ISSN: 1016-5444

Employment in Europe 2007

European Commission

Country abbreviations

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
EL	Greece
ES	Spain
FR	France
IE	Ireland
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	The Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
IS	Iceland
LI	Liechtenstein
NO	Norway
HR	Croatia
TR	Turkey
JP	Japan
US	The United States

EMPLOYMENT IN EUROPE 2007

European Commission
Directorate-General for Employment, Social Affairs and Equal Opportunities
Unit D1

Manuscript completed in October 2007

Acknowledgements

The "Employment in Europe 2007" was prepared by Directorate-General for Employment, Social Affairs and Equal Opportunities; Employment Analysis Unit. Primary contributors to this report include Matteo Governatori, Magdalena Grzegorzewska, Emmanuel Hassan, Christoph Maier, João Medeiros, Eric Meyermans and Paul Minty.

Statistical support from Eurostat and comments from other services of the Commission are gratefully acknowledged.

The report also benefited from contributions and comments by Philippe Askenazy, Thomas Bauer, Francois Rycx and by colleagues from the Dublin Foundation for the Improvement of Living and Working Conditions and the U.S. Department of Labor.

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Cataloguing data can be found at the end of this publication.
Luxembourg: Office for Official Publications of the European Communities, 2007
ISBN 978-92-79-06669-6
Printed in Belgium
PRINTED ON WHITE CHLORINE-FREE PAPER

Foreword
by Mr Vladimír Špidla, Commissioner for Employment, Social Affairs and Equal Opportunities

The Commission actively supports Member States in the analysis, design and implementation of their employment policies. The *Employment in Europe* report is one of the main instruments of this support.

The 19th edition of the Employment in Europe report comes at a time when the EU is experiencing strong employment expansion: in 2006, employment increased in all EU Member States and overall job growth has been the strongest since the launch of the Lisbon strategy in 2000. Moreover, strong job creation appears to be continuing in 2007. This is very positive news which shows that policy efforts in the area of employment are beginning to bear fruit in many Member States. At the same time, we must not forget that the ambitious Lisbon and Stockholm employment targets remain a considerable challenge and leave no room for complacency.

As in previous years, this issue of *Employment in Europe* addresses topics that are high on the European Union's employment policy agenda, complementing and expanding on the themes covered in previous reports. In particular, as in 2006, the report aims to inform the broad policy debate on flexicurity, which resulted earlier this year in a Commission Communication on Flexicurity with a view to reaching an agreement on a set of common principles at European level by the end of 2007. The report also takes account the European Year of Equal Opportunities 2007 by addressing the issue of work-life balance. It also complements the recent Commission Communication on Youth with a special focus on youth employment.

The overarching theme of this report is flexicurity and the closely related issue of life-cycle approach to work. While last years' report focused on the external aspects of flexicurity, this year's chapter on working time and work organisation seeks to enrich the flexicurity debate by looking at internal flexibility, i.e. within firms. Both the chapter on older workers and the panorama focus on young people expand on the review of the labour market trends for these two groups featured in the *Employment in Europe 2005* and aim to contribute to the promotion of a life-cycle approach to work. As in previous years, the *Employment in Europe 2007* pays particular attention to human capital development and looks at the issue of vocational training and, in particular, at the role of public policies in this domain. Finally, the report examines the evolution of the labour income share in the EU and addresses important issues, such as equity, efficiency and stability in the age of globalisation and rapid technological progress.

The findings presented in *Employment in Europe 2007* are a highly relevant contribution to the employment policy debate in the European Union and in the Member States. I would therefore like to recommend this report to you.

Vladimír Špidla

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EXECUTIVE SUMMARY

PANORAMA OF THE EUROPEAN LABOUR MARKETS WITH A SPECIAL FOCUS ON YOUTH EMPLOYMENT

Stronger economic growth in 2006…

Economic growth in the EU turned out to be better than expected in 2006, mainly due to brisk global growth and favourable domestic conditions. GDP growth for the EU-27 averaged 3% for the year as a whole, up from 1.8% in 2005, and is expected to grow at a similar rate in the current year.

…has led to a robust recovery of labour markets in the EU

In 2006, labour markets in the EU made a robust recovery. After rather modest increases in previous years, employment growth in the EU-27 picked up significantly in 2006 and, at 1.4%, was at its strongest since 2000. In addition, labour productivity accelerated in comparison with 2005 and grew at a slightly higher rate than in the United States, although the EU continued to underperform slightly in relation to the United States in terms of employment growth.

Progress towards the overall Lisbon employment target has been the best since 2000, and there has also been marked progress towards the female and older workers' targets

Due to stronger employment growth, the EU has made its best progress since 2000 towards its overall employment rate target of 70%, as well as towards the targets for female (60%) and older workers' (50%) employment rates. The overall female and older workers' employment rates reached 64.3%, 57.1% and 43.5%, respectively in 2006. Despite this progress, it seems increasingly challenging for the EU to meet the overall employment target of 70% and the older workers' target of 50% within the next four years, although the target of 60% for female employment seems to be within reach.

Employment growth has been positive in all 27 Member States…

For the first time in at least a decade, employment expanded across the entire EU, with all 27 Member States showing a rise in employment. Particularly high employment growth was observed in a number of the new Member States, namely Estonia, Latvia, Poland, Bulgaria and Slovakia, and in Ireland, Luxembourg and Spain. Even those Member States that had displayed no increases in employment in the previous year, namely Germany, Hungary, the Netherlands and Portugal, experienced significant employment growth in 2006.

…with prime-age workers and employees in full-time or permanent employment making a strong contribution

Overall, there was a net increase of over 4 million persons in employment in the EU-27 in 2006, with women contributing slightly more to employment creation than men. With respect to age, prime-age workers aged 25–54 accounted for almost two-thirds of this increase, with a higher share of prime-age women than men. Older workers above the age of 54 contributed just under a third to employment growth. Almost 90% of employment growth was due to employees in paid employment, with the remainder due to the self-employed.

Strong disparities in labour market outcomes persist across Member States

Despite an increase in employment in all Member States, large variations persist across countries. In 2006, employment rates ranged from as low as around 55% in Poland to more than 77% in Denmark. At the same time, employment rates for women remain substantially below those for men in most of the EU-27. There is also a substantial variation between Member States with respect to employment rates for older people aged 55–64.

Positive outlook for continued employment growth

The continuing economic upturn is expected to have positive effects on the labour market. Employment is projected to grow by 1.4% in 2007 and 1.1% in 2008. With more jobs being created, the number of jobless is likely to decrease even further: the unemployment rate is expected to fall to 7.2% in 2007 and 6.7% in 2008.

Youth unemployment remains a challenge, despite some recent improvements

A more detailed look at the employment situation of the younger generation reveals that youth unemployment and difficulties in successfully integrating young people in the labour market remain a challenge for many EU Member States. Despite signs of some overall recent improvements, a real breakthrough in reducing youth unemployment has yet to occur. At 17.4%, the average youth unemployment rate in the EU is still at a high level and it has not improved relative to unemployment rates for prime-age adults. Furthermore, as a whole, the EU underperforms in the international context, with substantially more youth in unemployment and fewer working than in other industrialised countries, such as the United States, Canada or Japan.

Youth in precarious jobs or long periods of inactivity are especially at risk of economic and social exclusion

Young people frequently face problems in making a smooth and rapid transition from education to work. A small but significant part of youth remains trapped in temporary, often low-pay jobs from which they find it difficult to exit. Another group at risk are those youth who experience longer spells outside employment, education or training.

Addressing school failure and familiarising youth with working life are needed...

Insufficient education attainment is one of the main causes behind the poor labour market performance of young people. Therefore programmes, which address school failure early on, familiarise youth with the world of work and prepare them for the need for lifelong learning in order to adapt their qualifications throughout their working lives, are a crucial factor to improve the labour market situation of young people.

...along with effective activation strategies and removing obstacles to hiring young people

In addition, better integration of disadvantaged youth suffering from long spells in unemployment or inactivity will also require more effective activation strategies than in the past. Moreover, youth are one group which is most likely to be negatively affected by institutional settings favouring those with a permanent job at the expense of newcomers. The problems due to labour market segmentation could be partly addressed by making it easier for firms to hire young people.

ACTIVE AGEING AND LABOUR MARKET TRENDS FOR OLDER WORKERS

Population ageing is a serious challenge to the labour market, economic growth and social protection systems in Europe

The EU is facing a substantial challenge due to population ageing, which is the result of low fertility rates and increasing life expectancy. The population is expected to become much older, with a marked change in the age structure of both the overall and working-age populations, and with the labour market more and more influenced by the older generation. This will have an impact on economic growth and lead to mounting pressure on social protection systems.

Increasing the labour force participation of older people is essential, through addressing the reasons for their inactivity

In this context, increasing participation, especially of older people, and delaying the exit from the labour force will be essential. However, currently over half of 55–64 year olds in the EU are inactive, mainly for reasons of retirement but also due to poor health, personal or family responsibilities, or the belief that no work is available. Transition into inactivity for older people is nearly always a path of no return.

Active ageing strategies are starting to produce results, with employment

Recent results indicate that efforts by Member States to implement measures in support of active ageing, as called for by the European Employment Strat-

of older workers up markedly since 2000…

egy, are starting to produce results. Employment of older workers has been one of the most dynamic components of the EU labour market in recent years, with employment rates for older workers up 7 percentage points since 2000, even though this was, for a large part, a period characterised by sluggish economic and employment growth. Pension reforms and cohort effects among women have contributed to this improvement.

…and with this, expansion associated with positive aspects of employment

The recent rise in the employment of older workers has not been associated with any noticeable rise in the precariousness of their employment, nor is it mainly associated with an increased prevalence of part-time work or self-employment. Furthermore, much of the employment growth has been in relatively highly skilled, knowledge-intensive sectors, and with a shift away from the more manual occupations towards the non-manual and more knowledge-intensive occupations. This suggests that older workers' employment is benefiting from the ongoing trends of population ageing and the shift to a more knowledge-based economy.

While the increase of female older workers is mainly due to cohort effects, for men it appears more strongly linked to recent policy measures related to active ageing

Much of the rise in employment rates for older workers is due to the increase in rates for older women, which is due in turn mainly to the knock-on effect of the increasing participation over time of women in general (women of younger generations have higher age-specific participation rates than women of older generations). This is as a result of changes in cultural attitudes regarding female participation, higher skill levels among women and greater possibilities to reconcile work and family responsibilities. In contrast, the increase in rates for men is a result of the delays in exiting the labour market, this being more due to such factors as reforms of pension and social protection systems, and other recent measures associated with active ageing.

Despite recent improvement much remains to be done to reach the Stockholm target

Despite the recent improvement, efforts to promote active ageing must still be pursued vigorously. Labour market participation of older people in Europe remains low by international standards and the employment rate for people aged 55–64 is still 6.5 percentage points from the Stockholm target of 50% by 2010. Nevertheless recent trends suggest the chances to make substantial progress are encouraging.

There are different approaches to active ageing across Member States – countries with more integrated approaches are more successful than others

Different types of approach to active ageing currently exist across Member States. Features of the systems which are more successful in supporting active ageing include good levels of general health for older people and reasonably high standard retirement ages; relatively high spending on active labour market policy measures and participation in lifelong learning; flexibility with regard to working hours and work organisation; and reduced financial pressures on older workers to leave the labour market, both in terms of the financial incentives for older workers to retire and the cost pressure on employers to hire younger rather than older workers. Certain groups of Member States, in particular Nordic countries, have implemented a more integrated approach to active ageing and have been relatively more successful in integrating and retaining older workers in employment compared to others.

Raising older people's labour market participation requires addressing a range of factors…

Increasing the labour market participation of older workers further will require overcoming the continuing barriers and disincentives they face to employment. A broad range of factors needs to be addressed. Apart from financial incentives embedded in pension systems, early retirement schemes and other tax and benefit systems, as well as more flexible wage-setting that is less linked to seniority, the general challenges include changing attitudes to older workers, maintaining and promoting the health and working capacity of workers as they age, and developing the skills and employability of older workers through effective lifelong learning. Suitable working conditions need to be provided, including more flexible working time and work-organisation

arrangements, together with employment opportunities for an ageing workforce. It is also necessary to provide a generally supportive environment for active ageing.

…including gender-related aspects of differences in participation at all ages

Addressing gender-related issues is important. The low employment rate for older workers in Europe is largely a result of the relatively low rates for older women, and, in a broader perspective, for women in general. Further efforts to reduce the gap in activity between men and women will be a key element of any strategy to increase the labour supply of older people. In this context, lack of sufficient support for women in combining work and family responsibilities continues to be an important factor limiting their participation, while it will be increasingly important to develop new mechanisms or extend existing policies to ensure adequate coverage of older female workers' needs.

Wider implementation of integrated strategies is needed, with a focus on the entire working lifespan

Addressing the challenge of demographic ageing and its impact on the workforce will require the wider implementation of more integrated strategies than has been the case to date. Measures are needed which emphasise the integration of older workers and improve their employability as well as closing off early exit pathways. Member States have been undertaking reforms and implementing measures to support active ageing, and there are also some indications that employers are beginning to address the issue of managing an ageing workforce, but further progress is needed. In taking active ageing forward, particular attention should be paid to promoting access to employment throughout working life; a comprehensive active-ageing strategy must focus on the entire working lifespan and all age groups, not just older workers.

WORKING TIME, WORK ORGANISATION AND INTERNAL FLEXIBILITY – FLEXICURITY MODELS IN THE EU

Flexicurity is an integrated strategy also involving flexibility within the firm

The recently adopted Commission Communication on flexicurity recognises that flexibility goes beyond the ease or difficulty to hire and fire employees (external flexibility) and can also be provided within the firm, either via flexible working-time arrangements (i.e. internal flexibility) and/or different forms of work organisation, such as teamwork, work rotation, discretion at work (i.e. functional flexibility).

This may concern either flexible working-time arrangements (internal flexibility)…

Since the mid-1990s, the rise in the incidence of part-time work is associated with the substantial increase in the female employment rate – more than offsetting the trend decline in hours worked per worker – leading to an overall increase in labour utilisation. The incidence of flexible working-time arrangements varies significantly across EU Member States. The evidence from surveys suggests that flexible working-time arrangements help to reconcile professional demands with employees' preferences, leading to increased job satisfaction and a better work-life balance. On the other hand, long and irregular working hours tend to be detrimental for the perceived job quality and health conditions of workers.

…or flexible forms of work organisation (functional flexibility) Innovative workplace practices enhance firms' competitiveness, but there is no convergence towards a single model of the 'flexible firm'

Competitiveness pressures and technological progress have led many firms in advanced economies to adopt more flexible forms of work organisation, together with complementary human resource management policies. Flexible forms of work organisation are loosely characterised by flatter hierarchical structures, a stronger involvement of employees in decision making, and greater discretion/autonomy of workers in the completion of their tasks, coupled with richer job content. These innovative working practices show significant complementarities/synergies and are more effective when combined with certain human resource management practices, such as on-the-job training

and contingent pay systems. However, there is no overall convergence towards a single model of the flexible workplace. Firms in EU Member States have adopted distinct national strategies of organisational change because of different institutions, socio-political preferences, economic structures, historical contexts, etc.

The taxonomy of flexicurity regimes needs to be updated by considering forms of flexibility provided within the firm…

Based on the institutional complementarities/policy regimes literature, the 2006 issue of *Employment in Europe* (*EiE*) proposed a typology of EU labour markets along the dimensions of flexibility and security. However, flexibility referred exclusively to its external component as measured by OECD's *Employment Protection Legislation* (EPL) indicator. The 2007 issue of *EiE* uses data from the *European Survey of Working Conditions* (European Foundation) to compute country-specific indicators of various forms of flexibility provided within the firm (both internal and functional) in order to update and refine the taxonomy of EU flexicurity systems presented in *EiE 2006*.

…which turn out to provide significant value added. Advanced internal flexibility is an important component of 'good' flexicurity models

The analysis strongly suggests that consideration of both external and internal forms of flexibility (and their interaction) is essential to characterise labour markets/flexicurity regimes across the EU. Two regimes are found to be associated with relatively 'good' socio-economic outcomes. The first regime (mainly 'Anglo-Saxon' countries) is characterised by high external flexibility combined with average levels of advanced forms of internal flexibility. It displays high labour mobility, low segmentation, innovation, take-up of training by employees and moderate success in poverty reduction, combined with low budgetary costs. The second regime (mainly 'Nordic' countries) is characterised by advanced forms of internal flexibility (complex tasks, workers' autonomy, flexible working-time arrangements), combined with moderate levels of external flexibility. It is associated with good economic outcomes (labour market, productivity, innovation); greater job satisfaction and work-related health; and strong reduction in inequality/poverty, combined with higher budgetary costs. Therefore there is no model that performs better on all counts i.e. there is no single policy 'recipe' for success.

A rich job content and autonomy at work seem to be part of win-win strategies that can simultaneously improve firms' results and raise employees' job satisfaction…

Different flexible practices of work organisation do not have the same impact on the quality of working conditions. The advanced internal flexibility (or discretionary learning) model, which combines greater demands on workers, in terms of responsibilities and problem-solving activities, with increased autonomy at work, may represent a win-win solution, reconciling both employers' and employees' interests, particularly when combined with better support for workers moving between jobs and enterprises. In fact, it is simultaneously characterised by firms' enhanced performances and better working conditions as opposed to traditional forms of work organisation. On the other hand, more basic forms of functional flexibility, such as task rotation, teamwork and strict production norms, seem to be detrimental to job satisfaction, work-life balance and work-related health outcomes.

…and they are also key for learning and innovation

The way work is organised plays a key role in the absorption and creation of knowledge. Models characterised by discretion/autonomy at work combined with complex problem-solving activities are the best performing in the development of in-house innovation, while the so-called 'lean' model, characterised by a low degree of autonomy and a large emphasis put on task rotation and teamwork, tends to be associated with the adoption and/or modification of existing technologies. Workers' discretionary efforts in understanding and solving production-related problems seem, therefore, to be a key factor for learning and innovation, in addition to completing 'standard' education levels (i.e. secondary education) and/or participating in lifelong training.

STRENGTHENING CONTINUING VOCATIONAL TRAINING AT THE INITIATIVE OF THE ENTERPRISE

Continuing vocational training is increasingly important due to major long-term trends that have affected EU economies over the past decades

Continuing vocational training at the initiative of the enterprise is being increasingly recognised in EU economies, given the long-term trends and characteristics of the structural changes in modern economies over past decades. These changes have been marked by a transition from a model of production based on mass production to a new productive model driven by quality and innovation; a major employment shift towards service sector jobs; and the significant increase in the education attainment level of the workforce. These changes have strengthened the need for continuing vocational training to guarantee that workers who entered the workforce several decades ago have the skills required to participate effectively in today's economy, but they have also put an increasing pressure on the new generations of workers to continuously acquire the skills necessary to learn and innovate in a new era characterised by rapid change.

Policies targeted towards continuing vocational training could pursue four key objectives in the context of the Lisbon Strategy for Growth and Jobs

There are at least four good reasons that call for the strengthening of continuing vocational training in the context of the Lisbon Strategy and these may also form the objectives for future policies. First, policies can reduce social exclusion and income inequality caused by insufficient human capital by raising the skills and the employability of at-risk workers. Second, these policies can be a means of keeping older workers, who entered the labour force with low levels of schooling, active in the labour market, thereby helping sustain the social protection systems. Third, policies targeted towards continuing vocational training are a crucial ingredient for the implementation of flexicurity policies by making internal labour markets more dynamic in the context of permanent economic changes, and workers' skills more transferable among employers, while reinforcing the perceptions of employment security. Finally, these policies can help ensure that workers acquire and upgrade the skills necessary in an era characterised by rapid change and learning, making European enterprise more competitive in the knowledge-based economy.

There are signs that the free market is unable to provide an efficient level of investment

There are some indications that the free market cannot provide an efficient level of investment in continuing vocational training because of possible market failures. Probably the most prominent market failure related to continuing vocational training is the poaching problem. This refers to the possibility that workers leave their current employers who provided the training in order to join other employers who do not pay for such an activity but gain part of the resulting benefits. In many circumstances, such market failure does not provide adequate incentives for employers to invest in continuing vocational training.

Findings show that equal access to training remains an issue for the EU

Empirical findings indicate that some groups of employees have a lower likelihood of participating in employer-sponsored training than others in the EU. Access to training remains unequal, particularly for older workers, the less educated, those in precarious jobs and workers with the lowest income. This has a negative impact on the employability of these groups, and hence increases the risk of social exclusion and income inequality. It also undermines the sustainability of the social protection systems by increasing the older workers' probability to exit the labour force early. Furthermore, the likelihood of participation in training remains quite low in small enterprises, which has potential negative effects on the innovation activities of this important business segment.

Government intervention can thus be justified on the grounds of efficiency and equity

For these reasons, government intervention may be required to ensure that the two traditional objectives of education and training – i.e. efficiency and equity, as stressed by the Commission's 2006 Communication *Efficiency and*

equity in European education and training systems – are reached. In this respect, government intervention can take three different forms: provision, regulation and funding. However, when implementing policy instruments, governments have to find the right balance among these forms of intervention in order to achieve both efficiency and equity.

Supply-side policies may help secure investment in continuing vocational training…

Specially designed policies may contribute to reducing under-investment in continuing vocational training, while, in certain circumstances, improving equality of access to training for all workers. These policies include fiscal incentives and subsidies, collective labour agreements and compulsory agreements through levy-based schemes. When designing such policies, governments should, nevertheless, be careful to avoid possible adverse effects on the efficiency of resource allocation.

…as well as its benefits

Supply-side policies may also help secure the benefits of continuing vocational training. Reforms aiming at aligning productivity and wages should be considered with caution because they may reduce the benefits from continuing vocational training that accrue to the employers providing such training to their employees. On the contrary, policy instruments aiming at reducing turnover, such as payback clauses, may be useful since, to a certain extent; they allow employers to secure the benefits of their investment in continuing vocational training. Lastly, policies promoting quality assurance, accreditation and certification of training may have differentiated effects. Whilst the accreditation of training contributes to improving the information on the quality and nature of training, thereby helping employers to take training decisions, the certification of training may reduce the incentives of firms to provide continuing vocational training to their employees (certification increases the transferability of their employees' skills by making them more visible to other employers). On balance, however, these policies are socially desirable, as they can ease job-to-job mobility, thus contributing towards implementing flexicurity policies.

THE LABOUR INCOME SHARE IN THE EUROPEAN UNION

The labour income share in Europe has been declining since the mid-1970s, while the skill composition of the total wage bill has changed notably

The labour income share, which measures the part of value added that is allocated to labour, fell markedly in the EU and Japan, and to a lesser extent in the USA. In the EU, the labour income share started to decline shortly after the first oil price shock, currently falling below the levels attained in the 1960s. The data also shows that the share of the skilled workers rose steadily over past decades while the share of the unskilled workers declined progressively.

This evolution has a major socio-economic importance

The evolution of the labour income share involves issues of equity, economic efficiency and macro-economic stability because it has an impact on personal income distribution and social cohesion, the direction of the adjustment in wages and employment, and the composition of aggregate demand.

Technological progress, and labour market institutions and policies can be seen as the most important drivers of this evolution, but they have differentiated effects on the income shares of workers with different skill levels

Once the restrictive assumptions of the basic neo-classical growth model are relaxed, the evolution of the labour income share can be understood as the outcome of a complex interaction between technological progress and labour market institutions and policies, and, to a lesser extent, other drivers, such as trade openness. However, depending on the degree of substitution between the production factors, changes in these drivers may have a different impact on the income share of the different skill types. This is very well illustrated by the effects of variables associated with technological progress, such as capital-to-labour ratio or ICT use, which has a positive effect on the income share of medium- and high-skilled workers and a negative impact on the income share of low-skilled workers.

Technological progress has been a major driving force the decline in the labour income share

Technological progress appears to have made the largest contribution to the fall in the income share of aggregate labour. However, this loss was unevenly spread over the different skill-types as the high-skilled workers increased their share while the low-skilled workers saw their income share fall. Trade openness also had a negative impact on the aggregate labour income share but to a lesser extent than technological progress, and its impact fell primarily on the medium-skilled workers.

Balanced packages of stability and growth-oriented macro-economic policies and labour market polices are needed in order to address any adverse developments in the labour income share

In order to address any adverse developments in the distribution of value added between capital and labour and between the different skill types of labour, policy-makers need to pursue macro-economic polices oriented to stability and growth, creating an economic environment that contributes to further capital and technological progress. However, in order to realise this potential, it is imperative that these policies are complemented by labour market polices that take into account the different responses of the different skill types to these drivers and, most importantly, by policies that allow the low-skilled to progress to a higher skill level so that the adverse effects, which stem from their high degree of substitutability with capital, can be mitigated.

Policies based on flexicurity principles are a concrete way forward for promoting a fairer share of the fruits of economic growth

Some degree of employment flexibility within a secure context should facilitate the creation of new jobs and the destruction of those that become unproductive, as well as facilitate the swift progression of workers to more rewarding jobs rather than keeping them trapped in low-skilled jobs, the income share of which is adversely impacted by capital deepening and technological progress.

CONCLUSIONS

A cyclical upturn in the economy contributed last year to the best employment performance of the EU since the launch of the Lisbon Strategy…

Employment expansion, apparent in the EU since 2004, continued in 2006, this time significantly helped by a relatively broad-based economic recovery. Each of the EU Member States recorded employment growth in 2006 and the total net increase of over 4 million people in employment represented significant progress toward the Lisbon and Stockholm employment targets, proving last year to be the most successful since the launch of the Lisbon Strategy in 2000.

…but this only strengthens the case for speeding up structural reforms in areas such as flexicurity and a life-cycle approach to work…

The improved economic climate should by no means obscure the urgent need for a continuing labour market reform across the EU. On the contrary, the current cyclical improvement presents a unique opportunity to push more strongly for the structural changes needed to achieve a breakthrough towards the overreaching Lisbon objectives of full employment, quality and productivity at work, and social and territorial cohesion. The analysis presented in this *Employment in Europe* demonstrates how a strategic and integrated policy approach towards key priority areas identified in the conclusions of the 2006/2007 Joint Employment Report, such as a life-cycle approach to work or flexicurity, can actually make a difference to the labour market performances of different Member States.

…as the analysis presented in this report demonstrates.

Life-long learning remains a necessary ingredient of successful policy packages in the EU labour markets and this year's *Employment in Europe* report looks specifically into policy solutions that improve both efficiency and equity in continuing vocational training. This report also examines the recently much-debated issue of the labour income share developments in the EU and suggests some policy responses best equipped to mitigate their possible adverse effects. Overall, the findings of *Employment in Europe 2007* support the general direction of the main policy initiatives at EU level within the employment pillar of the re-launched Lisbon Agenda.

Chapter 1

PANORAMA OF THE EUROPEAN LABOUR MARKETS

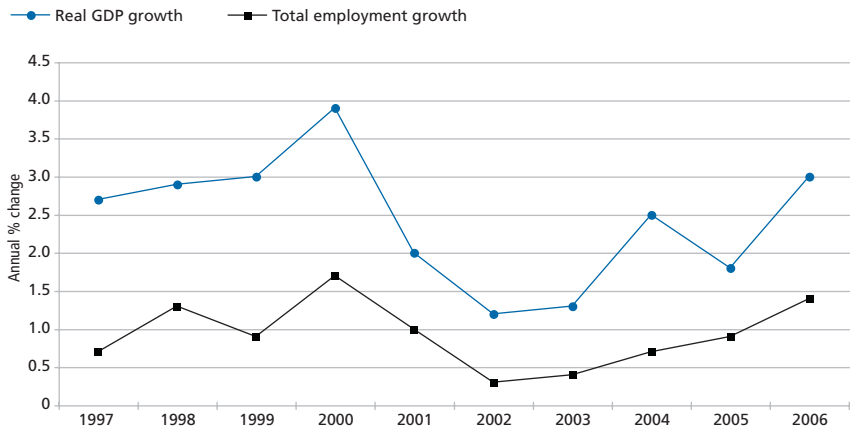
1. INTRODUCTION

This chapter provides an overview of recent developments in the European labour market until 2006 and compares them with developments in an international context, in particular with those in the United States and Japan. The chapter begins with an overview of recent labour market performance, examining the current situation and recent trends in the European Union (EU) set in a global perspective. It then focuses in more detail on the latest developments in activity, employment and unemployment rates across the individual Member States, with a focus on progress with regard to the Lisbon and Stockholm employment rate targets. The chapter also contains a special section on the labour market performance of young people in the EU which complements Chapter 2 of this report on active ageing and labour market trends for older workers. The findings reported in this chapter are based on data available up to June 2007[1]. EU averages generally refer to all 27 Member States of the EU, while some of the tables and charts include data for the EU-15 aggregate to provide a longer-term historical perspective.

2. EU LABOUR MARKET PERFORMANCE IN A GLOBAL PERSPECTIVE

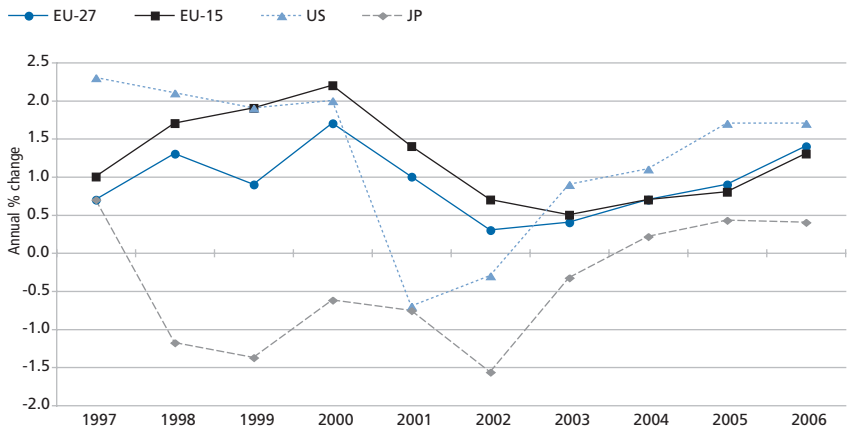
The world economy continued to develop strongly in 2006. World GDP growth for 2006 is estimated at 5.2%, up from 4.8% in 2005 and only slightly below the recent high of 5.3% observed in 2004. Particularly strong growth was again observed in certain emerging economies such as China (10.7%) and India (8.7%). In the United States, economic activity started to slow down after a strong first quarter in 2006, mainly due to a downturn in the housing sector and the accompanying decline in residential investment, but also to a slowdown in manufacturing. Nevertheless, GDP growth was still at 3.3%, compared to 3.2% in 2005. In Japan the

Chart 1: **Real GDP growth and employment growth in the EU, 1997–2006**



Source: Eurostat, national accounts.

Chart 2: **Employment growth in the EU, US and Japan, 1997-2006**



Source: Eurostat, national accounts.

1 The figures in this chapter are based on the data available up to June 2007 and generally include data for the years up until 2006. For further details on the data and the sources used, see the statistical annexes.

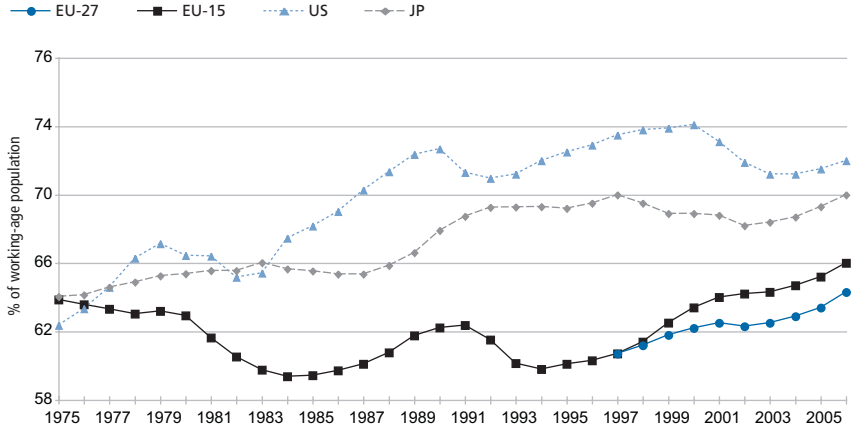
Table 1 - **International comparison of key indicators, 2004 – 2006**

	2004	2005	2006
Population (millions)			
EU-27	487	489	491
EU-25	457	460	462
EU-15	383	386	388
USA	293	296	298
Japan	128	128	128
GDP (in 1000 million purchasing power standards, current prices)			
EU-27	10670	11099	11671
EU-25	10453	10865	11414
EU-15	9522	9874	10344
USA	9795	10312	10859
Japan	3147	3271	3406
GDP growth at constant prices (annual % change)			
EU-27	2.5	1.8	3.0
EU-25	2.4	1.8	2.9
EU-15	2.3	1.6	2.8
USA	3.9	3.2	3.3
Japan	2.7	1.9	2.2
Employment rate (as % of working age population)			
EU-27	62.9	63.4	64.3
EU-25	63.3	63.8	64.7
EU-15	64.7	65.2	66.0
USA	71.2	71.5	72.0
Japan	68.7	69.3	70.0
Employment growth (annual % change)			
EU-27	0.7	0.9	1.4
EU-25	0.7	0.9	1.5
EU-15	0.7	0.8	1.3
USA	1.1	1.7	1.7
Japan	0.2	0.4	0.4
Unemployment rate (as % of civilian labour force)			
EU-27	9.0	8.7	7.9
EU-25	9.0	8.7	7.9
EU-15	8.0	7.9	7.4
USA	5.5	5.1	4.6
Japan	4.7	4.4	4.1

Source: GDP and employment growth from national accounts, Eurostat (employment growth for Japan from AMECO database, Commission Services). GDP in purchasing power standards from AMECO database, Commission Services. Employment rate from Eurostat (annual averages) and OECD data for US and Japan. Unemployment rate from the harmonised unemployment series, Eurostat. Population from demographic statistics, Eurostat, and for US and Japan from AMECO database, Commission Services.

Note: Employment rates for the EU and Japan refer to persons aged 15-64; US employment rate refers to persons aged 16–64.

Chart 3: **Employment rates in the EU, US and Japan, 1975–2006**



Source: DG EMPL calculations based on long-term trends in employment and population, Commission Services.

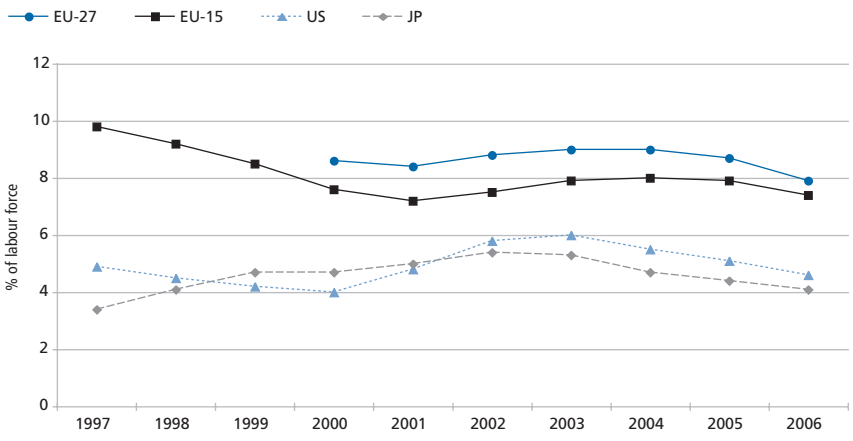
economy expanded by 2.2%, up from 1.9% the year before.

Economic growth in the EU turned out to be better than expected in 2006, mainly due to brisk global growth and favourable domestic conditions. GDP growth for the EU-27 averaged 3% for the year as a whole, up from 1.8% in 2005, and is expected to grow at a similar rate in the current year.

In 2006, the economic upswing was finally reflected in EU labour markets. After rather modest increases in the previous years, employment growth in the EU-27 picked up significantly in 2006 and showed its strongest increase since the late 1990s (Chart 1). For the year as a whole, EU employment growth averaged a healthy 1.4%, up from the previous year's level of 0.9%. Reflecting the improvement in labour market conditions, the employment rate in the EU rose to 64.3% (Chart 3), while the unemployment rate fell to 7.9%, down from 8.7% the year before (Chart 4). Yet despite these improvements, the average EU employment rate remains well below that of the United States and Japan, while the average EU unemployment rate is still almost double the rate in the United States and Japan.

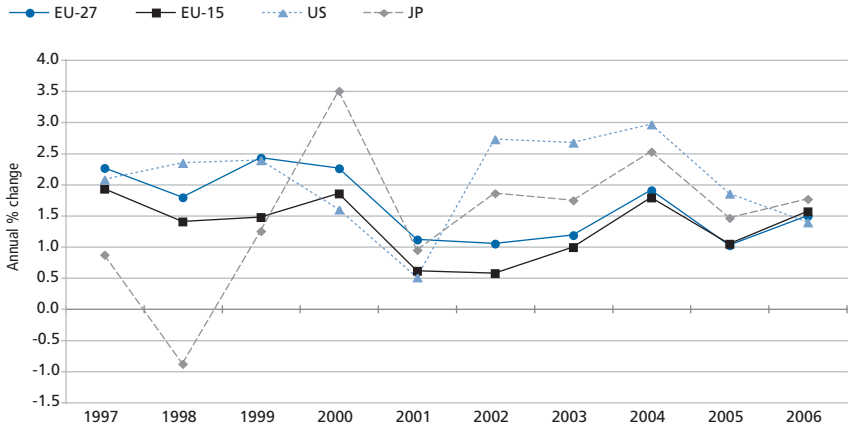
In the United States, the labour market continued to be robust despite first signs of slower economic growth. Employment continued to expand at a faster rate than in the EU, with growth at 1.7%, the same level as the year before (Chart 2, see page 19). The unemployment rate continued to fall and was at 4.6% in 2006, down from 5.1% in 2005 and at its lowest level since 2001. In Japan, the turnaround in the labour market observed in 2004 continued in 2006. Employment growth was positive for the third consecutive year, although, at 0.4% both in 2005 and 2006, much lower than in the EU and the US, while the unemployment rate continued to fall from 4.4% to 4.1%.

Chart 4: Unemployment rates in the EU, US and Japan, 1997–2006



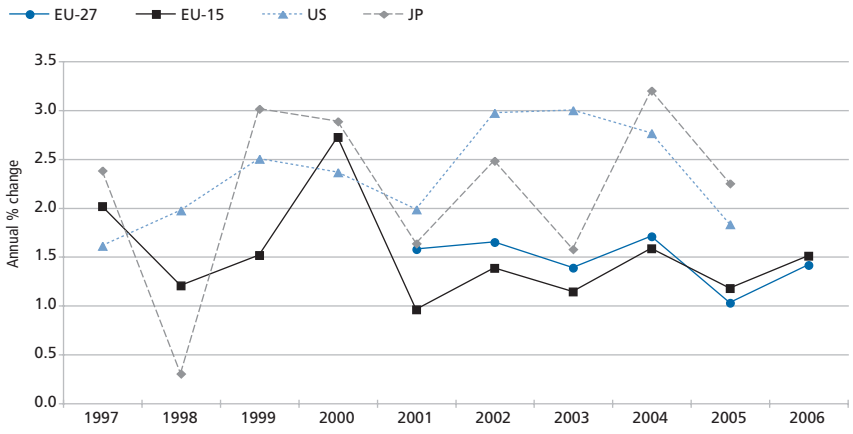
Source: Eurostat, harmonised series on unemployment.

Chart 5: Growth in productivity per person employed in the EU, US and Japan, 1997–2006



Source: AMECO database, Commission Services.

Chart 6: Growth in productivity per hour worked in the EU, US and Japan, 1997–2006



Source: AMECO database, Commission Services.

The increase in economic growth in the EU reflects an increase in average labour productivity growth. EU labour productivity (in terms of GDP per person employed) grew by 1.5% in 2006, up from a 1% increase in 2005 (Chart 5). In Japan, labour productivity growth was also up, with 1.8% in 2006, compared to 1.5% in 2005. In the United States, on the other hand, labour productivity growth again turned out to be less dynamic than the year before (1.4% in 2006, after 1.8% in 2005 and 3% in 2004). Considering productivity in terms of GDP per hours worked, productivity growth in the EU also increased in 2005 (Chart 6).

According to the European Commission's Spring Economic Forecast[2], the economic outlook for the EU-27 remains positive for this and the following year. For 2007, real GDP is predicted to expand by 2.9%, i.e. at a similar pace to 2006. For 2008, a slight deceleration to 2.7% is forecast, which would still be significantly above growth rates experienced in the first half of the decade. It is expected that the main drivers of the economy will be domestic demand, including private consumption and investment, and a continued strong though somewhat slower growth in exports.

The economic upturn is expected to have positive effects on the labour market. Employment is projected to grow by 1.4% in 2007 and 1.1% in 2008. Together with the employment expansion in 2006, this translates into an estimated 8.8 million new jobs over the period 2006–2008. With more jobs being created, unemployment is likely to decrease further; the unemployment rate is expected to fall to 7.2% in 2007 and to 6.7% in 2008. Labour productivity growth in the EU (in terms of real GDP per employed person) is estimated to remain static at 1.5% in both 2007 and 2008.

2 European Commission (2007).

3. LABOUR MARKET SITUATION IN THE EU

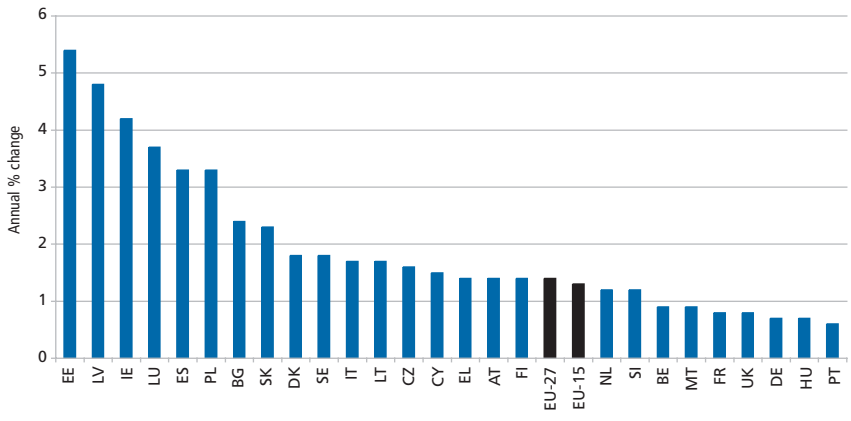
3.1 Employment growth in the EU Member States

In 2006, employment expanded across the entire EU. For the first time in at least a decade, all 27 current Member States experienced employment growth (Chart 7). Particularly strong growth rates were observed in a number of the newer Member States. Estonia had the highest employment growth with 5.4% and thereby underlined a greatly improved employment situation already established in the previous year. Employment in Latvia developed almost as equally impressively with an increase of 4.8%, after 1.5% the previous year. Poland, the biggest of the new Member States, also saw a further strong expansion of employment (+3.3%); following a long period of employment contraction during the beginning of the decade, employment in Poland began to pick up again in 2004 and has developed increasingly well since then (Table 2). Employment in Bulgaria continued to grow at a robust rate (+2.4%), albeit slightly less dynamically than in previous years. Slovakia also had employment growth of over 2%, significantly up from the previous year's growth rate. Cyprus, the Czech Republic, Lithuania and Slovenia all had employment growth in excess of 1%; however, in the case of Cyprus and Lithuania, this was a less dynamic development compared to the previous year. Employment in Hungary finally expanded again in 2006 (+0.7%), after having contracted in 2004 and stagnated in 2005. Malta experienced less dynamic employment growth in 2006 (+0.9%) compared to the previous year. The lowest employment growth rate of all the Member States was observed in Romania, which saw only marginal improvements in employment for the third year in a row and which were not enough to make up for the strong employment losses that occurred in the late 1990s and at the beginning of this decade.

As for the older Member States, employment growth continued to be particularly strong in Spain, Ireland and Luxembourg. Though slightly less dynamic than in 2005, employment in Ireland expanded by 4.2% and in Spain by 3.3%. Luxembourg managed to up the pace again and saw its employment grow by 3.7% in 2006. Almost all the other Member States also managed to increase their employment growth compared to the previous year, although in some countries the improvement was moderate. Even those Member States that had performed worst in 2005, namely Germany, Portugal and in particular the Netherlands, saw their employment grow again in 2006, although they still remained below the average growth rate for the EU. In Belgium, Finland and the United Kingdom, annual employment growth remained at about the same level as in previous years.

As for labour productivity, all of the new Member States continued to exhibit strong growth, which was well above the EU average, despite a more tempered pace in most countries compared to the previous year (Table 3 - see page 24). In particular, Estonia, Latvia, Lithuania and Slovakia saw their labour productivity (in terms of GDP per person employed) increase by more than 5%. Amongst the bigger old Member States, Germany stands out as the country with the highest productivity growth: 2.5% in 2006, the highest for Germany since the beginning of the decade. Productivity in the United Kingdom now also stands above average, while it remains subdued in France and particularly weak in Italy and Spain. Overall, the highest productivity growth in the old EU-15 was observed in Finland with +4%.

Chart 7: **Employment growth for EU Member States, 2006**



Source: Eurostat, national accounts.

3.2. Employment rates and the EU employment targets

3.2.1. Overall progress towards the Lisbon and Stockholm targets

Due to a stronger employment growth in 2006, the EU made its best progress towards the overall employment target since its definition at the Lisbon European Council of 2000 (Box 1). Between 2005 and

Box 1 – Lisbon and Stockholm employment rate targets and the relaunched Lisbon Strategy

The Lisbon European Council of 2000 set a strategic goal, over the decade 2000–2010, for the EU 'to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion'. It specifically stated that the overall aim of employment and economic policies should be to raise the employment rate to as close to 70% as possible by 2010 and to increase the employment rate for women to more than 60% by the same year, not least in order to reinforce the sustainability of social protection systems. In addition to the 2010 Lisbon targets, the Stockholm European Council of 2001 set a new target of raising the average EU employment rate for older men and women (aged 55–64) to 50% by 2010.

Recognising the limited progress achieved so far towards these targets, the European Council decided in 2005 to relaunch the Lisbon Strategy without delay and refocus priorities on economic growth and employment. As part of this, a new set of employment guidelines for the period 2005–2008 was adopted by the Council in July 2005 to reflect the renewed focus on jobs, and they form part of the integrated guidelines package also adopted in 2005, which lays out a comprehensive strategy of macro-economic, micro-economic and employment policies to redress Europe's weak growth performance and insufficient job creation. The employment guidelines continue to reflect the EU's overall goal of achieving full employment, quality and productivity at work, and social and territorial cohesion, and advocate a life-cycle approach to work that tackles the problems faced by all age groups. The eight employment guidelines fall under three broad areas for action, namely to:

- Attract and retain more people in employment, increase labour supply and modernise social protection systems;
- Improve adaptability of workers and enterprises;
- Increase investment in human capital through better education and skills.

Table 2 - **Employment growth for EU Member States, US and Japan, 1997 – 2006**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
BE	0.5	1.6	1.3	2.0	1.4	-0.1	0.0	0.6	1.0	0.9
BG	-3.9	-0.2	-2.1	4.9	-0.8	0.2	3.0	2.6	2.7	2.4
CZ	0.2	-1.5	-3.4	-0.2	0.5	0.6	-1.3	0.1	1.6	1.6
DK	1.2	1.5	1.0	0.4	0.8	-0.1	-1.3	0.0	0.7	1.8
DE	-0.1	1.2	1.4	1.9	0.4	-0.6	-0.9	0.4	-0.1	0.7
EE	0.0	-1.9	-4.4	-1.5	0.9	1.3	1.4	0.0	2.0	5.4
EL	-0.5	2.9	0.3	0.5	0.3	0.2	1.5	3.4	0.9	1.4
ES	3.6	4.5	4.6	5.1	3.2	2.4	3.1	3.5	3.8	3.3
FR	0.4	1.5	2.0	2.7	1.8	0.6	0.1	0.0	0.5	0.8
IE	5.6	8.6	6.2	4.6	3.0	1.8	2.0	3.1	4.6	4.2
IT	0.3	1.0	1.1	1.9	2.2	1.6	1.5	0.4	0.3	1.7
CY	0.6	1.6	1.9	1.6	2.2	2.1	3.8	3.8	3.6	1.5
LV	4.4	-0.3	-1.8	-2.9	2.2	2.3	1.0	1.1	1.5	4.8
LT	0.6	-0.8	-2.2	-4.0	-3.8	3.6	2.2	0.0	2.5	1.7
LU	3.1	4.5	5.0	5.5	5.6	2.9	1.8	2.3	3.0	3.7
HU	0.2	1.8	3.4	1.3	0.3	0.0	1.3	-0.7	0.0	0.7
MT	0.0	0.0	0.7	8.4	1.8	0.6	1.0	-0.8	1.8	0.9
NL	3.3	4.1	3.9	3.1	2.6	0.5	-0.5	-0.9	0.0	1.2
AT	0.9	1.3	1.6	1.0	0.6	-0.1	0.0	0.0	0.5	1.4
PL	1.4	1.2	-3.9	-1.6	-2.2	-3.0	-1.2	1.3	2.3	3.3
PT	:	:	1.9	1.7	1.6	0.5	-0.4	0.1	0.0	0.6
RO	-3.8	-2.3	-4.5	2.5	-0.8	-2.7	-0.1	0.2	0.2	0.2
SI	-1.9	-0.2	1.4	0.8	0.5	1.5	-0.4	0.5	0.3	1.2
SK	-1.2	-0.4	-2.7	-1.8	0.6	-0.5	1.8	-0.3	1.4	2.3
FI	3.3	2.0	2.5	2.2	1.5	1.0	0.1	0.4	1.4	1.4
SE	-1.3	1.6	2.1	2.4	1.9	0.2	-0.3	-0.6	0.4	1.8
UK	1.8	1.0	1.4	1.2	0.8	0.8	1.0	1.0	0.9	0.8
EU-27	0.7	1.3	0.9	1.7	1.0	0.3	0.4	0.7	0.9	1.4
EU-15	1.0	1.7	1.9	2.2	1.4	0.7	0.5	0.7	0.8	1.3
US	2.3	2.1	1.9	2.0	-0.7	-0.3	0.9	1.1	1.7	1.7
JP	0.7	-1.2	-1.4	-0.6	-0.8	-1.6	-0.3	0.2	0.4	0.4

Source: EU and US data from national accounts, Eurostat; Japan data from AMECO database, Commission Services.
Note: ':' data not available.

Table 3 - **Productivity growth for EU Member States, US and Japan, 2000–2006**

	Growth in GDP per person employed							Growth in GDP per hour worked						
	2000	2001	2002	2003	2004	2005	2006	2000	2001	2002	2003	2004	2005	2006
BE	1.7	-0.6	1.6	1.0	2.3	0.1	2.0	1.7	-0.8	1.6	1.4	3.6	-0.7	2.0
BG	0.5	4.9	5.3	2.0	3.9	3.5	3.6	:	4.1	5.4	2.7	2.5	3.8	3.3
CZ	4.1	2.1	1.6	4.7	4.1	4.7	4.7	3.9	6.7	2.4	4.9	3.6	4.9	3.8
DK	3.1	-0.1	0.5	1.7	2.1	2.4	1.3	2.1	-0.6	0.9	1.9	1.8	1.3	1.2
DE	2.3	1.4	1.1	1.5	1.7	1.5	2.5	2.6	1.8	1.5	1.2	0.7	1.3	2.1
EE	11.0	6.8	6.3	6.2	8.0	8.6	5.5	:	7.2	6.4	5.5	7.5	7.6	3.7
IE	5.3	2.8	4.2	2.3	1.2	0.9	1.7	5.6	3.3	5.0	3.5	1.4	1.2	1.8
EL	4.6	5.4	3.7	3.4	1.7	2.3	2.7	4.0	5.2	3.7	3.4	5.0	2.8	2.2
ES	0.0	0.4	0.4	0.6	0.6	0.4	0.8	0.1	0.7	0.6	0.8	0.7	0.9	0.5
FR	1.0	-0.3	0.1	1.1	2.4	1.4	1.2	3.7	0.9	3.1	1.4	0.8	2.0	1.2
IT	1.7	0.0	-0.9	-0.6	0.8	0.3	0.2	2.4	0.8	-0.7	-1.1	1.5	0.6	0.0
CY	3.4	1.8	-0.1	-1.9	0.4	0.3	2.3	:	-5.0	1.2	-0.8	1.0	1.4	2.3
LV	10.1	5.7	4.8	5.4	7.5	8.7	7.0	9.4	6.2	5.2	4.4	10.5	9.0	6.7
LT	8.4	10.9	3.2	7.9	7.3	5.0	5.7	1.6	11.8	4.8	8.9	6.0	1.5	6.6
LU	2.7	-2.9	0.9	-0.5	1.3	1.0	2.4	3.0	-1.8	1.5	0.8	3.7	0.9	3.3
HU	3.7	3.6	4.4	3.3	5.4	3.7	3.1	4.2	6.0	4.0	4.3	5.6	4.3	3.6
MT	4.0	-2.8	1.4	-3.3	1.2	1.2	2.0	:	0.5	0.6	-2.5	-0.7	4.5	2.0
NL	2.0	0.3	0.3	1.4	3.4	1.8	1.8	3.9	-1.2	0.7	0.9	3.5	2.2	2.1
AT	2.3	0.3	1.1	0.9	2.1	0.7	1.9	2.7	0.3	0.9	0.5	1.9	1.2	1.7
PL	5.8	3.4	4.5	5.1	4.0	1.2	2.4	:	4.1	4.3	4.8	4.0	0.6	2.3
PT	1.6	0.2	0.3	-0.4	1.2	0.5	0.5	4.6	0.1	0.2	0.8	0.3	1.0	0.5
RO	-0.3	6.6	8.1	5.5	8.0	3.9	4.7	:	:	:	:	:	:	:
SI	3.3	2.2	1.9	3.1	3.9	3.7	4.0	2.6	1.8	3.1	2.6	6.3	3.6	3.0
SK	2.6	2.6	4.7	2.3	5.8	4.6	5.8	2.5	3.3	7.8	6.8	3.6	2.6	5.4
FI	2.7	1.1	0.7	1.7	3.3	1.5	4.0	3.6	2.1	1.0	2.1	3.1	1.9	3.8
SE	1.9	-0.8	1.8	2.0	4.7	2.5	2.4	3.3	0.6	3.3	3.2	3.3	2.3	2.7
UK	2.6	1.5	1.3	1.7	2.2	1.0	1.9	3.3	1.3	2.4	2.8	2.5	0.7	2.6
EU-27	2.3	1.1	1.1	1.2	1.9	1.0	1.5	:	:	:	:	:	:	:
EU-15	1.9	0.6	0.6	1.0	1.8	1.0	1.6	2.7	1.0	1.4	1.1	1.6	1.2	1.5
US	1.6	0.5	2.7	2.7	3.0	1.8	1.4	2.4	2.0	3.0	3.0	2.8	1.8	:
JP	3.5	0.9	1.9	1.7	2.5	1.5	1.8	2.9	1.6	2.5	1.6	3.2	2.3	:

Source: EU and US data from national accounts, Eurostat; Japan data from AMECO database, Commission Services.
Note: ':' data not available.

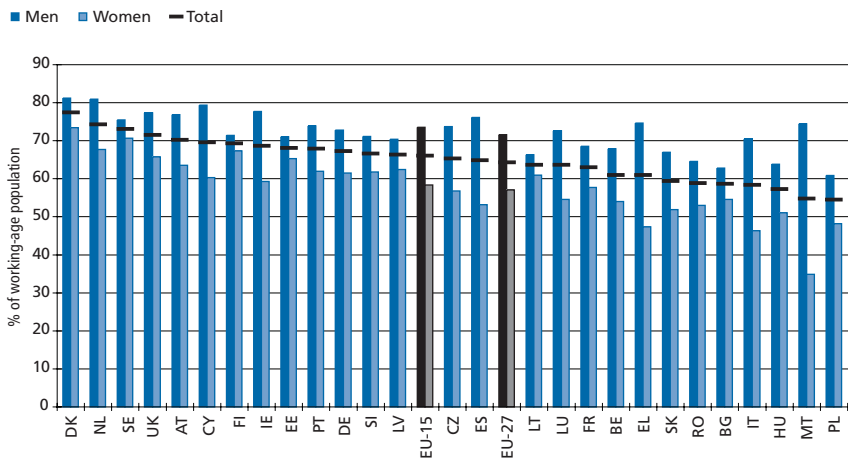
Table 4 - **Employment rates for EU Member States in 2006 and progress towards Lisbon and Stockholm targets for 2010**

	Total employment rate				Female employment rate				Older people's employment rate			
	2006	Change 2006–2005	Change 2006–2000	Gap below 2010 target	2006	Change 2006–2005	Change 2006–2000	Gap below 2010 target	2006	Change 2006–2005	Change 2006–2000	Gap below 2010 target
BE	61.0	-0.1	0.5	9.0	54.0	0.2	2.5	6.0	32.0	0.2	5.7	18.0
BG	58.6	2.8	8.2	11.4	54.6	2.9	8.3	5.4	39.6	4.9	18.8	10.4
CZ	65.3	0.5	0.3	4.7	56.8	0.5	-0.1	3.2	45.2	0.7	8.9	4.8
DK	77.4	1.5	1.1	>	73.4	1.5	1.8	>	60.7	1.2	5.0	>
DE	67.2	1.8	1.6	2.8	61.5	1.9	3.4	>	48.4	3.0	10.8	1.6
EE	68.1	3.7	7.7	1.9	65.3	3.2	8.4	>	58.5	2.4	12.2	>
IE	68.6	1.0	3.4	1.4	59.3	1.0	5.4	0.7	53.1	1.5	7.8	>
EL	61.0	0.9	4.5	9.0	47.4	1.3	5.7	12.6	42.3	0.7	3.3	7.7
ES	64.8	1.5	8.5	5.2	53.2	2.0	11.9	6.8	44.1	1.0	7.1	5.9
FR	63.0	-0.1	0.9	7.0	57.7	0.1	2.5	2.3	37.6	-0.3	7.7	12.4
IT	58.4	0.8	4.7	11.6	46.3	1.0	6.7	13.7	32.5	1.1	4.8	17.5
CY	69.6	1.1	3.9	0.4	60.3	1.9	6.8	>	53.6	3.0	4.2	>
LV	66.3	3.0	8.8	3.7	62.4	3.1	8.6	>	53.3	3.8	17.3	>
LT	63.6	1.0	4.5	6.4	61.0	1.6	3.3	>	49.6	0.4	9.2	0.4
LU	63.6	0.0	0.9	6.4	54.6	0.9	4.5	5.4	33.2	1.5	6.5	16.8
HU	57.3	0.4	1.0	12.7	51.1	0.1	1.4	8.9	33.6	0.6	11.4	16.4
MT	54.8	0.9	0.6	15.2	34.9	1.2	1.8	25.1	30.0	-0.8	1.5	20.0
NL	74.3	1.1	1.4	>	67.7	1.3	4.2	>	47.7	1.6	9.5	2.3
AT	70.2	1.6	1.7	>	63.5	1.5	3.9	>	35.5	3.7	6.7	14.5
PL	54.5	1.7	-0.5	15.5	48.2	1.4	-0.7	11.8	28.1	0.9	-0.3	21.9
PT	67.9	0.4	-0.5	2.1	62.0	0.3	1.5	>	50.1	-0.4	-0.6	>
RO	58.8	1.2	1.2	11.2	53.0	1.5	1.2	7.0	41.7	2.3	4.4	8.3
SI	66.6	0.6	3.8	3.4	61.8	0.5	3.4	>	32.6	1.9	9.9	17.4
SK	59.4	1.7	2.6	10.6	51.9	1.0	0.4	8.1	33.1	2.8	11.8	16.9
FI	69.3	0.9	2.1	0.7	67.3	0.8	3.1	>	54.5	1.8	12.9	>
SE	73.1	0.6	0.1	>	70.7	0.3	-0.2	>	69.6	0.2	4.7	>
UK	71.5	-0.2	0.3	>	65.8	-0.1	1.1	>	57.4	0.5	6.7	>
EU-27	64.3	0.9	2.1	5.7	57.1	1.1	3.4	2.9	43.5	1.3	6.6	6.5
EU-15	66.0	0.8	2.6	4.0	58.4	1.0	4.3	1.6	45.3	1.2	7.5	4.7
2010 target	**70 %**				**More than 60 %**				**50 %**			

Source: Eurostat, EU LFS annual averages.
Note: Data for RO 2002; 2006 data for DE and FR provisional.
The column "Gap below 2010 target" is for illustrative purposes only, since the 2010 target is a collective for the EU and not individual Member States.
The symbol ">" indicates that the respective target has been exceeded by the Member States concerned.

2006 the average employment rate for the EU rose by almost 1 percentage point to 64.3%. The employment rate for women rose by 1.1 percentage points to 57.1%, while that for men rose by a slightly more moderate 0.8 percentage points to 71.6%. As a result, the gender gap in employment rates in the EU narrowed further between 2005 and 2006, falling by 0.3 of a percentage point to 14.5 percentage points. For older people (aged 55–64) the employment rate rose again substantially by 1.3 percentage points to 43.5%, after already having increased by 1.5 percentage points the previous year.

Chart 8: **Employment rates by gender for EU Member States, 2006**



Source: Eurostat, EU LFS annual averages. Note: Data for DE and FR provisional.

Despite improved progress in 2006, the overall, female and older workers' employment rates were still more than 5, 3 and 6 percentage points below the respective Lisbon and Stockholm targets for 2010 (Table 4). Although the economic and labour market outlook for 2007 and 2008 is relatively positive as well, achieving an EU employment rate of 70% by 2010 remains very ambitious, given that annual employment growth would need to be significantly stronger than it has been in the past seven years or than is currently forecast for the next two years. This said, it is also worth pointing out that the gap left to meet the Lisbon and Stockholm goals is smaller for the 'old' EU-15 Member States for which the targets were originally set; the overall employment rate for the EU-15 was 66% in 2006, the female employment rate 58.4% and the older people's employment rate 45.3%.

3.2.2. Employment rate developments in the Member States

Large variations remain in employment rates between the EU Member States. In 2006, these ranged from as low as around 55% in Poland to more than 77% in Denmark. Rates rose in all Member States except for a few which experienced a standstill or marginal decrease, namely Belgium, France, Luxembourg and the United Kingdom. The largest increase in terms of percentage points (pp) occurred in Estonia (+3.7 pp) and Latvia (+3 pp), followed by Bulgaria (+2.8 pp). Three of the bigger Member States, namely Germany, Poland and Spain also showed a noticeable increase of 1.5 percentage points or more.

Employment rates for women remain substantially below those for men in most of the EU Member States (Chart 8). Despite the continuing reduction in the disparity between male and female employment rates, large gender differences of around 20 percentage points and more still remain in Cyprus, Greece, Ireland, Italy and Spain, while in Malta the gap is almost 40 percentage points, reflecting the fact that only one in three women of working age is in employment. Only Bulgaria, Denmark, Estonia, Finland, Latvia, Lithuania, Slovenia and Sweden show a gender disparity of less than 10 percentage points.

As for the older segment of the labour market, Sweden, by a wide margin, continues to have the highest employment rate for older workers aged 55–64 in the EU. It is also the only country where the employment rate of older workers is close to that of the overall employment rate (69.6% vs. 73.1%). At the other end of the spectrum are a number of new Member States, namely Hungary, Slovakia, Slovenia, Malta and Poland, where only a third or even less of older people hold a job. Low rates are also recorded for Belgium, Italy and Luxembourg (Table 4).

3.2.3. Individual situations in relation to employment targets

While the Lisbon and Stockholm employment rate targets are collective targets for the EU as a whole, it is interesting to examine the position of individual Member States with respect to the collective EU targets for 2010. Based on employment rates in 2006, these can be summarised as follows:

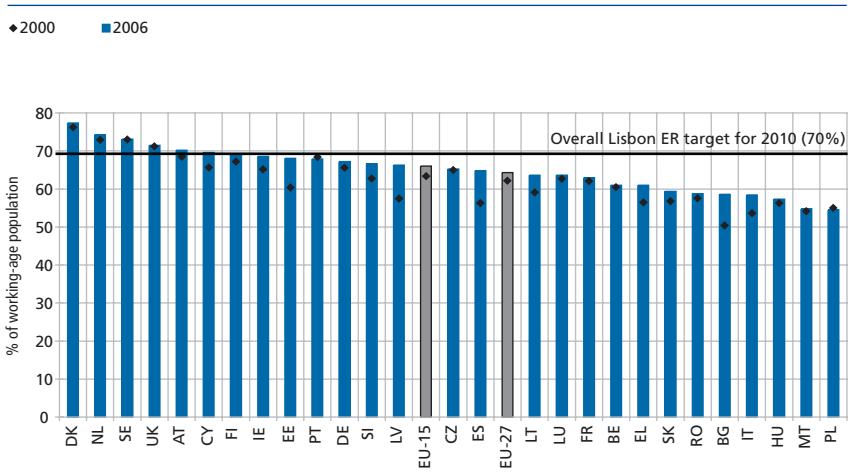
- Austria reached an overall employment rate of over 70% for the first time in 2006 and is now, along with Denmark, the Netherlands, Sweden and the United Kingdom, one of the five Member States which already meets the overall EU target for 2010 of an employment rate of 70%. Cyprus, Finland, Ireland, Portugal and, for the first time, Estonia and Germany are presently within 3 percentage points (Chart 9 - see page 26). However, the gap

remains over 10 percentage points in seven Member States, namely Bulgaria, Hungary, Italy, Malta, Poland, Romania and Slovakia. Since the launch of the Lisbon Strategy, the greatest improvement in the overall employment rate have taken place in Bulgaria, Spain, Estonia and Latvia where the rates have risen by around 8 percentages points and more. However, rates with respect to 2000 have also slightly declined in some Member States, namely in Poland and Portugal.

- 13 Member States already meet the 2010 employment rate target for women, including, for the first time, Cyprus, Germany, Latvia, and Lithuania. Ireland is very close and France and the Czech Republic are within 3 percentage points (Chart 10). Among the remaining Member States, the gap remains above 10 percentage points in Greece, Italy and Poland, and as high as 25 percentage points in Malta. Since 2000, large increases in the female employment rate have been achieved in Bulgaria, Cyprus, Estonia, Greece, Latvia and Italy, where rates have all risen by around 5 percentage points or more, and in Spain, which is up 12 percentage points, although Greece and Italy are still far from the target.

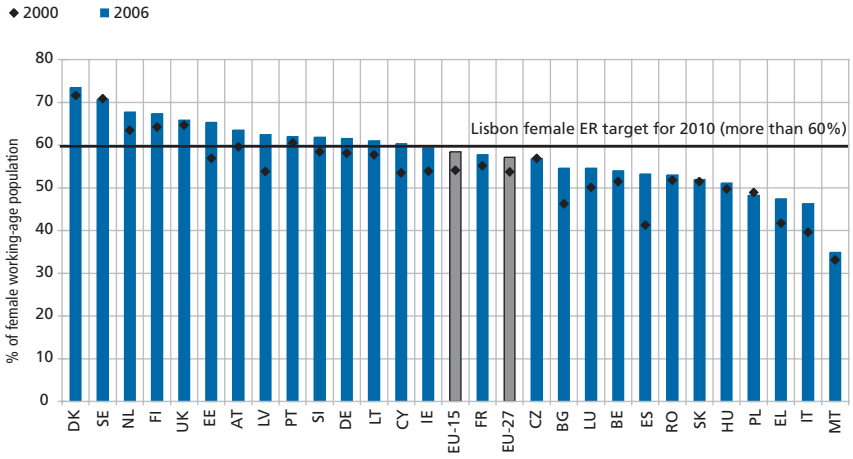
- For the older people's 2010 employment rate target, nine Member States already meet the target, but only three others – Germany, Lithuania and the Netherlands - are within 3 percentage points of it (Chart 11). While substantial gaps remain for many Member States (15–25 percentage points in nine cases), substantial progress has been made since 2000 towards the target in many countries. In particular, 20 Member States have achieved increases of 5 percentage points or more, with especially strong rises (over 10 percentage points) in Bulgaria, Esto-

Chart 9: Overall employment rate for EU Member States, 2000 and 2006



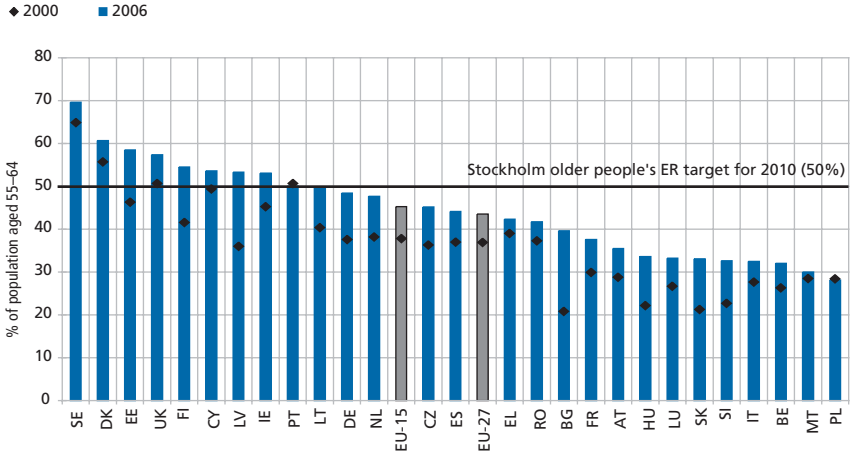
Source: Eurostat, EU LFS annual averages.
Note: Data for RO 2002; 2006 data for DE and FR provisional.

Chart 10: Female employment rate for EU Member States, 2000 and 2006



Source: Eurostat, EU LFS annual averages.
Note: Data for RO 2002; 2006 data for DE and FR provisional.

Chart 11: Older people's employment rate for EU Member States, 2000 and 2006



Source: Eurostat, EU LFS annual averages.
Note: Data for RO 2002; 2006 data for DE and FR provisional.

Table 5 - **Contribution to employment creation in the EU-27 between 2005 and 2006 by age, gender and type of employment**

		% contribution to employment creation 2005–2006		
		Total	Men	Women
Age and gender				
	Total		48.8	51.2
	15–24	3.9	3.0	0.9
	25–54	65.3	29.7	35.6
	55–64	27.8	14.2	13.7
Type of employment and gender				
Employee versus self-employed	Employee	88.5	41.9	46.5
	Self-employed	11.5	6.1	5.4
Full-time versus part-time	Full-time job	66.2	37.3	29.0
	Part-time job	33.8	11.3	22.4
Permanent versus fixed-term employees	Permanent	65.3	30.8	34.4
	Fixed-term	34.7	16.3	18.4

Source: Eurostat, EU LFS annual averages.
Note: EU-27 full-time/part-time indicators do not include IE.

Table 6 - **Change in employment in the EU-27 between 2000 and 2006 by age, gender and type of employment**

		2000–2006	
		(million)	Relative
	Total	11.6	5.7
Gender			
	Men	4.2	3.7
	Women	7.4	8.5
Age			
	15–24	-0.7	-3.0
	25–54	7.1	4.5
	55–64	5.3	27.6
Type of employment			
Employee versus self-employed	Employee	12.1	7.3
	Self-employed	1.4	4.5
Full-time versus part-time	Full-time job	5.7	3.3
	Part-time job	5.9	18.1
Permanent versus fixed-term employees	Permanent	7.1	4.9
	Fixed-term	5.0	24.8

Source: Eurostat, EU LFS annual averages.

nia, Finland, Germany, Hungary, Latvia and Slovakia. Only Poland and Portugal have experienced declines in employment rates for older people since 2000, although Portugal's rate is already above the 2010 target.

3.3. Features of EU employment expansion

Between 2005 and 2006, there was a net increase of around 4 million persons in employment in the EU-27, with women contributing slightly more to employment creation than men. With respect to age, prime age workers aged 25–54 accounted for almost two-thirds of employment creation, with women making a higher contribution than men. Older workers above the age of 54 contributed just under a third to employment growth, while younger people (15–24) contributed around 4%. Almost 90% of employment growth was made up of employees, with the remainder self-employed. Around two-thirds of the newly created jobs were either full-time or permanent jobs (Table 5).

Looking at employment expansion in the EU since the beginning of the decade, almost 12 million or 6% more people were in employment in 2006 than in 2000. This increase has not been uniform with respect to gender, age and type of employment. There are marked differences in the labour market performance trends of the various elements of the population and by type of employment arrangement, as detailed below (Table 6):

- Increasing female participation

  In terms of gender, women have accounted for the greatest growth in employment, both in relative and absolute terms. Indeed, the overall increase in female employment has been more than twice that for men. This reflects the recent trend of rising labour market participation of women, for whom activity rates have increased from 60% to 63.4% between 2000 and 2006 against an increase in the male rate of only 0.6 percentage points from 77.4% to 78%.

- Increasing participation of older people aged 55–64

  Relative to employment levels in 2000, growth has been greatest for the 55–64 age group, where employment has increased by almost 28%. Even in absolute terms the increase for the 55–64 age group has been dramatic, accounting for nearly half the overall increase in employment and not far below the total increase for the whole prime working-age group. This reflects a 7 percentage point increase in activity rates for those aged 55–64 since 2000 and indicates that, as well as cohort effects, developments such as recent reforms in pension systems and other measures related to active aging, which have postponed the statutory retirement age and more generally reduced incentives for early retirement, are taking effect and contribute to the reversal of the decrease in participation of older workers in many Member States (see Chapter 2 of this report for a detailed analysis of the labour market participation of older workers).

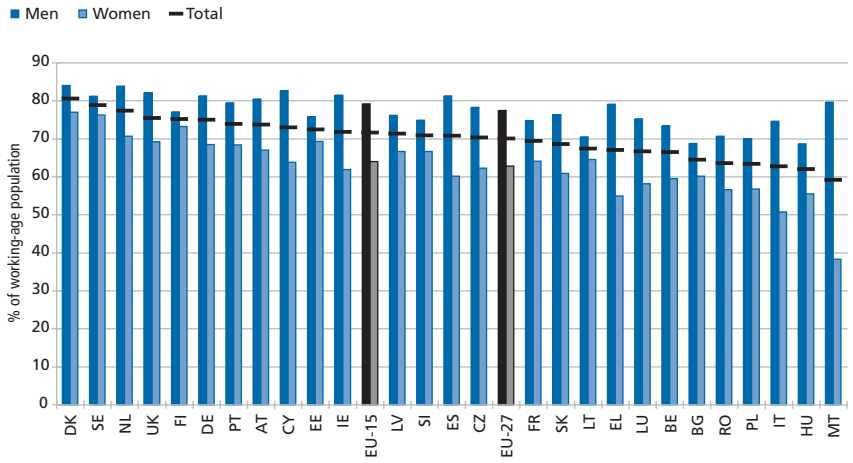
- Declining youth employment

  While the prime age and older age groups have experienced increases in employment, the 15–24 age group has witnessed a contraction in employment of around 3% since 2000, with activity rates falling by 1.5 percentage points to 48.4%. This development may be partly explained by increased participation in education, since as enrolment in education rises so labour market participation falls. Indeed, the share of young people in education has increased considerably in most EU Member States over recent years[3], affecting labour force participation, although in the longer term the implied improvement in human capital should have a positive effect on overall employment performance and the economy.

- Rising shares of part-time and fixed-term employment

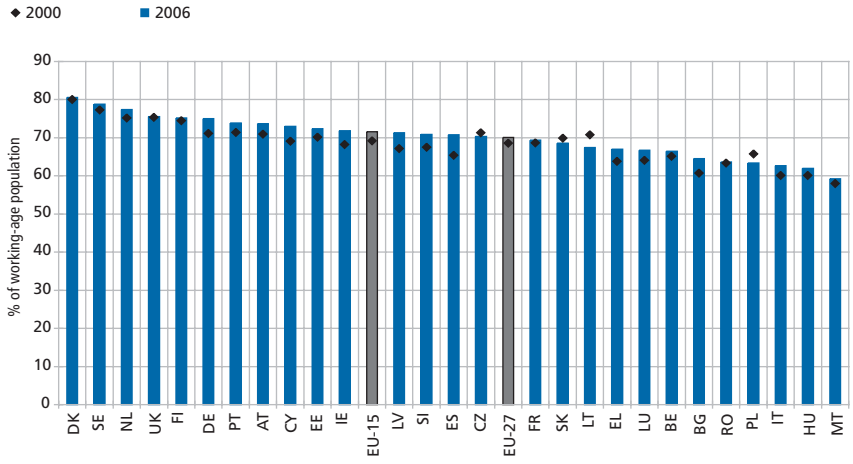
  In terms of developments by type of employment, the relative growth in part-time and fixed-term employment since 2000 has been substantial, with increases of 18% and 25% respectively. The extended availability of part-time jobs has facilitated the participation of women in particular by allowing them to combine work and family responsibilities better, although it should also be recognised that part-time work may have fewer fringe benefits and career possibilities than full-time jobs, and may to a certain degree reflect the unavailability of full-time work. Furthermore, although recourse to part-time work may reflect personal preferences and may help people to (re-)enter and stay in the labour market, the high gender gap in the share of part-time workers is also evidence of the differences in time-use patterns between women and men, and of the role of carer predominantly assumed by women as well as the greater difficulties they face in trying to reconcile work and private life.

Chart 12: **Activity rates by gender for EU Member States, 2006**



Source: Eurostat, EU LFS annual averages.
Note: Data for DE and FR provisional.

Chart 13: **Activity rates for EU Member States, 2000 and 2006**



Source: Eurostat, EU LFS annual averages.
Note: Data for RO 2002; 2006 data for DE and FR provisional.

3.4. Activity rates

In 2006, the economically active proportion of the working age population (aged 15–64) – i.e. that part of the population in employment or actively looking for a job – stood at 70.1%, about 0.5 percentage points up from the previous year. Despite having increased at a rate equal to or higher than in other major industrialised countries, average labour force participation in the EU remains low by international comparison. The United States, for example, has an activity rate which is 5 percentage points above that of the EU and compared to its European neighbour, Switzerland, it is almost 11 percentage points lower.

Last year, Bulgaria and Estonia both showed a strong increase of over 2 percentage points in their activity rates, but Austria, Germany, Latvia, Malta, Romania and Spain also had

3 See *Employment in Europe* 2005, chapter 1, section 6.2.2.

relatively strong increases of 1% or more. Activity rates for the individual Member States ranged from just under 60% in Malta, with Bulgaria, Italy, Hungary, Poland and Romania also substantially (5 pp or more) below the EU average, to almost 81% in Denmark (Chart 12). Although rates for men and women are rather close in certain Member States, such as Finland and Sweden, large disparities remain in several countries, particularly Greece, Italy and Spain, and especially Malta, implying there is still much scope for increasing female participation in many Member States.

Looking back at the development since the beginning of the decade, activity rates in the EU have on average increased by 1.5 percentage points since 2000 (Chart 13). This has been driven almost entirely by the continued increase of female participation which went up by 2.7 percentage points compared to only 0.4 percentage points for men.

3.5. Unemployment

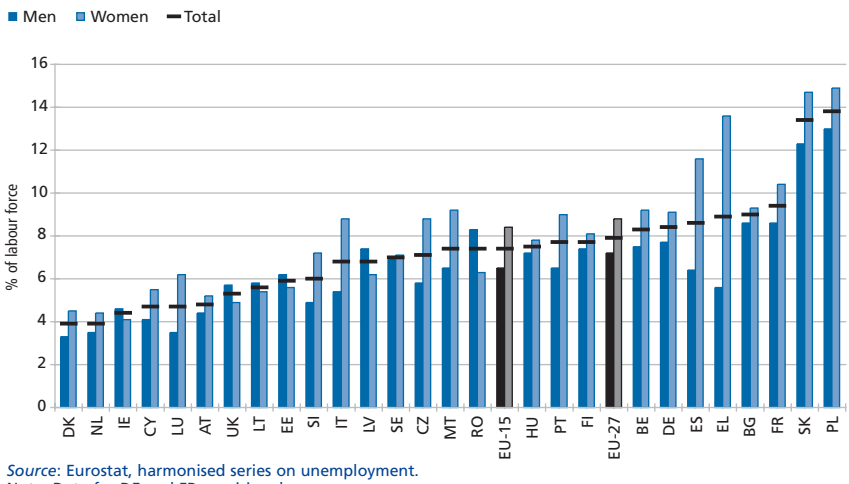
In 2006, the EU has seen its most substantial decline in unemployment since the end of the last decade. The EU's average unemployment rate dropped from 8.7% in 2005 to 7.9% in 2006. Among the individual Member States, Estonia, Latvia, Lithuania, Poland and Slovakia have seen the strongest reduction, although the latter two countries still have the highest unemployment rates in Europe. In Bulgaria and Germany unemployment rates were down by a little over 1 percentage point and most of the other Member States recorded smaller reductions. Rates went up in only seven Member States, although only marginally in most cases. The highest increase in 2006 was recorded in the United Kingdom, where unemployment rose by 0.5 percentage points.

Despite this, the United Kingdom at 5.3% continues to have by far the lowest unemployment rate among the big Member States and one of the lowest in the overall ranking. The lowest rates in 2006 were observed in Denmark and the Netherlands (3.9% each) and Cyprus, Ireland and Luxembourg also had rates below 5%. Poland and Slovakia remained on the other end of the spectrum with 13.8% and 13.4% respectively (Chart 14).

Gender disparities in the average EU unemployment rate continued to decrease to 1.6 percentage points in 2006, with unemployment rates at 7.2% for men and 8.8% for women. Nevertheless, in several countries the unemployment gender gap remains large, especially in Greece, Italy and Spain. However, in a few Member States, namely Estonia, Latvia, Lithuania, Ireland, Romania and the United Kingdom, unemployment rates for women are actually lower than those for men.

The drop in the overall unemployment rate is also reflected by a further fall in the long-term unemployment rate.[4] After a high of 4.2% in 2004 and 4% in 2005, it came down to 3.6% in 2006, the lowest rate in the period 2000 to 2006. Despite a considerable reduction last year, Poland and Slovakia still have the highest long-term unemployment rates in the Union (7.8% and 10.2% respectively). At close to 5% it also remains high in Germany, Greece and Bulgaria. Similar to overall unemployment rates, women are relatively more affected by long-term unemployment than men in a majority of Member States (4% vs. 3.3%), with the largest gender differences being found in the Czech Republic, Italy, Poland, Slovakia, Spain and, above all, Greece (Chart 15 - see page 30).

Chart 14: **Unemployment rates by gender for EU Member States, 2006**



Source: Eurostat, harmonised series on unemployment.
Note: Data for DE and FR provisional.

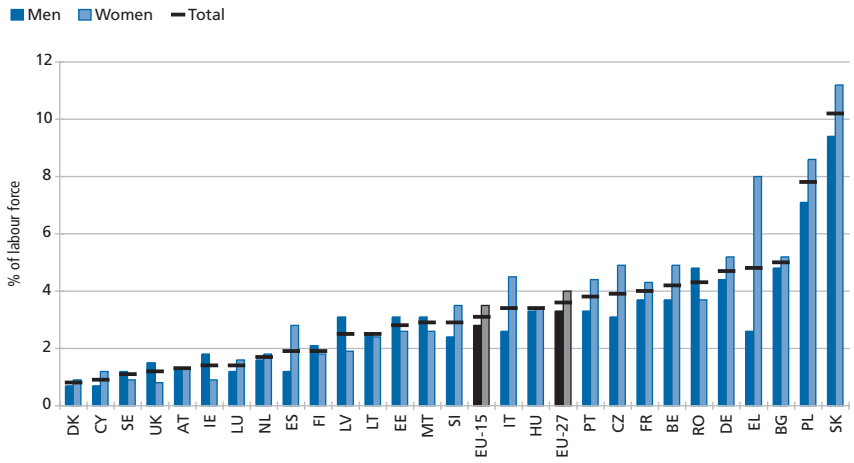
4. Labour market trends for young people

4.1. Introduction

The integration of young people in the labour market is a major policy issue for the EU and many individual Member States. Despite a shrinking and increasingly better-educated youth population, young people in many Member States still face considerable problems in making the

4 Those in unemployment for a duration of 12 months or more as a percentage of the labour force.

Chart 15: **Long-term unemployment rates by gender for EU Member States, 2006**



Source: Eurostat, EU LFS annual averages.
Note: Data for DE and FR provisional.

transition from education into employment. And many of those who have gained a foothold in the labour market often hold unstable jobs with unfavourable conditions. This is seen as having a negative impact, not only on young people's financial and social situation or training but also for the economy and social cohesion at large.

The main purpose of this section is to give an overview on the current labour market position of the younger generation in the EU and to examine how it has developed since the beginning of the decade. It starts with a presentation of standard measures of the labour market performance of youth, namely unemployment and employment. It then looks at those groups of young people who can be considered to be especially at risk of doing poorly on the labour market (i.e. youth not in employment or education and those with a poor education). Finally, it will present information on the school-to-work transition of young people and the type of jobs they occupy.

As for the definition of 'youth', conventionally the analysis of youth employment and corresponding official statistics tend to focus on the group aged 15–24. However, defining 'youth' by age alone remains to some extent arbitrary, especially when looking at the employment situation of young people. Given extended periods of (university) education and, more generally, longer periods of transition for youth from education into employment in many countries, it seems conceptually more apt to consider youth as the transition process from leaving continuous education into significant employment.[5] Although a majority of people in the Member States complete their school-to-work transition in their twenties, patterns and lengths vary between countries and groups of people. This should be kept in mind, although for practical purposes the data presented in this sub-chapter will mostly refer to young people under the age of 30 and differentiate between youth aged 15–24 and young people aged 25–29 where appropriate.

4.2. Standard measures of youth employment and unemployment

Box 2 – **Youth employment policies at EU level**

The **European Employment Guidelines** – as part of the Jobs and Growth package adopted by the Council in 2005 – call for intensified efforts to build employment pathways for young people and to reduce youth unemployment. With the adoption of the European Pact for Youth, Member States gave prominence to policies affecting young people. More and better investments in human capital, alongside improvements in quality and efficiency of education and training systems, are key factors to increasing educational attainment levels and to equipping young people with the skills and competencies required in a knowledge-based economy. The guidelines include targets for the reduction of early school leaving, the rise in educational attainment levels and a 'new start' within six months of unemployment for unemployed youth[6]

Member States' national reform programmes, presented in autumn 2005, provided the opportunity for the Commission to assess whether and how the Council's political commitments have been translated into concrete policy measures at the national level. In its analysis put forward to the 2006 Spring Council, the Commission found that, overall, Member States' responses to the youth employment challenge needed to be more comprehensive and to be expanded further. The Commission proposed to accelerate the offer of a new start for young people.

5 See Lefresne (2003) for a discussion on the definition of youth for purposes of labour market analysis.

6 The agreed targets include: an EU average rate of no more than 10% early school leavers; at least 85% of 22 year olds in the EU should have completed upper secondary education by 2010; every unemployed person is offered a new start before reaching six months of unemployment in the case of young people in the form of training, retraining, work practice, a job or other employability measure. See section 4.5 on the current state-of-play concerning the two youth education targets. As for the target concerning a new start for unemployed youth, no data is yet available for the great majority of Member States.

The 2006 Spring Council confirmed that Member States should reach the agreed target by 2007 and stressed the need to reduce the period to four months by 2010. With regard to the Youth Pact, the Council stressed the need to develop more effective cross-sectoral strategies linking education, training, employment, social inclusion and mobility, including developing links to the newly adopted European Pact for Gender Equality.

Youth employment issues have also been given a higher profile in the **Commission's Strategic Guidelines for Cohesion** for the period 2007–2013 as well as in the new **European Social Fund** (ESF) regulation. This provides greater opportunities for appropriate EU support of Member States' measures.

In the recent **Communication on Promoting young people's full participation in education, employment and society**[7], the Commission underlined the need to promote the labour market integration of youth in the larger context of general employment policies, namely in the framework of flexicurity policies. In the next Lisbon cycle, starting in 2008, Member States are invited to establish flexicurity strategies, based on their respective specific challenges and with active involvement of social partners, which integrate four policy components – flexible contractual arrangements, effective lifelong learning systems, active labour market policies and modern social security systems.

4.2.1. Overall trends

Assessing the labour market situation of young people is not a straightforward exercise as different indicators produce a mixed picture. When looking at absolute numbers, both youth unemployment and employment have decreased in recent years for the EU-27 as a whole. Between 2000 and 2006, the total number of unemployed youth aged 15–24 in the current EU-27, dropped from slightly over 5 million to 4.6 million. During the same period, total youth employment fell from around 22.6 million to about 22 million. At the same time, the number of young people who do not actively participate in the labour market increased slightly from 33.2 million to around 33.8 million.[8]

The decrease in youth employment and labour market participation, as well as unemployment for the 15–24 age group, also shows in relative terms. Over the past six years the average youth activity rate has dropped by 1.6 percentage points to 44%, while the youth employment rate has decreased by 0.8 percentage points to 36.3% (Table 7 - see page 32). The unemployment rate of young people participating in the labour market was on the rise until three years ago, but was down to 17.4% in 2006, compared to 18.5% in 2000. Another indicator, the youth unemployment to youth population ratio, has also fallen from 8.4% in 2000 to 7.7% in 2006.[9] The share of unemployed youth among all unemployed aged 15–64 fell from 25.2% in 2000 to 24.3% in 2006.

Compared to youth aged 15–24, young people aged 25–29 are showing significantly higher activity and employment rates which almost reach those of adults aged 30–54. Furthermore, while labour market participation and employment of the 15–24 age group has decreased since 2000, both have increased for the 25–29 age group. However, similar to the group aged 15–24, people in the second half of their 20s are, on average, significantly more affected by unemployment than prime-age adults.

With respect to long-term unemployment lasting more than 12 months, young people are, on average, less affected than prime-age adults, due to their higher hiring and job separation rates (see section 4.4). Although still high, overall long-term unemployment of young people also has, on average, decreased since 2000. In 2006, 30% of unemployed youth aged 15–24 were long-term unemployed, down from almost 34% in 2000. For the age group 25–29, the percentage of long-term unemployed decreased from 44% to 41%. By comparison, the share of long-term unemployed among unemployed adults aged 30–54 was at almost 52% in 2006 and has increased since the beginning of the decade.

This overview suggests that the average labour market performance of young people in the EU-27 has somewhat improved since the beginning of the decade. Youth unemployment is down and the decrease in youth employment and labour market participation is mostly due to a higher share of youth in education and therefore not available to the labour market.

In principle, demographics should also favour the labour market situation of youth in the EU, as their proportion of the overall population is already decreasing and will fall even further over the coming decades. Presently,

7 COM(2007) 495 final.

8 EU LFS annual averages.

9 The reason for looking at both youth unemployment rates and ratios is that a use of only the unemployment rate can produce a distorted picture when comparing the youth labour markets of different countries. More precisely, one difficulty with using the unemployment rate as an indicator for the labour market performance, especially of young people, is that it shows the number of unemployed youth as a percentage of the youth labour force, i.e. those who are either employed or unemployed but actively looking for work. Using the youth labour force as a denominator can lead to distortions when comparing countries with great differences in youth activity rates or when activity rates change significantly over time. For instance, youth unemployment rates for two countries with identical numbers of youth and unemployed youth will differ if one country has a higher share of youth not available to the labour market because of, for example, a higher number of youth in education. More concretely, the country with a higher share of youth in education (or otherwise inactive) will display a higher youth unemployment rate. See OECD (2000), Appendix 4 for a detailed discussion of this issue.

the working-age population in the EU-27 amounts to a total of 327 million people of whom around 61 million are in the age group 15–24. The share of youth in the working-age population in the EU-27 was 18.5% in 2006, down from 19% in 2000. In the medium and long-term, the youth population will drop even further, both in absolute and relative terms. According to Eurostat's population projections, the number of young people in the EU is estimated to shrink by almost 12% to around 53 million in 2020, while the overall working-age population is estimated to fall by only around 2% over the same period. Accordingly, the share of the youth population in the working-age population is estimated to decrease to around 16.4% in 2020.[10]

However, despite recent overall improvements in the labour market performance of young people and an already shrinking youth population, the labour market situation of young people in the EU does remain a concern. Firstly, improvements in the labour market situation of youth, although welcome, have been relatively small and have not significantly changed overall rates either for youth employment and unemployment in absolute terms or relative to the prime-age labour force. Secondly, compared to other big industrialised countries, youth unemployment rates in the EU are significantly higher and employment rates significantly lower, suggesting that Europe is still not making sufficient use of an increasingly scarce 'resource'.[11] Thirdly, a look only at EU averages hides important and quite substantial differences between Member States and different groups of youth.

4.2.2. Youth unemployment

Among the 27 Member States, Denmark and the Netherlands are the two Member States with the lowest share of unemployed youth in relation to the youth labour force (Chart 16). Their youth unemployment rates were at 7.7% and 6.6% respectively in 2006. The only other Member States with youth unemployment rates below 10% in 2006 were Austria, Ireland and Lithuania. At the other extreme, with youth unemployment rates above 20%, are Belgium, France, Greece, Italy, Poland, Romania, Slovakia and Sweden. While still high and above average, youth unemployment rates in Poland, Slovakia, Finland, Greece, but also Italy and Bulgaria have decreased significantly compared to the beginning of the decade (Table 8 - see page 38). Estonia and Lithuania also experienced a very significant drop in the

Table 7 - **Standard measures of labour market performance for youth and prime-age adults in the EU-27, 2000–2006**

Indicator	Age	2000	2001	2002	2003	2004	2005	2006
Activity rate	15–24	45.6	45.4	44.9	44.2	44.2	44.2	44.0
	25–29	82.0	81.7	81.8	81.6	82.0	82.1	82.6
	25–54	82.6	82.5	82.6	82.9	83.2	83.7	84.1
	30–54	82.7	82.6	82.7	83.1	83.5	84.0	84.4
Employment rate	15–24	37.1	37.4	36.7	36.0	35.9	35.9	36.3
	25–29	72.8	73.1	72.6	72.3	72.6	73.0	74.3
	25–54	75.9	76.2	76.0	76.1	76.4	77.1	78.1
	30–54	76.5	76.8	76.6	76.9	77.1	77.8	78.8
Unemployment rate	15–24	18.5	17.7	18.3	18.6	18.7	18.7	17.4
	25–29	11.3	10.6	11.3	11.4	11.4	11.0	10.0
	25–54	8.1	7.6	8.0	8.1	8.2	7.9	7.2
	30–54	7.5	7.0	7.4	7.5	7.7	7.4	6.7
Unemployment ratio	15–24	8.4	8.0	8.2	8.2	8.3	8.3	7.7
	25–29	9.2	8.6	9.2	9.3	9.4	9.1	8.3
	25–54	6.7	6.3	6.6	6.7	6.9	6.6	6.1
	30–54	6.2	5.8	6.1	6.2	6.4	6.2	5.7
Share of unemployed in age group relative to total unemployed aged 15	15–24	25.2	25.4	24.9	24.5	24.0	24.5	24.3
	25–29	18.3	17.9	17.9	16.9	16.7	14.6	14.5
	25–54	67.4	67.5	68.2	68.2	68.3	67.7	67.2
	30–54	55.3	55.3	55.8	55.2	55.7	53.0	52.7
Long-term unemployed as percentage of total unemployed in the same age group	15–24	33.9	33.6	33.6	33.6	31.1	31.0	30.0
	25–29	44.0	42.9	41.7	42.7	40.7	41.2	41.1
	25–54	49.6	49.7	48.1	49.3	48.8	49.7	49.5
	30–54	51.3	51.6	49.9	51.2	51.0	52.0	51.7

Source: Eurostat, EU LFS annual averages.
Note: EU-27 aggregates based on annual averages, except DE 2000–2004 Q2; FR 2000–2002 Q1; CY 2000–2003 Q2; 2004 av. Q2-Q4; LV 2000–2001 av. Q2 & Q4; LT 2000–2001 av. Q2 & Q4; LU 2000–2002 Q2; MT 2000–2001 Q2; SE 2000 Q2.
EU-27 aggregates for long-term unemployed share do not include NL 2000–2002, AT 2000-2001 and SE 2005–2006.

10 For the demographic context see also Chapter 2 on active ageing and labour market trends for older people.

11 While the youth unemployment rate for 15–24 year olds in the EU-27 was 17.4% and the employment rate 35.9% in 2006 (see Table 7), the respective rates for the United States were 10.5% and 54.2%, for Canada 11.6% and 58.7% and for Japan 8% and 41.4%. See OECD (2007a).

youth unemployment rate and are now well below the EU average. Some Member States, on the other hand, have seen a strong rise in their youth unemployment rate, with Sweden showing the biggest increase. Other Member States with strong increases during the same period are Portugal, Malta, Hungary, Luxembourg and Germany although they still remain close to or below the EU average. France experienced a less strong increase, but its youth unemployment rate still ranks among the highest in the EU.

A look at the youth unemployment to population ratio seems to mostly confirm this picture on youth unemployment. Although country rankings are different between the youth unemployment rate and ratio, most Member States with a relatively low rate also tend to have a low ratio (e.g. NL, DK), and vice versa (e.g. PL, SE) (Chart 16). However, a number of Member States with average or higher than average unemployment *rates* exhibit lower than average youth unemployment *ratios* (e.g. BG, HU), and vice versa (MT, UK)

As with any gender differences, unemployment rates for young women in the EU are higher than for young men, although this unemployment rate gender gap has been narrowing since the beginning of the decade. In 2000, the unemployment rate for women aged 15–24 in the EU-27 was 19.4% compared to 17.8% for men, i.e. a difference of 1.6 percentage points (Table 8 - see page 38). Six years later, the difference between male and female youth unemployment rates was down to 0.7 percentage points, mainly as a result of a relatively larger drop in the female youth unemployment rate compared to the male youth unemployment rate.

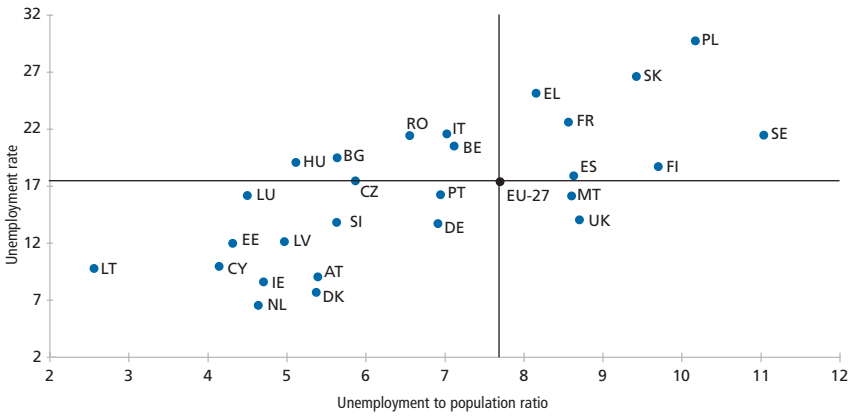
There are a number of notable differences between Member States. While some only show small differences between male and female youth unemployment rates in 2006 (namely DK, LT, AT, SK and SE), there are a few countries with very significant gender gaps. The most extreme case is Greece, where the female youth unemployment rate is 34.7%, almost twice as high as for young males, and where the gender gap has actually slightly increased with respect to 2000 (although rates have come down for both young men and women). Other Member States with a particular large youth unemployment gender gap are Spain and Italy (although it has decreased substantially in these two countries compared to 2000).

However, when looking at the youth unemployment to population *ratio* instead of the unemployment *rate*, a different picture emerges. While the average unemployment ratio for young men was 8.1% in 2006, it was 7.2% for young women (Table 8 - see page 38), i.e. the share of the unemployed is actually smaller among the female youth population than among the male youth population. Only Greece and Spain had a significantly higher unemployment ratio for female youth than for male youth, while in the other Member States the ratio for young men was higher than or very close to that of young women. These differences between the gender specific unemployment rates and ratios reflect different activity rates between male and female youth. In almost all Member States young men have a significantly higher activity rate than their female counterparts, due to a higher share of young women than young men in education or taking care of home and family.

Comparing youth to prime-age adults, the average youth unemployment rate in the EU-27 is 2.4 times higher than the average prime-age adult unemployment rate. The relative unemployment ratio between youth and prime-age adults is 1.3. Both the relative youth unemployment rate and ratio have not changed significantly since 2000, thus indicating that not only are youth, on average, significantly more likely to be affected by unemployment, but also that the average unemployment situation with respect to adults has not improved over time.

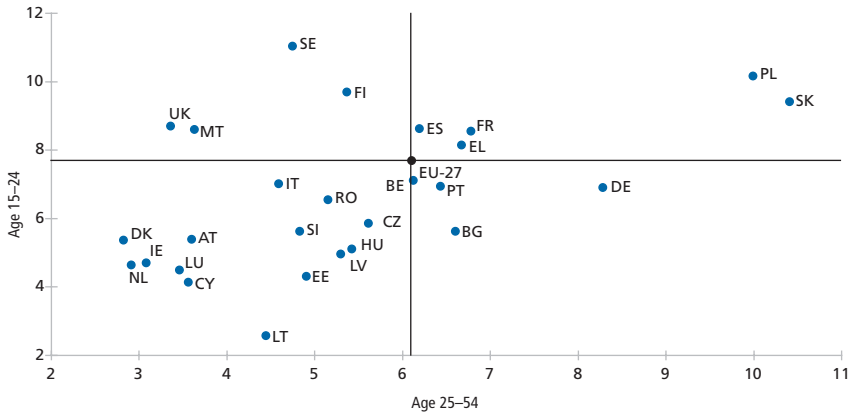
There are, however, big differences between Member States. In general, youth unemployment ratios seem to correspond to adult unemployment ratios. For example, in Poland and Slovakia and, to a lesser degree, France, Greece and Spain, both the percentage of unemployed youth and unemployed prime-age adults is relatively high, indicating that youth unemployment in these countries may also be part of a more general unemployment problem (Chart 17 - see page 34). On the other hand, Finland, Sweden and, to a lesser extent, Malta and the United Kingdom have a significantly higher unemployment ratio among youth

Chart 16: **Youth (age 15-24) unemployment rates vs. unemployment ratios, 2006**



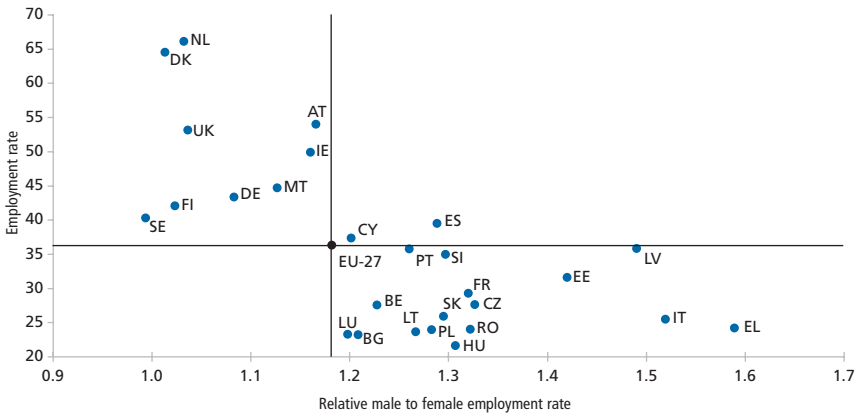
Source: Eurostat, EU LFS annual averages.

Chart 17: **Youth vs. prime-age adults' unemployment ratios, 2006**



Source: Eurostat, EU LFS annual averages.

Chart 18: **Youth (age 15–24) employment rates vs. relative difference between male and female youth employment rates, 2006**



Source: Eurostat, EU LFS annual averages.

than among prime-age adults, thus suggesting that unemployment in these countries may be a more youth-specific issue, while it is less of a problem for adults.

4.2.3. Youth employment

Examining the opposite perspective to youth unemployment, Denmark and the Netherlands have the highest youth employment rates, with around two-thirds of the 15–24 age group holding a job. At the other end of the spectrum, only less than one-quarter of youth were in employment in Hungary, Bulgaria, Luxembourg, Poland, Lithuania, Greece and Romania (Chart 18). For the age group 25–29, employment rates were, on average, more than twice as high as the younger age groups, because most young people have already made the transition from education to the labour market by that age. On the whole, countries with high employment rates for the younger age group also tend to show relatively high employment rates for the 25–29 age group (Chart 19).

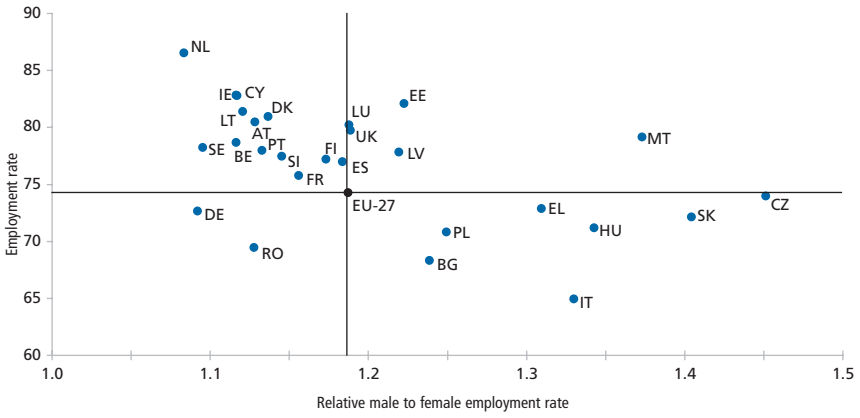
Countries with high overall youth employment rates also tend to have the lowest differences between employment rates of young men and women; Denmark, Finland, the Netherlands, Sweden and the United Kingdom show very similar employment rates for young women and men and high overall youth employment at the same time. Greece and Italy on the other hand have very low overall youth employment and the most extreme gender differences, with young men more than one-and-a-half times more likely to work than young women.

Compared to 2000, employment rates among youth (15–24) have decreased in most Member States (Table 8, see page 38). The most significant decrease was in Hungary, where the overall youth employment rate dropped by almost 12 percentage points from 33.5% to 21.7% between 2000 and 2006. Malta, the Czech Republic, Romania and Luxembourg also experienced youth employment rate decreases by more than 8 percentage points. The few exceptions where the youth employment rate has increased are Spain, Estonia, Slovenia, Sweden, Bulgaria, Latvia and France.

When looking at youth employment rates, especially for the 15–24 age group, it is worth noting that a significant share of employed young people are apprentices or working students who are counted as employed by definition.[12] On average, around one-third of employed

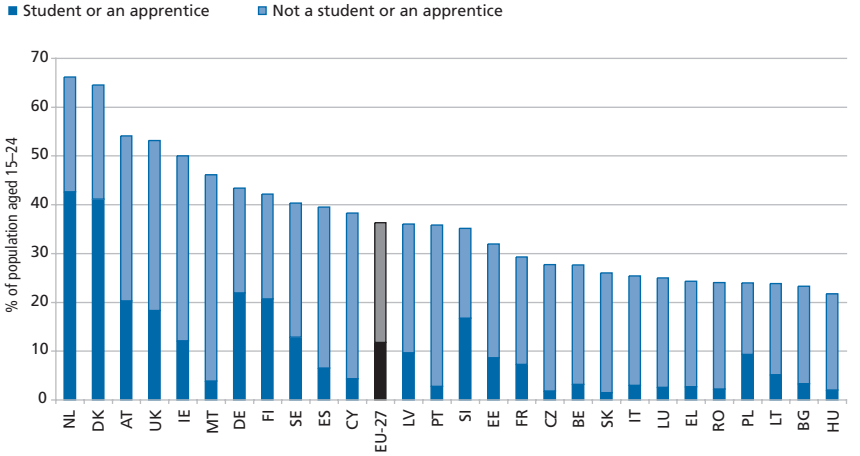
12 The European *Labour Force Survey* uses the International Labour Office definition of employment by which a person is employed if he or she performed work during the reference week of the survey, even for just one hour a week, for pay, profit or family gain, or was not at work but had a job or business from which he/she was temporarily absent because of, for example, illness, holidays, industrial dispute, or education and training.

Chart 19: Youth (age 25–29) employment rates vs. relative difference between male and female (age 25–29) employment rates, 2006



Source: Eurostat, EU LFS annual averages.

Chart 20: Youth (age 15–24) employment rates by current educational status, 2006



Source: Eurostat, EU LFS annual averages.
Note: Data for DE and FR provisional. For SE participation in education or training refers to the week preceding the survey reference week (instead of four weeks in the other countries).

youth are students or apprentices (compared to only 8% of the 25–29 age group), and in some countries this share is much higher, namely in Denmark and the Netherlands where over 60% of employed youth are students or apprentices, and Finland and Germany with more than half of employed youth also being students or apprentices (Chart 20). This observation also corresponds to a high share of employed youth in these countries which perform part-time or temporary jobs, not because they cannot find full-time or permanent work, but because they choose to (see section 4.6.2).[13]

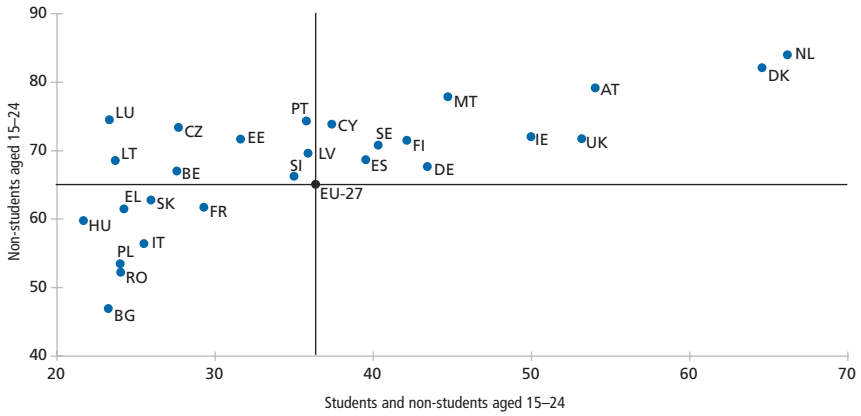
Chart 21 (see page 36) compares the employment rate of all 15 to 24 year olds (i.e. students and non-students) to the employment rate of non-students of the same age group. It illustrates several things: first, the non-student youth employment rate is significantly higher in all countries than the overall youth employment rate including students. Secondly, for some countries the non-student employment rate produces a different picture from the one gained by looking at the overall youth employment rate only. In particular Belgium, the Czech Republic, Estonia, Latvia, Lithuania and Luxembourg have a significantly higher than average share of young non-students in employment, despite a low overall youth employment rate. This suggests that these countries have low youth employment rates mostly because of a relatively high share of non-working students (or otherwise inactive youth) but that they are relatively successful in integrating young people into the labour market once out of school. Thirdly, several countries do well on both youth employment indicators, foremost Denmark and the Netherlands, but also Austria, Ireland and the United Kingdom, while others perform below average on both accounts, namely Bulgaria, Romania, Poland, Italy, Hungary, Greece, France and Slovakia.

Chart 22 (see page 36) compares employment rates of young non-students to that for prime-age adults and indicates that high youth employment tends to correspond to the level of employment among the prime-age population. This, together with a similar correlation between youth and adult unemployment observed in the previous section, suggests that policies which help to improve overall labour market performance may also help to create jobs for young people.

Finally comparing Member States performance with respect to both employment and unemployment

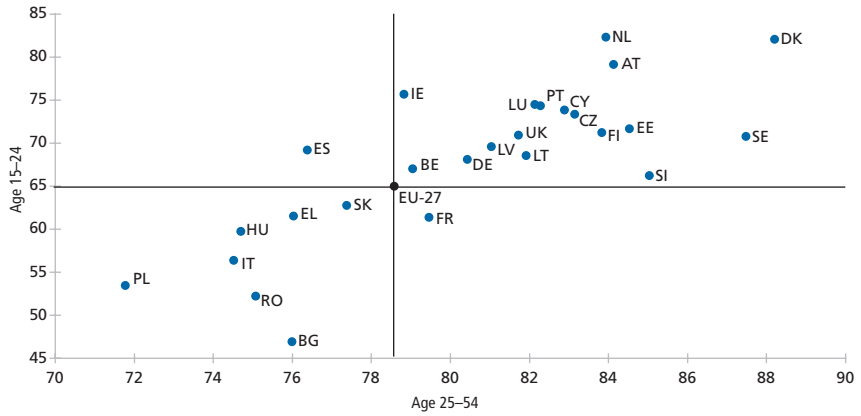
13 It also suggests that in some countries it is acceptable and institutionally possible for young people to combine work and study, while in other countries the transition into work follows only after having finished education. See also Van de Velde's (2007) comparative analysis of youth to adult life transitions in Denmark and France, which finds that young people in Denmark tend to combine school with professional experience or alternate between the two, while in France a high value is placed on initial training, with greater focus on earning a degree, without working along the way, and with the aim of entering into full-time employment at the start of a career.

Chart 21: Youth (age 15–24) employment rates of non-students vs. overall youth employment rates, 2006



Source: Eurostat, EU LFS annual averages.
Note: Data for DE and FR provisional. For SE participation in education or training refers to the week preceding the survey reference week (instead of four weeks in the other countries).

Chart 22: Youth vs. prime age adults' employment rates (non-students), 2006



Source: Eurostat, EU LFS annual averages.
Note: 2005 data for IE. Value for MT is an extreme outlier and therefore excluded from graph (78% youth non-student employment rate vs. 64 primeage non-student employment rate).

Chart 23: Youth (age 15–24) unemployment ratios vs. employment rates, 2006

Source: Eurostat, EU LFS annual averages.

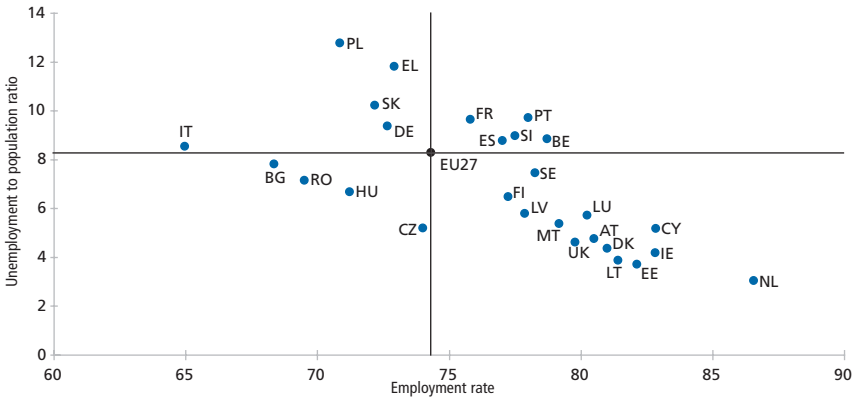
shows no clear correlation for the 15–24 age group. Some countries show both low youth unemployment to population ratios and employment rates (e.g. LT, HU and LU) while others show low unemployment ratios, but high employment rates (DK and NL) (Chart 23). This is at least partially due to large differences across Member States in the proportion of youth still in education or otherwise inactive and unavailable to the labour market. However, as for the 25–29 age group, differences in activity rates between Member States are much smaller compared to the 15–24 age group. Therefore the relation between both indicators is more clear-cut for young people aged 25–29, i.e. countries with relatively high employment also tend to show relatively low unemployment among the 25–29 age group (Chart 24).

4.3. Youth not in education or employment

Indicators, such as the employment rate and unemployment rates or ratios, provide information about the relative situation of young people who already have a job or are actively looking for one. However, they do not cover those who are inactive, either because they are still pursuing an education or for other reasons.

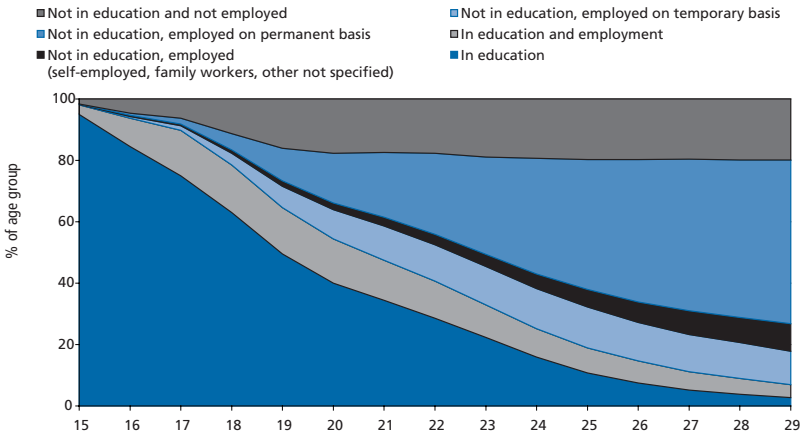
Looking at the activity status of young people, Chart 25 illustrates that the vast majority of teenagers in the EU-27 remain in education until around the age of 16 or 17. After that, the share of those entering the working world increases steadily with age, while the share of young people in education decreases. By the age of 29, around two-thirds of those in that age group are in employment while around 7% are in education. Furthermore, a considerable share of young people in education also work in some way or another, as already noted in the previous section.

Chart 24: Youth (age 25-29) unemployment ratios vs. employment rates, 2006



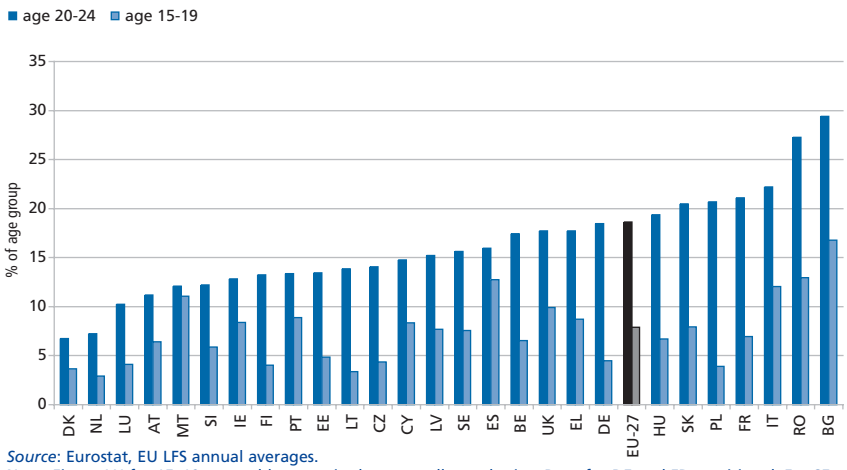
Source: Eurostat, EU LFS annual averages.
Notes: Unemployment ratio for MT uncertain due to small sample size.

Chart 25: Activity status of youth by age in the EU–27, 2006



Source: Eurostat, EU LFS annual averages

Chart 26: Teenagers and young adults not in education, employment or training, 2006



Source: Eurostat, EU LFS annual averages.
Note: Figure LU for 15–19 years old uncertain due to small sample size. Data for DE and FR provisional. For SE participation in education or training refers to the week preceding the survey reference week (instead of four weeks in the other countries).

Chart 25 also shows that from the age of 19 there is a fairly stable share of 17–19% of young people who are not in education, employment or training (NEET). It is this group of either unemployed or inactive youth who are not following an education which can potentially represent a problem for policy-makers, especially if they have trouble finding work or drop out of the labour force altogether because of being discouraged to work or for other unspecified reasons (as opposed to those who are inactive because of family commitments, military service, travel or leisure).[14]

Again, the EU average sometimes masks big differences between the Member States. For example, Denmark and the Netherlands have by far the lowest NEET rates among 20 to 24 year olds, and the majority of the other Member States are below or close to the EU average of 18.6% (Chart 26). However, a few countries, namely France, Italy, Poland, Romania and Slovakia have NEET rates among 20 to 24 year olds in excess of 20% and Bulgaria is close to 30% (although the group has decreased in recent years in Bulgaria, Poland, Romania and Slovakia, but remained the same level in France, Hungary and Italy). As for the 15–19 age group, NEET rates tend to be much lower than for those aged 20–24, reflecting the fact that teenagers in most countries are still in (compulsory) education. However, a few Member States do show high NEET rates among teenagers of 10% and more, namely Malta, Spain, Italy, the United Kingdom, Romania and Bulgaria.

It certainly needs to be added that not everybody who is NEET will remain so continuously. Many young people will not be in a job or education at some point in their life, but enter into one or the other again eventually. Research undertaken by

14 Around 43% of 15–29 year olds who are inactive and not in education do not participate in the labour market because of taking care of children or other family members or because of other family responsibilities, the vast majority of them women. Another 43% of those inactive and not in education – most of them young males – are either discouraged by the labour market or name other reasons, with the rest being ill or suffering from a disability.

Table 8 - Labour market performance of youth (age 15–24) by Member State – standard measures by gender, 2000 and 2006

	Employment rates						Unemployment rates						Unemployment ratios						Long-term unemployed					
	2000			2006			2000			2006			2000			2006			2000			2006		
	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
BE	29.1	32.8	25.4	27.6	30.4	24.7	17.5	15.3	20.3	20.5	18.8	22.6	6.2	5.9	6.5	7.1	7.0	7.2	29.1	27.2	30.8	28.3	25.8	30.8
BG	19.7	21.8	17.7	23.2	25.4	21.0	35.5	37.6	32.8	19.5	18.9	20.3	10.8	13.1	8.6	5.6	5.9	5.3	48.6	48.0	49.5	41.4	43.5	39.1
CZ	36.4	39.3	33.5	27.7	31.5	23.7	18.1	18.7	17.3	17.5	16.6	18.7	8.0	9.1	7.0	5.9	6.3	5.4	37.8	37.0	38.8	37.9	38.8	36.8
DK	66.0	68.5	63.3	64.6	65.0	64.1	6.7	6.8	6.7	7.7	7.9	7.5	4.8	5.0	4.5	5.4	5.6	5.2	:	:	:	:	:	:
DE	46.1	48.6	43.6	43.4	45.1	41.6	8.5	9.5	7.4	13.7	14.8	12.5	4.3	5.1	3.5	6.9	7.8	6.0	23.5	23.7	23.2	33.2	34.5	31.4
EE	28.3	31.7	24.8	31.6	37.0	26.1	24.4	24.5	24.2	12.0	10.0	14.7	9.1	10.3	7.9	4.3	4.1	4.5	25.4	28.5	(21.2)	(20.3)	(25.0)2005	(46.6)2005
IE	50.4	54.2	46.6	50.0	53.6	46.2	6.9	6.8	7.1	8.6	9.1	8.0	3.8	4.0	3.5	4.7	5.4	4.0	19.9	(21.5)	:	22.2	27.0	(19.7)2004
EL	27.6	32.7	22.4	24.2	29.7	18.7	29.2	21.6	38.2	25.2	17.7	34.7	11.4	9.0	13.8	8.2	6.4	9.9	50.2	42.9	55.1	48.0	42.6	51.6
ES	32.5	38.2	26.7	39.5	44.4	34.4	26.0	20.4	32.9	17.9	15.0	21.6	11.4	9.8	13.0	8.6	7.8	9.5	29.3	25.5	32.4	11.9	9.8	13.6
FR	28.2	31.3	25.1	29.3	33.3	25.2	20.6	19.0	22.6	22.6	21.2	24.5	7.3	7.3	7.3	8.6	8.9	8.2	21.1	19.8	22.4	26.9	28.6	25.1
IT	26.4	30.7	22.1	25.5	30.6	20.1	31.1	27.6	35.4	21.6	19.1	25.3	11.9	11.7	12.1	7.0	7.2	6.8	57.5	56.7	58.3	43.6	43.6	43.7
CY	36.7	39.5	34.3	37.4	41.0	34.1	10.2	(6.7)	13.3	10.0	8.9	11.1	4.2	(2.8)	5.3	4.1	4.0	4.3	(16.0)	:	(23.1)	(11.9)2005	:	:
LV	29.2	34.3	23.8	35.9	42.8	28.7	22.1	20.9	23.7	12.2	10.5	14.7	8.3	9.1	7.4	5.0	5.0	4.9	43.4	46.7	39.3	19.2	(21.5)	(16.8)
LT	25.2	28.3	22.1	23.7	26.4	20.9	30.2	32.1	27.5	9.8	10.0	(9.6)	10.9	13.4	8.4	2.6	2.9	(2.2)	43.1	50.2	(31.4)	(21.4)2005	(35.6)2004	:
LU	31.8	35.3	28.3	23.3	25.4	21.2	(6.4)	(5.7)	(7.3)	16.2	(17.0)	(15.2)	(2.2)	(2.1)	(2.2)	4.5	(5.2)	(3.8)	:	:	:	(30.0)	(40.4)	:
HU	33.5	37.3	29.7	21.7	24.5	18.8	12.5	13.7	10.9	19.1	18.6	19.8	4.8	5.9	3.6	5.1	5.6	4.6	37.0	39.6	32.7	36.8	37.2	36.3
MT	52.4	52.0	52.8	44.7	47.3	42.0	11.8	(13.1)	(10.4)	16.1	17.5	(14.5)	7.0	(7.9)	(6.1)	8.6	10.0	(7.1)	(23.8)2001	:	:	(36.1)2005	:	:
NL	68.7	70.0	67.3	66.2	67.2	65.1	5.8	5.0	6.5	6.6	6.1	7.1	4.2	3.7	4.7	4.6	4.3	4.9	:	:	:	19.2	19.9	18.6
AT	52.5	57.3	47.9	54.0	58.2	49.9	5.1	5.0	5.3	9.1	8.9	9.3	2.8	3.0	2.7	5.4	5.7	5.1	14.22002	13.32002	15.52002	15.9	(18.0)	(13.6)
PL	24.5	27.3	21.8	24.0	26.9	21.0	35.1	33.3	37.2	29.8	28.3	31.6	13.3	13.6	13.0	10.2	10.6	9.7	36.5	34.0	39.2	42.4	42.3	42.4
PT	42.2	48.1	36.2	35.8	39.8	31.6	8.8	6.6	11.8	16.3	14.5	18.4	4.1	3.4	4.8	6.9	6.8	7.1	21.2	(20.3)	(21.8)	29.2	29.6	28.8
RO	33.1	35.8	30.5	24.0	27.3	20.6	20.0	22.2	17.2	21.4	22.3	20.2	8.3	10.2	6.3	6.6	7.8	5.2	42.3	40.3	45.5	51.0	50.5	51.9
SI	32.8	35.7	29.7	35.0	39.2	30.3	16.3	14.6	18.5	13.9	11.6	16.8	6.4	6.1	6.7	5.6	5.2	6.1	42.4	(41.7)	43.0	35.8	(31.5)	(39.8)
SK	29.0	29.8	28.2	25.9	29.2	22.5	36.9	39.7	33.8	26.6	26.4	27.0	17.0	19.6	14.4	9.4	10.5	8.3	43.1	43.9	42.0	61.4	63.9	58.1
FI	41.1	42.3	39.9	42.1	42.6	41.6	21.4	21.1	21.7	18.7	19.0	18.4	11.2	11.3	11.1	9.7	10.0	9.4	8.1	(8.8)	(7.5)	(5.8)	(9.0)2005	:
SE	36.9	36.6	37.1	40.3	40.2	40.4	9.5	10.8	8.1	21.5	21.0	22.0	3.9	4.4	3.3	11.0	10.7	11.4	11.8	12.2	:	7.02004	7.92004	5.92004
UK	56.6	58.6	54.6	53.2	54.1	52.2	12.6	13.7	11.5	14.1	15.9	12.1	8.2	9.3	7.1	8.7	10.2	7.2	12.3	14.6	9.4	13.5	16.8	8.8
EU-27	37.1	40.4	33.9	36.3	39.3	33.3	18.5	17.8	19.4	17.4	17.1	17.8	8.4	8.7	8.2	7.7	8.1	7.2	33.9 no AT NL	32.7 no AT NL	35.3 no AT NL	30.0 no SE	31.0 no SE	28.9 no SE

Source: Eurostat, EU LFS annual averages.

Note: Data for 2000: DE, CY, LU, MT, SE Q2; FR Q1; LV and LT av.Q2 & Q4. EU-27 aggregates for long-term unemployed share do not include NL and AT in 2000 and SE in 2006. ':' data not available. Data in brackets uncertain due to small sample size.

Table 9 - **Labour market performance of young people (age 25–29) by Member State – standard measures by gender, 2000 and 2006**

	Employment rates						Unemployment rates						Unemployment ratios						Long-term unemployed					
	2000			2006			2000			2006			2000			2006			2000			2006		
	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
BE	80.7	85.2	76.0	78.7	83.0	74.4	9.2	8.8	9.7	10.1	9.3	11.0	8.2	8.2	8.2	8.9	8.6	9.2	44.4	44.2	44.5	36.1	33.6	38.3
BG	58.3	63.8	52.3	68.3	75.4	60.8	19.1	19.3	18.9	10.3	9.5	11.3	13.8	15.3	12.2	7.8	7.9	7.7	55.9	55.7	56.3	49.0	48.4	49.8
CZ	72.6	88.7	56.1	74.0	87.2	60.1	9.4	6.6	13.7	6.6	5.5	8.1	7.5	6.2	8.9	5.2	5.1	5.3	43.4	40.7	46.2	45.6	45.9	45.3
DK	80.0	85.5	74.5	81.0	86.1	75.8	5.6	4.2	7.1	5.1	4.3	6.1	4.8	3.8	5.7	4.4	3.8	4.9	(9.4)	:	:	(9.1)	:	:
DE	75.7	81.4	70.0	72.7	75.8	69.4	6.9	7.4	6.3	11.4	12.4	10.4	5.6	6.5	4.7	9.4	10.7	8.0	32.6	32.2	33.2	40.4	40.9	39.7
EE	71.9	81.5	61.9	82.1	90.2	73.8	13.9	13.4	14.6	4.3	(4.6)	(4.1)	11.6	12.6	10.6	3.7	(4.3)	(3.1)	35.2	42.0	(25.6)	45.7	(52.9)	(38.9)
IE	83.9	89.0	78.6	82.8	87.3	78.2	4.1	4.4	(3.7)	4.8	5.5	4.0	3.6	4.1	(3.0)	4.2	5.1	3.3	26.6	(31.1)	:	27.1	33.5	(17.9)
EL	68.1	81.3	54.4	72.9	82.2	62.8	17.5	12.2	24.6	14.0	9.7	19.4	14.5	11.3	17.8	11.8	8.8	15.1	55.8	48.8	60.5	51.3	43.2	56.2
ES	69.0	78.7	59.1	77.0	83.3	70.3	17.3	12.6	22.9	10.3	8.0	12.9	14.4	11.3	17.6	8.8	7.3	10.4	35.1	29.2	39.2	14.7	12.4	16.6
FR	76.0	83.5	68.7	75.8	81.3	70.3	12.7	11.0	14.6	11.3	11.3	11.3	11.0	10.3	11.8	9.7	10.3	9.0	25.2	23.1	27.2	32.4	34.4	30.3
IT	58.9	69.1	48.7	65.0	74.0	55.7	17.5	14.6	21.2	11.6	9.8	14.0	12.5	11.8	13.1	8.5	8.1	9.1	63.5	63.6	63.4	47.7	47.2	48.1
CY	83.3	93.4	74.3	82.8	87.4	78.3	(3.4)	(2.8)	(4.2)	5.9	5.7	(6.1)	(3.0)	(2.7)	(3.2)	5.2	5.3	(5.1)	:	:	:	(11.8)	:	(15.9)
LV	69.6	76.4	62.7	77.9	85.4	70.1	15.5	15.7	15.1	6.9	7.4	6.3	12.7	14.3	11.2	5.8	6.9	4.7	50.8	51.2	50.2	27.7	27.4	28.1
LT	75.4	73.9	76.9	81.4	86.0	76.7	14.7	17.9	11.4	4.6	(5.1)	:	13.0	16.1	9.9	3.9	(4.6)	:	46.6	53.5	36.7	(29.2)	(30.1)2005	(34.8)2004
LU	80.3	86.2	74.3	80.2	87.0	73.2	(4.4)	:	(6.0)	6.7	(5.2)	(8.4)	(3.7)	:	(4.8)	5.7	(4.8)	(6.7)	:	:	:	(24.7)	(39.4)	:
HU	69.6	82.5	56.2	71.2	81.4	60.7	7.3	7.6	7.0	8.6	8.4	8.8	5.5	6.7	4.2	6.7	7.5	5.9	41.4	43.9	37.2	41.2	42.8	39.3
MT	73.1	89.3	56.1	79.2	90.8	66.1	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	(43.7)2005	:	:
NL	86.4	92.8	79.8	86.5	90.0	83.1	2.6	2.0	3.3	3.4	3.4	3.4	2.3	1.9	2.7	3.0	3.2	2.9	:	:	:	24.9	24.7	25.1
AT	80.6	86.4	74.9	80.5	85.3	75.6	3.3	2.6	4.0	5.6	5.6	5.6	2.7	2.3	3.1	4.8	5.1	4.5	15.02002	12.92002	18.02002	17.9	21.6	(13.4)
PL	68.7	78.9	58.2	70.8	78.6	62.9	18.1	15.3	21.8	15.3	14.0	16.8	15.2	14.3	16.2	12.8	12.8	12.7	41.0	37.4	44.5	49.3	48.7	49.9
PT	82.8	88.3	77.3	78.0	82.8	73.1	4.4	2.8	6.2	11.1	8.2	14.2	3.8	2.5	5.1	9.7	7.4	12.1	29.5	(28.0)	30.5	37.2	37.5	37.1
RO	74.5	80.5	68.1	69.5	73.6	65.2	8.8	9.4	8.0	9.4	10.8	7.6	7.2	8.3	5.9	7.2	8.9	5.3	50.9	49.2	53.5	56.4	55.7	57.5
SI	81.2	82.9	79.3	77.5	82.8	72.3	7.3	6.9	7.8	10.4	7.5	13.5	6.4	6.2	6.7	9.0	6.7	11.3	51.2	53.9	48.7	40.3	(38.5)	41.6
SK	67.5	77.2	57.5	72.2	84.0	59.8	19.0	18.4	19.9	12.4	11.8	13.3	15.9	17.4	14.3	10.2	11.2	9.2	51.1	50.3	52.4	71.7	73.2	69.7
FI	74.1	81.3	66.4	77.2	83.1	70.8	10.7	9.2	12.5	7.7	7.0	8.7	8.9	8.3	9.5	6.5	6.3	6.7	16.8	19.6	(13.9)	10.9	(13.3)	(9.5)2005
SE	75.1	77.9	72.2	78.2	81.7	74.6	5.9	5.1	6.9	8.7	8.6	8.9	4.7	4.2	5.3	7.5	7.7	7.3	13.8	18.7	8.5	12.22004	13.32004	10.92004
UK	79.8	87.6	72.4	79.8	86.8	73.1	5.7	6.1	5.1	5.5	5.9	5.0	4.8	5.7	3.9	4.6	5.5	3.8	20.5	25.7	13.3	17.5	22.2	10.7
EU-27	72.8	80.8	64.7	74.3	80.6	67.9	11.3	9.9	12.9	10.0	9.5	10.7	9.2	8.9	9.6	8.3	8.4	8.1	41.1 no AT NL	39.7 no AT NL	42.5 no AT NL	37.6 no SE	38.2 no SE	36.9 no SE

Source: Source: Eurostat, EU LFS annual averages.
Note: Data for 2000: DE, CY, LU, MT, SE Q2; FR Q1; LV and LT av.Q2 & Q4. EU-27 aggregates for long-term unemployed share do not include NL and AT in 2000 and SE in 2006.
':' data not available. Data in brackets uncertain due to small sample size.

Quintini and Martin (2006) and based on *European Community Household Panel* (ECHP) data for 1997 to 2001 suggests that there is a frequent turnover into and out of NEET status and that this turnover is higher for youth than for prime-age adults.

However, in a number of the 13 old Member States observed there is a relatively high share of youth who always remained in the NEET category during the entire five-year observation period, namely Italy where the 'always NEET' incidence was at around 30%, Greece (around 20%) and France, Germany, Ireland, the Netherlands and Spain (more than 10%).

The likelihood of not being in education, employment or training is strongly correlated with a person's educational attainment level. While the NEET rate for 20–24 year olds with upper secondary education or university education is 14.4% and 13.1%, respectively, a full third of those young people who have not completed upper secondary education can be classified as NEET (Table 10). For the 20–29 age group, this link between education and joblessness is even more pronounced and it persists into later life.

There is also a strong gender dimension to this, as poorly educated young women have a much higher incidence of being NEET than their male contemporaries, while a gender difference also exists for those with medium and high educational attainment, but to a much lesser degree.

This link between poor education and an increased risk of joblessness generally holds true for most Member States, although with variations in intensity. In a number of Member States, however, this relationship is reversed to the extent that younger people aged 20–24 with a high educational attainment actually have a higher likelihood of being NEET than their less well-educated contemporaries. This applies mainly to most of the Mediterranean Member States – in particular Greece, Spain, Cyprus and Portugal. There are also several countries – Germany, Lithuania, Slovenia, Hungary, Romania and Bulgaria – where young university graduates have a lower risk of being jobless than those with a low educational attainment, but still have a higher jobless risk compared to those with a medium educational attainment. In most of these Member States this inverse education/NEET structure disappears when looking at older youth aged 25 to 29. Only in Portugal and Slovenia do highly educated 25 to 29 year olds also remain at a higher risk of being jobless than their medium-skilled contemporaries, while in Italy this phenomenon only appears in this age group.

One explanation suggested for the observation that higher education is not necessarily an insurance against joblessness is that young people who

Table 10 - **Share of youth (age 20–24) not in education, employment or training, by educational attainment level and gender, 2006**

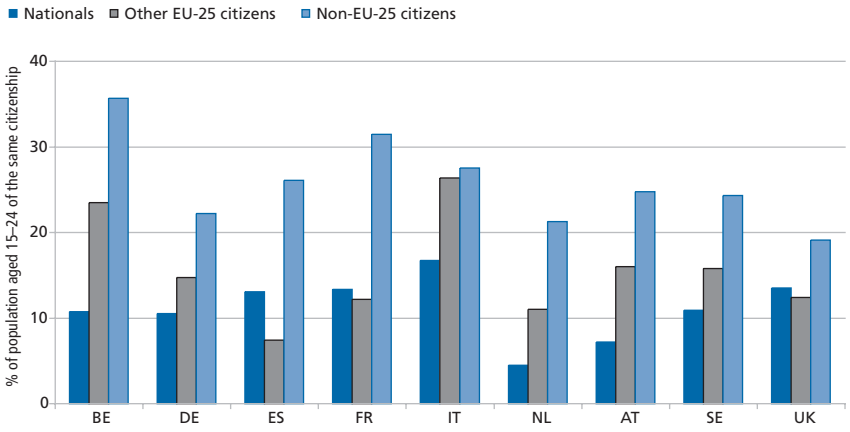
	Low				Medium				High			
	Total	Men	Women	Gender difference	Total	Men	Women	Gender difference	Total	Men	Women	Gender difference
BE	38.4	31.0	49.4	-18.5	12.8	10.6	15.2	-4.6	13.4	13.5	13.3	0.2
BG	68.0	55.9	81.2	-25.2	19.8	18.9	20.8	-2.0	23.3	:	(29.3)	:
CZ	41.1	32.1	52.2	-20.2	11.8	8.2	15.6	-7.5	9.0	7.7	9.9	-2.2
DK	10.9	(5.5)	18.8	:	5.2	5.5	5.0	0.5	:	:	:	:
DE	28.8	25.5	32.1	-6.6	14.1	15.0	13.3	1.7	17.5	12.3	19.9	-7.7
EE	29.5	21.5	49.9	-28.4	10.2	(4.7)	15.5	:	:	:	:	:
IE	37.8	27.0	53.9	-26.9	9.7	8.5	11.2	-2.7	6.4	:	(6.2)	:
EL	29.5	16.3	54.4	-38.1	12.8	8.4	17.2	-8.8	30.8	24.4	34.3	-9.9
ES	21.5	17.2	27.9	-10.7	11.1	8.7	13.3	-4.5	15.6	13.9	16.8	-2.9
FR	45.6	38.0	54.9	-16.8	17.6	13.6	21.9	-8.3	10.8	8.7	12.5	-3.8
IT	40.2	29.4	55.5	-26.1	16.5	15.6	17.3	-1.8	15.2	12.2	16.9	-4.7
CY	(16.3)	(9.1)	(33.7)	:	12.2	13.0	(10.9)	:	18.7	:	18.5	:
LV	28.6	19.5	45.0	-25.4	13.1	7.9	17.8	-9.9	:	:	:	:
LT	40.4	(37.3)	(45.7)	:	10.0	8.5	11.4	-2.8	(11.8)	:	:	:
LU	(16.9)	(14.5)	(20.3)	:	(6.9)	:	(7.5)	:	:	:	:	:
HU	47.0	37.7	58.6	-20.8	13.3	11.0	15.6	-4.6	18.4	(17.9)	18.6	:
MT	(18.1)	:	(22.8)	:	:	:	:	:	:	:	:	:
NL	15.5	11.4	21.3	-9.9	4.2	3.1	5.3	-2.2	3.6	(3.0)	(3.9)	:
AT	30.3	23.9	37.3	-13.4	8.0	7.4	8.7	-1.3	:	:	:	:
PL	47.9	44.0	54.6	-10.6	18.3	17.1	19.5	-2.3	17.6	(16.6)	18.1	:
PT	16.9	14.3	20.8	-6.4	7.4	6.2	8.4	-2.2	25.6	:	27.6	:
RO	48.1	41.5	55.2	-13.7	20.6	21.8	19.3	2.5	30.6	(30.0)	30.9	:
SI	31.7	(27.9)	(38.0)	:	9.5	8.3	10.9	-2.5	(19.9)	:	(22.8)	:
SK	63.0	61.6	64.5	-2.9	16.6	12.9	20.4	-7.5	15.9	:	(18.1)	:
FI	26.8	23.4	31.2	-7.7	11.0	9.6	12.2	-2.6	:	:	:	:
SE	31.7	31.1	32.7	-1.6	13.1	12.9	13.4	-0.5	7.2	:	7.4	:
UK	38.5	29.3	49.6	-20.4	12.6	9.0	16.2	-7.2	10.3	12.3	8.7	3.6
EU-27	33.6	27.2	41.8	-14.7	14.5	13.0	16.0	-2.9	13.1	11.6	14.2	-2.6

Source: Eurostat, EU LFS annual averages.
Note: ":" data not available. Data in brackets uncertain due to small sample size.

attain higher levels of education have had less time to acquire relevant work experience or they, especially those with university degrees acquired over a long period (as opposed to those with shorter or vocational degrees), may not meet labour market demands in the countries concerned[15]. Consequently, many of those with an academic degree may take longer to obtain a foothold on the labour market than those without one. However, once the transition has been made, education does tend to display positive returns for the investment in the form of a significantly lower risk of unemployment.

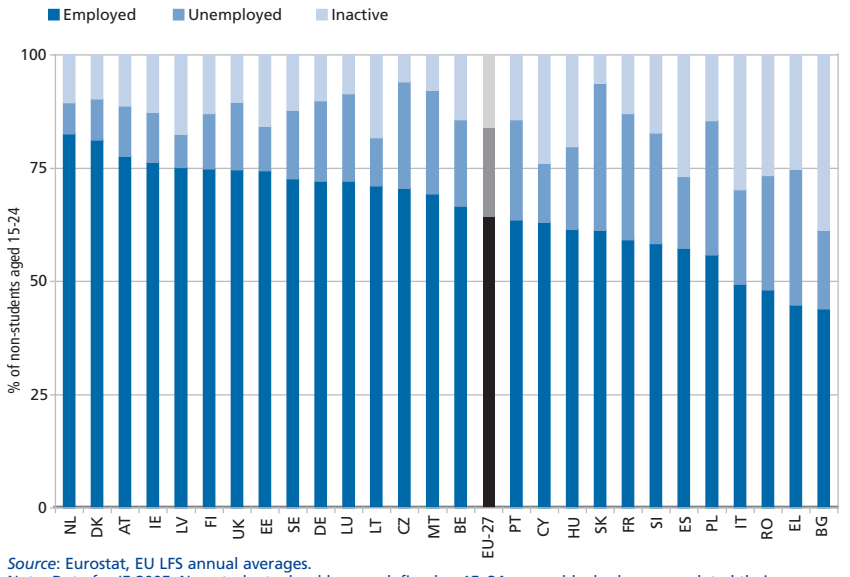
Joblessness is also a phenomenon which is much more likely to affect youth with foreign citizenship than young nationals. Young people from a non-EU country living in the EU are approximately twice as likely to be NEET, compared to youth living in their country of birth. They are also significantly more likely to find themselves in this position compared to youth coming from another EU Member State. Among the countries for which detailed data are available, Belgium and France have the highest NEET rates among young third-country nationals (Chart 27). In Belgium, the NEET rate of young third-country nationals is also very high compared to young nationals, and this ratio is even higher in Austria and the Netherlands (the latter two Member States have lower overall youth NEET rates). In the United Kingdom, on the other hand, the rate is relatively low for young third-country foreigners.

Chart 27: **Youth (age 15–24) not in education, employment or training by citizenship and country of residence, 2006**



Source: Eurostat, EU LFS annual averages.
Note: Data for 'Other EU-25 citizens' for ES, FR, LU, NL, AT uncertain due to small sample size.

Chart 28: **Youth school-to-work transition - labour market status of non-students (age 15–24) one year after leaving school, 2006**



Source: Eurostat, EU LFS annual averages.
Note: Data for IE 2005. Non-student school leavers defined as 15–24 years-old who have completed their education in the previous year.

4.4. Labour market transitions of youth

Another concern in the context of youth employment is the transition of young people from education into working life. On average, almost two-thirds of youth leaving education in the EU do have a job one year after leaving school, although the school-to-work transition seems to work better in some countries than in others (Chart 28). In Austria, Ireland, Latvia, Finland, Estonia and the United Kingdom, close to 75% or more of young people have a job one year after having left the educational system. In Denmark and the Netherlands this rate even exceeds 80% while Bulgaria, Greece, Italy and Romania are at the other end of the scale with less than 50% of young non-students being employed one year after leaving permanent education.

Again, education seems to play an important role in successful school-to-work transitions. On average, less than 4 out of 10 school leavers with a low educational attainment level find themselves in a job one year after having finished their education, compared to almost two-thirds of those with a medium level of education and more than three-quarters of those with a high level of education (Chart 29 - see page 42). In other words, better-educated youth tend to

15 See Fernández (2006) who examined this phenomenon for the Spanish labour market.

make a more speedy insertion into the job market than their less-educated peers.[16]

Research also suggests that the dual systems of combining work and education through vocational training or apprenticeships found in countries such as Austria, Denmark and Germany seem to improve the transitions and employment prospects of young people.[17]

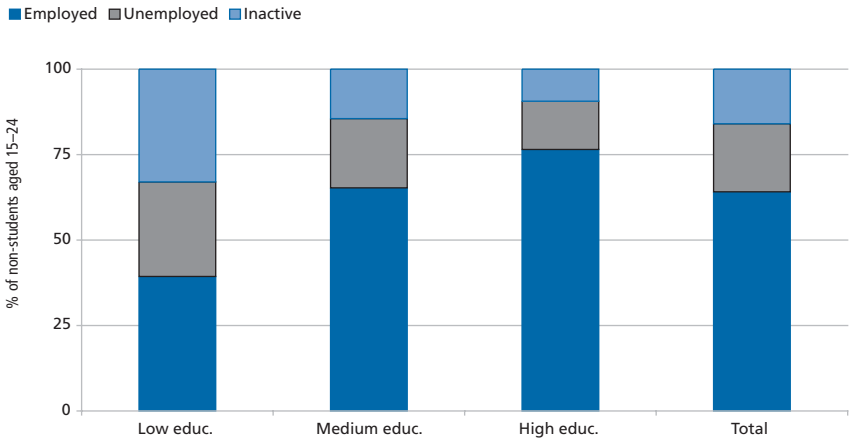
Looking at overall labour dynamics, young people tend to move into and out of jobs much more frequently than prime-age workers. In 2006, an average of 25% of young workers quit, lost or changed their job, compared to 11% of prime-age workers aged 30–54. On the other hand, the proportion of young people moving into a new job was also much higher, with almost 17% of young workers being newly hired, compared to 7% of prime-age workers. Added together, labour turnover[18] for young people is almost two-and-a-half times as high as for prime-age adults. To a large degree this is natural as young people are more likely to move in and out of jobs in search of the best possible match between their skills and those required by their employers.

However, youth labour turnover rates differ greatly between Member States and tend to correlate with those of the prime-age population; Member States with a high labour turnover among young workers also tend to have a high labour turnover among their prime-age population and vice versa as suggested by Chart 30. Denmark, Finland, Latvia, Spain and the United Kingdom are the countries where labour turnover for both age groups is above the European average, while France also has a higher than average turnover rate for young people but (slightly) lower than average turnover for the prime-age group.

Interestingly, the reasons for a high labour market turnover, especially among young people, seem to differ between these countries. For Finland, Spain and France, the high degree of turnover seems to be linked, at least partially, to a high share of young people who are employed on temporary contracts; in the case of France and Spain most of them involuntarily so (see section 4.6.2). In Denmark, Latvia and the United Kingdom, on the other hand, high labour turnover among young people does not go hand in hand with a particularly high incidence of temporary contracts.

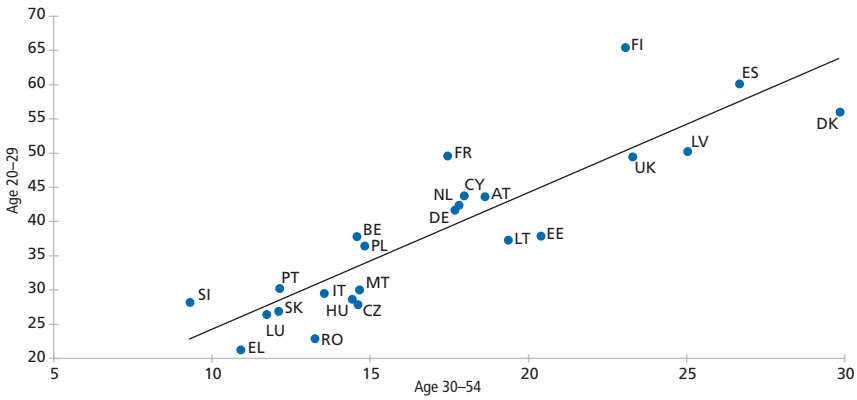
Not surprisingly, countries with a highly dynamic labour market also

Chart 29: Youth school-to-work transition by educational attainement in the EU–27 - labour market status of non-students (age 15–24) one year leaving school, 2006



Source: Eurostat, EU LFS annual averages.
Note: Non-student school leavers defined as 15 to 24 years old who have completed their education in the previous year.

Chart 30: Labour turnover of younger workers vs. prime-age workers, 2006



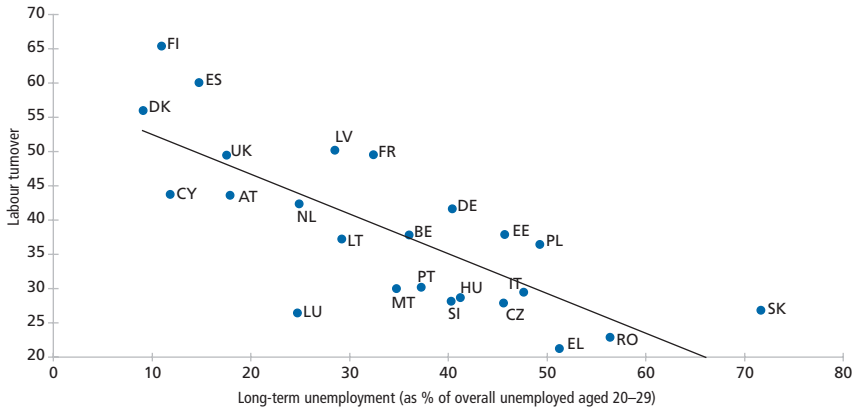
Source: Own calculations using EU LFS annual averages.
Note: Data for BG, IE and SE not available.

16 This is also confirmed by findings in *Employment in Europe 2004*, Chapter 4: Labour market transitions and advancement: temporary employment and low pay in Europe.

17 See, for example, Kogan and Schubert (2002), Ryan (2001) and Quintini and Martin (2006).

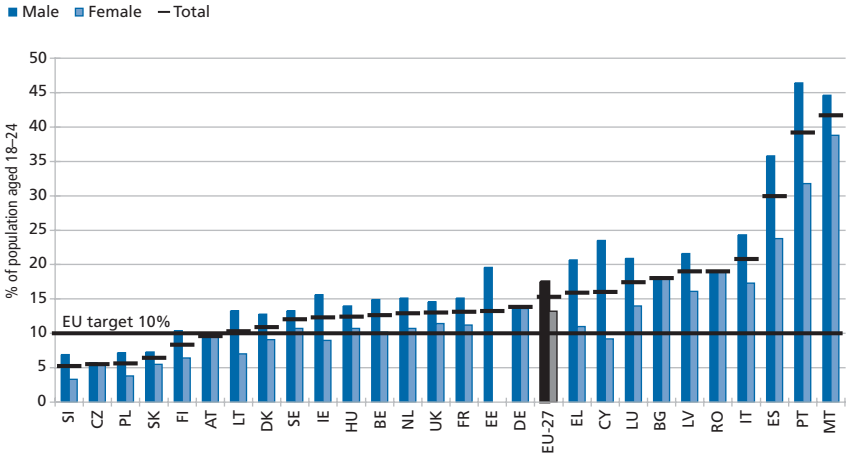
18 More precisely, labour turnover is here defined as the sum of the hiring rate and the job separation rate. The hiring rate is calculated as the percentage of workers in the age group who have less than one year's tenure at time t, over total employment at time t-1. The separation rate corresponds to the share of people unemployed, inactive or employed with less than one year's tenure at time t, who were employed at time t-1, over total employment at t-1. This follows the method for calculating labour turnover used in *Employment in Europe 2006*, Chapter 2, section 3.1.6.

Chart 31: Long-term unemployment vs. labour turnover of younger workers (age 20–29), 2006



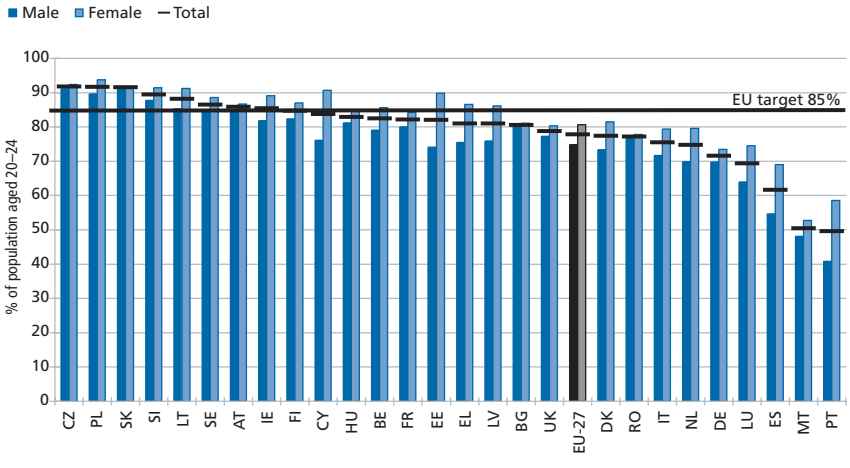
Source: Own calculations using EU LFS annual averages.
Note: Data for BG, IE and SE not available.

Chart 32: Early school leavers – share of the population aged 18–24 with at most lower secondary education and not in further education or training, 2006



Source: Eurostat, EU LFS annual averages.
Note: Data for female for EE uncertain due to small sample size.

Chart 33: Share of youth population aged 20–24 having completed at least upper secondary education, 2006



Source: Eurostat, EU LFS annual averages.

tend to have significantly fewer young people in long-term unemployment than countries with a low labour turnover (Chart 31).

4.5. Youth education attainment level

Given that the risk of making a bad transition into working life or being without a job tends to be higher for the poorly educated than for the better educated in most Member States, it must be of concern that still almost one in seven young people in the EU-27 drop out of school without at least an upper secondary qualification (Chart 32). Although the proportion of early school leavers declined from 17.6% in 2000 to 15.3% in 2006, the incidence of early school leavers in the EU still remains well above the target rate of 10% set in the framework of the European Employment Strategy. It is especially high in Malta and Portugal, where around 4 out of 10 young people leave the school system without achieving a satisfactory level of education, but also in Spain where 3 out of 10 fail to do so and in Italy where it is 2 out of 10.

The EU is also still lagging behind its other target on youth education, namely that at least 85% of 22 year olds in the EU should have completed upper secondary education by 2010, although things have improved in recent years. Presently, upper secondary attainment for 20–24 year olds is at 77.8% (Chart 33), up from 76.6% in 2000.

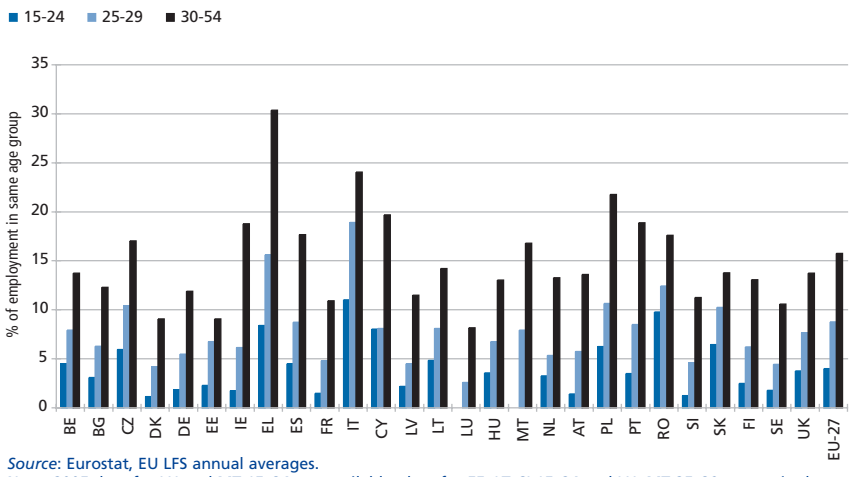
In practically all Member States, young men are more likely to drop out of school early (the exception being Austria) and less likely to complete upper secondary education.

4.6. Youth employment structures

4.6.1. Professional, sector and occupational structure

The overwhelming majority of young people with a job are employees. In the EU-27 only about 4% of youth aged 15–24 and 9% of those aged 25–29 are self-employed, compared to around 16% of people aged 30–54 (Chart 34). These percentages have not changed significantly since the beginning of the decade.

Chart 34: **Incidence of self-employed by age group, 2006**



Source: Eurostat, EU LFS annual averages.
Note: 2005 data for LU and MT 15–24 not available; data for EE, LT, SI 15–24 and LU, MT 25–29 uncertain due to small sample size.

On the one hand, the low share of self-employment among youth is not surprising as many young people still lack the skills, experience and resources to open their own business. On the other hand, there seems to be an untapped potential for young people to become entrepreneurs as more of than half of them indicate that they would prefer to be self-employed rather than being an employee.[19]

In most Member States, the share of self-employed youth seems to be correlated with the overall share of self-employed. For example, Greece, Italy, Poland and Romania have a relatively high share of self-employed among both their prime-age and younger populations, although there are exceptions (e.g. Ireland).[20]

The economic sectors with the largest average share of youth among their workforce are wholesale and retail trade and the hotel and restaurant business (Table 11). On the other hand, youth tend to be significantly under-represented in agriculture, mining, electricity and water supply, transport and communication, public administration, education, and health and social services.

As far as the occupational structure of youth employment is concerned, it is not surprising that youth aged 15–24 are strongly underrepresented in senior or management positions given their young age and lack of work experience (Table 12). They are also under-represented in professional occupations that often require advanced degrees or additional training. Nevertheless, the share of both youth and young people (aged under 30) in professional and technical occupations has increased since 2000, a reflection of the fact that more youth have been entering and finishing higher education. At the same time, however, the share of youth aged 15–24 in low-skilled service and retail positions, as well as elementary jobs, has also increased, while the

Table 12 - **Occupational structure by age group, 2000 and 2006 (% of total employment in age group)**

		2000			2006		
		15–24	25–29	30–54	15–24	25–29	30–54
Skilled non-manual	Legislators, senior officials and managers	2.2	5.3	8.8	1.9	5.0	9.0
	Professionals	4.1	12.5	13.5	4.4	15.1	14.1
	Technicians and associate professionals	11.7	16.2	15.3	12.7	18.3	16.1
Low skilled non-manual	Clerks	14.2	13.4	11.9	13.1	12.2	11.1
	Service workers and shop and market sales workers	22.7	15.1	11.8	25.8	15.6	12.0
Skilled manual	Skilled agricultural and fishery workers	5.7	4.2	5.0	4.0	3.1	4.5
	Craft and related traded workers	20.1	16.5	15.6	18.0	14.5	14.7
	Plant and machine operators and assemblers	8.1	9.4	9.7	7.2	8.3	9.4
Elementary occupations	Elementary occupations	11.1	7.4	8.5	12.8	8.1	9.0

Source: Eurostat, EU LFS annual averages.
Note: Data for 2000: DE, CY, LU, MT, SE Q2, FR Q1, LV and LT av.Q2&Q4.

19 Eurobarometer (2004).

20 In Greece, Poland and Romania, a big part of self-employed young people appear to run (presumably small) businesses in the agricultural sector, with manufacturing and trade activities also being of importance, while self-employed young people in Italy rather tend to be in construction, manufacturing, business activities or trade.

Table 11 - **Youth employment intensity by economic sector, 2006 (Employed youth and young people aged 15-29 as a percentage of all employed aged 15-64)**

	Agriculture, hunting; forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Wholesale and retail trade	Hotels and restaurants	Transport and communication	Financial intermediation	Real estate and business activities	Public admini-stration	Education	Health and social work	Community, social and other activities	Total
	(A+B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O+P+Q)	
BE	13.6	(21.9)	21.4	20.6	24.7	24.4	27.3	18.2	15.8	24.6	14.3	19.8	20.0	19.4	20.8
BG	12.9	10.0	19.1	8.5	20.3	25.4	37.1	14.5	19.1	23.3	15.7	7.0	7.3	21.2	18.5
CZ	11.9	9.4	23.2	10.6	20.4	25.7	35.9	18.6	22.1	23.1	18.5	12.6	17.4	22.6	21.2
DK	28.5	:	18.3	(7.4)	26.4	39.1	60.4	20.9	18.6	20.7	13.9	14.3	18.5	26.7	23.6
DE	16.5	12.6	20.0	16.6	21.7	23.6	34.5	16.4	18.8	21.1	18.8	16.8	22.3	20.0	20.9
EE	15.8	(12.0)	21.8	(7.4)	29.8	26.1	34.3	19.1	40.8	29.8	23.8	12.6	15.0	25.5	22.6
IE	15.3	24.2	31.1	18.4	39.7	41.7	49.8	21.5	39.3	33.7	18.7	20.0	21.5	33.5	31.7
EL	13.2	(10.5)	19.7	8.2	23.9	25.8	29.6	17.7	18.0	25.5	16.3	12.3	14.3	24.4	20.2
ES	19.9	20.9	25.6	21.8	29.5	30.4	32.1	20.7	23.3	25.7	13.3	16.3	19.4	27.3	25.1
FR	14.7	13.8	20.0	15.3	25.7	27.0	31.7	16.7	19.3	23.7	15.0	16.3	15.3	21.7	20.4
IT	14.0	13.3	20.4	8.5	23.3	21.7	28.9	14.8	14.3	19.6	7.5	6.2	10.1	21.3	17.9
CY	14.2	:	20.3	(15.3)	25.6	26.0	23.1	19.5	16.0	32.9	25.4	25.2	19.7	24.9	23.7
LV	16.9	38.0	24.1	14.4	33.5	30.1	37.3	19.0	32.4	28.9	24.9	11.7	11.2	25.2	23.8
LT	14.9	:	23.2	:	26.7	27.5	41.9	17.1	25.6	22.9	18.4	12.0	9.4	20.0	20.5
LU	(13.0)	:	14.5	:	18.7	22.2	25.1	19.8	15.0	22.4	20.7	17.3	22.9	10.1	18.5
HU	14.7	(7.5)	23.9	12.6	24.0	26.8	31.5	18.0	26.0	23.7	21.2	11.2	15.5	24.1	21.8
MT	:	:	40.0	:	24.5	37.9	43.2	28.7	36.0	41.3	22.6	26.8	21.8	37.5	32.4
NL	28.6	(10.8)	20.7	18.9	24.9	40.8	56.8	24.5	19.5	26.4	15.9	16.6	20.8	26.3	26.3
AT	11.7	(24.9)	27.4	18.2	30.8	29.9	33.0	20.5	21.0	24.1	14.5	15.6	20.7	27.5	24.5
PL	19.3	9.4	27.7	10.6	23.8	36.7	42.4	18.3	28.7	26.5	22.8	15.1	14.5	28.0	24.4
PT	8.9	21.5	26.1	15.4	26.1	28.6	29.0	23.7	16.9	28.0	19.0	16.7	20.4	17.0	23.0
RO	23.5	10.5	22.8	9.3	25.1	32.0	35.7	17.0	24.6	29.1	18.1	19.7	17.2	27.8	23.4
SI	19.6	(12.5)	21.8	(12.2)	21.9	28.1	39.7	21.2	18.5	24.7	19.1	15.9	18.8	30.7	22.7
SK	13.0	11.4	27.9	12.3	24.4	28.5	41.8	19.6	28.3	29.5	19.2	16.1	16.9	30.4	24.6
FI	12.0	(23.7)	20.7	(11.7)	22.0	30.6	42.1	21.8	17.5	25.7	12.2	15.1	15.7	24.8	21.5
SE	17.2	:	17.7	15.9	19.8	29.0	47.8	21.3	18.2	21.2	11.0	13.1	16.8	23.6	20.1
UK	21.3	16.9	19.5	24.9	24.2	36.1	49.1	19.5	29.2	23.6	18.4	14.4	17.9	30.6	24.5
EU-27	18.2	12.9	21.9	14.3	25.0	29.1	36.6	18.3	21.8	23.4	16.3	14.5	17.8	24.2	22.2

Source: Eurostat, EU LFS annual averages.
Note: ":" data not available. Data in brackets uncertain due to small sample size.

Table 13 - **Incidence of temporary and part-time work among youth (age 15–24), 2000 and 2006**

	Incidence of temporary work for employees						Incidence of part-time work					
	2000			2006			2000			2006		
	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
BE	30.8	28.1	34.3	30.0	28.7	31.5	19.7	11.7	30.0	20.7	11.9	31.9
BG	12.2	12.5	12.0	12.6	12.3	12.9	4.9	(5.0)	(4.7)	2.9	:	:
CZ	12.4	11.4	13.5	18.9	18.0	20.1	4.3	2.9	6.0	3.9	2.9	5.3
DK	27.4	28.8	25.7	22.4	24.6	20.1	46.2	37.6	56.1	58.4	47.9	69.5
DE	52.4	55.0	49.5	57.6	60.1	54.8	12.0	8.5	16.0	19.3	14.3	24.9
EE	6.7	8.9	:	7.3	7.4	(7.3)	11.8	8.7	15.9	13.0	7.7	20.6
IE	15.9	14.4	17.7	10.9	9.0	13.0	21.4	15.9	27.9	:	:	:
EL	29.5	27.9	31.4	25.0	23.0	27.8	8.3	7.0	10.1	13.3	10.6	17.5
ES	68.3	69.2	66.9	66.1	65.3	67.1	12.9	7.7	20.5	21.1	13.3	31.6
FR	55.0	56.3	53.5	49.8	49.0	50.9	22.1	12.9	33.6	21.6	12.0	34.5
IT	26.6	25.4	28.2	40.9	38.4	44.9	10.5	6.4	16.2	17.5	10.1	29.1
CY	18.7	16.3	20.9	21.2	16.2	26.6	8.3	(7.2)	9.4	9.5	(5.7)	13.6
LV	10.9	12.3	(8.7)	14.4	15.2	13.2	13.2	10.5	17.4	8.7	6.1	12.7
LT	9.3	(8.0)	(10.9)	10.5	11.9	(8.7)	16.4	16.8	15.8	9.0	(7.8)	(10.6)
LU	14.5	(15.3)	(13.4)	33.2	34.8	31.4	(8.8)	:	(14.5)	(8.8)	:	(13.0)
HU	13.6	14.0	13.1	16.9	17.9	15.4	2.8	1.9	4.0	4.7	4.3	5.3
MT	(8.1)	(11.2)	:	(8.0)	:	:	(7.8)	(10.1)	:	13.5	(11.1)	(16.3)
NL	35.5	34.9	36.1	43.5	42.9	44.3	60.2	52.7	68.3	68.3	59.6	77.5
AT	35.1	38.9	30.8	35.2	38.5	31.3	9.5	5.3	14.3	14.7	8.6	21.8
PL	14.8	14.6	14.9	67.3	65.4	69.7	16.2	13.6	19.5	19.3	16.2	23.3
PT	41.4	38.3	45.6	49.3	47.1	52.2	6.2	4.6	8.4	8.4	5.7	11.8
RO	3.3	3.6	2.9	5.0	5.1	(4.9)	15.5	17.1	13.6	16.1	17.4	14.4
SI	46.3	41.6	52.2	64.2	56.4	74.9	14.1	12.3	16.5	29.8	23.8	38.4
SK	10.5	11.3	9.8	14.2	13.8	14.8	(1.0)	:	:	3.3	(1.8)	5.3
FI	45.4	41.0	49.8	44.2	40.7	47.5	35.7	25.3	46.6	39.3	27.9	50.8
SE	45.2	39.5	51.0	59.0	52.2	66.0	38.3	27.6	49.4	42.2	28.3	57.7
UK	14.2	14.1	14.3	12.9	12.5	13.2	32.0	24.1	40.4	35.1	27.2	43.4
EU-27	34.9	35.7	34.0	40.9	41.0	40.7	20.2	14.9	26.5	25.3	18.4	33.6

Source: Eurostat, EU LFS annual averages.
Note: Data for 2000: DE, CY, LU, MT, SE Q2; FR Q1; LV and LT av.Q2 & Q4; BG 2001 and RO 2002. Data for full-time/part-time indicators for IE 2005.
':' data not available. Data in brackets uncertain due to small sample size.

share of skilled manual occupations has decreased.

4.6.2. Youth in part-time and temporary employment

Young people in the EU are significantly more likely than adults to work in temporary and/or part-time jobs. On average, 4 in 10 employed 15 to 24 year- olds work on a temporary contract (Table 13) compared to around 1 in 10 prime-age adults. Around a quarter of youth work in part-time jobs as opposed to 16% of the 25–54 age group. While the incidence of temporary and part-time work has been rising for adults as well as youth, the increase has been significantly more pronounced for young people.

There are no large gender differences at EU level with respect to temporary youth employment. On average, young men are in fact slightly more likely to be in a temporary contract than young women (40.8% vs. 40.2%), although there are of course differences between Member States. As for part-time work, gender differences are much more pronounced, with young women on average almost twice as likely to work part-time than young men.

To a certain extent it is to be expected that youth face a higher likelihood of temporary and part-time work, as employers may be reluctant to offer a permanent and full-time contract to somebody who is just entering the labour market with little or no previous work experience. For many youth, a temporary or part-time job is seen as a stepping-stone towards permanent employment. As shown in Chart 25 (see page 35), the share of young people with a permanent contract increases with age, and by the age of 29 an average of almost 50% of people that age are in a permanent job (with around 10% in a temporary job and the rest either in education or otherwise inactive, working as self-employed or a family worker, or unemployed).

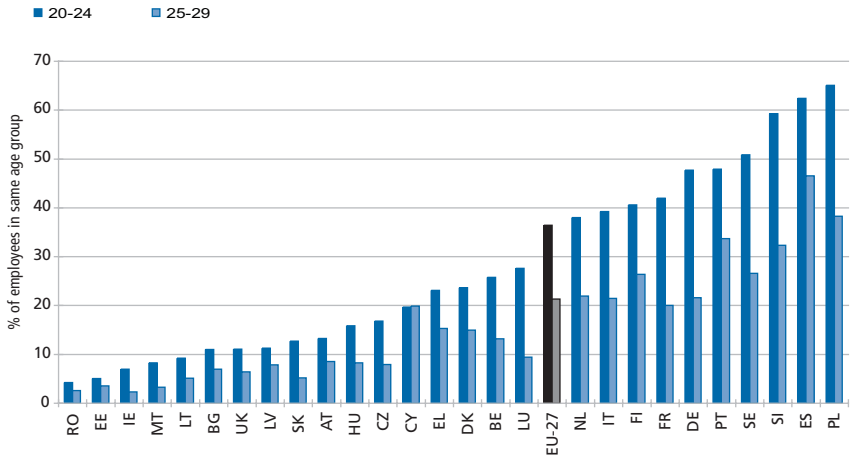
However, the issue can become problematic if a young person becomes trapped in a situation moving from one temporary contract to another without being able to get into a permanent job. (Chart 35) shows the incidence of temporary work among people in the 20–24 age group compared to those aged 25–29. In all Member States (except Cyprus), the share of 25 to 29 year olds in temporary work is lower than for their younger peers. However, some Member States show a particularly high incidence for both the younger and older youth age group, namely Portugal, Slovenia and Poland with more than 30% of 25 to 29 year olds in temporary con-

tracts, and Spain with more than 40%[21]. This suggests that youth in these Member States are more likely to face a series of temporary jobs and have therefore more difficulties in making a transition into stable employment than in others.[22]

The question whether temporary and part-time contracts need to be considered as precarious also depends on the degree to which this situation is involuntary – how much of it is because someone would have liked to work in a permanent or full-time job, but could not find one. Chart 36 shows that the incidence of involuntary temporary work among the youth varies greatly among Member States. In Spain, Poland, Sweden, Portugal, France, Belgium or Greece, for example, a majority of temporarily employed youth would have liked to work in a permanent job, but could not find one. In Slovenia, Germany, Finland, Italy, the Netherlands, Denmark or Austria, on the other hand, a majority of those in temporary employment did not want a permanent job (or were still in their probationary period or in training).

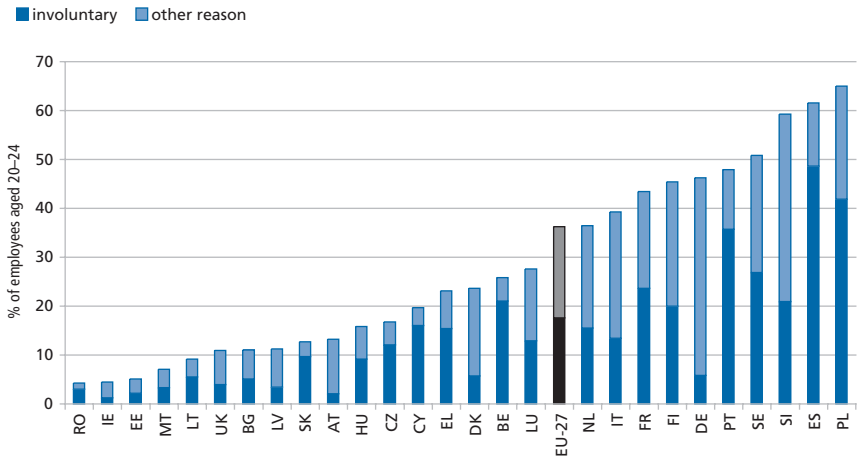
With respect to part-time work, it is interesting to note that in the two Member States with the highest incidence of part-time working among the youth, Denmark and the Netherlands, (Chart 37, see page 48) the incidence of involuntary part time working in relation to overall part-time work is very low. This seems to correspond largely with the high number of working students in both countries examined in section 4.2.2. Sweden, France and Italy, on the other hand, show a high incidence involuntary part-time working among youth in part-time employment.

Chart 35: Incidence of temporary work by age group, 2006



Source: Eurostat, EU LFS annual averages. Note: Data fot MT 20–24, 2005 and uncertain due to small sample size.

Chart 36: Temporary work by youth aged 20–24 by reason, 2006

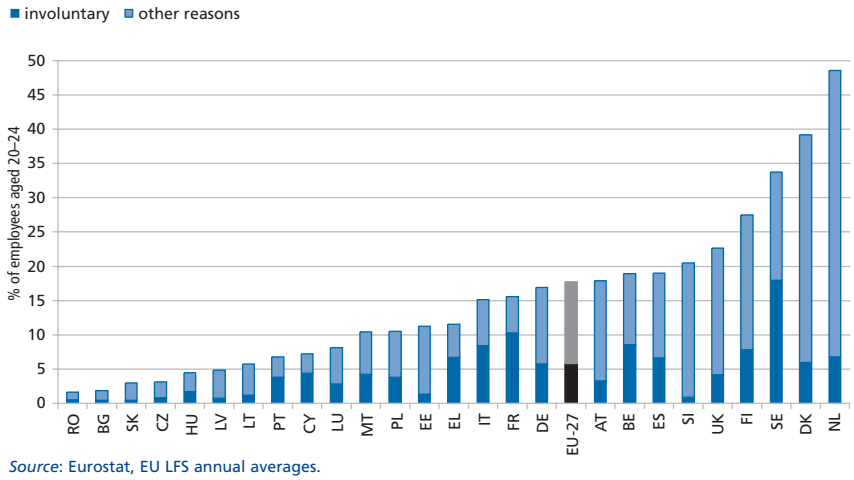


Source: Eurostat, LFS annual averages.

21 See OECD (2007b), p.50 f., for a discussion of temporary employment of youth in Spain. This study confirms the high rate of involuntary temporary youth employment in Spain and finds that transitions for youth from temporary to permanent employment are significantly below the European average. Furthermore, it finds that some temporary jobs offer good prospects and serve as stepping-stones into the labour market, especially if staying with the same employer during temporary employment. However, temporary jobs involving frequent changes of employers tend to represent a trap from which young people find difficult to exit.

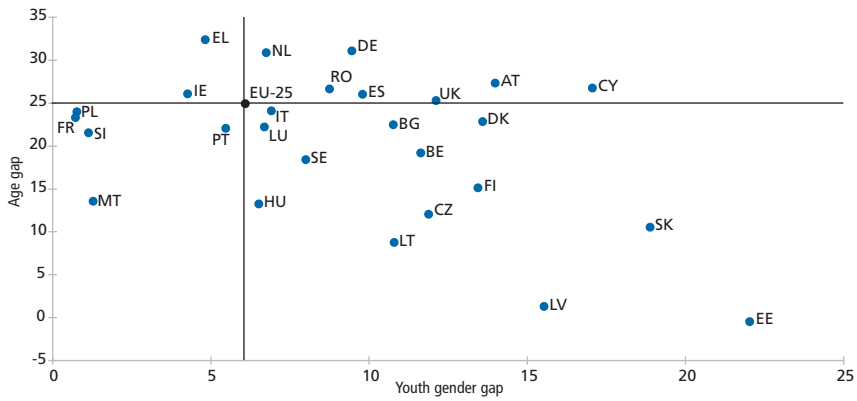
22 Note, however, that this consideration does not take into account the fact that youth in some countries enter the labour market later than in others and are therefore also more likely to show a higher incidence of temporary work in their late 20s, compared to countries where transitions tend to occur earlier.

Chart 37: **Part-time work by youth aged 20–24 by reason, 2006**



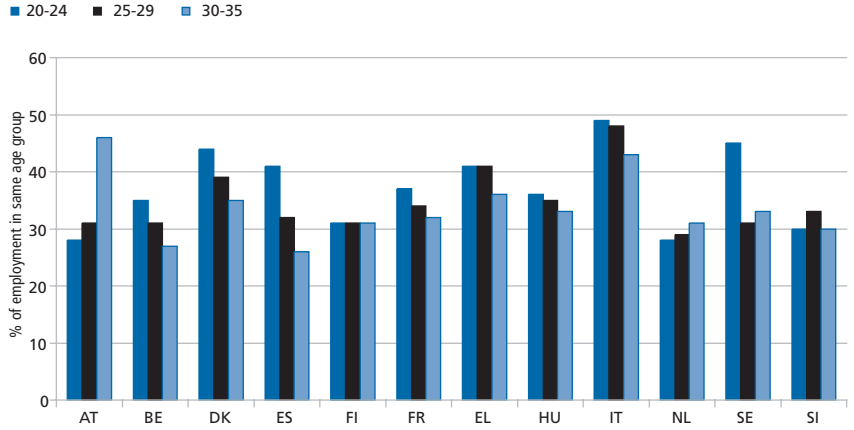
Source: Eurostat, EU LFS annual averages.

Chart 38: **Age and youth gender gap in hourly earnings, 2002**



Source: Own calculations based on the '*Structure of Earnings Survey*' 2002.
Note: Age gap defined as the number of percentage points by which hourly earnings of people aged less than 30 years old are below the average hourly earnings of all age classes.
Youth gender gap defined as the number of percentage points by which average hourly earnings of women under 30 are below those of men under 30.

Chart 39: **Incidence of job mismatches by age group, 2000**



Source: EU LFS 2000 ad hoc module on school to work transitions.
Note: missing Member States excluded because of unreliable or unavailable data.

4.6.3. Earnings structure of employed youth

Young people tend to earn significantly less than the overall workforce does. According to data from the *European Structure of Earnings Survey* 2002, average hourly earnings of employees below the age of 30 are around 25% below those of the overall workforce (Chart 38). The youth wage gap is highest in Greece, the Netherlands and Germany, where younger workers only earn about two-thirds of what an average worker gets. Relatively moderate wage gaps of between 5% and 15% were observed in Finland, Malta, Hungary, Czech Republic, Slovakia and Lithuania. Only in Estonia and Latvia did young peoples' earnings match those of the average.

Lower average earnings for young people are partly explained by the fact that the youth tend to be over-represented in sectors of the economy where wages are relatively low and under-represented in better paying sectors. For example, earnings in trade and the hotel and restaurant business – both activities with the highest share of youth in their workforce – are substantially lower than in other service activities or industry (Table 14). Furthermore, young people are also more likely to be paid lower wages due to the lack of previous work experience and the need for training until they become fully productive. With age and presumably increased productivity, earnings tend to increase at least into prime age.

Research undertaken by the OECD on the basis of 1997 to 2001 data from the ECHP, also suggests that the incidence of low pay among younger workers tends to decrease as they get older and that a relatively high share of poorly paid youth eventually make it into better paid jobs, as opposed to a lower share which makes a transition from unemployment into employment. It therefore seems, on balance, it is bet-

Table 14 - **Hourly earnings by age and economic activity, 2002 (in purchasing power standards)**

	Employees under 30 years of age						All age groups					
	Industry and services (excl. public admin.) (C - K)	Total industry (excl. construction) (C - E)	Construction (F)	Services (excl. public admin.) (G - K)	Wholesale and retail trade (G)	Hotels and restaurants (H)	Industry and services (excl. public admin.) (C - K)	Total industry (excl. construction) (C - E)	Construction (F)	Services (excl. public admin.) (G - K)	Wholesale and retail trade (G)	Hotels and restaurants (H)
BE	11.09	11.93	11.04	10.71	9.82	8.67	13.73	14.31	12.49	13.53	12.42	9.25
BG	1.50	1.46	1.39	1.57	1.22	1.06	1.98	2.01	1.76	2.00	1.38	1.31
CZ	4.82	4.65	4.21	5.09	4.24	3.98	5.45	5.22	4.97	5.80	4.76	5.63
DK	11.84	13.47	14.11	11.26	9.98	11.75	15.34	16.44	16.46	14.71	12.83	12.48
DE	10.25	11.25	8.56	9.78	9.09	6.74	14.89	16.11	12.96	14.02	13.04	9.21
EE	4.09	3.91	3.68	4.25	3.70	2.61	4.07	4.06	3.98	4.09	3.72	2.54
IE	10.74	11.35	11.82	10.40	8.29	7.74	13.74	14.16	14.47	13.37	10.46	9.13
EL	5.82	5.83	6.36	5.77	5.40	5.61	8.61	8.88	8.64	8.45	7.09	6.57
ES	7.31	7.60	7.22	7.20	6.85	6.36	9.81	10.35	8.39	9.89	9.24	7.26
FR	11.01	11.02	9.05	11.20	9.91	9.71	14.29	14.69	12.21	14.31	12.42	10.87
IT	8.39	8.29	8.00	8.55	8.10	7.39	11.05	10.68	10.06	11.55	10.21	8.54
CY	6.03	5.59	6.58	6.05	5.22	5.62	8.24	7.52	8.52	8.41	7.14	6.51
LV	2.98	2.84	2.73	3.08	2.29	2.01	3.02	3.11	2.77	3.00	2.24	1.97
LT	3.29	3.24	2.88	3.38	3.09	2.21	3.60	3.65	3.33	3.61	3.29	2.30
LU	12.06	11.91	10.46	12.27	9.63	8.90	15.51	15.28	12.83	16.00	12.61	10.03
HU	4.01	4.06	3.03	4.10	3.37	3.17	4.68	4.68	3.66	4.85	3.96	3.40
MT	7.50	7.38	6.11	7.78	7.14	6.34	8.69	8.25	7.47	9.26	8.15	7.31
NL	9.57	10.62	11.77	9.16	7.80	9.74	13.94	14.99	14.21	13.59	11.72	11.21
AT	8.75	9.45	8.92	8.33	7.52	6.35	12.03	12.90	11.62	11.61	10.28	7.48
PL	4.25	4.07	3.61	4.51	3.85	3.16	5.38	5.25	4.66	5.63	4.65	4.27
PT	5.35	4.55	4.95	5.96	5.15	4.19	6.88	5.87	5.81	8.00	6.63	4.88
RO	1.89	1.71	1.54	2.24	1.80	1.52	2.52	2.44	2.09	2.81	2.14	1.83
SI	6.06	6.22	4.99	6.17	5.63	4.31	7.43	7.23	6.30	7.92	6.98	5.72
SK	4.28	4.03	3.22	4.54	4.28	2.86	4.79	4.62	3.97	5.00	5.57	3.09
FI	9.88	10.47	9.55	9.49	8.78	8.55	11.64	11.89	11.01	11.51	10.72	9.18
SE	9.78	10.06	10.27	9.61	9.60	8.10	11.98	11.79	11.70	12.15	11.50	8.92
UK	11.23	12.10	12.36	10.97	9.00	7.67	15.37	15.85	15.24	15.20	11.85	8.83
EU-25	9.16	8.98	8.74	9.29	8.01	7.79	12.32	12.38	11.00	12.48	10.73	8.73

Source: Eurostat, Structure of earnings survey 2002

ter to start out working in a low-paid job than to have no job at all.[23]

With respect to gender differences, young women in the EU earn on average around 6% less than their male counterparts (Chart 38). Poland, France, Slovenia and Malta showed only a marginal gender gap in youth earnings, while Estonia, Latvia and Lithuania, which had the lowest age gap, rank among those countries with the highest gender gap. In general, the gender pay gap for young workers is much lower than for older workers (6% vs. 23%), which seems to be partly a reflection of the fact that a high proportion of young women in employment have not been affected, for example, by career breaks for maternity and child rearing. Moreover, young womenhave on average higher levels of education relative to their male counterparts and than older generations of women.

4.6.4. Job mismatches among employed youth

Another issue with respect to youth employment is to what extent young people take up occupations that are not close to their educational qualifications. Research based on data from the 2000 *Labour Force Survey* ad-hoc module[24] suggests that a relatively large number of young people in Europe are indeed affected by mismatches between their jobs and qualifications, albeit with significant variation between countries. Of those Member States where data are available, Italy and Greece show the highest percentage of school leavers aged 15–35 working in a job outside their field of education (47% and 40% respectively), followed by Greece, Denmark and Sweden. The lowest percentage is found in the Netherlands (29%).

In most Member States, having a job mismatch is negatively correlated with age: younger persons are more likely to work in a job outside their field of education than older ones (Chart 39). Similar negative correlations apply to the level and field of education: job-qualification mismatches are more frequent among those with a lower educational attainment compared to those with a higher education, and young people with a degree in humanities/arts, agriculture or sciences tend to find themselves working more frequently in a non-matching job than, for example, those with a qualification in education or health services or in engineering, manufacturing and construction (presumably because the latter educational fields tend to be more job specific than the former). Furthermore, in most Member States, young women tend to be more often affected by job-qualification mis-

23 Quintini and Martin (2006), pp. 9 and 17.

24 For this section and the detailed methodology of calculating job mismatches see M. Wolbers (2002).

matches than young men are. As for labour market outcomes, those with a job-qualification mismatch also tend to have a lower occupational status compared to those with matching jobs. They are also more likely to find themselves in a temporary and/or part-time job and show a higher propensity to be on the search for a new job than those with a matching job.

5. SUMMARY AND CONCLUSIONS

In 2006, labour markets in the EU made a robust recovery. After rather modest increases in the previous years, employment growth in the EU-27 picked up significantly in 2006 and, at 1.4%, showed its strongest increase since 2000. For the first time in at least a decade employment expanded across the entire EU, with all 27 Member States showing a rise in employment. Particularly high employment growth was observed in a number of the newer Member States, namely Estonia, Latvia, Poland, Bulgaria and Slovakia, as well as in Ireland, Luxembourg and Spain. Even those Member States that had performed worst in the previous year, namely Germany, Hungary, the Netherlands and Portugal, still experienced significant employment growth. In addition, labour productivity grew at a higher pace than in 2005 and at a slightly higher rate than in the United States, although the EU continued to slightly underperform relative to the US in terms of employment growth.

Due to stronger employment growth, the EU has made its best progress since 2000 towards the overall employment rate target with the rate now standing at 64.3%, and there was marked progress towards the targets for female and older persons' employment targets (currently at 57.1% and 43.5% respectively). Nevertheless, despite this progress, it seems increasingly challenging for the EU to meet the overall employment target of 70% and the older workers' target of 50% within the next four years, although the target of 60% for female employment seems to be within reach.

Regarding the younger generation, youth unemployment and difficulties in successfully integrating young people in the labour market remain a challenge. Despite signs of some overall improvements, there is evidence of persisting problems in a number of Member States and for certain disadvantaged groups of youth.

On the positive side, average labour market performance of young people in the EU has improved somewhat compared to the beginning of the decade. Youth unemployment is slightly down and the share of long-term unemployed youth has decreased substantially compared to the beginning of the decade (unlike the share of long-term unemployment among unemployed prime-age adults which has increased during the same period). Labour market participation and employment of youth aged 15–24 has decreased, but this is mostly due to a higher share of youth remaining in education and improving their skills. For young people aged 25–29, on the other hand, employment rates have increased in recent years.

However, despite these improvements, there has yet to occur a real breakthrough in reducing youth unemployment. At 17.4%, the average youth unemployment rate is still at a high level and it has not improved relative to unemployment rates for prime-age adults. Furthermore, as a whole, the EU underperforms in the international context, with substantially more youth in unemployment and less of them working than in other industrialised countries, such as the United States, Canada or Japan.

In addition, there are important differences between Member States, which are quite significant both in dimension and over time. For example, youth unemployment rates range from under 8% in Denmark and the Netherlands to over 25% in Greece, Poland and Slovakia. And while around two thirds of youth have a job in Denmark and the Netherlands, less than a quarter do so in Bulgaria, Greece, Hungary, Lithuania, Luxembourg, Poland and Romania. Moreover, youth tend to do better in Member States with high employment and low unemployment among prime-age adults (and vice versa). This suggests that the successful integration of youth into the labour market depends, for a big part, on a country's overall labour market performance. Therefore, economic policies aimed at increasing job creation in general will help to increase employment for young people.

Furthermore, young people often face problems in making a smooth and quick transition from education to work. On average, around one-third (and in some Member States more than half) of young people are still not in employment one year after finishing their education. While a large majority of young people will eventually make it into a stable and permanent job, a smaller, but significant part remains trapped in temporary, often low-paid jobs from which they find it difficult to exit. Another relatively small but relevant group at risk of labour market and social exclusion are youth who experience longer spells of being neither in education, nor employment nor training (NEET).

Education, or rather the lack of it, plays a key role in this. Young people with a low educational attainment are much more likely to be affected by (long-term) unemployment, inactivity or difficult school-to-work transitions than youth with upper secondary or university education. Therefore it is a concern that still almost one in seven young people in the EU drops out of school early without having received any relevant qualification. Although the incidence of school failure has continued to decline in recent years, it still remains

well above the target rate of 10% set in the EU employment guidelines. The EU is also still lagging behind its other youth education target, namely to have at least 85% of 22 year olds achieving a medium educational attainment, i.e. completing upper secondary education. Here too, the situation has improved in recent years, but the current level is still about 7 percentage points short of the target.

However, good education does not always seem to work as an insurance against difficult transitions, joblessness or precarious employment. In several Member States, young university graduates are actually more likely to be unemployed or inactive than their peers with only medium or low educational credentials. Moreover, a significant minority of young people find themselves working in jobs outside their field of education. Some of the consequences of these job-qualification mismatches are that those affected tend to have a lower occupational status and are more likely to be in temporary or part-time jobs compared to those with matching jobs.

All this implies that good education is crucial for a successful transition into working life and that the qualifications of youth need to be brought more in line with current and future requirements of the labour market. Programmes which address school failure early on, familiarise youth with the world of work – e.g. through (properly defined) internships, vocational training or apprenticeships – and prepare them for the need of lifelong learning in order to adapt their qualifications throughout their working lives, are one important way to improve the labour market situation of young people.

Integrating disadvantaged youth suffering from long spells of unemployment or inactivity may also require adequate activation strategies. However, these will have to be well designed and monitored as many active labour market policies targeted at youth so far have shown disappointing results.[25]

Finally, there is a need for reducing institutional barriers to the labour market entry of youth. Youth are one group which is most likely to be negatively affected by institutional settings which favour insiders in permanent employment and make it unattractive to hire newcomers. This is particularly the case with strict employment protection legislation (EPL) which tends to reduce the number of dismissals but decreases the entry rate into work. Strict EPL on regular contracts has been shown to contribute to labour market segmentation, high turnover for temporary employment, and precarious employment situations involving temporary contracts with low protection and limited prospects for permanent employment.[26] Making it easier to hire young people and removing labour market segmentation is therefore another crucial issue to be addressed.

A framework for developing concrete and coordinated policy responses to the main causes of youth employment problems may be found in the larger context of general employment policies, namely the recently proposed common principles on flexicurity[27]. These aim at integrating four policy components – flexible contractual arrangements, effective lifelong learning systems, active labour market policies and modern social security systems – in order to enhance flexibility and security at the same time in the labour market.

25 See *Employment in Europe 2006*, Chapter 3: Effective European labour market policies, p.139. For an overview and assessment of youth activation policies also see Walther and Pohl (2005).

26 See *Employment in Europe 2006*, Chapter 2: Flexibility and security in the EU labour markets.

27 COM(2007) 0359 final.

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Chapter 2

ACTIVE AGEING AND LABOUR MARKET TRENDS FOR OLDER WORKERS

1. INTRODUCTION

One of the most remarkable features of recent trends in labour markets in Europe has been the substantial increase in employment of older people, and this during a period of relatively limited economic and employment growth. Since 2000, the employment rate (ER) for people aged 55–64[1] has risen by 7 percentage points in the EU-25[2], compared to a rise of 2.3 percentage points for the working-age population as a whole. However, despite this improvement, employment of older people in Europe remains low by international standards, and many workers still exit the labour market at relatively early ages.

The need to improve labour market participation of older people has gained heightened attention in recent years, especially in view of the significant demographic changes the European Union (EU) will undergo due to population ageing. Indeed, population ageing is one of the most important challenges facing the EU, posing a threat to its macro-economic performance and competitiveness. In this context, increases in participation and employment rates for older workers are essential to help sustain economic growth, reinforce social cohesion and the adequacy of pensions, and manage the rising financial burden on social protection systems.

Increasing the labour market participation and employment of older people is therefore of key importance to EU policy, which is to be addressed through a comprehensive and sustainable approach known as 'active ageing'. Indeed, in its synthesis report to the 2004 European Spring Council[3] the Commission identified active ageing as one of the three priority areas for which swift action is needed to deliver the Lisbon Strategy. The report highlighted that efforts to promote active ageing must be pursued vigorously, particularly in those Member States with low employment rates for older workers and low average exit ages from the labour market. More recently, the European Commission's Green Paper on demographic change[4] has again highlighted the challenge of an ageing population in Europe.

The promotion of active ageing is reflected in two complementary targets that the EU has set itself – the 2001 Stockholm European Council set a target that by 2010 at least 50% of the EU population aged 55–64 should be in employment, while the 2002 Barcelona European Council concluded that 'a progressive increase of about five years in the effective average age at which people stop working in the EU should be sought by 2010'. Within the European Employment Strategy, the need to improve the labour market participation of older workers is fully taken into account in the Employment Guidelines (2005 to 2008)[5], which highlight that as part of a new intergenerational approach particular attention should be paid to promoting access to employment throughout working life. In the framework of the Open Method of Coordination (OMC) in the field of pensions, the 2006 Joint Report on Social Protection and Social Inclusion[6] highlighted that to ensure adequate and sustainable pension systems, Member States are implementing a three-pronged strategy of reducing public debt, reforming pensions and increasing employment, and that many have undertaken reforms that have begun to translate into higher employment rates of older people, notably by strengthening incentives to work longer.

To address the challenge of the ageing population and meet the targets the EU has set itself, it is essential to create the necessary conditions to support people who wish to take

1 Conventionally the concept of 'older workers' has logically focused on the age group approaching retirement, namely the group aged 55–64 within Europe. Most of the analysis in this chapter is therefore focused on people in the age range 55–64, since this is also the main age group targeted by ageing-related policies, but, where relevant, some analysis is also provided on the group aged 65 and over. With demographic ageing and the target of delaying the exit age by five years, the latter group will enter more and more into labour supply considerations and it is therefore useful to also examine the factors which affect their participation. Indeed, policy and pension revisions currently being considered in many Member States could well lead to a need to revise the currently accepted definition of 'older workers' at some stage in the future.

2 The analysis of developments between 2000 and 2006 mainly focuses on the EU-25 Member States and the associated aggregate due to the availability of more complete data series over this period, and due to a significant break in series in the employment rate of older workers in Romania for technical reasons during this timeframe. Furthermore, several sections refer only to the EU-25 since the relevant data series currently available are not yet set up to include the EU-27 aggregate (e.g. Eurostat population projections).

3 *Delivering Lisbon – Reforms for the Enlarged Union*, report from the Commission to the Spring European Council, COM(2004) 29.

4 European Commission, 'Confronting demographic change: A new solidarity between the generations', COM(2005) 94 final.

5 *Council Decision of 12 July 2005 on Guidelines for the employment policies of the Member States*, (2005/600/EC).

6 Joint Report on Social Protection and Social Inclusion 2006, adopted by the Council on 10 March 2006 (7294/06)

advantage of the opportunities offered by longer and more productive lives in better health. For individual companies and the economy as a whole it is essential to raise the employment rate for older workers, so that any labour shortage can be averted or mitigated by making fuller use of the available resources. For this to be successful, governments and social partners need to work together to develop the skills and employability of older people while maintaining the health, motivation and capacities of workers as they age. Age discrimination and negative stereotypes of older workers must be tackled, while working conditions and employment opportunities must be adapted to an age-diverse workforce.

In light of the above, the purpose of this chapter is not only to provide an update of the analysis on older workers presented in the 2003 *Employment in Europe* report[7] but also to carry out a review of the main features of the recent substantial improvement in the labour market situation of this group, to examine the main factors influencing their labour market attachment and the differences and similarities in approaches to active ageing across Member States, and to explore in broad terms the underlying reasons for the remarkable rise in employment of older workers in recent years.

2. DEMOGRAPHIC AND POLICY CONTEXT – WHAT'S AT STAKE

2.1. Demographic context

As stressed by the Heads of State and Government at their informal Hampton Court Summit in October 2005, demographic ageing is one of the main challenges facing the EU in the coming years. The ageing of the EU population is the result of the following main trends:

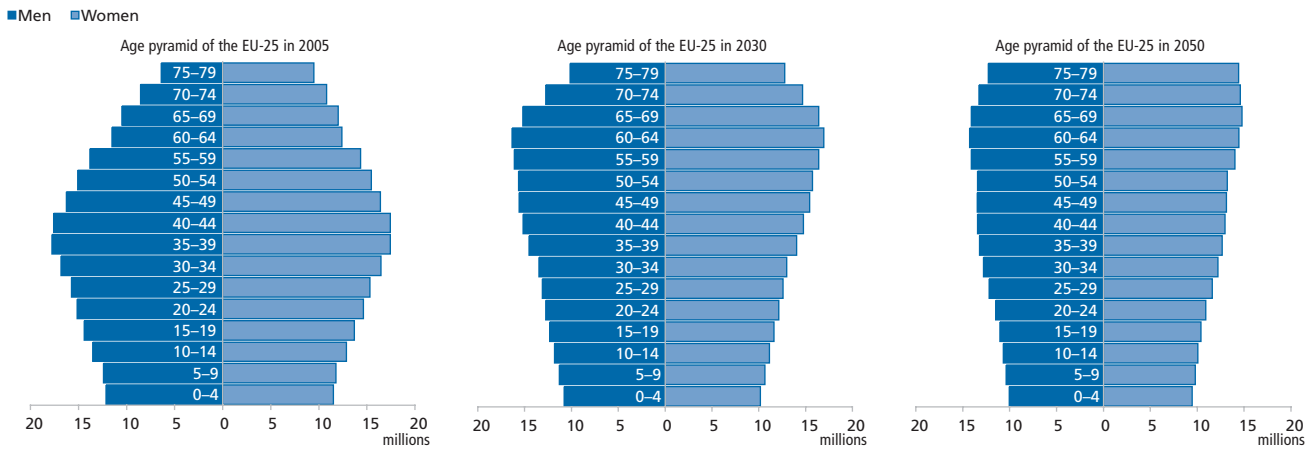
- the low fertility rate, which at 1.5 children is well below the replacement rate of 2.1 needed to maintain the population (disregarding immigration);
- the current step in the population age profile resulting from the post-war baby boom and the subsequent decline in fertility in recent decades, which will progressively move to older ages;
- increasing life expectancy. This is expected to lead to a spectacular increase in the number of people surviving into their 80s and 90s, meaning that many could survive several decades in retirement.

As a consequence of these trends, the total population in the EU is expected to become much older, with a marked change in the age structure (Chart 1). By 2050 almost one in three citizens in the EU will be aged over 65, up from the current level of around one in six. At the same time there will be a marked change in the size and age structure of the working-age population (i.e. those aged 15–64), with the peak of the age distribution moving to higher and higher ages (Chart 2). As a result, participation levels, and overall labour force numbers, will be more and more influenced by the activity patterns of the older generations.

2.1.1. Impact on the working-age population

In economic terms, a key aspect of demographic ageing will be its impact on the overall size of the

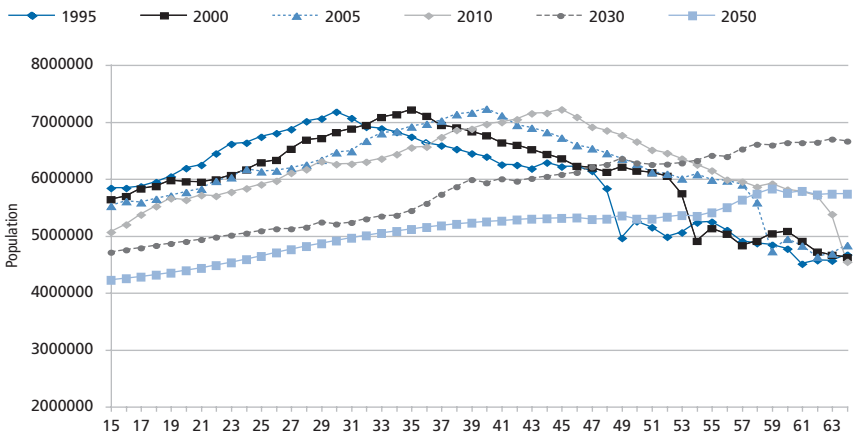
Chart 1: **Developments in the age pyramid structure of the EU-25 from 2005 to 2050**



Source: Eurostat, population projections baseline variant.

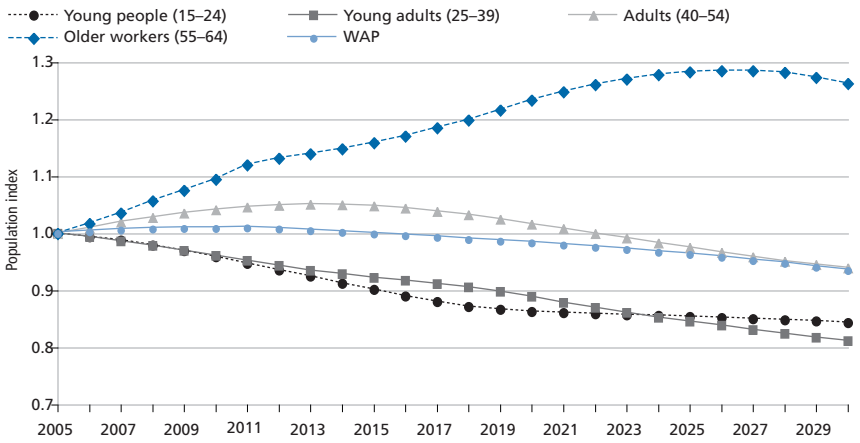
7 *Employment in Europe 2003*, chapter on 'Labour market trends and characteristics of older workers'.

Chart 2: Age profile of the EU working-age population (aged 15–64), 1995–2050



Source: Eurostat demographic statistics and population projections (2004, Baseline variant).

Chart 3: Trends in the size of the working age population and its sub-groups in the EU-25, 2005–2030 (2005=1.0)



Source: Eurostat population projections 2004, Baseline variant.

Table 1 - EU-25 working-age population trends, 2005–2050

Projections for the EU working age population 2005–2050 (in millions)

	2005–2010	2010–2030	2030–2050	2005–2050
Young people (15–24)	-2.4	-6.7	-5.0	-14.0
% change	*-4.1%*	*-12.0%*	*-10.2%*	*-24.3%*
Young adults (25–39)	-3.9	-14.9	-6.1	-24.9
% change	*-3.9%*	*-15.6%*	*-7.5%*	*-25.0%*
Adults (40–54)	4.1	-10.0	-12.8	-18.7
% change	*4.2%*	*-9.8%*	*-13.8%*	*-19.0%*
Older workers (55–64)	5.0	8.7	-9.0	4.7
% change	*9.5%*	*15.3%*	*-13.6%*	*9.1%*

Source: Eurostat population projections 2004, baseline variant

working-age population (those aged 15–64), which is expected to decrease by around 53 million (or 17%) by 2050 compared with 2005 levels. Although continuing to rise in the medium term, the working-age population in the EU-25 will start declining soon after 2010, while there will be marked variations in developments for underlying age groups (Chart 3).

By 2030, the working-age population in the EU-25 will total 288 million, down from 308 million in 2005, while there will be 116 million people aged over 65, compared to 77 million in 2005. The number of youth (aged 15–24) and young adults (25–39) is already falling, and for both groups the population will continue to decline significantly (down 12% and 16% respectively between 2010 and 2030 (Table 1)). Although rising initially, the number of 40–54 year olds will also start to fall shortly after 2010. In parallel, the number of people aged 55–64 will grow by 9.5% between 2005 and 2010 (from 52 million to 57 million), and by 15.3% (to 66 million) between 2010 and 2030. As a result, the working-age population will include an increasingly important share of older people in the age range 55–64 in the next two decades, with the share rising from 17% in 2005 to stabilise at around 23% from 2025 onwards (Chart 4 - see page 56). Employers will therefore have to rely increasingly on the experience and skills of older workers. At the same time, the dependency ratio (the number of people aged 65 years and older relative to those of working-age) is foreseen to rise from the current 25% to 40% by 2030, and reach 53% by 2050, with the result that instead of having four people of working age for every person aged 65 and over as at present there will be only two people by 2050.

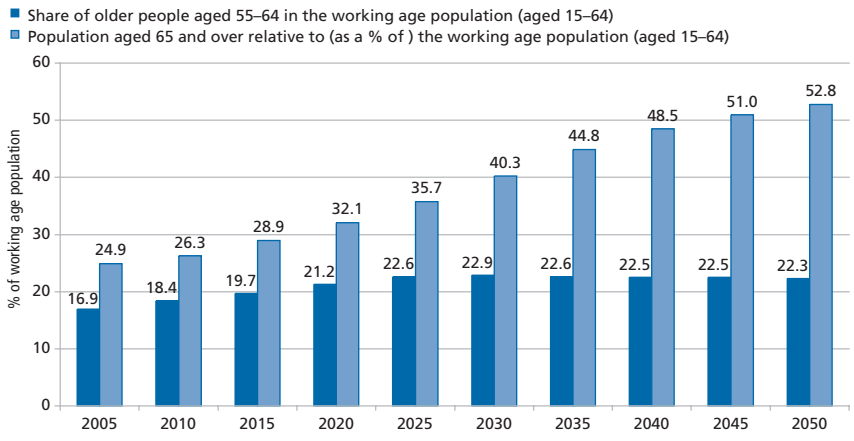
Underlying the general evolution foreseen at EU level in the working-age population are marked differences across individual Member States (Table 2 - see page 56). In the medium term (between 2005 and 2010), most Member States should see a moderate increase in the size of the working-age population, with more pronounced increases in Cyprus, Ireland, Luxembourg, Malta and Spain. In contrast, the working-age population would already have declined in the Czech Republic, Germany, Hungary,

Italy and the three Baltic States (Estonia, Latvia and Lithuania). At the same time, the share of older people aged 55–64 within the working-age population will increase for all Member States except Austria and Sweden, with the most noticeable rises in France, Finland, Slovenia, Slovakia and especially Poland. Currently the shares are highest in the Scandinavian Member States, which partly explains why these countries have already taken significant steps to improve the labour market participation of older workers with some success.

In the longer term, and in purely demographic terms, the impact on Member States of changes in the size and structure of the working-age population up to 2050 are likely to be most problematic for the Czech Republic, Estonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Portugal, Slovenia, Slovakia and Spain, and it is these Member States which may face the greatest pressure to adapt labour markets accordingly. They will suffer substantial declines in the working-age population of the order of 20–30% by 2050, and almost all will also see a marked rise (in excess of 5 percentage points) in the share of older workers in that population[8] (Table 3). Among these, Lithuania, Poland and Slovakia appear to face the greatest challenge arising from changes in the size and structure of the working-age population.

A group consisting of Belgium, Denmark, France, the Netherlands and the United Kingdom should experience much lower reductions in the

Chart 4: Importance of shares of older people in population projections for the EU-25, 2005–2050



Source: Eurostat population projections 2004, baseline variant.

Table 2 - Projected developments in the working age population and the share of older people aged 55–64 in the WAP

	Change in the WAP relative to 2005 level (% change)			Share of older people aged 55–64 in WAP (%)			
	2010	2030	2050	2005	2010	2030	2050
BE	2.0	-3.9	-8.1	16.8	18.9	21.5	20.8
CZ	-1.0	-15.0	-30.7	18.5	20.5	22.7	24.8
DK	0.2	-4.9	-8.7	19.8	20.2	22.2	20.1
DE	-1.3	-12.2	-23.7	17.6	18.0	24.3	23.4
EE	-2.0	-16.6	-26.9	16.2	17.5	19.6	23.9
IE	4.9	18.5	14.3	14.1	15.6	19.7	20.2
EL	1.0	-5.0	-21.5	16.5	18.1	24.7	22.7
ES	2.9	-2.1	-23.1	15.2	16.4	25.5	22.2
FR	2.1	-1.1	-4.4	16.6	19.5	20.9	19.9
IT	-0.5	-10.0	-26.9	18.1	18.9	26.6	22.7
CY	8.5	16.2	16.7	14.9	16.3	18.7	24.2
LV	-2.4	-18.6	-30.0	16.4	16.5	20.3	24.8
LT	-0.5	-14.8	-26.0	15.2	15.5	20.6	25.6
LU	5.3	16.4	28.6	15.3	16.6	20.4	18.8
HU	-1.2	-13.1	-25.3	17.5	19.6	21.2	22.8
MT	5.6	7.0	10.9	17.9	20.5	18.0	22.3
NL	1.7	-2.2	-4.2	17.6	19.3	22.0	19.7
AT	0.7	-5.2	-14.8	17.3	16.9	23.5	22.9
PL	1.5	-13.6	-27.5	14.1	18.1	19.2	25.7
PT	0.5	-6.3	-22.3	16.5	17.9	23.4	21.7
SI	0.1	-11.5	-24.4	15.8	18.6	23.3	23.1
SK	1.4	-11.2	-28.5	14.0	16.9	20.3	26.4
FI	1.0	-9.4	-13.7	19.6	22.3	20.1	21.4
SE	2.1	1.2	3.2	20.1	20.0	20.9	21.5
UK	2.4	0.1	-4.3	17.7	18.3	21.6	21.9

Source: Eurostat, population projections (2004, baseline variant).

8 Some of the 2050 projections may be too pessimistic for certain Member States, as recent data on total fertility rates published by Eurostat indicate a strong improvement in birth rates over the last two-three years in some cases. This is particularly the case in the Czech Republic, Estonia, Sweden and the United Kingdom. New projections will be published by Eurostat in 2008 which may take into account such recent developments and may lead to some revision in the projected situation of Member States.

working-age population (of the order of 4–9%) as well as more moderate rises in the share of older workers in that population. In contrast, Cyprus, Ireland, Luxembourg, Malta and Sweden should all see increases in the overall working-age population, although for the former two the rise in the share of older workers should also be substantial. Sweden is in the fortunate position of expecting growth in the working-age population combined with only a very limited increase in the share of people aged 55–64, although this partly reflects the fact that currently the share in Sweden (20%) is the highest of all Member States. This shows that, although a matter of concern to all countries, some Member States will face a greater challenge from workforce ageing than others, implying that the scale of the adjustment measures necessary will vary across countries.

2.1.2. Labour market exit and life expectancy in retirement

The numbers of workers leaving the labour force and going into retirement will increase markedly over the coming years as a result of the ageing of the EU population and the baby-boom generation (i.e. those born between 1946 and 1965) reaching retirement age, to be replaced by much less populace generations born in the 1970s onwards. This will lead to important changes in the size and age structure of the labour force (i.e. those who are economically active), although the negative effects may be temporarily offset during the coming decade with the support of specially adapted employment and pensions policies. Indeed, recent projections[9] suggest that although the working-age population will begin to fall from just after 2010 onwards, the total number of persons in employment in the EU-25 would continue to increase until around 2017. However, increasing employment rates can only offer a temporary respite, and the full burden of the demographic changes would subsequently be felt.

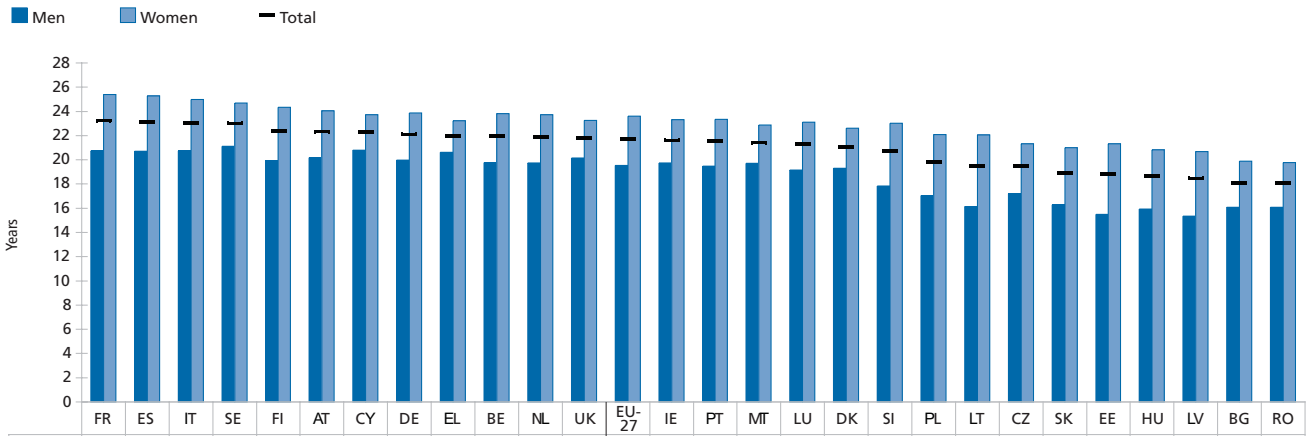
Figures on the age at which people exit the labour market and become economically inactive show that, on average, people within the EU-25 withdrew from the labour force at the age of 60 in 2001. Yet due to improvements in health and living conditions, by the early 2000s life expectancy at the age of 60 had risen on average to around 20 years for men and 24 years for women (Chart 5). This means that people can expect

Table 3: **Projected change 2005–2050 in the WAP and the share of older people (55–64) in the WAP**

		Change in the size of the working age population			
		Increase	Limited decline (<10%)	Medium decline (10-20%)	Strong decline (>20%)
Increase in the share of older people aged 55-64 in the WAP	Low (< 2%)	SE	DK	FI	
	Moderate (2–5%)	LU, MT	BE, FR, NL, UK		IT
	Medium (5–10%)	CY, IE		AT	CZ, DE, EE, EL, ES, LV, HU, PT, SI
	Strong (> 10%)				LT, PL, SK

Source: Eurostat, population projections (2004, baseline variant).

Chart 5: **Life expectancy at the age of 60 in the EU by gender, 2003**



	FR	ES	IT	SE	FI	AT	CY	DE	EL	BE	NL	UK	EU-27	IE	PT	MT	LU	DK	SI	PL	LT	CZ	SK	EE	HU	LV	BG	RO
Men	20.8	20.7	20.8	21.1	19.9	20.2	20.8	20.0	20.6	19.8	19.8	20.1	19.6	19.8	19.5	19.7	19.2	19.3	17.8	17.1	16.1	17.2	16.3	15.5	15.9	15.4	16.1	16.1
Women	25.4	25.3	25.0	24.7	24.3	24.1	23.7	23.9	23.2	23.8	23.7	23.3	23.6	23.3	23.3	22.9	23.1	22.6	23.0	22.1	22.1	21.3	21.0	21.3	20.8	20.7	19.9	19.8
Total	23.2	23.1	23.0	23.0	22.3	22.3	22.3	22.1	22.0	21.9	21.9	21.8	21.7	21.6	21.5	21.4	21.3	21.0	20.7	19.8	19.5	19.4	18.9	18.8	18.6	18.5	18.1	18.0

Source: Eurostat, demographic statistics.

9 Economic Policy Committee and European Commission (2006), 'The impact of ageing on public expenditure: projections for the EU-25 Member States on pensions, healthcare, long-term care, education and unemployment transfers (2004-50)' in *European Economy Reports and Studies*, No. 1.

to live substantially beyond the age at which they withdraw from the labour market, which modifies enormously the meaning of retirement, especially as further improvements in longevity will increase the post-exit years even further. Indeed, it is projected that a European reaching the age of 65 in 2050 could expect to live on average some four to five years longer than those reaching 65 today[10]. In a context where people live on average a further 20 years or more after withdrawing from active life, increasing participation and delaying the exit from the labour force will be essential to support economic growth and ease the mounting pressure on social protection systems, in particular regarding pensions and healthcare systems. There is, therefore, growing public awareness of the need to delay the age at which people exit the labour market, with the results from a recent Eurobarometer survey[11] indicating that 45% of EU-25 citizens aged 15 or older believe that their fellow citizens retire too early.

2.1.3. Impact on economic growth, social security and public finances

Economic growth rates are set to decline with the ageing of the population, mainly due to the effect on overall employment levels of the reduction in the working-age population. The Economic Policy Committee and European Commission 2006 projections forecast that, if current trends and policies remain unaltered, annual GDP growth for the EU-25 will fall systematically from 2.4% over the period 2004–2010 to only 1.2% between 2030 and 2050. Over time, Europe will increasingly have to rely on productivity gains as a main source of economic growth. At the same time, older workers will constitute an increasingly important element of EU labour resources.

Based on current policies, ageing will lead to ever greater pressures on public spending, although the situation varies widely from one country to another. For the EU-25, it is projected[12] that age-related expenditure will rise by around 4% of GDP up to 2050, representing an increase of 10% in public spending. The upward pressure will be felt from 2010 onwards, with about half of the projected increase in public spending used on pensions and the other half on healthcare and long-term care. As a result, overall public finances risk becoming unsustainable in many countries, thereby compromising the future equilibrium of pension and social security systems in general. Indeed, as reported in the Communication to the 2006 Spring European Council[13], based on current policies there is a medium to high risk to the sustainability of public finances in a majority of EU countries. At the same time, as highlighted by the 2007 Joint Report on Social Protection and Social Inclusion, current public pension reforms would often translate in the long term into declines in pension levels at a given retirement age and a given career length (as measured by theoretical replacement rates[14]) in most countries, notably in those which have enacted comprehensive reforms (and improved sustainability). In parallel, Member States are projecting to compensate for this decline in order to ensure future adequacy by extending working lives or increasing supplementary pension savings.

In order to tackle these challenges the EU Member States need to implement structural reforms so as to restrain the long-term expenditure trends and to raise potential growth, notably by raising employment rates and the effective retirement age. Reforms are thus needed to redress past reductions in the effective retirement age, and to cope with the baby-boom generation retiring and the increases in the dependency ratio, so as to ensure, in particular, adequate and sustainable retirement provision. EU governments have, in general, not remained inactive and recent reforms, especially in the fields of public pensions, health, employment and education systems, have begun to pay off, as evidenced in particular by the employment rate for older workers, which has been rising rapidly since 2000.

2.2. Policy context

2.2.1. Stockholm and Barcelona targets

Demographic ageing and its impact on employment in Europe is widely recognised as one of the main challenges facing the EU. This is clearly reflected in the fact that the EU has set itself two key objectives with regard to employment of older people. In 2001, the Stockholm European Council set a target that, by 2010, at least half of the EU population aged 55–64 should be in employment. This was then followed by the conclusion of the 2002 Barcelona European Council that 'a progressive increase of about five years in the effective average age at which people stop working in the EU should be sought by 2010', the aim being to step up

10 European Commission, 'The demographic future of Europe – from challenge to opportunity', COM(2006) 571 final.

11 Special Eurobarometer 261, *European Employment and Social Policy*, October 2006.

12 Communication from the European Commission, 'The long-term sustainability of public finances in the EU', COM(2006) 574.

13 Communication from the Commission to the Spring European Council, implementing the renewed Lisbon Strategy for growth and jobs, 'A year of delivery', 2006

14 Replacement rates show the level of pensions as a percentage of previous individual earnings at the moment of take-up of pensions. Public pension schemes and (where appropriate) private pension arrangements are included, as well as the impact of taxes, social contributions and non pension benefits that are generally available to pensioners. Theoretical replacement rates are calculated for an hypothetical worker, with a given earnings and career profile (and a corresponding affiliation to pension schemes) and by taking into account enacted reforms of pension systems.

efforts to allow older workers to remain longer in the labour market.

In its synthesis report to the 2004 European Spring Council[15], the Commission identified active ageing as one of the three priority areas for which swift action is needed to deliver the Lisbon Strategy. It highlighted that efforts to promote active ageing must be pursued vigorously, particularly in those Member States with low employment rates for older workers and low average exit ages, and called for action on four fronts combined with pension reforms: removing disincentives for workers to work longer, discouraging early retirement, stimulating lifelong learning to avoid skills obsolescence, and improving working conditions and maintaining the overall health status of the mature population. In line with this it proposed the following actions for Member States and the social partners:

- Removing financial disincentives for workers to retire later and for employers to hire and keep older workers. This includes adjusting specific tax-benefit mechanisms and employment and pension legislation, to reduce provisions discouraging older workers from staying longer in employment and to discourage early exits from the labour market. Efforts to discourage early retirement should be pursued in all Member States.

- Promoting access to training for all and developing lifelong learning strategies, particularly for older workers who are underrepresented in training.

- Improving quality in work to provide an attractive, safe and adaptable work environment throughout working life, including the provision of part-time and career breaks.

More recent key communications from the European Commission on the issue of Europe's demographic future[16] have again highlighted the major challenge of coping with an ageing population in Europe and its consequences for the labour market.

2.2.2. Employment Guidelines (2005 to 2008)

Within the European Employment Strategy, the need to improve the labour market situation of older workers is fully taken into account in the Employment Guidelines (2005 to 2008) adopted by the Council in July 2005. These emphasise that strategies for the management of an ageing workforce must necessarily extend over several dimensions, and highlight that as part of a new intergenerational approach particular attention should be paid to promoting access to employment throughout working life.

One overall aim of the guidelines is attracting and retaining more people in employment, increasing labour supply and modernising social protection systems. In this context it is emphasised that promoting an increased labour supply in all groups together with a new life-cycle approach to work, and modernising social protection systems to ensure their adequacy, financial sustainability and responsiveness to changing needs in society, are all the more necessary because of the expected decline in the working-age population. The low employment rate of older workers is specifically mentioned as an issue requiring special attention and emphasis is put on the need for the right conditions to be put in place to facilitate progress in employment, including for those wishing to prolong working lives.

Specific actions targeted at older people are called for under several of the guidelines. Guideline 17 (*Implement employment policies aiming at full employment, improving quality and productivity at work, and strengthening social and territorial cohesion*) recalls, among other things, that policies should contribute to achieving an average EU employment rate for older workers of 50% by 2010, and to reducing unemployment and inactivity. Under Guideline 18 (which concerns the promotion of a lifecycle approach to work) specific measures called for include:

- 'support for active ageing, including appropriate working conditions, improved (occupational) health status and adequate incentives to work and discouragement of early retirement'

- 'modern social protection systems, including pensions and healthcare, ensuring their social adequacy, financial sustainability and responsiveness to changing needs, so as to support participation and better retention in employment and longer working lives'.

Furthermore, although not specifically mentioned, older workers are also concerned by measures under several of the other guidelines. For example, Guideline 19 (*Ensure inclusive labour markets, enhance work attractiveness, and make work pay for jobseekers, including disadvantaged people, and the inactive*) concerns facilitating access to employment and requires breaking down barriers to the labour market by assisting with effective job searching, facilitating access to training and other active labour market measures and ensuring work pays, including through a continual review of the incentives and disincentives resulting from tax and benefits systems. Guideline 21 (*Promote flexibility combined with employment security and*

15 Delivering Lisbon – Reforms for the Enlarged Union', report from the European Commission to the Spring European Council, COM(2004) 29.

16 European Commission, 'Confronting demographic change: a new solidarity between the generations' COM(2005) 94 final, and 'The demographic future of Europe – from challenge to opportunity' COM(2006) 571 final.

reduce labour market segmentation) concerns the need to improve the adaptability of workers and enterprises to better anticipate, trigger and absorb economic and social change, and calls for employment-friendly labour costs, modern forms of work organisation and well functioning labour markets, allowing more flexibility combined with employment security. The promotion and dissemination of innovative and adaptable forms of work organisation with a view to improving quality and productivity at work (including health and safety) and support for transitions in occupational status (including training) are two of the measures highlighted.

Furthermore, the measures under the guidelines which fall within the overall objective of improving human capital through better education and skills also apply to older workers. It is clearly recognised that the EU needs higher and more effective investment in human capital and lifelong learning in order to enhance access to employment for all ages, raise productivity levels and improve quality at work. In response, efficient lifelong learning strategies are called for with a view to enhancing participation in continuous and workplace training throughout the life cycle, especially for the low-skilled and older workers.

2.2.3. Active ageing

The EU policy response is therefore based on a comprehensive and sustainable approach known as 'active ageing', which employs a range of tools beyond just retirement reforms. This recognises that in order to be able to seriously consider working longer, people must be in good physical and mental health and have good prospects of remaining so for longer, they must have access to more flexible retirement schemes and working arrangements as well as appropriate working conditions, they must have the opportunity to, and be prepared to, update and make the most of the skills they have gained, and they must have access to available employment opportunities and not be faced with discriminatory prejudices.

As part of the new intergenerational approach advocated by the European Employment Strategy, it is recognised that particular attention should be paid to promoting access to employment throughout working life. In its Communication on 'Increasing labour force participation and promoting active ageing'[17], the European Commission emphasised that 'the objective of a comprehensive strategy should be to maximise each individual's capacity to participate over his or her whole life cycle. Prevention is the key to a successful integration and retention of people in the labour market. The aim is to ensure the positive interaction of economic, employment and social policies with the view to supporting a long-term sustainable working life in which all human resources in society are fully utilised.' As part of this, raising the basic educational level and preventing the erosion of skills throughout adult working life are seen as key to raising participation and employment. Furthermore, the report states that 'high employment and activity rates among the prime age group could be translated into significantly higher employment rates for older workers up to a decade later if a dynamic approach is taken to retain these workers longer in the labour market through better working arrangements and quality in work', and that 'appropriate incentives and services at decisive stages in life, for example the provision of childcare facilities for parents and better reconciliation between work and family responsibilities, will avoid early exits from the labour market'.

As the results in the next section show, there has been a substantial improvement in the labour market situation of older people in recent years, suggesting that recent policy developments in the area of active ageing are starting to pay off.

3. CURRENT LABOUR MARKET SITUATION AND RECENT EMPLOYMENT TRENDS FOR OLDER WORKERS

3.1. Labour market characteristics and comparisons with other age groups

According to the EU *Labour Force Survey* (LFS), of the 56.6 million people aged 55–64 in the EU-27 in 2006, 24.6 million were in employment, 1.6 million were unemployed and 30.4 million were inactive. In terms of the share of total employment, those aged 55–64 accounted for 11.5%, or just over one in nine, while they accounted for just over 17% of the total working-age population (aged 15–64). For the group aged 65 and over, amounting to 81.0 million, only 3.5 million were in employment (accounting for below 2% of total employment) while the rest were essentially inactive.

The employment rate for those aged 55–64, at 43.5% in 2006, is around half that of the prime working-age (25–54) population (78.1%) and one third less than that for the working-age population as a whole (64.4%). Furthermore, there are strong gender differences in the employment rates of people aged 55–64, with the rate for older men averaging 52.6% and that for older women only 34.8%, although this gender gap (17.8 percentage points) is not substantially different from that for prime-age men and women (15.7 percentage points). Nevertheless, differences in employment rates for

17 European Commission, 'Increasing the employment of older workers and delaying the exit from the labour market', COM(2004) 146 final.

older workers according to gender are substantial in most Member States (Chart 6), and indeed the low employment rate for older workers is, to a large extent, a result of the relatively low rates for older women. As shown later this is due at least in part to lower levels of female participation in general, including at younger ages, the lower skill levels of older women, and lower statutory retirement ages for women compared to men in many Member States.

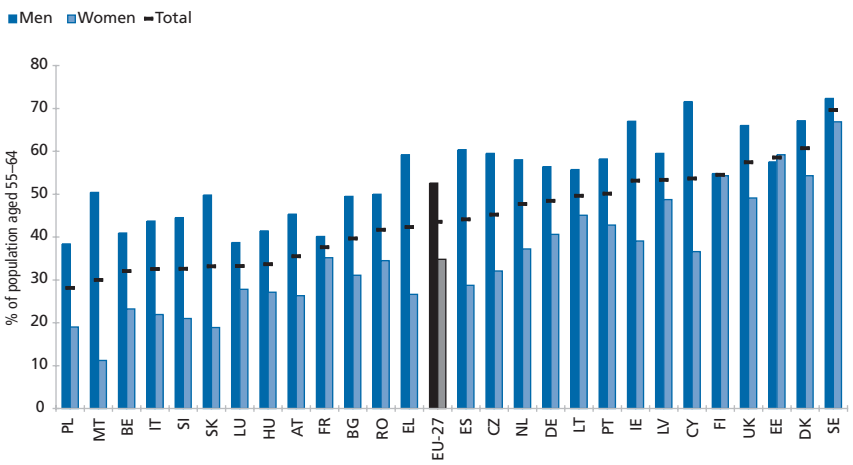
A comparison of the characteristics of the population in employment aged 55–64 with other age groups indicates some of the more typical features of older workers' employment (Table 4). Firstly, larger shares of older people in employment are men (59%) compared to the younger age groups (55%), i.e. there is a relatively lower involvement of older women in employment (41%). Similarly part-time employment is a more prominent feature of older workers' employment (22%) compared to prime-age workers (16%), while, in contrast, fixed-term employment is relatively rare in this age group. Another key feature is the prevalence among older workers of self-employment, which accounts for almost a quarter of all employment among 55–64 years olds compared to only 15% of prime-age workers.

The sectoral composition of employment of older workers within the EU-27 is also quite distinctive (Chart 7 - see page 62). Although, as for the young and prime working-age groups, two-thirds of older workers are employed in the services sector, there are significant differences in the shares employed in industry (mainly composed of manufacturing and construction) and agriculture. A higher share of older workers' employment is in agriculture compared to the other age groups (8.6% compared to around 5% for young and prime-age workers), while the share in industry is lower (24.5% versus 28%).

Furthermore, while employment of older workers in agriculture represents only 8.6% of total employment for that age group, it accounts for around 17% of all agricultural employment, showing the relative importance of older workers to this sector in particular. Education is the only other sector where older workers account for a similarly high share (over 15%) of total sectoral employment, the share in most other sectors being broadly around the 10% level.

At EU level, older workers are relatively over-represented in knowledge-intensive sectors, such as education and health and social work, compared to the younger age groups, and, with the clear exception of agriculture, under-represented in those sectors where the work generally involves more physical than mental effort (such as manufacturing, construction, wholesale and retail trade and repair, and hotels and restaurants). This structural composition of older workers' employment appears relatively positive in light of major underlying trends, such as the general shift towards a more knowledge-based economy and population ageing, which are likely to create greater demand and employment opportunities in those sectors (apart from agriculture) where older workers'

Chart 6: Employment rates across EU Member States for older workers (aged 55–64), 2006



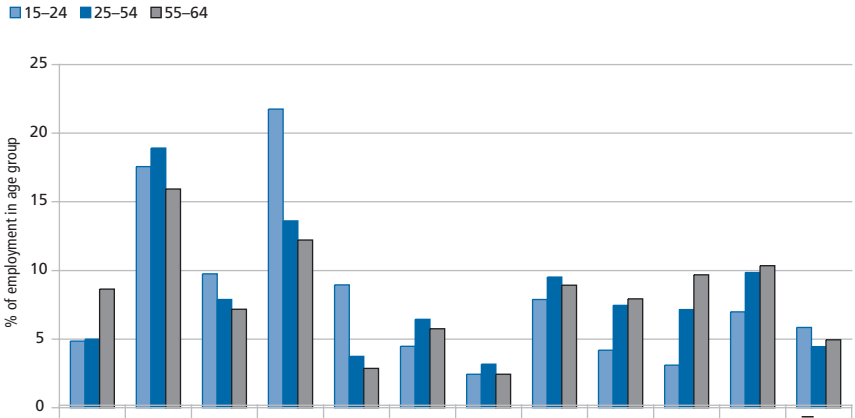
Source: Eurostat, EU LFS, 2006 annual average.
Note: French and German data for 2006 are provisional.

Table 4 - Characteristics of older workers' (aged 55–64) employment in the EU-27 compared to other age groups, 2006 (shares (as %) of employment within the age group by sex and type of employment)

	Age group	Men	Women	
Sex	15–24	55.0	45.0	
	25–54	55.1	44.9	
	55–64	58.7	41.3	
		Total	Men	Women
Part-time	15–24	25.3	18.5	33.7
	25–54	15.8	4.8	29.4
	55–64	22.0	10.6	38.2
		Total	Men	Women
Fixed-term	15–24	40.9	41.0	40.7
	25–54	11.4	10.8	12.2
	55–64	6.7	6.5	6.9
		Employee	Family worker	Self-employed
Professional status	15–24	92.9	3.1	4.0
	25–54	83.9	1.4	14.7
	55–64	74.5	2.6	22.9

Source: Eurostat, EU LFS, 2006 annual average.
Note: French and German data for 2006 are provisional.

Chart 7: Sectoral employment structure in the EU-27 by sector and age group, 2006 (% of employment in each age group)



	Agriculture, fishing and forestry	Manufacturing	Construction	Wholesale and retail trade	Hotels and restaurants	Transport, storage & communication	Financial intermediation	Real estate, renting & business	Public administration, defence	Education	Health & social work	Community & personal services
15-24	4.9	17.6	9.8	21.8	8.9	4.5	2.4	7.9	4.2	3.1	7.0	5.9
25-54	5.0	18.9	7.9	13.6	3.7	6.4	3.2	9.5	7.5	7.1	9.8	4.5
55-64	8.6	15.9	7.2	12.2	2.9	5.8	2.4	8.9	7.9	9.7	10.3	4.9

Source: Eurostat, EU LFS, 2006 annual average.

Table 5 - Occupational employment structure in the EU-27, 2006, as % shares of total employment in age group

	15–24	25–54	55–64
All			
Skilled non-manual	19.1	40.0	41.6
Low-skilled non-manual	38.9	23.5	19.6
Skilled manual	29.2	27.3	27.4
Elementary occupations	12.8	9.2	11.4
Men			
Skilled non-manual	15.5	38.0	43.3
Low-skilled non-manual	23.0	13.2	9.9
Skilled manual	46.1	40.9	37.9
Elementary occupations	15.4	7.8	8.8
Women			
Skilled non-manual	23.3	42.4	39.2
Low-skilled non-manual	58.0	35.9	33.4
Skilled manual	8.9	10.8	12.4
Elementary occupations	9.8	10.9	15.1

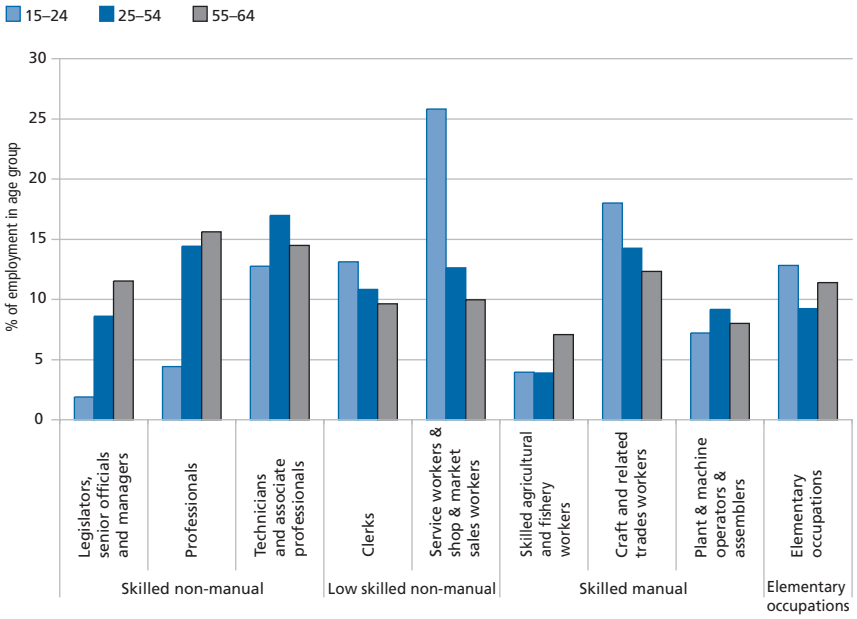
Source: Eurostat, EU LFS, 2006 annual average.
Note: Excludes employment in the armed forces.

employment is more typical (e.g. education, and health and social work).

In terms of occupational structure, although the employment structure for older workers and people of prime working age are broadly similar, and both markedly different from that for youth, older workers are slightly more concentrated in the skilled non-manual and elementary occupations than prime working-age people, but less so in the low-skilled non-manual occupations (Table 5). Employment shares in the skilled manual occupations are similar for older and prime working-age workers, due to the higher share of older people employed in 'skilled agricultural and fisheries workers' occupations compensating for lower shares in 'craft and related trades workers' and 'plant and machine operators and assemblers' occupations (Chart 8). Within the skilled non-manual occupations, older workers have relatively greater shares of employment in the highest skilled occupations (i.e. in the 'legislators, senior officials and managers' and 'professionals' categories).

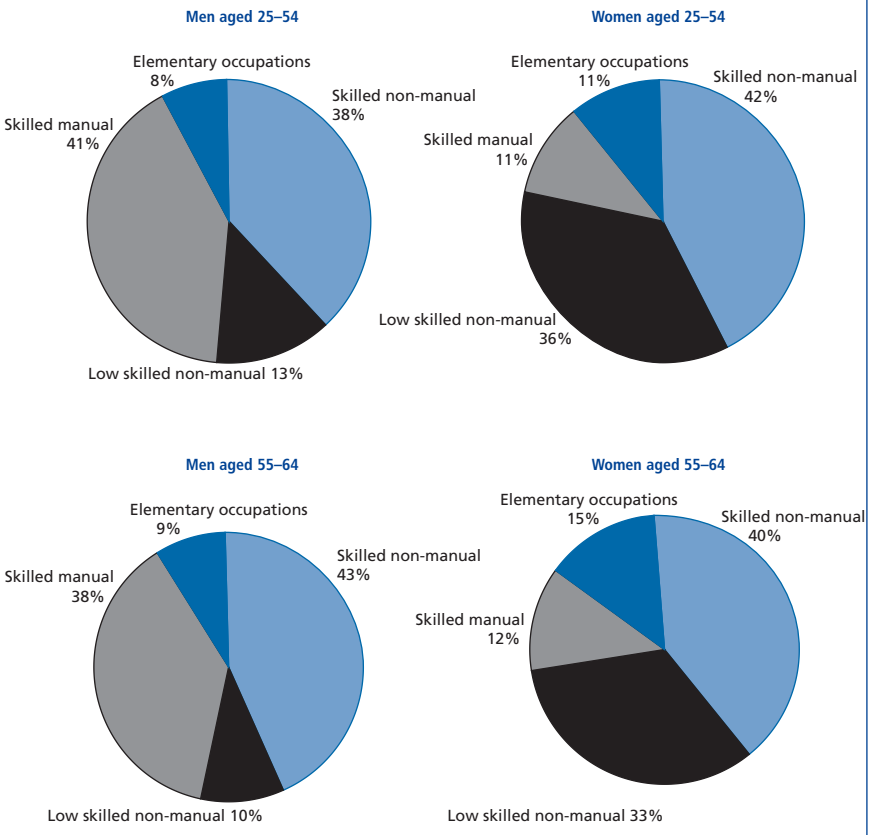
Looking also at the occupational employment structure from a gender perspective (Table 5 and Chart 9), for older male workers, there is a higher share of employment in skilled non-manual occupations than for their prime working-age counterparts, partly reflecting the tendency for higher skilled people to remain longer in employment than the low-skilled. In contrast, older female workers are less concentrated in the skilled non-manual occupations than those aged 25–54, and relatively more concentrated in the elementary occupations, partly reflecting the lower skill levels of the older generation of female workers and the improvements in education for the younger cohorts of females in recent decades. Comparing older men and older women directly, there are large differences in occupational employment structure between the sexes. While employment shares in the skilled non-manual occupations are broadly similar, employment of older men is relatively much more concentrated in the skilled manual occupations, while older women are relatively more concentrated in the low-skilled non-manual and elementary occupations.

Chart 8: **Occupational structure of employment in the EU-27 by age group, 2006**



Source: Eurostat, EU LFS, 2006 annual average.
Note: Excluding employment in armed forces.

Chart 9: **Occupational employment structure in the EU-27 of prime-age and older worker age groups, by sex, in 2006**



Source: Eurostat, EU LFS, 2006 annual average.

3.2. Recent labour market trends and progress towards the targets

3.2.1. Recent overall trends for older workers

One of the most salient features of developments in the EU labour market in recent years has been the sharp rise in the employment rate of older workers since 2000 (Chart 10 - see page 65), even more remarkable as this has taken place during a period that, for a large part, (over the years 2001 to 2004) was characterised by sluggish economic and employment growth. While for the EU[18] as a whole, progress in raising the employment rate of older people was rather slow during the 1990s, since 2000 the increase in the employment rate of those aged 55–64 has generally accelerated, outpacing the rises for the working-age population as a whole (Chart 11 - see page 65). Post 2000, the improvement in the employment rate for older workers has been markedly better than that for both people of prime working age (25–54) and youth (15–24), reversing the situation prior to 2000. As a result, along with the rise in female participation, employment of older workers has been one of the most dynamic components of the EU labour market in recent years, with the employment rate rise for older workers accounting for a substantial share of the rise in the overall employment rate (Box 1 - see page 64).

18 As mentioned previously, the focus is on the EU-25 aggregate rather than the EU-27, due to the marked break in series for Romania between 2001 and 2002.

Box 1 – The impact of rises in older people's employment and participation on overall employment and participation rates in the EU-25

It is interesting to see what impact the changes in employment for older workers between 2000 and 2006 has had on the overall employment rate (i.e. for the population aged 15–64) in the EU. For this purpose, changes in the employment rate can be broken down into a population composition effect (representing the change in employment rates attributable to changes in population structure, assuming that employment rates per age group remained the same) and an employment rate effect (representing the change in the employment rate had the population structure remained the same). This can also be done for participation rates.

This shift share analysis of the contribution of different age groups to the changes in the overall participation and employment rates (Table 6), together with the contribution provided by the demographic component, reveals that the increase in activity and employment rates between 2000 and 2006 was essentially driven by net rate increases for prime-age females and older workers. Almost half of the improvement in the EU employment rate was due to the shift in the employment rate for older workers. The impact of the demographic effect (i.e. the shift in the relative share of different age and gender groups, which is a pure compositional effect) was slightly negative for the working-age population as a whole, due to the reduction of the young and prime-age groups. In contrast, the demographic effect was substantially positive for the older workers age group, with the improvement in the overall participation and employment rate therefore due in part (around one-seventh for employment rates) to the increasing share of older workers.

Table 6 - **Contribution to changes in activity and employment rates in the EU-25 between 2000 and 2006 by age group**

Percentage point change 2000–2006	Activity Rates		Employment Rates	
Total (for WAP) (= 1 + 2 + 3)	1.8	100%	2.5	100%
Contribution from shift in rate				
Total WAP (1)	**1.9**	**108%**	**2.6**	**104%**
15–24	-0.3	-16%	-0.1	-4%
25–54	1.1	60%	1.5	61%
55–64	1.1	64%	1.2	47%
Men	**0.4**	**20%**	**0.6**	**23%**
15–24	-0.1	-8%	-0.1	-3%
25–54	0.0	2%	0.2	6%
55–64	0.5	26%	0.5	20%
Women	**1.5**	**87%**	**2.0**	**81%**
15–24	-0.2	-9%	0.0	-1%
25–54	1.0	58%	1.4	55%
55–64	0.7	38%	0.7	27%
Contribution from demographic effect				
Total WAP (2)	**-0.2**	**-12%**	**-0.2**	**-6%**
15–24	-0.3	-14%	-0.2	-8%
25–54	-0.3	-19%	-0.3	-12%
55–64	0.4	21%	0.3	14%
Interaction effect (residual effect)				
Total WAP (3)	**0.1**	**4%**	**0.1**	**2%**
15–24	0.0	0%	0.0	0%
25–54	0.0	0%	0.0	0%
55–64	0.1	4%	0.1	3%

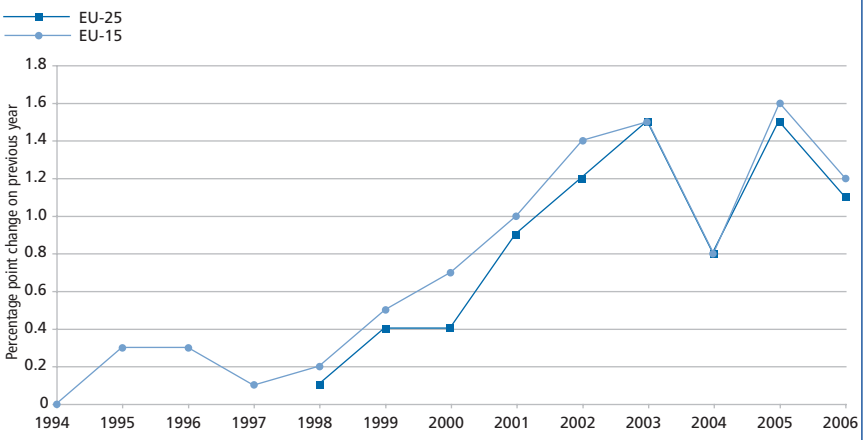
Source: DG EMPL calculations based on Eurostat, LFS 2000 spring data and 2006 second quarter data.

3.2.2. Progress towards the Stockholm target

In total, between 2000 and 2006, the employment rate of people aged 55–64 rose by 7 percentage points at EU-25 level, taking the average rate from 36.6% to 43.6%, and with the increase higher for older women (up 8 percentage points) than for older men (up 5.9 percentage points). This reflects marked increases in almost all Member States (Chart 12), with only Poland and Portugal recording declining rates, although for the latter the rate is already relatively high and just above the 2010 target. However, despite the substantial rises of recent years, there is still a gap of 6.5 percentage points to the Stockholm target for older people. Furthermore, there remains large variations in employment rates for older people aged 55–64 at the level of individual Member States, which in 2006 ranged from as low as 28% in Poland to as high as almost 70% in Sweden, and with, in general, a situation of high rates in northern Member States and low rates in southern European countries.

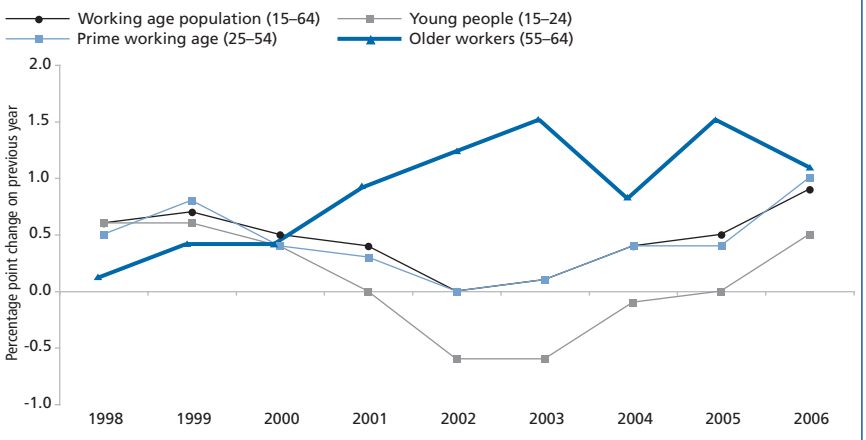
In 2006, nine of the EU Member States (Cyprus, Denmark, Estonia, Finland, Ireland, Latvia, Portugal, Sweden and the United Kingdom) had

Chart 10: Year-on-year change in employment rates for older workers (aged 55–64) in the EU, 1994–2006



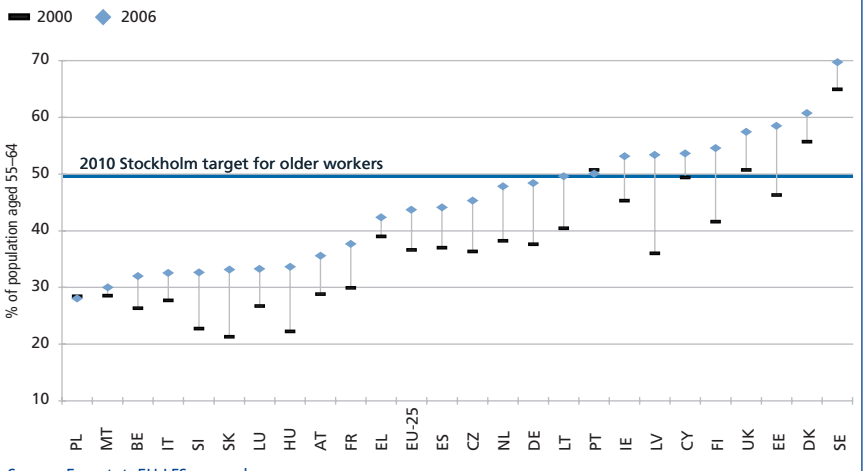
Source: Eurostat, EU LFS, annual averages.

Chart 11: Year-on year change in employment rates in the EU-25 by age group, 1997–2006



Source: Eurostat, EU LFS, annual averages.

Chart 12: Changes in employment rates across EU-25 Member States for older workers (aged 55–64) from 2000 to 2006



Source: Eurostat, EU LFS, annual averages.
Note: French and German data for 2006 are provisional.

already achieved the 2010 Stockholm employment rate target for older workers, but only three others were within 3 percentage points of it, although this does include the largest Member State, Germany. While substantial gaps remain for many Member States (being of the order of between 15 and 22 percentage points in nine cases), substantial progress has been made towards the target in many countries since 2000. In particular, 20 of the EU-25 have achieved increases of around 5 percentage points or more, with especially strong rises (in excess of 10 percentage points) in Estonia, Finland, Germany, Hungary, Latvia and Slovakia. Apart from Poland and Portugal, only Greece and Malta have had relatively limited success in raising their employment rates for older workers.

In terms of skill levels, employment rate increases for those aged 55–64 have been greatest for the medium-skilled, for whom rates have increased 7.2 percentage points between 2000 and 2006, this increase even exceeding that for the high-skilled (up 5.8 percentage points). In contrast, the improvement has been more limited for low-skilled older workers for whom employment rates have risen less than 5 percentage points. This has somewhat dampened the overall rise for older workers, especially given the high share of low-skilled in the population aged 55–64.

Underlying the rise in older workers' employment rates has been a sharp increase in their labour market participation, with their activity rates also having risen on average by 7 percentage points in the EU-25 between 2000 and 2006. This reflects not only strong increases in activity rates for older women (up 8.2 percentage points), but also, although to a lesser degree, in the participation rate of older men (up 5.8 percentage points) (Chart 13 - see page 66). For older women this is largely a consequence of the longer-term trend of rising female participation in general, with

higher participation in successive cohorts of better educated younger women progressively feeding through into improved participation in older age groups, while for older men it marks a turnaround in the long-term trend of falling participation rates observed since the 1970s. Strong rises in participation for women have also occurred for the age group 45–54, which should have a positive impact in the medium term as this cohort moves into the older workers' age group.

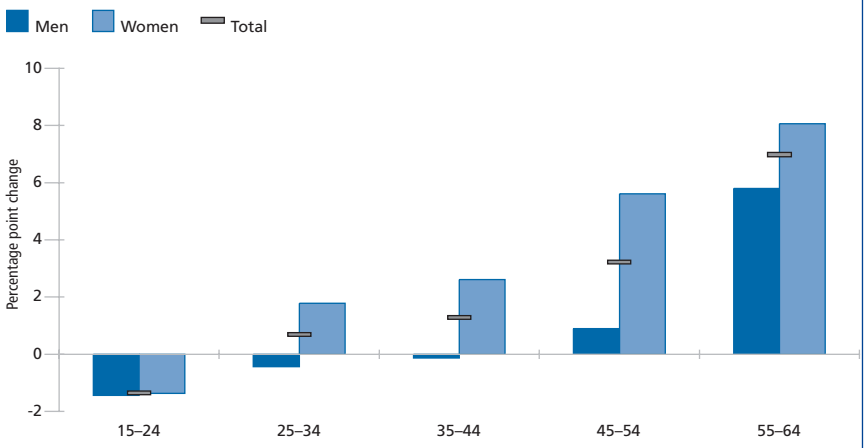
It is also interesting to note that developments in employment rates for the age group 65 and over also show rises in the vast majority of Member States since 2000, suggesting a move towards more people staying longer in work, even beyond the bounds of what is currently considered normal working age (Chart 14), although the overall change at EU level is limited.

3.2.3. Progress towards the Barcelona target

The Stockholm and Barcelona targets are complementary in that they both require an increase in the labour market participation of older workers. However, achieving the Barcelona target would contribute to achieving the Stockholm target only in as much as increased labour force participation leads to employment rather than unemployment, i.e. by keeping older people in the labour force longer and ensuring that they remain in, or can enter, work. Nevertheless, it is clear that countries with high employment rates for older workers generally tend to be those with high average exit ages[19] (Chart 15).

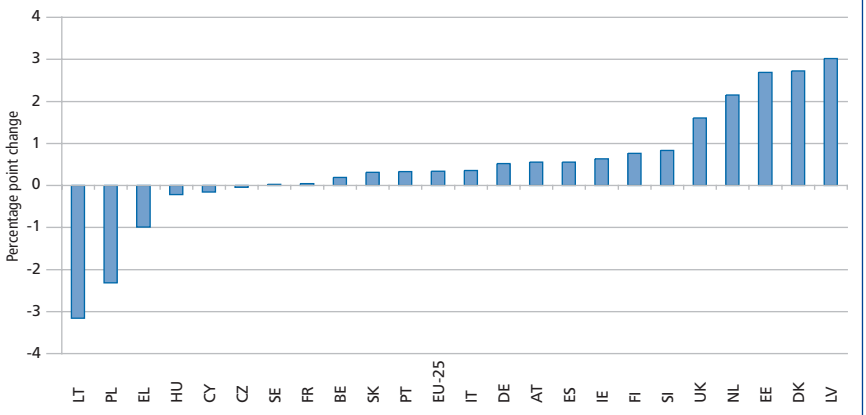
Based on figures for 2005[20], EU Member States can be placed into three main groupings according to the combination of exit age and older workers' employment rate: one in

Chart 13: Change in activity rates for the EU-25 between 2000 and 2006 by 10-year age group and gender



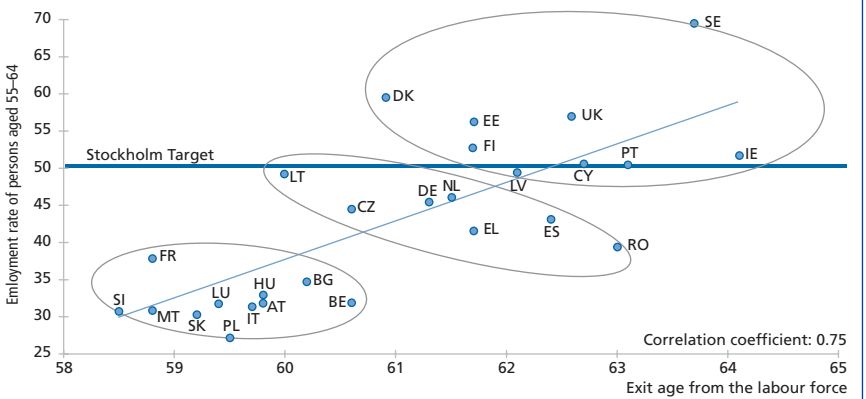
Source: Eurostat, EU Labour Force Survey, spring 2000 and second quarter 2006 results.

Chart 14: Changes in employment rates between 2000 and 2006 for the population aged 65 and over



Source: Eurostat, EU LFS, 2000 spring and 2006 second quarter results.
Note: French and German data for 2006 are provisional.

Chart 15: Situation with respect to the Stockholm and Barcelona targets in 2005



Source: Eurostat, EU LFS, 2005 results.
Note: Average exit age for CY and DE refers to 2004.

19 Exit age figures are derived from a model using activity rates by individual year *Labour Force Survey* data to calculate probabilities for individuals in each same age cohort to stay active in period 't' compared to period 't-1'. For a full description of the model see the annex to *EiE 2003*, Chapter 5. The results from the model do not refer to the effective retirement age but rather provide an estimate for the average exit age from the labour force for an active person aged 50–70, regardless of whether they are receiving a pension or not.

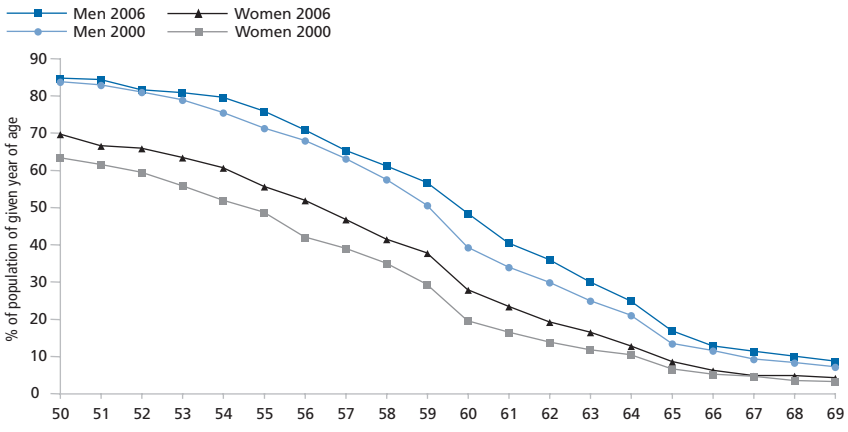
20 Exit age data for 2006 was not available in time for inclusion in this report.

Table 7 - **Labour market indicators for older workers and changes since 2000**

	Labour Market indicators for older people aged 55–64, 2005			Change between 2000 and 2005 (percentage point change)		
	AR	ER	Exit age[1]	AR	ER	Exit age[1]
BE	33.3	31.8	60.6	6.2	5.5	3.8
CZ	46.9	44.5	60.6	8.7	8.2	1.7
DK	62.8	59.5	60.9	4.6	3.8	-0.7
DE	52.0	45.4	61.3	9.1	7.8	0.7
EE	59.0	56.1	61.7	7.7	9.8	0.6
IE	53.1	51.6	64.1	6.6	6.3	0.9
EL	43.2	41.6	61.7	2.7	2.6	0.4
ES	45.9	43.1	62.4	5.0	6.1	2.1
FR	40.0	37.9	58.8	7.9	8.0	0.7
IT	32.6	31.4	59.7	3.6	3.7	-0.1
CY	52.4	50.6	62.7	1.1	1.2	0.4
LV	53.8	49.5	62.1	14.1	13.5	-0.3
LT	52.8	49.2	60.0	7.7	8.8	1.1
LU	32.4	31.7	59.4	5.4	5.0	2.6
HU	34.3	33.0	59.8	11.4	10.8	2.2
MT	31.9	30.8	58.8	2.3	2.3	1.2
NL	48.1	46.1	61.5	9.1	7.9	0.6
AT	33.0	31.8	59.8	2.5	3.0	0.6
PL	30.5	27.2	59.5	-0.8	-1.2	2.9
PT	53.8	50.5	63.1	1.4	-0.2	1.2
SI	32.1	30.7	58.5	8.1	8.0	1.9
SK	35.0	30.3	59.2	10.7	9.0	1.7
FI	56.6	52.7	61.7	10.7	11.1	0.3
SE	72.6	69.4	63.7	4.0	4.5	1.9
UK	58.5	56.9	62.6	5.6	6.2	0.6
EU-25	**45.5**	**42.5**	**60.9**	**6.0**	**5.9**	**1.0**

Source: Eurostat QLFD and Structural Indicators.
Note: [1]. Changes in the exit age refer to changes since 2001 for all Member States except for EL and SI which refer to 2002, and CY and DE for which the latest data refers to 2004.
German data for 2005 are provisional.

Chart 16: **Employment rate of older persons aged 50–69 in the EU-25 by sex and individual year of age in 2000 and 2006**



Source: Eurostat, EU LFS, 2000 spring data and 2006 Q2 data.

which employment rates for older people are high and at or above the Stockholm target, and for which exit ages are generally in excess of 61 years (this group includes the Scandinavian countries, Estonia and Latvia, Ireland and the United Kingdom, and the Mediterranean countries of Cyprus and Portugal); a second in which employment rates are well below the 50% target and exit ages are generally below 60 years (this group includes most of the central and eastern European Member States, Italy and Malta, and Belgium, France and Luxembourg); and a third intermediate group where rates are around the EU average and exit ages are centred around the 61 years mark (among this group are Germany and Spain).

Figures covering the period 2001 to 2005 indicate there has been an overall, although limited, increase in the EU-25 in the average age at which older workers exit from the labour force (i.e. transit from active to inactive life purely in labour market terms) (Table 7). By 2005 the average exit age had risen to 60.9 years compared to 59.9 years in 2001, and with the vast majority of Member States having experienced increases over this period. Nevertheless, there remains a wide variation in exit ages across Member States, ranging from as low as 58.5 years in Slovenia to 64.1 years in Ireland in 2005. It is still the case that no Member State has an exit age above the Barcelona target, equivalent to around 65 years. Strong efforts are therefore still needed to encourage older people not to withdraw from the labour force at relatively early ages and to increase opportunities for them to remain in the labour market.

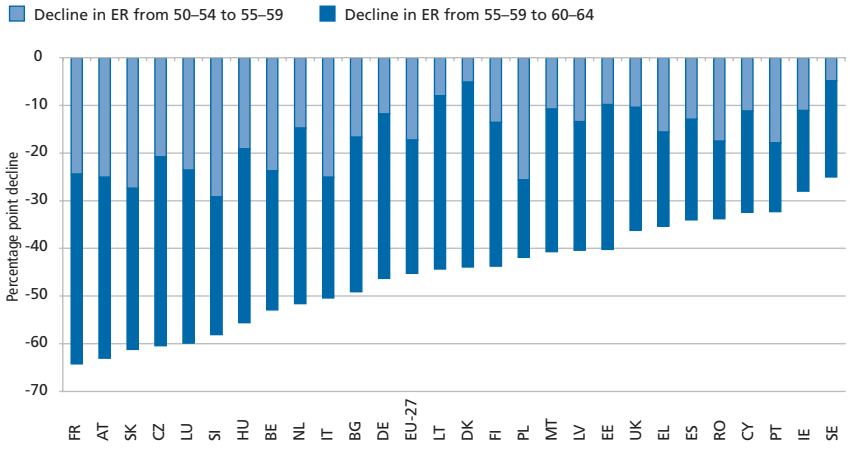
In the context of retaining older people in employment longer, it is interesting to examine the employment rate profile across specific ages. In the EU, the employment rate of people aged 50–69 decreases with age but not in a uniform manner (Chart 16), while men tend to stay in employment to later ages than women. In 2006, between the ages of 50 and 54 years, the employment rate declined on average by close to 2 percentage points per year, but picked up to 4.6 points per year on average from 54 to 59. Between 59 and 60 there was a much more marked decline, in that employment rates fell sharply by 9 percentage points between these two years of age, indicating that this is a key decision point for exiting the labour market. Although an important feature for both sexes, the effect at this age was more pronounced for women than men, reflecting the prevalence across several Member States of 60 years as the official retirement age

for women. Between 60 and 64, rates returned to a slower rate of decline of 5 percentage points per year, but again fell more sharply between 64 and 65 due to a strong adjustment for men. Beyond 65 the rate tends to flatten out, decreasing by a more subdued 1.6 percentage points per year on average until 69.

The employment rate profiles for 2000 and 2006 indicate that older men have tended to stay longer in work compared to 2000, the fall in rates being at a slower pace, and with a slightly less strong adjustment when reaching 60. It is also apparent that the change in employment rates has been more marked for men aged 60 to 64 than the younger age group 55–59, but that for women the opposite has occurred (i.e. the rate adjustment is more concentrated in the older age group for men and in the younger group for women). This suggests that recent policy changes to encourage later withdrawal from the labour market may particularly have influenced participation of older men. In contrast, developments for women reflect more the importance of cohort effects on their employment rates, as women of succeeding generations more likely to be in employment than their predecessors enter the ranks of older workers.

The pattern in the decline in employment rates with age shows considerable variation across Member States (Chart 17). In several (Austria, Belgium, France, Italy, Luxembourg, Poland, Slovakia and Slovenia) there are strong declines (of the order of 25 percentage points or more) in employment rates between age groups 50–54 and 55–59, indicating that many people leave employment relatively early in these countries. In contrast Member States such as Denmark, Estonia, Lithuania and Sweden show little decline between these age groups, which is also relatively limited in the large Member States of Germany, Spain and the United Kingdom. The overall decline in employment rates from 50–54 to 60–64 is substantial, indicating that stemming the exit from employment at early ages would have a large impact on the supply of labour in the 55–64 age group, especially in countries such as Austria, the Czech Republic, Slovakia and France.

Chart 17: Decline in employment rates across EU Member States between age groups 50–54, 55–59 and 60–64, 2006



Source: Eurostat, EU LFS, 2006 annual results.
Note: French and German data for 2006 are provisional.

3.3. Main features of the rise in employment of older people since 2000

According to the EU *Labour Force Survey*, of the 13 million total rise in employment in the EU-25 between 2000 and 2006, around 5.3 million or 41%, was due to the substantial rise in employment of those aged 55–64, and a further 0.5 million from those aged over 65. This compares with a total rise in employment for the prime working-age group (covering the wider age range 25–54) of 7.5 million and a decline in youth employment of 0.4 million.

Furthermore, relative to the level in 2000, employment of the age group 55–64 has increased markedly (by 30%), much more than the growth for the prime working age (up 5%) and youth (down 1–2%) age groups. Employment levels for those aged 65 and over have increased by around 20%.

3.3.1. Changes in employment according to gender and type of employment

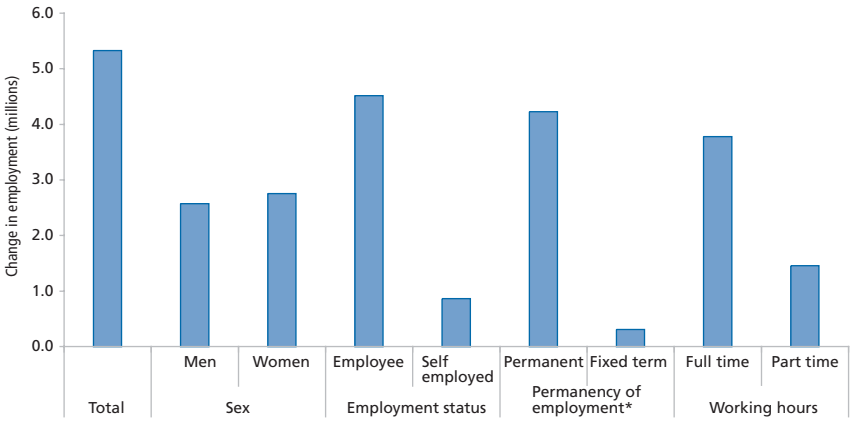
Unlike the rise among prime-age workers, which has been dominated by the increase in employment of women, the rise in older workers' (55–64) employment has been fairly evenly split between the sexes (48% being older men and 52% older women) (Chart 18). The vast majority of the net increase in employment is associated with a rise in employment of older workers who are working as employees rather than as self-employed (around 84% versus 16%), and similarly in permanent rather than fixed-term employment (93% versus 7% of the rise in employees aged 55–64). While part-time employment accounted for a substantial element of the overall employment increase (28%), highlighting the importance of the growing number of people who opt to continue longer in employment but with a reduced number of hours at work, a much greater share was associated with older people in full-time employment. Hence the recent rise in employment of the 55–64 age group as a whole has not been heavily associated with increased prevalence of fixed-term nor self-employment, nor overwhelmingly with part-time employment, but rather with the more traditional or standard types of employment.

However, this result, covering the whole 55–64 age range, may hide the possibility that the more flexible types of employment become more important as age increases. Indeed, when the characteristics of the rise in employment of still older workers (aged 65 and over) since 2000 (Chart 19) are considered, then the importance of the availability of more flexible types of work arrangement in encouraging extended work attachment becomes more evident. Part-time employment and self-employment have been important elements in raising the employment levels of people aged 65 and over, although temporary employment does not seem to play a major role, and does suggest that the availability of such flexible forms of employment has an increasingly important influence on older workers' employment as age rises. The low incidence of fixed-term employment in the expansion of older workers' employment suggests that the recent improvement for older workers has not been associated with a rise in the precariousness of their employment.

3.3.2. Sectoral employment changes

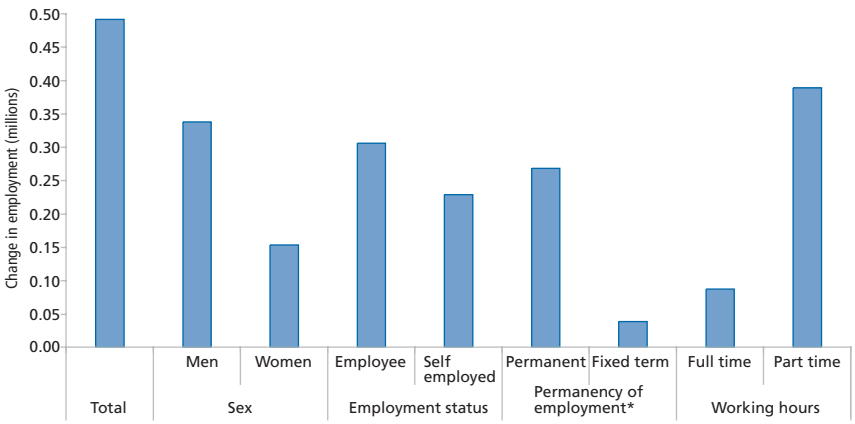
As for other age groups, the vast majority of the overall rise in employment for older workers has been in the services sector, which has risen by around 4.6 million for this age group since 2000 (accounting for around a third of the net employment creation in the sector). The largest increases in employment for older workers have occurred within the 'health and social work' sector (up 1 million) and the 'education' and 'real estate, renting and business services' sectors (both up around 0.75 million), all relatively knowledge-intensive sectors (Chart 20 - see page 70). 'Public administration and defence' and 'wholesale and retail trade', both up around 0.5 million, were also relatively important service sectors for increases in older workers' employment. Overall employment of people aged 55–64 declined in the agriculture sector, as it did for youth and prime working-age people, but rose in the manufacturing sector (up 0.5 million), in contrast to the strong declines in employment for those aged 15–24 and 25–54. Furthermore, the absolute rise in employment levels for older workers even outpaced that of prime-age workers in the 'transport, storage and communication', 'financial intermediation' and 'public administration and defence' sectors. In light of the above developments, it is clear that the recent rise in employment for older workers has, to a large extent, taken place in expanding sectors rather than in declining economic activities, and with much of the employment growth in relatively higher-skilled, knowledge-intensive sectors. This tends to suggest that older workers' employment is benefiting from the ongoing trends of population ageing and the shift to a more knowledge-based economy.

Chart 18: **Characteristics of the rise in employment of older workers (aged 55–64) in the EU-25 between 2000 and 2006**



Source: Eurostat, EU LFS spring 2000 and second quarter 2006 results.
Note: *Figures for permanency of employment refer to employees rather than employment.

Chart 19: **Characteristics of the rise in employment of older workers aged 65+ in the EU-25 between 2000 and 2006**

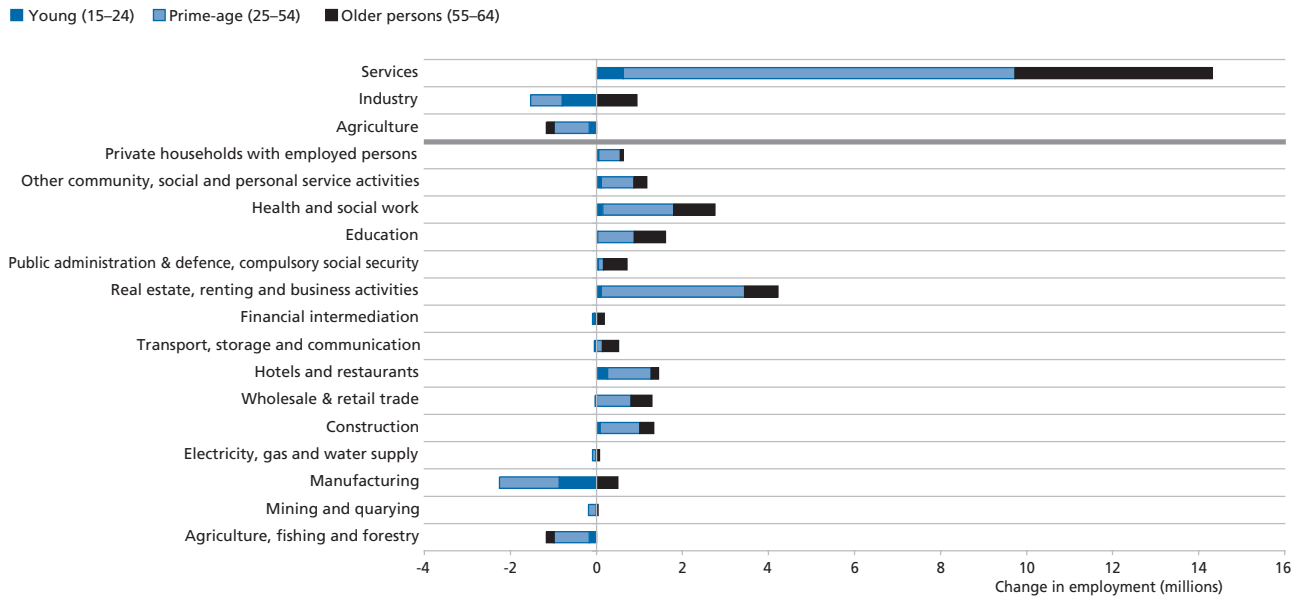


Source: Eurostat, EU LFS spring 2000 and second quarter 2006 results.
Note: *Figures for permanency of employment refer to employees rather than employment.

3.3.3. Changes in occupational employment structure

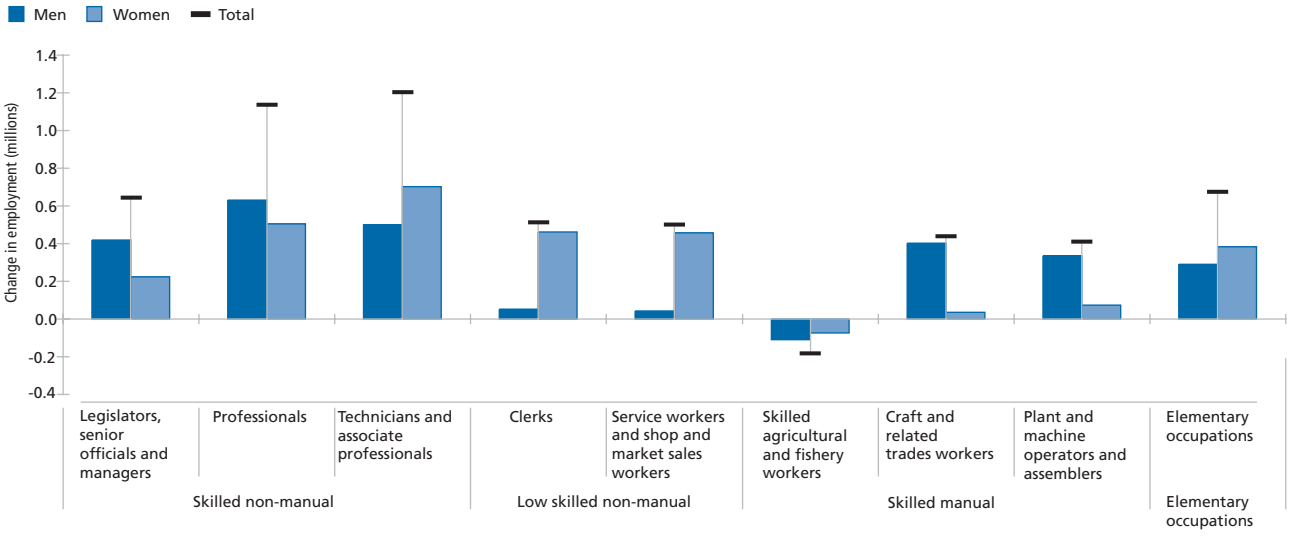
In terms of occupations, the expansion in employment of older workers has mainly been due to a substantial increase in their employment in the skilled non-manual occupations, which together account for over half

Chart 20: Change in sectoral employment in the EU-25 between 2000 and 2006 by age group



Source: Eurostat, EU LFS spring 2000 and second quarter 2006 results.

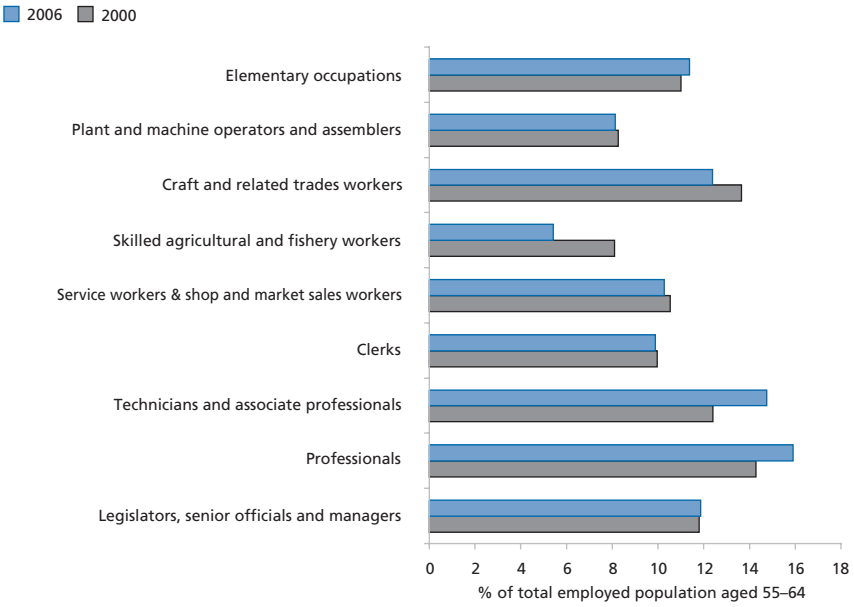
Chart 21: Changes in employment of older workers (55–64) in the EU-25 by main occupational groups and sex between 2000 and 2006



Source: Eurostat, EU LFS, spring 2000 and second quarter 2006 results.

(56%) of the overall rise in employment among older workers in the EU-25 between 2000 and 2006 (Chart 21). Nevertheless, employment of older workers also rose in almost all other occupational categories, the only exception being the 'skilled agricultural and fishery workers' category. For both older men and older women the main increase in employment has been in the skilled non-manual occupations, accounting for over half in both cases but slightly higher for men. However, while the share of the increase in employment

Chart 22: **Developments in occupational employment structure of older workers (55–64) in the EU-25 between 2000 and 2006**



Source: Eurostat, EU LFS spring 2000. and 2nd quarter 2006 results.

Table 8 - : **Changes in occupational structure for older workers (55–64) in the EU-25 between 2000 and 2006 by main occupational grouping (as % shares of total employment (excl. armed forces))**

Main occupational grouping	2000	2006	Change 2000–2006
Skilled non-manual	38.5	42.5	4.0
Low skilled non-manual	20.5	20.2	-0.4
Skilled manual	30.0	25.9	-4.1
Elementary occupations	11.0	11.4	0.4

Source: Eurostat, EU LFS spring 2000 and second quarter 2006 results.

in elementary occupations has also been broadly similar for both sexes (11% for older men and 14% for older women), the rest of the rise in employment for older men (around a quarter) has almost all been in the skilled manual occupations while for women the remainder (a third) has almost entirely been in the low-skilled non-manual occupations.

These developments have led to significant changes in the occupational structure of older workers' employment (Table 8 and Chart 22), with the share of older people employed in the skilled non-manual occupations rising by 4 percentage points, driven by strong rises in the shares in the 'professionals' and 'technicians and associate professionals' categories. In contrast, the share of older workers in the skilled manual occupations has declined by 4 percentage points, mainly reflecting the downwards adjustment in the 'skilled agricultural and fishery workers' and 'craft and related trades workers' occupations. Overall the occupational employment structure for older workers has therefore moved towards a higher skill profile of employment, with a shift away from the more manual occupations towards the non-manual and more knowledge-intensive occupations.

4. Inactivity among older people and their labour market transitions

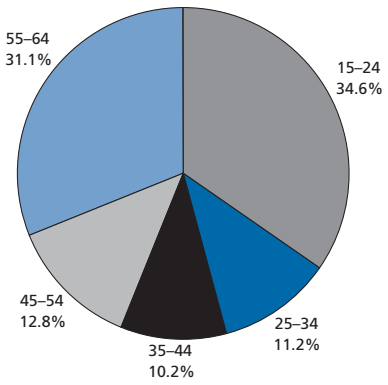
4.1. The extent and gender-related aspects of inactivity among older people

Increasing labour force participation through mobilising the potential labour supply of inactive people is a key requirement for achieving the employment rate targets set by the Lisbon and Stockholm European Councils, and has a major role to play in attenuating the negative impact of population ageing on economic growth. This will necessarily mean getting more people into the labour force by reducing the level of inactivity, and older workers will have a key part to play in this since, in absolute terms, economically inactive people[201] in the age group 55–64 account for close to one third of all inactive people of working age in the EU-27 (Chart 23 - see page 72). Across Member States, the importance of the share of older inactive people aged 55–64 in the total inactive working-age population (15–64) varies considerably, with the inactive population noticeably more concentrated in the older age group than average in Belgium, Denmark, Finland, France, Slovenia and especially Austria and the Netherlands (with older people accounting for over 40% of the total inactive population of working age in both), but generally less so in most of the new Member States, Ireland, Spain and Sweden (Chart 24 - see page 72).

Despite the positive developments in older workers' employment in recent years, participation rates among older people in the EU generally remain

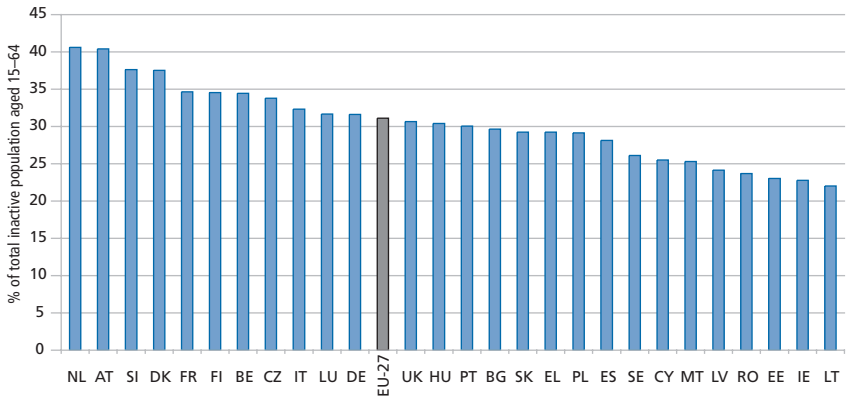
21 An economically inactive person is broadly defined as someone outside the labour force (neither employed nor unemployed) who is not actively seeking employment or is not immediately available for work. For a more detailed review of some definitional issues connected with economic inactivity, see *Employment in Europe 2005*, p. 211.

Chart 23: Share of different age groups in the total inactive population aged 15–64 in the EU-27, 2006



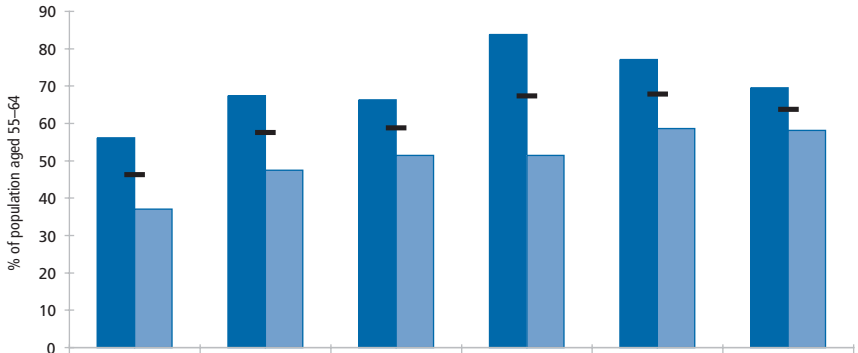
Source: Eurostat, EU Labour Force Survey, 2006 annual average.

Chart 24: Share of inactives aged 55–64 in the total inactive population of working age (15–64) across EU Member States, 2006



Source: Eurostat, EU lLbour Force Survey, 2006 annual average.

Chart 25: International comparison of activity rates for people aged 55–64, 2006



	EU-27	AU	CA	JP	CH	US
Men	56.1	67.4	66.3	83.8	77.1	69.6
Women	37.1	47.5	51.4	51.5	58.6	58.2
Total	46.3	57.5	58.7	67.3	67.8	63.7

Source: Eurostat, EU LFS 2006 annual average for EU-27, *OECD Employment Outlook 2007* for AU, CA, JP, CH and US (all 2006).

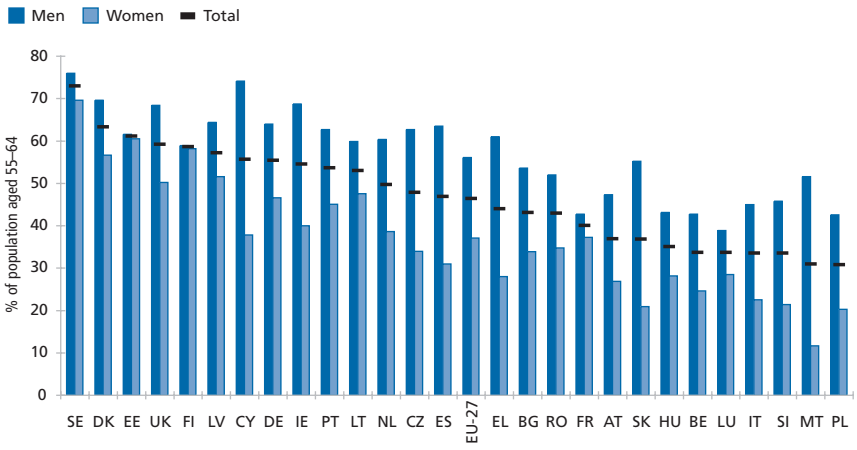
low, with over half of 55–64 year olds currently inactive. International comparison of activity rates for the population aged 55–64 in 2006 indicates that the average rate for the EU-27 of 46.3% is substantially below that of many other similarly advanced economies; this is also the case with the individual rates for men and women (Chart 25). Activity rates of older people in the United States are around 17 percentage points higher, and in Japan 21 percentage points, while within Europe the rate for Switzerland is almost 22 percentage points higher. This highlights the relatively low level of labour market participation of people in this age group in the EU, and suggests that, in spite of recent progress, there is still considerable scope for raising the participation of older people appreciably.

Focusing on gender, it is interesting to note that the difference between the EU and Japan in activity rates for older men is close to 28 percentage points, although this partly reflects the extremely high participation rate of older men in Japan (around 84%), while the difference in rates for older women is much less (14 percentage points). In contrast, the gap for older women is more pronounced compared to the United States, where the activity rate for women aged 55–64 (58%) exceeds even that for older men in the EU.

Within the EU, the degree of participation of older people aged 55–64 in the labour market varies considerably across Member States, ranging from as low as 31% in Poland to close to 73% in Sweden. Furthermore, despite the greater rise in participation of older women than older men, substantial gaps remain in the gender-specific activity rates across most Member States, with rates generally much lower for older women than for older men (Chart 26). Indeed, in almost half the Member States, less than one in three women aged 55–64 participates in the labour market.

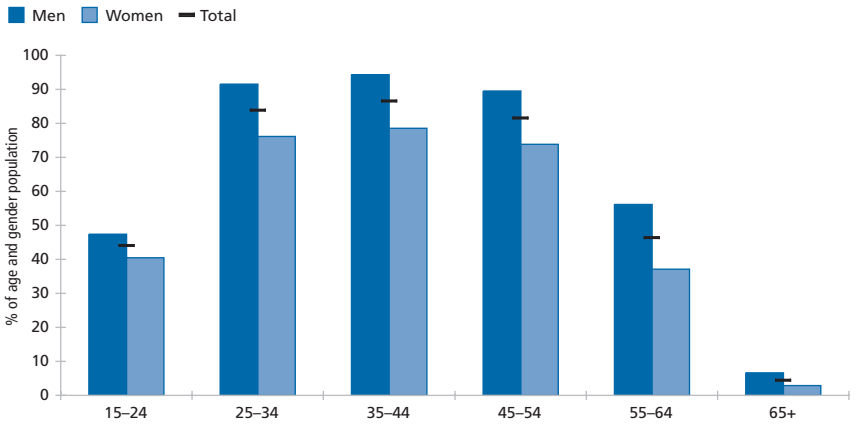
This highlights that, for many countries, further efforts to reduce the gen-

Chart 26: Activity rates across the EU-27 for people aged 55–64, 2006



Source: Eurostat, *EU Labour Force Survey*, 2006 annual average.

Chart 27: Activity rates in the EU-27 by age group and gender, 2006



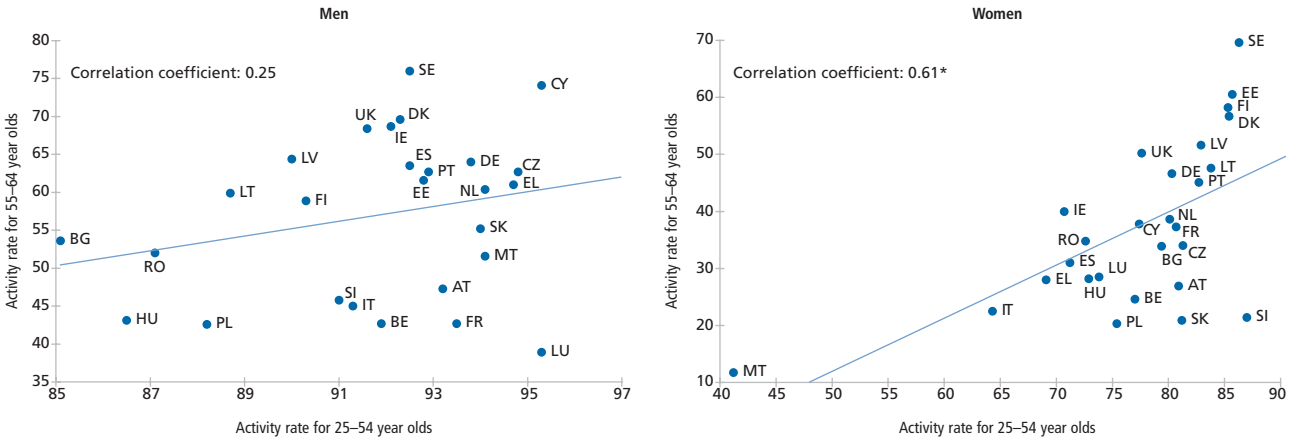
Source: Eurostat, EU Labour Force Survey, 2006 annual average.

der gap in activity will necessarily be a key element of any strategy to increase the labour supply of older people. In particular, the low participation rate of older women, which averages 37% for the EU as a whole (compared to 56% for older men), is a feature of all the new Member States (other than the Baltic States), although not solely a feature of these since EU-15 countries such as Austria, Belgium, Greece, Italy, Luxembourg and Spain also record weak participation of women aged 55–64. Nevertheless, being of the order of 20% or below, the activity rates of older women in Malta, Poland, Slovenia and Slovakia, as well as Italy, are particularly low.

While activity rates in the EU-27 are broadly similar for the prime working-age groups 25–34, 35–44 and 45–54 (at around the 85% level), for those aged 55–64 the rate falls to 46% (Chart 27), only slightly above that for youth. Lower activity among women is a feature common to all age groups, but is most pronounced for the 55–64 group where the gender difference in activity rates is close to 20 percentage points.

By comparing activity rates for the age group 55–64 with those for the age group 25–54 across Member States, it is possible to see whether cross-country differences in rates of older men and women are more a result of differences between countries in participation

Chart 28: Activity rates for older people (aged 55–64) versus those of prime working-age people (aged 25–54) across EU Member States, 2006



Source: Eurostat, EU LFS, 2006 annual average.
Note: * indicates statistically significant at the 1% level.

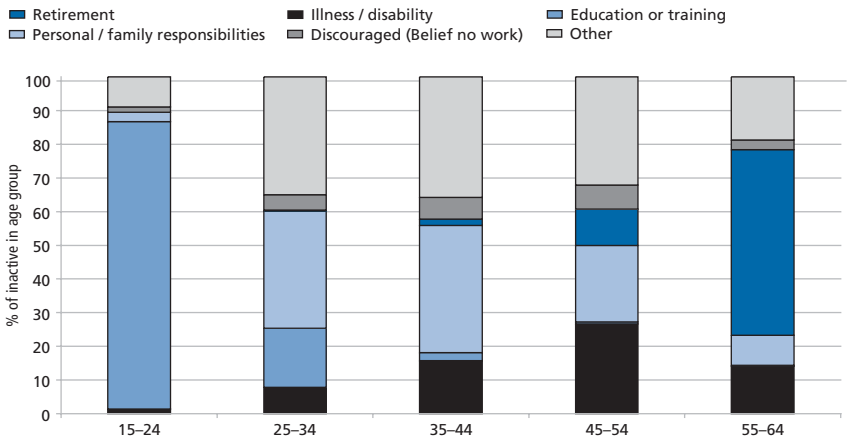
rates in general (Chart 28, see page 73). For men there is only a weak correlation between activity rates for the prime working-age and the older age group, suggesting that cross-country variations in the participation of older men is mainly the result of differences in the characteristics of the labour market for older workers. However, for women, higher activity rates at younger ages is strongly associated with higher participation at older ages, as evidenced by the reasonably strong (and statistically significant) positive correlation between the rates for the two age groups. This therefore suggests that differences across Member States in activity rates for older women reflect, to a significant degree, the differences in participation of women in general. Indeed, developments in activity rates for older women reflect both the effect of rising activity rates for subsequent generations of women as well as changes in their behaviour at advanced ages. Therefore, apart from addressing the various factors affecting older workers' participation, strategies to respond to the low activity rates among older women also need to address the reasons for low participation of women in the younger age groups.

4.2. Reasons for inactivity among older people

The reasons for inactivity clearly change with age (Chart 29). For the working-age population as a whole, the main reason for inactivity is education and training, which accounts for around a third of the inactive population aged 15–64. However, much of this is due to the importance of education and training as the main reason for inactivity among youth aged 15–24, for whom it accounts for 85% of the inactive population. The importance of this reason clearly declines substantially for older age groups, and for people aged 55–64 is negligible, covering only about 0.3% of the inactive population in this age group. For older people it is retirement which is the main reason for inactivity, accounting for 55% of all the inactive population aged 55–64 (and the second most important reason for the inactive working-age population as a whole, at just under 20%). The very high share of retired people in this age group explains why the relative importance of other reasons, including illness or disability and the belief no work is available, declines after 55, since early retirement schemes are partly taken up by disabled or discouraged individuals. Nevertheless 14% of inactive 55–64 year olds still specifically mention illness or disability as the reason for their inactivity, and 3% the belief that no work is available. Although family responsibilities appear to be cited much less as a reason for inactivity among older workers compared to prime working-age people, this still accounts for a significant share (9%) of the inactive population aged 55–64.

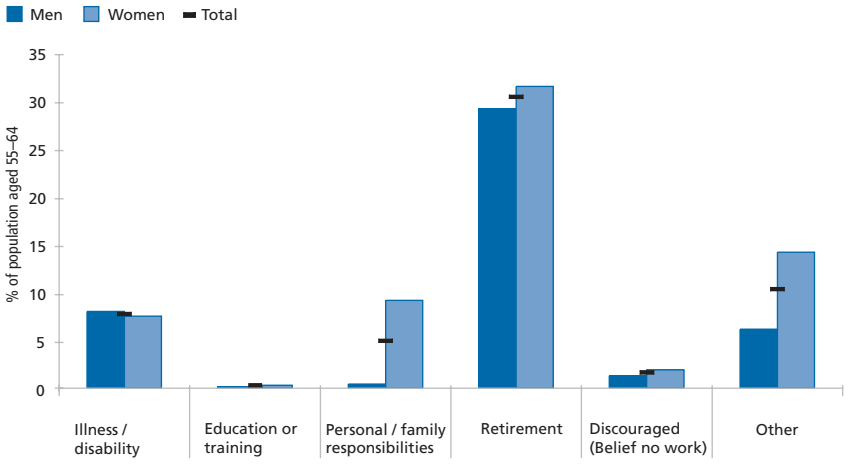
Focusing on the gender perspective for men aged 55–64, retirement is the main reason given for being economically inactive (Chart 30). Around 29% of men in this age group (or 65% of inactive men aged 55–64) are retired. The second most common reason is own illness or disability,

Chart 29: **Reasons for inactivity by age group in the EU-27, 2005**



Source: Eurostat, EU LFS, 2005 spring results.

Chart 30: **Shares of the EU-27 population aged 55–64 by sex and reason for not being economically active, 2005**



Source: Eurostat, EU LFS, 2005 spring results.

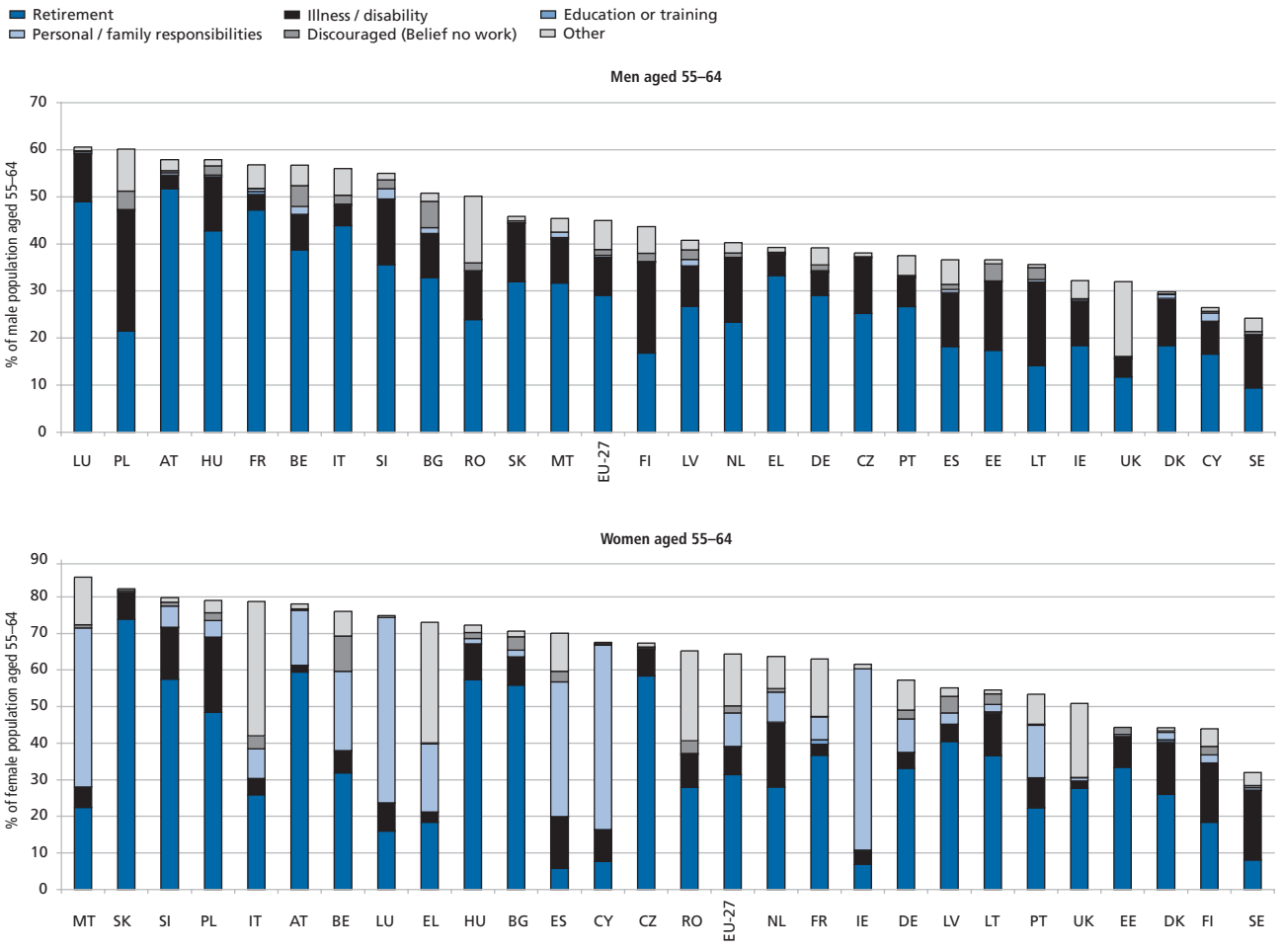
accounting for 8% of older men (or almost 18% of inactive older men), while personal or family responsibilities hardly feature at all as a reason for older men being inactive, accounting for under 0.5% of all men aged 55–64. In contrast, while retirement is also the main reason for older women being outside the labour market, accounting for 31% of women in this age group (or 49% of all inactive women aged 55–64), the second most common reason is personal or family responsibilities at 9% (or 14% of inactive older women), followed by own illness or disability at 7.5% (or 11.6% of inactive older women). Hence the prevalence of reasons for inactivity is broadly similar between the sexes, with the exception of those inactive due to personal or family responsibilities.

At the level of individual Member States, although retirement is the main reason for older men to be outside the labour market in almost all countries (the exceptions being Finland, Lithuania, Poland and Sweden where illness or disability accounts for a higher share), the picture is more mixed for older women (Chart 31). In several (Cyprus, Greece, Ireland, Luxembourg, Malta and Spain), personal or family responsibilities are a more important reason for the non-participation of older women than retirement, while in Sweden it is illness or disability. This highlights the importance of the availability of flexible working arrangements and care facilities which can enable older female workers to achieve a better balance between private responsibilities and work, as well as action to address regulations on retirement and health issues, such as health and safety at work. As discussed later, personal and family responsibilities could increase substantially in the future as a potential cause of inactivity among 55–64 year olds, especially if sufficient support facilities are not made available.

4.3. Older inactives who are willing to work

Many older people might consider themselves effectively trapped outside the labour market due to barriers – real or perceived – even though they are in fact willing to work. Overcoming these obstacles to participation requires addressing the barriers to employment (including

Chart 31: **Inactivity of older persons (aged 55–64) across EU Member States by sex and main reason for not being economically active, 2005 (as % of the respective gender population aged 55–64)**



Source: Eurostat, EU LFS, 2005 spring data.

the attitudes of employers to older workers), facilitating integration into the labour market and increasing the rewards from work as compared to inactivity, as well as implementing economic policies geared to creating sufficient jobs appropriate for those older inactive people who are willing to work.

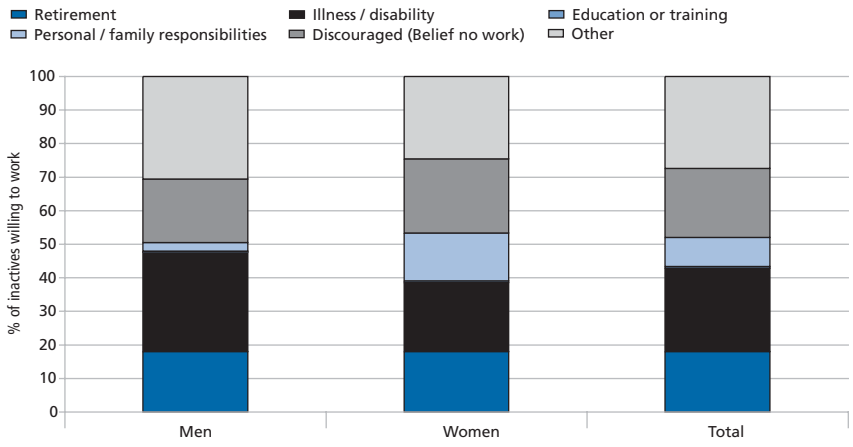
According to the EU *Labour Force Survey*, in 2005 around 7% of the inactive population aged 55–64 in the EU-27 would have liked to work, with more inactive older men willing to do so than older women (8.5% of inactive men aged 55–64 versus 6.2% of inactive women in the same age group). This 'labour force reserve' of older workers corresponds to 1 million men and 1.1 million women. Among these people, the main impediment to labour force participation is 'own illness or disability', accounting for almost 2% of inactive 55–64 year olds, while the belief that no work is available and retirement account for 1.5% and 1.3% respectively. Looking at this from another perspective, of those inactive 55–64 year olds who are willing to work, a quarter are prevented from doing so by constraints related to their own illness or disability, and close to one in five due to the belief that no work is available or due to retirement (Chart 32). The latter suggests that even among those who are in a situation normally where they have definitively left the labour market there are some who would nevertheless be willing to work, and hence raises questions regarding such practices as compulsory retirement. Among older inactive women who are willing to work, around 14% are prevented from doing so by personal or family responsibilities.

The above suggests that helping ill or disabled older people to better integrate into the labour market, terminating the practice of compulsory retirement, providing greater care support facilities (especially for older women) and addressing the negative perceptions of certain older workers about their labour market prospects while ensuring the creation of suitable jobs, could result in significant increases in the participation of older people. Indeed, based on the situation in 2005, if all those inactive older people who are willing to work were to enter the labour force the activity rate for older people in the EU would increase by 4 percentage points. At the same time in 2005 there were around 1.6 million unemployed older people aged 55–64 who were actively seeking employment and immediately available for work. If both these groups (amounting to almost 4 million) would have been in employment, this would have resulted in an increase of 7 percentage points in the employment rate for older workers, taking the rate up to within a percentage point of the Stockholm target.

The increase needed in participation to reach the employment rate target by 2010 does not necessarily rely so much on bringing already inactive older people into the labour force, but is probably more a question of retaining those older workers presently active in the labour force for longer, by delaying the age at which they withdraw from the labour market, and helping them to remain in employment for longer. Indeed, if around four-fifths of the 50–59 age group who were in employment in 2005 would remain in employment for a further five years (until 2010, when they would be 55–64) then the 50% Stockholm target would be met. However, this would require a significant improvement on past performance. For example, between 2000 and 2005 the employment rate for the cohort aged 55–64 in 2005 was 70% of the rate for that cohort in 2000, when they were aged 50–59.

The next section on older workers' transitions examines, among other things, why older workers leave employment in order to identify the main drivers of moving from employment into inactivity.

Chart 32: Reasons for inactivity in the EU-27 among those aged 55–64 who are willing to work, 2005



Source: Eurostat, EU LFS, 2005 spring results.

4.4. Labour market transitions of older people

It is important to examine the transitions between economic statuses (employment, unemployment and inactivity) for older workers, since increasing the labour market participation and employment rates for older people will require both reducing the flows into inactivity (by delaying their exit from employment and the labour market) and raising the outflows from inactivity and unemployment into employment. Figures from the EU *Labour Force Survey* for transitions between 2005 and 2006 (Table 9) indicate the following within the EU:

- For the working-age population as a whole, the transition rates from work into unemployment (2.5%) or inactivity (2.9%) are broadly similar. However, for those aged 55–64 the risk of moving from employment into unemployment is lower (1.5%), but there is a much higher chance of moving from work into inactivity (8.2%). The main reason for leaving employment and transiting into inactivity for this age group is retirement.

- For people aged 55–64, the flows into work are much lower than for other age groups. Under 3% of inactive people aged 55–64 enter work within a year. Furthermore, unemployed people aged 55–64 are much less likely to find work, with only around 13% succeeding compared to 32% of those of prime working age and 39% of young unemployed. Older workers therefore face a much greater challenge to get back into work if they lose their job.

- The older unemployed are twice as likely as other age groups to drop out of the labour force altogether. Around half of unemployed older people exit the labour market within a year, compared to only one in five people of prime working age. Many leave the labour market through edging into retirement (8%), or due to becoming discouraged through the belief that no work is available (9%) or due to illness or disability (5%), although a large share also leave for undefined 'other' reasons.

- For older people the transition into inactivity is essentially a path of no return. Under 4% of inactive people aged 55–64 re-enter the labour market within a year, in contrast to around 20% of people of prime working age. The main reason older people remain inactive is retirement (51% of inactive people who were also inactive one year later), but illness or disability (13%) and personal and family responsibilities (8%) are also important factors.

Beyond this overall situation at EU level, transition rates for older people between economic statuses show considerable variation across Member States (Table 10 - see page 78):

- Rates of moving out of employment range from over 15% in the Czech Republic, France and Luxembourg to less than half of this in Cyprus, Greece, Latvia, Portugal, Romania and the United Kingdom.

- In several (Finland, France, Germany, Greece and Poland), only about 10% of older people who were unemployed a year earlier reported being in employment when surveyed, while it was even lower in Belgium (less than 2%) and Slovenia (around 7%). This contrasts with rates of around 30% or more in Cyprus, Estonia, Latvia and the United Kingdom.

- At the same time, in all Member States, there tends to be very little return to the labour market following exit into inactivity. Furthermore, in most countries very few inactive older people manage to return to employment – in most cases less than 2% of inactive people aged 55–64 are in jobs one year later. However the rate is considerably higher than the EU average in Austria, the Czech Republic, Finland, Latvia, Romania, Slovakia and the United Kingdom.

Table 9 - **Transitions by economic status and reasons for inactivity in the EU-27* between 2005 and 2006 (row percentages)**

	Economic status in 2006								
	Employed	Unemployed	Inactive						
Economic status in 2005			Illness / disability	Education or training	Personal / family responsibilities	Retirement	Discouraged (Belief no work)	Other	Total Inactive
Total WAP									
Employed	94.6	2.5	0.3	0.2	0.2	0.8	0.1	1.4	2.9
Unemployed	31.2	43.4	2.2	1.3	2.3	1.1	5.2	13.4	25.4
Inactive	10.4	4.3	8.9	30.7	8.0	15.8	1.6	20.3	85.3
15–24									
Employed	89.9	5.6	0.2	1.6	0.3	0.0	0.2	2.1	4.4
Unemployed	38.9	40.4	0.8	3.4	1.3	0.0	4.2	11.0	20.7
Inactive	13.0	5.2	1.0	73.3	1.1	0.2	0.4	5.9	81.8
25–54									
Employed	95.7	2.3	0.2	0.1	0.2	0.1	0.1	1.2	2.0
Unemployed	32.3	45.2	2.1	0.9	2.3	0.1	4.7	12.4	22.5
Inactive	13.8	6.3	14.4	6.1	15.9	4.4	2.9	36.2	79.9
55–64									
Employed	90.3	1.5	0.7	0.0	0.2	5.4	0.2	1.8	8.2
Unemployed	12.8	37.7	4.8	0.7	3.5	8.1	9.4	22.9	49.4
Inactive	2.9	0.7	13.3	0.4	8.1	50.7	1.9	21.9	96.4

Source: Eurostat, EU LFS, 2006 annual results.
Note: * EU-27 covers the EU Member States excluding BG, IE, NL and SE, for which data is not available in 2006 on status one year earlier.
Row percentages = 'of those in this activity status one year before, x% are now in status '

These results highlight the fact that, although older workers in the EU generally face a lower risk of moving from employment into unemployment than those in younger age groups, in many Member States the consequences of job loss for older workers can be more serious. Indeed, older workers are subject to significant difficulties if they lose their job, as evidenced by the relatively high incidence of long-term unemployment. Although, with the notable exception of Germany, unemployment rates are lower for older people aged 55–64 than for younger age groups (in 2006 the unemployment rate in the EU averaged 6.2% for those aged 55–64, compared to 8.3% for the working-age population as a whole), this partly reflects the greater tendency for older people to leave the labour market altogether at older ages, and older persons who are unemployed generally face longer periods of time in unemployment than their younger colleagues. Around 63% of the older unemployed experience periods of unemployment lasting 12 months or more, a third more than the average for the working-age population as a whole (46%).

These comparisons of transition rates between statuses tend to suggest that in countries where employment rates among older people are particularly low, the labour market is not very accommodating or dynamic for older people, in that older people are retained less in employment and find it harder to get into employment when out of work (e.g. Austria, Belgium, France, Luxembourg, Poland and Slovenia). The risk of moving out of employment is higher than in most other Member States, and the chances of older unemployed people returning to work are low. Early retirement may be the only alternative for older workers in these countries following the loss of a job. In contrast, the labour market for older workers in countries such as Cyprus, Denmark, Estonia, Latvia and the United Kingdom appears to be more dynamic and accommodative, with older people more likely to remain in employment, and with the probability of unemployed older people returning to work being much higher than average (Chart 33).

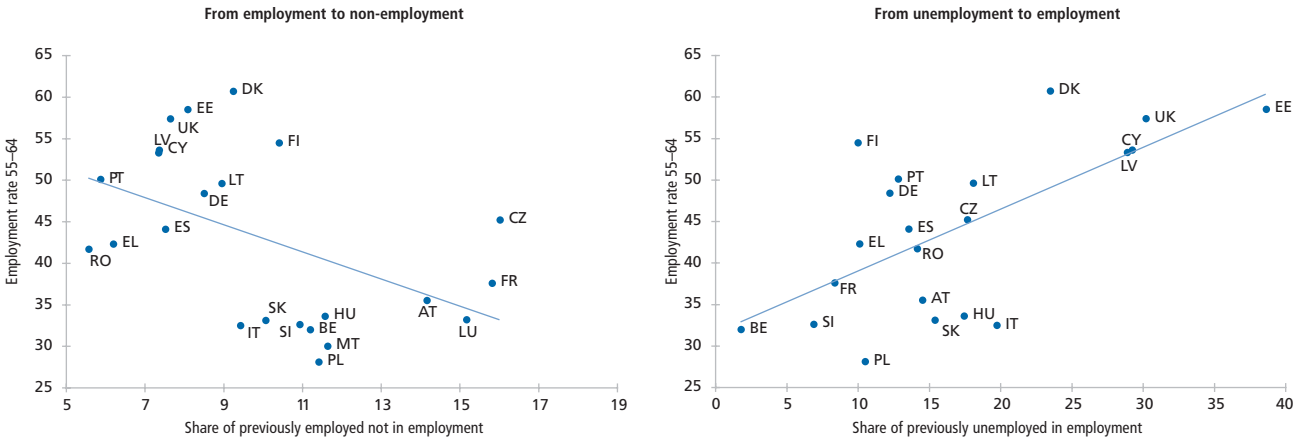
Given the generally low chance in the EU of moving back into a job once older workers leave employment, it is worthwhile exploring further the specific feature of the transition out of employment. The vast majority of older workers who leave employment move into inactivity within a relatively short space of time, essentially exiting the labour market altogether. Over the period 2001 to 2005, among those aged 55–64 in the EU-25 who were not in employment when surveyed and who had left their last job during the previous 12 months, less than one in five were unemployed, i.e. still active in the labour market. While in some Member States the share of recently out-of-work older people who are unemployed rather than inactive was around 25% or more (Finland, Lithuania, Spain and Sweden), it was in the region of 10% or below in several countries, including Austria, Belgium and Luxembourg but also the large Members States of France, Italy and Poland (Chart 34),

Table 10 - **Transitions between economic statuses for older workers (55–64) between 2005 and 2006 (as % of status one year previously) across EU Member States**

Status in 2005	Employed			Unemployed			Inactive		
Status in 2006	Employed	Unemployed	Inactive	Employed	Unemployed	Inactive	Employed	Unemployed	Inactive
BE	88.8	0.4	10.8	1.8	13.3	84.9	1.3	0.4	98.3
CZ	84.0	2.1	14.0	17.7	48.6	33.8	8.7	1.3	90.0
DK	90.8	1.5	7.8	23.5	34.9	41.6	1.4	0.4	98.2
DE	91.5	2.7	5.8	12.2	54.9	32.9	2.7	1.2	96.1
EE	91.9	1.6	6.5	38.7	39.4	22.0	2.2	0.6	97.2
EL	93.8	0.6	5.6	10.1	65.3	24.6	0.3	0.2	99.6
ES	92.5	1.0	6.5	13.6	35.9	50.5	1.3	0.9	97.8
FR	84.2	1.5	14.4	8.4	20.7	70.9	0.9	0.5	98.6
IT	90.6	0.6	8.9	19.7	19.3	61.0	1.5	0.3	98.1
CY	92.6	1.5	5.9	29.2	39.1	31.7	1.4	0.4	98.1
LV	92.7	1.9	5.4	28.9	28.2	42.9	5.4	1.5	93.1
LT	91.0	1.8	7.2	18.1	36.6	45.3	1.1	1.8	97.1
LU	84.8	0.3	14.9	:	:	:	0.1	0.0	99.9
HU	88.4	1.1	10.5	17.4	24.7	57.9	1.3	0.5	98.1
MT	88.4	0.6	11.0	:	:	:	0.1	0.3	99.6
AT	85.8	1.0	13.2	14.5	27.7	57.8	5.4	0.1	94.4
PL	88.6	1.0	10.4	10.5	35.3	54.2	2.9	1.1	96.0
PT	94.1	1.4	4.5	12.8	64.5	22.7	0.4	0.1	99.4
RO	94.4	0.5	5.1	14.2	45.6	40.3	13.3	0.3	86.4
SI	89.1	0.5	10.4	6.9	12.8	80.3	0.3	0.0	99.6
SK	89.9	0.9	9.2	15.4	55.4	29.2	5.2	0.9	93.9
FI	89.6	2.4	8.0	10.0	26.6	63.4	6.0	0.5	93.6
UK	92.4	1.4	6.2	30.2	36.0	33.8	3.9	0.8	95.3
EU-27*	**90.2**	**1.5**	**8.3**	**12.8**	**37.7**	**49.4**	**3.0**	**0.7**	**96.3**

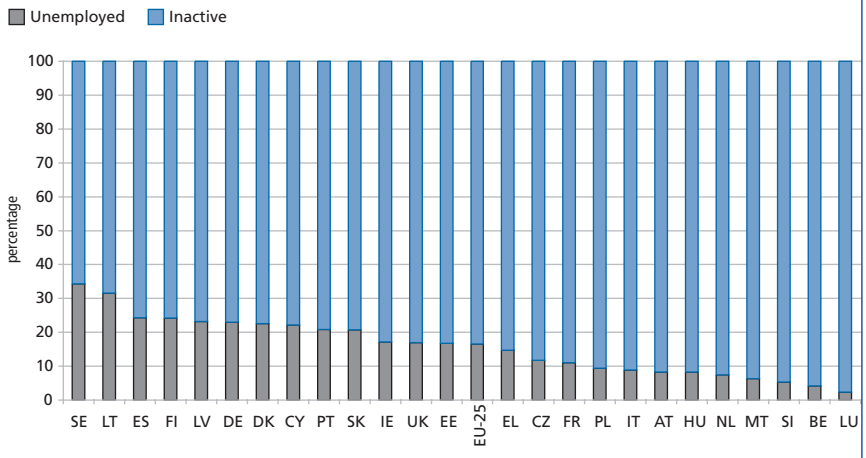
Source: Eurostat, EU LFS, 2006 annual results.
Note: * EU-27 covers the EU Member States excluding BG, IE, NL and SE, for which data is not available in 2006 on status one year earlier.
':' means results unreliable due to too small sample (for LU and MT).

Chart 33: Employment rates across EU Member States of those aged 55–64 versus shares of those (a) employed one year previously but currently not in employment and (b) unemployed one year previously and currently in employment, 2006



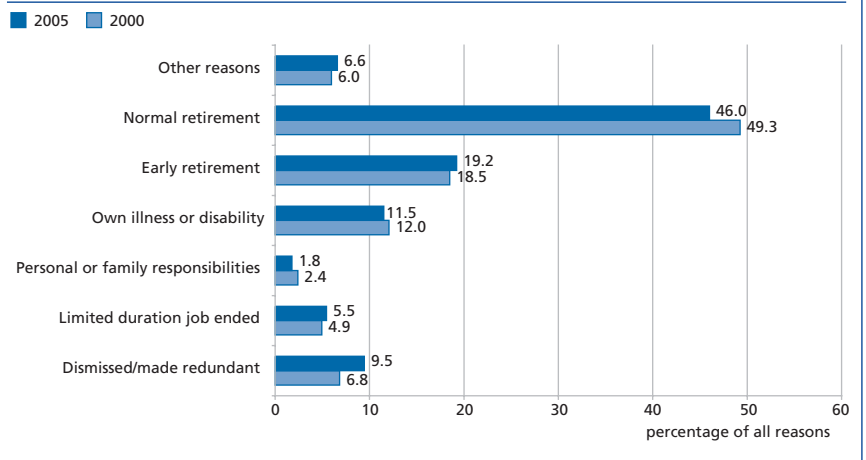
Source: Eurostat, EU LFS, 2006 annual results.

Chart 34: Economic status of those aged 55–64 who left their last job within the previous 12 months and are not in employment, pooled results for 2001–2005



Source: Eurostat, EU LFS, pooled results for 2001 to 2005.

Chart 35: Reasons for leaving last job or business in the EU-25 for older people aged 55–64, who are inactive, and who left their job in the last 12 months, 2000 and 2005 (as % of all reasons)



Source: EU LFS, 2000 and 2005 spring results.

indicating that in the latter countries few older people remain active once they exit from a job.

In the context of retaining people in the labour market longer, and given that when older people leave employment they, for the most part, transit into inactivity, it is important to identify the reasons why older people who recently left work and who are out of the labour market left their last employment. For the majority (close to two-thirds) the main reason is retirement, either through normal retirement (i.e. the normal retirement age), accounting for around half, or through early retirement, which accounts for around a fifth (Chart 35). Just over 10% leave employment and transit into inactivity for reasons of their own illness or disability, while close to 10% end up inactive following separation from their job due to dismissal or redundancy. This would indicate that more could be done to help ill or disabled people and those who leave work involuntarily to find new jobs, including through improved assistance programmes and assistance from employment services, as well as reducing separations by improving health and safety provisions, and conditions of work. Relatively few (around 2%) recently jobless inactive older people specifically cite personal or family responsibilities as the reason for leaving their last employment. It is inter-

esting to note that, other than a slight decline in the shares exiting through normal retirement and a moderate rise in the share of exits due to lack of employment (highlighting the need to address employment opportunities for older workers), the distribution of reasons has not changed substantially since 2000.

The importance of the various routes for exiting early from the labour market differs across Member States. Over the period 2001 to 2005, of those people aged 55–64 who reported leaving their last job in the previous 12 months and when surveyed were inactive, the main reason for leaving the last job across all Member States was retirement (Chart 36). It is of concern that even though the official retirement age is 65 in many Member States, within a year of leaving employment such a large share of people definitively quit the labour market at relatively young ages in order to enter retirement. For example, in Luxembourg and the Netherlands, more than 80% of inactive people aged 55–64 who left their job in the previous 12 months did so for reasons of retirement, while in Finland, Portugal and Spain less than 40% did so, even though the official retirement age is 65 for both men and women in all these Member States. In some Member States, especially Estonia, Finland, Spain and Sweden, a relatively high share (around 30% or more) of recent job leavers who end up inactive give being dismissed, made redundant or the expiry of a limited duration job as the reason for leaving their last job, these being more associated with indications of involuntary separation on the part of the individual workers themselves.

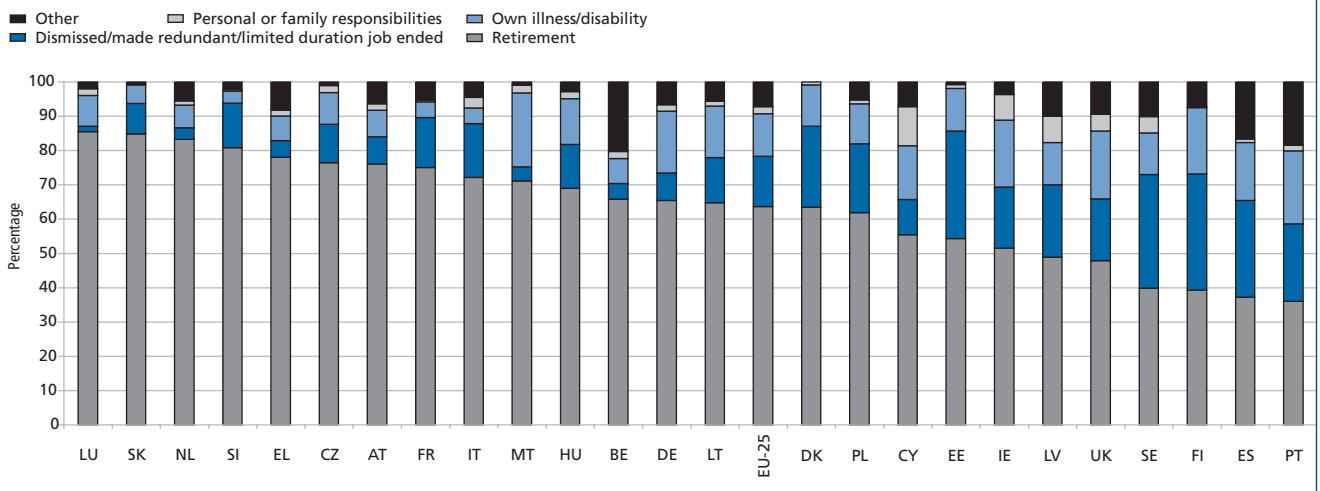
In Finland, Germany, Malta, Ireland, Portugal and the United Kingdom, around one in five declare that their own illness or disability was the main reason for separating from their last job, although this may also indicate the importance of alternative pathways into retirement other than official retirement schemes, in particular sickness and disability benefit schemes. Indeed, the high share of older job leavers shifting into retirement well before the official retirement age reflects a variety of alternative early retirement schemes. Finally, job separation among older inactive people for reasons of personal or family responsibilities appears to be relatively limited in most Member States, but seems to be a much more significant reason in Cyprus, Ireland, Latvia, Sweden and the United Kingdom, where the shares range from 5% to 11%, well above the EU average of around 2%.

5. FACTORS AFFECTING OLDER PEOPLE'S LABOUR MARKET SITUATION

5.1. Background

There are various reasons why employment rates for older workers are relatively low in Europe, but it basically reflects a lack of incentives for employers to retain or hire older people and a lack of incentives for older workers to remain in the labour force (European Commission, 2002). High separation costs may discourage employers from employing older people in the first place. Organisational features, such as employers' policies, technological division of labour, and fellow workers and managers' attitudes, are also known to influence the ability of older workers to remain in employment (Taylor, 2002). At the same time there are often penalties or low rewards in old-age pensions and other parts of the tax and welfare system for individuals to carry on working, with early retirement schemes, social security benefits and disability benefits often used by both employees and employers as exit routes from the workplace. In this regard, Gruber and Wise (2002) report that incentives stem-

Chart 36: Reasons across EU Member States for leaving last job or business for older people aged 55–64, who are inactive, and who left their job in the last 12 months (as % of all reasons given, pooled data 2001–2005)



Source: EU LFS, pooled results for 2001 to 2005.

ming from social security systems have a strong effect on retirement decisions, irrespective of cross-country differences in cultural norms and labour market institutions.

Older workers are generally considered to be one of the most vulnerable groups in the labour market (others being, for example, youth, women and disabled workers). One reason for this is that they are often viewed as being more costly than their younger counterparts, due mainly to the prevalence of age-related remuneration systems and seniority wages, and as having lower productivity due to both outdated skills and more frequent physical limitations resulting from ageing. As a result older workers, especially the low-skilled ones, have often been among those employees released first when employers need to reduce staff levels. This was particularly the case during the period of industrial restructuring in the 1970s and 1980s and, more recently, in the new Member States when older workers were encouraged to exit the labour market through redundancy and early retirement schemes. One legacy of this is that older workers may still expect to retire at relatively early ages, while the view may persist among employers that older workers remain a relatively dispensable element of their workforce. However, as shown previously, once out of work, older workers in particular often face difficulties in re-entering employment.

Existing research has classified the factors that influence the exit of older workers from the labour market into 'push' and 'pull' factors (OECD, 2006). From the perspective of employers, push factors include negative perceptions about the capacities of older workers and the labour costs relative to their productivity. From the perspective of individual older workers, they include poor health and disability, work-related issues (including negative attributes of their present employment and unsatisfactory working conditions), and the obsolescence of skills as a consequence of technological change and lack of opportunities to update skills. Pull factors essentially consist of financial incentives which encourage older workers into retirement and factors associated with the attractiveness of life in retirement, such as opportunities to take up a secondary career, undertake voluntary work, or to enjoy new hobbies (Taylor, 2002).

In the context of raising older people's labour market participation, much analysis and debate has taken place on reviewing financially related aspects (such as pension provisions and increasing the retirement age to receive a pension), while less attention has been given to creating appropriate employment opportunities and the right working and employment conditions to encourage older workers to remain in work for longer. However, recent studies (Haider and Loughran, 2001: Taylor, 2001) emphasise that financial incentives and social security regulations are not the only determinant of older people's labour supply – non-pecuniary factors also play an important role in their decision to remain in or re-enter the labour market.[22] Steps to limit access to early retirement must therefore be backed up by removing barriers and disincentives which prevent older people from working longer, and through providing better and more appropriate employment opportunities for ageing workers. The employability of older people also needs to be addressed, focusing on the improvement of types and levels of skills that are often a major obstacle to hiring older workers.

It is also becoming increasingly clear that the work-life balance is an important factor in job satisfaction and the planning of ageing staffs' careers in particular. Employers must consider the overall pattern of their older employees' wishes and expectations towards work. With advancing age, these increasingly encompass their personal lives outside work, such as their family care responsibilities. In this regard, flexible working arrangements, particularly part-time work and self-employment, have been promoted as an important mechanism for 'active ageing'.

Some of the key factors which influence the labour market participation of older people are examined in more detail in the following sections. These are addressed under three broad headings which generally reflect the main areas for action identified in the Commission's synthesis report to the 2004 European Spring Council, namely:

- Retirement, pensions and the balance of financial incentives.
- Factors affecting the availability of jobs for older workers and their employability.
- Conditions and attractiveness of work.

Before exploring further, a few words are necessary on the need for a broad supportive environment to underpin active ageing strategies. For many people, being able to work may depend heavily on factors such as cultural aspects relating to the participation of certain elements of the population in the labour market, their general health and the availability of, and access to, good quality care facilities and employment services. All these can be seen as components of a more general environment which will encourage, or not, the labour market participation of older workers.

Cultural aspects and the general attitudes of business and society towards the labour market participation of older workers have a role to play. For example, older women have low participation rates in many Member States, reflecting the more tradition-

22 Haider and Loughran (2001), in a study of American labour supply for elderly people aged 65 and older, find that 'non-pecuniary factors dominate the labour supply decisions of the elderly' who 'are particularly willing to purchase jobs that they enjoy and allow them the flexibility they desire at the expense of low financial returns'. The authors therefore conclude that 'policies that affect the financial return to work for the elderly will have less impact on labour supply in this population than policies targeted at improving the non-pecuniary returns to work'.

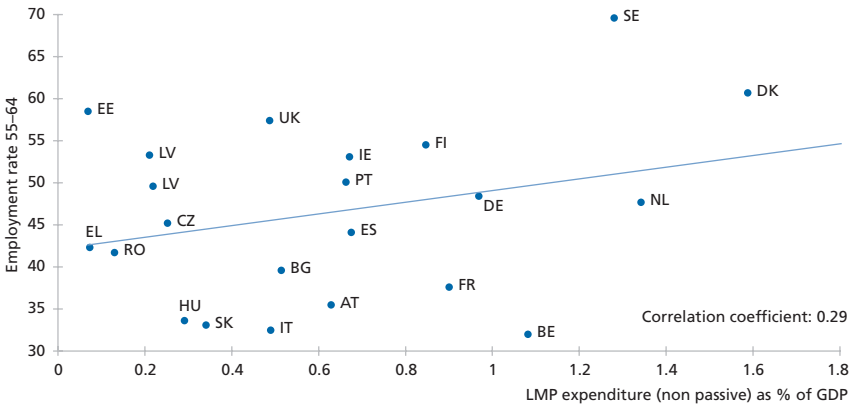
al cultural roles for elderly women in those countries. At the same time, attitudes of employers and staff towards older workers are an important issue. Raising awareness is a necessary measure to change attitudes and reduce discrimination against older workers and has been used quite extensively in the United Kingdom and Sweden.

In its Communication to the 2006 Spring European Council (European Commission, 2006c) the Commission highlighted that Member States increasingly recognise that improving health and the access to medical and preventive care and rehabilitation services are also key dimensions of a strategy to increase labour supply in a sustainable manner. OECD (2006) also emphasises that prevention is an important means for promoting longer working lives, not just by reducing the risk of occupational injuries and diseases but also by tackling those factors outside of work which may be leading to poor health, such as obesity and tobacco and alcohol consumption. In this context, measures aimed at stepping up lifelong preventive health policies should have an important influence on extending working lives.

Recent research (Ghosheh Jr. et al, 2006; EFILWC, 1999) highlights that the need for better reconciliation of work and family life is likely to rise significantly for older workers in the future. Such responsibilities are likely to become more demanding, as older people try to cope with balancing professional responsibilities with addressing the needs not only of elderly relatives, but also of elderly or infirm partners, adolescent children who remain in the family home, or even of grandchildren for whom the grandparent may provide the majority of childcare. Indeed, as the current demographic trend for women to have children later in life continues, together with the postponement of departure from the family household by adolescent or adult children, and with the older elements of the population living to ever older ages, the 55–64 age group may well increasingly face a rising challenge of reconciling work and family life. Policies and work arrangements will need to be developed to take this into account if older workers' participation is not to be adversely affected. In particular, raising the labour market participation of older women aged 55–64, upon whom the care responsibilities principally fall rather than upon older men, will require improvements in the provision of care and assistance services for dependent members of their families.

The availability and quality of local employment services, and in particular the level of assistance available related to non-passive labour market policy measures, may have an impact on the possibility for older workers to find appropriate employment. Indeed, comparing across countries, those Member States with higher spending on such measures tend to have higher employment rates among older workers[23] (Chart 37). Well-designed non-passive labour market policies, generally covering job placement services and measures such as vocational training, job search or hiring subsidies, can help to reduce unemployment through improving the skills of the unemployed as well as achieving more efficient job matching. Conversely, insufficient availability of good quality employment services will impact negatively on the ability of older workers to enter or re-enter employment. Indeed, low rates of transition from unemployment to employment for older workers may partly reflect the lack of support provided by public employment services, including that provided through active labour market policy measures. Moreover, OECD (2006) reports that older job seekers are under-represented in active labour market programmes in nearly all Member States, suggesting that active labour market policy is not very active towards older workers and that there is scope for improvement in the employment services offered to them.

Chart 37: Employment rates for older workers (55–64) versus spending on non-passive labour market policy measures



Source: Eurostat, EU Labour force survey, 2006 annual average for employment rate 55–64 and LMP database, 2005 for expenditure on non-passive measures (categories 1-7) as % of GDP.

23 Lack of data on ALMP spending specific to those aged 55-64 means it is not possible to clearly show an association between ALMP spending on older people and their labour market outcomes.

5.2. Retirement, pensions and the balance of financial incentives

As shown previously, the main reason people aged 55–64 exit the labour market into economic inactivity is retirement, while an important trend in recent decades has been the decline in the effective retirement age in many EU Member States. Reaching the Lisbon and Stockholm targets will clearly require a reversal of this long-term trend. The previous results on employment rates by individual year of age, which show a sharp reduction in rates between 59 and 60 and between 64 and 65 (Chart 16 - see page 67), together with research findings (Gruber and Wise, 2002), indicate that many workers leave employment as soon as they reach the age at which they are entitled to draw a pension. This is partly due to the influence of customary social practice, but may also reflect the case that people may not be allowed to continue working beyond the statutory retirement age. A number of European countries still currently maintain a mandatory retirement age, although this practice is increasingly being questioned[24] (OECD, 2006).

In the context of the OMC on pensions, the issue of promoting longer working lives and how reforms of pension and social protection systems can contribute is essential. Recent studies from the Social Protection Committee[25] highlight in particular that a number of Member States are currently reviewing or reforming the conditions for taking up pensions, by introducing more flexibility in the choice of the path from work to retirement. This can be achieved through more flexibility in the age at which people may retire and appropriate incentives to prolong working lives, but also through partial pensions and possibilities to combine pensions and earnings.

At the same time, the general public is becoming increasingly aware of the need to remain longer in the labour force. Results from a recent Eurobarometer survey[26] indicate that 45% of EU-25 citizens aged 15 or older believe that their fellow citizens retire too early. Furthermore, persons aged 55 years and over were the only age group in which a majority believe that people retire too early, while half of retired persons also agreed with this statement. These results suggest that 'older people and the retired would probably favour extending their working lives for various reasons, including social integration and the maintenance of the standard of living they enjoy when in employment'.

5.2.1. Standard and early retirement

There is substantial variation across Member States in the age at which people are eligible to standard pension benefits (Table 11 - see page 84), although to a certain extent this reflects the variation in life expectancy across countries (with lower retirement ages tending to be found in countries with lower life expectancy, as is the case in Eastern Europe). In most Member States the age at which people are entitled to a public pension has remained fixed over recent decades, despite the fact that life expectancy has increased substantially. For most the age of eligibility for men is 65, but ages of eligibility are considerably below this in some Member States (the Baltic States, the Czech Republic, France, Hungary, Malta, Slovenia and Slovakia). Differences are wider with respect to standard retirement ages for women, despite the fact that a number of Member States are in the process of bringing female eligibility ages into line with those for men.

The availability of early retirement schemes and minimum ages of eligibility to these also shows wide variation across countries, with no such schemes being available in seven Member States, while several others allow access to early retirement benefits from ages around the mid-50s mark. At the same time, occupational or private pension schemes play a large role in pension provision in a number of Member States and thus can potentially have an important impact on retirement decisions. As for public pension schemes, the way these are set up can encourage or discourage retirement at an early age.

In response to the need to raise the labour market participation of older workers, many Member States have carried out, or are in the process of carrying out, pension reform. These have included increases in the age of eligibility for a full pension, bringing retirement ages for women into line with those for men, increases in the minimum contribution period required to acquire full pension rights, switching from pay-as-you-go to funded schemes and tightening the eligibility to early retirement and sickness and invalidity schemes, although in many cases the increase in the statutory retirement age will be implemented over a long time period to prevent sudden changes.

In addition to necessary and ongoing state pension reforms, there is wide recognition of the increasing importance of work-based and private voluntary pensions and other forms of long term savings and investments that will help to ensure adequate levels of income in retirement.

24 The practice of mandatory retirement in firms is questionable, on the basis that it is incompatible with a general policy thrust towards removing age barriers to employment and offering greater choice to workers over the work-retirement decision.

25 SPC (2004), *Promoting longer working lives through better social protection systems*, (available at http://ec.europa.eu/employment_social/social_protection/docs/working_longer_en.pdf), and SPC (2007, forthcoming), *Promoting longer lives through pension reforms (first part): flexibility in retirement age provision.*

26 Special Eurobarometer 261, *European Employment and Social Policy*, October 2006.

Table 11 - Ages of entitlement to standard and early retirement pensions across EU Member States, 2006

	Men	Women	Comments
Standard pension			
Belgium	65	64	For women the age will be raised to 65 in 2009.
Czech Republic	61,5	59 years and 8 months*	*Women's retirement age depends upon the number of children raised, and ranges from 55 years and 8 months (5 or more children) to 59 years and 8 months (no children). The retirement age shall be gradually increased by 2 months for men and 4 months for women each year until it reaches 63 years for men and women without children and 59–62 years for women with children.
Denmark	65	65	Social Pension (*Folkepension*): 65 (67 for those who had reached the age of 60 on 1.7.1999).
Germany	65	65	
Estonia	63	59,5	Pensionable age is gradually increasing and shall be equalised for men and women by 2016 at the age of 63.
Ireland	65	65	
Greece	65	60	Persons insured before 1.1.1993: Men 65 years, women 60 years. Persons insured since 1.1.1993: Men 65 years, women 65 years.
Spain	65	65	
France	60	60	General scheme for employees (Régime général d'assurance vieillesse des travailleurs salariés, RGAVTS): 60 years.
Italy	65	60	Persons insured before 1.1.1996: men 65 years, women 60 years. Persons insured since 1.1.1996: Flexible retirement age between 57 and 65 years.
Cyprus	65	65	
Latvia	62	60,5	For women, 60.5 years by 1 July 2005 (gradually increasing by 6 months every year until it reaches 62 years).
Lithuania	62,5	60	
Luxembourg	65	65	
Hungary	62	62	
Malta	61	60	
Netherlands	65	65	
Austria	65	60	Progressive increase of age limit for women until the same retirement age as for men will have been reached, i.e. between the years 2024 and 2033.
Poland	65	60	
Portugal	65	65	
Slovenia	61	60	Due to a gradual increase the final retirement age will be reached in 2008 for women at 61 and in 2009 for men at 63. In 2005 the full retirement age was 60/61.
Slovakia	62	60*	Old-age Pension (Starobny Dôchodok): 62 years retirement age will be reached in 2014 for all population groups. Retirement ages for women currently vary according to the number of children raised (from a current age of 60 for those with no children to 56 years for those with 5 or more children).
Finland	65	65	National pension (Kansaneläke): 65 years.
Sweden	61-67	61-67	Flexible retirement age from 61 to 67 years. Possibility to work thereafter with employer's consent.
United Kingdom	65	60	State pension age: men 65 years, women 60 years (gradually rising to 65 over period 2010 to 2020).
Early retirement pension			
Belgium	60	60	After 35 years of professional activity.
Czech Republic	58,5	56 years and 8 months*	Permanently Reduced Early Pension available up to three years prior to the normal retirement age. The claimant must have an insurance record of at least 25 years.
Denmark	none	none	No retirement possible before the statutory pensionable age of 65 years.
Germany	63	63	From the age of 63 (or 60 for severely handicapped persons) after 35 years of pension insurance periods. from 60 for those born before 1952 under specific conditions.
Estonia	60	56,5	Early Retirement Pension (ennetähtaegne vanaduspension): Available up to three years before the legal retirement age.
Ireland	none	none	No early pension.
Greece	55	55	Varies according to specific conditions.
Spain	60	60	60 years of age for certain persons who were insured according to the system abolished on 1 January 1967. 61 years of age for employees in certain cases.
France	56	56	General scheme for employees (Régime général d'assurance vieillesse des travailleurs salariés, RGAVTS): From the age of 56 for the insured who started their professional activity at the age of 14 and under a triple condition (duration of insurance, duration of contribution and retirement age). From the age of 55 for the insured with severe disabilities who fulfil the minimum periods of insurance and contribution.
Italy	57	57	Early retirement pension (pensione di anzianità): at the age of 57 with 35 years of contributions or after 37 years of contributions regardless of age. Pensions awarded to employees of companies in economic difficulties (pre-pensionamento). Early retirement is possible up to 5 years before normal retiring age.
Cyprus	63	63	
Latvia	60	58,5	Early pension available 2 years before standard pensionable age.
Lithuania	57,5	55	Persons are eligible for early retirement pension if they have an insurance period of 30 years, they are registered as unemployed for at least 12 months, and the age is less than 5 years to retirement age.
Luxembourg	57	57	Early retirement pension (pension de vieillesse anticipée): From 60 years of age (on condition that 480 months of effective insurance or assimilated periods can be proved). From 57 years of age (on condition of 480 months of effective insurance).
Hungary	varies	varies	Varies according to specific conditions.
Malta	none	none	No early pension.
Netherlands	none	none	No early pension.
Austria	62	62	General legislation: 62 years for men and women. 60 years of age for heavy workers at the earliest (depending on the number of months doing heavy work).
Poland	60	55	Persons born before 1.1.1949, early pensions for specific cases. Person born after 1.1.1949, no provisions.
Portugal	55	55	Unemployed: from the age of 60. For those who have contributed 20 calendar years and are aged 50 or more when unemployed, it is also possible from the age of 55. In the case of heavy or unhealthy work, as a rule from the age of 55 (but only for professions legally foreseen).
Slovenia	none	none	No special early pension. Possibility of exceptions (no malus) in the case of retirement at the age of 58 provided that a person has completed 40 years (men) or 38 (women) years of service.
Slovakia	varies	varies	Varies according to specific conditions, but not related to any age limits.
Finland	62	62	National pension (Kansaneläke) and statutory earnings-related pension (Työeläke): Early old-age pension from the age of 62 (60 if born in 1944 or earlier).
Sweden	none	none	No early pension.
United Kingdom	none	none	No early State Pension.

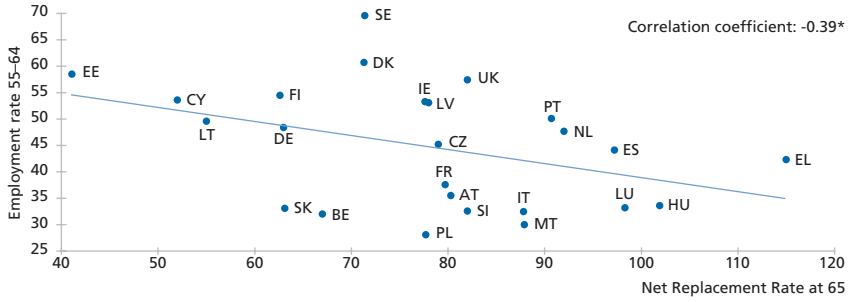
Source: MISSOC (Mutual information system on social protection, situation as at 1/1/2006) database, DG Employment, social affairs and equal opportunities, and national sources.

5.2.2. Balance of financial incentives

Choosing to participate in the labour market depends critically on individual financial circumstances and the alternatives available. Individuals will make judgements based on income from work and that from other sources, such as pensions. A key decision often facing older workers is whether or not they can afford to retire, taking into account the different characteristics of the old-age pension system, such as the age of entitlement to benefits and the benefit level, as well as the expected gain from continuing to work (from increasing future benefits) and indeed whether it pays to stay in work. Women are often most concerned with the work-or-retire calculation as they may not have worked in the paid labour market continuously, thus diminishing their retirement income. Financial incentives in pensions systems and other welfare benefits can therefore have an important influence on older workers' retirement decisions.

The effects of pensions and benefit systems have been covered extensively in many other publications and will not be the subject of a detailed analysis here[27]. Indeed, it is not the aim of this chapter to address in detail the issue of pension reforms and their significance in meeting the known budgetary challenges associated with demographic change. Nevertheless, a short overview of the main research findings, which draws heavily on OECD research in this area (in particular OECD, 2005 and Duval, 2003), are summarised in this section.

Chart 38: **Employment rates for the age group 55–64 versus net pension replacement rates[1] at age 65 across EU Member States**



Source: Eurostat, EU LFS 2006 for employment rates 55–64; Report by the Indicators Sub-group (ISG) of the Social Protection Committee (SPC), 19 May 2006, for replacement rates 2004/2005.
Note: [1]. Base Case: Career length 40 years, age at retirement 65, full-time work, single person, average earnings.
* indicates statistically significant at the 10% level.

The OECD's findings suggest that the wide variability in employment rates of older workers across countries is mainly due to disincentives to working longer embedded in public policies rather than different attitudes towards retirement age. Strong financial disincentives to remain in the labour market after 55 often arise from the design of pension systems and from other benefit programmes (particularly those concerning unemployment and disability), which can be used as pathways to early retirement rather than for the purposes for which the programmes were designed. This suggests that better designed policies can help increase employment of older workers, especially in those countries which have low employment rates for those aged 55–64.

A useful indicator of pension levels and hence financial incentives to retire is the replacement rate[28] (the ratio of annual benefits compared to earnings just before retirement), which can be obtained from pension systems and, where relevant, other social transfer programmes (such as early retirement schemes and unemployment and disability benefits)[29]. However, comparability between the different Member States' levels depends very heavily on whether the hypothetical cases calculated are similarly representative, and this can vary considerably across Member States. Nevertheless, based on recent data from the Indicators Sub-Group of the Social Protection Committee[30], for the case of a single person in full-time work and retiring at 65 with a career length of 40 years and on average earnings, there does appear to be considerable variation in replacement rates across Member States. More importantly, there appears to be a reasonably strong negative correlation with employment rates for older workers (Chart 38). While replacement rates are relatively low in the Baltic

27 For detailed analyses of pensions see for example Economic Policy Committee and European Commission (2006), 'The impact of ageing on public expenditure: projections for the EU-25 Member States on pensions, healthcare, long-term care, education and unemployment transfers (2004-50)' in *European Economy Reports and Studies*, No. 1., SPC(2004), *Promoting longer working lives through better social protection systems*, and European Commission (2006), *Adequate and sustainable pensions – synthesis report 2006*.

28 Replacement rates show the level of pensions as a percentage of previous individual earnings at the moment of take-up of pensions. Public pension schemes and (where appropriate) private pension arrangements are included, as well as the impact of taxes, social contributions and non-pension benefits that are generally available to pensioners. Theoretical replacement rates are calculated for a hypothetical worker, with a given earnings and career profile, and by taking into account enacted reforms of pension systems. Comparison of levels of replacement rates between Member States should be made with caution as the base case will vary in how representative it is in different countries.

29 This indicator serves as the base for a key indicator in the field of pensions, which is the change of replacement rates over time (between 2005 and 2050). The Indicator Subgroup of the Social Protection Committee has adopted a report describing this indicator in 2006: http://ec.europa.eu/employment_social/social_protection/docs/isg_repl_rates_en.pdf

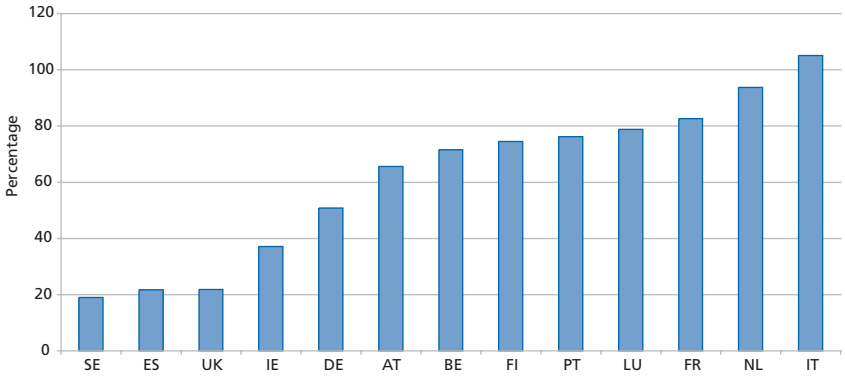
30 The data reflect current situations (data are for 2004 or 2005), i.e. the situation of people who retire today.

and Nordic Member States, and also Germany, they are high in almost all the Mediterranean countries (Greece, Italy, Malta, Portugal and Spain) and Hungary, Luxembourg and the Netherlands.

The OECD has also calculated expected replacement rates in old-age pensions systems (over a five-year horizon and at ages 60 and 65), but as averages across a range of cases of people with different characteristics[31] (Duval, 2003). These figures for replacement rates also indicate that expected replacement rates at ages 60 and 65 vary considerably across Member States, with particularly marked variations across countries in replacement rates at 60, for which figures range from zero in those Member States where the earliest age of eligibility is 65 to over two-thirds in those countries where people can become eligible for generous old-age pension benefits in their early 60s.

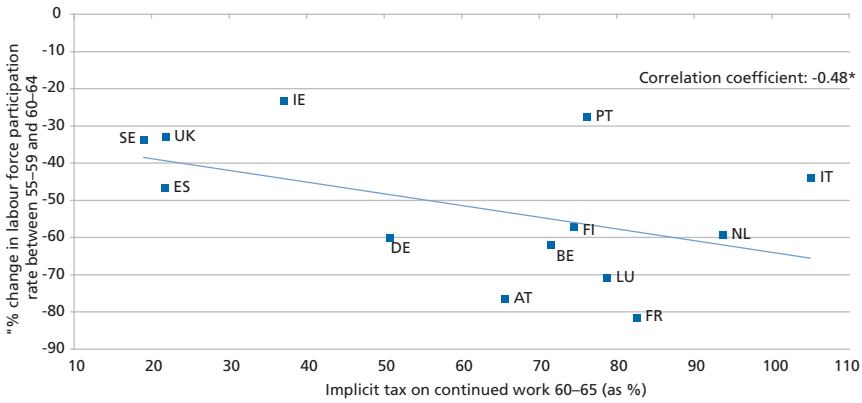
Older workers' retirement decisions may depend not only on the replacement rate but also on the implicit tax on continued work[32]. The OECD has carried out calculations[33] to combine implicit taxes arising from old-age pension schemes and other social transfer programmes into a single implicit tax rate, which sums up retirement incentives embedded in the social system (Chart 39). The results from these calculations 'underscore the strong incentives to retire in many countries' (OECD, 2005). Indeed, the OECD reports that at age 55, the overall implicit tax rate is considerable across many EU Member States even though old-age pension schemes on their own do not provide a strong incentive for retirement.

Chart 39: Implicit tax rates on continued work (for a single worker with average earnings at age 60) over the next five years in social transfer programmes, 1999



Source: Brandt et al. (2005).
Note: The implicit tax on continued work refers to an "early retirement route" and is defined as the change in pension/social wealth (i.e. the present value of the future stream of pension/social benefits), net of additional contributions paid, resulting from a decision to postpone retirement from age 60 to age 65. The calculations are made for a single worker with average earnings.

Chart 40: Decline in male labour force participation between five-year age groups 55–59 and 60–64 versus implicit tax rates on continued work, 1999



Source: Source: Brandt et al. (2005) for implicit tax rates on continued work, Eurostat, EU LFS, for activity rates for five-year age groups.
Note: The implicit tax on continued work refers to an "early retirement route" and is defined as the change in pension/social wealth (i.e. the present value of the future stream of pension/social benefits), net of additional contributions paid, resulting from a decision to postpone retirement from age 60 to age 65. The calculations are made for a single worker with average earnings. * denotes significant at 10% level.

The OECD reports therefore that the implicit tax on continued work has a clear influence on older workers' retirement behaviour, with a strong correlation between the level of implicit tax on continuing working

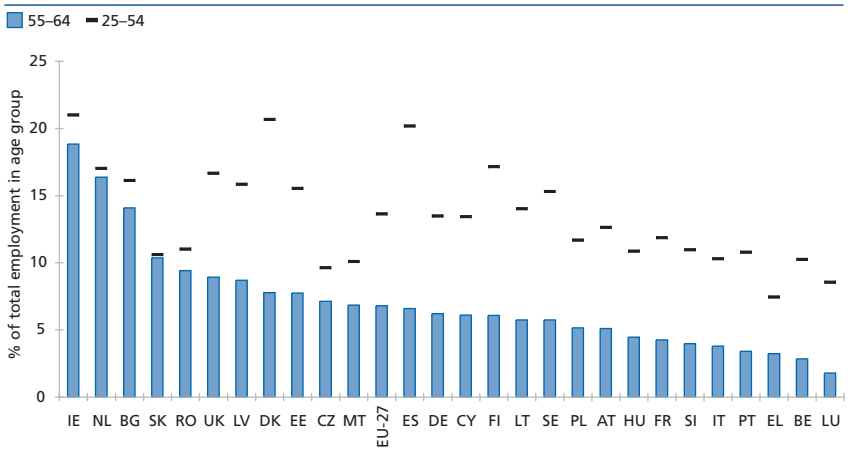
31 Calculated before tax and representing an average across six different stylised workers (corresponding to three earnings levels and two marital situations), assuming the person enters the labour market at 20 and has an uninterrupted full-time career until retirement. Calculations are based on currently legislated pension systems. See Duval (2003), Appendices 1 and 3, for details.

32 If the cost of remaining in employment in terms of foregone pensions and contributions paid exceeds the expected gain from the rise in future benefits of delaying retirement, there is an implicit tax on continued work. As such the implicit tax on continued work is a summary indicator of retirement incentives embedded in pension systems and early retirement schemes, and provides a representation of the balance between economic costs and benefits of continued work, and also some of the effects of eligibility ages and the level of benefits.

33 Implicit tax rates on continued work are calculated for a 'typical early retirement route', taking into account that a person will eventually move onto old-age pensions. It measures the costs of continuing to work in terms of contributions paid and foregone benefits, and is defined as the average annual change in pension/social wealth (i.e. the present value of the future stream of pension/social benefits), net of additional contributions paid, resulting from a decision to postpone retirement.

for five more years and changes in the labour force participation of successive five-year age groups of older male workers (a measure of labour market withdrawal) (Chart 40). This suggests that in some continental European Member States where employment rates for older workers are relatively low (such as Austria, Belgium, France, Italy, and Luxembourg), the comparatively high levels of implicit tax on continued work have a considerable impact on retirement behaviour, and that the labour force participation of older workers could be boosted by a reduction in the implicit tax on continued work.

Chart 41: **Hiring rate* of older and prime-age workers across EU Member States, 2005**



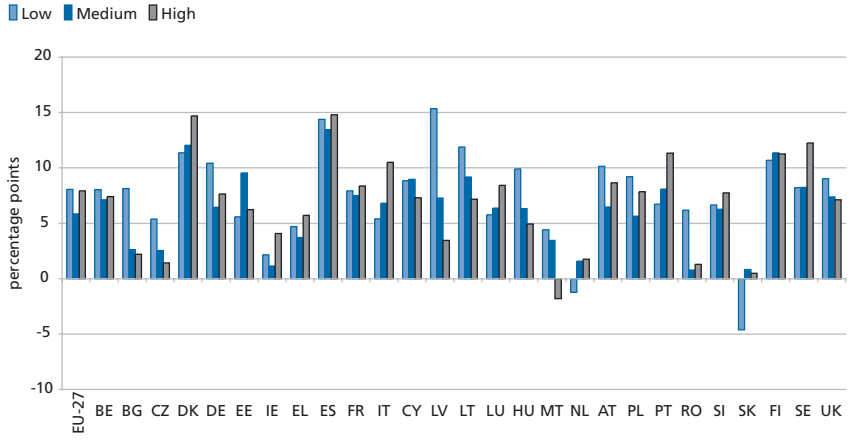
Source: Eurostat, EU LFS, 2005 annual results.
Note: * Hiring rate means the ratio of all those in employment with a job tenure of 12 months or less (in the age category) relative to the total employment (in that age group).

5.3. Factors affecting the availability of jobs to older workers and their employability

The availability of suitable jobs is a key factor influencing older people's decisions to enter, re-enter or remain in the labour market. On the other hand, the perception that no jobs are available, or that other elements of the population are given preference for the jobs that are available, may discourage older people from even looking for work in the first place. At the same time, while the general macro-economic situation will influence the overall level of demand for labour in the economy, underlying trends in the structure of employment and the functioning of the labour market, including wage rates and the relative 'employability' of specific elements of the population, will determine the extent to which employers will offer jobs and to whom.

The possibility for older workers to integrate, and remain, in the labour market, and particularly their attractiveness to employers (or their 'employability'), are key issues. To maintain an increasing number of older people in work and to prevent their exclusion from the labour market, it is crucial to preserve and improve their employability, a term which covers such aspects as their health, skills, motivation, productivity, relative costliness and mobility/adaptability.

Chart 42: **Gap in hiring rates between older workers (55–64) and prime age workers (25–54) across EU Member States by skill level, 2005**



Source: Eurostat, EU LFS, 2005 annual results.

As highlighted previously, evidence indicates that older jobseekers within the EU are likely to experience significant barriers to entering or re-entering employment, as exemplified by the fact that older workers are over-represented among the long-term unemployed and their low transition rate from unemployment into employment. In almost all Member States, the hiring rate[34] for older workers is well below that for people of prime working age, and for the EU as a whole is only around half that for the 25–54 age group (Chart 41). This indicates that older workers are at a clear disadvantage when it comes to hiring. In terms of the gap between hiring rates for these two age groups, the biggest differences are observed in Denmark, Finland and Spain, but in contrast the rates

34 The ratio of all those in employment with a job tenure of 12 months or less relative to total employment.

are in fact very similar in Bulgaria, Ireland, the Netherlands, Romania and Slovakia. The latter Member States are also those where the hiring rates for older people are highest, with Denmark, Estonia, Latvia and the United Kingdom also having rates well above the EU average. However, in several countries, such as Belgium, Greece, Italy, Luxembourg and Portugal, the hiring rate of older workers is particularly low at under 4%, although this seems to reflect to a certain extent that the labour market in these countries is generally less dynamic, since rates for prime-age workers are also relatively low.

It is interesting to observe that the differences in hiring rates between prime-age and older workers remains substantial in most Member States even when comparisons are made for the same skill level (Chart 42 - see page 87), hence indicating that older workers are still at a clear disadvantage in most countries even when adjustment is made for the skill composition of the different age groups.

5.3.1. Demand changes due to sectoral employment developments

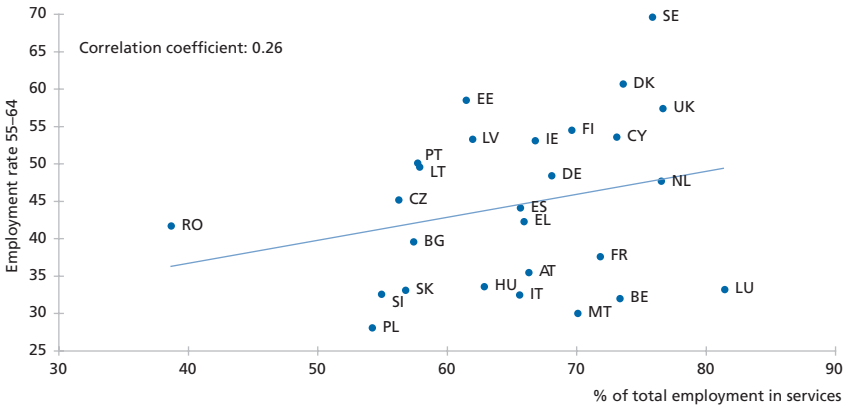
Since the 1970s, economic and structural changes have had a major impact on the sectoral employment structure within Europe, leading to declines in the importance of traditional industries, such as agriculture, manufacturing and mining, and expansion in the services sector, leading to the demand for different skills and abilities. Technological innovation and different ways of organising production have led to changes within the labour process and brought about new patterns of working. All this has resulted in a redistribution of jobs across the working population, with losses among some groups and new opportunities for others. For example, the shift in employment from manufacturing and agriculture towards services is related to technological change which requires more flexibility in acquiring new skills and wider knowledge of new technologies, which, it can be argued, probably weakens elderly people's position in the labour market relative to younger groups. However, the ongoing shift in employment towards the services sector and away from manufacturing and agriculture may well benefit older workers for several reasons.

Firstly, in general it would be expected that service sector jobs would require less in the way of physical effort compared to those in manufacturing and agriculture. Manual work has increasingly been replaced by non-manual work, so that the share of older workers in physically demanding activities has probably declined over time, while the reduced physical strains may allow them to remain in employment longer. Secondly, some service sector jobs may require interpersonal skills that are accumulated with experience. Indeed, in some cases it may be preferable to employ older workers than younger employees. This is particularly true in those sectors with an ageing customer base or that supply products or services more specific to the older generation, for example in the health services sector. Thirdly, service sector jobs tend to be more female employment-intensive, and this is a main demand-related factor behind the rise in older female employment, which has risen more strongly than for older men. A cross-country comparison of employment rates for the age group 55–64 versus the share of overall employment[35] in the services sector suggests that rates for older workers indeed tend to be higher in those Member States where the share of employment in services is higher, although the correlation is not particularly strong (Chart 43).

5.3.2. Age discrimination by employers

A key issue affecting employment prospects for older workers is the attitudes of employers, which will affect the real availability of job opportunities for this age group. O'Cinneide (2005) highlights that the negative impact of age stereotypes and prejudice is particularly marked

Chart 43: Employment rates for older workers (55–64) versus the share of employment in services, 2006



Source: Eurostat, EU labour force survey, 2006 annual average.
Note: Sector share refers to employment by main employment, resident concept.

35 By main employment and resident concept.

in the context of employment. Unjustified age discrimination, particularly of older people, often deprives individuals of equal access to work opportunities and hinders the development of the Lisbon Agenda by preventing particular age groups from participating fully in the labour market.

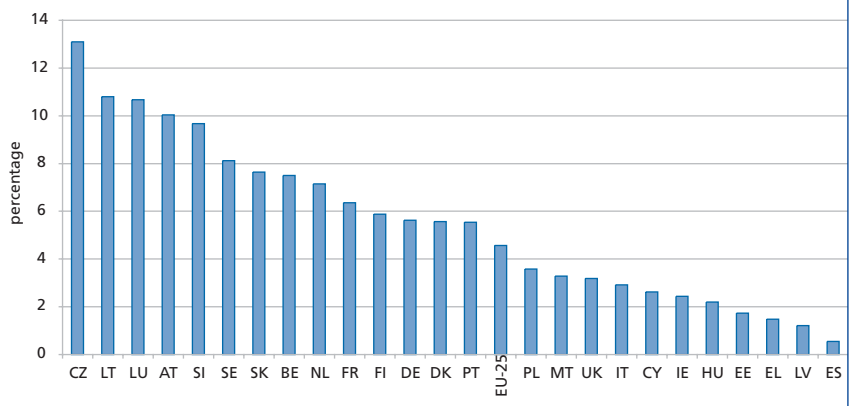
Taylor (2001) reports that research carried out among older job-seekers has found evidence of widespread experience of age discrimination by employers in the recruitment process, highlighting that while only a minority of older people in employment report experiences of age discrimination, older persons seeking employment are likely to encounter significant barriers. Ghosheh Jr. et al (2006) also identify age discrimination as one of the greatest obstacles to entry or re-entry of older workers in the labour market, concluding that 'age discrimination based on social and cultural perceptions that stereotype or generalise the capabilities and capacities of older workers, creates enormous obstacles for older workers to constructively participate in the paid labour market'.

The prevalence of age discrimination among employers is supported by the results of the 57th Eurobarometer survey carried out in 15 EU Member States, which indicated that workers aged 45–64 years were found to be more likely to report discrimination when looking for work (Marsh and Sahin-Dikmen, 2002). Furthermore, regarding general perceptions towards discrimination of older people, when questioned on attitudes to discrimination, 71% of respondents of all ages thought that those over 50 would have less chance of getting a job, training or promotion (compared to others with the same skills or qualification), varying from 17% in Greece to 83% in Finland (Marsh and Sahin-Dikmen, 2003). More recently, the results from the special Eurobarometer 273 (from 2007) shows that perceived age discrimination remains a reality in the European labour market, with age felt to be the most telling factor affecting a person's perceived chance of finding a new job (requiring the same skills and experience) should he or she be laid off.

Older people are also more subject to discrimination when they are in work. This is illustrated, for example, by the fact that older workers in employment have fewer opportunities for vocational training than their younger colleagues. Furthermore, results from the 4th *European Survey on Working Conditions* (Parent-Thirion et al, 2007) show that 4.6% of people in employment in the EU-25 aged over 55 report being personally subject to age discrimination at work, compared to 1.9% of those aged 25–54. While the average is fairly low, perceptions of discrimination are more substantial in particular Member States, especially Austria, the Czech Republic, Lithuania and Luxembourg, where a much higher share (over 10% of workers aged over 55) report being personally subject to age discrimination in the workplace (Chart 44). The large variation across Member States may, however, reflect to a certain degree differences in the level of public awareness of age discrimination issues, for example due to recent age awareness campaigns or well publicised changes in age discrimination legislation, rather than indicating concrete differences in the prevalence of discrimination.

In light of the above, it is evident that employer reluctance to hire and retain older workers partly reflects age discrimination and, hence, in addition to efforts to modify employer attitudes through information campaigns and guidelines, there is also a need for appropriate age discrimination legislation. Within the EU, the need for widespread legislation to address, among others, discrimination on the basis of age has been addressed through the adoption in 2000 of the Employment Framework Directive[36], which has created a completely new legal context in most Member States. The directive outlaws discrimination on grounds of age (as well as a number of other criteria) in terms of employment, self-employment and occupation, vocational training and guidance, and in the membership of organisations. In conformity with the directive, all EU countries were obliged to have put in place legislation banning age discrimination with regard to employment by the end of 2006, and the

Chart 44: Shares of older people aged 55 and over reporting being personally subject to age discrimination at work, 2005



Source: European Foundation for the Improvement of Living and Working Conditions, 4th ESWC.
Note: Figures show the proportion of respondents answering positively with don't knows/refusals ommitted from calculations.

36 Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation.

2007 European Year of Equal Opportunities for All will be an occasion to evaluate its implementation.

5.3.3. Age-related wages and productivity

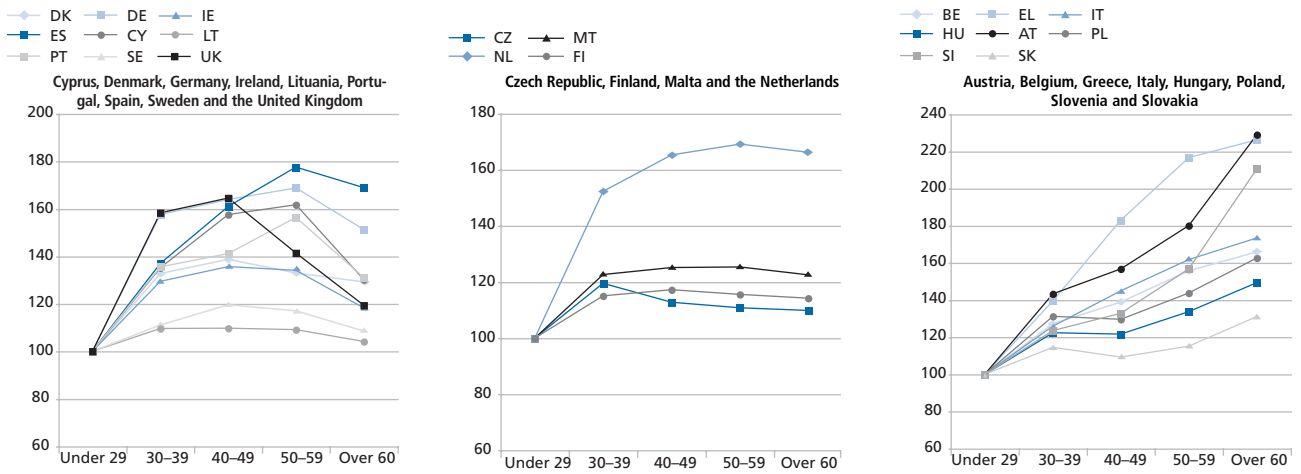
An issue of particular relevance with regard to older workers is the common view that workers become more expensive and less productive as they get older, pointing to a cost disadvantage to hiring or retaining older workers. Indeed, one of the factors seen as a main obstacle for improving the labour market participation of older workers is the perceived discrepancy between declining productivity, as a result of deteriorating physical and mental capacities, and increasing labour costs at older ages, especially in the context of seniority-based wage systems. In this perspective older workers are seen as too expensive in relation to their productivity, which explains why employers have a preference to get rid of older workers in periods of economic slowdown or recession.

In line with this, OECD (2006) reports empirical evidence that higher wage and non-wage costs act as barriers on employment opportunities for older workers, with some evidence of a negative impact of seniority wages on employment opportunities for older male workers.[37] Another finding is that employers appear more likely to hire and retain older male workers, all else being equal, in countries where wages rise less steeply with age than they are in those countries where wages rise more steeply. This reinforces the view that relatively high wages for older workers may well be placing important constraints on labour demand for older workers.

Data from the 2002 EU *Structure of Earnings Survey* shows that, in a number of Member States, earnings of employees in industry and market services sectors (NACE sectors C to K) normally increase until a certain age, generally peaking in the 40s or 50s, before falling for the subsequent age group(s) (Chart 45). However, there are notable exceptions to this hump-shaped profile, especially Austria, Belgium, Greece, Italy, Hungary, Poland, Slovenia and Slovakia, where earnings continue to rise even into the 60 and over age group. A further group of countries (the Czech Republic, Finland, Malta and the Netherlands) show relatively little decline in earnings for the older age group.

Examining the impact of relative wages for older workers on their employment outcomes across Member States reveals there is a strong (and statistically significant) negative correlation between employment rates for the age group 55–64 and the ratios of mean annual earnings of the older age groups (50–59 and 60 and over), compared to both the young (under 29) and 40–49 age groups (Chart 46). In those countries where older workers' earnings are highest relative to the younger age groups, older workers' employment rates tend to be lower, this being clearly the case in Austria, Belgium, Greece, Hungary, Italy, Slovenia and Poland. This indicates that the relative cost of older workers compared to younger ones is indeed a key factor affecting employers' willingness to hire or retain older workers. It therefore seems likely that more flexible pay systems, and in particular moving away from seniority-based wage systems, could enhance the job security and employability of older workers by reducing their relative cost. However, based on an assessment of recent developments for older workers in Belgium, Denmark, Germany and the Netherlands, Tros (2005) reports that currently there appears to be little policy interven-

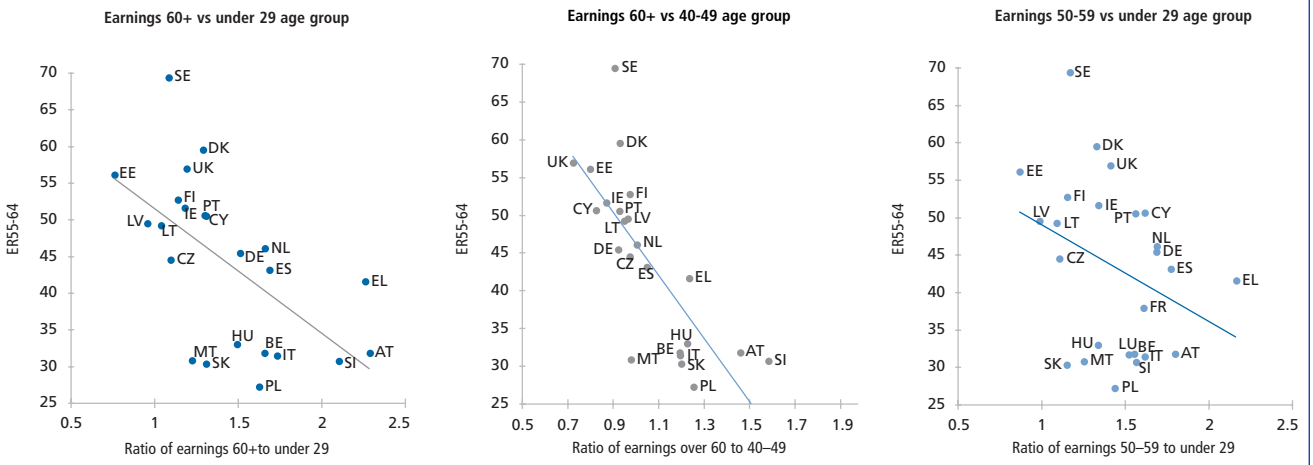
Chart 45: **Earnings profiles of employees in industry and market services by age across EU Member States, 2002**



Source: Eurostat, Structure of Earnings Survey 2002.

37 There is a negative relationship observed across OECD countries between the employment rate of men aged 55–64 and the extent to which wages for male workers aged 55–59 are higher than those aged 25–29.

Chart 46: **Relationship between employment rates for the 55–64 age group and earnings ratios of older age groups versus young (under 29) and middle (40–49) age groups**



Source: Eurostat, EU LFS 2005 for ERs, Structure of earnings survey 2002 for earnings ratios

tion to improve wage flexibility in order to enhance employment security for older workers.

Apart from earnings, high non-wage costs can also act as a barrier to employing older workers and affect an employer's willingness to hire and keep older workers. In this context, more general labour market institutions, such as the tax wedge[38], can also help explain differences in the labour market performance of older workers across countries. Bassanini and Duval (2006) find that, in common with outcomes for other age groups, high tax wedges in general are associated with lower employment prospects for older workers. They report that a reduction of 1 percentage point in the tax wedge leads to a rise of 0.3 percentage points in the older worker's employment rate.

On whether older workers have sufficiently high productivity to merit their relatively high costs compared to younger workers, available evidence does not suggest that older workers are necessarily less productive than their younger counterparts, and that an older labour force and longer working lives need not necessarily imply less productive labour overall. Auer and Fortuny (2000) emphasise that while it is true that wages and fringe benefits often rise with age, there is no reason to believe that performance and accumulated know-how of older workers does not compensate for the higher cost. As emphasised by Naegele and Walker (2006) 'both practical experience and research demonstrate, older employees – deployed in the right posts for their individual skills – are highly productive'. Moreover, Taylor (2002) argues there is evidence that older workers' higher earnings may be compensated for by their accumulated experience and greater know-how resulting in higher levels of job performance, and reports that while studies show that when objective measures of productivity are used performance increases with age, supervisor ratings tend to indicate instead a negative relationship (Taylor, 2001).

Even if individual productivity does decline in some dimensions (e.g. physical and mental capacity) this can be reduced by changes to work organisation, ensuring older workers receive appropriate training to update skills[39], preventive health policies and more effective use of work-related technologies, and may be partly offset by typical characteristics of older workers such as greater experience, stability and reliability, and better people skills.

5.3.4. Employment protection legislation

Apart from seniority-based wage systems, strict employment protection legislation[40] (EPL) may also make it more expensive to employ older workers (for example it may be more expensive to lay-off older workers because of higher severance pay). However, the overall effect on employment is not straightforward, since strict EPL can have two opposing effects on labour market outcomes for workers. On the one hand, it tends to reduce the separation rate from employment since it raises firing costs, while on the other it decreases the exit rate from unemployment

38 The tax wedge (the difference between the labour cost to the employer and the corresponding net take-home pay of the employee) is an indication of the distortions created by the tax system. Labour taxes may affect employment if they alter labour costs and modify the incentive for job creation at given after–tax wages. Changes in taxes affect labour-supply decisions when they alter the gap between in-work and out-of-work income.

39 Data from the OECD's International *Adult Literacy Survey* (IALS) suggests literacy skills are a key determinant of worker's productivity and that these improve with practice and deteriorate if not used. This suggests the productivity potential of older workers is not impaired by age but rather by skills obsolescence – something that can be overcome through training.

40 EPL covers legal and administrative restrictions on worker dismissals as well as severance payments for dismissed employees.

into work since, in anticipation of possible future costs on labour force adjustment, firms may become more cautious about hiring.

Empirical evidence generally indicates a weak negative correlation across Member States between the OECD calculated indicator of the overall strictness of EPL[41] and the corresponding employment rate for the 55–64 age group (Chart 47). However, by focusing on outcomes for older men and the employment ratio specifically of employees aged 50–64 to the population of the same age (hence excluding the self-employed), the OECD (2006) finds much stronger evidence that strict EPL is a barrier to employment of older workers. In particular, it appears to be associated with lower labour mobility in a number of countries, especially in terms of lower hiring rates. Results from the EU *Labour Force Survey* for 2006 confirm the stronger nature of the negative relationship for male employees (Chart 48), although the correlation in this case is not statistically significant.

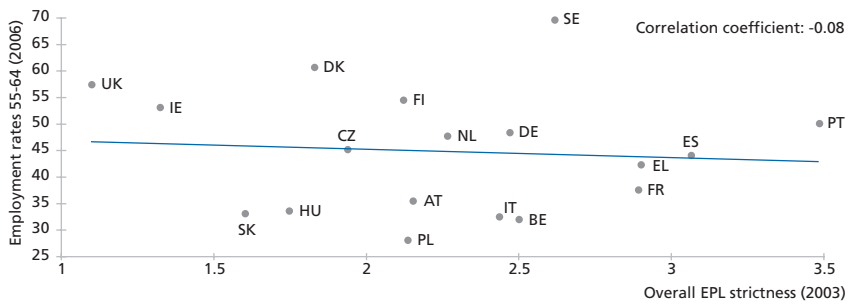
However, recent research by Bassanini and Duval (2006) using cross-country and time-series econometric techniques[42] finds that stringent EPL may in fact benefit older workers. They find that, although EPL is likely to reduce the opportunities of older job seekers through its negative impact on hiring rates, this may be more than offset by the lower risk that already employed older workers are laid off.

5.3.5. Health, disability, and health and safety at work

Health often declines with age, and the onset of health problems affects the timing of retirement for a significant number of workers unless it is possible for them to adapt work activities.[43] Research (Bound et al., 1998) and results shown earlier indicate that poor health and disability are among the most common factors leading people to withdraw from the labour market and are a very important determinant of labour force participation for older people. Indeed, employment rates for the age group 55–64 tend to be higher in those Member States where the share of people in this age group reporting self-perceived health as good or very good is greater (Chart 49).

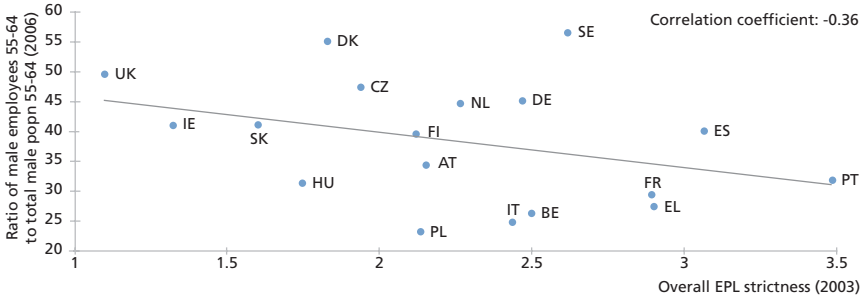
Persons with long-standing health problems or disability (LSHPD) are much more likely to be inactive than the able-bodied as a result of difficulties in entering the labour market and remaining there. Results from the 2002 LFS ad hoc module[44] indicate that 45% of people in the EU-25 aged over 15 and with some disability are inactive compared to 27% of the non-disabled. Furthermore, only around 50% of disabled people are in employment, compared to 68% of the non-disabled. Since the incidence of long-standing health problems or disability increases with age (Chart 50),

Chart 47: Older workers employment rates across EU Member States versus strictness of EPL



Source: Eurostat, EU LFS for ERs 55-64 (2006 annual averages), OECD Employment Outlook 2006 and OECD.stat for EPL strictness, 2003

Chart 48: Ratio of male employees aged 55-64 to the male population of the same age versus EPL strictness



Source: Eurostat, EU LFS second quarter 2006 results for male employee ratio, Employment Outlook 2006 and OECD.Stat for EPL strictness (2003)

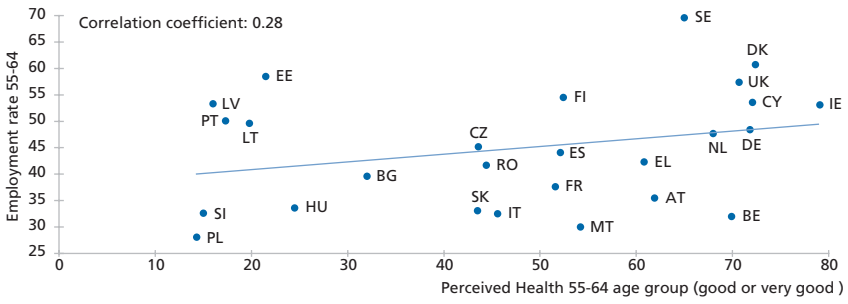
41 The OECD calculates a summary indicator of the overall strictness of EPL as a weighted average of three components: 1. regular employees, 2. temporary employees and 3. collective dismissals. The summary indicator ranges from 0 to 6, with higher values indicating greater strictness of EPL.

42 They explore the policy and institutional determinants of employment rates through pooled cross-country/time series regressions, including for the older workers age group.

43 Bound et al (1998) find that changing jobs appears to be an important method adopted by older workers to enable continued labour force participation.

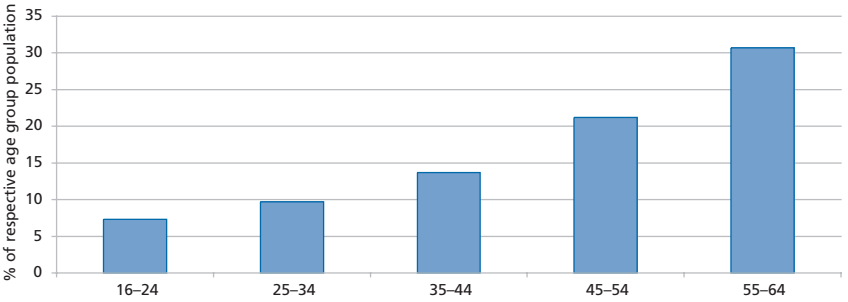
44 The 2002 LFS module focused on the topic of the employment of disabled people. Results refer to persons aged 16–64 living in private households. Disabled persons are those who stated that they had a longstanding health problem or disability (LSHPD) for six months or more or expected it to last for six months or more.

Chart 49: Employment rates for the age group 55-64 across EU Member States versus self-perceived health status of this group



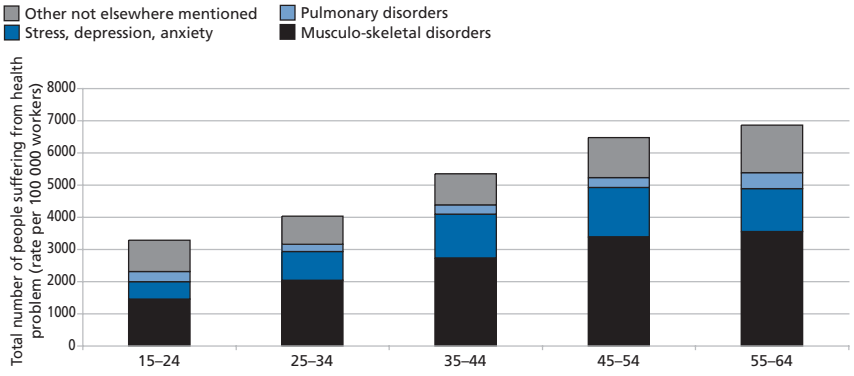
Source: Eurostat, EU LFS, annual averages 2006 for ERs 55-64, and Health Interview Survey 2004 round

Chart 50: Percentage of EU-25 population aged 16–64 with a long-standing health problem or disability, 2002



Source: Eurostat, EU LFS ad hoc module 2002

Chart 51: Standardised prevalence rate of work-related health problems by diagnosis group and age in the EU* in 1999



Source: Eurostat, EU LFS ad hoc module 1999
Note: * EU data covers only DK, DE, EL, ES, HU, IE, IT, LU, PT, FI, SE, UK.

the impact on inactivity among older people is even more pronounced. Almost one in three people aged 55–64 suffers from a longstanding health problem or disability (LSHPD), and more than two-thirds of those aged 55–64 with some form of disability are inactive.

Figures on the standardised prevalence rate[45] of work-related health problems from the 1999 LFS ad hoc module on work-related health problems and accidental injuries indicate that the most frequent health problems for older workers concern musculoskeletal disorders (Chart 51). This highlights the importance of reducing the physical strain on ageing workers, which can be achieved through variations in working time, work organisation and job design. However, stress, depression and anxiety are also relatively important causes of health problems as workers get older.

Despite the significance of health problems with regard to labour force participation, figures from the latest *European Working Conditions Survey* indicate that around one in three (35.4%) workers in the EU-27 feel that their work affects their health, while around one in four (28.6%) consider their health and safety to be at risk because of their work, although this share has been declining in recent years. Corresponding figures for workers aged 55 and over are broadly similar (33% and 24.9% respectively). However, the true impact of health-related issues is likely to be greater, since data from the survey does not cover people no longer in work, many of whom may have exited the labour market due to health problems. All this reinforces the importance of measures to improve working conditions and to pay particular attention to health and safety in the workplace, as well as general measures to improve the overall health of the population.

5.3.6. Skill levels and lifelong learning

Older workers are often perceived as being less well educated than younger age groups, having obsolete

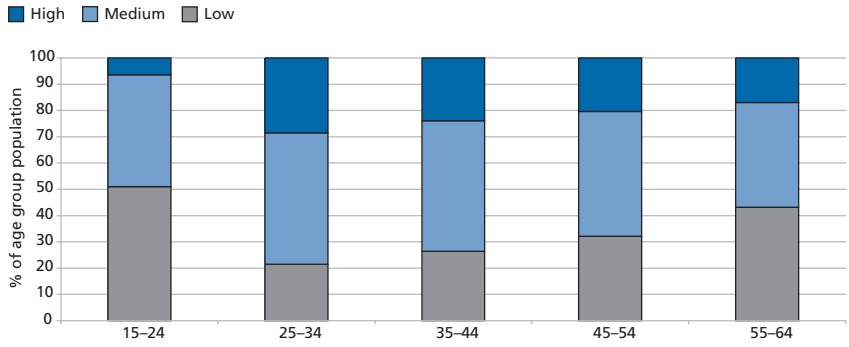
45 The prevalence rate is the number of workers suffering from the health problem during the last 12 months per 100 000 employed workers. A work-related health problem covers all diseases, disabilities and other physical or psychological health problems, apart from accidental injuries, suffered by the person during the last 12 months, and caused or made worse by the work.

skills and being less able to adapt to rapid technological change. Indeed, Taylor (2001) reports that a perceived lack of appropriate skills among older workers, lack of qualifications held and the low return on training investment due to a truncated pay-back period are often cited by employers as factors which might discourage them from recruiting and employing older people. If workers are to remain and progress in work they need to update skills regularly, as skills and competences determine not only the extent to which those entering or returning to the labour market can take up the jobs on offer, but more crucially, the extent to which those already in work can keep their jobs in a changing technological and economic environment. Skills are, indeed, a key dimension of employability, but evidence suggests that older workers in particular face a lack of opportunities to update their skills.

Figures from the EU *Labour Force Survey* confirm that older people are, on average, less well educated[46] than other age groups (Chart 52). However, more effective lifelong learning strategies, as well as the fact that younger cohorts are better educated[47] and will eventually filter through to the older age groups, should lead to a continuing improvement in the skill composition of the 55–64 year old group in coming years.

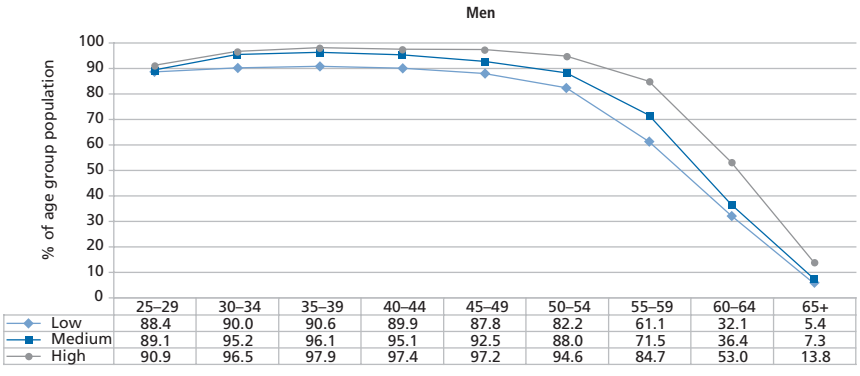
As the existing literature shows (*Employment in Europe 2003*; OECD, 2006: Leombruni and Villosio, 2005), educational attainment is a particularly important factor in the employment of older workers, and their participation and employment rates. At all ages, activity rates are significantly higher the more educated the work force, with the importance of skill level to labour market participation more pronounced for women than for men (Chart 53). For men the difference in activity rates between the low and high-skilled generally increases with age, being greatest for the age groups 55–59 and 60–64 where the difference exceeds 20 percentage points. This age effect is less pronounced for women, as differences between activity rates for low and high-skilled are generally sub-

Chart 52: Skill structure of the population aged 15–64 in the EU-27 by age group, 2006

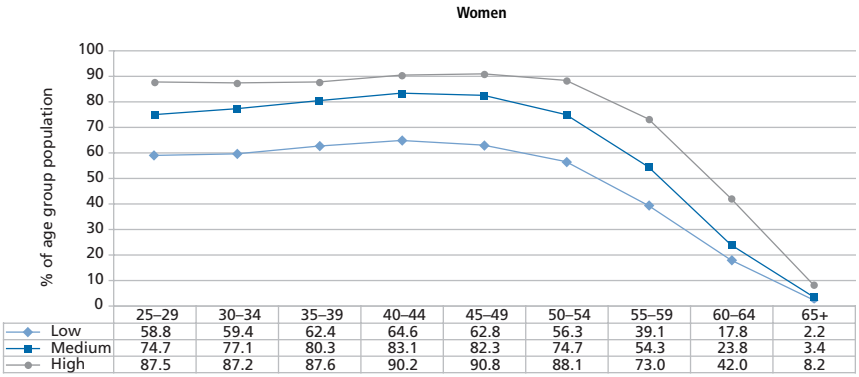


Source: Eurostat, EU Labour force survey, 2006 spring results

Chart 53: Activity rate by five year age groups, sex and skill level in the EU-25, 2006



	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65+
Low	88.4	90.0	90.6	89.9	87.8	82.2	61.1	32.1	5.4
Medium	89.1	95.2	96.1	95.1	92.5	88.0	71.5	36.4	7.3
High	90.9	96.5	97.9	97.4	97.2	94.6	84.7	53.0	13.8



	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65+
Low	58.8	59.4	62.4	64.6	62.8	56.3	39.1	17.8	2.2
Medium	74.7	77.1	80.3	83.1	82.3	74.7	54.3	23.8	3.4
High	87.5	87.2	87.6	90.2	90.8	88.1	73.0	42.0	8.2

Source: Eurostat, EU LFS second quarter 2006 results.

46 In this chapter, 'low-skilled' refers to those with education at lower secondary level or below (ISCED 0-2), 'medium-skilled' to those with upper secondary education (ISCED 3-4), and 'high-skilled' to those having completed tertiary education (ISCED 5-6).

47 In 2006, within the EU-25, the age group 25–54 comprised 25% high-skilled and only 27% low-skilled compared to 17% and 43% respectively for those aged 55–64.

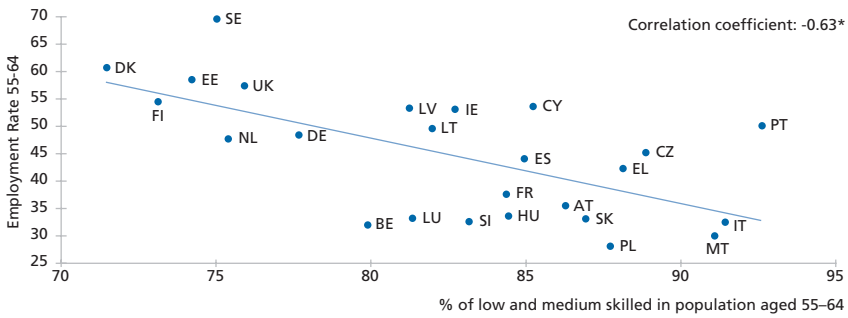
stantial at all ages below 65, although the difference is most pronounced for the older age groups 50–54 and 55–59.

Older people in the highest education category (those having completed tertiary education) are almost twice as likely to be in employment as those in the lowest category (those with education only at lower secondary level or below), with the difference more pronounced for women than for men. This difference in employment rates for people aged 55–64 between the high and low-skilled (64% versus 34%) is much greater than that observed for the prime working-age population (88% versus 66%), indicating the greater importance of skill level to older people's employment attachment. Indeed, higher qualified people generally remain in the labour market to older ages than the less qualified, but this may also be partly explained by the fact that the less educated generally begin their working lives earlier and consequently exit the labour market earlier[48].

There are large differences across Member States in the skill composition of the population aged 55–64. For example, while the share of low-skilled in this age group averages 43% for the EU-25 as a whole, in Greece, Italy and Spain the share is over two-thirds and is even higher in Malta and Portugal at over 80%. These marked differences in skill composition account for a substantial part of the variation in overall employment rates for older people across Member States (Chart 54), with high (and statistically significant) negative correlation between the employment rates for those aged 55–64 and the combined share of low and medium-skilled in the population of the same age. Indeed in many Member States the low employment rate for the age group 55–64 is due to the combination of the high share of older people with lower levels of education and the tendency for the less skilled to have lower employment rates.

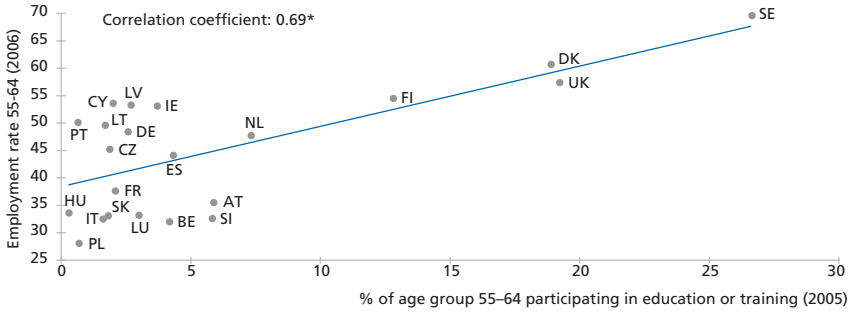
Continuing to update skills during working life to respond to the changing needs of the labour market is critical if older workers are to remain in work longer. Indeed, access to training and lifelong learning has been identified as a key factor for extending working life (OECD, 2006: European Commission, 2006c), and there is a positive and statistically significant correlation across Member States between the incidence of training for older workers[49] and the employment rate for this age group (Chart 55). Adult learning and training can also play a key role in overcoming the lack of formal education or in the acquisition of basic skills, and are important for both equity and efficiency, not least to re-engage the low-skilled in learning and help them to become better adapted to the changing labour market (European Commission, 2006d). Furthermore, as Auer and Fortuny (2000) point out, while the 'educational upgrading' in younger generations should provide the basis for younger cohorts to eventually enter the older age group relatively well equipped,

Chart 54: Skill composition of population aged 55–64 and overall employment rates for the age group 55–64, 2006



Source: Eurostat, EU LFS, annual average 2006 for ER 55–64, second quarter 2006 results for skill composition.
Note: * indicates significant at the 1% level.

Chart 55: Employment rates for the age group 55–64 and their participation in education or training across EU Member States



Source: Eurostat, based on EU LFS annual average data 2005 and 2006.
Note: * Statistically significant at 1% level.

48 See *Employment in Europe 2003*, Chapter 5.

49 Based on data from the EU *Labour Force Survey* on the share of older people aged 55–64 in the labour force who received education or training in the four weeks preceding the survey.

longer duration of schooling cannot be a substitute for lifelong learning. They emphasise that 'without lifelong learning, the incoming cohorts of younger workers will continue to have educational advantages compared with older cohorts, especially since their education may be perceived to be more relevant to the current job market'.

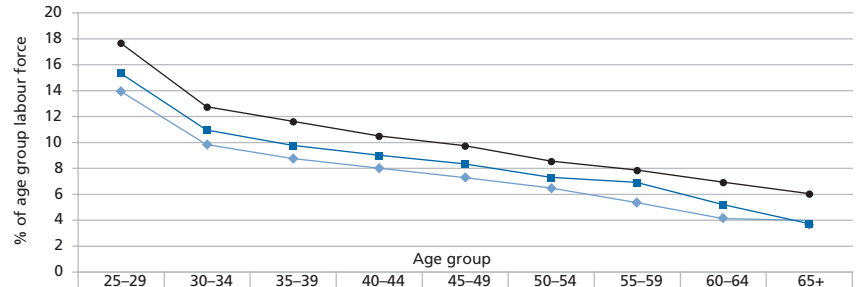
However, the evidence indicates that older workers participate in training and lifelong learning activities less than their younger colleagues do, with most surveys clearly showing an age gap in participation in continuing education and training. According to the EU LFS, only in Austria, the Nordic Member States, Slovenia and the United Kingdom does the share of older workers in training in the last four weeks exceed 10%, while in most southern and eastern Member States the levels of training are very low at fewer than 5%. In addition, a recent study by EIM and SEOR (2005) reports that not only does the incidence of job-related training tend to decline with age but also the average duration of training for older workers is shorter compared to younger trainees. Furthermore, analysis performed on the results of the third *European Working Conditions Survey* (Molinié, 2003) highlights the fact that the older workers get, the more they feel that their work does not enable them 'to learn new things' and task rotation between colleagues becomes considerably rare over the age of 45.

While it still remains the case that older workers receive less training than their younger counterparts, there is nevertheless some evidence of an improvement between 2000 and 2006 in the share of the labour force participating in education and training for all age groups, including older workers (Chart 56). Furthermore, the improvement for those aged over 50 has generally been of the same order as that for the younger groups aged over 30. The absolute situation for older workers has therefore improved but not the situation relative to younger age groups, and the differences between ages still persist. Indeed, the trend of declining participation in education and training with age, which starts early on in working life, remains a strong feature in most Member States and much remains to be done to address this.

Furthermore, little attention continues to be paid to training for low-skilled older workers. It remains the case that the low-skilled receive considerably less training than the high-skilled across all adult age groups, including the older workers age group (Chart 57). According to the EU LFS, in 2006 less than 4% of low-skilled 55–64 year olds in the labour force received training in the four weeks preceding the survey, while the share was around four times higher(around 15%) for high-skilled older workers. Given that the share of low-skilled in the 55–64 age group is much greater than that of the high-skilled, and that in principle it is the low-skilled that have the greater need for training if they are to adapt to and stay in the changing labour market, the large difference in the incidence of training among older people according to skill level is an issue of concern.

In an economy in which jobs require an increasingly high level of technical skills and knowledge, the lack of major improvements in the relative position of older workers with respect to lifelong learning, especially the less skilled ones, is a concern. As pointed out by Taylor (2001 and 2002), with the application of new technologies over recent years there have been marked changes in the skills requirements within many industries and organisations, while

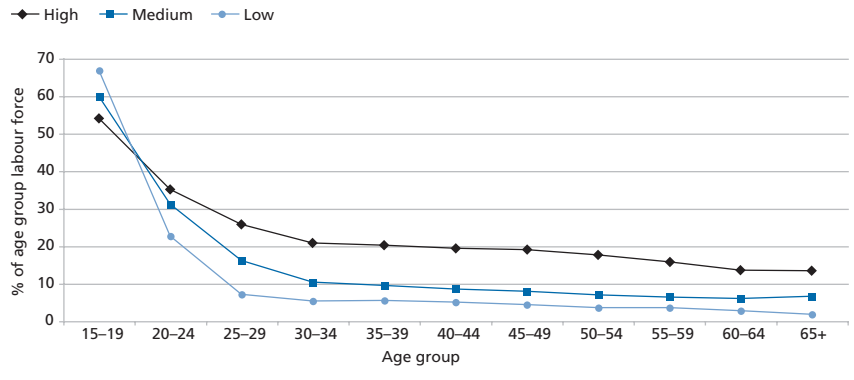
Chart 56: **Participation of the EU-25 labour force in education and training by age group**



	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65+
2000	13.9	9.8	8.7	8.0	7.2	6.4	5.3	4.1	3.9
2003	15.3	10.9	9.7	9.0	8.3	7.3	6.9	5.2	3.7
2006	17.6	12.7	11.6	10.5	9.7	8.5	7.8	6.9	6.0

Source: Eurostat, EU LFS, spring 2000 & 2003 and second quarter 2006 results.

Chart 57: **Percentage of the EU-25 labour force in training during previous four weeks by educational attainment level and age group, 2006**



Source: Eurostat, EU LFS second quarter 2006 results.

the reorganisation of work also brings with it potential challenges for older workers. If new technologies change job and skill requirements, older workers will be affected differently to prime-age workers because of their older skills and because they have less education on average. Behaghel and Greenan (2007) confirm that technical change is biased against older low-skilled workers, but also find that old age does not constitute a systematic barrier to training and that the difficulties faced by older low-skilled workers may be due rather to the lack of basic computer literacy. It is therefore essential that older workers are provided with the skills required of the new economy, in particular through greater involvement in lifelong learning, if inactivity of older people due to skill deficits is to be reduced (Box 2).

However, in the general debate on the need for increased training for older workers some caveats are necessary. Mayhew and Rijkers (2004) point out that while education and training on the whole improve individuals' labour market prospects, not all education and training is equally effective in achieving this. They report that training programmes on their own are of limited value in getting people out of unemployment or inactivity and into work, and that indiscriminately providing training in the absence of other linked initiatives (for example, active labour market measures such as job search assistance and ensuring that it pays to work) would be wasteful. OECD (2006) argues that the attractiveness of training and its potential returns for older workers can be improved by adapting teaching methods and content to their needs by the provision of short, modular courses and through the recognition of prior learning and experience. Older workers are found to be more likely to participate in training if they have access to shorter courses that build on existing skills and experience and which have a stronger link to the workplace, suggesting that training which is targeted and has a strong on-the-job element is most likely to be successful.

As Auer and Fortuny (2000) point out, the move towards lifelong learning will be a gradual process, but in the meantime there is still an urgent need to help the present 'stock' of older workers. Therefore, both stock (the current problems of older workers) and flow (to seriously start a policy of lifelong learning for younger cohorts) policies have to be pursued at the same time. A means of compensating for low educational attainment among today's older age groups is through adult key skills programmes, in addition to addressing some of the barriers that seem to prevent many people from engaging in job-related learning later in life. In a longer-term perspective, what is needed is a lifelong learning strategy for working-age people, not just focusing on the needs of workers when they reach the later ages of 55–64 but addressing their needs throughout their entire working life.

5.4. Attractiveness (and conditions) of work

In order to raise employment among older people it is not just a case of making older workers more attractive to employers, but also of making the sort of jobs available to older

Box 2 – Skill deficits and inactivity

A major factor in the inactivity of older people is their lack of preparedness for continuing their working career. Participation in adult learning in the EU is currently low and unequally distributed. In all countries, participation decreases sharply with age after the age of 34. Also older workers are less likely to benefit from workplace training opportunities than their younger colleagues, while those with the lowest levels of skills and of initial education are least likely to participate; thus many older workers are at a double disadvantage as they also belong to that part of the workforce considered to be low-skilled workers.

Cedefop advocates a new mindset among policy-makers and social partners in relation to working, learning and ageing, and the links between them[50]. Older people may be less able to do physically demanding work, for example, but they do have something different to contribute – experience, reliability, a longer term view (providing a balance between 'younger' and 'older' perspectives – intergenerational learning). However, their skills need to be adapted and developed in order for them to fill a new role in the workplace, and currently lifelong learning strategies are failing to cover their needs.

Cedefop's work concludes that key policy changes are required in relation to older workers based on:

- New thinking about the contribution of older people in a 'life-course' perspective, which means understanding the phases of one's life as the taking on of new challenges, i.e. active ageing
- Creation of 'sustainable work environments' that provide flexible and quality work for older people.

50 *Promoting lifelong learning for older workers: an international overview* (2006), Cedefop, edited by Tarja Tikkanen and Barry Nyhan.

people more attractive to them. Indeed, the quality of work is a key element in retaining older workers in employment or encouraging them to return to work; the number of older workers in jobs of low quality leaving the labour market is up to four times higher than that of older workers in jobs of higher quality[51]. Furthermore, results from the 4th *European Working Conditions Survey* indicate that, although for the EU-27 as a whole 85% of older people aged 55 and over in employment report being satisfied or very satisfied with their working conditions, satisfaction varies substantially across Member States, from as low as around the 50% level in Greece and Romania to 98% in Denmark (Chart 58).

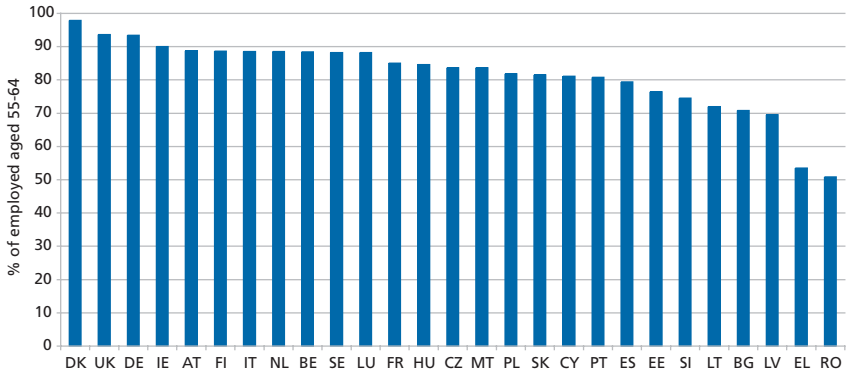
Research (Haider and Loughran, 2001; Ghosheh Jr. et al, 2006) has shown that the attractiveness of work and working conditions[52] are significant factors affecting older workers' labour market attachment. The overall attractiveness of a job covers a number of dimensions such as pay and working conditions, training opportunities and career development, health and safety at the workplace, and flexible work organisation and working-time arrangements that allow for a better reconciliation between work and family responsibilities. Issues which can act as disincentives to remaining in work include low job satisfaction, occupational stress, poor working conditions, work which is physically demanding, a lack of variety and autonomy in work tasks, a lack of challenge and development opportunities, and an inability to reconcile work and personal responsibilities. Furthermore, appropriate adjustments at the workplace are crucial for allowing workers with disabilities or declining physical capacities to enter or stay in the labour market. The ability of the European labour market to address these issues and offer good quality jobs will determine the extent to which older workers will take up the jobs on offer or remain in their current employment for longer.

5.4.1. Working time

An issue of particular relevance to older workers may be the desire to withdraw gradually from the labour force by reducing working hours towards the end of their working lives. Rather than having to end their participation in the labour market abruptly, arrangements which allow people to withdraw gradually from employment could potentially better meet the wishes of older workers and consequently help raise their employment rates. Conversely, a lack of possibilities to shift to part-time work would limit the scope for a more phased transition to retirement.

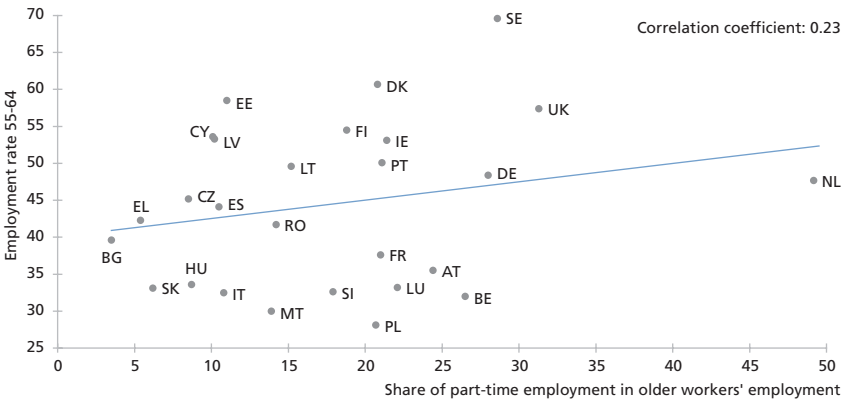
There are broad indications that reduced working hours would generally help to raise employment levels

Chart 58: **Satisfaction* with working conditions among employed older workers (aged 55–64) in the EU Member States, 2005**



Source: European Foundation for the Improvement of Living and Working Conditions, 4th EWCS
Note: * Share of older people in employment declaring they are satisfied or very satisfied with working conditions.

Chart 59: **Part-time employment share and employment rates for older workers (55–64) across EU Member States, 2006**



Source: Eurostat, EU LFS, 2006 annual average.

51 European Commission, 'Improving quality in work: a review of recent progress', COM(2003) 728.

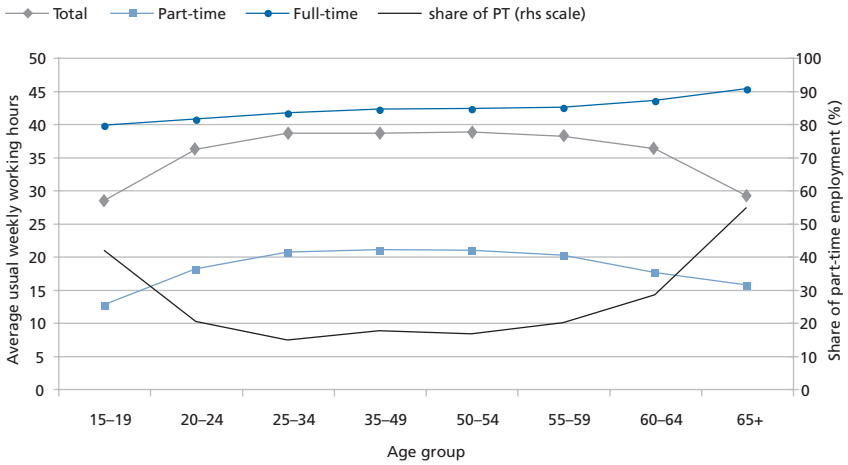
52 The importance of health-related issues has already been addressed earlier in the chapter. Here it is just necessary to emphasise again that, given that many older workers cite health problems as one of the reasons for withdrawing from the labour market, improving working conditions will play a key role in encouraging longer working lives.

among older people. Older people are already over-represented in part-time work, and Member States with greater shares of older workers in part-time employment tend to have higher overall employment rates for the 55–64 age group, although the relationship is not particularly strong (Chart 59). Furthermore, the proportion of involuntary part-time workers (i.e. those that are employed part time because they could not get a full-time job) in the EU is low for older workers (at around 12%, compared to 20% for the working-age population as a whole (2004 figures)), clearly indicating that part-time work meets the wishes of a large majority of older workers in such employment.

Working-time reduction therefore merits special attention as a potentially useful measure to improve the attractiveness of work for older workers, and Member States have been experimenting with and implementing measures on gradual retirement in which older workers decrease their working hours whilst being granted some form of income support. However, while increasing the availability of arrangements allowing for reduced working hours for older workers appears a positive step in principle, Jolivet and Lee (2004) highlight that it may have unintended consequences such as inducing those who would otherwise stay in full-time work to take part-time employment, or even marginalising older workers in the workplace. With take-up rates of progressive retirement among older workers still very low in European countries, Taylor (2002) points out that a problem for gradual retirement appears to be that part-time employment may be seen as unusual or of lower status. OECD (2006) also points out that if reductions in working time are heavily subsidised, there is a risk that they could involve reductions rather than increases in effective labour supply of older workers, and warns that measures to promote a more phased transition between work and retirement – especially if it involves a public subsidy to reduce working time – should be carefully evaluated in terms of its expected net impact on the effective labour supply.

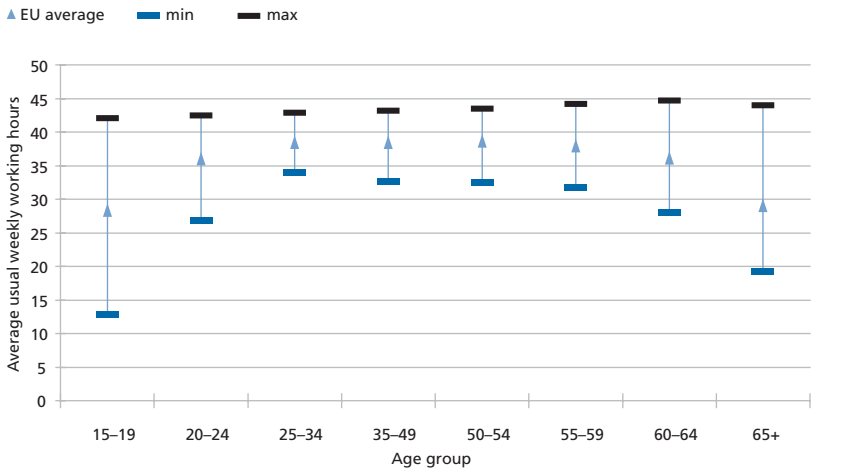
Contrary to what might be expected, results from the EU *Labour Force Survey* indicate that the average usual weekly working hours for older workers aged 55–64 are not substantially lower than those of prime working age (25–54). Those aged 55–59 work on average 38 hours per week, essentially the same as the hours worked by the age groups in the range 25–54, and with only a slight overall reduction to 36 hours for those aged 60–64 (Chart 60). The downward trend for the 60–64 age group is due in large part to the higher share of part-time workers among those in employment in this particular age group. It is interesting to note that average working hours for those in full-time employment show an upward trend for older workers, while those for part-time workers tend to decline. This opposite movement in working hours for part-time and full-time employment points to a diversification in working hours for older workers. Looking at the range in average working hours for the different age groups across individual Member States (Chart 61) indicates that there is greater variability across

Chart 60: Average usual working hours in the EU-25 by age and full-time versus part-time distinction, 2005



Source: Eurostat, EU LFS, annual average data for 2005

Chart 61: Cross-country variation in average usual weekly working hours across EU Member States for different age groups, 2005



Source: Eurostat, EU LFS, annual average data for 2005.

countries in average working hours for older workers than for prime-age workers. In some Member States, ageing is associated with longer average working hours, while in others the opposite situation applies, and there is less commonality in the overall average number of hours for this group.

Jolivet and Lee (2004) also find that working time for older workers does not differ significantly from that for other age groups, although one of the key reasons suggested for this is that many of those workers who did not want the prevailing working time patterns may have already exited the labour market. This is supported by their finding that the preferred length of working time for inactive older people is much shorter than that for employed people. They conclude that working-hour constraints for inactive older people may be responsible, to some extent, for their inactivity. The rise in availability of part-time work over recent years would therefore appear to be an important factor in addressing the working-hour desires of older workers who might otherwise be inactive.

5.4.2. Working-time organisation and atypical working hours

Apart from the length of working time, an important issue is how that time is organised. Access to jobs with a flexible organisation of working hours (such as flexible work schedules), which better suit employees' needs, is a potentially important element in raising employment among older people, since it can facilitate their remaining in employment longer, together with reconciling their work and family responsibilities. For example, recent research (Leombruni and Villosio, 2005) has shown that in countries where the employment rate of older workers is lower, the burden associated with family responsibilities in terms of care of children or other members of the family is higher. Haider and Loughran (2001) find that individuals over the age of 65 clearly prefer flexibility at the expense of low wages.

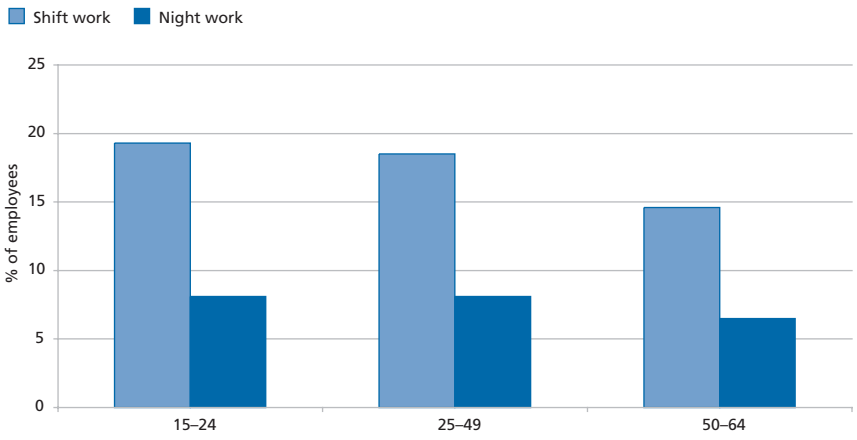
However, while the 2005 *European Working Conditions Survey* indicates that flexibility of work schedules appear to be gradually increasing, some two-thirds of employees in the EU-25 still have schedules fixed by their employer with no possibility for change, and only around a quarter can adapt their working times to suit their needs, in some cases within limits. The situation for older workers is only marginally better, with around 61% of employees aged 55 or over still having schedules fixed by their employer with no possibility for change, and only around 28% able to adapt their working times to suit their needs, suggesting that much scope still remains to improve the prevalence of more flexible working-time arrangements among older employees.

With regard to the more atypical forms of working-time arrangement, such as shift work and night work, available evidence (Ghosheh Jr. et al, 2006; Spurgeon, 2003) suggests that these forms of arrangement are less suitable for older workers. Indeed, Spurgeon (2003) reports that a series of studies in the late 1990s indicate that from around the late 40s and early 50s, ageing results in a decreasing ability to cope with shift work. Explanations put forward for this include the shortening and fragmentation of sleep with age and the slower circadian rhythm of older workers. Despite the concerns with regard to unsocial working hours for older workers, Jolivet and Lee (2004) conclude that these concerns are not necessarily reflected in actual working time patterns and that evidence does not indicate that older workers are in a clearly more favourable position with regard to how working time is organised compared to other age groups. They find that overall within the EU, apart from some greater influence on starting and finishing times, older workers appear to be equally exposed to unsocial working hours and irregularity of daily and weekly working hours as other groups. Results from the EU LFS confirm that the incidence of night and shift work among older employees is not dramatically lower than that among younger employees (Chart 62).

5.4.3. Work organisation, ergonomics and job design

Raising the employment rate of older workers must be counterbalanced with the aim to avoid pushing employees to their physical and mental limits. Steps must therefore be taken with regard to organisational, ergonomic and job design aspects. For example,

Chart 62: **Prevalence of shift work and night work among employees in the EU-25 by age group, 2005**



Source: Eurostat, EU LFS, 2005 results.
Note: Indicence of night work refers to the share of employees usually doing night work.

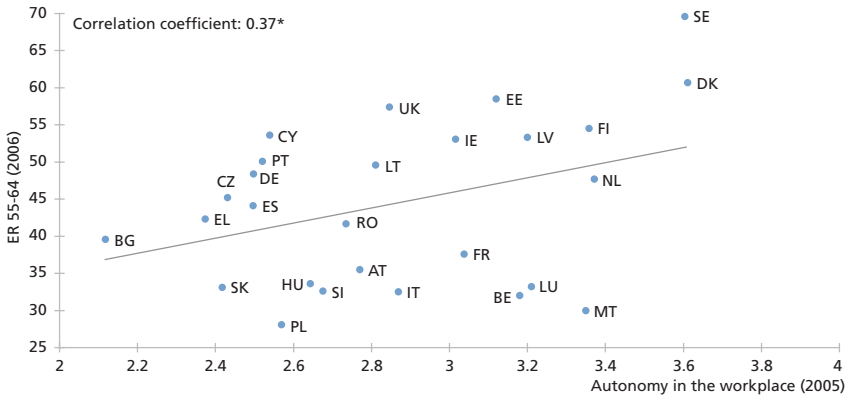
work organisation that increases variety and autonomy in work tasks, and provides a challenge and development opportunities, could encourage older workers to remain longer in employment. Physical strain can be lessened though appropriate job design and working-time organisation. Modern technology and ergonomics can increase the productivity of older workers, compensating for physical decline, while improving the work environment would contribute to extending healthy life and support active ageing.

With regard to organisational aspects, it might be expected that a work organisation in which employees enjoy a high degree of autonomy would have high levels of employee job satisfaction, and consequently this would encourage workers to want to remain in work longer. In line with this, Peulet (2006) finds that work organisations in which employees enjoy greater autonomy favour an extended career. This is generally confirmed by the reasonably strong correlation between employment rates for older workers and an autonomy index[53] developed by the European Foundation for the Improvement of Living and Working Conditions based on several indicators of work autonomy from the 4th *European Working Conditions Survey* (EWCS) (Chart 63). Denmark and Sweden, which have high shares of older workers in employment, enjoy a largely autonomous work organisation model, while Member States with traditionally less autonomous models generally have lower employment rates for older workers. Overall, it seems that there is indeed a positive relationship between work organisations that provide more autonomy to employees and the prolonging of older workers' professional lives.

Another issue of particular concern to older workers is physical working conditions, especially for those whose jobs entail sustained physical effort. However, while advances in production technology have led to a corresponding lessening of the physical demands in the workplace, as evidenced by the decrease in blue-collar jobs, it is noteworthy that a growing body of research has identified the phenomenon of work intensification[54] and that consequently the level of non-physical demands faced by older workers (e.g. intense concentration and stress) may have increased significantly. Tros (2005) argues that the job and employment security of older workers is under pressure due to trends like work intensification, leading to loss of soft jobs and bridge jobs.

Various ergonomic and job design measures can be implemented to address the specific work-environment needs of older workers, including those which prevent work-induced illness or disability and compensate for the decline in physical capabilities that comes with age. This may include, for example, the provision of better lighting and seating, removing the need for heavy lifting or violent twisting movements, and arranging workstations to avoid tiring movements and to improve working postures. Furthermore, older people can be reassigned to less physically demanding activities or their task organisation structured to allow more intervals between the more physically demanding tasks. However, Ghosheh Jr. et al (2006) point out that while measures specific to improving the working environment of older workers are often introduced in workplaces, it should be borne in mind that older workers' health is a function of past as well as current working conditions, which means that the best approach lies in a policy of improving working conditions throughout working life.

Chart 63: Employment rates for people aged 55–64 across EU Member States versus autonomy in the workplace



Source: : Eurostat, EU LFS annual averages 2006 for ERs 55–64, European Foundation for the Improvement of Living and Working Conditions, 4th EWCS for autonomy index (2005) (Figures apply to employees only).
Note: * indicates significant at the 10% level.

6. A TYPOLOGY OF APPROACHES TO ACTIVE AGEING IN EU MEMBER STATES

The previous analysis has highlighted some of the main factors which may influence the labour market attachment of older people and which either encourage or prevent them from extending their working lives.

53 The autonomy index is a composite indicator constructed from five variables in the *European Working Conditions Survey* (EWCS), namely whether people are able to choose or change (a) the order of tasks, (b) the methods of work, (c) the speed of work, (d) whether they have influence over the choice of working partners and (e) whether they are able to take a break when desired. It refers to employees only.

54 See, for example, the European Foundation for the Improvement of Living and Working Condition's publication (2006), *Fifteen years of working conditions in the EU: Charting of the trends*.

These fell into the broad categories of retirement, pensions and the balance of financial incentives, which focused on various disincentives or penalties to carry on working embedded in each country's pension system and in other aspects of the tax and social welfare system, the factors affecting the availability of jobs to older workers, the employability of older workers, and the conditions and attractiveness of work, as well as the existence of a supportive environment.

In this context it is interesting to examine the existence of different types of approach to active ageing within the EU Member States, in terms of the combination of policy-relevant measures aimed at addressing some of the key factors already identified as influencing the labour market participation of older workers. This provides an indication of the similarities and differences across countries in terms of how active-ageing strategies are implemented, and in particular how groups of Member States stand with respect to various factors that are recognised as being of particular importance to the employment of older people, which can then be linked to their present position with regard to older workers' labour market outcomes such as their employment rates.

An initial examination has been carried out on the basis of a select set of factors which, based on the preceding review, appear particularly important with regard to the labour market situation of older workers. The approach focuses on a cluster analysis of variables which are representative indicators[55] of the factors thus identified, and for which data are available for a large majority of the EU Member States. The variables concerned are the following:

- **AV ORA**: The standard retirement age as a simple average across male and female statutory ages for entitlement to a standard pension. *Source*: MISSOC 2006.

- **NRR at 65**: The net pension replacement rate at age 65.[56] This is a straightforward indicator of pension levels (the ratio of annual benefits to earnings just before retirement) which influences older workers' decisions to remain in work, depending on whether they consider their benefits to be high enough. *Source*: Report by the Indicators Sub-group (ISG) of the Social Protection Committee (SPC), 19 May 2006.

- **ERN ratio**: The ratio of average earnings for the age group 50–59 compared to those aged under 29, for NACE sectors C to K, as a proxy for the influence of seniority wages. *Source*: Eurostat, *Structure of Earnings Survey*, 2002.

- **Tax wedge**: The tax wedge on labour costs,[57] as a proxy for the influence of distortions created by the tax system on older workers' employment prospects. *Source*: Eurostat, Structural Indicators.

- **EPL**: The strictness of EPL, as given by the overall OECD indicator (2003 data). *Source*: OECD (OECD. stat database), plus figures for Bulgaria, Estonia, Lithuania and Slovenia from S. Cazes and A. Nesporova (2007), *Flexicurity: a relevant approach in Central and Eastern Europe*, International Labour Office.

- **ALMP (excl PES)**: Total expenditure on active labour market policy measures (active spending excluding public employment services)[58] as a percentage of GDP, as an indicator of the relative importance given to ALMP in general in Member States. It covers active interventions that aim to help the unemployed and other disadvantaged groups to prepare for or enter work, including training, job rotation and job sharing, employment incentives, integration of people with disabilities, direct job creation and start-up incentives. (Figures are the average over the years 2003–2005 where data is available, otherwise 2005 figures.) *Source*: Eurostat, Labour Market Policy database.

- **LLL**: Life-long learning, as the percentage of the population aged 25–64 participating in education and training. (This is very highly correlated (0.98) with the lifelong learning figures for the age group 55–64, and available for more countries.) *Source*: Eurostat, EU *Labour Force Survey*.

- **Flex-work hours**: Working-hour flexibility, as the percentage of employees aged 55+ who can adapt working hours to suit their needs (i.e. working hours entirely determined by them or can adapt working hours within certain limits). *Source*: European Foundation for the Improvement of Living and Working Conditions, 4th EWCS.

- **Flex-autonomy**: Autonomy in work arrangements, as an index of the extent of autonomy in the workplace for employees. This index covers work organisation including control over order, methods and speed of tasks and ability to rest when desired. *Source*: European Foundation for the Improvement of Living and Working Conditions, 4th EWCS.

55 A number of indicators are used to characterise the labour market institutions and other factors affecting labour market performance to reflect the complex network of interrelations, although the choice of particular indicators may be open to debate.

56 Data refers to the base case of a single person with a career length of 40 years, age at retirement 65, in full-time work and on average earnings.

57 Defined as income tax on gross wage earnings plus employee's and employer's social security contributions, expressed as a percentage of the total labour costs of the earner, defined as gross earnings plus the employer's social security contributions plus payroll taxes (where applicable). Here data for the tax wedge refers to that for a single low-wage earner (earning 67% of the average worker earnings), without children. *Employment in Europe 2004* reports that the cross-country correlation of the tax wedge between the categories 'single worker with no children' and 'married couple with two children' is high and stable over time.

58 This correlates very highly with active expenditure including PES (correlation coefficient 0.94).

- **Health (perc 55–64)**: Self-perceived health status among the older population (the percentage of older people aged 55–64 declaring their health as good or very good). *Source*: Eurostat, Health Interview Surveys, 2004 round.

6.1. Cluster analysis on EU Member States

Based on the 10 variables mentioned above, hierarchical clustering[59], which is a common and well-established statistical technique[60], allows six main groupings of Member States to be distinguished (Table 12). A robustness check was also carried out using the k-means clustering technique with the same number of clusters. The composition and characteristics of these six groups are (Chart 64, see page 104, arranged to distinguish indicators positively associated with older workers' employment rates (lhs) and those negatively associated (rhs)):

- **Group 1**: Consists of the 'western continental' countries of Austria, Belgium, France, Germany and Italy, with the group characterised by intermediate standard retirement ages and pension replacement rates, together with intermediate work flexibility and lifelong learning participation, but relatively high EPL, tax wedge and relative earnings for older workers. The average (unweighted) employment rate of older workers is second lowest for this group.

- **Group 2**: Consists of the 'Central European' Member States of the Czech Republic, Hungary, Poland, Slovenia and Slovakia, with the group characterised on the one hand by relatively low perceived health and standard retirement ages, together with relatively low ALMP spending, lifelong learning participation and work flexibility (i.e. low scores on all indicators positively associated with older workers' employment rates), but on the other hand by comparatively low relative wages for older workers and EPL, and intermediate tax wedges. This group has the lowest (unweighted) employment rate for older workers.

- **Group 3**: This cluster includes the 'Nordic' countries of Denmark, Finland and Sweden, plus the Netherlands. It is characterised on the one hand by intermediately low pension replacement rates, relative costs of older workers and EPL, but on the other by high perceived health and standard retirement ages, together with substantially higher ALMP spending, lifelong learning participation and work flexibility. It scores relatively highly on all indicators positively associated with older workers' employment rates, and has the highest average (unweighted) employment rate for older workers.

- **Group 4**: In this group are the 'Baltic States' of Estonia and Lithuania, which although broadly similar to the Central European grouping of countries (Group 2) are distinguished from the latter by much lower pension replacement rates and relative earnings of older workers, and higher EPL and autonomy in the workplace. The average (unweighted) employment rate for older workers in this group is the third highest.

- **Group 5**: This group consists of the 'Anglo-Saxon' countries of Ireland and the United Kingdom, and is strongly differentiated from other clusters by the much lower EPL and tax wedge combined with relatively high lifelong learning participation and perceived levels of health, and intermediate flexibility, retirement ages, pension replacement rates and relative earnings of older workers. The average (unweighted) older workers' employment rate is the second highest for this group.

- **Group 6**: The 'Mediterranean' countries of Greece, Portugal and Spain make up this cluster, characterised by relatively high pension replacement rates, relative earnings of older workers and EPL but comparatively low tax wedges, lifelong learning participation and work flexibility. This cluster forms the central group in terms of older workers' average (unweighted) employment rates.

It is to be noted that for some groupings (mainly group 1 and group 2) a similar 'policy mix' (i.e. combination of active ageing relevant factors) may lead to significantly different outcomes (i.e. older workers' employment rates) across the countries

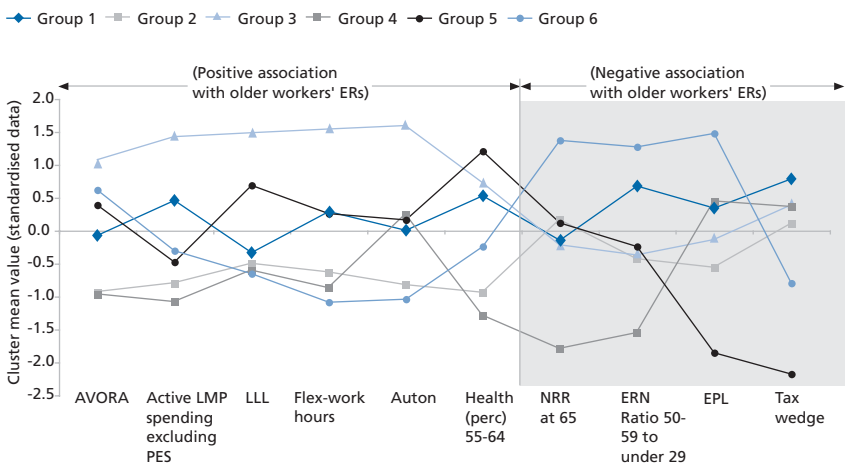
Table 12 - **Results of clustering analysis (6 groups)**

Group	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Composition	BE DE FR IT AT	CZ HU PL SI SK	DK NL FI SE	EE LT	IE UK	EL ES PT
Average (unweighted) ER 55-64	37.2	34.5	58.1	54.1	55.3	45.5

59 Using both complete linkage and Ward's method of agglomeration. Only those Member States where data was available on all factors were included in the cluster analysis (21 of the 27 EU countries, excluding BG, CY, LU, LV, MT and RO).

60 A word of caution is required on the application of such techniques. Cluster analysis uses the country scores on the various factors to come up with groupings of countries based on some measure of 'distance'. Results can be sensitive to the specific agglomeration methodology used and the particular parameters chosen for the clustering exercise. For a description of cluster analysis see *Employment in Europe 2006*, p. 109.

Chart 64: **Profiles of cluster means, 6 groups**



Source: various sources

belonging to the same group (this being notably the case for example for the Czech Republic and Germany in their respective groupings).

6.2. Principal components analysis on EU Member States

A principal components analysis (PCA)[61] allows identification of the main underlying dimensions or 'factors' which explain a large part of the differences across countries. Such a preliminary factor analysis (Table 13), based on the 10 variables mentioned above as the active variables in the PCA, reveals that the first three principal components account for 77% of the overall variability in the data. The characteristics of the three principal components are:

Factor 1: has high correlation with the standard retirement age, participation in lifelong learning, spending on active labour market policy measures, work flexibility (covering working-hours organisation and job autonomy), and health of older people. It can be interpreted as a 'supportive active ageing system', as it covers key aspects related to encouraging older workers to remain in the labour market and maintaining their employability.

Factor 2: has high correlation with the net pension replacement rate and the relative cost of older workers compared to youth. It can be interpreted as a kind of indicator of the 'financial pressure' on older people to exit the labour market (covering both the financial incentives for older workers to retire and the cost pressure on employers to hire younger rather than older workers).

Factor 3: is highly correlated with the tax wedge and EPL, which can be seen as general labour market institutions potentially reducing the adaptability of companies and the labour market in general, rather than aspects specific to older workers.

Chart 65 shows the plots of country scores along the three principal components axes, with shaded areas highlighting where the groupings identified in the cluster analysis are clearly evident. Much of the clustering can be observed from the combination of just the first two factors, but the third factor is important with regard to the grouping of the Baltic States into a specific cluster separate to the Central European Member States. The Nordic group of countries (including the Netherlands) scores comparatively highly with regard to support to active ageing (factor 1), as does, although to a lesser degree, the Anglo-Saxon grouping, which combines this with low scores on general labour market institutions which potentially reduce adaptability of companies (factor 3). The Central European, Baltic States and Mediterranean countries' groupings score relatively low on support to active ageing, with the latter group also scoring high on the financial pressure factor, for which the score is also comparatively high for the western continental country grouping.

6.3. Labour market outcomes in relation to the principal components

In addition to the 10 'active variables' used to classify countries, some supplementary variables were included in the analysis to provide some indication of the effects of the components of the different active-ageing approaches on relevant labour market outcomes (based on the correlations of these key outcome variables with the principal components), especially those of concern to older workers. The supplementary variables are the activity and employment rates for the 55–64 age group, overall unemployment and long-term unemployment rates, the exit age, and measures of job satisfaction among workers aged over 55 and the reduction in the risk of poverty for those aged over 65[62].

61 PCA is a multivariate analysis technique, the aim of which is to reveal how different variables change in relation to each other, or how they are associated. This is achieved by transforming the original variables into a new set of uncorrelated ones using the correlation matrix. The new variables are linear combinations of the original ones, and usually the correlations among original variables are large enough for the first few new variables to account for most of the variance in the dataset, thus helping to clarify the structure of the relationships. For further description of PCA see *Employment in Europe 2006*, p 102.

62 An indicator for the reduction in the risk of poverty for those aged over 65 due to the impact of social transfers, including pensions. It is equivalent to the percentage point difference between the risk of poverty (defined as the share of persons with an equivalised income below 60% of the national median) before and after social transfers. (*Source*: DG EMPL calculations based on Eurostat data.)

In order to enhance the interpretability of the results, a varimax[63] rotation on the PCA results was also carried out. The results (Table 14) indicate that the factor interpretations remain similar to that before rotation for factors 1 and 2, but that the third factor now is only highly correlated with the tax wedge. Comparing the correlations of the supplementary variables with the principal components after rotation (D1, D2 and D3) indicates the following:

- A 'supportive active-ageing system' (factor D1) has a broad positive effect on labour market outcomes for older people. It has a noticeable positive correlation with older workers' activity and employment rates, and also with the age at which older people exit the labour market. At the same time there is a strong positive correlation with job satisfaction among older employed people, and a negative correlation with the level of unemployment and long-term unemployment.
- The 'financial pressure' on older people to exit the labour market (factor D2) is negatively correlated with activity and employment rates for older workers.
- Tax distortions (factor D3), as represented by the tax wedge, is negatively correlated with the exit age, and more weakly with older worker's employment and activity rates, but is associated with a reduced risk of poverty in later life.

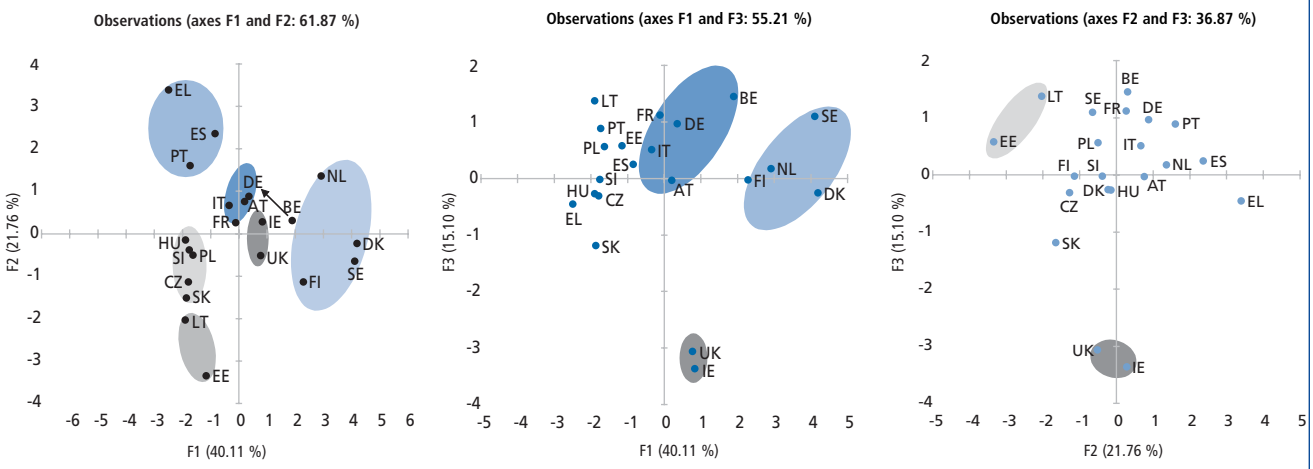
The preceding results highlight the features of those systems which are more successful in encouraging active ageing, namely good levels of general health for older people and reasonably high standard retirement ages; relatively high spending on active labour market policy measures and participation in lifelong learning; flexibility with regard to working hours and work organisation; and reduced financial pressures on older workers to leave the labour market, both in terms of the financial incentives for older workers to retire and the cost pressure on employers to hire younger rather than older workers. In this regard, the Nordic group of countries (including

Table 13 - **Main results of the PCA**

	Factor 1	Factor 2	Factor 3
Variability (%)	40.1	21.8	15.1
Cumulative %	40.1	61.9	77.0
Correlation between variables and factors			
AV ORA	0.65	0.42	-0.01
NRR at 65	-0.21	0.82	-0.19
Tax wedge	0.18	-0.17	0.80
ERNRatio	-0.09	0.93	0.05
EPL	-0.20	0.41	0.77
LLL	0.80	-0.14	-0.17
FLEX–work hours	0.92	-0.02	0.02
FLEX–autonomy	0.88	-0.26	0.10
Health (perc) 55-64	0.69	0.36	-0.35
ALMP (excl PES)	0.86	0.24	0.27

Source: DG EMPL calculations based on data from Eurostat, DG EMPL, EFILWC, OECD and ILO
Note: High and moderate correlations (>0.5) are highlighted and indicate how variables are related to the principal components

Chart 65: **Country scores along the principal factor axes**



Source: DG EMPL calculations based on data from Eurostat, DG EMPL, EFILWC, OECD and ILO

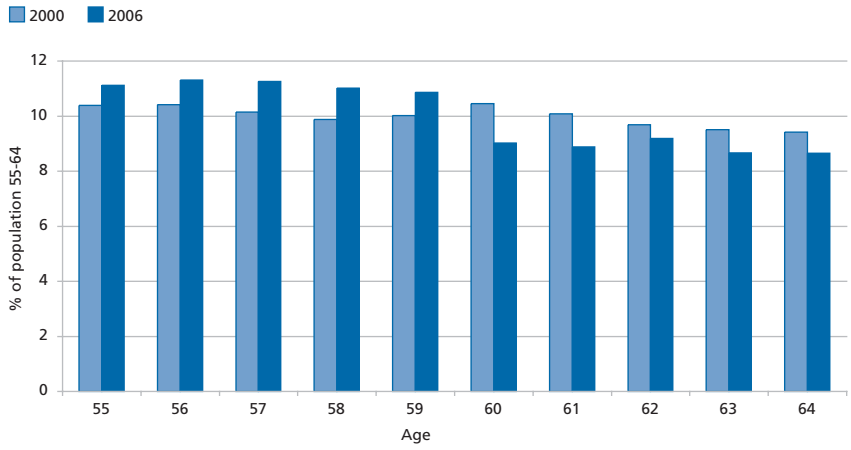
63 Varimax rotation is a technique used to maximise the correlation of a number of original variables with principal components.

Table 14 - **Correlations between principal components and active and supplementary variables (after Varimax rotation)**

	D1	D2	D3
AV ORA	0.73	0.12	-0.42
NRR at 65	-0.11	0.88	-0.14
Tax wedge	0.16	-0.10	0.89
ERNRatio	0.03	0.94	0.00
EPL	-0.09	0.20	0.24
LLL	0.76	-0.16	0.00
FLEX–work hours	0.89	-0.03	0.24
FLEX–autonomy	0.84	-0.35	0.15
Health (perc) 55-64	0.71	0.35	-0.18
ALMP (excl PES)	0.90	0.05	0.11
Correlations of supplementary variables with principal components after varimax rotation			
Employment rate 55–64	0.54	-0.39	-0.33
Activity rate 55-64	0.53	-0.41	-0.32
Unemployment rate (overall)	-0.43	0.04	0.14
Long term UR (overall)	-0.55	0.00	0.13
Exit age	0.43	-0.04	-0.66
Job satisfaction 55+	0.63	-0.21	-0.01
Reduction in poverty risk for 65+	0.23	-0.16	0.60

Source: DG EMPL calculations based on data from Eurostat, DG EMPL, EFILWC, OECD and ILO
Note: High and moderate correlations (around 0.4 or higher) are highlighted and indicate how variables are related to the principal components.

Chart 66: **Age structure of the age group 55–64 by individual year of age in 2000 and 2006**



Source: Eurostat, EU LFS spring data (2000) and second quarter data (2006).

the Netherlands), but also to a lesser degree the Anglo-Saxon grouping, appears to have implemented a more integrated approach to active ageing, and to have been relatively more successful in integrating and retaining older workers in the labour market compared to the other Member States.

7. REASONS FOR THE RISE IN EMPLOYMENT OF OLDER PEOPLE SINCE 2000

This section briefly examines some of the main drivers or causes underlying the improvement in the employment situation of older workers in recent years. On the demand side, macro-economic stability and tight labour demand have been put forward as contributory causes in some Member States such as the United Kingdom, where there were historically relatively few redundancies post-2000, a factor of major significance to older workers since they tend to lose out most when workers need to be made redundant. Attitudes of employers may also be beginning to change, as a consequence of economic necessity but also the recent implementation of anti-age discrimination legislation and age-awareness campaigns.

On the supply side, recent pension, tax and welfare reforms may have had an effect on older workers-labour market attachment. Problems in the equity markets in the early 2000s and the effect on private pension schemes may also have resulted in some older people deferring early retirement during this period. At the same time, long-term societal trends in labour market participation, such as increasing female participation, and the improvement in skill levels of the workforce can have eventual effects on the older workers' age group.

Some of these issues are examined in the following sections, but the lack of detailed data on changes in relevant labour market institutions for many Member States covering the period in question precludes any detailed analysis at this stage.

7.1. Factors related to demographic and long-term societal changes

7.1.1. The demographic effect within the older workers-age group

Part of the improvement in the employment rate of older workers can simply be attributed to the shift in the relative shares of different ages within the older worker population, reflecting a pure composition effect. Since people at the lower ages within the older age group tend to

have higher employment rates, a shift in the balance or composition of the individual year of age populations will have an influence on the employment rate for the overall 55–64 age group. This is especially important in the context of sharp demographic changes such as the approaching retirement of the baby-boom generation.

The single year age distribution within the overall older worker population has changed noticeably between 2000 and 2006, with a higher share of people in the lower age range 55–59 and relatively fewer in the range 60–64 (Chart 66). A simple shift-share analysis on the employment rate changes between 2000 and 2006 indicates that of the overall increase of around 7 percentage points, around one-fifth (1.3 percentage points) was due to this change in the older workers' population structure[64], with a slightly greater contribution of this composition effect for men than women (Table 15). Nevertheless, the net contribution from the shift in employment rates was clearly more substantial.

The contribution from the shift in age structure, although positive for the EU-25 as a whole, varies markedly across countries, with a significant negative effect in Austria, the Czech Republic, Denmark and Sweden contrasting with strong positive contributions in Finland, France and Poland (Table 16). In France and Greece, the impact from the change in the age structure accounts for an important element of the overall rise in older workers' employment rates (around a third and a half respectively), and in Poland it helped dampen considerably the decline in employment rates; but in all the other Member States it is much less than the effect from the rise in employment rates net of any demographic effects.

The rise in employment rates net of any demographic effects (i.e. the pure 'non-composition' effect) was almost 6 percentage points, this time with a greater net contribution for women than men (3.5 versus 2.4 percentage points), and has been substantial in almost all Member States[65]. Net increases have been particularly strong in the Czech Republic, Finland, Germany and Hungary, all with net rises in excess of 10 percentage points. Only in Poland and Portugal was there a negative contribution from the net shift in employment rates.

Table 15 - **Contribution of demographic composition to changes in employment rates 55-64 between 2000 and 2006**

Percentage point change 2000-2006	
Total (= 1 + 2 + 3)	7.2
Contribution from shift in employment rate	
Total (1)	5.9
Men	2.4
Women	3.5
Contribution from demographic effect	
Total (2)	1.27
Men	0.70
Women	0.57
Interaction effect (residual effect)	
Total (3)	-0.03

Source: Eurostat, EU LFS, 2000 spring data and second quarter 2006.

Table 16 - **Contribution to changes in employment rate of 55-64 year old age group between 2000 and 2006**

	Total change in employment rate (= (1) + (2) + (3))	Contribution from shift in employment rate ((1) net of demographic effects)	Contribution from demographic effect (2)	Interaction effect (residual effect) (3)
EU-25	**7.2**	**5.9**	**1.3**	**0.0**
BE	5.4	4.2	1.3	-0.1
CZ	9.3	10.3	-0.9	-0.1
DK	6.3	8.2	-1.9	0.1
DE	10.8	10.1	1.6	-0.9
EL	3.0	1.1	1.6	0.2
ES	7.3	6.7	0.4	0.1
FR	8.4	5.1	2.8	0.5
IE	8.3	8.0	0.2	0.1
IT	5.4	4.2	0.9	0.3
CY	4.0	3.8	-0.2	0.4
LT*	8.4	7.5	1.1	-0.2
HU	11.7	11.7	0.1	0.0
NL	9.5	9.2	0.1	0.2
AT*	6.1	8.1	-1.2	-0.8
PL	-1.7	-4.3	2.6	0.0
PT	-1.1	-1.8	0.5	0.1
SI*	11.3	8.7	0.9	1.7
FI	13.0	10.9	2.3	-0.2
SE	5.2	6.0	-1.3	0.5
UK	6.9	6.6	0.2	0.1

Source: Eurostat, EU LFS spring data (2000) and second quarter data (2006).
Note: *Figures for AT, LT and SL not fully reliable due to small sample sizes. For EE, LV, LU, MT and SK figures not publishable due to samples per individual year of age being too small.

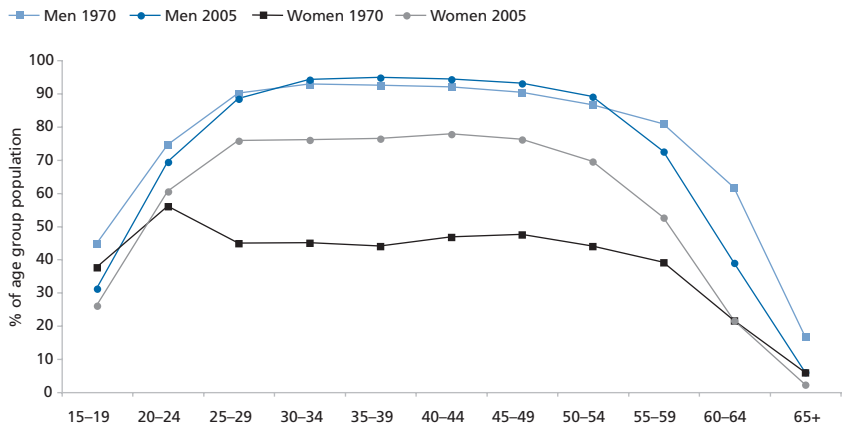
7.1.2. Long-term trends – the importance of gender and cohort effects

Another underlying reason for the rise in employment rates of older workers is the long established 'cohort effect' in the labour market participation of women, i.e. the impact of younger female cohorts, who are better integrated into the labour market, filtering through with time into the older workers' age group. The pattern of labour

64 The demographic effect within the older workers age group is a dynamic phenomenon. The positive impact reported is transitory and over the coming years the baby-boom generation will shift towards the upper end of the age group, and the effect may be reversed.

65 Results are only displayed for those Member States for which sample sizes per individual year of age are sufficiently large.

Chart 67: **Activity rates by gender in the EU-15, 1970 and 2005**



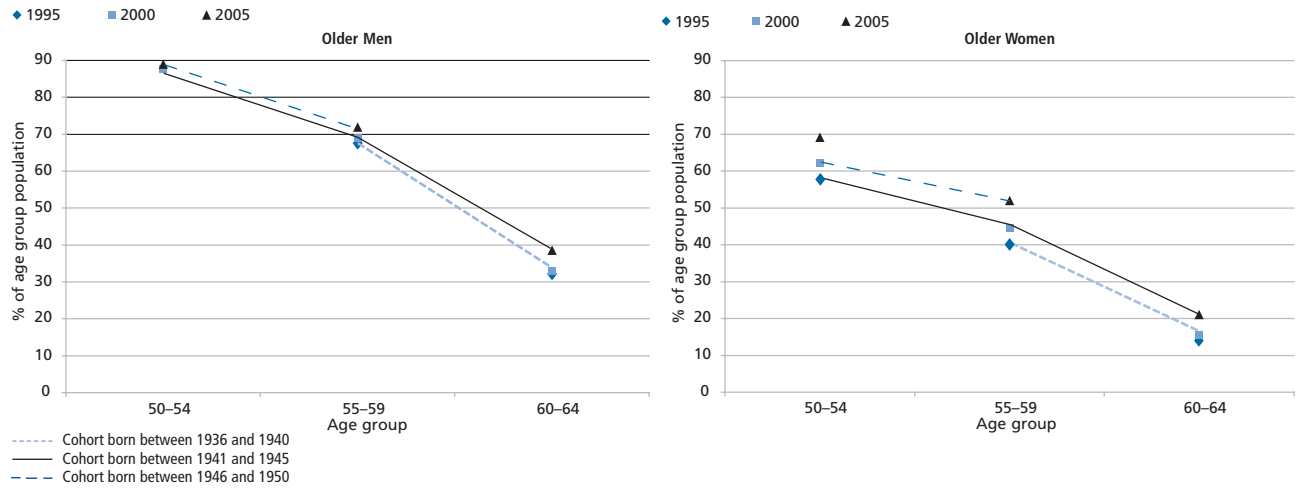
Source: OECD, OECD.Stat database

force participation has changed markedly over recent decades and within the EU-15[66] the participation of women between the ages of 25 and 60 has increased substantially, reflecting steadily rising participation, while that of men has changed little for those of prime working age but has declined markedly at the lower and upper end of the age distribution[67] (Chart 67). The major increase in participation of women in the prime working-age group (25–54) means that the pattern of female participation is now much more similar to that of men, and with the participation of young women now barely below that of young men.

The general trend towards higher participation in successive cohorts of women means that rises in participation rates in the younger age groups have subsequently fed through to an increase in the older age groups. For example, within the EU-15, for the age group 55–59, the cohort of females born between 1936 and 1940 had an activity rate of 39.8%, those born between 1941 and 1945 had a rate of 44.7%, and those born between 1946 and 1950 one of 52% (Chart 68), with rises in the order of 5–7 percentage points over each five-year period. For men, on the other hand, activity rates for the age groups 50–54 and 55–59 are rather similar for all three years, reflecting the fact that prime-age male participation in the labour market has been fairly constant at relatively high levels, and devoid of any substantial cohort effect.

The cohort effect on participation rates for women has subsequently fed through into employment rates, as can be seen from the profile of employment rates by individual year of age in the EU-15 for the years 1995, 2000 and 2005 (Chart 69). There is clearly a general upward shift in employment rates for women of all ages between 50 and 59, with the employment rate profiles broadly parallel and with rates only converging from around 60 onwards. The employment rates at age 50 for

Chart 68: **Cohort comparison of activity rates of older people in the EU-15 for the years 1995, 2000 and 2005**

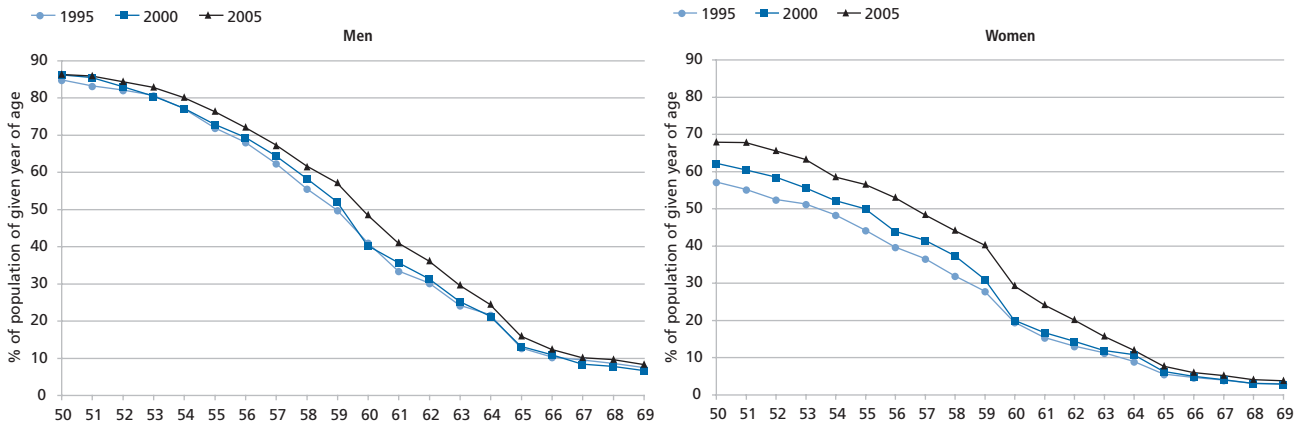


Source: Eurostat, EU LFS, annual results for 1995, 2000 and 2005.

66 The EU-15 is referred to here since long-time series data for the EU-25 is not available back to 1970, but this nevertheless gives a good representation of developments for the EU as a whole.

67 Participation rates of men begin to decline rapidly for the age group 55–59 onwards, compared with the first marked declines for the 60–64 age group in 1970. Those for women start to decline earlier, in the 50–54 age group, but decline less rapidly, and activity rates for women aged 50–60 are higher than they were in 1970.

Chart 69: **Employment rate profile of older men and women aged 50–69 in the EU-15 by sex and individual year of age in 1995, 2000 and 2005**



Source: Eurostat, EU LFS, 1995 and 2000 spring data, and 2006 Q2 data

women were 57% in 1995, 62% in 2000 and 67.7% in 2005. For the age group 55–59 they averaged respectively 36.1%, 40.7% and 48.5% – the rises of around 5–8 percentage points between each five-year reference point strongly mirroring the increase in corresponding participation rates and suggesting that the cohort effect largely accounts for the overall rise in employment rates for women aged 55–64.

Again, for men little cohort effect is visible due to the filtering through of younger cohorts into the older workers' age group. The employment rates at age 50 are very close across all three years (84.8% in 1995, 86.1% in 2000 and 86.2% in 2005). However, while the employment rate profiles for 1995 and 2000 are very similar, between 2000 and 2005 there has been an upwards shift in the year-specific employment rates beyond the age of 52, reflecting a shift towards men staying longer in employment post 2000.

The rise in participation of older women aged 55–64 appears therefore to be due in large part to the increasing trend in the involvement of women in general in the labour market. This has been the result of several factors, including the reduced social barriers to female participation in the labour market, higher skill levels among women, delays in the age at which women have children and greater possibilities to reconcile work and personal responsibilities. The change in cultural attitudes and social norms regarding gender roles has clearly had a major influence on female participation, but the increase in female education in recent decades also appears to be a major determinant of the positive trend in female labour force participation[68].

7.2. How governments and employers are responding to the challenge of an ageing labour force

While composition and cohort effects can explain a significant part of the rise in older workers' employment rates since 2000, especially with regard to the rise in rates for older women, policy measures and reforms enacted in the past five to ten years, such as pension reforms and the tightening of early retirement schemes, have also contributed towards encouraging older workers to enter or remain longer in the labour market, especially with regard to older male workers.

Recent research has confirmed the important effect such measures can have on older workers. Based on data covering the period 1982 to 1999, Bassinini and Duval (2006) find that, among other factors, generous unemployment benefits, high tax wedges and high implicit taxes on continued work act as disincentives to older workers remaining in the labour market and reduce employment rates for older workers, while high statutory retirement ages have the opposite effect. They highlight, in particular, that a reduction of 1 percentage point in the implicit tax on continued work leads to a rise of 0.1 percentage point in the older workers' employment rate, while a one-year increase in the statutory retirement age increases the older workers' employment rate by around 0.6 percentage points. They conclude that changes in policies and institutions account for a substantial share of the change in employment rates for older workers across OECD countries during the 1980s and 1990s. Similarly, the findings of a recent international research project (Gruber and Wise, 2002) indicate that changing pension plan provisions can have large effects on the labour force participation of older workers. However, as

68 Results from the EU LFS for 2006 clearly show the importance of skill level to labour market outcomes particularly for women; a woman with tertiary-level education is more than twice as likely (80%) as a woman with lower-secondary level or below (39%) to be in employment.

highlighted previously in this chapter, non-pecuniary factors such as working conditions, skills and training, and health are also important determinants of older people's labour market attachment.

7.2.1. How governments are responding

Member States have been developing strategies to react to the ageing population and its impact on the labour market. As part of this, many are adapting social protection systems to encourage workers to prolong their working lives and improve the labour market participation of older workers.

Pension reform has received much attention from policy-makers in recent years and a number of Member States have adopted substantial reform programmes to pension and benefit systems (for a detailed review across Member States see Annex 2). These include increasing statutory retirement ages and the earliest ages at which retirement can take place; bringing retirement ages for women into line with those for men; increasing the minimum contribution period required to acquire full pension rights; reductions in pension replacement rates; implementing actuarial adjustments for pension benefits for early and late retirement; switching from pay-as-you-go to funded schemes; and tightening eligibility to early retirement and sickness and invalidity schemes, as well as unemployment benefits for older jobseekers. The reforms are mainly focused on strengthening incentives to extend working lives, tightening the link between contributions and benefits, and modernising pension systems by making them more adaptable to structural change (Box 3). They generally

Box 3 – Main features of recent pension reforms

As reported in the 2006 Joint Report on Social Protection and Social Inclusion[69], there has been substantial progress in reforming pension systems in recent years. Disincentives to work longer have been reduced and incentives strengthened, links between contributions and benefits have been tightened, and life expectancy has been further taken into account in pension systems. Moreover, the provision of supplementary pensions has been promoted and legislative frameworks improved.

Strengthening incentives to extend working lives

In nearly all Member States, recent reforms have strengthened incentives to extend working lives (especially for statutory schemes), and reduced access to early retirement. Working longer is generally encouraged by pension supplements and leaving earlier discouraged by actuarial reductions. Furthermore, greater flexibility is provided in the timing of retirement, for example combining employment and partial retirement. In addition, access to disability, sickness and incapacity schemes are being reviewed to eliminate other paths to early exit. Reforms of statutory schemes have often led to a decrease of individual replacement rates, while many Member States have increased the accrual of pension rights if people work longer, which should act as incentives to work longer.

Strengthening the link between contributions and benefits

A number of recent reforms have strengthened the benefit/contribution link of pension systems. This has occurred, firstly, through the introduction of longer contribution periods required for a full pension. Secondly, by calculating full pensions on the basis of lifetime earnings instead of final salary, thus reflecting the contributions more accurately over an entire career, rather than just wage progression in later years. Thirdly, applying actuarial reductions/increases for early/deferred retirement also contributes to a culture in which early retirement is less prevalent (this has occurred in a number of Member States, like AT, FR, FI, ES, PT, NL and IT, while the link was strengthened by previous reforms in many Member States, such as DE, BE, LU, HU, EE, LV, LT, PL, SK, SI and SE).

Modernising pension systems by making them more adaptable to structural change

New labour-supply structures require adaptable pension systems (more and more people do not follow the standard career of full-time, lifelong employment). Member States have started to review pension provisions for workers with atypical careers and for the self-employed, with a view to easing access to statutory and supplementary pension schemes. For example, some Member States allow people to acquire pension credits for periods of short-term contracts, part-time and voluntary work as well as for some breaks in the work career such as for child and old-age care, education and unemployment. Most of the Member States are gradually phasing out differences in legal retirement ages between men and women. Given the rising importance of supplementary schemes some Member States (DK, DE, NL and UK) have improved the portability of supplementary pension rights which pose obstacles to workers' mobility.

69 Joint Report on Social Protection and Social Inclusion 2006 - Synthesis report on adequate and sustainable pensions (COM(2006) 62 final).

result in a reduction of the implicit taxes on continued work (OECD, 2005), which are particularly noticeable in Belgium, Finland, France, Germany and especially Italy (Chart 70, but note that the 2003 results reflect currently legislated systems once fully implemented, which for some Member States could take a considerable time). A number of Member States have or will raise the statutory retirement age, although in many cases the increase will be implemented gradually over a long time period to prevent sudden changes. For example, in the United Kingdom the age at which women can receive a state pension will be gradually equalised with men's beginning in 2010 and reaching 65 by 2020.

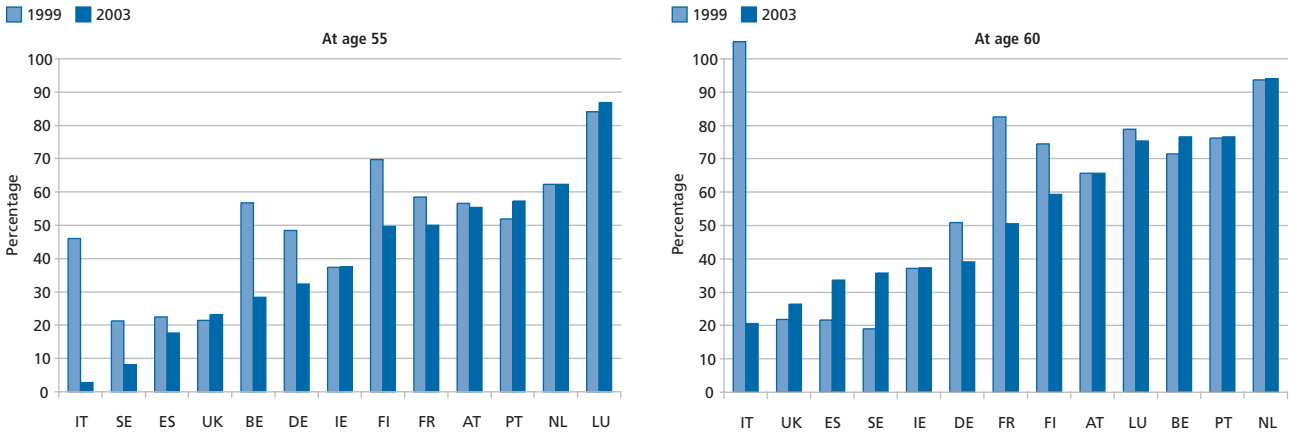
OECD (2006) reports that a number of countries have introduced various types of wage subsidies which are intended to align older workers' labour costs more closely with their productivity. In addition, countries have adopted a wide range of measures promoting greater participation in learning across the adult population. Several Member States have focused on the promotion of key basic skills and compensatory education with, for example, some Nordic countries systematically offering adults courses that allow older people to gain equivalent qualifications to youth. Different methods for maintaining skills have also been developed, which form part of the EU's general principle of lifelong learning. For example Germany's AQTIV programme aims to improve qualifications of the over 50s in small and medium-sized companies. In Sweden, the programme '100 steps to safety and development with an ageing population' offers public study grants and individual skills assessments to help older workers access the labour market.

In parallel, programmes are being set up to encourage companies to promote better health in the workplace, the general aim being to maintain the health of employees and avoid premature fatigue. The Finnish national TYKY campaign is the most far-reaching. It aims at protecting employees' physical and psychological capacities to avoid them deteriorating with age. In the Netherlands, several collective labour agreements cover reduction or adaptation of the workload for older workers as well as adapting working hours.

Major restructuring of the public employment services (PES) and boosting of activation measures also took place in a large number of Member States over the period 2000–2006, with a rationalisation of the services provided by the PES in the direction of more individualised and better targeted activation measures, improved coordination of different actors, and the modernisation and expansion of the training on offer, including the development of continuous and vocational training systems.

In line with the Employment Framework Directive adopted in 2000, EU Member States have also been putting in place legislation banning age discrimination with regard to employment, self-employment and occupation, vocational training and guidance. Some Member States have also implemented awareness-raising campaigns among employers in order to modify attitudes of employers and staff towards older workers. For example, the United Kingdom has issued a set of guidelines to help employers recognise the business benefits of an age-diverse workforce and to promote best practice, while in Sweden a lot of work has also been done on changing attitudes and negative perceptions towards older workers[70].

Chart 70: **Implicit tax rates on continued work (for a single worker with average earnings at age 55 and 60) over the next five years in social transfer programmes, 1999 and 2003**



Source: Brandt et al. (2005).
Note: The calculations are made for a single worker with average earnings. For 2003, they reflect the steady-state of currently legislated systems once they have fully matured and once recent reforms have been fully phased in, which in some cases (e.g. Italy) will take several decades.

.70 For further details on actions at country level see, for example, the synthesis report 'Attracting more people to the labour market', July 2005 (produced in the framework of the mutual learning programme of the European Employment Strategy) and related reports on active ageing (see http://www.mutual-learning-employment.net/)"

7.2.2. How employers are responding

Apart from government action, employers have important contributions to make by developing initiatives in the workplace related to, for example, the work environment and the quality of work, in particular by creating conditions that allow and encourage older workers to stay longer in work. There is a growing awareness among employers that, by artificially limiting the field of candidates, age barriers may prevent an organisation from maximising its recruitment potential. Furthermore, some enterprises are recognising that the organisation with a diverse age base is likely to be able to respond best to rapidly changing circumstances. In the service sector in particular, employers are seeing the benefits of adjusting the age range of their employees to reflect the age composition of their customers better. However, much still remains to be done to convince companies in Europe to establish a sustainable age management policy. An extensive project funded by the European Commission has examined how companies are beginning to address the issue of managing an ageing workforce (Box 4).

Other recent research reveals that many cases of good practice in age management aimed at improving job opportunities and working conditions for older workers already exist. Based on a follow-up in 2005[72] of case studies from a project first carried out in the mid-1990s, and an examination of developments over the past 10 years, Taylor (2006) reports on how employers are so far responding to the challenge of an ageing labour force. Among the key findings from this analysis is that, in general, there has been an overall increase in the complexity of organisations' approaches to age management. While training and development remains by far the most common measure, followed by flexible working, and with the incidence of both having risen over time, there has also been a gradual change in the types of measures adopted by organisations, with health and well-being growing in importance. In addition there has been a general move away from focusing on one age group towards measures involving all staff.

Box 4 – Study on the identification of good practice to increase job opportunities and maintain older workers in employment

A recent report on ageing and employment[71], resulting from a project funded by the European Commission, considers measures designed to help maintain and improve the employment opportunities of older workers. Based on case studies of 41 companies in 11 EU Member States (the Czech Republic, Finland, France, Germany, Hungary, Italy, Lithuania, the Netherlands, Poland, Portugal and the United Kingdom), covering a range of sectors and company sizes, the report provides important empirical findings that demonstrate how some companies are beginning to address the issue of managing an ageing workforce.

The report highlights that age management can be observed within a variety of contexts and involves a broad range of measures. With regard to the latter, in an attempt to achieve the right balance between an individual's abilities according to their age and the tasks to be fulfilled, the case-study companies have introduced a range of practices aimed at:

- improving working conditions and workers' abilities
- promoting health
- greater internal flexibility and mobility
- career development for all age groups
- establishing mixed age groups and the promotion of knowledge transfer
- flexible working-time practices
- avoiding physically demanding working hours and using older workers at non-stressful periods
- changing wage structures and pension provisions to reduce incentives for early retirement.

In terms of positive outcomes, respondents of the case studies mainly referred to the cost-effectiveness of such measures. The most notable savings were in reduced severance pay, lower absenteeism rates and a decline in staff turnover. In addition, companies also reported an improvement in workers' motivation and productivity; however, the report suggests that measuring the degree of improvement with regard to these two factors proved difficult.

71 'Ageing and employment: Identification of good practices to increase job opportunities and maintain older workers in employment', study for the European Commission by the Warwick Institute for Employment Research, University of Warwick and Economix Research and Consulting, Munich, in collaboration with various other research institutes, 2006.

72 Case studies from a project (*Combating age barriers*), first carried out in the mid 1990s by the European Foundation for the Improvement of Living and Working Conditions, were followed up in 2005. New data was collected from over 100 companies, all of which exemplified long-standing documented good practice in age management and which covered a broad range of industries overall, in 11 Member States from the former EU-15.

The results from the analysis point to a range of benefits for staff and organisations in implementing effective age management. For individuals, these include improved health and well-being, more satisfying work and the prospect of continuing employment. Benefits for organisations include securing labour supply, maximising workforce utility and hence increased productivity and competitiveness, and improved company/industrial relations.

The findings from the above project, together with further research covering the new Member States[73] (Mandl et al 2006), have contributed to the development of a European guide on good practice on age management[74]. Aimed primarily at the organisational level, the guide is designed to assist all those who are responsible for employment to ensure that workplace ageing is managed successfully and that older workers are enabled to fulfil their potential, and that age does not become a barrier to employment.

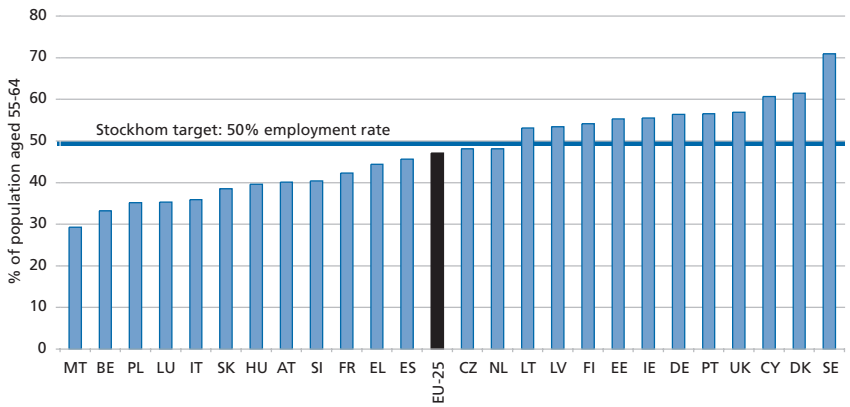
8. Prospects of meeting the targets, and longer term prospects

8.1. Prospects of meeting the Stockholm and Barcelona targets

Despite the considerable recent improvements in employment of older people, the employment rate of older workers in the EU (43.5 % in 2006) is still a long way from the target of 50% established by the Council of Stockholm in 2001. It is estimated that between 2006 and 2010 employment of those in the age group 55–64 would need to increase by around 6 million in order to reach the target, equivalent to an employment growth of around 5.5% per year. This should be seen in the context of employment creation for the older workers age group of around 5.3 million between 2000 and 2006, with an average annual growth rate of 4.2% over this period.

Increases in the employment rate depend on both employment growth and population growth. The effort needed to achieve the 50% employment rate target by 2010 is magnified by the fact that the population in this age group is projected to increase by close to 8% between 2006 and 2010. It is estimated that around 2 million of the employment increase necessary to reach the target would be needed just to balance this effect of population ageing. Furthermore, while for the EU as a whole the composition effect of the older workers' population age group on the employment rate has been positive over the first half of the decade, the gradual ageing of the baby-boom generation will result in a shift in the distribution towards older ages and consequently a negative contribution to employment rates by 2010. Assuming that year-of-age specific employment rates remain unchanged from those in 2006, it is estimated[75] that the effect of the shift in the age structure alone would result in a decline in the average employment rate between 2006 and 2010 of almost 1 percentage point (i.e. the overall employment rate would be 1 percentage point lower due to the composition effect), meaning that the rise in employment rates net of any demographic effects would have to be higher to meet the 2010 target.

Chart 71: **Projected employment rates of older workers (55–64) across EU Member States in 2010**



Source: EPC and European Commission, 2005 EPC budgetary projection exercise.

73 The guidelines are derived mainly from the findings of a project looking at developments in employment initiatives for an ageing workforce across 11 EU countries (Austria, Belgium, Finland, France, Germany, Greece, Italy, the Netherlands, Sweden, Spain and the United Kingdom). Further information comes from new research across the EU including the new Member States. Throughout, the guide makes reference to a wide spectrum of organisations: small and large, in the public and private sectors, in services and manufacturing.

74 G. Naegele and A. Walker. (2006), 'A guide to good practice in age management', research project for the European Foundation for the Improvement of Living and Working Conditions.

75 By applying the year-of-age specific employment rates for 2006 (using data for the second quarter of 2006 from the EU *Labour Force Survey*) to the projected single-year population totals for 2010, using data from the Eurostat population projections (baseline variant).

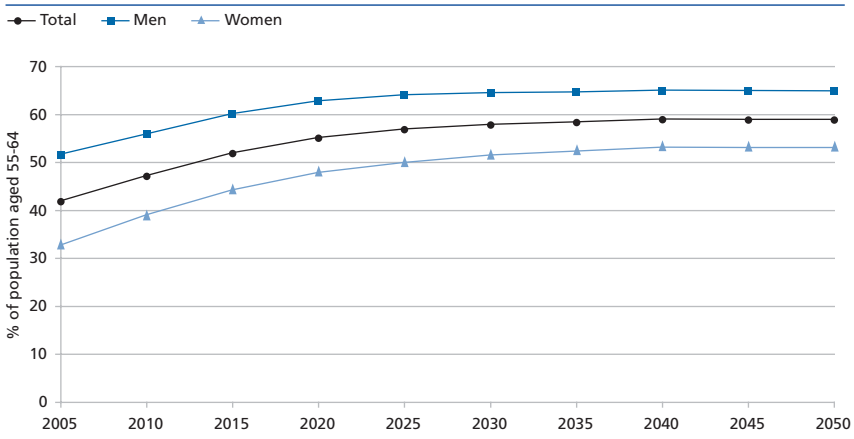
Nevertheless, recent trends in the employment rate for older workers suggest the chances to make substantial progress towards the 2010 target are encouraging, even if the target is not reached. The recent labour force projections prepared by the Commission and the Ageing Working Group attached to the Economic Policy Committee[76] foresee the older workers employment rate for the EU-25 substantially up at 47% in 2010, with 11 Member States having rates above 50% by that time (Chart 71, see page 113), and with the target actually being reached in 2013. Simple estimates based on recent employment growth rates for older workers confirm that even if the strong acceleration in employment growth of older workers observed since 2000 would continue over the next four years, the EU employment rate for older workers would (at 47.5%) still be below the 50% target in 2010.

Concerning the Barcelona target of an increase of about five years in the effective average age at which people stop working in the EU, developments in the exit age indicator over recent years suggest that it is rather unlikely that the target will be achieved by 2010. Between 2001 and 2005, the average age at which older workers exited from the labour market rose by just one year, suggesting that strong efforts are still needed to encourage older people not to withdraw from the labour force at relatively early ages and to increase opportunities for them to remain in the labour market.

8.2. Longer - term prospects

Over the next decade the working-age population will start to decline as a large number of 'baby-boomers' retire. This can be partially offset by increasing rates of employment.

Chart 72: **Projected developments in employment rates for older workers (aged 55–64) in the EU from 2005 to 2050**



Source: EPC and European Commission, budgetary projections AWG variant scenario, 2005

Recent projections[77] show that although the working-age population will begin to fall from 2010 onwards, the total number of people in work in the EU-25 will continue to increase until around 2017. It is estimated that between 2004 and 2017 employment will increase by some 20 million. More than two-thirds of this increase will be the result of a higher number of women in work. A substantial amount is also accounted for by the increase anticipated in the employment rate for older workers. Indeed, the employment rate for those aged 55–64 is projected to continue to increase sharply after reaching the target in 2013, rising to close to 57% by 2025 and then subsequently levelling off at around 59% up to 2050, and hence eventually surpassing the Stockholm target by a very wide margin (Chart 72).

9. SUMMARY AND CONCLUSIONS

The EU is facing a substantial challenge due to population ageing, the result of low fertility rates and increasing life expectancy. As a consequence of these trends the population is expected to become much older, with a marked change in the age structure of both the overall and working-age populations, and with the labour market increasingly influenced by the activity patterns of the older generation. Although a matter of concern to all, some Member States will face a greater challenge from workforce ageing than others.

In a context where people can live on average a further 20 years or more after withdrawing from active life, increasing participation and delaying the exit from the labour force will be essential to support economic growth and ease the mounting pressure on social protection systems. Demographic ageing therefore calls for strategic importance to be given to increasing the participation of men and women aged over 55. Indeed the problem is not higher life expectancy and ageing as such, but rather one of inappropriate retirement behaviour given the demographic context. On the positive side, ongoing developments will mean that the older element in the labour force will in future be better educated and in

76 A long-run labour force projection was recently prepared by the Commission and the Ageing Working Group (AWG) attached to the Economic Policy Committee as part of the project to produce common age-related expenditure projections. Using a baseline population projection supplied by Eurostat, the labour force projections are based on an age-cohort methodology developed by the OECD and refined by DG ECFIN and the AWG. Projections reflect the observed increase in employment rates of older workers in recent years and also the expected positive effects of enacted pension reforms. See: http://europa.eu.int/comm/economy_finance/publications/european_economy/2005/eespecialreport0405_en.htm

77 Economic Policy Committee and European Commission (2006), 'The impact of ageing on public expenditure: projections for the EU-25 Member States on pensions, healthcare, long-term care, education and unemployment transfers (2004-50)' in European Economy Reports and Studies, No. 1.

better health, and contain an increasing share of women.

Increasing labour force participation through mobilising the potential labour supply of inactive people has a major role to play in attenuating the negative impact of population ageing on economic growth. Older people aged 55–64 will have a key part to play in this since they account for close to a third of all inactive people of working age in the EU. However, currently over half of 55–64 year olds in the EU are inactive, mainly for reasons of retirement but also poor health or due to personal or family responsibilities, or the belief that no work is available, and the transition into inactivity is essentially a path of no return. At the same time, older workers are subject to significant difficulties if they lose their job, as evidenced by the relatively low hiring rates and the high incidence of long-term unemployment for this age group.

The European Employment Strategy, as a key element of the overall Lisbon Strategy for Growth and Jobs, calls on Member States to develop and implement comprehensive and effective active-ageing strategies, which must address the main barriers affecting the labour market participation of older people. This includes far-reaching reforms to remove incentives for early exit from the labour market and to encourage employment of senior citizens, together with ensuring that it is effectively possible to work for longer and that employment policies as a whole create more job opportunities for older workers. While more still needs to be done, recent results indicate that efforts by Member States to implement measures in support of active ageing are bearing fruit. Employment rates for older workers have risen substantially since 2000 (up 7 percentage points), even though this was a period for a large part characterised by sluggish economic and employment growth. Indeed, along with the rise in female participation, employment of older workers has been one of the most dynamic components of the EU labour market in recent years.

The recent rise in employment of older workers has not been clearly associated with a rise in the precariousness of their employment (i.e. the share of fixed-term employment) or with self-employment, nor is it overwhelmingly associated with increased prevalence of part-time employment, but rather with the more traditional forms of employment. In addition, much of the rise in older workers' employment has been in relatively higher-skilled, knowledge-intensive sectors. Furthermore, the occupational employment structure for older workers has moved towards a higher skill profile of employment, with a shift away from the more manual occupations towards the non-manual and more knowledge-intensive occupations. These trends suggest that older workers' employment is benefiting from the ongoing trends of population ageing and the shift to a more knowledge-based economy.

Much of the rise in employment rates for older workers is due to the increase in rates for older women, which is due in turn mainly to the knock-on effect of increasing participation over time of women in general (women of younger generations have higher age-specific participation rates than women of older generations). This is a result of changes in cultural attitudes and social norms regarding female participation, higher skill levels among women and greater possibilities to reconcile work and family responsibilities. In contrast, for men the rise in employment rates is a result of the rising delay in exiting the labour market, this being more due to such factors as reforms of pension and social protection systems and other recent measures associated with active ageing. Around a fifth of the overall rise is due specifically to the shift in age structure of the population aged 55–64.

Despite the recent increase in their employment, labour market participation of older people in Europe remains low by international standards, and many workers still exit the labour market at relatively early ages. Efforts to promote active ageing must therefore still be pursued vigorously, particularly in those Member States with low employment rates for older workers. Indeed, despite having risen markedly since 2000, the employment rate for older people aged 55–64 remains over 6.5 percentage points from the Stockholm target. Nevertheless recent trends in the employment rate for older workers suggest the chances to make substantial progress are encouraging, even if the target is not reached.

Further increasing the labour market participation of older workers will require measures to overcome the continuing barriers and disincentives they face employment. Existing research on older workers and analysis in this chapter has highlighted that the low labour market participation of older people is the result of a combination of factors, among which the following appear to be of particular importance:

- The balance of financial incentives, including those to discourage early retirement and to make employment financially more attractive. There is evidence that incentives embedded in tax and benefit systems, in particular public pension systems and other social transfer programmes (such as sickness and invalidity schemes), provide strong incentives for older workers to withdraw relatively early from the labour market. Addressing this will require reducing the attractiveness and availability of early pathways into retirement and appropriate adjustment of the value of pension benefits in case of anticipated and deferred retirement.

- Reducing the obstacle older people face through age discrimination and negative perceptions of their

capabilities. This is a key element in improving the employment of older workers, both through legislation and age-awareness campaigns to educate people about the need for age diversity. A shift in attitudes towards working at older ages will be necessary by employers, older workers and society as a whole.

- Helping disabled older people to better integrate into the labour market. This is also important and particular attention must be paid to health and safety in the workplace, as well as maintaining the health and working capacity of workers as they age.

- The relative cost of older workers compared to younger people is a key factor affecting employers' willingness to hire or retain older workers. More flexible pay systems, in particular moving away from seniority-based wage systems, could enhance the job security and employability of older workers.

- Training is essential to improving the employability of older workers, through addressing inadequate skills and competences. However, low participation of older workers in lifelong learning, especially the low-skilled, remains a feature in the large majority of Member States. Specific measures are needed to help upgrade the basic skills of the present stock of older workers, but, in a longer term perspective, what is needed is a lifelong learning strategy for working-age people that addresses their needs throughout their entire working life.

- Attractiveness of work and good working conditions are significant factors affecting older workers' labour market attachment. Increasing the opportunities for reduced working hours and particularly more flexible working-time arrangements appear to be especially important. More flexible work organisation, ergonomics and job design are also very relevant for encouraging older workers to remain longer in employment.

- Active ageing must be supported by an appropriate general support framework. For many older people, being able to work may depend heavily on factors such as cultural aspects relating to their participation in the labour market, their general health and the availability of, and access to, good quality care facilities and employment services.

A broad range of factors therefore needs to be addressed. Pension systems can encourage later retirement, but without suitable access for older workers to appropriate employment, they may not be particularly effective. Apart from addressing financial incentives, general challenges therefore include changing attitudes to older workers, maintaining and promoting the health and working capacity of workers as they age, developing the skills and employability of older workers, and providing suitable working conditions together with employment opportunities for an ageing workforce. It is also necessary to provide the necessary general supportive environment for this.

Addressing gender-related issues is also important. Differences in employment rates for older workers according to gender are substantial in most Member States, and indeed the low employment rate for older workers in Europe is, to a large extent, a result of the relatively low rates for older women and, in a broader perspective, of women in general. Further efforts to reduce the gap in activity between men and women will necessarily be a key element of any strategy to increase the labour supply of older people, as family-friendly employment policies which encourage younger women to participate in the labour market may also eventually lead to increased participation of older women. In this context, a lack of sufficient support for women in combining work and family responsibilities continues to be an important factor limiting their participation.

As women's labour market participation increases, it will be important to develop mechanisms, or even extend existing work and family policies, to ensure adequate coverage of older female workers' needs. In particular, it is likely that women's growing participation in the workforce will increasingly impact on their availability to carry out their traditional role of providing care for family and relations, which may require a substantial expansion in formal care facilities. The increasing importance of the older female component in the workforce may also present employers with a number of challenges as women's employment goals, career patterns and work styles may be different to those of men.

Different types of approach to active ageing currently exist across Member States. Features of those systems which are more successful in supporting active ageing include good levels of general health for older people and reasonably high standard retirement ages; relatively high spending on active labour market policy measures and participation in lifelong learning; flexibility with regard to working hours and work organisation; and reduced financial pressures on older workers to leave the labour market, both in terms of the financial incentives for older workers to retire and the cost pressure on employers to hire younger rather than older workers. In this regard, the Nordic group of countries (including the Netherlands), but also to a lesser degree the Anglo-Saxon grouping, appear to have implemented a more integrated approach to active ageing and have been relatively more successful in integrating and retaining older workers in the labour market compared to the other Member States.

Addressing the challenge of demographic ageing and its impact on the workforce will require the wider implementation of more integrated strategies than have been the case to date. Measures are needed both in the labour market and in the workplace, which emphasise the integration of older workers and improve their employability, as well as closing off routes for early exit from the labour market.

Member States have been developing strategies to react to the ageing population and its impact on the labour market. A number have adopted substantial reform programmes to pension and benefit systems, others have strengthened their efforts, while some remain at an early stage of the reform process. In the general move to tighten up early retirement schemes it will nevertheless be necessary to ensure that such systems can still address the needs of those genuinely requiring support. In addition to pension reform, improvements in participation of older workers in lifelong learning, promotion of better health in the workplace, improvements in public employment services, and implementation of stricter legislation banning age discrimination in employment and age awareness campaigns have been among the recent approaches implemented in a number of Member States.

Although much remains to be done, there are also some indications that companies are beginning to address the issue of managing an ageing workforce. In this area further progress needs to be made with regard to better working conditions, greater availability of flexible working time and work-organisation practices, more flexible wage-setting that is less linked to seniority, and changing attitudes of managers and staff towards older workers. Access to company training will also play a key role, since continued vocational training offers a tremendous opportunity for older workers to acquire new skills and to update qualifications throughout their professional lives.

As a final point, as part of the new intergenerational approach advocated by the European Employment Strategy, it is recognised that particular attention should be paid to promoting access to employment throughout working life. Indeed active ageing must not start with elderly people but rather requires much earlier intervention throughout an entire career: a lifecycle perspective is essential. For example, improving occupational health and safety for workers of all ages and emphasising the prevention of age-related work problems (such as the de-skilling of older workers and work-related health problems) will assist future generations of older workers to remain in employment longer. Therefore a comprehensive active-ageing strategy must focus on the entire working lifespan and all age groups, not just older workers.

ANNEX 1: DECOMPOSING CHANGES IN PARTICIPATION AND EMPLOYMENT RATES

By applying a simple shift-share analysis, the change in the overall participation rate (PR) can be algebraically decomposed into changes over time (from time 0 to time 1) in its three main components, a population composition effect, a participation rate effect and an interaction effect:

$$PR^1 - PR^0 = \sum_i (PR^1{}_i \times p^1{}_i) - \sum_i (PR^0{}_i \times p^0{}_i)$$

where PR = Participation rate, p = share of population

Thus, adding

$$\sum_i [(PR^1{}_i \times p^0{}_i) + (PR^0{}_i \times p^0{}_i) + (PR^0{}_i \times p^1{}_i)] + [\sum_i [(PR^1{}_i \times p^0{}_i) + (PR^0{}_i \times p^0{}_i) + (PR^0{}_i \times p^1{}_i)]$$

and rearranging one obtains:

$$PR^1 - PR^0 = \sum_i PR^0{}_i \times (p^1{}_i - p^0{}_i) + \sum_i p^0{}_i \times (PR^1{}_i - PR^0{}_i) + \sum_i (p^1{}_i - p^0{}_i) \times (PR^1{}_i - PR^0{}_i)$$

where the first part is the *population composition effect*, due to changes in the demographic structure, had the participation rate remained constant; the second part is *the participation rate effect,* due to changes in participation rate of specific cohort, keeping constant the population structure; and the third represents the effect due to the interaction of the changes in the two components. Even if the participation rate effect is assumed to be zero (when $PR^1 = PR^0$), the overall participation rate may change because of changing demographic structure (changes in p_i,). The same decomposition can be applied to the overall employment rate (ER).

Annex 2: Summary of recent pension reforms in EU Member States

Main features of recent pension reforms

Country	Main features of the reforms implemented
BE 2003	The standard retirement age for women will increase gradually from age 63 in 2003 to 64 in 2006 and will be 65 in 2009 in the general schemes for wage-earners and self-employed. Early-retirement (seniority pension) is still possible, but the required contribution period has been increased from 32 years in 2003 to 35 years in 2005. Also, the 'older workers' unemployment scheme' has been recently reformed and is under discussion for further reforms.
CZ 2003	Before the pension reform in 2003, men retired at the age of 60 and women at 53–57, depending on the number of children (one year less per child). Since January 2004, the age of retirement is increased constantly over time (2 months per year for men and 4 months per year for women) to reach 63 years for men and 59–63 for women (still depending on the number of children) in 2013. The so-called 'temporarily reduced pension', an early retirement scheme, has been abolished, while the so-called 'permanently reduced pension' scheme (allowing early retirement up to three years before the normal retirement age) is still in place but with a stronger reduction of the pension benefit (0.9% for each 90 calendar days from the statutory retirement age).
DK 2003 2004	In 2003, eligibility to disability pensions was redefined so that, instead of defining the disability degree, the work ability degree is defined. Persons with some work ability are directed to subsidised jobs (and if unemployed, to special unemployment benefit) instead of granting a disability pension. As of 1 July 2004, the statutory retirement age is 65 instead of 67. At the same time, the voluntary early retirement pension was made less attractive with the aim of increasing the effective retirement age.
DE 1992–2001 2002, 2004	An increase of the statutory retirement age to 65 was legislated in 1992. The transition period of the increase of the statutory retirement age was fixed several times (1996, 1999, 2001 and 2004) and will be completed by 2012 for those born in 1952 or later. The statutory retirement age for women and the unemployed will rise from 60 to 65 by 2011. For those born in 1952 or later, early retirement will be possible at the age of 62 with the condition of at least 35 years of contribution. In addition, pensions are reduced by 3.6% per year in the case of early retirement, while a bonus of 6% per year is granted for deferred retirement. The reduction for disability pensions before the age of 62 is up to a maximum of 10.8%. The 2001 reform aimed at promoting the development of supplementary pension schemes whilst slightly reducing the target replacement ratio in the social security scheme. The 2004 old-age pension insurance Sustainability Act introduced a sustainability factor in the pension indexation formula. This requires maintaining the set of quantitative ratio between the numbers of beneficiaries and contributors (dependency ratio). This sustainability factor led to no index adjustments in pensions in 2004 and 2005. Time spent in school and university will no longer be counted as years worked. The possibility of leaving the labour market at the age of 58 while receiving unemployment benefits until pension retirement (so-called 58er regulation) will be abolished in 2008.
EE 2001	Changes in the PAYG system include raising the retirement age for females to 63 by 2016 and revising the benefit formula. Legislation passed in mid-September 2001 set up mandatory individual accounts for the funded tier, allowing to switch a part of the statutory social security pension into private pension funds. Since 2002, over half the labour force has joined funded schemes.
ES 2002–2005	The mandatory retirement age (65) was abolished, while the accrual of pension rights after 65 was increased by 2% per year and the contributions abolished. Early retirement is discouraged by the reduction of contributions rates (50% at the age of 60, increasing by 10 pp. by each additional year) and made possible only from the age 61 provided that contributions have been paid for at least during 30 years and the person has been unemployed at least 6 months. Moreover, the pension is reduced by 6–8% p.a., depending on the number of contribution years. Pensions have also been made compatible with part-time work; the pension benefit is reduced according to the length of the working day.
FR 2004	The main measures of the reform implemented as of 2004 include a prolongation of the contribution period for a full pension from 37.5 to 40 years for public sector employees a further increase to 41 years for all employees between 2009 and 2012 and to 41.75 in 2020. Thereafter, further gains in life expectancy (at 60) will prolong the contribution period by two-thirds of the increase in life expectancy. Moreover, retirement was made more flexible but bonus/malus adjustments will be applied to deferred/earlier retirement. In the case of postponement, the bonus is 3% per year. As of 2006, the amount of the penalty ('la décote'; applied if retired before 40 years of contributions) will decrease gradually from 10% to 5% of pension per year of anticipation in 2015 for the private sector and will increase from 0.5% to 5% for civil servants). Furthermore, pensions were indexed to prices only and the contribution rate will be increased by 0.2 of a percentage point as of 2006.
IE 1999 2000 2003	The National Pension Reserve fund was established in 1999 with the aim of pre-funding in part the future Exchequer cost of social welfare and public service pensions. A statutory obligation has been placed on the government to pay a sum equivalent to 1% of GNP from the Exchequer into the fund each year until at least 2055. A series of significant tax incentives have been introduced for the purpose of promoting pension provision amongst the self-employed, employers in non-pensionable employment and proprietary directors. These incentives aim at encouraging individuals to plan for the pension provision early on in their careers. Personal Retirement Savings Accounts which seek to promote supplementary pension coverage were introduced. Reforms of the public pension system implemented to date have allowed for the raising of the minimum pension age and the removal of a compulsory retirement age for most public servants. A cost-neutral early retirement scheme with actuarially reduced benefits has been introduced.

IT 2004	As of 2008, regardless of the regime (earnings-related, mixed, contribution-defined), the take-up of early pensions will be tightened. To take-up a pension at an age lower than 65 for men (60 for women) is allowed only to those with 40 or more years of contributions or to those with 35 years of contributions and the age of 60 for the employed (61 for the self-employed), instead of the flexible age range of 57–65 before the reform. Furthermore, the age limits will be raised by one year in 2010 and 2014, thus reaching 62 for the employed and 63 for the self-employed. A further postponement of pension is envisaged with respect to the moment at which the requirements are met through the so-called 'exit windows' (finestre). During the period 2008–2015, the take-up of seniority pensions for those having met the requirements of the legislation before 2004 (at least 35 years of contributions and the age of 57 for the employed/58 for the self-employed) is limited to women who accept the pension calculation according to a less-favourable contribution method. During the period 2004–2007, those employed in the private sector and having satisfied the requirements for a seniority pension may opt for a different regime providing: 9 (i) an additional pay corresponding to the whole pension contribution (32.7% of gross wages), 9 (ii) the total tax exemption of this additional income and 9 (iii) pension amount calculated according to the contribution years matured at the date of the option and indexed to inflation for the period until old-age retirement.
HU 1997	The standard retirement age for women will increase to 60 by 2005, 61 by 2007 and 62 by 2009; before the reform it was 57). A funded tier was introduced in 1997, allowing to transfer an 8% contribution (26.5% of the total social security pension contribution) into private pension funds. This funded tier is mandatory to all new entrants to the labour market. In 2005, already 62% of the labour force have joined funded schemes.
LV 1996	The Latvian social security pension system was reformed into a notional defined-contribution scheme in 1996 and complemented with the introduction of a funded tier in 2001, allowing to transfer a part of the contribution into private pension fund: the contribution is currently 2% but is to be raised to 10% (50% of the total contribution) by 2010. Furthermore, the standard age requirement for women (60.5 years until July 2006) will increase by 6 months each year to reach 62 by 2008. Those for men reached 62 in 2003. Early retirement up to two years before the standard retirement age remains possible until July 2008.
LT 1995 2004	The standard minimum retirement age for women (55 years in 1995, 58.5 years in 2003) will increase by 6 months each year to reach 60 years in 2006. The retirement age for men was gradually increased (2 months per year) from 60 years in 1995 up to 62.5 in 2003. A funded tier was introduced in 2004, allowing a transfer of a part of the statutory social security pension contribution (to rise to 5.5% in 2007) into private pension funds. The switch is voluntary to all.
NL 2006	Decisions have been taken to reduce the incentives for the take-up of early retirement pensions (VUT), mainly via the reduction of the favourable tax treatment of such pensions.
AT 2003, 2004	The minimum retirement age for men will increase from 61.5 years to 65 years; for women the age will rise from 56.5 to 60 years. The increase will be phased in gradually beginning in July 2004 and by 2017 early retirement will be eliminated. The statutory retirement age for women will be increased gradually between 2019 and 2034 to reach the retirement age for men at 65. The 2003 reform abolished early retirement schemes and linked benefits more closely to contributions. The 2004 reform introduced significant improvements for the financial sustainability of the pension system via a better transparency between contributions and benefits; bonus/malus adjustments (4.2% p.a.) are applied for deferred/earlier retirement and a longer contribution period (45 years) is required for a full pension (80%) at the age of 65. Also, a switch to the price indexation of pensions as of 2006 has already been decided. Furthermore, an alignment between different sectoral schemes has been undertaken. From January 2005, harmonised guaranteed pension accounts will be established (the Act on the harmonisation of pension system was approved in November 2004). In the new system, individual, transparent pension accounts will be kept to report of benefits accrued from contributions paid in and other credits acquired, such as from active child and elderly care.
PL 1999	The Polish general social security pension system was reformed into a notional defined-contribution scheme in 1999, with the introduction of a funded tier at the same time, allowing the transfer of a part of the contribution (7.3%) into private pension funds. The switch is mandatory to people born after 1969. Those born before 1948 remain in the old defined-benefit scheme. People born 1949–1968 could choose whether they joined the NDC scheme or split the contributions between NDC and the fully funded scheme. Farmers are not included in the reformed NDC scheme. The standard retirement age remains 65 for men and 60 for women. There will be no early pension for those born after 1948 and retiring after 2006.
PT 2002 2005	The general social security pension scheme was reformed in 2002, changing the calculation rules of pensions to be based on lifetime earnings (max. 40 years) instead of the best 10 years over the last 15 years' wages. However, this is being phased in over a long transition period. The 2005 reform aligned the public sector employees' pensions with the general pension scheme (previously aligned only to those who had entered the labour market after 1993), raising the statutory retirement age from 60 in 2005 to 65 by 2015, raising the length of the contribution period required for a full pension from 36 to 40 years by 2013 and applying bonus/malus adjustments for deferred/earlier retirements.
SK 2004	The standard retirement age will increase from 60 to 62 for men (9 months per year) by 2007 and from the former 57 (reduced by 1 year per child, to reach age 53) to 62 for women by 2016. A worker can still retire earlier if the combined benefit from the first and the newly introduced second pillar equal at least 60% of the minimum living standard determined by the government. In this case, the pension is reduced by 6% per year while a bonus of 6% is introduced for those postponing retirement. It is also possible to get pension benefit while working. A funded tier was introduced in 2005, which is mandatory to the new entrants to the labour market, allowing the transfer of half the statutory social security pension contribution (9) into private pension funds.

SI 2000	The standard retirement age has been increased. It is now possible to retire between 58 and 63 for men and 61 for women (the minimum retirement age was 53 for women and 58 for men before the reform). Women who worked before the age of 18 can retire earlier (but not before the age of 55). Special regulations reduce the age of retirement to 55 in certain cases (before the reform it was possible even below 50). The minimum retirement age is raised from 53 to 58 for women (the same as for men). The accrual rate has been reduced from 2% to 1.5% since 2000. Later retirement has been encouraged: a person who fulfils the requirement for pension but continues to work beyond the age of 63/61 will receive an additional pension increase (3.6% the first additional year, 2.4% the second year and 1.2% in the third, plus the normal rate of accrual, 1.5% p.a.). The indexation of pensions has varied from year to year. During the period of 2000–2004, it was 50% to wages and in 2005 80% to wages. Prices were taken in to account only when the result of the indexation was below the price increase in 2001–2005. As of 2006, it will be fully to wages. A new supplementary pre-funded pension insurance was introduced. It is mandatory for early pensions in heavy and unhealthy work and voluntary for collectively agreed pension insurance.
FI 2003–2005	The 2003–2005 revisions of the pension scheme aim to raise the effective retirement age (by two years by 2025) by removing the unemployment pension scheme (between 2009–2014) and removing the individual disability (early retirement) scheme whilst allowing flexible retirement between 63 and 68 years and an early retirement at the age of 62. The accrual rate is increased to 4.5% for those continuing to work beyond the age of 63 (previously 2.5% for those working beyond 60) and an actuarial reduction of 0.6% per month is applied to those retiring prior to 63. The ceiling on the maximum pension is abolished. Pension benefits are calculated on the basis of life-time earnings. Also, a life expectancy coefficient will be implemented in the system as of 2009, adjusting future old-age and survivors' benefits to the increase in life expectancy.
SE 1998	Under the new notional defined contribution system it is possible to retire from age 61 onwards, with an actuarially fair compensation for those who stay on in the labour force. Every year of contributions is important for the pension benefit. A person with an average wage will increase his yearly pension benefit by nearly 60% if he postpones his retirement decision until age 67 compared to leaving at age 61. Yearly 'statement of account' informs the individual of costs and benefits of retirement. The new system is being phased in gradually for generations born between 1938 and 1953, and will fully affect generations born after 1953.
UK 2002–2003	Between 2010 and 2020, women's pensionable age will gradually rise from 60 to 65, as for men. In 2002, the State Second Pension was introduced (replacing the earlier State Earnings-related Pension), resulting in time in higher benefits. In 2003, the Pension Credit was introduced, increasing income-related benefits to people over 60. Also, the basic state pension has been increased more than what the statutory indexation rule (with prices) requires.

Source: Reproduced from European Economy, Special Report No 1/2006, 'The impact of ageing on public expenditure: projections for the EU-25 Member States on pensions, healthcare, long-term care, education and unemployment transfers' (2004–50), European Commission.

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Chapter 3

Working time, work organisation and internal flexibility - flexicurity models in the EU

1. Introduction

In spite of country differences, European Union (EU) Member States are facing a number of common challenges, such as demographic ageing, together with still relatively low average employment rates and high structural unemployment, which put at risk the sustainability of social protection systems[1]. Europe's social reality is becoming more complex[2], while the 'European social model' has been subject to a 'globalisation shock' (BEPA, 2007). Globalisation is accentuating Europe's rapid trajectory towards a post-industrial knowledge and service economy. This requires a highly educated work force and the modernisation of institutions to avoid the development of segmented labour markets in many Member States, where both relatively protected and unprotected workers coexist (i.e. 'insiders' and 'outsiders'), and where long-term poverty can be especially problematic among certain groups having limited access to vocational training opportunities (Esping-Andersen, 2002; *Employment in Europe*, 2004).

Articulated sets of policies, which simultaneously address the requirements of flexibility in the labour markets, provide flexible forms of work organisation and improved labour relations, and increase employment and social security, are necessary in order to achieve the objectives of the renewed Lisbon Strategy. This means in particular more and better jobs, while modernising the European social models at the same time.

Flexicurity is such an integrated strategy[3]. Flexibility, on the one hand, is about successful transitions during the life cycle (e.g. from school to work, from job to job). It is about upward mobility and the development of talent, and fostering flexible work organisations capable of rapidly adapting and effectively mastering new productivity processes. It is about facilitating the combination of work and individual preferences. Security, on the other hand, is more than just the security to sustain a job. It is about equipping people with the skills that enable them to progress in their working lives, and help them to find new jobs. It is also about adequate unemployment benefits to facilitate transitions, and it also encompasses training opportunities for all workers, especially the low-skilled and older workers[4].

Both internal (within the firm) and external (between firms) forms of flexibility are necessary[5]. In addition, all forms of flexibility should be accompanied by secure transitions from job to job, thus they should be supported by:

- modern labour laws
- effective active labour market policies
- modern social security systems
- comprehensive lifelong learning policies[6].

Concerning, internal flexibility, high-quality workplaces with capable leadership, good organisation of work, and continuous upgrading of skills should be an integral part of any successful flexicurity strategy.

Wilthagen and Tros (2004) argue that the notion of flexibility should by no means be reduced to the ease or difficulty in hiring/firing workers and in making use of non open-ended employment contracts, such as fixed-term contracts, temporary work agencies, on-call work, etc. (i.e. external numerical flexibility). In fact, flexibility requirements can also be fulfilled within the firm (i.e. internal flexibility). This internal flexibility may involve either quantitative and/or qualitative features (Wiltha-

1 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, 'Towards common principles of flexicurity: More and better jobs through flexibility and security', COM(2007) 359.

2 Member States face common challenges such as demography, increased ethnic and cultural diversity, and the individualisation of values.

3 A successful flexicurity strategy has [also] to balance carefully the income insurance function of an unemployment benefit system with the appropriate 'activation' strategy designed to facilitate transitions into employment and boost career development.

4 On the effectiveness of human capital policies in general, see Heckman (2000), and for active labour market policies in particular, see *Employment in Europe 2006*, Chapter 3.

5 In this chapter and consistent with the common use of the terms, 'functional flexibility' or 'internal qualitative flexibility' is defined as forms of work organisation that use an employee's capacity to perform different tasks when required, through job rotation and teamwork. Advanced forms of functional flexibility are associated with multitasking, skills development (training), job enrichment (complexity), and involvement of workers in planning or budgeting (team autonomy). 'Internal numerical flexibility' is defined as the amount of flexibility firms can achieve by varying labour *input through the use of flexible working-time arrangements, atypical working hours, part-time work, etc.*

6 These are the four policy components of flexicurity. They are affected by considerable policy complementarities.

gen, 1998; Wilthagen and Tros, 2004; Hurley and Vermeylen, 2007; Goudswaard and de Nanteuil, 2000). Quantitative forms of internal flexibility refer to different working-time arrangements, such as the use of overtime, part-time, weekend work, or the implementation of flexible working-time schemes. Qualitative forms of internal flexibility refer to the adoption of work organisation methods that enhance the adaptability to change, including such practices as job rotation, multitasking and increased employees' responsibilities in decision—making.

The recently adopted Commission's Communication on flexicurity recognises that flexibility is also about 'flexible work organisations, capable of quickly and effectively mastering new productivity needs and skills and about facilitating the combination of work and private responsibilities'. Within the set of common principles, which are proposed in order to facilitate national reform debates, it calls on Member States to enhance internal and external flexibility simultaneously[7].

Depending on particular institutional arrangements and/or social dialogue practices, social partners are likely to be able to agree on internal flexibility combinations that respond better to both market pressures and workers demands for an improved work-life balance (i.e. are win-win solutions).

This chapter is divided into three main sections. The first section uses both micro and macro data sources to describe some of the stylised facts that characterise working-time trends and patterns in Europe. It also presents information on the typology and incidence of working-time arrangements. *Labour Force Survey* (LFS) data is used to present detailed information on the distribution of working hours. The European Foundation's *European Working Conditions Survey* (EWCS) is used to calculate a composite indicator of total working time, and assess the impact of working time on health, the work-life balance and job satisfaction.

The second section surveys the literature on new forms of work organisation, and discusses its rationale. It also describes the main facts regarding the incidence of such innovative practices across the EU and estimates some probit regressions. The EWCS is used to describe the main stylised facts regarding work organisation practices in Europe, including autonomy at work, task rotation and teamwork, task complexity, problem solving and communication structures at work, complementary human resource management (HRM) policies, work organisation and job satisfaction. Using the EWCS, probit regressions are estimated for the determinants of the pace of work, the incidence of performance-based pay schemes, the health risks of work, the work-life balance, job satisfaction, controlling for wages[8], worker and establishment characteristics, different work organisation practices and country-fixed effects. The second section also presents a typology of work organisations in Europe in the context of innovation systems (Lorenz and Valyere, 2003).

The third section builds upon the evidence presented in the previous two sections to calculate two composite indicators of flexibility within the firm: internal and functional flexibility. This represents a considerable improvement upon the analysis carried out in the 2006 *Employment in Europe (EiE)* report, where flexibility was entirely identified with the notion of external flexibility as measured using the OECD's Employment Protection Legislation (EPL) indicator. In contrast, this chapter uses a comprehensive measure of flexibility, including indicators on external, internal and functional flexibility. These two new composite indicators are then added to the usual set of labour market indicators to redo a principal components analysis (PCA) of labour market/flexicurity systems and refine the taxonomy presented in last year's *EiE report*.

However, given the nature of flexicurity, it is important to mention that this chapter does not analyse in-depth security aspects. A more in-depth investigation of the security dimension of flexicurity would require use of more recent longitudinal data, which are currently unavailable on a harmonised basis across EU Member States. Longitudinal data are necessary to assess individuals' transitions between different labour market statuses and pay levels. The reader is referred to *Employment in Europe 2004*, Chapter 4, for an analysis of the latest figures available on labour market transitions in EU Member States.

2. WORKING TIME - QUANTITATIVE FLEXIBILITY

This section describes some of the stylised facts that characterise working-time trends and patterns in Europe in order to provide a picture of the development of quantitative internal flexibility. Annual average hours worked per worker have declined considerably in recent decades; in the literature two competing explanations are advanced for this. The first explanation is based on preferences for fewer working hours, partly resulting from changes in the composition of the workforce[9], and

7 This type of discussion is not new at EU level. In 1997, the European Commission issued a Green Paper that examined new forms of work organisation and public policy options for increasing their utilisation (European Commission, 1997).

8 Using wage deciles.

9 In recent decades, the trend increase in female labour force participation led to a reduction in the total preferred number of working hours, because of the need of women to reconcile work with family responsibilities.

the second due to the effects of institutional factors that create disincentives to work. Disentangling these two hypotheses is relevant for policy. For example, on the one hand, if the declining trend in working hours reflects individual/family preferences for voluntary part-time work, there might be no societal problem *per se*. On the other hand, if low working hours are due to institutional features that create disincentives to work, such as high tax wedges and unemployment benefits in a context of inadequate 'activation'[10] policies, there might be room for policy intervention.

A number of surveys suggest that actual participation rates, particularly among women, are below individuals' desired levels (Jaumotte, 2003). There are large differences across countries because the labour force participation of women is mainly determined by their level of education, policies and cultural attitudes, although the male-breadwinner model is no longer the predominant one in Europe. The *Labour Force Survey* (LFS) indicates that the percentage of inactive women that would like to work in EU Member States is, on average, above 10%.

This section uses data mainly from the following sources: the Groningen Growth and Development Centre, Eurostat's *Labour Force Survey* (LFS), and two surveys of the European Foundation for the Improvement of Living and Working Conditions[11].

2.1. Downward trend in average working hours

All sources of information used indicate that average working hours per worker have declined significantly in all developed countries since the early 1970s (Leiner-Killinger et al., 2005). Over the long term, labour utilisation[12] decreased at a faster pace in the EU[13] than in the United States (Chart 1, Panel 1), although the situation has improved in the former since the mid 1990s as a result of policy reforms (Chart 2, Panel 1, see page 128).

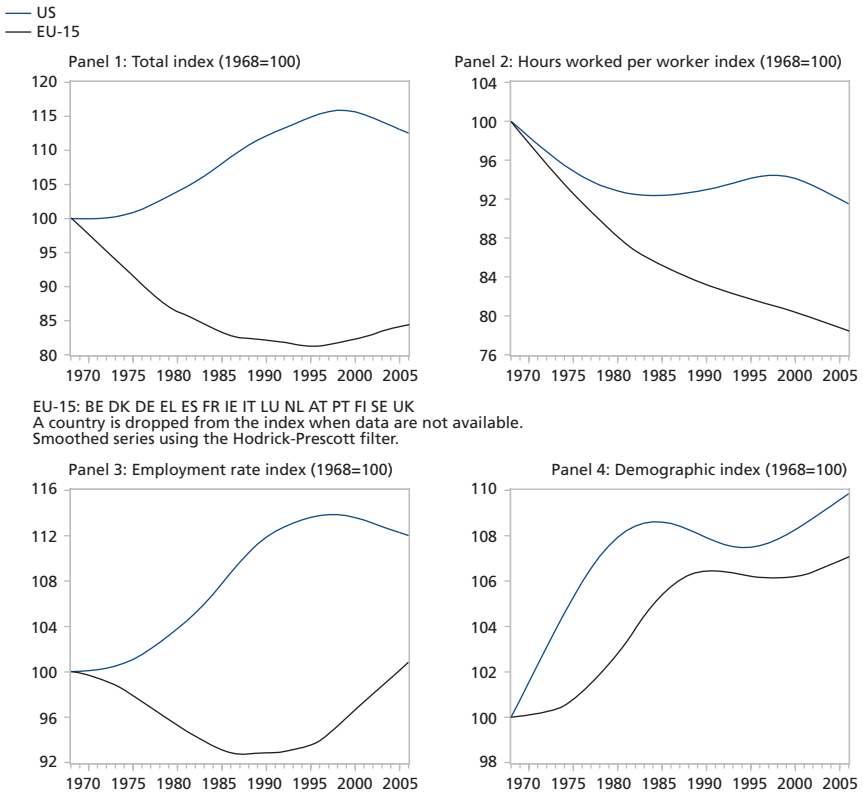
Data from the Groningen Growth and Development Centre (GGDC) are used to breakdown labour utilisation in three main components:

- the change in average annual hours worked per worker
- the change in the employment rate
- the change in the ratio of the working-age population in the total population.

Over the long term, Chart 1 suggests that the diverging trend in labour utilisation between the EU and the United States is explained by stronger declines in average annual hours worked per worker (Panel 2) and in the employment rate (Panel 3) in the former relative to the latter.

Since the second half of the 1990s, labour utilisation has grown at a faster pace in Europe than in the

Chart 1



Source: Groningen Growth and Development Centre Total Economy Database, January 2007; DG ECFIN, Ameco Database, Autumn 2006 Economic Forecatsts

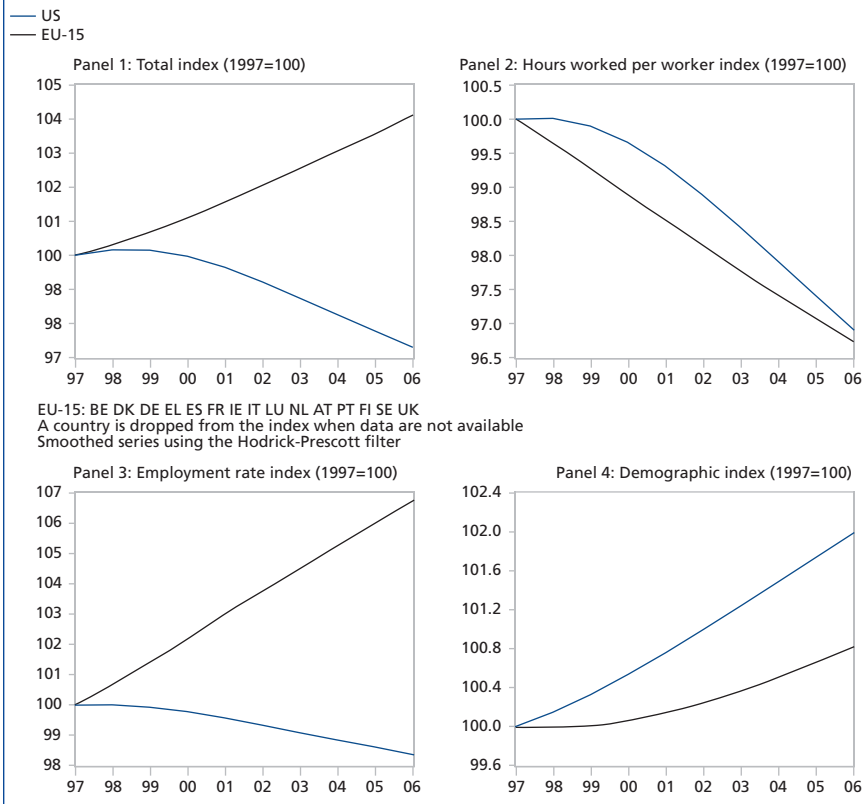
10 'Activation' policies attempt to coordinate active with passive labour market policies (or active labour market policies with the administration of public unemployment benefits). The 'mutual obligations' principle plays a central role in activation strategies. On the one hand, public employment services should provide quality counselling and job brokerage services, while on the other the unemployed should comply with the obligations to actively search for a job and to accept suitable job offers (*EiE 2006*, Chapter 3).

11 The *Establishment Survey on Working Time* (wave 2004-2005), and the *European Working Conditions Survey* (waves 1991, 1995, 2000-01 and 2005).

12 The total number of hours worked divided by the total population is commonly referred to as the labour utilisation indicator.

13 EU-15: BE, DK, DE, EL, ES, FR, IE, IT, LU, NL, AT, PT, FI, SE and UK.

Chart 2



EU-15: BE DK DE EL ES FR IE IT LU NL AT PT FI SE UK
A country is dropped from the index when data are not available
Smoothed series using the Hodrick-Prescott filter

Source: Groningen Growth and Development Centre Total Economy Database, January 2007; DG ECFIN, Ameco Database, Autumn 2006 Economic Forecatsts

United States (Chart 2). This reflects the remarkable turnaround in the employment rate in the former (Panel 3), which more than offsets the uninterrupted decline in the average number of hours worked per worker (Panel 2).

In recent years, there has been a significant rise in the EU average employment rate (or in the extensive margin of labour market adjustment), largely reflecting the rise in female labour-force participation. A large proportion of women that joined the labour market have opted for working part-time or a reduced number of hours (Chart 3), explaining the cross-country strong negative correlation between the incidence of part-time work and the average annual number of hours of work per worker (Chart 4).

Econometric analyses using micro data were used to investigate the determinants of an individual's decision to work part-time (Jaumotte, 2003; Buddelmeyer et al., 2005). The analyses reveal that preferences for individual's part-time work depend on a number of factors, such as gender, education, household composition (e.g. number of children), government policies (e.g. taxation, child benefits/childcare subsidies) and the country's characteristics that may reflect cultural factors as well as national differences in labour market institutions (Algan and Cahuc, 2005).

Overall, the analysis suggests that part-time jobs provide an opportunity for parents, particularly women, to reconcile work and family demands. Nevertheless, part-time work for women can be associated with negative future career prospects, particularly in the private sector of the economy, for example in terms of lower wages, social security coverage, less training and fewer transitions to full-time jobs (Buddelmeyer et al., 2005; ESWT).

2.2. Working-time arrangements

In 2004, the *European Labour Force Survey*[14] (EU LFS) included an ad hoc module on work organisation and

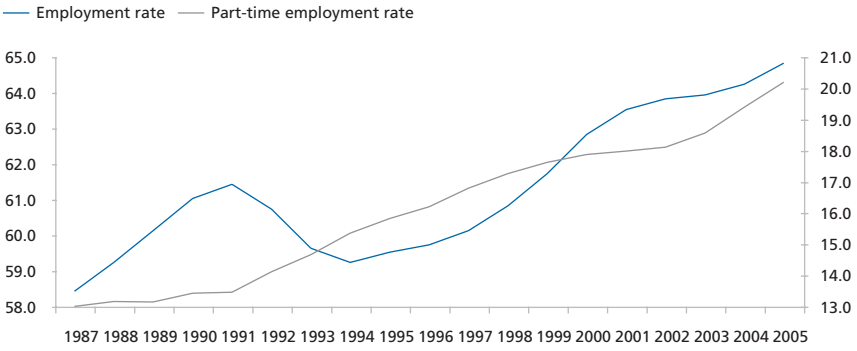
14 The EU LFS is a large household sample survey providing quarterly results on labour participation of people aged 15 and over, as well as on people outside the labour force. The survey is conducted in the 27 Member States of the European Union and 3 countries of the European Free Trade Association (EFTA) in accordance with Council Regulation (EEC) No. 577/98 of 9 March 1998. The Labour Force Surveys are conducted by the National Statistical Institutes across Europe and are centrally processed by Eurostat, using the same concepts and definitions, i.e. following the International Labour Organisation (ILO) guidelines, and using common classifications, such as NACE(rev1), ISCO-88(COM), ISCED and NUTS.

In all of the countries providing quarterly data, the quarterly sample is spread uniformly over all weeks of the quarter. The data collection covers in total the years 1983 to 2006. In spring 2007, the LFS sample size across the EU was about 1.5 million individuals. The EU LFS covers all industries and occupations.

15 The *European Working Conditions Survey* (EWCS) is carried out simultaneously by the European Foundation for the Improvement of Living and Working Conditions (hereafter the European Foundation) in all EU Member States, and also Candidate and EFTA countries. It only covers individuals in employment. The survey questionnaire asks more than 100 questions, including questions on household characteristics, time use, work organisation, perceived health hazards and access to training. The survey methodology is based on a multi-stage random sampling method involving face-to-face interviews conducted at the respondent's principal residence. The fourth EWCS was carried out in each of the 27 Member States between 19 September and 30 November of 2005. Approximately 30 000 workers were interviewed. The survey questionnaire was directed at approximately 1 000 workers per country with the exceptions of Estonia, Cyprus, Luxembourg, Malta and Slovenia which had only 600 respondents each. The European Foundation is an autonomous EU agency with a tripartite governing board based in Dublin (i.e. includes representatives of European Social Partners and of EU bodies). It was set up by the European Council Regulation No. 1365/75 of 26 May 1975 in order to contribute to the planning and design of better living and working conditions in Europe.

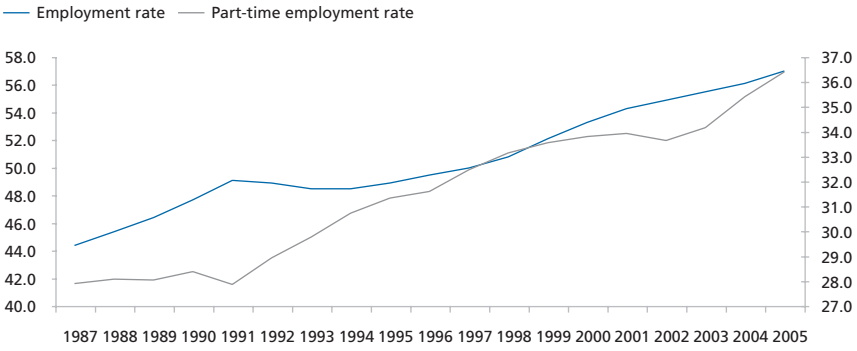
16 In 2004 (EU15) and 2005 (NMS 6), the European Foundation carried out the European *Establishment Survey on Working Time* (ESWT). It was conducted in over 21 000 establishments with 10 or more employees, covering both the private and public sectors. Personnel managers and, where available, employee representatives were interviewed about working time arrangements and work-life balance in their workplaces.

Chart 3: Total employment rate (LHS) and part-time employment rate (RHS) in the EU-12 (percentages)



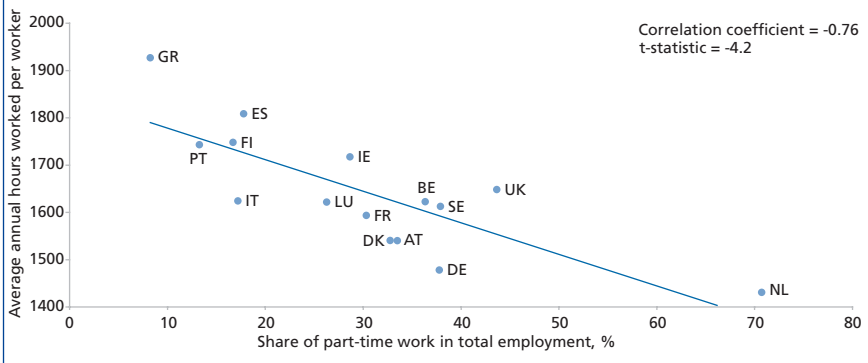
Source: Eurostat

Female employment rate (LHS) and part-time employment rate (RHS) in the EU-12 (percentages)



Source: Eurostat

Chart 4: The annual average of hours worked per worker and the average part-time rate, 1995–2005



Source: Groningen Growth and Development Centre and Eurostat.

working-time arrangements. The European Foundation's EWCS[15] and ESWT[16] have also detailed information that can be used to identify and investigate different patterns of working-time arrangements. Table 1 (see page 130) presents comparative information taken from these three surveys on work organisation and working-time arrangements.

Using these three surveys, Member States were ranked according to the percentage of workers/establishments using one of the various flexible working-time arrangements (types 2 to 5 in Table 1, see page 130). The resulting Spearman's[17] rank correlation coefficient is relatively high and the correlations are significantly different from zero (Table 2, see page 130). Twenty-one EU Member States are present in all three surveys[18].

The section following will focus mainly on the ESWT survey, because this survey can give us insights as to the reasons for the introduction of various types of working-time arrangements, the take-up rates of the different regimes, and the assessment of results from the perspectives of both managers and employee representatives.

In the context of flexicurity policies, it is important to evaluate to what extent the adoption of working-time arrangements deviating from the standard norm result from employees' personal needs and preferences or from employers' optimisation behaviour[19]. Obviously, the introduction of flexible working-time arrangements, either on the basis of work-life balance or of efficiency criteria, are not necessarily incompatible, but there is also room for potential conflict.

The ESWT distinguishes four types of flexible working-time arrangements according to the time horizon given for the balancing of time accounts (European Foundation, 2006b).

17 Spearman's rank correlation coefficient is equivalent to (Pearson) correlation coefficient but on ranks.

18 AT, BE, CY, CZ, DE, DK, EL, ES, FI, FR, HU, IE, IT, LU, LV, NL, PL, PT, SE, SI and UK.

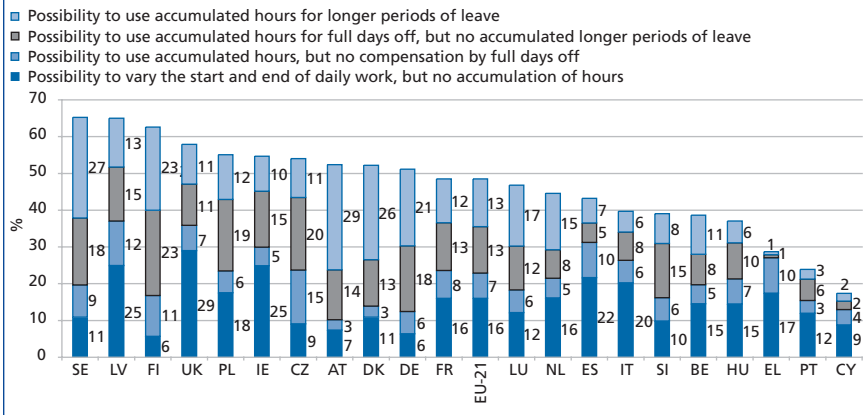
19 For example, adapting working time patterns to workload fluctuations and/or reducing costs by limiting the use of overtime.

Table 1 - Typology of working-type arrangements

Survey	*Labour Force Survey* ad hoc module on work organisation and working-time arrangements, 2004 (Eurostat)	*Establishment Survey on Working Time*, 2004-2005 (European Foundation)	*Fourth European Working Conditions Survey*, 2005 (European Foundation)
Question/variable	Variable working hours (VARWKHRS)	Flexible working-time arrangements (MM300, MM305, MM306a, MM306b)	How are your working-time arrangements set? (Q17a)
Types: 1	Fixed start and end of working day	No flexible working-time arrangements	They are set by the company/ organisation
2	Staggered working hours, banded start/end	Possibility to vary the start and end of daily work, but no accumulation of hours	You can choose between several fixed working schedules determined by the company/ organisation
3	Working-time banking with possibility only to take hours off	Possibility to accumulate hours, but no compensation by full days off	You can adapt your working hours within certain limits
4	Start and end of working day varying by individual agreement	Possibility to use accumulated hours for full days off	Your working hours are entirely determined by yourself
5	Determines own work schedule (no formal boundaries)	Possibility to use accumulated hours for longer periods of leave	

Source: Eurostat and the European Foundation.

Chart 5: Incidence of different forms of flexible working time arrangements by country



Source: European Foundation, ESWT 2004-2005; DG EMPL calculations. Management interviews; establishments having answered the question on flexible working time arrangements (mm300).

Table 2

Spearman's correlation coefficient for the relevant questions on work organisation and working time arrangements (t-statistic in parenthesis)

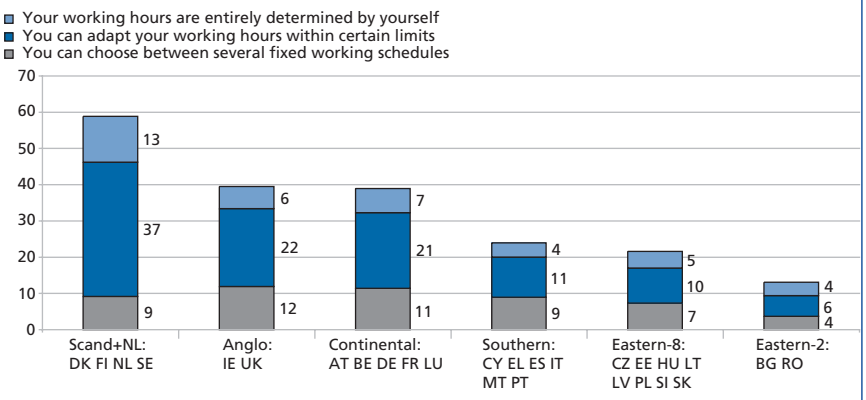
	LFS	EWCS	ESWT
LFS	1	0.84 (6.6)	0.52 (2.6)
EWCS	-	1	0.71 (4.3)
ESWT	-	-	1

Source: DG EMPL calculations.

Ranked in an increasing degree of flexibility (Chart 5):

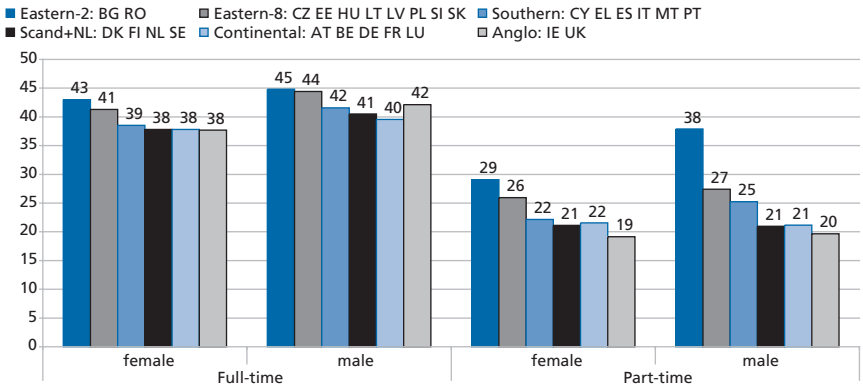
- Schemes that only allow the starting and finishing times of each day to vary, without the possibility of accumulating credit or debit hours (16% of all establishments surveyed);
- Schemes that allow for the accumulation of credit and debit hours, over longer periods of time (such as a week or a month), but do not allow credit hours to be compensated by full days off (7% of all establishments surveyed);
- Schemes that permit employees to take full days off to compensate for accumulated credit hours (13% of all establishments surveyed);
- Schemes that allow employees to take longer periods of time off. Such schemes are often referred to as 'working time accounts' or 'annualised working hours' (13% of all establishments surveyed).

Chart 6: Working–time arrangements



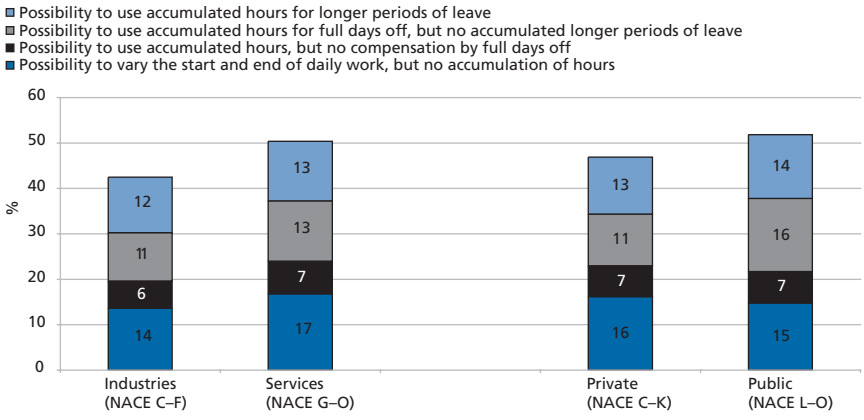
Source: European Foundation, EWCS 2005 (question Q17a); DG EMPL calculations.

Chart 7: Time spent in the first job by country groupings–employees in 2005



Source: European Foundation, fourth EWCS; DG EMPL calculation.

Chart 8: Flexible working–time arrangements by sector of activity



Source: European Foundation, fourth EWCS; DG EMPL calculation.
Note: Establishments with flexible working-time arrangements (management interviews).

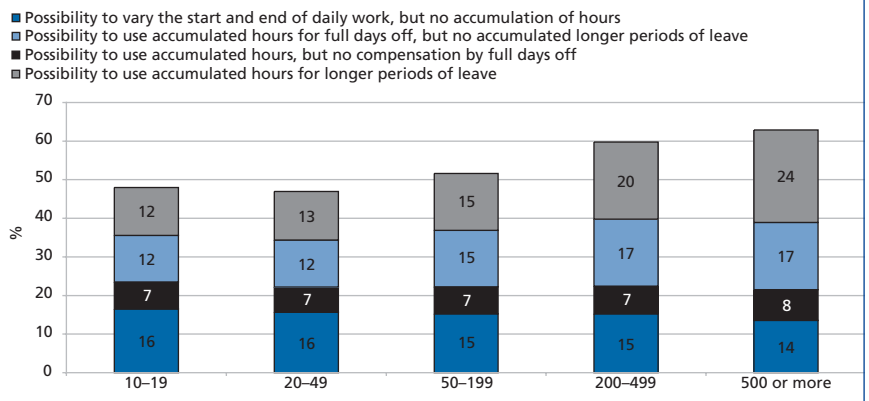
Chart 5 highlights the existence of significant differences in flexible working-time arrangements across the 21 EU Member States covered by the survey. The EWCS also indicates the existence of significant differences in working-time arrangements across country groupings (Chart 6), which contrast with the relatively uniform patterns for working hours (Chart 7). Opportunities to make use of the various types of flexible working-time arrangements are higher in the service sector (Chart 8). The size of firm also matters for the adoption of working-time arrangements, particularly for the most 'advanced' type (Chart 9, see page 132). In fact, the proportion of establishments offering the possibility to take long periods of leave in exchange for accumulated hours to at least some of their employees rises with the size of the workforce.

The European Foundation (2006b) advances a number of explanations for this. Firstly, there may be fixed costs for setting and managing flexitime schemes. Secondly, the management of time accounts requires a certain degree of formalisation in order to protect accumulated rights. Thirdly, in small and medium-size enterprises it might be difficult to replace workers taking long periods of leave.

Using the ESWT, the European Foundation (2006b) makes an important distinction between entitlement to flexible working-time arrangements at establishment level and the take-up rate at the worker level. Nevertheless, the data suggests that there is a positive correlation between these two measures (Chart 10, see page 132).

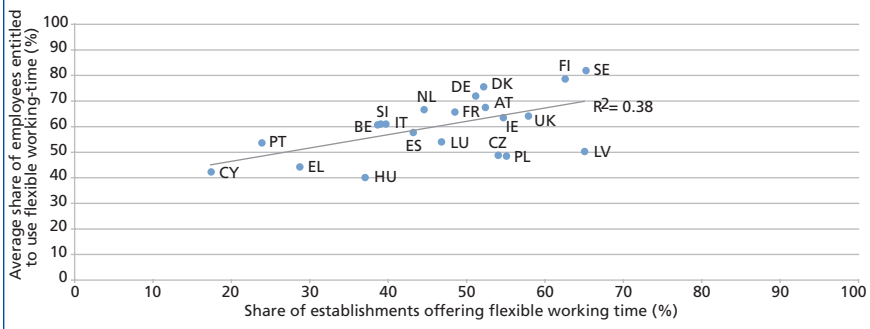
The ESWT asks both managers and employee representatives the reasons for the introduction of flexible working-time arrangements (Chart 11, see page 132). It is remarkable to notice that the rankings given largely coincide. The first reason, with more than 70% of positive answers (among valid responses), is to enable employees to better combine work and family life. The second reason, with slightly

Chart 9: **Establishments with flexible working–time arrangements, by size and degree of flexibility**



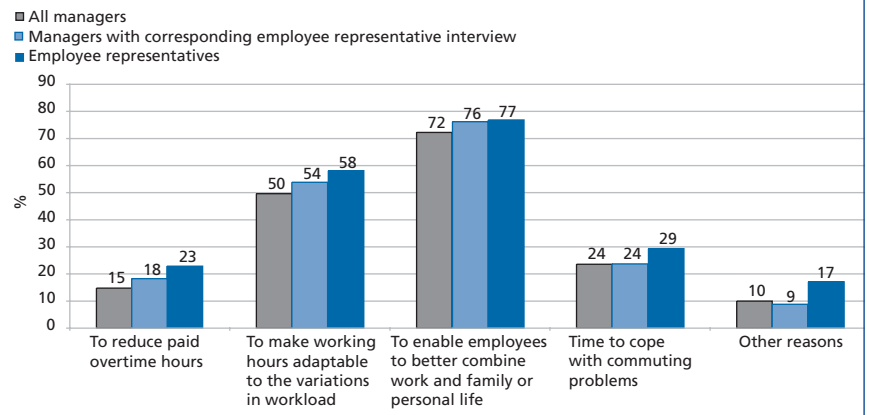
Source: European Foundation, ESWT 2004–2005; DG EMPL calculations.
Management interviews; establishments having answered the question on flexible working–time arrangements (mm300).

Chart 10: **Share of companies offering flexible working–time arrangements and the average share of employees entitled to make use of them by country**



Source: European Foundation, ESWT 2004–2005; DG EMPL calculations.
Management interviews; establishments having answered the questions on flexible working–time arrangements (mm300) and on the proportion of employees entitled to use flexitime in the establishment (mm302).

Chart 11: **Reasons for introducing flexible working times by type of interview**



Source: European Foundation, ESWT 2004–2005; DG EMPL calculations.
Establishments with flexible working–time arrangements (both types of interviews).
Note: Results exclude answers of the type 'Don't know/No answer'.

more than 50% of positive answers, is to better adapt working hours to the variations in the workload.

As regards the perceived effects of introducing flexible working-time arrangements, both managers and employee representatives most frequently report higher job satisfaction as an outcome of the introduction of flexible working times, followed by a better adaptation of working hours to the workload. Between both groups of respondents there is only a small minority which perceives negative effects (Chart 12).

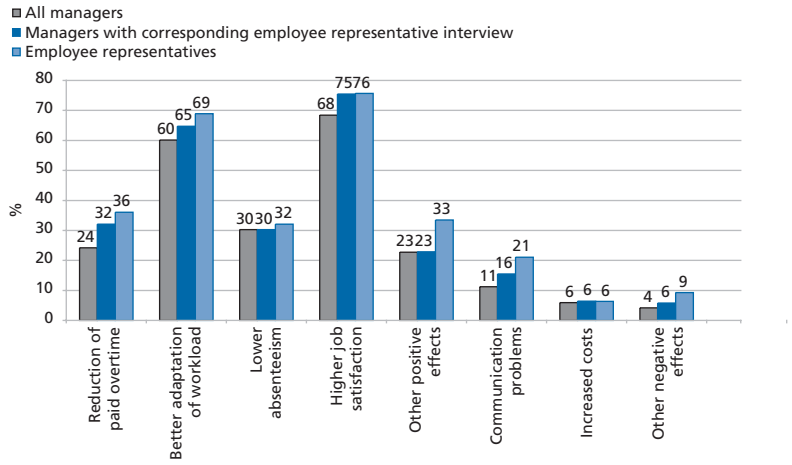
Results from the ESWT suggest that the greater the working-time flexibility allowed, the more positive tends to be the management's evaluation (Chart 13). The reduction in paid overtime hours, lower absenteeism, higher job satisfaction and better adaptation of the working hours to the workload are more often considered by managers to have positive effects in establishments with more 'advanced' forms of flexibility (European Foundation, 2006b).

2.3. Part-time work

A large proportion of workers seem to be willing to participate in the labour force because of the availability of a number of non-standard working-time arrangements, particularly part-time work, which offers them the possibility to combine market work with family responsibilities or education. Flexible working-time arrangements have a more positive impact on the participation rates of certain disadvantaged groups in the labour force, such as low-skilled, female and young workers.

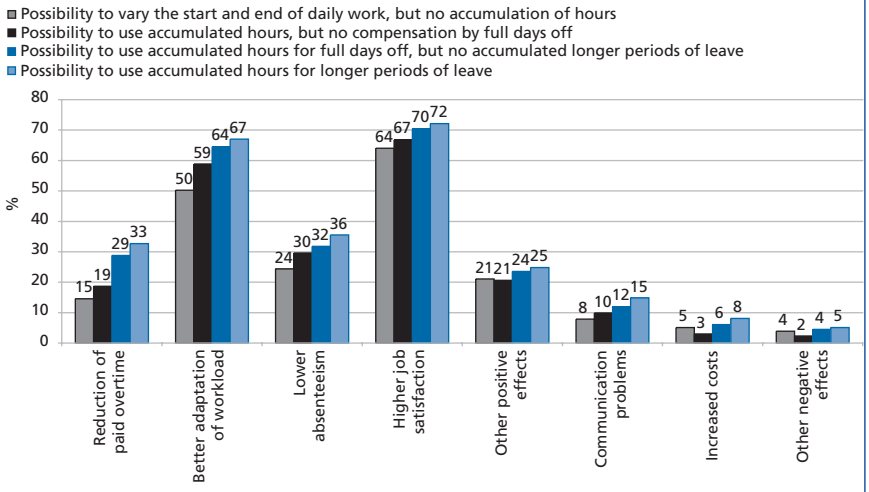
Since the mid-1990s, there has been a turnaround in labour utilisation in Europe (Chart 2, see page 128). This results from two offsetting trends. On average in the EU, positive employment growth, resulting from successful reforms and societal trends, more than compensated for the decline in the number of hours worked per worker.

Chart 12: Effects of introducing flexible working time by type of interview



Source: European Foundation, ESWT 2004–2005; DG EMPL calculations.
Establishments with flexible working–time arrangements (both types of interviews).
Note: Results exclude answers of the type 'Don't know/No answer'.

Graph 13: Effects of introducing working hours by type of arrangement



Source: European Foundation, ESWT 2004–2005; DG EMPL calculations.
Establishments with flexible working–time arrangements (management interviews).

Table 3 : Breakdown of the variation in the average number of usual weekly hours of work in the main job between 1985 and 2005

Total variation	Full-time working hours	Part-time working hours	Composition effect
-2.6	-0.9	0.0	-1.7

Source: Eurostat and DG EMPL calculations.

These combined trends reflect the rapid development of part-time work, particularly for women (Chart 3, see page 129). Indeed, in recent decades female participation trends have largely shaped overall developments. A number of analyses find that policies that remove barriers to part-time work increase female participation (Jaumotte, 2003; OECD, 2005). The mechanical effect on the rise in the female employment rate[20] within the total employment rate is high across countries (Chart 14, see page 134), while the development of female part-time seems to have contributed to the rise in female employment rate across EU Member States (Chart 15, see page 134). Therefore, the more intensive recourse to part-time arrangements contributed to the increase in both employment growth and labour utilisation.

Part-time work is largely voluntary (Chart 16, see page 134). In addition, rates of involuntary part-time work are particularly low in countries that also have low levels of average hours worked per worker (Chart 17, Leiner-Killinger, 2005, see page 135), suggesting again that preferences play an important role in the choice of part-time work.

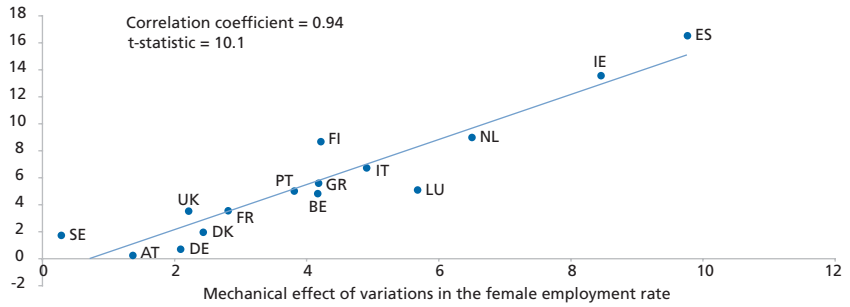
Using LFS data (on usual weekly hours of work in the main job), the reduction in average hours of work between 1985 and 2005 is broken down between composition effects (i.e. full-time versus part-time) and pure effects (Chart 18, see page 135)[21]. The data covers eight EU Member States for which data is available[22]. The results suggest that about two-thirds of the overall reduction in average usual hours of work can be attributed to the rise in part-time employment.

20 The change in the female employment rate between 1995 and 2005 weighted by the fraction of the female working-age population in the total working-age population in 1995.

21 $\Delta h = \Delta f * F_0 + \Delta p * P_0 + f_1 * \Delta F + p_1 * \Delta P$ where Δ stands for the variation between an initial (0) and final (1) periods ($\Delta x = x_1 - x_0$); h for average hours; f for full-time average hours; p for part-time average hours; F for the full-time employment ratio (i.e. full-time employment over total employment); and P the part-time employment ratio. The total effect ΔH is the sum of a pure effect: $\Delta f * F_0 + \Delta p * P_0$ and a composition effect: $f_0 * \Delta F + p_1 * \Delta P$.

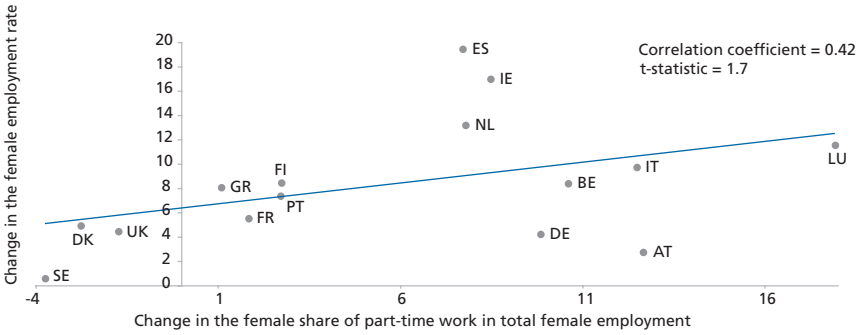
22 The period 1985–2005 was used in order to calculate a longer medium-term trend, but at the cost of including only nine countries in the analysis (BE, DE, DK, FR, EL, IT, LU, NL and UK). It should also be mentioned that there is a potentially significant break in series due to German unification.

Chart 14: **Change in the total employment rate and the mechanical effect induced by variations in the female employment rate in the period 1995–2005 (percentage points)**



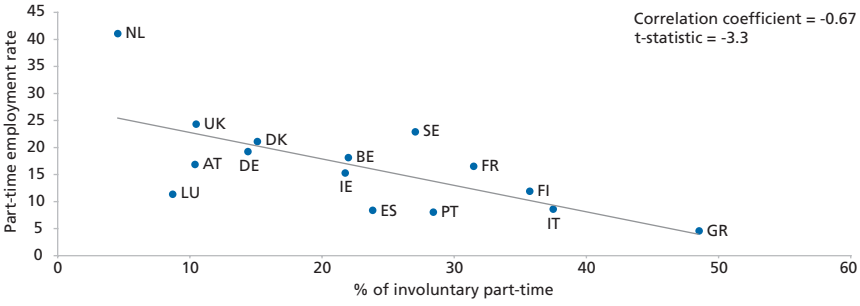
Source: Eurostat.

Chart 15: **Changes in the female employment rate and in the female share of part-time work in total female employment in the period 1995–2005 (percentage points)**



Source: Eurostat.

Chart 16: **The part-time employment rate and the percentage of involuntary part-time (averages 1995–2005) (percentages)**



Source: Eurostat.

2.4. Distribution of working hours

LFS data is used to characterise the distribution of working hours by main classification variables (e.g. country, gender, type of employment), while, due to the availability of longer time series, GGDC data is used to identify the major factors explaining the declining trend in labour utilisation.

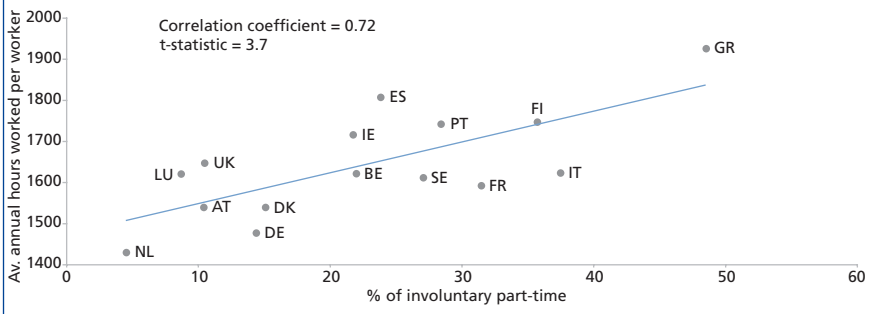
Again it can be seen that the declining trend in average hours of work (Table 4, Panel 1) is, to a large extent, the result of composition effects (i.e. the shift from full-time to part-time work). Using only data for full-time employment (Panel 2), average weekly hours of work have remained relatively unchanged in the major continental EU Member States in the last 10 years (1995–2005). Moreover, the average full-time weekly hours of work have increased in Germany, Italy and Spain, albeit marginally, and more substantially in France since 2002 (Chart 19, see page 136).

Data from both the GGDC and Eurostat's LFS suggest that while labour utilisation indices declined significantly in Europe until the early 1990s, they have since largely stabilised, particularly after correcting for composition effects. Chart 20 (see page 136) uses a boxplot[23] graph to analyse the distribution of usual weekly hours of work in eight EU Member States for which data is available from 1985. The message is again one of a significant decline in average working hours until the early 1990s followed by a relative stabilisation, but also of a convergence in full-time working hours post 2000.

The LFS distinguishes between the number of hours usually worked and the number of hours actually worked (Table 5, see page 137). The former should correspond to the number of

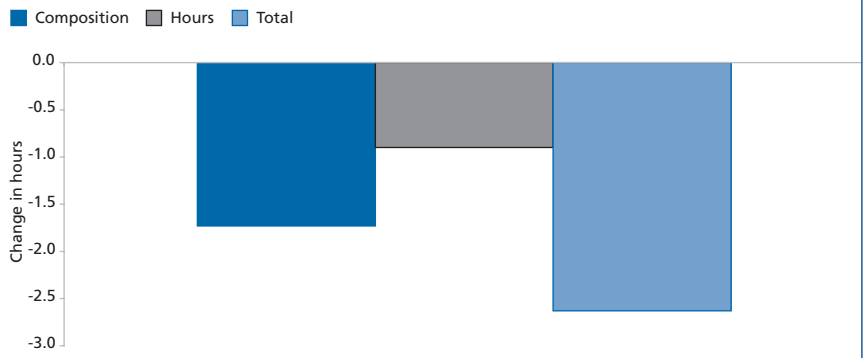
23 A boxplot graph summarises the distribution of a set of data by displaying measures of localisation and spread. The box portion of a boxplot represents the first and third quartiles (i.e. the middle 50% of the data). The difference between the first and third quartile represents the interquartile range (IQR). The median is depicted using a horizontal line through the box, while the mean is drawn using a dot symbol. The inner fences are defined as the first quartile minus 1.5*IQR and the third quartile plus 1.5*IQR. The graphical elements known as whiskers and staples delimit the values that are outside the first and third quartiles, but within the inner fences. The staple is the horizontal line delimiting the inner fences. Whiskers are the vertical lines linking each hinge to the corresponding staple.

Chart 17: Total annual hours worked per worker and the percentage of involuntary part-time (averages 1995–2005)



Source: Groningen Growth and Development Centre and Eurostat.

Chart 18: Breakdown of the variation in the average number of usual weekly hours of work in the main job (period between 1985–2005)



Source: Eurostat LFS, DG EMPL calculations.
Note: average for BE DE DK FR EL IT LU NL and UK.

hours a person normally works, while the latter should correspond to the number of hours a person actually worked during the reference week[24]. The LFS also includes information concerning the existence of more than one job[25] per person. Although only about 3.5% of EU workers have a second job, these people work, on average, a considerable number of hours in their second job.

The distribution by gender of working hours in part-time and full-time employment is shown in Chart 21 (see page 136). Despite the high incidence of female part-time work (Table 6), average weekly hours (in part-time work) are not significantly different across gender (Chart 21, upper panel, see page 136). As regards full-time employment, there is a significantly positive difference in the average number of weekly hours between men and women (Chart 21, bottom panel, see page 136).

The distribution of weekly hours of work by gender for the full-time workers employed in 1985 and 2005 is presented in Charts 22 (see page 137) and 23 (see page 138). These Charts suggest a general shift to shorter working hours.

Table 4 : Average number of usual weekly hours of work in the main job

Panel 1 : Total employment

Country	Gender	1985	1990	1995	2002	2005	2006
DE	F	35.8	33.5	33.1	31.4	30.3	30.2
	M	42.6	41.3	40.8	40.6	40.2	40.1
	F+M	39.9	38.2	37.6	36.5	35.7	35.6
ES	F		38.4	37.3	36.7	35.5	35.6
	M		42.4	42.2	41.8	42.1	42.1
	F+M		41.1	40.5	39.9	39.4	39.4
FR	F	36.3	35.5	34.8	33.4	34.3	34.4
	M	42.1	41.6	41.4	38.9	41.2	41.2
	F+M	39.6	38.9	38.4	36.3	38.0	38.1
IT	F	36.9	36.6	35.9	35.3	34.1	34.0
	M	41.2	41.4	41.3	41.4	41.6	41.5
	F+M	39.8	39.8	39.4	39.1	38.6	38.5
UK	F	30.1	30.8	30.7	31.2	31.3	31.3
	M	44.5	45.1	44.5	42.9	42.0	41.8
	F+M	38.5	38.9	38.3	37.4	37.0	36.9
EU-15	F			33.7	32.9	32.6	
	M			41.8	40.9	41.1	
	F+M			38.4	37.4	37.3	

Source: Eurostat

Panel 2: Full-time employment

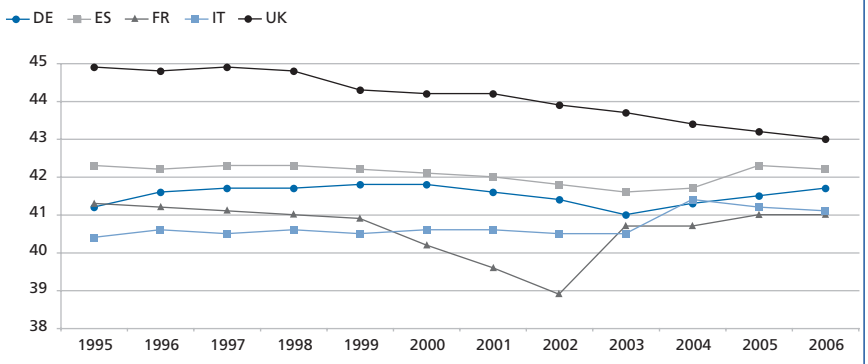
Country	Gender	1985	1990	1995	2002	2005	2006
DE	F	42.2	40.8	40.1	40.1	40.0	40.4
	M	43.1	42.0	41.7	42.1	42.3	42.4
	F+M	42.8	41.6	41.2	41.4	41.5	41.7
ES	F		41.2	41.1	40.5	40.7	40.5
	M		42.8	42.8	42.4	43.1	43.1
	F+M		42.3	42.3	41.8	42.3	42.2
FR	F	40.2	39.7	39.8	37.7	39.0	39.2
	M	42.6	42.2	42.4	39.8	42.2	42.2
	F+M	41.7	41.2	41.3	38.9	41.0	41.0
IT	F	38.2	38.0	37.9	37.8	38.4	38.5
	M	41.5	41.7	41.7	41.9	42.6	42.5
	F+M	40.5	40.5	40.4	40.5	41.2	41.1
UK	F	40.4	40.8	41.1	40.8	40.4	40.4
	M	45.8	46.8	46.8	45.5	44.7	44.5
	F+M	44.2	44.9	44.9	43.9	43.2	43.0
EU-15	F			40.0	39.6	39.8	
	M			43.0	42.4	42.9	
	F+M			42.0	41.4	41.8	

Source: Eurostat

24 Possible reasons for a difference include: a) slack for technical or economic reasons; b) labour dispute; c) maternity or parental leave; d) overtime.

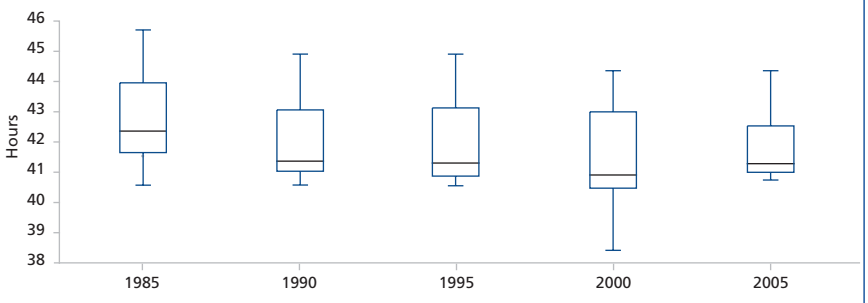
25 Multiple (or second jobholders) decide for themselves which job is to be considered as the first job. In doubtful cases the first job should be the one with the greatest number of hours usually worked.

Chart 19: **Average number of usual weekly hours of work in the main job - total full-time employment**



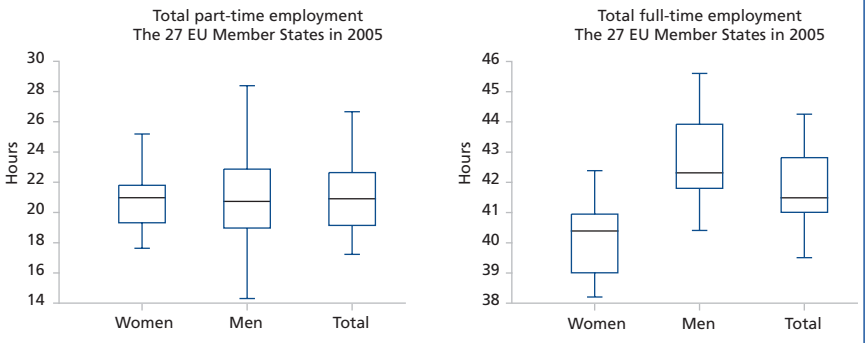
Source: Eurostat.

Chart 20: **Average number of usual weekly hours of work in the main job – total full-time employment**



Source: Eurostat and DG EMPL. calculations.
Note: EU–8: BE LU NL IT FR DE UK EL

Chart 21: **Average number of usual weekly hours of work in the main job**



Source: Eurostat and DG EMPL. calculations.

Chart 24 (see page 139) presents, side-by-side, the distributions of weekly hours of work for total employment for both women and men. It identifies the following stylised facts: a) the high incidence of part-time work for women; and b) men working full-time work longer hours than women working full time.

According to the LFS, the distinction between full-time and part-time work is made based on the spontaneous answer given by the respondent. However, excluding implausible answers, it should be expected that full-time work should start at about 30 hours, while part-time work should hardly exceed 35 hours. Such outcomes would secure the necessary consistency with the notions of full and part-time. Chart 25 (see page 139) presents the distributions of part and full-time side-by-side, roughly corroborating such expectations.

2.5. A composite indicator of total working time

Labour force surveys normally report working time as time spent on the main job. They exclude commuting time and time spent at home in various household duties or non-workplace activities, such as caring for children and adults. By totalling the time spent on workplace and household work, time-diary or time-budget data sets can be used to calculate measures of total work. Comprehensive measures of working time are particularly relevant to assess the effects of work (intensity) on (perceived) health hazards, the work-life balance and overall satisfaction with working conditions.

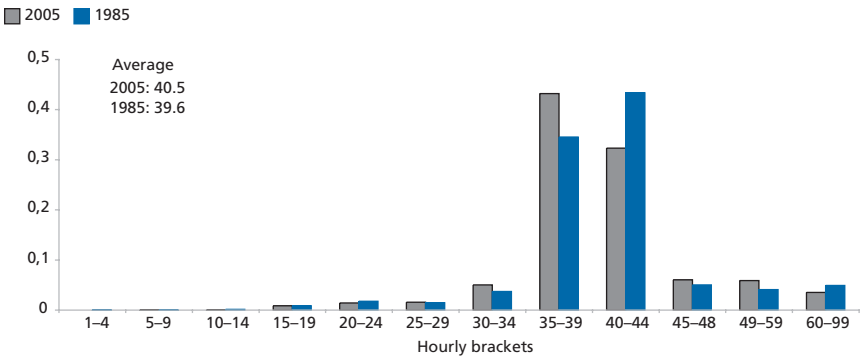
Using this type of data sets for the United States and three EU Member States, Burda et al. (2006) find that workers in the United States work more than in Europe: i) in the workplace; ii) in total (i.e. both in the workplace and at home); and iii) at unusual times of the day and on

Table 5 : **Average number of weekly hours of work in the main and second jobs in 2005**

Country	Gender	Main job usual hours	Main job actual hours	Second job actual hours	Percentage of second job holders in total employment
DE	F	30.3	30.9	8.4	3.3%
	M	40.2	41.6	10.2	3.4%
	F+M	35.7	36.8	9.4	3.3%
ES	F	35.5	34.6	14.1	3.3%
	M	42.1	41.3	16.3	2.5%
	F+M	39.4	38.6	15.3	2.8%
FR	F	34.3	33.0	11.2	4.1%
	M	41.2	39.9	15.5	1.9%
	F+M	38.0	36.8	12.6	2.9%
IT	F	34.1	33.5	11.8	1.7%
	M	41.6	41.0	15.2	1.5%
	F+M	38.6	38.1	13.8	1.6%
UK	F	31.3	30.2	10.0	4.7%
	M	42.0	40.4	11.6	3.0%
	F+M	37.0	35.7	10.7	3.8%
EU-15	F	32.6	32.1	10.8	3.9%
	M	41.1	40.7	13.2	3.3%
	F+M	37.3	36.9	12.0	3.5%

Source: Eurostat and DG EMPL.

Chart 22: **Distribution of usual weekly hours of work - female full-time employment in the EU-8 in 2005 and 1985**



Source: Eurostat and DG EMPL calculations.
Note: EU–8: BE LU NL IT FR DE UK EL

weekends. Total time committed to all work activities can result in the worker perceiving a 'time shortage' or 'time stress' (Hamermesh and Lee, 2003). Time shortage has some similarity with poverty: 'both reflect the scarcity of resources, time in the former case, goods in the latter'[26]. Hamermesh and Lee (2003) find that women perceive to be more affected by time stress than men after controlling for observable characteristics.

The fourth EWCS can be used to calculate a broader measure of working time that includes time spent in paid jobs other than the main one, commuting time (i.e. time spent travelling to and from work), and time spent working at home on non-workplace activities.

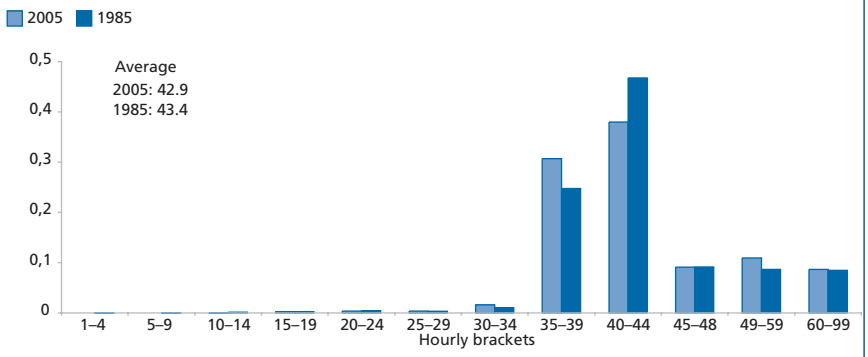
26 The only difference is that in a growing economy the goods constraint will relax over time, while the time constraint cannot.

Table 6: **Part-time workers in percentage of total employment**

Country	Gender	1992	1995	2002	2005
DE	F	30.9	33.7	39.5	43.8
	M	2.7	3.6	5.8	7.8
	F+M	14.5	16.3	20.8	24.0
ES	F	13.8	16.4	16.8	24.2
	M	2.2	2.9	2.6	4.5
	F+M	6.0	7.5	8.0	12.4
FR	F	25.2	29.1	29.8	30.7
	M	3.8	5.1	5.2	5.7
	F+M	13.1	15.8	16.4	17.2
IT	F		12.7	16.9	25.6
	M		2.9	3.5	4.6
	F+M		6.3	8.6	12.8
UK	F	43.8	44.4	43.8	42.7
	M	6.3	7.8	9.6	10.4
	F+M	22.9	24.1	25.4	25.4
EU-15	F	28.8	31.0	33.3	36.3
	M	4.2	5.2	6.6	7.7
	F+M	14.2	15.8	18.1	20.3
EU-27	F			28.5	31.0
	M			6.6	7.4
	F+M			16.2	17.8

Source: Eurostat

Chart 23: **Distribution of usual weekly hours of work - male full-time employment in the EU-8 in 2005 and 1985**



Source: Eurostat and DG EMPL calculations.
Note: EU–8: BE LU NL IT FR DE UK EL

Although the EWCS has been carefully designed in order to replicate some of the sampling characteristics of the LFS, the small sample of the former when compared with the latter (roughly 20 000 versus 1.5 million cases respectively), together with the fact that the EWCS only covers people in employment and not the entire labour force, warrants some care when using the EWCS to infer results, particularly at country level. In fact, the EWCS has been designed primarily with a view to obtaining results at the EU level. Moreover, the monitoring of the European Employment Strategy (EES) largely relies on the use of Eurostat data in general, and LFS data in particular.

The EWCS includes a question on the number of usual weekly hours of work in the main job. This allows comparing the results obtained using the EWCS with the LFS for the average (Chart 26) and the coefficient of variation[27] (Chart 27, see page 140) of usual weekly hours of work in the main job. For the EU as a whole (or even just the EU-15), the results obtained using the EWCS are close to those obtained using the LFS (for both the mean and the coefficient of variation).

For the EU as a whole, the results suggest that the EWCS closely reproduces the distribution of weekly usual hours of work in the main job calculated using LFS data. This, together with the availability of other indicators in the fourth EWCS, makes it possible and justifies the calculation of a more comprehensive measure of total time use in work. This comprehensive measure includes a) time spent in paid jobs other than the main one, b) commuting time, and c) time spent at home on non workplace (and unpaid) activities[28].

Chart 28 (see page 140) presents the breakdown of the composite indicator for weekly working hours. The composite indicator is calculated as the sum of:

a) hours usually worked per week in the main job (Q8a)

b) hours worked on average per week in job(s) other than the main paid job (Q9b)

c) commuting time to work (Q8b*Q13/60)

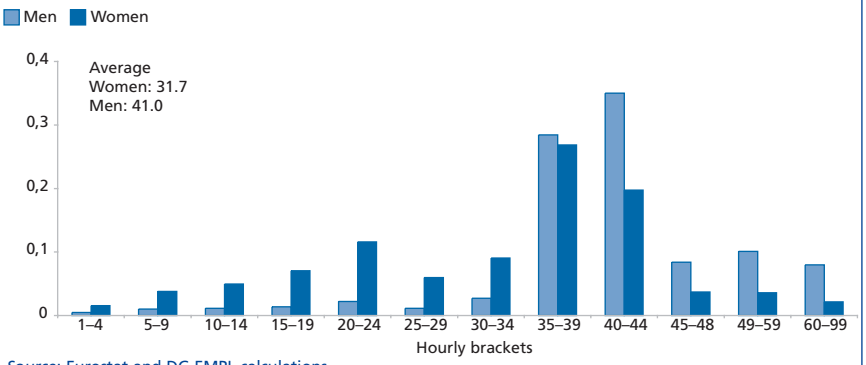
d) time spent in some non-workplace activities, such as caring for and educating children (EF4.1c), cooking and housework (EF4.1d), and caring for elderly or disabled relatives (EF4.1e)[29].

27 The coefficient of variation is the standard deviation divided by the mean.

28 Because the EWCS only includes people who were in (paid) employment in the reference week, unpaid work carried out by non-employed people, with a high proportion of women, are not considered. Therefore in the EWCS, unpaid (or non-workplace) working hours represent working hours carried out exclusively by people already in (paid) employment (Parent-Thirion et al., 2007).

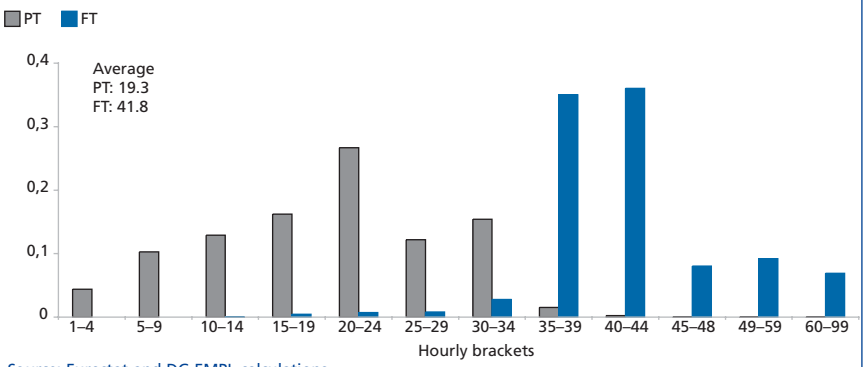
29 Using the nomenclature in the questionnaire of the fourth EWCS (http://www.eurofound.europa.eu/docs/ewco/4EWCS/ENFINALquestionnaire2005.pdf), the composite indicator is calculated as: $Q8a + Q9b + Q8b*Q13/60 + 7*(EF4.1c + EF4.1d + EF4.1e)$. Extreme values are trimmed as follows: Q8a at 120 hours per week, and EF4.1c, EF4.1d and EF4.1e each at 10 hours per day.

Chart 24: **Distribution of usual weekly hours of work - Total employment in the EU-8 in 2005**



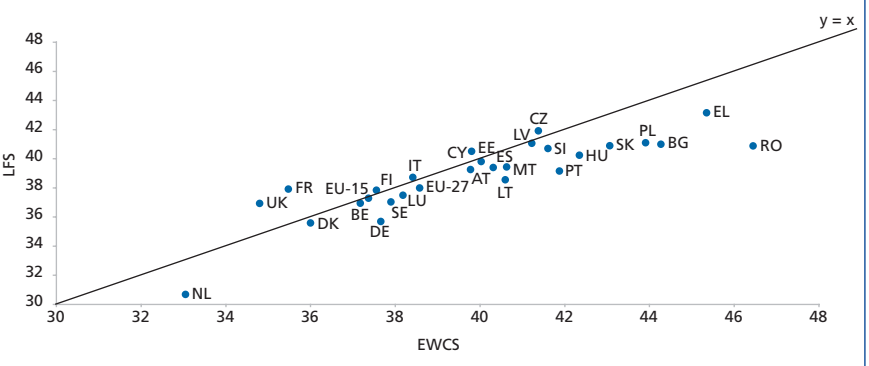
Source: Eurostat and DG EMPL calculations.
Note: EU–8: BE LU NL IT FR DE UK EL

Chart 25: **Distribution of usual weekly hours of work - part-time and full-time employment in the EU-8 in 2005**



Source: Eurostat and DG EMPL calculations.
Note: EU–8: BE LU NL IT FR DE UK EL

Chart 26: **Average number of usual weekly hours of work in the main job in 2005**



Source: Eurostat, LFS; European Foundation, EWCS.

Parent-Thirion et al. (2007) highlight the fact that such a composite working-time indicator gives important insights (Chart 29 and 30, see page 140 and 141). Specifically, after combining time in paid work with time in non-workplace activities, women spent considerably more time working than men, reversing the rankings obtained when only paid (or workplace) work is considered. Moreover, even women working part-time - a form of work organisation widely believed to favour the work-life balance or the reconciliation of work with family responsibilities - work longer total hours than men in full-time jobs.

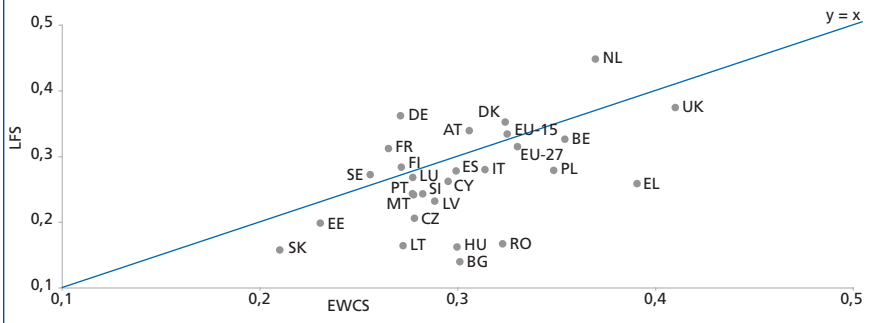
However, contrary to this result, Burda et al. (2006) find that total work (i.e. the sum of workplace and household work) tends to be equal for men and women at a point in time, even while it may change over time and differ across countries. These authors call it the stylised 'iso-work' fact[30]. Since economic theory offers little explanation for the rationale of such a coordination mechanism, the authors propose the existence of social norms to explain the 'iso-work' fact.

Another aspect worth mentioning is the high cross-country variability in total working hours as measured by the coefficient of variation of the composite working-time indicator (Chart 31, see page 141). Moreover, the variability of working hours is highly correlated with the percentage of employees working 'long' hours (i.e. more than 48 hours per week) (Chart 32, see page 141).

However, Parent-Thirion et al. (2007) suggest that the variability of working hours (relative to the national average) might per se be more detrimental to the perceived work-life balance than long hours, because workers working atypical hours cannot benefit from a number of societal services which have normal opening hours. However, the negative impact of atypical working hours can be mitigated if couples are able to coordinate their tasks.

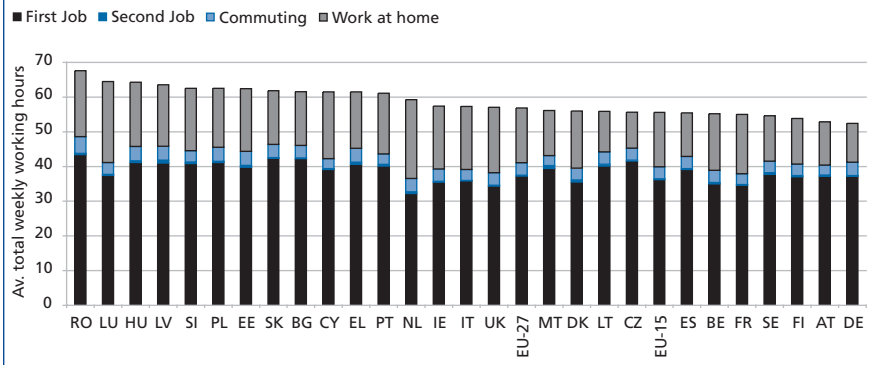
30 The 'iso-work' stylised fact is challenging for economic theory for a number of reasons: firstly, it requires explaining why total work differs so little between genders when there is so much variation within gender; and secondly, total work is the sum of different types of work with distinct productivity levels, therefore there is no reason for their sum be equal across gender, without regard to the mix.

Chart 27: **Coefficient of variation of usual weekly hours of work in the main job in 2005**



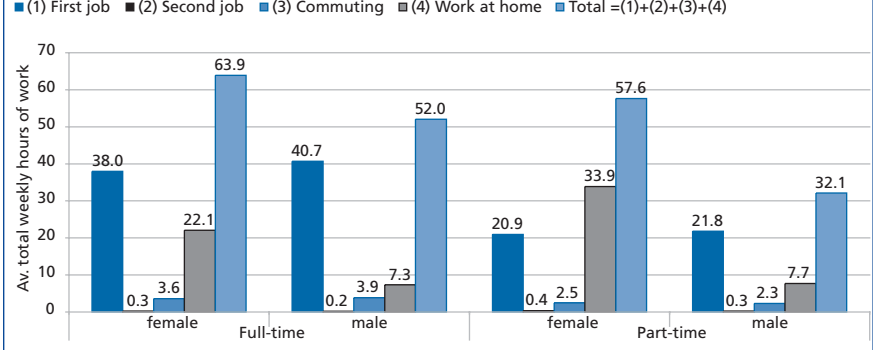
Source: Eurostat, LFS; European Foundation, EWCS.

Chart 28: **Working hours composite indicator employees in the EU in 2005 – breakdown of the composite indicator**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 29: **Working hours composite indicator – employees in the EU-15 in 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

2.6. The impact of working time

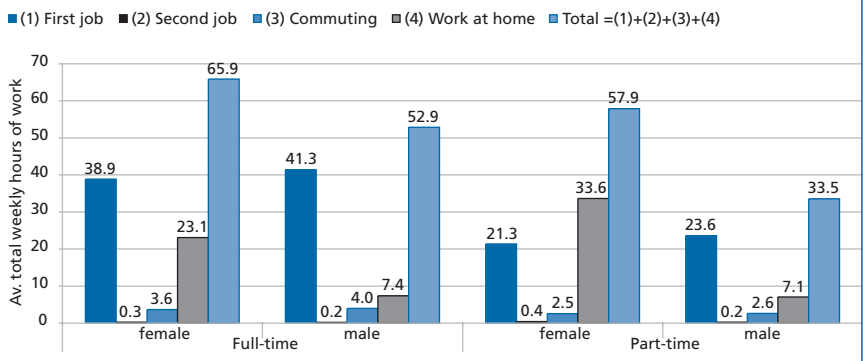
Research suggests that despite a continuous shift towards a service economy, some trends observed in recent decades in employment relationships and working conditions have led to an overall intensification of work in some sectors and/or occupations, having a negative impact on the (perceived) health and safety of workers (see 3.3). Across EU countries, total working time is positively correlated with the percentage of employees who perceive work to represent a health or safety risk (Chart 33, see page 142).

Chart 34 and 35 (see page 142) also illustrate the fact that the total time spent working is one of the principal factors influencing, on the one hand, the work-life balance (or the ability of workers to reconcile satisfactorily family and social commitments outside work with their careers) and, on the other hand, satisfaction with working conditions.

In addition to drawing scatter plots with cross-country averages, another way to illustrate the effects of total working time on (perceived) job satisfaction and/or on the work-life balance is to partition survey respondents into different groups and then to compare their respective average answers. Following Parent-Thirion et al. (2007), the sample was divided between a working group having 'normal' working hours and another having 'long' hours; the threshold is 48 usual weekly hours of work in the first job. Such a descriptive approach suggests again that working long hours is negatively correlated with the (perceived) work-life balance (Chart 36, see page 143) and job satisfaction (Chart 37, see page 143).

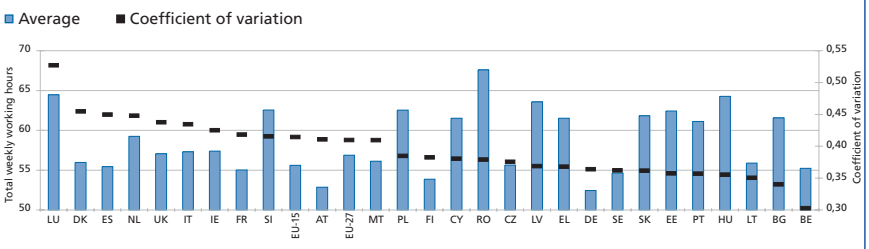
However, as regards the effects of total working time on job satisfaction, there is a significant degree of heterogeneity across EU Member States (Chart 38, see page 144). Obviously, numerous other factors influence job satisfaction, such as positive wage dif-

Chart 30: **Working hours composite indicator – employees in the EU-27 in 2005**



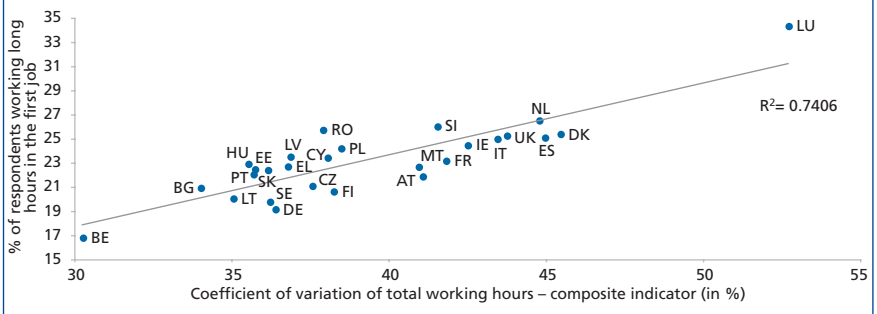
Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 31: **Working hours composite indicator – employees in the EU in 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 32: **Variability of working hours and work intensity – employees in 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.
Note: Long working hours ie. more than 48 hours per week.

ferentials, offsetting unpleasant working conditions; different models of work organisation, empowering workers with a high degree of autonomy; and various (flexible) working-time arrangements, facilitating the reconciliation of professional demands with personal needs and preferences.

3. Work organisation

3.1. Introduction

Market pressure and technological innovation foster flexible work organisations

Increasing international competition and the faster pace of technological progress have led many firms, particularly in developed countries, to adopt new and more flexible forms of work organisation in order to increase competitiveness through cost reduction and strengthen the firms' ability to adapt to change. In developed countries, enterprises increasingly need to compete in terms of product quality, innovation, responsiveness to customers' demands, rather than on price competitiveness alone, especially when competing against some labour and/or resource rich economies, such as BRIC countries[31] (Appelbaum and Batt, 1994; Appelbaum and Berg, 1997).

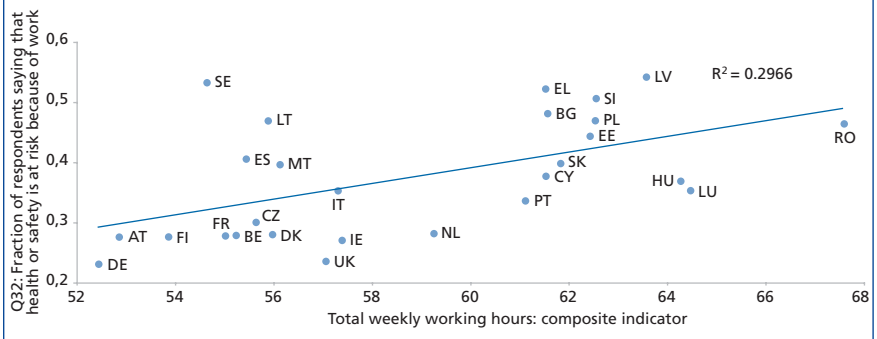
3.2. The adoption of more flexible work practices

A number of literature surveys suggest that work organisation changed significantly in the 1980s and 1990s (Ichniowski et al., 2000; Godard and Delaney, 2000), moving away from the traditional or 'Tayloristic' organisational form[32]. Companies have reorganised their workplaces, adopting

31 Brazil, Russia, India and China.

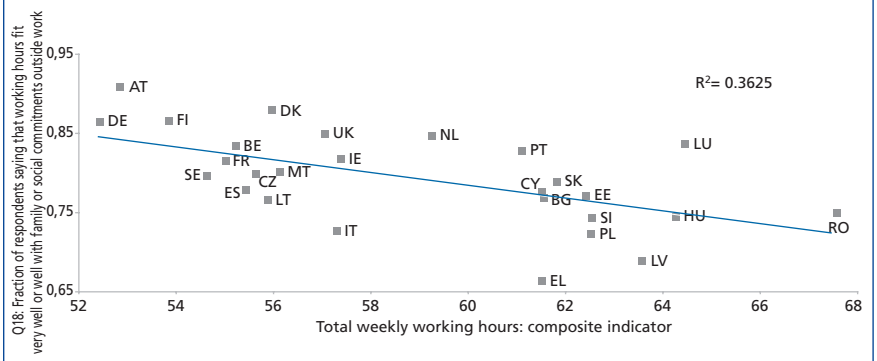
32 The 'Tayloristic' work organisational model is characterised by the standardisation of production processes, the narrow definition of a job's content, a clear differentiation between rights and duties of employees and management, and the use of formal procedures and hierarchical structures for internal communication and conflict management (Ichniowski et al., 1996).

Chart 33: **Impact of work on health – employees in the EU in 2005**



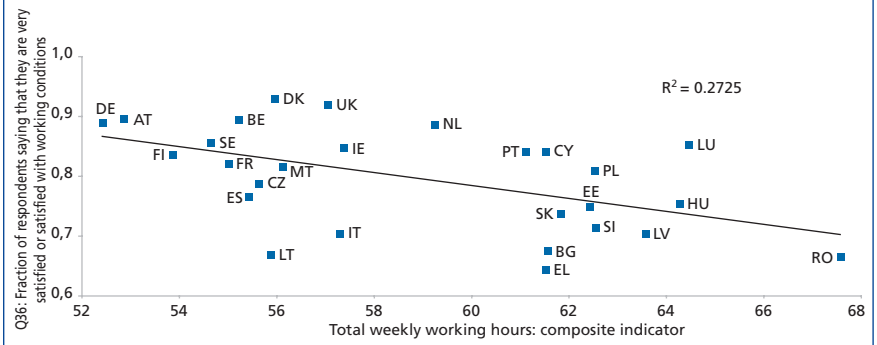
Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 34: **The work-life balance – employees in the EU in 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 35: **Satisfaction with working conditions – employees in the EU in 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

what has been termed 'new', 'flexible', 'lean', 'high-performance' or 'high involvement' work systems (Becker and Huselid, 1998; OECD, 1999; Appelbaum et al., 2000; Osterman, 1994).

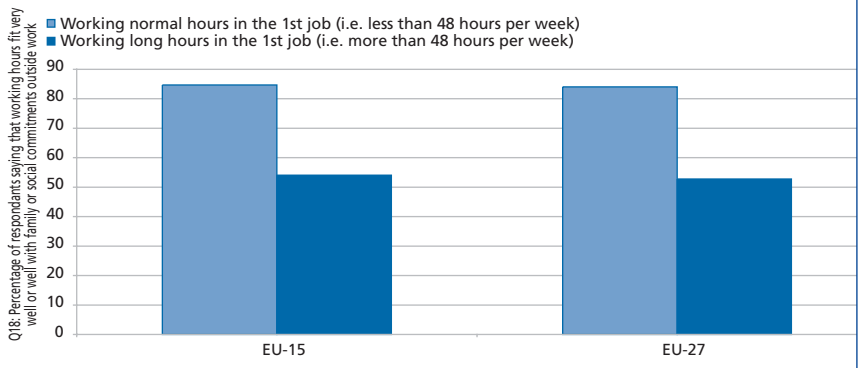
New work practices tend to be more participatory, horizontal and cooperative

Examples of innovative forms of work organisation (Bauer, 2004; OECD, 1999; Parent-Thirion et al., 2007; Appelbaum and Berg, 1997; Ichniowski et al., 1996) include greater workers' 'autonomy' in setting the pace and methods of work as well as the flattening of hierarchical structure and command chains, which play a crucial role by moving decision-making closer to workers, thus allowing them to make use of their specific knowledge and experience of their own job in order to design their tasks in the most effective way.

By enhancing communication and information sharing - among workers and between workers and management - new work practices create the conditions for teamwork, and task rotation or multi-tasking. Multi-tasking, together with the increasing use of information and communication technologies (ICTs), enriches job content, leading to more complex and less repetitive tasks with greater cognitive demands for discretionary efforts at problem solving.

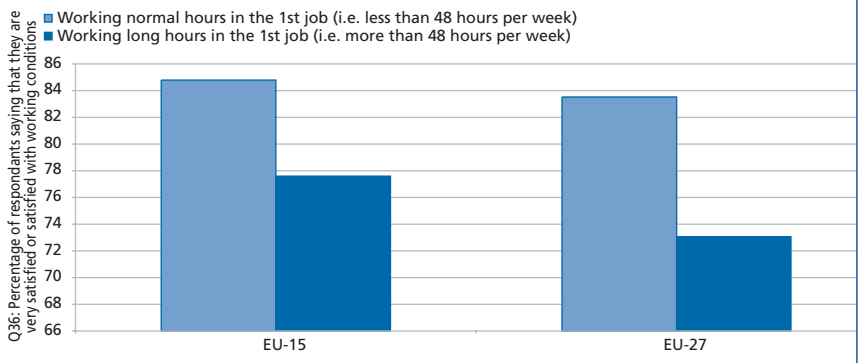
New work practices also include total quality management (TQM) methods, which focus on continuous product quality improvements, customer satisfaction and prompt product delivery, and just-in-time methods, which emphasise swift responsiveness of production processes to market changes through, for instance, shorter delivery times, minimisation of buffer stocks of products and rapid response to changes in taste (Askenazy and Caroli, 2006).

Chart 36: **The work life balance – employees in 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 37: **Satisfaction with working conditions – employees in 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

These innovative workplace systems are often accompanied by complementary human resource management policies (see Section 3.5.6), such as increased provision of training as well as incentive-based compensation plans (Black et al., 2003)[33].

Innovative forms of work organisation should enhance productivity…

The theory of 'high-performance' work organisations predicts that such practices increase firms' productivity through their effect on workers' behaviour. Specifically, they encourage workers both to work harder, by making their job more interesting and rewarding, and to work smarter, by allowing them to express and share their views and experience, participate in decision-making and define their tasks accordingly (Appelbaum and Batt, 1994).

…both by making firms more efficient directly…

On the other hand, they should also enhance a firm's performance - at a given level of workers' involvement - by improving the efficiency of the production process[34] (Ichniowski et al., 1996; Levine, 1995; Appelbaum et al., 2000).

…and by their effects on workers' behaviour

As regards behavioural and motivation effects, a richer job content and greater autonomy in carrying out tasks are expected to have positive effects on productivity, and decrease absenteeism and turnover rates (Hackman and Oldham, 1980[35]; Appelbaum and Berg, 1997).

A complementary explanation for the existence of positive motivation effects is based on the concept of procedural utility, which means that individuals care not only about the outcomes usually considered in economic theory (e.g. pay and hours of work), but also about the conditions and processes leading to such outcomes (Frey and Stutzer, 2002)[36]. According to this idea, all the rest being equal, workers prefer autonomy and networking to being subject

33 The main feature of these 'high-performance' practices is the change from a Tayloristic work organisation, characterised by task specialisation, a pyramidal hierarchical structure, and a centralisation of responsibilities, to a holistic organisation featuring flat hierarchical structures, job rotation, self-responsible teams, multitasking, a greater involvement of lower level of employees in decision-making, and the replacement of vertical by horizontal communication channels (Bauer, 2004). However, the large number of terms used to designate these new forms of work organisation reflects both the diversity of such practices and a lack of consensus on the set of work practices that characterise these new forms of work organisation (Ichniowski et al., 1996; Bélanger, 2000).

34 Examples of such effects are: job rotation, which reduces the costs of absenteeism; flatter hierarchical structures, which reduce the number of supervisors; and training, which increases the returns of ICT investments.

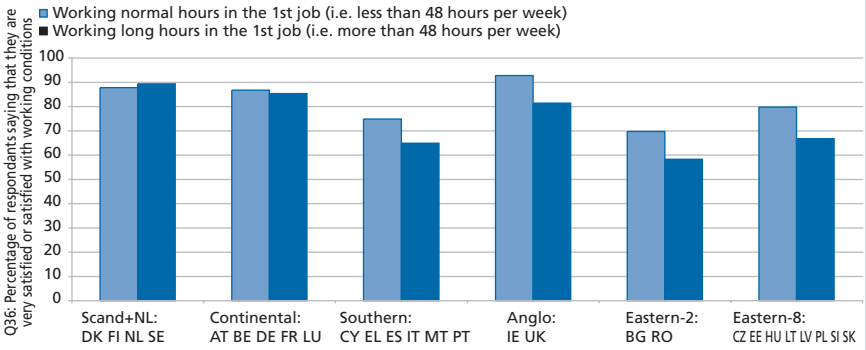
35 The job characteristics model (Hackman and Oldham, 1980) identifies five core task attributes as factors leading to increased motivation and job satisfaction: i) the job requires different skills (skill variety); ii) the job requires completion of an identifiable piece of work (task identity); iii) the job has a significant impact on others (task significance); iv) the job provides the worker with discretion and independence (autonomy); and v) the job provides the worker with information about performance (feedback).

36 This is related to the research on the measurement of 'happiness' seen as a comprehensive and thereby more meaningful measure of well-being than traditional measures based on income and leisure (Layard, 2005).

to a traditional Tayloristic pyramidal decision-making structure. Therefore, 'high-performance' organisations should have a positive effect on job satisfaction to the extent that they flatten hierarchical structures, giving workers more control over their work as well as enriching its content by making it more complex and intellectually challenging[37].

Moreover, organisational theory underlines that workers have information and knowledge about their jobs, which management does not have. Therefore high involvement and high participation practices are also justified as a way to allow workers to use this information in order to improve the efficiency of the production process and the quality of products (Bailey, 1993).

Chart 38: **Satisfaction with working conditions – employees in 2005**



Source: European Foundation, Fourth EWCS; DG EMPL calculations.

3.3. The effects of flexible work practices

More flexible work organisation tends to improve firm's performance

An extensive body of empirical literature suggests that new forms of work organisation have positive effects on various performance indicators (Ichniowski et al., 1996; Becker and Huselid, 1998; Bauer, 2003). Increasing product-market competition leads firms to adopt 'better' management practices, which are significantly associated with higher productivity, profitability, sales growth rates, firm-survival rates and product quality (Bloom and Van Reenen, 2006a).[38] However such empirical tests are often subject to a number of methodological caveats and so their results need to be taken with great caution. These caveats concern the measurement and specification of variables associated with high-performance work-organisation (HPWO) practices, the assessment of the magnitude of their effects (Becker and Huselid, 1998), the understanding of the processes by which HPWO practices impact on firms' performance (Edwards and Wright, 2001), and the correction of potential sources of estimation bias, which make it difficult to establish robust causal relationships or to generalise results across firms and industries (Bauer, 2003[39]; Cappelli and Neumark, 2001a).

…but can they provide win-win solutions for both workers and firms?

More problematic is the link between such flexible practices and the well-being of workers. The question arises whether increasing organisational flexibility, being mainly driven by the interests of the employers, might eventually be detrimental for workers or whether, instead, innovative practices can be designed and implemented in such a way as to provide 'win-win' solutions for both firms and employees (Berg and Kalleberg, 2002; Bélanger, 2000).

The analysis carried out in this chapter assesses the links between a number of new work practices and HRM policies and a selected few outcome variables, such as work intensity, perceived physical and mental health of workers, and the degree of satisfaction with working conditions. Theoretical arguments highlight both positive and negative effects of HPWO practices and HRM policies on workers' health, and job satisfaction, therefore not allowing for clear-cut results.

New work practices may increase job satisfaction…

As argued above (see 3.2), innovative forms of work organisation com-

37 Evidence that supports this hypothesis is provided by Frey et al. (2002), who compare the job-satisfaction of self-employed and dependent employees using data from Germany, Switzerland and the United Kingdom. They show that individuals value independence and dislike hierarchy over and above the outcomes associated with the employment status.

38 The quality of management concept used by Bloom and Van Reenen (2006a) is a broad concept comprising both aspects related to new forms of work organisation and human resource management policies.

39 Bauer (2003) suggests that some empirical work yielding positive effects of HPWO practices on labour efficiency may be misleading due to three potential sources of bias: i) unobserved heterogeneity in cross-section studies (omitted variable bias); ii) potential endogeneity of HPWO; and iii) heterogeneity in the returns from HPWO, making the generalisation of results across industries and countries problematic. Bauer's analysis – based on panel data for Germany – makes use of a number of techniques to correct for different sources of bias. Results show positive effects of HPWO on productivity, but no increase in labour efficiency because the increase in labour productivity is accompanied by a rise in wages. This in turn implies that the effects on employment of HPWO are expected to be small. Cappelli and Neumark (2001a) also address methodological problems in estimations. Their results suggest that work practices transferring power to employees tend to raise both productivity and labour costs, leading to a no-net-effect on labour efficiency.

bined with complementary HRM policies should make the job more interesting and rewarding, and increase trust among colleagues and between employees and management. This should, in turn, enhance job satisfaction and boost perceived well-being of workers (Handel and Levine, 2006; Appelbaum et al., 2000; Bauer, 2004; Appelbaum and Batt, 1994). Moreover, emphasis on product quality, optimisation of the production process and improvement of information flows should decrease the risk of production failures and work accidents, thereby leading to diminished stress and work-related health problems[40] (Askenazy and Caroli, 2006).

…but they may also intensify work pace and increase health-related problems

A strand of the literature highlights the risk that innovative forms of work organisation may lead to a deterioration in working conditions. Continuous product quality improvement[41] and the reduction of slack time, which is a consequence of the optimisation of the production process[42], may lead to an 'intensification of work pace'[43] (Green, 2004b; Green and Tsitsianis, 2004). Also job rotation, greater task complexity and increased responsibility may lead to 'higher stress, mental strain and job dissatisfaction' (Bauer, 2004; Berg and Kalleberg, 2002; Askenazy and Caroli, 2003; Conti and Gill, 1998). Teamwork may decrease an individual's control over his/her own job, thereby triggering 'greater pressure and conflict' with colleagues (Handel and Levine, 2006; Askenazy and Caroli, 2003).

A higher risk of work-related accidents and illnesses may result from new forms of work organisation due to higher work intensity and greater emphasis on quality which distracts workers' attention from safety (Askenazy and Caroli, 2003; Brenner and Fairris, 2001). Moreover, job rotation may prevent workers from developing safe work routines which are associated with more stable job tasks (Askenazy and Caroli, 2006).

Evidence confirms conflicting impact of HPWO on working conditions

Empirical analysis on these issues is more limited than on the impact on firms' performance (Bauer, 2004; Bélanger, 2000). United States-based investigations (Freeman et al., 2000; Appelbaum et al., 2000) and similar analysis on Canadian data (Godard, 2001) seem to find positive effects of HPWO on self-reported job satisfaction. Some evidence in the same direction has been also provided for the EU, based on the 2000 third wave of the European Foundation's EWCS (Bauer, 2004)[44]. This suggests that greater autonomy, participation in decision making and improved communication can enhance trust, commitment to the organisation, intrinsic rewards and satisfaction from work, and therefore innovative work organisations can improve productivity without necessarily deteriorating workers' welfare.

However, empirical evidence also shows that HPWO may lead to greater work effort and intensity. In particular, practices such as quality norms, minimisation of buffer stocks, job rotation and peer pressure within teams may be associated with work intensification, increased mental strain (Lewchuc and Robertson, 1996; Brenner et al., 2001; Askenazy and Caroli, 2006) as well as a greater risk of health problems and work accidents (Brenner and Fairris, 2001; Askenazy, 2001; Askenazy and Caroli, 2003)[45].

A few words of caution are warranted here. In this type of research, it is difficult to identify the direction of causality. It is, for example, not clear whether HPWO practices increase job satisfaction or whether firms where employees start with a high level of job satisfaction can more easily adopt HPWO practices. Furthermore, it seems to be important to control for wages, otherwise the estimates may suffer from the omitted variable bias.

Win-win solutions can be reached by combining employers' work demands with employees' control over their work

Empirical evidence seems to suggest that no general conclusions can be drawn on the impact of HPWO practices on workers' well-being. Existing evidence suggests that the way innovative work practices are designed and implemented determines whether they have a beneficial or detrimental effect on employees' well-being. Practices that impose greater demands and pressures on workers (such as just-in-time, quality improvement, job rotation, greater task complexity) without simultaneously providing workers with an increased control over their work (by means of autonomy, participation in decision–making and better communication) may deteriorate their job conditions (Green, 2004a; Green and

40 Monotonous and repetitive tasks may reduce alertness due to boredom and so increase the risk of workplace accidents. Hence a more diversified and challenging job should be associated with higher job safety (Askenazy and Caroli, 2003).

41 Through the adoption, for instance, of total quality management methods.

42 Such as in the so-called 'just-in-time methods'.

43 Green (2004b) argues that new forms of work organisation lead to greater work effort by two different channels. On the one hand, new practices allow for tighter control of the work process by management so that inefficient workers can be traced back more easily. On the other hand, they yield efficiency gains which can be fully reaped only if workers are motivated to increase their work effort.

44 Sponsored by the European Foundation, secondary analysis based on the 2005 fourth wave of the EWCS is currently ongoing.

45 Based on an establishment-level survey, Brenner and Fairris (2001) find that quality circles are associated with higher risk of repeated traumas. Askenazy (2001) finds that total quality management methods increase the probability of work-related accidents and illnesses both in manufacturing and in services. Askenazy and Caroli (2003) use data from a French survey on working conditions and find that the adoption of quality norms and job rotation enhance the risk of work accidents while, interestingly, autonomy does not have any significant impact. They also find rotation and quality norms to be associated with indicators of mental strain.

Tsitsianis, 2004[46]). This is illustrated by Karasek (1998) who develops the so-called demand/control model according to which the level of job strain and work-related illnesses result from the combination of two features of work organisation: firstly, the psychological demands on the worker (i.e. how hard he/she has to work); and secondly, the 'decision latitude' (i.e. discretion) granted to the worker in order to cope with those demands. The best combinations are obtained in active learning organisations, where both demands and control on the job are high. Such organisational type allows workers to cope with the job's challenges by means of direct actions and effective problem solving.

The effects of new forms of work organisation and/or good management practices on the work-life balance have also been recently evaluated (Bloom and Van Reenen, 2006b; Parent-Thirion et al., 2007). However, no consensus seems to emerge regarding the impact of new forms of work organisation or the quality of management on the work-life balance. Using an international survey on medium-sized manufacturing firms, Bloom and Van Reenen (2006b) reject the view that tougher competition reduces the work-life balance. On the contrary, the authors find that: i) work-life outcomes are positively correlated with better management, so that well-run firms are both more productive and offer better conditions for their employees; and ii) tougher competition increases average management quality but does not negatively affect employees' working environment.

3.3.1. Functional flexibility and job stability

Internal and external flexibility may substitute for each other…

Within the flexicurity debate, it is important to assess the implications of flexible workplace practices on the stability of jobs. Arguments can be put forward to support the hypothesis that internal and external flexibility are to some extent substitutes. This would mean that firms can adapt to changes in product demand or technology, either via reorganisation and reallocation of a skilled workforce (i.e. being 'functionally' flexible) or by relying on layoffs of workers whose skills are obsolete and a larger use of 'contingent' workers, such as fixed-term and temporary (Cappelli and Neumark, 2001b; Atkinson, 1984). A parallel argument (Kochan and Osterman, 1994; Osterman, 2000) highlights that innovative work practices need workers' commitment and active participation to trigger productivity improvements, which will not arise if workers feel that their suggestions and efforts may threaten their jobs. Hence, firms need to promise employment security in order to make innovative practices successful. These arguments were originally made in the context of the organisational model of large Japanese firms, which combine lifetime employment with flexible management of the workforce (via job rotation and other practices) to adapt to cyclical and competitive conditions.

…or they may be combined in order to enhance a firm's adaptability

However, an alternative view points to potential complementarities between internal versus external flexibility, saying that firms may find it more efficient to combine both types of flexible strategies in order to enhance competitiveness and adaptability.

Empirical evidence is mixed…

Empirical evidence on the impact of new forms of work organisation on job stability is quite limited and tends to deliver mixed results. Based on two waves of an American employer-based survey, Osterman (2000) finds that the adoption of HPWO practices raises firms' future layoff rates. Using American data, Cappelli and Neumark (2001b) investigate the link between flexible work organisations, and voluntary and involuntary work turnover (i.e. quits plus layoffs), finding that internal flexibility reduces turnover in manufacturing. Batt (2000) looks at a sample of sales departments in the American telecommunications industry and finds that high involvement practices, such as self-managed teams, are associated with lower voluntary turnover of employees. Based on a sample of Canadian firms, Morissette and Rosa (2003) underline the importance of sectoral differences, concluding that HPWO practices are more effective in reducing quit rates in high-skill services.

…and firms' restructuring may trigger both layoffs and new work practices

Firms in times of crisis may be more willing to implement HPWO practices because both the opportunity cost of implementing such measures and the resistance of the workforce to their introduction are lower.

3.4. Typologies of work organisation in Europe

3.4.1. Work practices need to be complementary to be effective

The theoretical discussion (Amable, 2003; MacDuffie, 1995) highlights the existence of important complementarities between different work organisation practices, so that the performance of a firm can be enhanced only if a coherent set or 'bundle' of practices is in place.

Training and contingent pay support work practices relying on workers' efforts…

In particular, the synergies between work organisation practices and

46 Green (2004a) and Green and Tsitsianis (2004) investigate the reason for the fall in perceived job satisfaction in the United Kingdom in the 1990s. They conclude that this can be accounted for by a parallel move towards work intensification and declining opportunities for task discretion at work.

human resource management policies should be explored in order to lever out the desired motivational and efficiency effects (Holmstrom and Milgrom, 1994). In fact, the forms of work organisation which call for continuing learning, problem-solving capabilities and active participation in decision making on the part of the employees risk being ineffective if not accompanied by supporting HRM policies. The latter should reward employees' discretionary efforts and new ideas on the job (e.g. by means of performance-based pay systems), or help them acquire the necessary skills, through larger investments in training (Bailey, 1993; Becker and Huselid, 1998; Ichniowski et al., 1997; Levine and Tyson, 1990). The empirical literature tends to lend support to the hypothesis that systems of complementary organisation and HRM policies tend to increase firms' production (Ichniowski et al., 1997; Ichniowski et al., 1996; Becker and Huselid, 1998; Appelbaum et al., 2000). Caroli and van Reenen (2001) provide evidence that innovative work organisations are complementary with highly skilled workers, a notion which they term 'skill-biased organisational change', signalling the need to couple innovative work practices with strengthened on-the-job training.

...but work organisation also needs to match the market's features and business strategy

However, systems of work practices do not only need to be consistent with each other (what is often referred to as 'internal fit', see Ichniowski et al., 1997; Becker and Huselid, 1998) but also to be aligned with other factors such as the overall firm's structural and production features, as well as its competitive strategy and market environment ('external fit', see MacDuffie, 1995). Accordingly, a firm's strategy of organisational change is influenced by a number of structural economic variables, such as sector, establishment size and the occupational distribution of the workforce (OECD, 1999; Lorenz and Valery, 2005).

3.4.2. A typology of work organisation in Europe

EU Member States have adopted different work organisation models...

Using 2000 data from the third wave of the EWCS, Lorenz and Valeyre (2003) find evidence supporting the institutional complementarities hypothesis. By combining factor analysis with clustering[47], they propose a typology of four forms of work organisation in Europe, which are labelled as:

- learning
- lean
- Taylorist
- traditional

In this context, 'high-performance' organisations can be loosely identified with the 'learning' and 'lean' forms.

The learning form represents 39% of employees. It is characterised by high levels of autonomy, task complexity, learning and problem solving; and by low levels of task monotony, work-rate constraints, teamwork and job rotation (Table 7). The lean form accounts for 28% of employees. It is characterised by high levels of teamwork, job rotation, and learning and problem solving; and by low levels of autonomy and tight quantitative produc-

Table 7: **Work organisation clusters**

(% of employees in each cluster)

	Learning organisation	Lean production	Taylorism	Traditional organisation	All
Autonomy fixing work methods	89.1	51.8	17.7	46.5	61.7
Autonomy setting work rate	87.5	52.2	27.3	52.7	63.6
Learning new things in work	93.9	81.7	42.0	29.7	71.4
Problem solving activities	95.4	98.0	5.7	68.7	79.3
Complexity of tasks	79.8	64.7	23.8	19.2	56.7
Responsibility for quality control	86.4	88.7	46.7	38.9	72.6
Quality norms	78.1	94.0	81.1	36.1	74.4
Teamwork	64.3	84.2	70.1	33.4	64.2
Job rotation	44.0	70.5	53.2	27.5	48.9
Monotony of tasks	19.5	65.8	65.6	43.9	42.4
Repetitiveness of tasks	12.8	41.9	37.1	19.2	24.9
Horizontal contraints on work rate	43.6	80.3	66.1	27.8	53.1
Hierarchical constraints on work rate	19.6	64.4	66.5	26.7	38.9
Norm-based constraints on work rate	21.2	75.5	56.3	14.7	38.7
Automatic constraints on work rate	5.4	59.8	56.9	7.2	26.7

Note: Table from Lorenz and Valeyre (2003).
Source: Third European Working Condition Survey (2000).

47 Following the so-called Tandem Approach (Nardo et al., 2005), they apply to 15 organisational variables, a multiple correspondence analysis (MCA) folowed by hierarchical clustering (HC).

Table 8: **National differences in organisational models**

(% of employees in each cluster)

	Learning organisation (1)	Lean production (2)	Advanced forms (1)+(2)	Taylorism	Traditional organisation
Belgium	38.9	25.1	64.0	13.9	22.1
Denmark	60.0	21.9	81.9	6.8	11.3
Germany	44.3	19.6	63.9	14.3	21.9
Greece	18.7	25.6	44.3	28.0	27.7
Italy	30.0	23.6	53.6	20.9	25.4
Spain	20.1	38.8	58.9	18.5	22.5
France	38.0	33.3	71.3	11.1	17.7
Ireland	24.0	37.8	61.8	20.7	17.6
Luxembourg	42.8	25.4	68.2	11.9	20.0
Netherlands	64.0	17.2	81.2	5.3	13.5
Portugal	26.1	28.1	54.2	23.0	22.8
United Kingdom	34.8	40.6	75.4	10.9	13.7
Finland	47.8	27.6	75.4	12.5	12.1
Sweden	52.6	18.5	71.1	7.1	21.7
Austria	47.5	21.5	69.0	13.1	18.0
EU-15	39.1	28.2	67.3	13.6	19.1

Source: Third European Working Condition Survey (2000).
Note: Table from Lorenz and Valeyre (2003).

tion norms. The Taylorist form accounts for 14% of employees. Its characteristics are basically the opposite of those defining the learning model. Finally, the traditional form represents 19% of employees. It is a residual category that cannot be well characterised, although it is associated with high levels of task monotony.

The results suggest that the learning and lean organisational forms represent about two-thirds of the total and that there are significant international differences in the prevalence of these advanced forms of work organisation. The learning form is more prevalent in the Netherlands, the Nordic countries and to a lesser extent Germany and Austria. The lean form has a greater presence in the United Kingdom, Spain, Ireland and, to a lesser extent, France (Table 8).

A major difference between the learning and lean organisational forms is that while both emphasise the importance of promoting learning and problem solving on the part of employees, the learning model of work organisation is characterised by a low level of teamwork and job rotation, but displays a high degree of employee autonomy in decision-making.

...and this is due to national factors rather than different production structures

Lorenz and Valeyre (2005) also find that the prevalence of different work organisation models across EU Member States cannot be exclusively explained by different production structures, measured by sector, occupation, or the distribution of firms by size or by different degrees of specialisation in the high technology segment. Furthermore they find that country effects play a significant role in accounting for those differences.

Organisations giving more discretion to workers are more able to innovate

Lorenz and Valeyre (2003) and Arundel et al. (2006) suggest that there are systemic links between the way work is organised in a firm and its capacity to innovate. Based on their typology of work organisation models, they highlight that the learning model is correlated with the development of leading/innovative technologies, while the lean model is associated with preferences for the adaptation/modification of existing technologies. The positive correlations between the learning model and the frequency of leading innovators provides support for the hypothesis developed in the literature (Lam, 2005; Jensen et al., 2007) that forms of work organisation characterised by high levels of workers' discretion and by problem solving create the necessary knowledge base for the development of new technologies.

Finally, they also provide evidence that forms of work organisation requiring considerable discretion and problem-solving activity on the part of employees tend to go together with larger firms' investments in continuing vocational training.

Similarly, Greenan et al. (2007)[48] argue that work organisation plays a central role in the process of production and absorption of new technologies.

48 A multiple correspondence analysis (MCA) is performed on a set of organisational variables, using the 2000 wave of the EWCS, to propose a taxonomy of work organisation for EU Member States.

3.5. Evidence on new work organisation practices in the EU

Using data from the fourth wave of the EWCS (2005), this section provides some descriptive evidence on the incidence of new work organisation practices and human resource management policies across the EU, together with the results of a number of probit[49] estimations.

The descriptive analysis covers the following aspects:

- workers' autonomy
- task rotation
- teamwork
- work-rate constraints
- cognitive dimensions of work (task complexity, learning and problem solving)
- communication structures at work.

A note of caution is warranted concerning descriptive analysis based on simple correlations because they often suffer from the well-known problem of the omitted variable bias. Therefore all statements made in this section based on simple correlations should not be used to infer causal relationships.

A number of probit regressions are estimated to assess the correlations between work organisation practices and performance-based pay, pace of work, health risks, work-life balance and job satisfaction, respectively[50]. These regressions control for wages - using deciles– worker and establishment characteristics, work organisation practices, and human resource management policies. Results are interpreted according to the hypotheses commonly formulated by HPWO and HRM theories. The reported coefficients represent marginal effects and not odds ratios[51].

Flexible work practices are quite common across the EU-15...

The four waves of the EWCS (1990, 1995, 2000, and 2005) covering the EU-15, give a time perspective for the evolution of HPWO. Data for the new Member States is only available for the years 2001 and 2005. Chart 39 and 40 (see page 150) illustrate the time patterns for the proportion of workers involved in a number of new work practices.

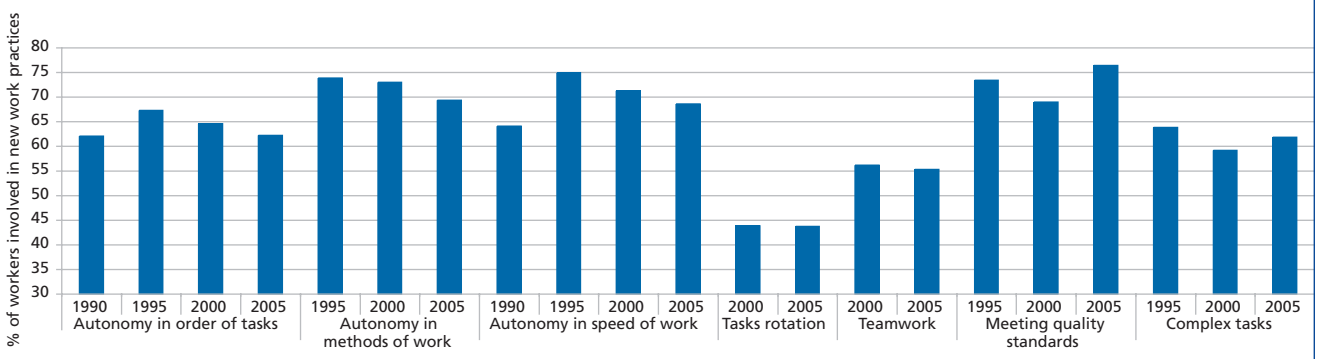
Chart 39 suggests that new work practices are quite widespread in the EU-15, particularly in meeting quality standards, which in 2005 involved around three-quarters of all workers, workers' autonomy which involves 60-70% of all workers, and complex tasks which concerned around 60% of all workers. Adoption of teamwork and task rotation is somewhat more limited involving slightly more than half and 40% of all workers, respectively.

...and their adoption took place mostly in the 1980s and early 1990s (as in the US)

No clear overall time pattern emerges for the evolution of work organisation practices. Autonomy is somewhat on the decline (after having increased between 1990 and 1995), while quality standards and task complexity have first decreased and then increased. These findings are in line with those of Greenan et al. (2007) who, using synthetic indicators based on EWCS figures, explore trends of work organisation change in the EU-15 between 1995 and 2000. They conclude that complexity, learning opportunities and discretion at work have decreased between 1995 and 2000.

The fact that various waves of the EWCS do not show evidence of an increase in the incidence of new work practices suggests that their diffusion

Chart 39: **Evolution of flexible forms of work organisation, EU-15**



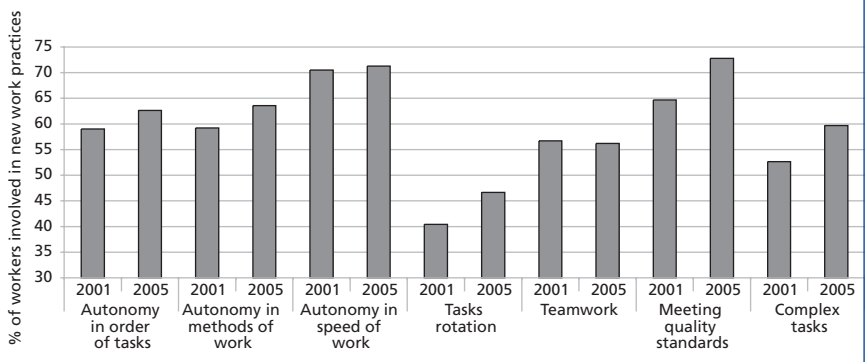
Source: European Foundation, fourth EWCS; DG EMPL calculations.

49 Probit models are part of a class of models that allow a combination of categorical and continuous independent variables to predict a dichotomous dependent variable.

50 Chapter 4 of this report includes a similar probit analysis on the correlations of work organisation with training provided by the employer.

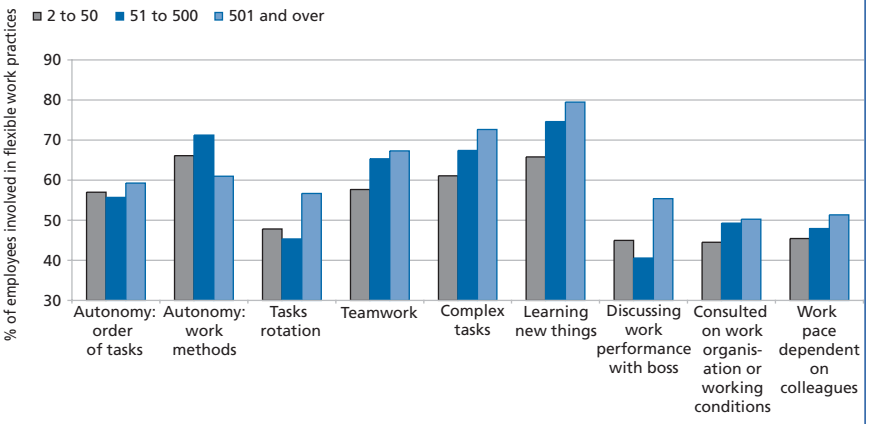
51 An odds ratio indicates how the odd of observing Y=1 changes when X changes from 0 to 1 (equal to 1 if no change).

Chart 40: **Evolution of flexible forms of work organisation, New Member States**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 41: **Flexible work organisation by establishment size EU-27, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

took place mainly between the 1980s to the mid-1990s. The available evidence suggests a relatively large penetration of new work practices already in the mid to late 1990s across EU Member States, although with significant cross-country differences. Evidence supporting this argument is relatively more detailed for the United Kingdom (Green, 2004b; ILO, 2002[52]) but is also available for other EU Member States from a number of international comparisons (MacDuffie and Pil, 1999; OECD, 1999; ILO, 2002; Askenazy and Caroli, 2003[53]). The incidence of these new practices across Europe is more pronounced in Nordic countries, and the evidence also suggests that in some cases Japan and Europe rank higher than the United States.[54]

Graph 40 suggests that in the 12 new Member States which have joined the EU since 2004 the extent that new organisational forms have been adopted is quantitatively similar to that in the EU-15. New work practices seem to be on the rise in new Member States, particularly quality standards, complex tasks and task rotation.

OECD (1999) points out that a number of firms' characteristics, such as size and sector, may have an impact on the likelihood of adopting new organisational practices. Larger establishments tend to implement flexible practices to a greater extent than smaller ones, although the difference is not dramatic. Chart 41 shows that the share of workers involved in such practices increases with firm size, with a more pronounced increase for task complexity and on-the-job learning.

Larger firms may be more able to exploit economies of scale in the set-up of new forms of work organisation and to support their costs. Furthermore, smaller firms may be, by their nature, less hierarchical and more informal, thereby making the adoption of flexible practices less necessary.

The remainder of this section presents cross-country evidence on the diffusion of new work practices across EU Member States drawn from the most recent wave of the EWCS (2005).

3.5.1. Autonomy at work

The EWCS includes a large number of indicators on autonomy/discretion at work. In this section, the following three indicators are considered. Workers were asked about the possibility to choose autonomously:

- the order of tasks to be carried out at work (Q24a);
- the methods of work (Q24b);
- the speed or rate of work (Q24c).

52 Green (2004b) considers three innovative practices, i.e. just-in-time production methods, total quality management and teamwork, arguing that each of them has been adopted by at least 7 out of every 10 UK manufacturing sites by 1996. The ILO (2002) report results from the EPOC (Employee Direct Participation in Organisational Change) study as well as from the Institute of Personnel and Development (IPD) training and development survey, which illustrate an extensive use of individual flexible practices among British organisations.

53 OECD (1999) compares international figures drawn from the EPOC study and other sources which tend to refer to the mid-1990s and concludes that '...there is a group of large firms in Europe which use flexible working practices to a roughly similar extent to large firms in North America'. Askenazy and Caroli, (2003) point out that diffusion of HPWO has been rapid in France over the 1990s, reaching a level comparable to the one characterising the United States in the early 1990s.

54 OECD (1999) suggests that significant cross-country variations exist in the uptake of flexible practices, including within the EU, and that, for instance, job rotation is more frequent in EU Nordic countries and Germany, together with Japan, than in the United States.

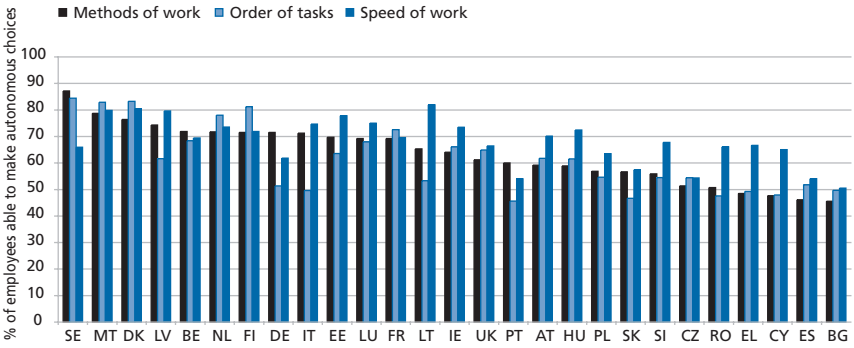
Table 9:

Pearson correlation coefficients between the three indicators of autonomy at work drawn from the EWCS:

	Methods of work	Order of tasks	Speed of work
Methods of work	1	0.76 (***)	0.64 (***)
Order of tasks	-	1	0.55 (***)
Speed of work	-	-	1

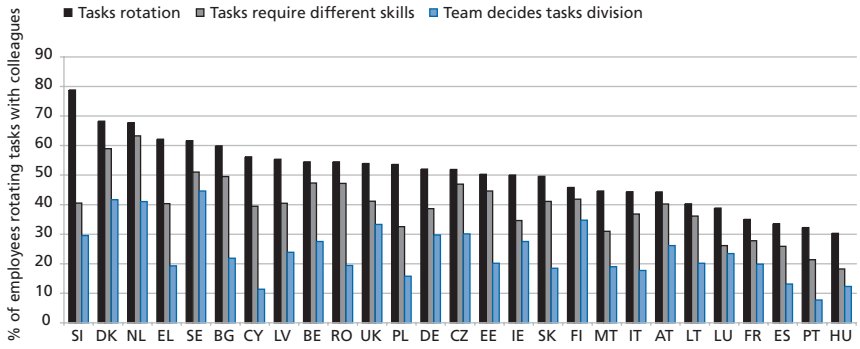
Source: DG EMPL calculations.
(***) statistically significant at 1%

Chart 42: **Autonomy at work (by country, 2005)**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 43: **Tasks rotation (by country, 2005)**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 42 illustrates that EU Member States differ significantly in the extent to which workers have leeway to carry out their duties.[55] The data shows a relatively strong positive correlation across all the three indicators (Table 9).

3.5.2. Task rotation and teamwork

Chart 43 shows the percentage of workers rotating tasks with colleagues. Values range from a high of almost 80% in Slovenia, and around 70% in the Netherlands and Denmark, to less than 40% in Spain, France and Luxembourg, and around 30% in Portugal and Hungary. The survey questionnaire uses follow-up questions that allow qualifying the kind of task rotation prevailing in different countries, namely do the tasks require different skills (Q26a1), and whether workers' teams are autonomous in deciding the division of tasks (Q26a2).[56] Graph 43 shows also the percentage of workers rotating tasks that are involved in more advanced forms of rotation.[57] Denmark, the Netherlands and Sweden have the highest shares of workers involved in 'advanced' forms of task rotation, while in countries such as Slovenia, Greece, Cyprus and Poland, involvement in advanced forms of task rotation is much lower.

Chart 44 (see page 152) plots the percentage of workers working in teams, showing a large diversity across the EU. Similar to the questions on task rotation, the EWCS includes two follow-up questions, namely on the degree of autonomy granted to teams with respect to the division of tasks, and on the selection of their leader (Q26B.1). The corresponding national values are shown in Chart 44 (see page 152) and suggest that, by focusing on autonomous teams, incidence rates are greatly reduced in the EU. Moreover the national ranking is extensively modified with Sweden and Finland moving to the top. Denmark and Austria also move to the high end of the range.[58]

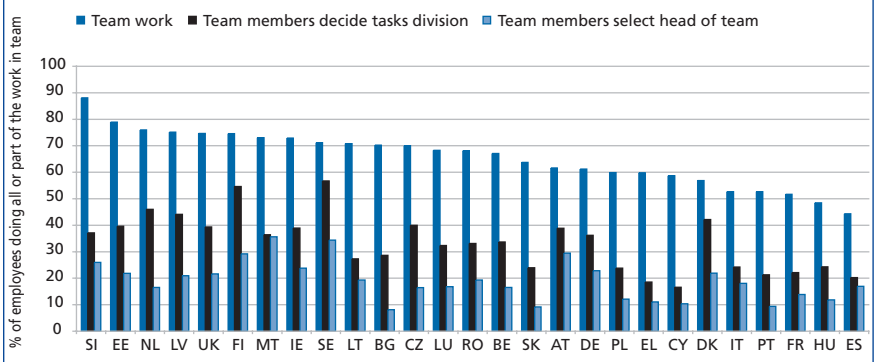
55 Following a similar analysis carried out in the report of the fourth EWCS (Parent-Thirion et al., 2007), figures for autonomy as well as for other work practices in most of the remainder of this section are calculated using data for employees only. The self-employed are excluded because they tend to have much different patterns of involvement in such practices (e.g. they enjoy much higher autonomy or do not participate in teamwork or task rotation).

56 These follow-up questions have only been put to the workers who say that they are involved in task rotation.

57 As a percentages of the total number of workers.

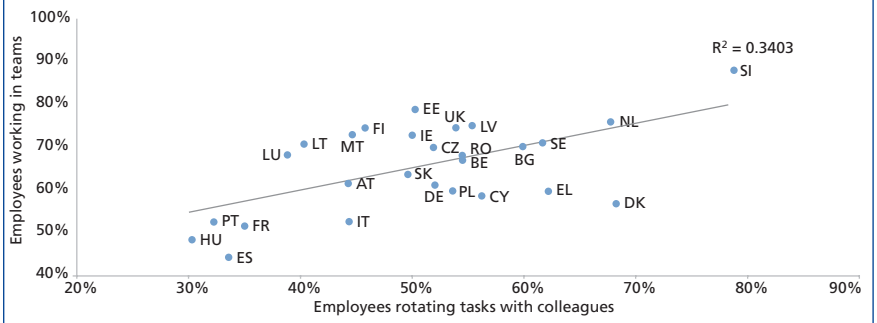
58 As regards the choice of team leader, the decrease in incidence rates is not necessarily surprising. Even in organisations with flat hierarchical structures, the management may prefer not to let workers decide for themselves on the team leader. For example, if a team leader receives a higher wage because of his/her higher responsibility, the firm could use this wage differential as an incentive mechanism, requiring management (and not workers) to decide on the appointment. Furthermore, a firm may have an incentive to provide their workers with a career path, which becomes more difficult in flat hierarchies. The post of team leader can then be used as a substitute for a career path in flat hierarchical structures.

Chart 44: **Team work by country, 2005**



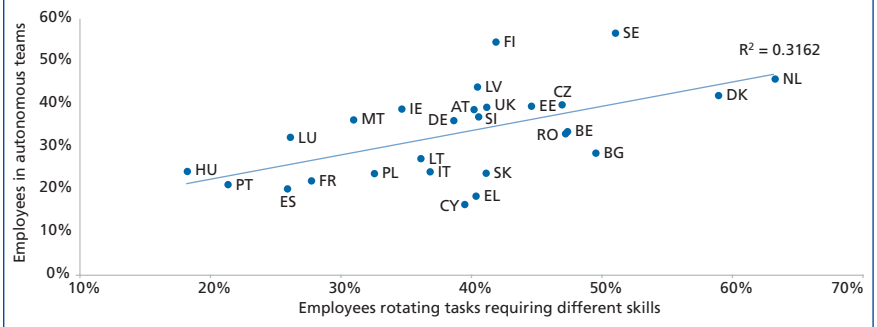
Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 45: **Task rotation and team work by country, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 46: **'Advanced' forms of task rotation and team work by country, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 45 plots data on all forms of task rotation and teamwork, suggesting the existence of complementarities across different flexible workplace practices.

Chart 46 plots data on advanced forms of task rotation and teamwork only, i.e. those that require different skills and team autonomy to decide the division of tasks.[59]

3.5.3. Determinants of the pace of work

The EWCS also includes a set of questions on the factors that determine the pace of work in European workplaces. Among others, such questions capture the extent to which the work pace is determined by the automatic speed of a machine (Q21d), which can be labelled the 'industrial constraint', or the direct demands of people (Q21b), such as customers or services users, which can be labelled the 'market constraint'. Chart 47 (see page 154) plots these two determinants of the pace of work across the EU.

Chart 47 (see page 154) suggests that the direct demands of people play a large part in determining work pace across European countries, ranging from less than 50% to around 70-80%. On the other hand, industrial constraints play a much less important role ranging from less than 15% to between 25% and 30%. Chart 47 (see page 154) also suggests the existence of a negative correlation between the incidence of market (on the vertical axis) and industrial constraints (on the horizontal axis), i.e. countries where market constraints are more prevalent tend to have a lower fraction of workers affected by the speed of machines and vice versa.

Chart 48 (see page 154) plots the shares of workers affected by the direct demands of people and by the direct control of a superior across EU Member States. A negative relationship seems to emerge, which is in line with the notion that flexible workplace practices reduce the number of hierarchical levels.

Table 10 presents selected results of probit estimates for the industrial and market determinants of the pace of work[60], controlling for worker and establishment characteristics, work organisation practices and including country-fixed effects.

59 Chart 45 and 46 reproduce similar material in the Parent-Thirion et al. (2007).

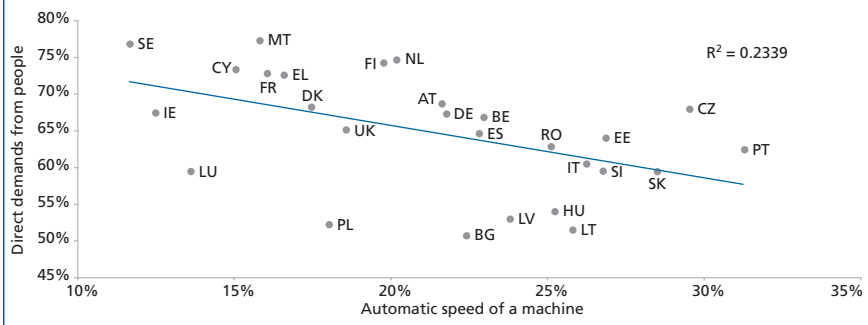
60 The sample used in each probit regression is the number of employees in the 27 EU Member States with valid answers. Complete tables with the estimation results are presented in the data annex.

Table 10: **Determinants of the pace of work**

		Industrial constraints	Market constraints
Endogenous		**Q21d**	**Q21b**
Working time	**Hours usually worked per week in the main job**	0.001	0.010***
	Working time arrangements		
	(reference: set by the firm)		
	Arrangements with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	-0.057	0.035
Establishment characteristics	***Sector***		
	(reference: manufacturing)		
	Agriculture. hunting. forestry. and fishing	-0.249***	-0.385***
	Mining and quarrying	0.082	-0.265*
	Electricity. gas. and water	-0.627***	0.109
	Construction	-0.576***	0.222***
	Wholesale and retail trade	-0.629***	0.607***
	Hotels and restaurants	-0.657***	0.651***
	Transport. storage and communication	-0.431***	0.357***
	Financial intermediation and insurance	-0.637***	0.401***
	Real estate. renting and business activities	-0.562***	0.242***
	Public administration and defence. compulsory social security	-0.632***	0.079
	Education	-1.158***	0.520***
	Health and social security	-0.788***	0.545***
	Other community. social and personal service activities	-0.694***	0.300***
	Enterprise size		
	(reference: medium enterprises)		
	Micro-enterprise (fewer than 10 employees)	-0.218***	0.274***
	Small enterprises (10–49 employees)	-0.146***	0.166***
	Large enterprises (250+ employees)	-0.029	-0.129***
Worker characteristics	***Gender***		
	(reference: male)		
	Female	-0.178***	0.087***
Job-related characteristics	***(reference: blue-collar high-skill)***		
	White-collar high-skill	-0.332***	0.368***
	White-collar low-skill	-0.341***	0.468***
	Blue-collar low-skill	0.082*	0.188***
Workplace practice characteristics	***Workplace practices***		
	Job rotation	0.162***	0.120***
	Team work	0.120***	0.083***
	Training paid by employer	-0.021	0.065**
	Quality norms	0.428***	0.104***
	Responsability for quality control	0.059	0.074**
	Problem solving activities	0.028	0.300***
	Monotony of tasks	0.312***	-0.092***
	Complexity of tasks	0.075	0.147***
	Learning new things at work	-0.016	0.142***
	Discretion in fixing task order	-0.177***	0.037
	Discretion in fixing work methods	-0.095**	0.045
	Discretion in setting work pace	-0.102***	-0.008
	Repetitiveness of tasks (10 minutes)	0.288***	0.150***
	Observations	12822	12854
	Pseudo R-squared	0.238	0.132

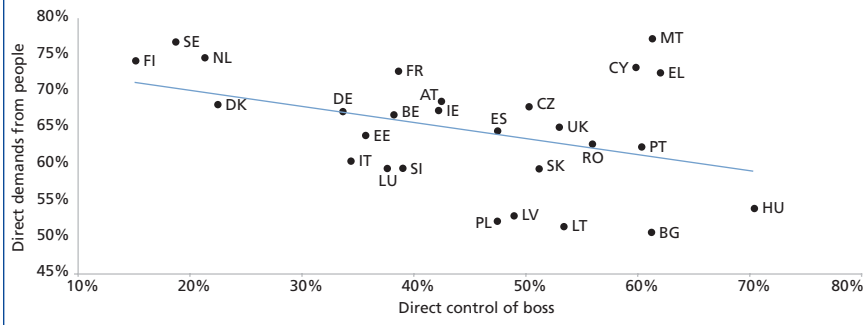
Source: European Foundation's fourth EWCS and DG EMPL calculations.
Notes: *, **, ***, statistically significant at 10%. 5% and 1%. respectively.

Chart 47: **Determinants of work pace: market constraints vs. industrial constraints by country, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 48: **Determinants of work pace: direct demands from people vs. control of boss by country, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

The economic sector plays an important role. Industrial constraints basically determine the pace of work in the manufacturing sector, whereas market constraints play a more central role in services. Firm size is also important: small firms are less subject to industrial constraints, but more to market constraints (than medium-size firms) whereas large firms are less subject to market constraints (than medium-size firms). The gender variable enters with a significant coefficient in the regressions, mainly reflecting the sharply different gender breakdowns between manufacturing and services.

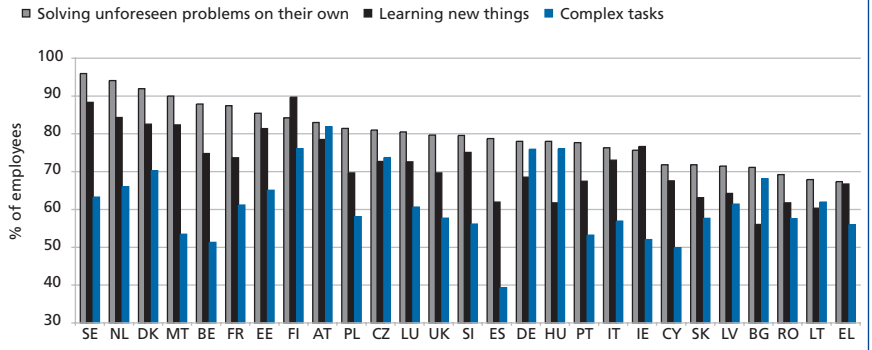
The central element of interest in these regressions is the identification of a number of work organisation practices having a significant impact on the determinants of the pace of work. Job rotation, teamwork, quality norms, and the repetitiveness of tasks tend to increase both industrial and market constraints. However, the results presented in Table 10 suggest that advanced forms of functional flexibility - characterised by problem-solving activities, complex tasks and learning new things at work - are associated with a higher incidence of market constraints, whereas basic forms of functional flexibility – characterised by low levels of discretion – are associated with a higher frequency of industrial constraints.

3.5.4. Job content: task complexity and problem solving

New work practices imply greater involvement of workers in decision-making and discretionary efforts at work. They change the nature of workers' tasks, becoming less standardised but more demanding in terms of problem-solving efforts by the workers. At least three indicators on the complexity and learning dimensions are provided by the EWCS: i) solving unforeseen problems on their own (Q23c); ii) learning new things (Q23f); and iii) carrying out complex tasks (Q23e). Chart 49 illustrates the nature of cognitive demands in the workplace across EU Member States, based on these three indicators. It suggests that a majority of European workers considers that the nature of their jobs is quite sophisticated and intellectually demanding.

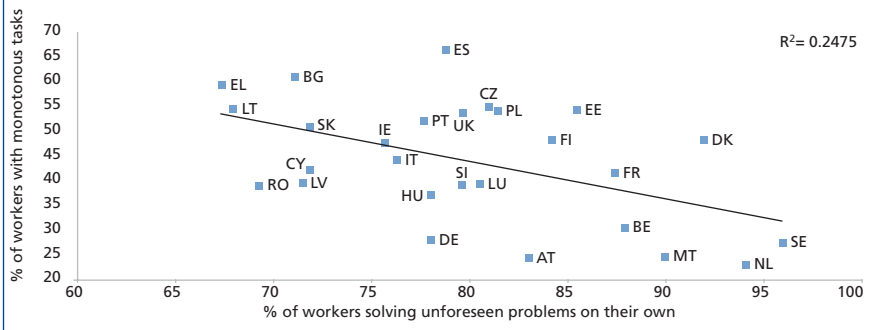
One would also expect to find a negative correlation between task monotony and its complexity and/or problem-solving demands. Chart 50 plots the percentage of workers solving unforeseen problems on their own at work (Q23c) against carrying out monotonous tasks (Q23d). It suggests the existence of a negative correlation across European countries,

Chart 49: **Cognitive dimensions of work by country, 2005**



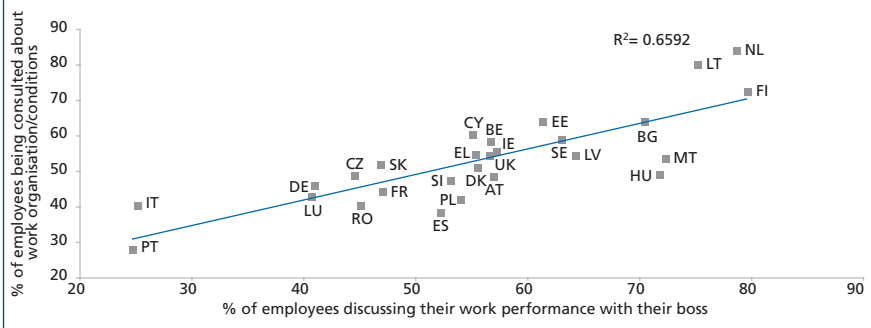
Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 50: **Cognitive dimensions of work by country, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 51: **Communication structures at work by country, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

i.e. countries where the job demands greater problem-solving efforts are also those where workers' tasks are less monotonous.

3.5.5. Communication structures at work

The EWCS also provides information on the extent of informal communication between workers and management in European workplaces. Key features of new forms of work organisation, such as increased employees' involvement in decision-making and flatter hierarchies, should go hand in hand with improved communication and consultation channels between workers and management.

Chart 51 plots the percentage of workers discussing their performance with their superior (Q30a) against the percentage of workers being consulted on changes in work organisation and working conditions (Q30b). This chart shows a positive correlation across EU Member States, suggesting that a higher tendency to discuss workers' performance with superiors goes together with enhanced vertical communication on other matters, such as work organisation, working conditions and general work-related problems.

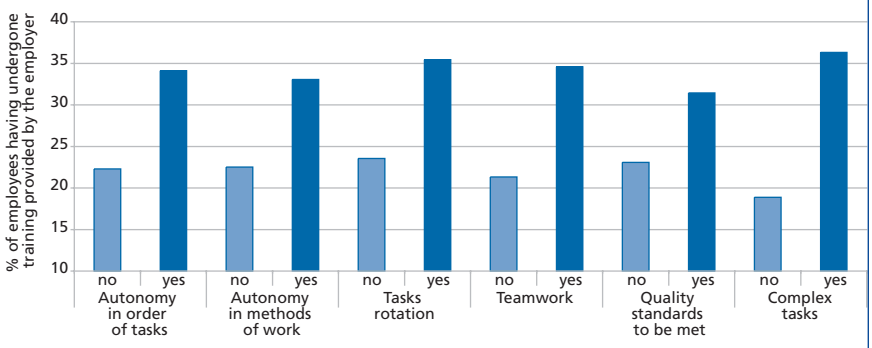
3.5.6. Complementary HRM policies: training and pay

The information in the EWCS can be used to provide an illustration of the complementarities between new forms of work organisation and human resource management policies, such as training and performance-based pay.

Chart 52 illustrates how the frequency of receiving training paid by the employer (Q28a) is affected by different forms of work organisation. It suggests an increase in the provision of training across all forms of flexible work practices considered (particularly complex tasks and teamwork), providing some support to the hypothesis that the adoption of new forms of work organisation tends to enhance the need for training. However, this relationship appears not to be particularly strong since the percentages increase on average from around 20% for the workers without flexible practices to around 33% for the workers involved in flexible practices.

A more detailed analysis of the determinants of training financed by firms is carried out in the fourth chapter of the present edition of *EiE*. Probit equations are estimated to explain the occurrence of training paid by the employer, using regressor variables for worker and establishment characteristics, together with indicators for different work organisation practices. The results suggest that the main practices characterising the new

Chart 52: **Work organisation and training EU-27, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

forms of work organisation, such as teamwork, job rotation, discretion in fixing the work methods and the complexity of tasks have a positive impact in raising the probability of training being paid by the employer.

Chart 53 plots the percentages of workers receiving compensation[61] that are at least partly based on company performance (EF6) against different forms of flexible work practices. The presence of flexible practices tends to increase the occurrence of performance based pay schemes, either based on the overall performance of the firm (EF6g) or on the overall performance of a group (EF6h), using wages, variables for worker and establishment characteristics, different work organisation practices, and country-fixed effects as regressors.

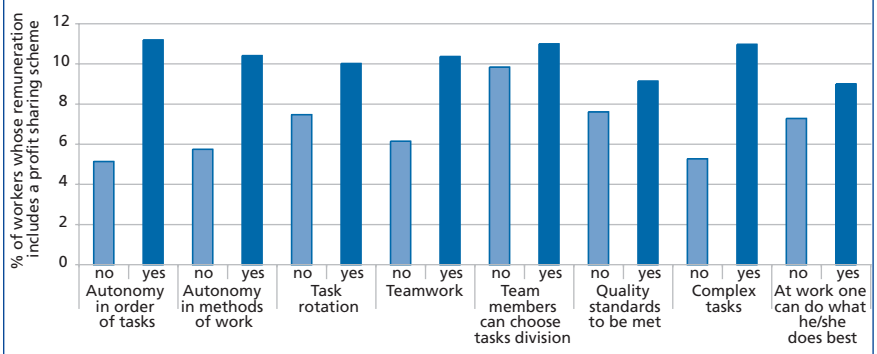
A probit regression is estimated to explain the occurrence of performance-based compensation schemes. This result could be driven by the high take-up rates of profit sharing schemes among managers and professionals, which are also more likely to adopt flexible work practices[62].

An interesting result is that performance-based schemes seem to be positively associated with flexible working-time arrangements, and with a number of new work organisation practices, such as job rotation, teamwork, responsibility for quality control and learning new things at work. This seems to confirm the theoretical hypothesis that new forms of work organisation are associated with complementary human resource management policies.

The probit regression in Table 11 (and Table 3a in the annex, page 189) further suggests that performance-based pay schemes are more common:

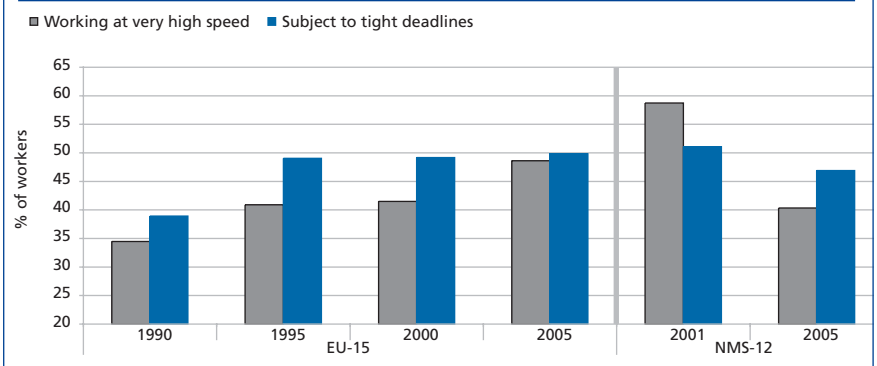
- in manufacturing than in services
- in larger than in smaller firms
- in age cohorts younger than 40 years
- for workers in the top half of the wage distribution
- for white-collar/high-skill workers[63].

Chart 53: **Work organisation and performance-based pay EU-27, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 54: **Evolution of work intensity EU-15 and New Member States**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

3.5.7. Work organisation, work intensity and job satisfaction

Data from the EWCS can be further used to shed light on the evolution of perceived work intensity in the EU. Graph 54 is based on two intensity indicators[64]: the speed of work (Q20Ba), and whether the worker has to cope with tight deadlines (Q20Bb).

61 Shares of workers involved in profit-sharing schemes never exceed 11-12%.

62 See European Foundation (2007).

63 See Table 3a in the annex for a complete list of regressors. Occupation categories are recoded as follows. 'White-collar high-skill': (isco1) 'Legislators, senior officials and managers', (isco2) 'Professionals', and (isco3) 'Technicians and associate professionals'.

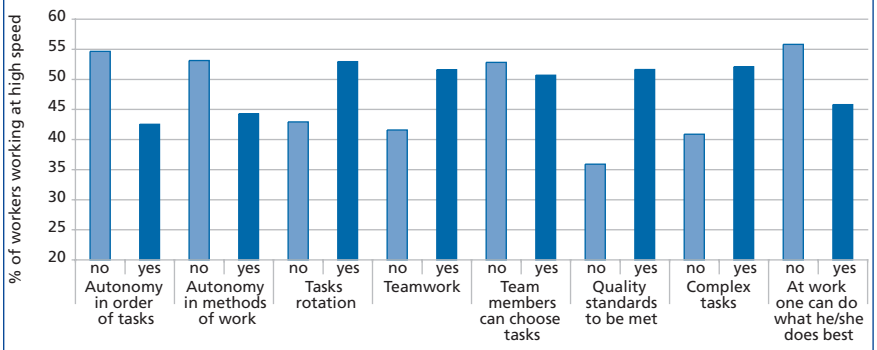
'White-collar low-skill': (isco4) 'Clerks', and (isco5) 'Service workers, shop and market sales workers'. 'Blue-collar low-skill': (isco6) 'Skilled agricultural and fishery workers', and (isco7) 'Craft and related trades workers'.

64 The two intensity indicators are calculated by recoding question Q20Ba 'Does your job involve working at very high speed?', and question Q20Bb, 'Does your job involve working to tight deadlines?' Individuals are classified as working at high speed or subject to tight deadlines if their answers fall in one of the following four categories: all the time; almost all the time; around three-quarters of the time; around half of the time. Otherwise they are classified as not being subject to high work-speed or tight deadlines.

Table 11: **Performance-based pay schemes**

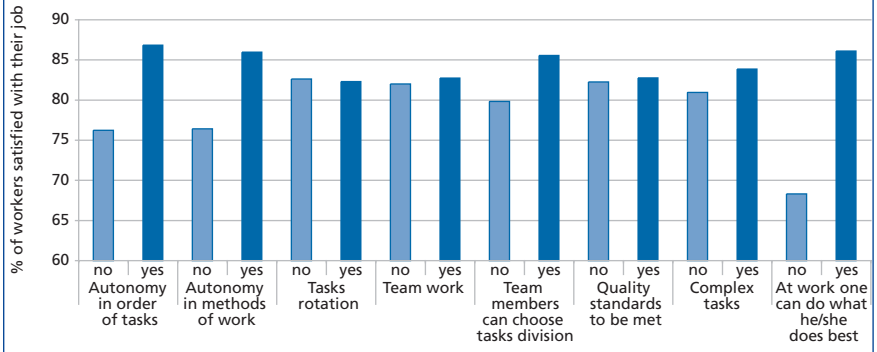
Endogenous		EF6g + EF6h
Working time	**Hours usually worked per week in the main job**	0.003
	Working-time arrangements	
	(reference: set by the firm)	
	Arrangemets with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	0.258***
Establishment characteristics	***Sector***	
	(reference: manufacturing)	
	Agriculture. hunting. forestry. and fishing	-0.284**
	Mining and quarrying	-0.022
	Electricity, gas and water	-0.032
	Construction	-0.186**
	Wholesale and retail trade	0.079
	Hotels and restaurants	-0.376***
	Transport. storage and communication	-0.107
	Financial intermediation and insurance	0.332***
	Real estate. renting and business activities	-0.115*
	Public administration and defence. compulsory social security	-1.069***
	Education	-1.194***
	Health and social security	-0.865***
	Other community. social and personal service activities	-0.335***
	Enterprise size	
	(reference: medium enterprises)	
	Micro-enterprises (fewer than 10 employees)	-0.222***
	Small enterprises (10–49 employees)	-0.069
	Large enterprises (250+ employees)	0.220***
Worker charac-teristics	***Age***	
	(reference: between 25 and 39 years old)	
	Less than 24 years old	-0.028
	Between 40 and 54 years old	-0.120***
	55 years old and over	-0.186***
Job-related characteristics	***Indefinite/non indefinite***	
	(reference: indefinite contract)	
	Fixed-term contract	-0.106*
	Agency contract	-0.619***
	Job tenure	
	(reference: between 2 and 6 years of job tenure)	
	Less than one year of job tenure	-0.203***
	Between 1 and 2 years of job tenure	-0.115
	Between 6 and 15 years of job tenure	-0.087*
	More than 15 years of job tenure	-0.036
	Income level from main paid job	
	(reference: 1st and 2nd deciles)	
	3rd and 4th deciles	0.018
	5th and 6th deciles	0.129*
	7th and 8th deciles	0.320***
	9th and 10th deciles	0.546***
	Occupation	
	(reference: blue-collar high-skill)	
	White-collar high-skill	0.264***
	White-collar low-skill	0.202***
	Blue-collar low-skill	0.143**
Workplace practices characteristics	***Workplace practices***	
	Job rotation	0.107***
	Teamwork	0.107***
	Training paid by employer	0.192***
	Quality norms	-0.033
	Responsability for quality control	0.130***
	Problem solving activities	0.101*
	Monotony of tasks	0.032
	Complexity of tasks	0.049
	Learning new things at work	0.147***
	Discretion in fixing task order	-0.009
	Discretion in fixing work methods	0.055
	Discretion in setting work pace	0.075*
	Repetitiveness of tasks (10 minutes)	0.007
	Observations	12916
	Pseudo R-squared	0.238
	Source: European Foundation's fourth EWCS and DG EMPL calculations.	
	Note: *, **, ***, statistically significant at 10%. 5% and 1%. respectively.	

Chart 55: **Work organisation and work intensity, EU-27, 2005**



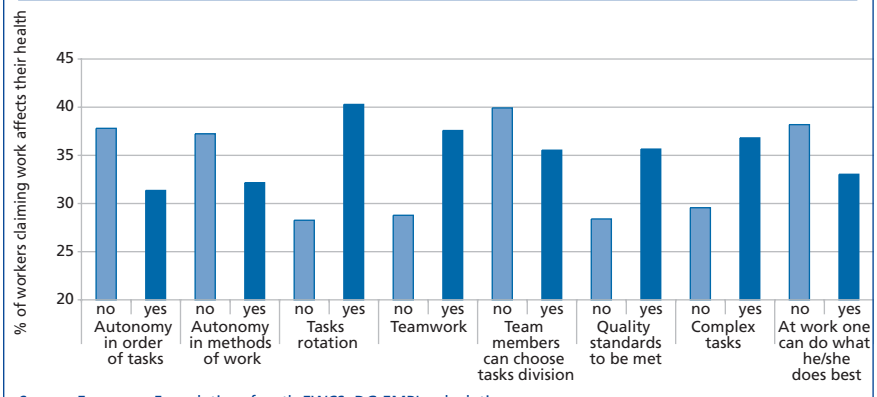
Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 56: **Work organisation and job satisfaction, EU-27, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 57: **Work organisation and health at work, EU-27, 2005**



Source: European Foundation, fourth EWCS; DG EMPL calculations.

It illustrates that in the EU-15 some intensification of the work pace has taken place since 1990, which is in line with conclusions reached in a number of studies (Green and McIntosh, 2001; Burchell et al., 1999).

The EWCS will now be used to provide descriptive evidence of the link between new work organisation practices and three features that characterise the quality of working conditions: work intensity, job satisfaction and workers' health.

Based on the EWCS, Chart 55 relates perceived work intensity to different features of new forms of work organisation. Some features, such as having to meet precise quality standards, rotating tasks, working in a team and performing complex tasks are associated with greater work intensity. This result is in line with theoretical hypotheses arguing that new work practices imply an increase in the pace of work. On the other hand, greater autonomy in setting the order of tasks can give workers some relief in terms of work intensity, suggesting that organisations increasing both demands on and control by workers may not necessarily result in (perceived) higher work stress.

Chart 56 shows that new forms of work organisation tend to raise (perceived) job satisfaction (Q36)[65], particularly autonomy in the tasks and methods of work, and discretion in task division within teams, but not task rotation and team work. Everything considered, the evidence suggests that new forms of work organisation may have conflicting effects on work intensity, while being favourable overall to job satisfaction.

Chart 57 plots perceived health effects against different forms of work organisation[66]. Similarly to work intensity, different features of new work practices have conflicting effects on perceived health outcomes.

65 'On the whole, are you very satisfied, satisfied, not very satisfied, or not at all satisfied with working conditions in your main paid job?' Similar to work intensity, the question has been recoded. Respondents are classified as being satisfied if they reply 'satisfied' or 'very satisfied', and as being not satisfied if they reply 'not very satisfied' or 'not at all satisfied'.

66 "Does your work affect your health, or not?" (Q33). The answer is recorded as a dichotomous variable.

3.5.8. Probit regressions, work-life balance and job satisfaction

Two probit regressions are estimated for perceived health risks (Q32) and health effects (Q33) of work when controlling for worker and establishment characteristics and different work organisation practices, including country-fixed effects[67].

The probit regressions in Table 12 (see page 160) suggest that workers perceive health outcomes to deteriorate with the number of work hours, but to improve with the availability of flexible working-time arrangements. Sectoral effects play an important role. Workers in mining, construction, hotels and restaurants, transport and communication, education, and health and social security report higher health risks/effects (than in manufacturing), while workers in wholesale and retail trade report lower health risks/effects (than in manufacturing). Women, employees younger than 24 years, and white-collar employees tend to report lower health risks/effects from work than men, employees aged 25-39 and blue-collar workers, respectively.

An interesting result is that new work-organisation practices, prone to raising work intensity (e.g. job rotation, teamwork, problem-solving activities and complex tasks), together with monotonous and repetitive tasks, are perceived to increase the health risks and the effects of work on heath. Whereas, new work practices associated with more autonomy/discretion at work are perceived to lower health risks/effects.

A probit regression is estimated to explain the factors determining the work-life balance (Q18), using the following as explanatory variables: worker and establishment characteristics, different work-organisation practices and country-fixed effects.

The probit regression in Table 13 (see page 161) suggests that the perceived work-life balance deteriorates with the number of work hours, but improves with the availability of flexible working-time arrangements. Sectoral effects again play an important role. Workers in wholesale and retail trade, hotels and restaurants, transport and communication, and health and social security report lower levels of satisfaction with their work-life balance (than in manufacturing). Unexpectedly, part-time work has a negative impact on the work-life balance[68].

An interesting result again is that new work-organisation practices prone to raising work intensity (e.g. job rotation, teamwork, problem-solving activities and complex tasks), together with monotonous tasks are perceived to reduce the work-life balance. Whereas new work practices associated with more autonomy/discretion at work are perceived to increase the work-life balance.

A probit regression is estimated for perceived job satisfaction (Q36), using the following as explanatory variables: worker and establishment characteristics, different work-organisation practices and country-fixed effects.

The probit regression in Table 14 (see page 162) suggests that perceived job satisfaction deteriorates with the number of work hours, but improves with the availability of flexible working-time arrangements. With few exceptions[69], sector effects do not play a role in determining job satisfaction levels.

It is interesting to note that even after controlling for wage (deciles), worker and establishment characteristics, new work-organisation practices still have a significant impact, although contradictory, on job satisfaction. On the one hand, new work practices associated with more autonomy/discretion and learning new things at work are perceived to increase job satisfaction. On the other hand, problem-solving activities, and the monotony, repetitiveness and complexity of tasks are associated with lower levels of job satisfaction.

4. Measuring flexibility in work organisations

This section uses the fourth wave of the EWCS (2005) to calculate some country-specific indices of internal and functional flexibility, using factor analysis methods. These indices are then added to a large set of socio-economic policy and outcome variables to rework the taxonomy analysis of European flexicurity systems carried out in Chapter 2 of *EiE 2006*.

Different kinds of flexibility can be identified…

In Chapter 2 of *EiE 2006*, a measure of external (numerical) flexibility, namely OECD's EPL indicator, was used to measure the concept of flexibility. A number of authors (Goudswaard and De Nanteuil, 2000; Wilthagen, 2006) have proposed mappings of types of flexibility that involve various work-organisation practices.

Goudswaard and De Nanteuil (2000) use a two-by-two matrix to classify flexibility strategies, with a dimension discriminating between internal and external, and another between numerical and qualitative forms.

67 "Do you think your health or safety is at risk because of your work?" (Q32). The answer is recorded as a dichotomous variable.

68 This may reflect the fact that part-time work is more common in services, where workers perceive a less favourable work-life balance (compared to manufacturing).

69 The electricity, gas, water, hotel and restaurant sectors.

Table 12: **Health risks/effects**

		Health risks	Health effects
Endogenous		**Q32**	**Q33**
Working time	**Hours usually worked per week in the main job**	0.014***	0.013***
	Working-time arrangements		
	(reference: set by the firm)		
	Arrangemets with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	-0.084***	-0.092***
Establishment characteristics	***Sector***		
	(reference: manufacturing)		
	Agriculture. hunting. forestry. and fishing	0.041	0.188**
	Mining and quarrying	-0.400***	0.382**
	Electricity. gas. and water	0.151	0.041
	Construction	0.211***	0.190***
	Wholesale and retail trade	-0.161***	-0.088*
	Hotels and restaurants	0.181**	0.193***
	Transport. storage and communication	0.203***	0.152***
	Financial intermediation and insurance	-0.132*	-0.039
	Real estate. renting and business activities	-0.024	-0.001
	Public administration and defence. compulsory social security	0.219***	0.058
	Education	0.149***	0.250***
	Health and social security	0.509***	0.296***
	Other community. social and personal service activities	0.143***	0.165**
Worker characteristics	***Gender***		
	(reference: male)		
	Female	-0.175***	0.037
	Age		
	(reference: between 25 and 39 years old)		
	Less than 24 years old	-0.140***	-0.198***
	Between 40 and 54 years old	-0.003	0.101***
	55 years old and over	-0.165***	-0.045
Job-related characteristics	***Indefinite/non indefinite***		
	(reference: indefinite contract)		
	Fixed-term contract	-0.076*	-0.085**
	Agency contract	-0.175	-0.261**
	Job tenure		
	(reference: between 2 and 6 years of job tenure)		
	Less than one year of job tenure	-0.038	-0.029
	Between 1 and 2 years of job tenure	-0.046	-0.108**
	Between 6 and 15 years of job tenure	0.088***	0.077**
	More than 15 years of job tenure	0.062*	0.080**
	Income level from main paid job		
	(reference: 1st and 2nd deciles)		
	3rd and 4th deciles	0.022	0.001
	5th and 6th deciles	-0.010	-0.067
	7th and 8th deciles	-0.045	-0.028
	9th and 10th deciles	-0.041	-0.047
	Occupation		
	(reference: blue-collar high-skill)		
	White-collar high-skill	-0.481***	-0.345***
	White-collar low-skill	-0.453***	-0.393***
	Blue-collar low-skill	-0.162***	-0.121***
Workplace practices characteristics	***Workplace practices***		
	Job rotation	0.113***	0.132***
	Teamwork	0.122***	0.107***
	Training paid by employer	0.020	0.060**
	Quality norms	0.078**	0.067**
	Responsability for quality control	0.005	0.030
	Problem solving activities	0.192***	0.106***
	Monotony of tasks	0.256***	0.222***
	Complexity of tasks	0.205***	0.175***
	Learning new things at work	-0.027	-0.003
	Discretion in fixing task order	-0.126***	-0.115***
	Discretion in fixing work methods	-0.009	0.012
	Discretion in setting work pace	-0.083***	-0.065**
	Repetitiveness of tasks (1 minute)	0.116***	0.146***
	Observations	12735	12751
	Pseudo R-squared	0.117	0.109

Source: European Foundation's fourth EWCS and DG EMPL calculations.
Note: *, **, ***, statistically significant at 10%. 5% and 1%. respectively.

Table 13: **The work-life balance**

Endogenous		Q18
Working time	**Hours usually worked per week in the main job**	-0.032***
	Working-time arrangements	
	(reference: set by the firm)	
	Arrangemets with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	0.134***
Establishment characteristics	***Sector***	
	(reference: manufacturing)	
	Agriculture. hunting. forestry. and fishing	-0.116
	Mining and quarrying	0.204
	Electricity. gas and water	0.189
	Construction	-0.023
	Wholesale and retail trade	-0.254***
	Hotels and restaurants	-0.352***
	Transport. storage and communication	-0.217***
	Financial intermediation and insurance	0.148*
	Real estate. renting and business activities	-0.014
	Public administration and defence. compulsory social security	0.045
	Education	0.102*
	Health and social security	-0.246***
	Other community. social and personal service activities	-0.045
	Enterprise size	
	(reference: medium enterprises)	
	Micro-enterprises (fewer than 10 employees)	0.063
	Small enterprises (10-49 employees)	-0.007
	Large enterprises (250+ employees)	-0.127***
Job-related characteristics	*(reference: full-time contract)*	
	Part-time contract	-0.112**
	Job tenure	
	(reference: between 2 and 6 years of job tenure)	
	Less than one year of job tenure	-0.033
	Between 1 and 2 years of job tenure	0.070
	Between 6 and 15 years of job tenure	0.054
	More than 15 years of job tenure	0.106**
	Income level from main paid job	
	(reference: 1st and 2nd deciles)	
	3rd and 4th deciles	0.069
	5th and 6th deciles	0.112**
	7th and 8th deciles	0.074
	9th and 10th deciles	0.016
	Occupation	
	(reference: blue-collar high-skill)	
	White-collar high-skill	0.025
	White-collar low-skill	0.012
	Blue-collar low-skill	-0.090*
Workplace practices characteristics	***Workplace practices***	
	Job rotation	-0.120***
	Team work	-0.060*
	Training paid by employer	-0.006
	Quality norms	-0.018
	Responsability for quality control	0.066**
	Problem solving activities	-0.118***
	Monotony of tasks	-0.191***
	Complexity of tasks	-0.110***
	Learning new things at work	0.040
	Discretion in fixing task order	0.188***
	Discretion in fixing work methods	0.002
	Discretion in setting work pace	0.155***
	Repetitiveness of tasks (10 minutes)	-0.033
	Observations	12885
	Pseudo R-squared	0.101

Source: European Foundation's fourth EWCS and DG EMPL calculations.
Note: *, **, ***, statistically significant at 10%. 5% and 1%. respectively.

Table 14: **Job satisfaction**

Endogenous		Q36
Working time	**Hours usually worked per week in the main job**	-0.010***
	Working-time arrangements	
	(reference: set by the firm)	
	Arrangemets with different degrees of flexibility: i) choice between different	
	fixed schedules; ii) flexitime; iii) entirely free	0.063*
Establishment characteristics	***Sector***	
	(reference: manufacturing)	
	Agriculture, hunting, forestry, and fishing	0.213**
	Mining and quarrying	-0.172
	Electricity, gas and water	0.489***
	Construction	-0.032
	Wholesale and retail trade	-0.024
	Hotels and restaurants	-0.193**
	Transport, storage and communication	0.002
	Financial intermediation and insurance	0.161*
	Real estate, renting and business activities	0.053
	Public administration and defence, compulsory social security	0.029
	Education	0.000
	Health and social security	-0.037
	Other community, social and personal service activities	-0.052
	Enterprise size	
	(reference: medium enterprises)	
	Micro-enterprises (fewer than 10 employees)	0.121***
	Small enterprises (10–49 employees)	0.068*
	Large enterprises (250+ employees)	-0.024
Job-related characteristics	***Indefinite/non indefinite***	
	(reference: indefinite contract)	
	Fixed-term contract	-0.104**
	Agency contract	-0.032
	Full-time/part-time	
	(reference: full-time contract)	
	Part-time contract	-0.071
	Job tenure	
	(reference: between 2 and 6 years of job tenure)	
	Less than one year of job tenure	0.133***
	Between 1 and 2 years of job tenure	0.136**
	Between 6 and 15 years of job tenure	0.055
	More than 15 years of job tenure	0.062
	Income level from main paid job	
	(reference: 1st and 2nd deciles)	
	3rd and 4th deciles	0.040
	5th and 6th deciles	0.308***
	7th and 8th deciles	0.249***
	9th and 10th deciles	0.431***
	Occupation	
	(reference: blue-collar high-skill)	
	White-collar high-skill	0.188***
	White-collar low-skill	0.238***
	Blue-collar low-skill	0.120**
Workplace practices characteristics	*Workplace practices*	
	Job rotation	-0.030
	Teamwork	-0.032
	Training paid by employer	0.134***
	Quality norms	0.078**
	Responsability for quality control	0.094***
	Problem solving activities	-0.101***
	Monotony of tasks	-0.371***
	Complexity of tasks	-0.185***
	Learning new things at work	0.209***
	Discretion in fixing task order	0.163***
	Discretion in fixing work methods	0.091**
	Discretion in setting work pace	0.129***
	Repetitiveness of tasks (10 minutes)	-0.088***
	Observations	12853
	Pseudo R-squared	0.107

Source: European Foundation's fourth EWCS and DG EMPL calculations.
Note: *, **, ***, statistically significant at 10%, 5% and 1%, respectively.

Wilthagen (2006) proposes the following four-way classification of flexibility:

- External (numerical) flexibility (e.g. types of employment contracts, employment protection legislation);
- Internal (numerical) flexibility (e.g. working-time arrangements);
- Functional flexibility (e.g. work-organisation practices such as task rotation and teamwork);
- Flexible or variable pay (e.g. profit-sharing schemes).

The EWCS can be used to build indicators of internal and functional flexibility…

Internal flexibility involves working-time arrangements (e.g. flexitime, time accounts), atypical working practices (e.g. overtime, irregular work, variable hours, working during weekends) and work intensity (e.g. long hours).

Indices on functional flexibility are calculated using variables related to work-organisation practices (e.g. job rotation, multitasking, teamwork, autonomy at work, complexity of tasks, solving unforeseen problems and learning new things).

The multivariate methods used to calculate country-specific indices are based on the responses of 8 356 employees working in establishments with at least 10 people in both industry and services, but excluding agriculture and fishing, public administration and defence, and education and health. In all calculations, the cases are weighted using the cross-national weighting variable (w5_ewcs).

4.1. Internal flexibility

In order to calculate internal flexibility indices for the EU Member States, a factor analysis method is used, based on nine questions from the EWCS (see Box 1 for details). The nine questions of the EWCS used to calculate internal flexibility indices are as follows (their respective numbers in the questionnaire are shown in parentheses):

- How many times a month do you work at night for at least two hours between 10 pm and 5 am? (Q14a)
- How many times a month do you work in the evening for at least two hours between 6 pm and 10 pm? (Q14b)
- How many times a month do you work on Sundays? (Q14c)
- How many times a month do you work on Saturdays? (Q14d)
- How many times a month do you work more than 10 hours a day? (Q14e)
- Do you work the same number of hours every day? (Q16a_a)
- Do you work the same number of days every week? (Q16a_b)
- Do you work fixed starting and finishing times? (Q16a_c)
- How are your working-time arrangements set? (Q17a) This question can be answered as follows: 1) they are set by the company/organisation with no possibility for changes; 2) you can choose between several fixed working schedules determined by the company/organisation; 3) you can adapt your working hours within certain

Box 1 – The factor analysis method

Categorical principal components analysis (CatPCA) is the method used to perform factor analysis. CatPCA, also known as nonlinear principal component analysis, can be seen as a multivariate technique that is intermediate between linear principal components analysis [a)](PCA) and nonlinear multiple correspondence analysis [b)](MCA) (Greenacre and Blasius, 2006). CatPCA is ideal for datasets with variables having different measurement levels (scale/numeric, ordinal or nominal) because it can both impose order constraints on the categories of ordinal variables and allows their intervals to vary according to optimal quantifications.

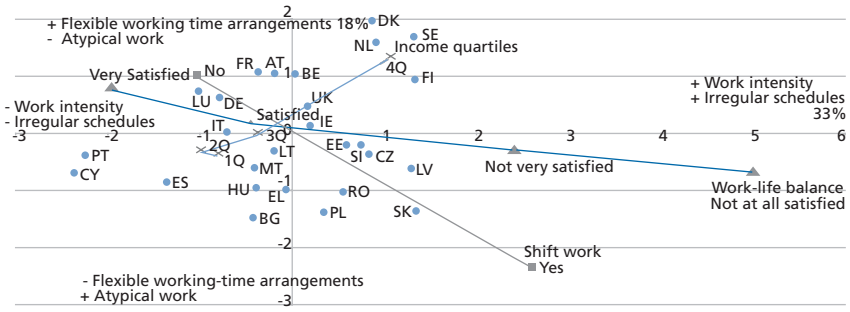
SPSS is the software package used. All syntax (program) files are available upon request.

a) PCA is a linear method that transforms/reduces a number of possible correlated variables into a smaller set of uncorrelated variables called principal components. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining variability as possible.

b) Unlike principal components analysis, where the total variance of the data is broken down along the principal components, in MCA the total variance of the data is measured by the chi-squared statistic for row-column independence, and it is the chi-squared statistic which is broken down along the principal factors. It is common to refer to the percentage of the 'inertia' accounted for by a factor. Inertia is defined as the value of the chi-squared statistic of the data matrix divided by the total number of observations.

limits (e.g. flexitime); 4) your working hours are entirely determined by yourself.

Chart 58: Internal flexibility – 1st factor: work intensity and irregular schedules 2nd factor: flexible working-type arrangements and atypical work



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 58 plots the first two factors of the analysis on internal flexibility (Table 15). The first factor, accounting for 33% of the total variance, discriminates according to work intensity and the irregularity of working schedules[70]. The second factor, accounting for 18% of the total variance, correlates positively with the existence of flexible working-time arrangements which allow workers to adjust working hours to their needs and negatively with forms of atypical work[71]. Although the first and second axes account for just about half of the total variance, they manage to organise (cluster) countries in neatly separated quadrants that strongly resemble the results obtained in Esping-Endersen's taxonomy exercises (e.g. Chapter 2 of *EiE 2006*). Nordic countries and the Netherlands appear in the first quadrant (of Chart 58) with flexible working-time arrangements and relatively high work intensity/irregularity; Central European Member States tend to concentrate in the second quadrant (i.e. relatively high work intensity/ irregularity and relatively low incidence of flexible working-time arrangements), although some of them are in the third quadrant with Mediterranean Member Sates, displaying relatively low work intensity/irregularity but also relatively low incidence of flexible working-time arrangements and a relatively high incidence of atypical work; Continental Member States are in the fourth quadrant, while Anglo Saxon countries are close to the centre of gravity (origin). The standardised average scores per country[72] for the two factors will be used as indices of internal flexibility in the Principal Components Analysis (PCA) carried out in section 4.3.

In addition, three variables, showing a moderate correlation with at least one of the two main factors, are presented in Graph 58 in order to facilitate the interpretation of the results[73]. The work-life balance improves with less work intensity and irregular schedules, and with more flexible working-time arrangements and less atypical work. A rise along income/wage quartiles corresponds to a simultaneous move towards greater flexibility of work arrangements and greater work intensity /irregularity. The presence of shift work entails a significant deterioration in the work-life balance.

Table 15: Internal Flexibility Index

Component Loadings	Dimension	
	1	2
Q14a. Normally, how many times a month do you work at night, for at least 2 hours?	0.55	-0.52
Q14b. How many times a month do you work in the evening, for at least 2 hours?	0.68	-0.29
Q14c. How many times a month do you work on Sundays?	0.62	-0.48
Q14d. How many times a month do you work on Saturdays?	0.60	-0.38
Q14e. How many times a month do you work more than 10 hours a day?	0.59	0.26
Q16a_a. Do you work the same number of hours every day?	0.67	0.45
Q16a_b. Do you work the same number of days every week?	0.65	0.06
Q16a_c. Do you work fixed starting and finishing times?	0.61	0.55
Q17a. How are your working time arrangements set?	0.27	0.69

Source: European Foundation's fourth EWCS and DG EMPL calculations.
In colour values larger than 0.5 in absolute value.

70 Irregular working schedules are those characterised by people not working the same number of hours every day (Q16a_a), the same number of days every week (Q16a_b), and not having fixed starting and finishing times (Q16a_c).

71 Atypical work includes tendency to work in the evening (Q14b), at night (Q14a), on Saturdays (Q14d), and on Sundays (Q14c).

72 The centroid coordinates.

73 In the terminology of these techniques, these are called supplementary or illustrative variables.

4.2. Functional flexibility

In order to calculate functional flexibility indices for the EU Member States, factor analysis is conducted based on 11 questions of the EWCS. These questions cover a number of aspects related to functional flexibility, such as task rotation, teamwork, autonomy at work, complexity of tasks, need to solve unforeseen problems and learn new things.

The 11 questions considered are the following:

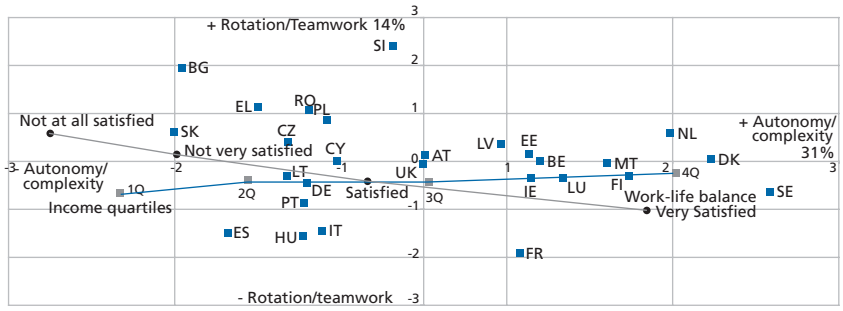
- Does your main paid job involve, or not, solving unforeseen problems on your own? (Q23c)
- Does your main paid job involve, or not, complex tasks? (Q23e)
- Does your main paid job involve, or not, learning new things? (Q23f)
- Are you able, or not, to choose or change your order of tasks? (Q24a)
- Are you able, or not, to choose or change your methods of work? (Q24b)
- Are you able, or not, to choose or change your speed or rate of work? (Q24c)
- Have you influence over the choice of your working partners? (Q25d)
- Can you take your break when you wish? (Q25e)[74]
- Are you able to apply your own ideas in your work? (Q25j)
- Does your job involve rotating tasks between yourself and colleagues? (Q26a)
- Does your job involve doing all or part of your work in a team? (Q26b).

Chart 59 plots the first two factors of the analysis on functional flexibility. The first factor, accounting for 31% of the total variance, discriminates according to work autonomy and the complexity of tasks (Table 16, see page 166). The second factor, accounting for 14% of the total variance, discriminates according to the existence or not of rotating tasks and teamwork. The standardised average scores per country will be used as indices of functional flexibility in the PCA carried out in section 4.3.

It is apparent from Chart 59 that country clusters, similar to those obtained in Chart 58, are more difficult to obtain now. Hence, functional flexibility appears to be more heterogeneous across countries than internal flexibility. However, internal and functional flexibility, as measured using the first factor of the respective analysis, are significantly correlated (Graph 60).

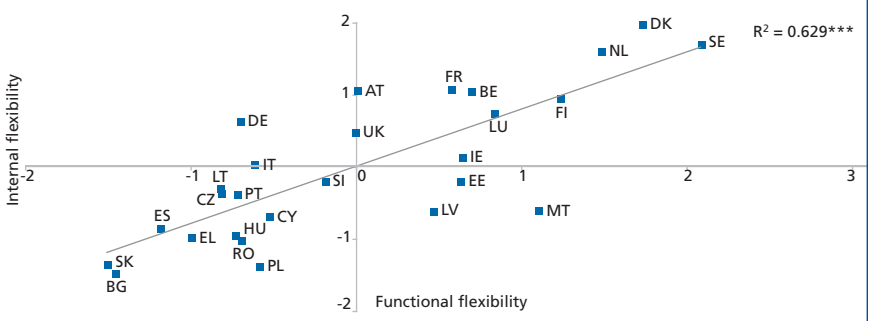
In addition, two outcome variables, showing a moderate correlation with at least one of the two main factors, are presented in Chart 59 in order to facilitate the interpretation of the results. The work-life balance improves with more autonomy/discretion at work and with the complexity of tasks, and with less rotation and teamwork. Higher income/wage quartiles correspond to more autonomy/complexity at work.

Chart 59: Functional flexibility – 1st factor: autonomy and complexity 2nd factor: rotation and teamwork



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 60: The first factors of the internal and functional flexibility CatPCA



Source: European Foundation, fourth EWCS; DG EMPL calculations.
Note: *** significant at 1%

74 Here we follow the approach of the European Foundation, which includes this question among the indicators of workers' autonomy (see Parent-Thirion, 2007), rather than on flexibility of working time.

Table 16: **Functional Flexibility Index**

Component Loadings	Dimension	
	1	2
Q26a. Does your job involve rotating tasks between yourself and colleagues?	0.14	0.71
Q26b. Does your job involve doing all or part of your work in a team?	0.16	0.71
Q24a. Are you able to choose or change your order of tasks?	0.75	-0.22
Q24b. Are you able to choose or change your methods of work?	0.73	-0.19
Q24c. Are you able to choose or change your speed or rate of work?	0.65	-0.25
Q25d. You have influence over the choice of your working partners.	0.54	0.00
Q25e. You can take your break when you wish.	0.60	-0.30
Q25j. You are able to apply your own ideas in your work.	0.66	-0.02
Q23c. Does your main paid job involve: solving unforeseen problems on your own?	0.52	0.21
Q23e. Does your main paid job involve: complex tasks?	0.49	0.34
Q23f. Does your main paid job involve: learning new things?	0.53	0.31

Source: European Foundation's fourth EWCS and DG EMPL calculations.
In colour values larger than 0.5 in absolute value.

4.3. A taxonomy of flexicurity regimes in the EU

Different policy regimes exist across advanced economies…

The theory of institutional complementarity and diversity of modern capitalism (e.g. Amable, 2003) states the existence of different socio-economic systems/models that can be identified according to prevailing combinations of policies and/or institutions (*EiE 2006*, Chapter 2), the total forming a coherent universe. However, these models should be seen more as defining 'ideal-types' rather than characterising actual countries, mainly because of the remaining heterogeneity across countries classified in the same model, and some evidence of model hybridisation, resulting from the impact of globalisation and/or the adaptation of domestic policies and/or institutions to perceived best international practices (Amable, 1999)[75].

Esping-Andersen (1990) carried out the seminal work on the taxonomy of socio-economic systems[76]. Most classifications developed since, including the present one – covering a wide range of subjects, such as welfare, labour market, innovation and healthcare – seem to confirm, by and large, the findings of the original taxonomy. One prominent finding that stands out is that geographical and/or cultural proximity matters, reflecting communalities, such as historical heritage, values, legal systems, integrated markets, etc.

…and they may lead (although not all of them) to good economic performances

Hall and Soskice (2001) analyse which differences in political economic configurations are more relevant for macro-economic performance, concluding that different regimes are equally compatible with economic success. Muffels et al. (2002), Wilthagen (2004), Auer (2005), and the European Commission (*EiE 2006*, Chapter 2) characterise different employment and economic systems/models mainly along two axes, which can be broadly interpreted as representing flexibility and security in the labour market.

Using the transitional labour markets framework (TLM)[77], Muffels et al. (2002) evaluate how the notion of 'employment regimes' defined by Esping-Andersen is related with the concepts of labour market flexibility and work security in European labour markets. Based on evidence from the European Community Household Panel (ECHP), the authors propose a four-way taxonomy of flexicurity (or employment) regimes in Europe: the liberal, the social-democratic, the corporatist or conservative and the southern. The paper concludes that 'the liberal regime combines a high level of labour mobility and flexibility (although not much higher than the corporatist or social-democratic regimes) with a low level of work security, and that the social democratic regime comes out with a high level of work security but a (somewhat) lower level of labour market mobility'[78].

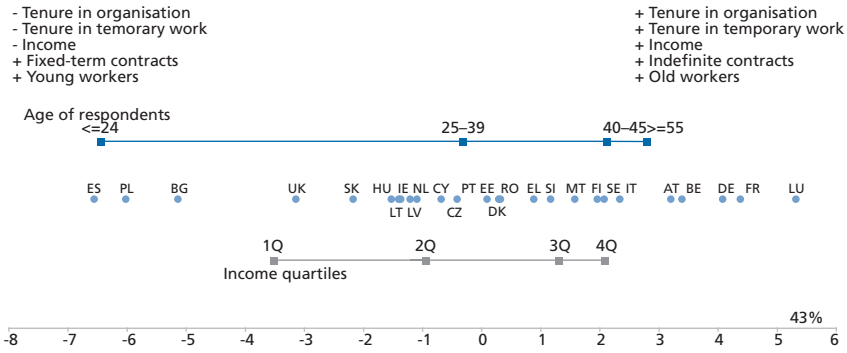
75 "One should not expect a pattern of institutional convergence among developed economies or, to put it in a different way, economic convergence in terms of GDP per capita and technological level does not imply a strict convergence among institutions or forms of organisation. But it may imply some loose convergence, or at least that if some institutions are not exactly replicated across advanced economies, there exist functional equivalents."

76 Using data from the 1980s, in *The Three Worlds of Welfare Capitalism*, G. Esping-Andersen classified the welfare systems of developed economies into three models: the Liberal, the Conservative and the Social Democratic.

77 The European Commission has been playing a leading role in financing research on the way TLM can cope with increasing social risks due to structural socio-economic and social-cultural changes (network of researchers funded by the Fifth Framework Programme of the European Commission, running from 2002–2005). The main focus of the TLM theory is on in-work transitions and transitions from work into other spheres of social life, like learning, caring and retiring. Within the TLM framework, there are five main areas of research: 1) transitions within employment; 2) transitions between education/training and the labour market; 3) transitions between employment and unemployment; 4) transitions between household activities and employment; and 5) transitions between retirement/disability and the labour market.

78 However, 'these regimes do not fit nicely in the "ideal-type" models', particularly because 'countries under the liberal regime have also a fairly high level of employment security and countries under the social-democratic regime have fairly high levels of labour mobility and flexibility'. The authors conclude that these findings lend support to the convergence (or hybridisation) hypothesis.

Chart 61: **Job tenure**



Sources: European Foundation, fourth EWCS; DG EMPL calculations.

Box 2 – A job tenure index

The EWCS is also used to calculate a job tenure index for the EU Member States. A CatPCA is run on three questions of the EWCS. The questions considered are the following:

- How many years have you been in your company or organisation? (Q2d)
- What kind of employment contract do you have? (Q3b) This variable can be answered as follows: 1) an indefinite contract; 2) a fixed-term contract; 3) a temporary employment agency contract; 4) an apprenticeship or other training scheme; 5) no contract.
- What is the exact duration of the contract in number of years and months? (Q3c)

Chart 61 plots the first factor of the CatPCA. It accounts for 43% of the total variance, discriminating well between job tenure and the type of labour contract. The standardised average score per country is reported in the data annex. This index will be used as a supplementary/illustrative variable in the PCA carried out in Section 4.3. In addition, two supplementary variables, showing a moderate correlation with the first factor, are presented in Chart 61 in order facilitate the interpretation of the results. It is particularly interesting to notice that young and low-income workers tend to have relatively low job tenures.

Table 17: **Job tenure index**

Component Loadings	Dimension
	1
Q2d. How many years have you been in your company or organisation?	-0.90
Q3b. What kind of employment contract do you have?	0.95
Q3c. Total time in temporary work (years)	-0.70

Source: European Foundation's fourth EWCS and DG EMPL calculations.
In colour values larger than 0.5 in absolute value.

The liberal (Anglo-Saxon) and Nordic regimes achieve good employment outcomes

In its 2006 reassessment of the Job Strategy, the OECD Secretariat identified four distinct labour market regimes in the OECD area (OECD 2006a; OECD 2006b; Bassanini and Duval, 2006). Two regimes are associated with high employment outcomes: i) the mainly English-speaking countries[79], and ii) the mainly Northern European countries[80]. Two regimes are associated with low employment outcomes: i) mainly Continental and Southern European countries[81], and ii) Eastern European countries[82].

…the latter has budgetary costs; the former relatively higher poverty/inequality

Looking at the two groups of countries with good labour market performance, the Northern European regime involves a clear budgetary cost. In the countries adopting this model, the governments spend about 2.5 times on average more on labour market policies, as a percentage of GDP, than in the group of mainly English-speaking countries. On the other hand, income inequalities as well as poverty rates are lower in the mainly Northern European group than in the mainly English-speaking group. The OECD Secretariat concludes that the experience since the early 1980s shows that there is no single combination of policies and institutions to achieve and maintain good labour market performance, but rather that there have been different roads to success. Respecting the principles of subsidiarity, this allows some scope to tailor policy packages to suit national preferences with respect to equity, risk-taking and other national objectives. However, the OECD warns that in practice there might be limited policy combinations available for achieving good employment outcomes.

79 This group includes Australia, Canada, Japan, Korea, New Zealand, Switzerland, the United Kingdom and the United States.
80 This group includes Austria, Denmark, Ireland, the Netherlands, Norway and Sweden.
81 This group includes Belgium, Finland, France, Germany, Italy, Portugal and Spain.
82 This group includes the Czech Republic, Poland and Slovakia.

Recently, working-time flexibility across the EU has also been analysed

Recent attempts have also been made to include the dimension of internal flexibility in the analysis of labour market regimes. Chung (2007) mentions the fact that research to date tends to depict labour market flexibility as being solely in the interest of employers and to focus almost exclusively on external numerical flexibility (and correspondingly on the loosening of employment protection legislation). However, certain forms of flexibility, especially flexible working-time arrangements, can also be used to accommodate workers' preferences regarding, for example, the reconciliation of work with care or family responsibilities, coping with the increased diversification of individual life-courses, and the need to enhance an individual's employability via training or education breaks. Chung (2007) uses company-level data from the ESWT to group different flexible working arrangements based on whether they are mainly in the interests of employees, employers or both. The analysis focuses on numerical flexibility, both internal (i.e. concerning working time[83]) and external[84]. The procedure is similar to that followed in this chapter, but performing instead a PCA on company level data. Flexible arrangements are then grouped across three main factors, the first capturing those which are mainly in the interests of employees (e.g. leave schemes), the second, those that are mainly in the interests of companies (e.g. working at unusual hours, and temporary contracts), and the third, those which accommodate the needs of both (e.g. part-time, flexible working-time arrangements, early and phased retirement). These three factors are then narrowed down to two indices: one, representing flexibility in the interests of employees and the other, flexibility in the interests of employers[85]. Countries are then clustered, based on the scores obtained on the two indices. The resulting classification is relatively close to Esping-Andersen's welfare state taxonomy, showing a positive correlation between the two types of flexibility. This conveys the important message that flexibility strategies can be designed in such a way as to reconcile employees and employers' interests.

The EU flexicurity taxonomy proposed in* EiE 2006 *is revised…

The present section improves on the taxonomy analysis of European flexicurity systems carried out in the second chapter of *EiE 2006*. It covers 22 countries[86] (four more than in 2006) and corrects a major shortcoming of last year's exercise by including forms of flexibility which are enacted within the firm (i.e. that are relative to either work organisation or working time practices). Hence, this is probably the most comprehensive attempt to classify flexicurity regimes to date, in terms of putting together three fundamental dimensions of flexibility: external, internal and functional.

As in *EiE 2006*, a few words of caution are warranted on the robustness of the methods used and on the policy conclusions that can be derived. First, the reliability of PCA in identifying the major components of socio-economic/flexicurity regimes depends on the right choice of variables. The problem with factor analysis methods, such as PCA, is that it is not possible to test the 'final' model against alternative hypotheses. Second, the success of PCA is largely measured on its ability to reduce the initial set of variables to a limited number of principal components, accounting for a large amount of the total variation in the data. Therefore variables weakly correlated (with others in the set) might be wrongly discarded in order to reduce the number of principal components used[87]. Third, it has to be remembered that PCA is based on correlation coefficients and does not provide evidence on the existence of causal relationships.

Finally, the taxonomy analysis carried out in this chapter largely confirms the one made in *EiE 2006*. However, a lack of recent longitudinal data does not permit a full consideration of all relevant labour market transitions that are needed for a holistic assessment of the different security aspects of flexicurity.

…by adding indicators on internal and functional flexibility

Labour market/flexicurity systems are described using seven (active) variables[88], with every one of the four flexicurity components[89] being covered by at least one variable each.

The following seven[90] active variables are used:

83 This includes part-time, unusual working hours, overtime, flexible working-time schedules, parental and long-term leave, and phased retirement.

84 This relates to the use of non-standard employment contracts, such as fixed-term and temporary agency contracts.

85 Flexible arrangements which were previously included in the third factor are distributed in the two indices with weights corresponding to the aggregate national scores on the ESWT question concerning the motivation for the introduction of the referred work-organisation practice.

86 EU-27 minus Luxembourg, Cyprus, Malta, Latvia and Romania. The four new EU Member States covered (relative to *EiE 2006*) are Bulgaria, Estonia, Lithuania and Slovenia.

87 It is conceivable that factors or principal components, even representing mainly just a single variable, may eventually be necessary to differentiate across systems/models.

88 Most data refers to 2005. EPL data for 2003 is the main exception. See the annex for a complete list of the (standardised) data and respective sources/notes.

89 1) Modern labour laws allowing for sufficient flexible work arrangements; 2) effective active labour market policies supporting transitions between jobs, as well as from unemployment and inactivity to jobs; 3) credible lifelong learning systems enabling workers to remain employable throughout their careers, by helping them to cope with rapid change, unemployment spells and transitions to new jobs; and 4) modern social security systems combining the need to facilitate labour market mobility with the provision of adequate income support during all absences from the labour market (from 'Towards common principles of flexicurity: More and better jobs through flexibility and security', Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM(2007) 359).

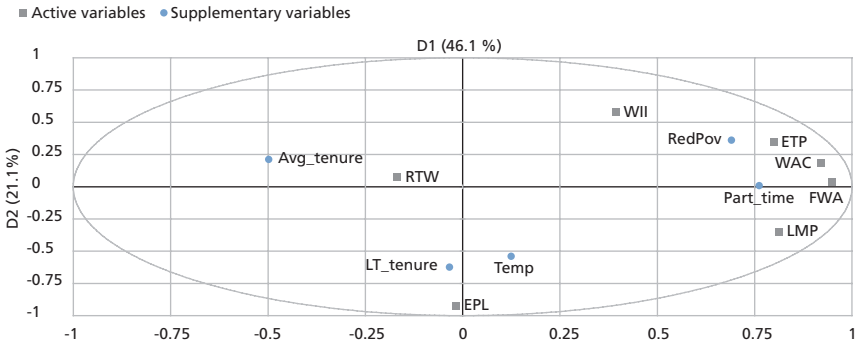
- The EPL[91] indicator used as a proxy for external numerical flexibility (EPL)
- Percentage of participants in education or training programmes[92] (ETP)
- Expenditure on labour market policies as a percentage of GDP (i.e. the sum of passive/unemployment benefits and ALMPs)[93] (LMP)
- An indicator on work intensity and the irregularity of working schedules to measure aspects of internal flexibility[94] (WII)
- An indicator on the existence or not of flexible working-time arrangements and forms of atypical work to measure aspects of internal flexibility[95] (FWA)
- An indicator on the degree of autonomy and complexity of tasks to measure aspects of functional flexibility[96] (WAC)
- An indicator on rotation and teamwork to measure aspects of functional flexibility[97] (RTW).

Table 18: **Correlation matrix**

	EPL	ETP	LMP	WII	FWA	WAC	RTW	TWED
EPL	1	-0.3	0.2	-0.5	-0.1	-0.2	-0.2	0.3
ETP	-	1	0.4	0.5	0.7	0.7	0.0	0.1
LMP	-	-	1	0.0	0.7	0.6	-0.2	0.3
WII	-	-	-	1	0.3	0.5	0.4	0.1
FWA	-	-	-	-	1	0.9	-0.3	0.3
WAC	-	-	-	-	-	1	-0.1	0.2
RTW	-	-	-	-	-	-	1	-0.1
TWED	-	-	-	-	-	-	-	1
Cronbach's alpha for the eight variables:					0.65			
Cronbach's alpha for the first seven variables:					0.63			

Source: DG EMPL calculations using data from Eurostat; the European Foundation and the OECD.
In colour the correlations larger than 0.5 in absolute value.
Legend: EPL: employment protection legislation; ETP: participants in education or training programmes; LMP: expenditure in labour market policies.
WII: work intensity/irregularity, first factor of the internal flexibility analysis (Section 4.1).
FWA: flexible working time arrangements, second factor of the internal flexibility analysis (Section 4.1).
WAC: work autonomy/complexity, first factor of the functional flexibility analysis (Section 4.2).
RTW: rotation and team work, second factor of the functional flexibility analysis (Section 4.2).
TWED: tax wedge on labour cost for single persons without children.

Chart 62: **Variables (axes D1 and D2: 67.2 %) after Varimax rotation**



Source: DG EMPL calculations using data from Eurostat, the European Foundation and the OECD.
Note: This graph plots the correlation coefficients of the variables being considered with the two principal components. A variable close to the unitary circle has a high correlation with a linear combination of the the two principal components.
Legend: EPL: Employment protection legislation;
ETP: Education and training programmes; LMP: Labour market policies; WAC: Work autonomy/complexity; FWA: Flexible work arrangements; WII: Work intensity/irregularity; RTW: Rotation and team work; Part_time: Part-time employment rate; Temp: Temporary employment rate;
RedPov: Reduction in poverty rate;
Avg_tenure: Average tenure; LT_tenure: Long-term tenure.

Systems can be classified along three axes, allowing for a richer interpretation…

The three principal components account for 85.4% of the overall variability in the data. Using the correlation coefficients[98] between the seven active variables and the three principal components (Table 19, and Chart 62 and 63, see page 170), together with the help of a selected number of supplementary/illustrative[99] variables, allows for a rich interpretation of the three principal axes, capturing a number of stylised facts. It is clear that con-

90 One additional variable, i.e. the tax wedge (as a proxy for distortions created by the tax system, see p. 103 of EiE 2006), was also initially considered but was ultimately discarded as an active variable for two main reasons. First, there is no compelling theoretical reason for its inclusion in the analysis (as an active variable). Second, it has low correlations with the other variables (Table 18) and does not change either the interpretation or the total amount of variation accounted for by the first two factors/axes. In addition, the theory recommends that the countries-to-variables ratio should be between 3 and 5 in order to avoid carrying out multivariate analysis with a too small sample compared to the number of indicators, which would lead to results not having known statistical properties.

91 The overall OECD indicator for 2003. *Source*: Cazes and Nesporova (2003) for SI, LT, EE and BG; OECD for all remaining Member States.

92 Percentage of population aged 25-64 participating in education or training programmes (*Source*: Eurostat).

93 *Source*: Eurostat's Labour Market Policy database.

94 The first factor of the analysis carried out in section 4.1 (on internal flexibility) using the EWCS.

95 The second factor of the analysis carried out in section 4.1 (on internal flexibility) using the EWCS.

96 The first factor of the analysis carried out in section 4.2 (on functional flexibility) using the EWCS.

97 The second factor of the analysis carried out in section 4.2 (on functional flexibility) using the EWCS.

98 When orthogonal rotation is used (here the Varimax method was used), the values of the correlation coefficients are identical to the regression coefficients of the factors on active variables (factor loadings).

99 'Supplementary' or 'illustrative' variables are used only to better characterise factors/principal components not entering in their calculation.

Table 19: **PCA analysis**

Percentage of variance after Varimax rotation:

	D1	D2	D3	F4	F5	F6	F7
Variability %	46.1	21.1	18.2	6.0	4.7	2.7	1.3
Cumulative %	46.1	67.2	85.4	91.4	96.0	98.7	100.0

Factor loadings after Varimax rotation:

	D1	D2	D3
EPL	-0.02	-0.93	-0.09
ETP	0.80	0.34	0.06
LMP	0.81	-0.35	-0.13
WII	0.39	0.58	0.57
FWA	0.95	0.03	-0.13
WAC	0.92	0.19	0.02
RTW	-0.17	0.07	0.95
ER_1564T	0.78	0.13	-0.01
ER_1564F	0.77	0.18	0.07
ER_5564T	0.53	0.19	-0.14
Part-time	0.76	0.01	-0.09
Temporary rate	0.12	-0.54	-0.08
Unemployment rate	-0.46	-0.18	0.22
Labour productivity	0.65	0.05	-0.31
Unemployment trap	0.62	-0.34	0.14
Low wage trap 1	0.75	0.31	0.04
Low wage trap 2	0.65	0.14	0.20
Reduction in poverty	0.69	0.36	0.06
Long-term unemployment rate	-0.58	-0.12	0.32
ALMP	0.85	-0.22	-0.03
PLMP	0.75	-0.39	-0.16
Average tenure	-0.50	0.21	0.10
Work-life balance	0.73	0.18	-0.25
Health risks	0.46	0.20	-0.50
Health effects	0.39	0.09	-0.52
Job satisfaction	0.71	0.22	-0.19
R&D	0.86	0.10	-0.11
Patents	0.86	0.03	-0.07
Information technology	0.76	0.35	-0.09
IT exports	0.37	0.54	-0.43
Long term tenure	-0.03	-0.62	0.19
School leavers	-0.17	-0.53	-0.50
At least upper secondary	0.11	0.53	0.45
Vocational training paid by the employer	0.65	0.40	0.13
Human resources in science and technology (HRST)	0.81	0.24	0.07

Source: DG EMPL calculations.
'The results corresponding to the supplementary variables are displayed in the second part of the table'.
In colour values larger than 0.5 in absolute value.

sideration of the aspects pertaining to internal flexibility - or the work organisation of firms - makes an enormous difference, allowing for a much richer and compelling characterisation of the different labour market/flexicurity systems. The two principal components are not identifiable anymore with: 1) (external) flexibility; and 2) income/employment security, respectively, as in the analysis carried out in the second chapter of *EiE 2006*. Now, the two principal components simultaneously represent different aspects of flexibility and security. Muffels et al. (2002) also find evidence supporting the convergence (or hybridisation) hypothesis across different models/systems (i.e. both flexibility and security can coexist in countries belonging to different 'ideal-types', because they are provided by different means).

...although national groupings of EiE 2006 *are largely confirmed*

However, countries remain split into different groups, which largely coincide with the country taxonomy proposed in *EiE 2006.* Visual inspection of the PCA country scores (both along the first and second dimensions – Chart 64, and the first and third – Chart 65) is highly suggestive of country groupings. A cluster analysis (CLA) on the seven active variables, using the k-means method[100], confirms this impression (Table 20). Despite the substantial changes in the interpretation of the PCA factors, notice how Table 20 is nearly identical to Table 3 on p. 107 of *EiE 2006* (reproduced in footnote)[101].

The first principal component/axis, accounting for about 46% of the total variance in the data, can be named as 'advanced forms of internal flexibility and security'. It is positively correlated with flexible working-time arrangements (FWA) and work autonomy/complexity (WAC) (Table 19). As regards the FWA variable, countries that score high along the first axis have high take-up rates of flexible working-time arrangements (e.g. flexitime). The first component further shows a low concentration of atypical working practices (e.g. weekend work). As regards the WAC variable,

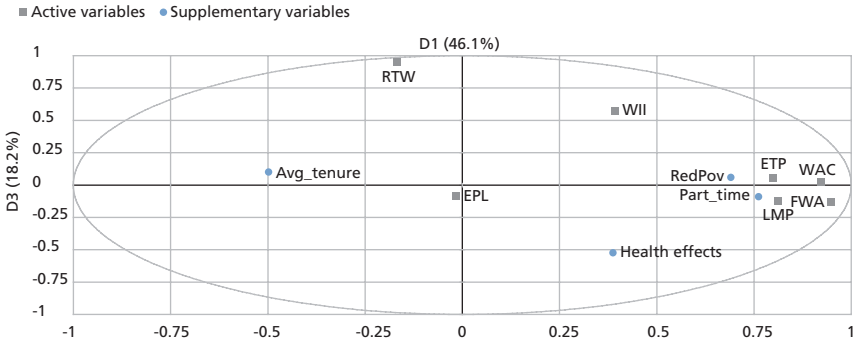
100 See Box 1 in *EiE 2006*, p. 109, for more details on the methodology of PCA and the cluster analysis k-means method.

101 Results obtained in *EiE 2006* (Chapter 2, Table 3)

Continental	Central and Eastern	Nordic and the Netherlands	Mediterranean	Anglo-Saxon
AT	CZ	DK	EL	IE
BE	HU	FI	PT	UK
DE	IT	NL	ES	
FR	PO	SE		
	SK			

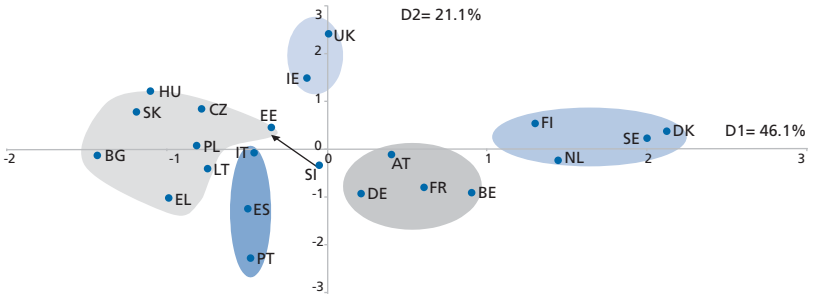
Source: DG EMPL calculations using data from Eurostat, European Foundation and the OECD.

Chart 63: Variables (axes D1 and D3: 64.3%) after Varimax rotation



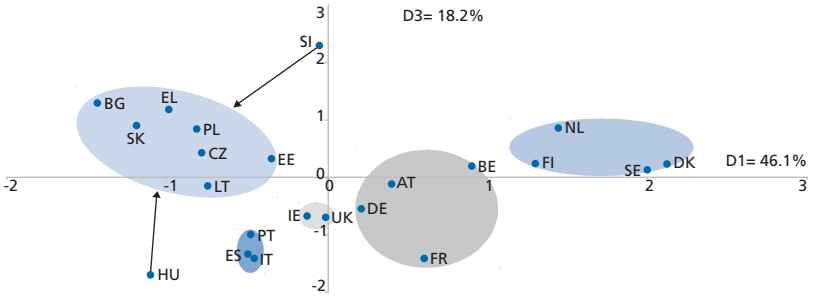
Source: DG EMPL calculations using data from Eurostat, the European Foundation and the OECD.
Note: This graph plots the correlation coefficients of the variables being considered with the two principal components. A variable close to the unitary circle has a high correlation with a linear combination of the the two principal components.
Legend: EPL: Employment protection legislation; ETP: Education and training programmes; LMP: Labour market policies; WAC: Work autonomy/complexity; WII: Work intensity/irregularity; RTW: Rotation and team work; Part_time: Part-time employment rate; FWA: Flexible work arrangements; RedPov: Reduction in poverty rates. Avg_tenure: Average tenure; Health effects: does work affect your health? (EWCS, Q33).

Chart 64: Taxonomy of flexicurity regimes based on the k-means method -Country scores on the first and second components



Source: European Foundation, fourth EWCS; DG EMPL calculations.

Chart 65: Taxonomy of flexicurity regimes based on the k-means method -Country scores on the first and third principal components



Source: European Foundation, fourth EWCS; DG EMPL calculations.

countries that score high along this first axis have a high percentage of their employees reporting advanced functional flexibility practices[102] (e.g. autonomy at work). The first axis is also positively associated with lifelong learning or competence building policies (ETP), active and passive labour market policies (ALMP and PLMP, respectively) and with a strong reduction in poverty (RedPov).

The second principal component/axis, accounting for about 21% of the total variance in the data, can be named as 'external flexibility'. It is positively correlated with the work intensity and irregular schedules (WII) and negatively correlated with EPL[103]. As regards the WII variable, countries that score high along the second axis have a high proportion of their employees working irregular schedules (e.g. irregular hours). As regards EPL, countries that score high along this second axis have low firing restrictions and, therefore, high external numerical flexibility.

The third principal component/axis, accounting for about 18% of the total variance in the data, can be named as 'basic forms of functional flexibility'. It is positively correlated with the work intensity and irregular schedules (WII) and rotation and teamwork (RTW). As regards the RTW variable, countries that score high along the third axis have a high incidence of task rotation and teamwork practices.

4.3.1. The impact of different types of flexibility on security

Advanced internal arrangements seem to capture 'negotiated' flexibility…

The definition of all variables (active and supplementary), including data sources and notes, is given in the Annex. The supplementary variables plotted on Chart 62 (see page 169) allow differentiating further between

102 As opposed to basic forms of functional flexibility: task rotation and teamwork.

103 Recall that the EPL scale is reversed. Countries with low (high) EPL have high (low) external (numerical) flexibility.

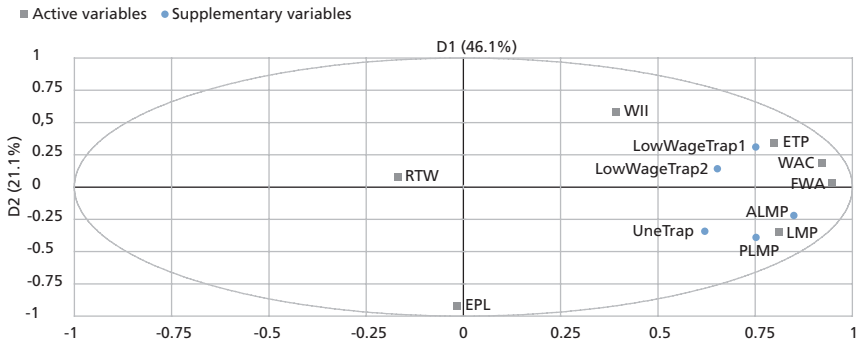
Table 20

Results of the clustering analysis, using the K-means method

Continental	Central, Eastern and Greece	Nordic and the Netherlands	Mediterranean	Anglo-Saxon
AT	BG	DK	ES	IE
BE	CZ	FI	IT	UK
DE	EE	NL	PT	
FR	EL	SE		
	HU			
	LT			
	PO			
	SK			
	SI			

Source: DG EMPL calculations using data from Eurostat, European Foundation and the OECD.

Chart 66: **Variables (axes D1 and D2: 67.2 %) after Varimax rotation**



Source: DG EMPL calculations using data from Eurostat, the European Foundation and the OECD.
Note: This graph plots the correlation coefficients of the variables being considered with the two principal components. A variable close to the unitary circle has a high correlation with a linear combination of the the two principal components.
Legend: EPL: Employment protection legislation; ETP: Education and training programmes; LMP: Labour market policies; WAC: Work autonomy/complexity; FWA: Flexible work arrangements; WII: Work intensity/irregularity; RTW: Rotation and team work; UneTrap: Unemployment trap for a single person without children; LowWageTrap1: Low wage trap for a single person without children;
LowWageTrap2: Low wage trap for one earner couple with two children; ALMP: Active labour market polcies; PLMP: Passive labour market policies.

the first and second axes. The incidence of part-time work in percentage of total employment increases along the first component, while the percentage of employees with temporary contracts decreases along the second. In Section 2.3, it was mentioned that according to surveys, part-time work is mainly voluntary, whereas a high proportion of employees with temporary contracts would prefer to have a permanent contract. Hence, the first axis, seems to put together forms of flexibility which allow mutually acceptable compromises between workers and employers, thereby suggesting that the amount of negotiated practices/social trust increases along that axis.

…while external flexibility reduces labour market segmentation

The temporary work variable, together with active variables WII and EPL, defining the second axis, suggest that labour market segmentation decreases along the second axis. There is also evidence that average job tenure decreases along the advanced internal flexibility axis, while long-term tenure decreases along the external flexibility axis.

Advanced internal flexibility goes together with increased income security…

As regards (income) security, measured by the reduction in the poverty rate resulting from government transfers (RedPov)[104], the evidence suggests that it improves along both the first and second axes, although more firmly so along the first. As is well known, only a few updated indicators are available on labour market transitions (e.g. from unemployment/inactivity to employment). Therefore, the operational concept of security used in this chapter is considerably narrower in scope than the meaning of the term in flexicurity policy documents[105]. Expenditure on labour market policies (LMP), especially if implemented under activation strategies to counterbalance disincentive effects, and participation in education and training programmes (ETP) contribute favourably to overall employment security. It should be highlighted that both LMP and ETP are (strongly) positively correlated with the first axis, while the former is (weakly) negatively correlated with the external flexibility axis.

…and activation policies to counterbalance the disincentive effects of passive measures

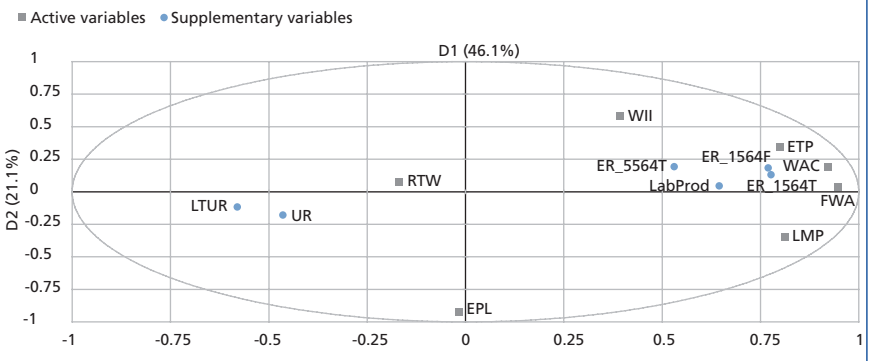
Chart 66 shows a number of variables/indicators related to labour market policies, namely expenditure on labour market policies (both active and passive)[106] and indicators of low wage and unemployment traps, which capture the financial disincentives to progress towards better (higher paid) jobs and to take up a job when unemployed, respectively, which are due to the combined effect

104 i.e. the difference between the risk of poverty before and after social transfers divided by the former.

105 'Towards common principles of flexicurity: More and better jobs through flexibility and security', Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM(2007) 359.

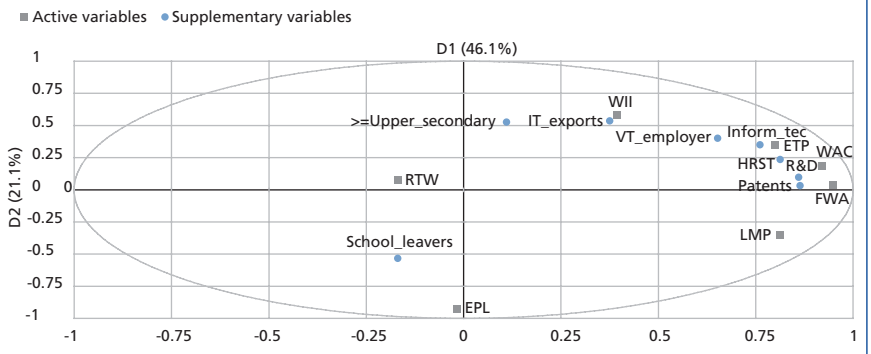
106 The reader is referred to *EiE 2006*, Chapters 2 and 3, for a discussion on the design and combination of passive and active labour market policies and their impact on employment performance.

Chart 67: Variables (axes D1 and D2: 67.2 %) after Varimax rotation



Source: DG EMPL calculations using data from Eurostat, the European Foundation and the OECD.
Note: This graph plots the correlation coefficients of the variables being considered with the two principal components. A variable close to the unitary circle has a high correlation with a linear combination of the two principal components.
Legend: EPL: Employment protection legislation;
ETP: Education and training programmes; LMP: Labour market policies; WII: Work intensity/irregularity; RTW: Rotation and team work; ER_1564T: Total employment rate; ER_1564F: Female employment rate; ERT–5564T older worker employment rate; LabProd: Labour productivity per employee; UR: Unemployment rate; LTUR: Long-term unemployment rate.

Chart 68: Variables (axes D1 and D2: 67.2%) after Varimax rotation



Source: DG EMPL calculations using data from Eurostat, the European Foundation and the OECD.
Note: This graph plots the correlation coefficients of the variables being considered with the two principal components. A variable close to the unitary circle has a high correlation with a linear combination of the two principal components.
Legend: EPL: Employment protection legislation;
ETP: Education and training programmes; LMP: Labour market policies; WAC: Work autonomy/complexity; FWA: Flexible work arrangements; WII: Work intensity/irregularity; RTW: Rotation and team work; VT_employer: Vocational training paid by the employer; Inform_tec: Expenditure on information technology; HRST: Human resources in science and technology as a share of labour force; IT_exports: High-tech exports; Patents: Patent application to the European Patent Office; R&D: Gross domestic expenditure in R&D; School_leavers: People aged 18-24 with only lower secondary education not in education; >=Upper_secondary: Population aged 25 to 64 having completed at least upper secondary education.

of tax and social benefit systems. Spending on both active and passive policies rise along the first axis, which is unsurprising given the correlation of the latter with LMP. The same applies to financial disincentives, which attain a maximum for the Nordic and the Netherlands group of countries. This is also relatively unsurprising given that larger LMP tend to be associated with larger transfers and taxation/social contributions which, in turn, tend to reduce the net income associated with transitions from unemployment to employment and/or from low-paid to better-paid jobs. However, financial disincentives may be counterbalanced by appropriate design of unemployment benefits in terms of duration, sanctions, and combining with effective job search assistance and activation policies. Comparable indicators on such aspects are, though, currently not available.

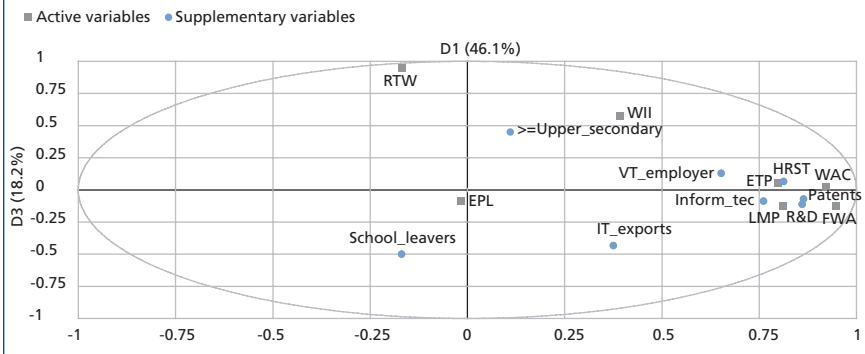
Advanced internal flexibility is associated with better innovation performance…

As regards outcome variables, Chart 67 suggests that positive labour market outcomes and labour productivity increase along the first axis. Hence, more advanced forms of internal flexibility are associated with high employment rates, high labour productivity and lower unemployment rates. An important dimension is also the impact on a firm's ability to produce technological innovation. Section 3.4.2 above discussed the four-way typology of work organisations elaborated by Lorenz and Valeyre (2003), of which two are considered to be 'advanced' forms: the 'discretionary learning' (DL) and the 'lean'. The DL work organisation is characterised by high levels of autonomy in work combined with high levels of learning, problem solving and task complexity. The lean form is also characterised by high levels of learning and problem solving, but can be distinguished from the DL form by the relatively low levels of employment discretion in setting work pace and methods, and by the greater use of job rotation and teamwork. This typology does not have a direct equivalent in the three principal components resulting from the PCA carried out in this chapter.

…confirming the role of work autonomy/complexity for 'discretionary-learning' organisations

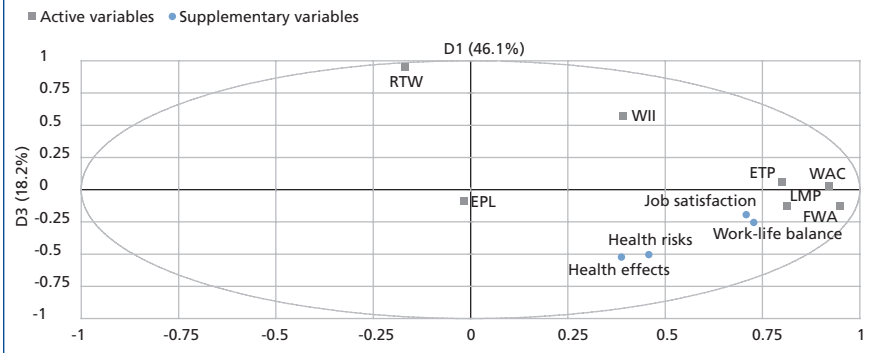
However, the first principal component – advanced forms of internal flexibility and security – shares many features of the discretionary learning model (Chart 68 and 69, see page 174), both as regards the definition of the axis (e.g. work autonomy and task complexity) and outcomes in terms of innovation efforts and performance (e.g. a strong correlation with R&D

Chart 69: Variables (axes D1 and D3: 64.3%)



Source: DG EMPL calculations using data from Eurostat, the European Foundation and the OECD.
Note: This graph plots the correlation coefficients of the variables being considered with the two principal components. A variable close to the unitary circle has a high correlation with a linear combination of the two principal components.
Legend: EPL: Employment protection legislation;
ETP: Education and training programmes; LMP: Labour market policies; WAC: Work autonomy/complexity; FWA: Flexible work arrangements; WII: Work intensity/irregularity; RTW: Rotation and team work; VT_employer: Vocational training paid by the employer; Inform_tec: Expenditure on information technology; HRST: Human resources in science and technology as a share of labour force; IT_exports: High-tech exports; Patents: Patent application to the European Patent Office; R&D: Gross domestic expenditure in R&D; School_leavers: People aged 18–24 with only lower secondary education not in education; >=Upper_secondary: Population aged 25–64 having completed at least upper secondary education.

Chart 70: Variables (axes D1 and D3: 64.3%) after Varimax rotation



Source: DG EMPL calculations from Eurostat, European Foundation and OECD figures.
Note: This graph plots the correlation coefficients of the variables being considered with the two principal components. A variable close to the unitary circle has a high correlation with a linear combination of the two principal components.
Legend: EPL: Employment protection legislation;
ETP: Education and training programmes; LMP: Labour market policies; WAC: Work autonomy/complexity; FWA: Flexible work arrangements; WII: Work intensity/irregularity; RTW: Rotation and team work; Work-life balance (EWCS, Q18); Health risks (EWCS, Q32); Health effects (EWCS, Q33); Job satisfaction (EWCS, Q36).

spending, patent application, the share of human resources in science and technology areas, and provision of employer-paid training). The second and third principal components defined as, respectively, 'external flexibility' and 'basic forms of functional flexibility' are poorly characterised in terms of technology/innovation-related variables. Chart 68 (see page 173) suggests that external flexibility is positively correlated with the percentage of high technology exports and the fraction of employees receiving vocational training paid by the employer.

Advanced internal flexibility and security is associated with improved working conditions…

The supplementary variables plotted on Chart 70 allow differentiating between the first and third axes based on a few measures of the quality of working conditions, such as job satisfaction, work-life balance and health outcomes[107]. Although both 'advanced forms of internal flexibility and security' (the first axis) and 'basic forms of functional flexibility' (the third axis) are positively correlated with work intensity and irregular schedules (WII), the perceived effects of working conditions depend on the type of flexibility. Advanced forms of internal flexibility and security are associated with positive health outcomes, improved levels of job-satisfaction and work-life balance. This suggests that work autonomy, job enrichment and flexible working-time arrangements more than counterbalance the intensification of work, leading to improved working conditions in organisations with advanced forms of internal flexibility and security. Conversely, basic functional flexibility, i.e. task rotation and teamwork, is perceived as increasing health risks, decreasing job satisfaction and worsening the work-life balance.

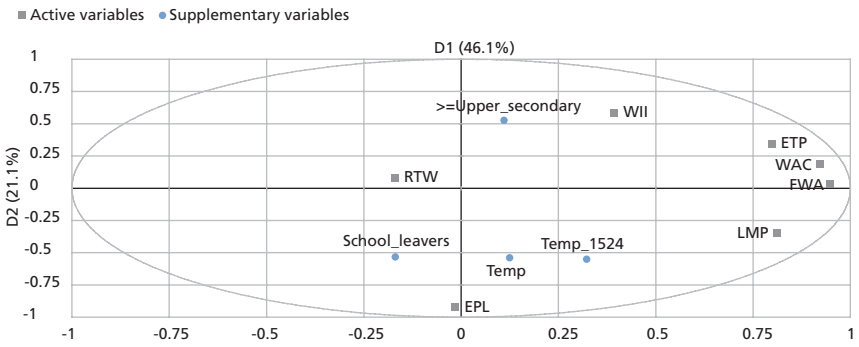
…hence it may represent a win-win solution for both workers and firms

This supports the arguments developed earlier (in Section 3.3) that work organisations accommodating greater demands on the workforce (in terms of increased responsibilities, problem-solving activities, discretionary efforts, etc.) with increased autonomy/discretion and competencies building (e.g. through training) may raise workers' satisfaction and health conditions when compared with more conventional workplace practices. The perceived favourable impact of new forms of work organisation on workers' well-being adds to their positive effects on productivity,

107 All supplementary variables in Chart 70 have been scaled in such a way that an increase in their values represents favourable outcomes.

innovation performance, and labour market outcomes. This favourable combination suggests that new forms of work organisation may represent win-win strategies, allowing for the reconciliation of employers and workers' interests. On the other hand, this analysis suggests that task rotation and teamwork are perceived to lower job satisfaction and have a negative impact on work-related health outcomes.

Chart 71: **Variables (axes D1 and D2: 67.2%) after Varimax rotation**



Source: DG EMPL calculations using data from Eurostat, the European Foundation and the OECD.
Note: This graph plots the correlation coefficients of the variables being considered with the two principal components. A variable close to the unitary circle has a high correlation with a linear combination of the two principal components.
Legend: EPL: Employment protection legislation;
ETP: Education and training programmes; LMP: Labour market policies; WAC: Work autonomy/complexity; FWA: Flexible work arrangements;WII: Work intensity/irregularity; RTW: Rotation and team work; Temp: Temporary employment rate; Temp_1524: Youth temporary employment rate (15-24);School_leavers: People aged 18–24 with only lower secondary education not in education; >=Upper_secondary: Population aged 25–64 having completed at least upper secondary education.

External flexibility and lower segmentation go together with better basic education

Some education outcomes are particularly relevant in order to interpret the second axis (Chart 71). 'External flexibility' is associated with better (basic) education outcomes - i.e. a larger proportion of the population having completed at least upper secondary education (>=Upper_education), and a lower proportion of the young population (18-24) with only lower secondary education not in further education or training (School_leavers). It is interesting to note that high labour market segmentation (i.e. a high proportion of total and young temporary workers) is positively correlated with bad (basic) education outcomes. Self-reinforcing mechanisms might be at work here, reflecting the tendency for young people to accumulate disadvantages (Heckman and Carneiro, 2003). On the one hand, young people might become discouraged and drop out of high school because of expected difficult transitions into work life (i.e. a segmented labour market); on the other hand, firms might be reluctant to offer permanent contracts to young people with inadequate competencies.

5. Conclusions

Flexicurity reforms should explore policy synergies

Flexicurity is a comprehensive policy strategy that aims to improve the adaptability of employees and enterprises to face competitiveness and technological challenges, and to respond better to societal changes. It aims at enhancing, simultaneously, the flexibility and security dimensions of the labour market, by exploring complementarities/synergies between different policies and institutions. Usually, these types of reforms have significant distributional effects, thereby implying the need to reach enlarged social consensus in order to strengthen the momentum for reform. Flexicurity reform packages require a careful balancing of components in order to maximise synergies, political support, and the sense of inclusiveness (i.e. avoiding the marginalisation of any stakeholder).

...and forms of internal flexibility (i.e. within the firm) have to be included in the analysis

Flexicurity is a difficult concept to tackle analytically, largely due to its holistic nature. The dimensions of flexibility and security can be further sub-divided into several sub-components, requiring the use of a variety of information sources. To our knowledge, currently available analyses of flexicurity regimes/systems, including the one made in *Employment in Europe 2006*, focus exclusively on the external component of flexibility and do not consider those forms of flexibility that are provided within the firm through the implementation of different work organisation practices (e.g. working-time arrangements, rotation and teamwork, discretion/ autonomy at work).

Considering internal flexibility

This chapter aims at filling this gap by explicitly considering forms of internal flexibility, making an extensive use of a large number of data sources, in particular the European Foundation's EWCS, in order to map the various dimensions of flexibility. The theory of high performance (or new work) organisations is used to interpret results.

Firms' work organisation practices have significant effects on outcomes

Different work organisation practices and human resource management policies are expected to have distinct effects on variables, such as the flexi-

bility/adaptability of the workforce/firm, productivity/profitability, and incentives to carry out innovation activities in-house. Descriptive analysis suggests that the flexibility requirements of firms and/or workers are catered for in a distinct number of ways across Europe:

- labour market segmentation
- external numeric flexibility
- rotation and teamwork
- advanced forms of flexible work organisation (e.g. flexible working-time arrangements, job autonomy).

The analysis suggests that new forms of work organisation are associated with positive outcomes in the labour market and increased job satisfaction…

Both the descriptive analysis and the probit estimations provide support for the view that the advanced internal flexibility model – characterised by new work organisation practices that are complemented by HRM policies combining greater demands on the workers with increased autonomy at work – is associated with high levels of job satisfaction, and better (perceived) work-life balance and health outcomes in comparison with more traditional forms of work organisation. However, this chapter does not address the effects of flexible/new forms of work organisation on wages, wage inequality, and employment, because of the inadequacy of the available data[108].

Moreover, results of the PCA indicate that the advanced internal flexibility and security model is also associated with positive outcomes in the labour market, and on productivity and innovation, suggesting that this model may facilitate the reconciliation of employees with employers' interests.

…but dissemination of new work organisation practices might be contingent on the firm's business model

Firms producing standardised products, relying more on economies of scale and price competition, are likely to have fewer incentives to adopt certain forms of internal flexibility associated with new forms of work organisation, at least in the immediate future, than those firms that produce specialised products, whose business models explore economies of variety/scope, and learning and innovation are their basis for competition.

…while the basic functional flexibility model is associated with negative outcomes

Finally, the analysis carried out in this chapter also confirms that the basic functional flexibility model – characterised by high rotation and teamwork, high work intensity, and a low degree of work autonomy – exerts a negative impact on job satisfaction, and on the perceived heath conditions of workers.

Internal flexibility plays an important role in the taxonomy of flexicurity systems

Country-specific indicators of internal and functional flexibility, calculated using the EWCS, are added to a broader set of indicators to carry out a principal components analysis of labour market/flexicurity regimes followed by a clustering analysis. Inclusion of these new indicators represents an improvement in the characterisation of flexicurity systems, because of the large variation in their incidence across countries, and the different correlation patterns with a broader set of socio-economic variables, reflecting the effects of institutional complementarities.

Two flexicurity regimes/systems show good socio-economic outcomes

The various regimes are characterised by different socio-economic outcomes/performances. Similar to the results obtained in the OECD reassessment of its job strategy, two flexicurity regimes are found to be associated with relatively 'good' socio-economic outcomes. The first is characterised by high external flexibility, high rates of secondary education attainment, moderate intensity of vocational training and low spending in activation policies. The second is characterised by a high incidence of advanced forms of flexible work organisation and by moderate levels of external flexibility, complemented by a large role for lifelong learning policies, vocational training and spending in R&D, as well as labour market policies within activation strategies.

Socio-economic outcomes differ but there is no overall best system.

The second ('good') flexicurity system tends to be associated, on the one hand, with better overall socio-economic outcomes (labour market, innovation and productivity), as well as better working conditions as perceived by workers (job satisfaction, work-life balance and health conditions); and, on the other hand, it produces a significant reduction in inequality/poverty.

However, the first ('good') flexicurity system implies lower budgetary costs due to lower spending on public transfers in general, and on labour market policies in particular, combined with low distortions induced by the tax/benefit system. Moreover, the first flexicurity regime is also associated with high labour mobility (as measured by job tenure) and low labour segmentation, while still achieving a moderate success in reducing inequality/poverty, in innovation outcomes as measured by the high percentage of high-technology products in total exports, and in the moderate percentage of employees

108 Addressing these issues requires linked employer-employee data.

attending vocational training paid by their employers.

Everything considered, there is no single combination of policies and institutions to achieve and maintain good socio-economic results, but rather there are different pathways to good performance that are, to a large extent, the result of distinct historical trajectories. Respecting the principles of subsidiarity (and the Open Method of Coordination), this allows scope for tailor-made policy packages to suit national preferences with respect to distributional aspects, risk-taking and other national objectives.

Autonomy and problem solving are critical for learning and innovation

The results also suggest that there are systemic links between the way work is organised and innovation performance. Forms of work organisation characterised by high levels of autonomy, complex problem-solving activities and continuous vocational training are associated with in-house innovation activities as opposed to the adoption/modification of existing technologies. This suggests that, in addition to 'standard' education (i.e. upper secondary education), developing the right work environment/structures is crucial to promoting learning through problem solving and discretion/autonomy at work, helping employees to solve technical and product-related problems, and encouraging the effective use of their competencies for career building and innovation activities.

Need of harmonised employer-level survey data to assess work organisation and other management practices

However, the employee-level data of the EWCS are relatively inadequate for developing indicators for the analysis of work organisations, because they cannot capture enterprise-based variables, especially certain aspects of management strategy. At present there are no harmonised employer-level survey data that can be used to characterise work organisation and other management aspects across EU Member States.

Transitions need to be thoroughly assessed to have an in-depth knowledge of the security dimension

Although this chapter carried out an extensive analysis of the different forms of flexibility available to both firms and workers across Europe, it could not deal adequately with security aspects, particularly the assessment of individuals' transitions between different labour market statuses and pay levels. Use of up-to-date longitudinal data – currently unavailable on a harmonised basis across EU Member States – is necessary in order to overcome this shortcoming in the analysis of flexicurity systems.

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DATA ANNEXES

Table 1a: **Dependent variable: Q21B_N (Market constraint)**

		Coefficients
Working time	**Hours usually worked per week in the main job**	0.010***
	Working-time arrangements	
	(reference: set by the firm)	
	Arrangemets with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	0.035
Establishment characteristics	***Sector***	
	(reference: manufacturing)	
	Agriculture, hunting, forestry and fishing	-0.385***
	Mining and quarrying	-0.265*
	Electricity, gas and water	0.109
	Construction	0.222***
	Wholesale and retail trade	0.607***
	Hotels and restaurants	0.651***
	Transport, storage and communication	0.357***
	Financial intermediation and insurance	0.401***
	Real estate, renting and business activities	0.242***
	Public administration and defence, compulsory social security	0.079
	Education	0.520***
	Health and social security	0.545***
	Other community, social and personal service activities	0.300***
	Enterprise size	
	(reference: medium enterprises)	
	Micro-enterprises (fewer than 10 employees)	0.274***
	Small enterprises (10-49 employees)	0.166***
	Large enterprises (250+ employees)	-0.129***
Worker characteristics	***Gender***	
	(reference: male)	
	Female	0.087***
	Educational attainment	
	(reference: upper secondary education)	
	Pre-primary education (ISCED 0)	-0.318*
	Primary education (ISCED 1)	-0.238***
	Lower secondary education (ISCED 2)	-0.160***
	Post-secondary non-tertiary education (ISCED 4)	0.082*
	First stage of tertiary education (ISCED 5)	0.010
	Second stage of tertiary education (ISCED 6)	-0.040
	Age	
	(reference: between 25 and 39 years old)	
	Less than 24 years old	-0.044
	Between 40 and 54 years old	-0.080***
	55 years old and over	-0.165***
Job-related characteristics	***Indefinite/non indefinite***	
	(reference: indefinite contract)	
	Fixed-term contract	-0.134***
	Agency contract	0.044
	Full-time/part-time	
	(reference: full-time contract)	
	Part-time contract	0.018
	Job tenure	
	(reference: between 2 and 6 years of job tenure)	
	Less than one year of job tenure	-0.108**
	Between 1 and 2 years of job tenure	-0.121**
	Between 6 and 15 years of job tenure	-0.094***
	More than 15 years of job tenure	-0.060
	Income level from main paid job	
	(reference: 1st and 2nd deciles)	
	3rd and 4th deciles	-0.073
	5th and 6th deciles	-0.041
	7th and 8th deciles	-0.075
	9th and 10th deciles	-0.095
	Occupation	
	(reference: blue-collar high-skill)	
	White-collar high-skill	0.368***
	White-collar low-skill	0.468***
	Blue-collar low-skill	0.188***

Table 1a: **Dependent variable: Q21B_N (Market constraint)**

cont'd		Coefficients
Workplace practice characteristics	***Workplace practices***	
	Job rotation	0.120***
	Teamwork	0.083***
	Training paid by employer	0.065**
	Quality norms	0.104***
	Responsability for quality control	0.074**
	Problem solving activities	0.300***
	Monotony of tasks	-0.092***
	Complexity of tasks	0.147***
	Learning new things at work	0.142***
	Discretion in fixing task order	0.037
	Discretion in fixing work methods	0.045
	Discretion in setting work pace	-0.008
	Repetitiveness of tasks (10 minutes)	0.150***
Country	***Country fixed effects (reference: France)***	
	Belgium	-0.217**
	Czech Republic	-0.301***
	Denmark	-0.215**
	Germany	-0.167*
	Estonia	-0.508***
	Greece	-0.143
	Spain	0.038
	Ireland	-0.143
	Italy	-0.155
	Cyprus	-0.028
	Latvia	-0.743***
	Lithuania	-0.501***
	Luxembourg	-0.372***
	Hungary	-0.555***
	Malta	-0.121
	The Netherlands	-0.242***
	Austria	-0.205**
	Poland	-0.543***
	Portugal	-0.242***
	Slovenia	-0.385***
	Slovakia	-0.459***
	Finland	-0.151*
	Sweden	-0.184**
	United Kingdom	-0.214**
	Bulgaria	-0.508***
	Romania	-0.394***
	Observations	12854
	Obs with Dep=0	4044
	Obs with Dep=1	8810
	Pseudo R-squared	0.132

Source: European Foundation's fourth EWCS and DG EMPL calculations.
Note: *, **, ***, statistically significant at 10%, 5% and 1%, respectively.

Table 2a: **Dependent variable: Q21D_N (Industrial constraint)**

		Coefficients
Working time	**Hours usually worked per week in the main job**	0.001***
	Working-time arrangements	
	(reference: set by the firm)	
	Arrangemets with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	-0.057
Establishment characteristics	***Sector***	
	(reference: manufacturing)	
	Agriculture, hunting, forestry and fishing	-0.249***
	Mining and quarrying	0.082
	Electricity, gas and water	-0.627***
	Construction	-0.576***
	Wholesale and retail trade	-0.629***
	Hotels and restaurants	-0.657***
	Transport, storage and communication	-0.431***
	Financial intermediation and insurance	-0.637***
	Real estate, renting and business activities	-0.562***
	Public administration and defence, compulsory social security	-0.632***
	Education	-1.158***
	Health and social security	-0.788***
	Other community, social and personal service activities	-0.694***
	Enterprise size	
	(reference: medium enterprises)	
	Micro-enterprises (fewer than 10 employees)	-0.218***
	Small enterprises (10-49 employees)	-0.146***
	Large enterprises (250+ employees)	-0.029
Worker characteristics	***Gender***	
	(reference: male)	
	Female	-0.178***
	Educational attainment	
	(reference: upper secondary education)	
	Pre-primary education (ISCED 0)	0.069
	Primary education (ISCED 1)	0.023
	Lower secondary education (ISCED 2)	0.057
	Post-secondary non-tertiary education (ISCED 4)	-0.016
	First stage of tertiary education (ISCED 5)	-0.059
	Second stage of tertiary education (ISCED 6)	-0.013
	Age	
	(reference: between 25 and 39 years old)	
	Less than 24 years old	0.053
	Between 40 and 54 years old	-0.024
	55 years old and over	-0.119**
Job-related characteristics	***Indefinite/non indefinite***	
	(reference: indefinite contract)	
	Fixed-term contract	-0.046
	Agency contract	0.199*
	Full-time/part-time	
	(reference: full-time contract)	
	Part-time contract	-0.045
	Job tenure	
	(reference: between 2 and 6 years of job tenure)	
	Less than one year of job tenure	-0.029
	Between 1 and 2 years of job tenure	-0.001
	Between 6 and 15 years of job tenure	0.033
	More than 15 years of job tenure	-0.002
	Income level from main paid job	
	(reference: 1st and 2nd deciles)	
	3rd and 4th deciles	-0.024
	5th and 6th deciles	-0.001
	7th and 8th deciles	-0.054
	9th and 10th deciles	-0.049
	Occupation	
	(reference: blue-collar high-skill)	
	White-collar high-skill	-0.332***
	White-collar low-skill	-0.341***
	Blue-collar low-skill	0.082*

Table 2a: **Dependent variable: Q21D_N (Industrial constraint)**

cont'd		Coefficients
Workplace practice characteristics	***Workplace practices***	
	Job rotation	0.162***
	Teamwork	0.120***
	Training paid by employer	-0.021
	Quality norms	0.428***
	Responsability for quality control	0.059
	Problem solving activities	0.028
	Monotony of tasks	0.312***
	Complexity of tasks	0.075
	Learning new things at work	-0.016
	Discretion in fixing task order	-0.177***
	Discretion in fixing work methods	-0.095**
	Discretion in setting work pace	-0.102***
	Repetitiveness of tasks (10 minutes)	0.288***
Country	***Country fixed effects (reference: France)***	
	Belgium	0.216**
	Czech Republic	0.121
	Denmark	-0.148
	Germany	0.107
	Estonia	0.167
	Greece	0.191
	Spain	0.017
	Ireland	-0.004
	Italy	0.156
	Cyprus	-0.046
	Latvia	0.035
	Lithuania	0.231**
	Luxembourg	-0.029
	Hungary	0.178*
	Malta	-0.034
	The Netherlands	-0.030
	Austria	0.162
	Poland	-0.306***
	Portugal	0.096
	Slovenia	-0.118
	Slovakia	0.072
	Finland	0.196**
	Sweden	-0.272**
	United Kingdom	0.119
	Bulgaria	-0.121
	Romania	0.232**
	Observations	12822
	Obs with Dep=0	10499
	Obs with Dep=1	2323
	Pseudo R-squared	0.238

Source: European Foundation's fourth EWCS and DG EMPL calculations.
Note: *, **, ***, statistically significant at 10%, 5% and 1%, respectively.

Table 3a: **Dependent variable: EF6_N = EF6g OR EF6h (performance-based pay schemes)**

		Coefficients
Working time	**Hours usually worked per week in the main job**	0.000
	Working-time arrangements	
	(reference: set by the firm)	
	Arrangemets with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	0.258***
Establishment characteristics	***Sector***	
	(reference: manufacturing)	
	Agriculture, hunting, forestry and fishing	-0.284**
	Mining and quarrying	-0.022
	Electricity, gas and water	-0.032
	Construction	-0.186**
	Wholesale and retail trade	0.079
	Hotels and restaurants	-0.376***
	Transport, storage and communication	-0.107
	Financial intermediation and insurance	0.332***
	Real estate, renting and business activities	-0.115*
	Public administration and defence, compulsory social security	-1.069***
	Education	-1.194***
	Health and social security	-0.865***
	Other community, social and personal service activities	-0.335***
	Enterprise size	
	(reference: medium enterprises)	
	Micro-enterprises (fewer than 10 employees)	-0.222***
	Small enterprises (10–49 employees)	-0.069
	Large enterprises (250+ employees)	0.220***
Worker characteristics	***Gender***	
	(reference: male)	
	Female	-0.133***
	Educational attainment	
	(reference: upper secondary education)	
	Pre-primary education (ISCED 0)	0.216
	Primary education (ISCED 1)	-0.040
	Lower secondary education (ISCED 2)	-0.006
	Post-secondary non-tertiary education (ISCED 4)	0.103*
	First stage of tertiary education (ISCED 5)	0.002
	Second stage of tertiary education (ISCED 6)	0.000
	Age	
	(reference: between 25 and 39 years old)	
	Less than 24 years old	-0.028
	Between 40 and 54 years old	-0.120***
	55 years old and over	-0.186***
Job-related characteristics	***Indefinite/non indefinite***	
	(reference: indefinite contract)	
	Fixed-term contract	-0.106*
	Agency contract	-0.619***
	Full-time/part-time	
	(reference: full-time contract)	
	Part-time contract	-0.021
	Job tenure	
	(reference: between 2 and 6 years of job tenure)	
	Less than one year of job tenure	-0.203***
	Between 1 and 2 years of job tenure	-0.115
	Between 6 and 15 years of job tenure	-0.087*
	More than 15 years of job tenure	-0.036
	Income level from main paid job	
	(reference: 1st and 2nd deciles)	
	3rd and 4th deciles	0.018
	5th and 6th deciles	0.129*
	7th and 8th deciles	0.320***
	9th and 10th deciles	0.546***
	Occupation	
	(reference: blue-collar high-skill)	
	White-collar high-skill	0.264***
	White-collar low-skill	0.202***
	Blue-collar low-skill	0.143**

Table 3a: **Dependent variable: EF6_N = EF6g OR EF6h (performance-based pay schemes)**

cont'd		Coefficients
Workplace practice characteristics	***Workplace practices***	
	Job rotation	0.107***
	Teamwork	0.107***
	Training paid by employer	0.192***
	Quality norms	-0.033
	Responsability for quality control	0.130***
	Problem solving activities	0.101*
	Monotony of tasks	0.032
	Complexity of tasks	0.049
	Learning new things at work	0.147***
	Discretion in fixing task order	-0.009
	Discretion in fixing work methods	0.055
	Discretion in setting work pace	0.075*
	Repetitiveness of tasks (10 minutes)	0.007
Country	***Country fixed effects (reference: France)***	
	Belgium	-0.770***
	Czech Republic	0.011
	Denmark	-0.622***
	Germany	-0.725***
	Estonia	-0.089
	Greece	-0.652***
	Spain	-0.490***
	Ireland	-0.385***
	Italy	-0.629***
	Cyprus	-1.044***
	Latvia	-0.153
	Lithuania	-0.234*
	Luxembourg	-0.331***
	Hungary	-0.450***
	Malta	-0.467***
	The Netherlands	-0.059
	Austria	-0.699***
	Poland	-0.460***
	Portugal	-1.052***
	Slovenia	0.255**
	Slovakia	0.973***
	Finland	-0.193*
	Sweden	-0.180*
	United Kingdom	-0.751***
	Bulgaria	-0.434***
	Romania	-0.549***
	Observations	12916
	Obs with Dep=0	11340
	Obs with Dep=1	1576
	Pseudo R-squared	0.238

Source: European Foundation's fourth EWCS and DG EMPL calculations.
Note: *, **, ***, statistically significant at 10%, 5% and 1%, respectively.

		Table 4a	Table 5a
		Health risks	**Health effects**
Endogenous			
Working time	***Hours usually worked per week in the main job***	0.014***	0.013***
	Working-time arrangements		
	(reference: set by the firm)		
	Arrangemets with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	-0.084***	-0.092***
Establishment characteristics	***Sector***		
	(reference: manufacturing)		
	Agriculture, hunting, forestry and fishing	0.041	0.188**
	Mining and quarrying	0.400***	0.382**
	Electricity, gas and water	0.151	0.041
	Construction	0.211***	0.190***
	Wholesale and retail trade	-0.161***	-0.088-*
	Hotels and restaurants	0.181**	0.193***
	Transport, storage and communication	0.203***	0.152***
	Financial intermediation and insurance	-0.132*	-0.039
	Real estate, renting and business activities	-0.024	-0.001
	Public administration and defence, compulsory social security	0.219***	0.058
	Education	0.149***	0.250***
	Health and social security	0.509***	0.296***
	Other community, social and personal service activities	0.143***	0.165**
	Enterprise size		
	(reference: medium enterprises)		
	Micro-enterprise (fewer than 10 employees)	-0.048	-0.095***
	Small enterprises (10-49 employees)	-0.001	0.019
	Large enterprises (250+ employees)	0.082 **	0.045
Worker characteristics	***Gender***		
	(reference: male)		
	Female	-0.175***	0.037
	Educational attainment		
	(reference: upper secondary education)		
	Pre-primary education (ISCED 0)	0.371 *	0.366**
	Primary education (ISCED 1)	-0.004	0.030
	Lower secondary education (ISCED 2)	0.043	0.059
	Post-secondary non-tertiary education (ISCED 4)	0.043	0.057
	First stage of tertiary education (ISCED 5)	-0.078 **	0.039
	Second stage of tertiary education (ISCED 6)	-0.085	-0.082
	Age		
	(reference: between 25 and 39 years old)		
	Less than 24 years old	-0.140***	-0.198***
	Between 40 and 54 years old	-0.003	0.101***
	55 years old and over	-0.165***	-0.045
Job-related characteristics	***Indefinite/non indefinite***		
	(reference: indefinite contract)		
	Fixed-term contract	-0.076*	-0.085**
	Agency contract	-0.175	-0.261**
	Job tenure		
	(reference: between 2 and 6 years of job tenure)		
	Less than one year of job tenure	-0.038	-0.029
	Between 1 and 2 years of job tenure	-0.046	-0.108**
	Between 6 and 15 years of job tenure	0.088***	0.077**
	More than 15 years of job tenure	0.062*	0.080**
	Income level from main paid job		
	(reference: 1st and 2nd deciles)		
	3rd and 4th deciles	0.022	0.001
	5th and 6th deciles	-0.010	-0.067
	7th and 8th deciles	-0.045	-0.028
	9th and 10th deciles	-0.041	-0.047
	Occupation		
	(reference: blue-collar high-skill)		
	White-collar high-skill	-0.481***	-0.345***
	White-collar low-skill	-0.453***	-0.393***
	Blue-collar low-skill	-0.162***	-0.121***

		Table 4a	Table 5a
Endogenous	Cont'd	**Health risks**	**Health effects**
Workplace practice characteristics	***Workplace practices***		
	Job rotation	0.113***	0.132***
	Teamwork	0.122***	0.107***
	Training paid by employer	0.020	0.060**
	Quality norms	0.078**	0.067**
	Responsability for quality control	0.005	0.030
	Problem solving activities	0.192***	0.106***
	Monotony of tasks	0.256***	0.222***
	Complexity of tasks	0.205***	0.175***
	Learning new things at work	-0.027	-0.003
	Discretion in fixing task order	-0.126***	-0.115***
	Discretion in fixing work methods	-0.009	0.012
	Discretion in setting work pace	-0.083***	-0.065**
	Repetitiveness of tasks (1 minute)	0.116***	0.146***
Country	***Country fixed effects***		
	(reference: France)		
	Belgium	0.125	0.148*
	Czech Republic	-0.341 ***	0.014
	Denmark	-0.068	0.362***
	Germany	-0.195 **	-0.251***
	Estonia	0.390 ***	0.712***
	Greece	0.534 ***	1.011***
	Spain	0.182 *	0.054
	Ireland	-0.030	0.024
	Italy	0.189 *	0.342***
	Cyprus	0.270 **	0.340***
	Latvia	0.669 ***	0.948***
	Lithuania	0.270 ***	0.348***
	Luxembourg	0.130	0.191**
	Hungary	0.072	0.339***
	Malta	0.158	0.520***
	The Netherlands	0.037	-0.062
	Austria	-0.145	0.014
	Poland	0.451 ***	0.892***
	Portugal	-0.114	0.055
	Slovenia	0.414 ***	0.728***
	Slovakia	0.172 *	0.440***
	Finland	-0.152 *	0.220***
	Sweden	0.733 ***	0.722***
	United Kingdom	-0.182 *	-0.208**
	Bulgaria	0.320 ***	0.344***
	Romania	0.306 ***	0.257***
	Observations	12735	12751
	Obs with Dep=0	8740	7241
	Obs with Dep=1	3995	5510
	Pseudo R-squared	0.117	0.109

Source: Source: European Foundation's fourth EWCS and DG EMPL calculations.
Note: *, **, ***, statistically significant at 10%, 5% and 1%, respectively.

Table 6a: **Dependent variable: Q18 (work-life balance)**

		Coefficients
Working time	**Hours usually worked per week in the main job**	-0.032***
	Working-time arrangements	
	(reference: set by the firm)	
	Arrangemets with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	0.134***
Establishment characteristics	***Sector***	
	(reference: manufacturing)	
	Agriculture, hunting, forestry and fishing	-0.116
	Mining and quarrying	0.204
	Electricity, gas and water	0.189
	Construction	-0.023
	Wholesale and retail trade	-0.254***
	Hotels and restaurants	-0.352***
	Transport, storage and communication	-0.217***
	Financial intermediation and insurance	0.148*
	Real estate, renting and business activities	-0.014
	Public administration and defence, compulsory social security	0.045
	Education	0.102*
	Health and social security	-0.246***
	Other community, social and personal service activities	-0.045
	Enterprise size	
	(reference: medium enterprises)	
	Micro-enterprises (fewer than 10 employees)	0.063
	Small enterprises (10–49 employees)	-0.007
	Large enterprises (250+ employees)	-0.127***
Worker characteristics	***Gender***	
	(reference: male)	
	Female	-0.008
	Educational attainment	
	(reference: upper secondary education)	
	Pre-primary education (ISCED 0)	-0.180
	Primary education (ISCED 1)	0.268***
	Lower secondary education (ISCED 2)	0.101**
	Post-secondary non-tertiary education (ISCED 4)	0.003
	First stage of tertiary education (ISCED 5)	-0.034
	Second stage of tertiary education (ISCED 6)	-0.114
	Age	
	(reference: between 25 and 39 years old)	
	Less than 24 years old	0.124**
	Between 40 and 54 years old	0.100***
	55 years old and over	0.298***
Job-related characteristics	***Indefinite/non indefinite***	
	(reference: indefinite contract)	
	Fixed-term contract	-0.020
	Agency contract	-0.019
	Full-time/part-time	
	(reference: full-time contract)	
	Part-time contract	-0.112**
	Job tenure	
	(reference: between 2 and 6 years of job tenure)	
	Less than one year of job tenure	-0.033
	Between 1 and 2 years of job tenure	0.070
	Between 6 and 15 years of job tenure	0.054
	More than 15 years of job tenure	0.106**
	Income level from main paid job	
	(reference: 1st and 2nd deciles)	
	3rd and 4th deciles	0.069
	5th and 6th deciles	0.112**
	7th and 8th deciles	0.074
	9th and 10th deciles	0.016
	Occupation	
	(reference: blue-collar high-skill)	
	White-collar high-skill	0.025
	White-collar low-skill	0.012
	Blue-collar low-skill	-0.090*

Table 6a: **Dependent variable: Q18 (work-life balance)**

cont'd		Coefficients
Workplace practice characteristics	***Workplace practices***	
	Job rotation	-0.120***
	Teamwork	-0.060*
	Training paid by employer	-0.006
	Quality norms	-0.018
	Responsability for quality control	0.066**
	Problem solving activities	-0.118***
	Monotony of tasks	-0.191***
	Complexity of tasks	-0.110***
	Learning new things at work	0.040
	Discretion in fixing task order	0.188***
	Discretion in fixing work methods	0.002
	Discretion in setting work pace	0.155***
	Repetitiveness of tasks (10 minutes)	-0.033
Country	***Country fixed effects (reference: France)***	
	Belgium	0.026
	Czech Republic	0.210
	Denmark	0.299*
	Germany	0.143
	Estonia	-0.128
	Greece	-0.244**
	Spain	-0.009
	Ireland	-0.113
	Italy	-0.470***
	Cyprus	-0.061
	Latvia	-0.283***
	Lithuania	-0.092
	Luxembourg	-0.021
	Hungary	-0.149
	Malta	-0.132
	The Netherlands	-0.096
	Austria	0.419***
	Poland	-0.086
	Portugal	-0.016
	Slovenia	-0.129
	Slovakia	0.122
	Finland	0.165
	Sweden	-0.137
	United Kingdom	0.146
	Bulgaria	0.146
	Romania	0.095
	Observations	12885
	Obs with Dep=0	2477
	Obs with Dep=1	10408
	Pseudo R-squared	0.101

Source: European Foundation's fourth EWCS and DG EMPL calculations.
Note: *, **, ***, statistically significant at 10%, 5% and 1%, respectively.

Table 7a: **Dependent variable: Q36 (job satisfaction)**

		Coefficients
Working time	**Hours usually worked per week in the main job**	-0.010***
	Working-time arrangements	
	(reference: set by the firm)	
	Arrangemets with different degrees of flexibility: i) choice between different fixed schedules; ii) flexitime; iii) entirely free	0.063*
Establishment characteristics	***Sector***	
	(reference: manufacturing)	
	Agriculture, hunting, forestry and fishing	0.213**
	Mining and quarrying	-0.172
	Electricity, gas and water	0.489***
	Construction	-0.032
	Wholesale and retail trade	-0.024
	Hotels and restaurants	-0.193**
	Transport, storage and communication	0.002
	Financial intermediation and insurance	0.161*
	Real estate, renting and business activities	0.053
	Public administration and defence, compulsory social security	0.029
	Education	0.000
	Health and social security	-0.037
	Other community, social and personal service activities	-0.052
	Enterprise size	
	(reference: medium enterprises)	
	Micro-enterprises (fewer than 10 employees)	0.121***
	Small enterprises (10–49 employees)	0.068*
	Large enterprises (250+ employees)	-0.024
Worker characteristics	***Gender***	
	(reference: male)	
	Female	0.048
	Educational attainment	
	(reference: upper secondary education)	
	Pre-primary education (ISCED 0)	-0.229
	Primary education (ISCED 1)	0.074
	Lower secondary education (ISCED 2)	0.064
	Post-secondary non-tertiary education (ISCED 4)	-0.020
	First stage of tertiary education (ISCED 5)	-0.144***
	Second stage of tertiary education (ISCED 6)	-0.187*
	Age	
	(reference: between 25 and 39 years old)	
	Less than 24 years old	0.071
	Between 40 and 54 years old	-0.016
	55 years old and over	0.084*
Job-related characteristics	***Indefinite/non indefinite***	
	(reference: indefinite contract)	
	Fixed-term contract	-0.104**
	Agency contract	-0.032
	Full-time/part-time	
	(reference: full-time contract)	
	Part-time contract	-0.071
	Job tenure	
	(reference: between 2 and 6 years of job tenure)	
	Less than one year of job tenure	0.133***
	Between 1 and 2 years of job tenure	0.136**
	Between 6 and 15 years of job tenure	0.055
	More than 15 years of job tenure	0.062
	Income level from main paid job	
	(reference: 1st and 2nd deciles)	
	3rd and 4th deciles	0.040
	5th and 6th deciles	0.308***
	7th and 8th deciles	0.249***
	9th and 10th deciles	0.431***
	Occupation	
	(reference: blue-collar high-skill)	
	White-collar high-skill	0.188***
	White-collar low-skill	0.238***
	Blue-collar low-skill	0.120**

Table 7a: **Dependent variable: Q36 (job satisfaction)**

cont'd		Coefficients
Workplace practice characteristics	***Workplace practices***	
	Job rotation	-0.030
	Teamwork	-0.032
	Training paid by employer	0.134***
	Quality norms	0.078**
	Responsability for quality control	0.094***
	Problem solving activities	-0.101***
	Monotony of tasks	-0.371***
	Complexity of tasks	-0.185***
	Learning new things at work	0.209***
	Discretion in fixing task order	0.163***
	Discretion in fixing work methods	0.091**
	Discretion in setting work pace	0.129***
	Repetitiveness of tasks (10 minutes)	-0.088***
Country	***Country fixed effects (reference: France)***	
	Belgium	0.096
	Czech Republic	0.070
	Denmark	0.435***
	Germany	0.319***
	Estonia	-0.232**
	Greece	-0.322***
	Spain	0.133
	Ireland	0.144
	Italy	-0.368***
	Cyprus	0.227*
	Latvia	-0.263***
	Lithuania	-0.230**
	Luxembourg	0.002
	Hungary	-0.055
	Malta	0.004
	The Netherlands	0.048
	Austria	0.346***
	Poland	0.230**
	Portugal	0.349***
	Slovenia	-0.245**
	Slovakia	-0.024
	Finland	0.052
	Sweden	-0.019
	United Kingdom	0.563***
	Bulgaria	-0.241***
	Romania	-0.260***
	Observations	12853
	Obs with Dep=0	2476
	Obs with Dep=1	10377
	Pseudo R-squared	0.107

Source: European Foundation's fourth EWCS and DG EMPL calculations.
Note: *, **, ***, statistically significant at 10%, 5% and 1%, respectively.

Table 8a: **Standardised data used in the PCA**

	EPL	ETP	LMP	WII	FWA	WAC	RTW	TWED	ER_1564T	ER_1564F
AT	-0.26	0.24	0.38	-0.32	0.93	0.06	0.16	0.56	0.71	0.53
BE	0.38	-0.29	1.53	-0.06	0.92	0.74	0.06	1.61	-0.56	-0.56
BG	-0.55	-1.09	-0.82	-0.58	-1.54	-1.37	1.88	-0.43	-1.45	-0.84
CZ	-0.66	-0.60	-1.09	0.84	-0.45	-0.74	0.42	0.49	0.07	-0.23
DE	0.32	-0.36	1.30	-0.99	0.52	-0.63	-0.38	1.23	0.17	0.21
DK	-0.86	1.90	2.20	0.89	1.84	1.74	0.10	0.05	1.93	1.84
EE	0.01	-0.57	-1.27	0.57	-0.29	0.67	0.20	0.13	0.00	0.54
EL	1.12	-1.03	-0.97	-0.18	-1.06	-0.92	1.12	-0.73	-0.72	-1.58
ES	1.42	-0.04	0.45	-1.64	-0.93	-1.10	-1.37	-0.53	-0.19	-0.90
FI	-0.32	1.34	0.98	1.41	0.83	1.26	-0.24	0.08	0.67	1.13
FR	1.10	-0.44	0.68	-0.52	0.96	0.62	-1.76	0.38	-0.22	-0.05
HU	-1.01	-0.80	-0.88	-0.54	-1.03	-0.66	-1.43	0.62	-1.26	-0.93
IE	-1.79	-0.39	-0.22	0.12	0.03	0.68	-0.29	-3.05	0.54	0.04
IT	0.26	-0.58	-0.25	-0.90	-0.07	-0.54	-1.32	0.43	-1.15	-1.69
LT	0.93	-0.56	-1.18	-0.32	-0.40	-0.75	-0.24	0.67	-0.30	0.18
NL	-0.05	0.58	1.21	0.93	1.46	1.50	0.60	0.37	1.48	1.11
PL	-0.30	-0.68	-0.30	0.29	-1.45	-0.52	0.87	0.54	-1.95	-1.49
PT	2.20	-0.77	0.23	-2.65	-0.47	-0.65	-0.77	-1.16	0.52	0.49
SE	0.59	2.44	0.68	1.40	1.56	2.09	-0.56	1.20	1.36	1.64
SI	0.19	0.51	-0.51	0.75	-0.29	-0.13	2.33	-0.41	0.27	0.44
SK	-0.51	-0.72	-1.02	1.43	-1.43	-1.41	0.62	-0.59	-1.13	-0.94
UK	-2.21	1.91	-1.15	0.09	0.37	0.05	-0.01	-1.45	1.23	1.05

Source: Eurostat, European Foundation, OECD and DG EMPL calculations.

Table 9a: **Standardised data used in PCA**

ER_5564T	Part_time	Temp	Temp_1524	UR	LabProd	UneTrap	Low Wage Trap1	LowWage Trap2	RedPov
-1.04	0.64	-0.41	0.01	-0.97	0.97	-0.55	-0.43	0.33	0.63
-1.04	0.73	-0.44	-0.12	0.02	1.46	0.94	0.84	-0.34	0.41
-0.78	-1.25	-0.84	-1.16	0.54	-2.17	0.28	-1.13	-0.74	-1.38
0.10	-0.97	-0.57	-0.85	-0.13	-0.91	-0.63	-0.43	0.13	0.78
0.18	0.93	0.30	1.26	0.36	0.47	0.12	0.51	0.77	0.37
1.44	0.74	-0.32	-0.40	-1.09	0.55	1.36	2.17	1.20	1.33
1.13	-0.68	-1.29	-1.15	-0.13	-1.19	-0.71	-0.87	-1.12	-0.92
-0.16	-0.96	-0.03	-0.42	0.45	0.42	-0.96	-1.42	-1.32	-1.66
-0.03	-0.23	2.92	1.71	0.27	0.26	0.53	-0.87	-1.28	-1.44
0.83	-0.10	0.60	0.52	0.02	0.60	0.28	1.23	1.51	1.07
-0.49	0.25	0.16	0.79	0.42	1.09	0.69	-0.43	0.03	0.63
-0.93	-1.05	-0.70	-0.91	-0.35	-0.71	-1.54	-0.65	-1.38	0.95
0.73	0.21	-1.15	-1.21	-1.24	1.47	0.03	0.46	0.70	-0.15
-1.07	-0.19	0.02	0.14	-0.20	0.61	-0.13	-0.37	-2.09	-1.18
0.52	-0.75	-0.89	-1.10	-0.01	-1.38	-1.42	-0.32	-0.42	-1.28
0.24	3.12	0.44	0.36	-1.12	0.73	0.78	1.56	0.77	0.63
-1.45	-0.38	1.86	1.64	2.89	-1.18	0.61	1.29	0.67	-0.61
0.63	-0.34	1.02	0.60	-0.23	-0.96	0.61	-1.20	0.70	-1.04
2.32	1.00	0.50	1.10	-0.29	0.56	1.11	0.84	1.27	1.80
-1.14	-0.56	0.70	1.50	-0.57	-0.44	1.60	-0.65	0.60	0.87
-1.17	-1.21	-0.99	-1.15	2.45	-0.96	-2.53	-1.04	-0.95	0.07
1.20	1.07	-0.89	-1.17	-1.09	0.68	-0.46	0.90	0.97	0.13

Source: Eurostat, European Foundation, OECD and DG EMPL calculations.

Table 10a: **Standardised data used in PCA**

LTUR	ALMP	PLMP	Avg_tenure	Work-life balance	Health risks	Health effects	Job satisfaction	R&D	Patents
-0.97	-0.10	0.57	-1.14	1.79	0.74	0.66	1.14	0.90	0.83
0.20	1.05	1.66	-1.20	0.29	1.02	1.02	1.19	0.31	0.36
0.80	-0.15	-1.07	1.62	-0.80	-1.28	-0.37	-1.09	-1.13	-0.94
0.12	-1.07	-1.04	0.06	-0.21	0.51	0.20	-0.43	-0.13	-0.84
0.42	0.36	1.64	-1.43	0.87	1.31	1.36	0.65	1.06	1.91
-1.05	2.73	1.85	-0.18	1.66	0.84	0.14	1.97	0.98	1.21
0.12	-1.29	-1.19	-0.11	0.04	-0.92	-1.11	-0.76	-0.65	-0.84
0.46	-1.25	-0.79	-0.37	-2.38	-1.60	-1.57	-0.80	-1.01	-0.88
-0.63	0.26	0.50	2.10	-0.37	-0.13	0.33	-0.58	-0.46	-0.70
-0.63	0.64	1.07	-0.73	0.90	1.06	0.23	-0.05	2.12	1.86
0.04	0.50	0.72	-1.53	0.79	0.86	1.13	0.35	0.64	0.40
-0.26	-0.86	-0.85	0.43	-0.95	-0.02	-0.25	-0.95	-0.65	-0.81
-0.90	-0.03	-0.29	0.37	0.27	1.10	1.13	0.78	-0.32	-0.27
0.01	-0.09	-0.31	-0.85	-0.93	0.17	0.06	-1.05	-0.48	-0.17
0.16	-1.00	-1.19	0.39	-0.67	-1.32	-0.90	-1.25	-0.85	-0.93
-0.75	1.05	1.22	0.28	0.42	0.76	1.34	0.78	0.26	1.29
2.38	-0.39	-0.25	1.92	-1.40	-1.41	-1.78	-0.34	-1.06	-0.95
-0.07	0.07	0.29	0.00	0.16	0.15	0.22	-0.04	-0.80	-0.91
-1.01	1.76	0.18	-0.77	0.70	-1.09	-0.84	0.73	2.53	1.66
-0.29	-0.15	-0.63	-0.47	-0.71	-1.45	-1.51	-1.36	-0.35	-0.52
2.94	-0.93	-1.00	0.64	-0.67	-0.56	-0.99	-0.87	-1.12	-0.91
-1.09	-1.09	-1.11	0.96	1.17	1.28	1.50	1.97	0.21	0.14

Source: Eurostat, European Foundation, OECD and DG EMPL calculations.

Table 11a: **Standardised data used in PCA**

Inform_tec	IT_exports	LT_tenure	School_leavers	>=Upper_secondary	VT_employer	HRST
0.36	0.40	0.31	-0.58	0.51	0.90	0.09
0.25	-0.70	1.06	-0.08	-0.44	1.06	1.09
-1.02	-1.25	0.17	0.80	-0.02	-2.01	-0.93
0.25	0.26	-0.24	-0.91	1.12	0.17	-0.49
0.48	0.40	0.41	0.02	0.67	-0.18	0.63
0.82	0.13	-1.29	-0.65	0.53	0.02	1.39
0.25	-0.29	-1.86	0.05	1.06	0.16	0.90
-1.71	-0.70	1.68	-0.04	-0.84	-1.18	-1.21
-1.14	-0.84	-0.64	2.16	-1.59	-0.83	0.06
1.17	0.81	0.08	-0.55	0.39	2.23	1.33
0.82	1.09	1.05	-0.13	-0.42	-0.50	0.20
-0.33	1.37	-0.51	-0.17	0.23	-1.28	-0.91
-0.79	2.33	-1.55	-0.17	-0.50	0.79	0.13
-0.91	-0.70	1.01	1.04	-1.47	-0.75	-0.75
-1.25	-1.25	-1.35	-0.56	0.97	-0.66	-0.05
1.40	0.95	0.10	0.00	-0.07	0.13	1.55
-0.56	-1.25	0.67	-1.02	0.78	-0.06	-1.20
-0.56	-0.56	1.23	3.14	-3.03	-1.12	-2.30
1.97	0.26	0.04	-0.24	0.70	1.73	1.21
-0.79	-0.98	1.33	-1.17	0.49	0.21	-0.10
-0.45	-0.98	-0.40	-0.99	0.99	0.18	-1.04
1.74	1.50	-1.29	0.05	-0.07	1.00	0.40

Source: Eurostat, European Foundation, OECD and DG EMPL calculations.

Table 12a: **Description of the data**

Symbol	Variable	Year	Source	Notes
EPL	Employment protection legislation indicator	2003	OECD	EU22(1)/ BG EE LT SI.
EPL	Employment protection legislation indicator	2002-2003	ILO	BG EE LT SI
ETP	Percentage of population aged 25-64 participating in education or training programmes	2005	EUROSTAT	
LMP	Expenditure on labour market policies as a percentage of GDP	2005	EUROSTAT	SI based on an ILO estimate
WII	First factor of the CatPCA on internal flexibility	2005	EWCS	
FWA	Second factor of the CatPCA on internal flexibility	2005	EWCS	
WAC	First factor of the CatPCA on functional flexibility	2005	EWCS	
RTW	Second factor of the CatPCA on functional flexibility	2005	EWCS	
TWED	Tax wedge on labour cost for a single person without children	2005	EUROSTAT	
ER_1564T	Total employment rate (aged 15-64)	2005	EUROSTAT	
ER_1564F	Female employment rate (aged 15-64)	2005	EUROSTAT	
ER_5564T	Older workers employment rate (aged 55-64)	2005	EUROSTAT	
Part_time	Part-time employment rate	2005	EUROSTAT	
Temp	Temporary employment rate	2005	EUROSTAT	
Temp_1524	Temporary employment rate (aged 15-24)	2005	EUROSTAT	
UR	Unemployment rate	2005	EUROSTAT	
LabProd	Labour productivity per person employed GDP in PPS per person employed relative to EU-25 (EU-25=100)	2005	EUROSTAT	
UneTrap	Unemployment trap for a single person without children (percentage of gross earnings which is 'taxed away' when an unemployed person returns to employment)	2005	EUROSTAT	
Low Wage Trap1	Low wage trap for a single person without children (percentage of gross earnings which is 'taxed away' when gross earnings increase from 33% to 67% of average wage)	2005	EUROSTAT	
LowWageTrap2	Low wage trap for one earner couple with two children (percentage of gross earnings which is taxed away when gross earnings increase from 33% to 67% of average wage)	2005	EUROSTAT	
RedPov	The difference between the risk of poverty before and after social transfers divided by the former	2005	EUROSTAT	BG 2002
LTUR	Long-term unemployment rate	2005	EUROSTAT	
ALMP	Active labour market policies	2005	EUROSTAT	SI based on estimates
PLMP	Passive labour market policies	2005	EUROSTAT	SI based on estimates
Avg_tenure	Average tenure: the first factor of the CatPCA on the job tenure indicator	2005	EWCS	
Work-life balance	Do your working hours fit in with your family or social commitments outside work? (Q18) (CatPCA quantifications)	2005	EWCS	
Health risks	Do you think your health or safety is at risk because of your work ? (Q32) (CatPCA quantifications)	2005	EWCS	
Health effects	Does your work affect your health, or not? (Q33) (CatPCA quantifications)	2005	EWCS	
Job satisfaction	On the whole, are you very satisfied, satisfied, not very satisfied or not at all satisfied with the conditions in your main paid job? (Q36) (CatPCA quantifications)	2005	EWCS	
R&D	Gross domestic expenditure on R&D (GERD) - Percentage of GDP	2005	EUROSTAT	
Patents	Patent applications to the European Patent Office (EPO) - Number of applications per million inhabitants	2005	EUROSTAT	
Inform_tec	Expenditure on Information Technology as a percentage of GDP	2005	EUROSTAT	
IT_exports	Exports of high technology products as a share of total exports	2005	EUROSTAT	
LT_tenure	Long term tenure: percentage of employees in the same job for more than 10 years	2005	EUROSTAT	
School_leavers	Early school-leavers (percentage of people aged 18-24 with only lower secondary education not in education or training)	2005	EUROSTAT	
>=Upper_secondary	Percentage of the population aged 25 to 64 having completed at least upper secondary education	2005	EUROSTAT	
VT_employer	Training paid or provided for by your employer (Q28A) (percentages over total)	2005	EWCS	
HRST	Human resources in science and technology (HRST) as a share of the economically active population in the age group 25-64.	2005	EUROSTAT	
(1) EU22: AT BE BG CZ DE DK EE EL ES FI FR HU IE IT LT NL PL PT SE SI SK UK.				

Chapter 4

STRENGTHENING CONTINUING VOCATIONAL TRAINING AT THE INITIATIVE OF THE ENTERPRISE

1. INTRODUCTION

Education and training have a key role in responding to the challenges that are facing European economies: globalisation, an ageing population, rapid technical progress and skill needs. Such a central role is reflected in the European Union's agenda, and in the revised Lisbon Strategy and its integrated guidelines for growth and jobs 2005–2008. It calls for development and improved investment in human capital and for the adaptation of education and training systems in response to these challenges. The Commission's 2001 Communication *Making a European area of lifelong learning a reality* and the 2002 Council Resolution on lifelong learning stress the importance of lifelong learning strategies in that respect.

Vocational education and training is an integral part of these strategies. It plays a key role in human capital accumulation for the achievement of economic growth, employment and social objectives, as emphasised in the 2006 *Helsinki Communiqué* of the European Ministers of Vocational Education and Training, the European Social Partners and the European Commission on *Enhanced European cooperation in vocational education and training*. Vocational education and training is an essential tool in providing citizens with the skills needed in the labour market and more broadly in the knowledge-based society. European vocational and educational policies should promote high-quality initial vocational education and training, and create conditions to improve the skills of those in the labour force through continuing vocational education and training. It has a dual role in contributing towards competitiveness and enhancing social cohesion. Vocational education and training should address all sections of the population, offering attractive and challenging pathways for those with high potential, while at the same time addressing those at risk of educational disadvantages and labour market exclusion. In short, vocational education and training should be both equitable and efficient as highlighted by the Commission's 2006 Communication *Efficiency and equity in European education and training systems*.

The Commission's recent 2006 Communication *Adult learning: It is never too late to learn* puts the accent firmly on adult learning, recognising that it is a vital component of lifelong learning. Adult learning – defined as all forms of learning undertaken by adults after having left initial education and training – is increasingly recognised in Members States' National Reform Programmes. However, with some exceptions, implementation remains weak. Most education and training systems are still largely focused on the education and training of young people and limited progress has been made in changing systems to mirror the need for 'lifelong' learning. For instance, an additional 4 million adults would need to participate in lifelong learning in order to achieve the participation rate of the benchmark agreed by Member States in the framework of the 'Education and Training 2010' process.

Against this background the chapter highlights the essential role of continuing vocational education and training in the European Union as an integral part of adult learning. Continuing vocational training (CVT) can be financed by individuals, public authorities or enterprises. This chapter focuses only on CVT at the initiative of the enterprise, defined as all training measures or activities, which the enterprise finances wholly or partly for their employees who have an employment contract (European Commission, 2002).

There are at least four good reasons which call for the strengthening of CVT in the context of the Lisbon Strategy for Growth and Jobs. These reasons may also constitute the objectives that policies targeted towards CVT could pursue.

Firstly, policies can reduce social exclusion and income inequality, caused by insufficient human capital, by raising the skills and the employability of at-risk workers.

Secondly, these policies can be a means to keep older workers, who entered the labour force with low levels of schooling, active in the labour market, thereby sustaining our social protection systems.

Thirdly, policies targeted towards CVT are a crucial ingredient for the implementation of flexicurity policies as presented in the recently adopted Commission's 2007 Communication *Towards common principles of flexicurity: More and better jobs through flexibility and security* by making internal labour markets more dynamic in the context of permanent economic changes, and workers' skills more transferable among employers, while reinforcing the perceptions of employment security.

Finally, these policies can help ensure that workers acquire the skills neces-

sary to learn and innovate in a new era characterised by rapid change and learning, making European enterprises more competitive in the knowledge-based economy.

The structure of this chapter is as follows. Section 2 shows the importance of CVT in the changing economic context, by describing the long-term trends and structural changes that have affected European economies over past decades. Section 3 discusses efficiency and equity considerations in CVT. It explains the reasons why the training market may fail to induce an efficient and equitable investment in CVT justifying the implementation of some forms of government intervention. Section 4 presents the variety of supply-side policies that may remedy these problems by securing both investment in CVT and the benefits from such an activity.

2. THE IMPORTANCE OF CONTINUING VOCATIONAL TRAINING

The issue of continuing vocational training (Box 1) in the European economies appears particularly important given the long-term trends and implications of the structural changes that have characterised modern economies over past decades (Boyer, 2000). The latter have indeed been marked by a transition from a Fordist model of production based on mass production methods to a post-Fordist productive model driven by quality and innovation. Moreover, European economies have experienced a massive employment shift from manufacturing to the services sector. Finally, among younger generations, the education attainment level of the workforce in these economies has significantly risen. These long-term trends and structural changes have pushed up the need for CVT in order to ensure that workers who entered the workforce a few decades ago with low educational attainment levels have the skills required to fully participate in the production process of today's economy. In addition, these trends and structural changes have put an increasing pressure on the new generations of workers to continuously acquire the skills necessary to learn and innovate in a new era characterised by rapid change.

Given these long-term trends and the characteristics of the structural changes that have affected modern economies over past decades, it becomes understandable that CVT is particularly important for both workers and firms. Besides, a growing empirical literature has intended to quantify the importance of CVT for both employees and employers through the estimation of its economic returns. Despite many conceptual and methodological problems, many studies show that CVT has economic benefits for employees. In addition to these benefits that are of private nature, continuing vocational training is also likely to have benefits for the society.

2.1. Continuing vocational training in a changing economy

2.1.1. The emergence of a new production model

After the end of the Second World War until the beginning of the 1970s, Western EU Member States experienced a period of sustained economic development and rapid productivity growth characterised by weak short-term fluctuations. While a few countries such as the United States were already at the technology frontier or close to it, relying on the results of scientific and applied research to develop new products and processes, Western EU Member States were in a situation of catching-up, adopting the characteristics of the Fordist model of production (Boyer and Didier, 1998). The Fordist model of production (Figure 1) has four principal objectives.

Firstly, it aims at rationalising the production process by means of mechanisation.

The second objective is to set clear hierarchical coordination among the key functions of the firm, namely design, production and sales.

The third objective of the Fordist model of production is the maximisation of economies of scale in order to minimise the price of products and therefore to stimulate mass consumption. In such a model, firms compete essentially on the basis of price.

Finally, only the small firms can respond to the possible variations in the demand; the production of big firms is essentially dedicated to the large and stable markets requiring a standardised product.

In order to catch up rapidly and at low cost, Western EU Member States assimilated these management principles through the absorption of new technologies incorporated in single purpose production equipment, but also through the implementation of specific methods of work organisation (Boyer and Didier, 1998).

These management principles called for a particular organisation of work within the firm. This organisation in the Fordist model of production was characterised by a high degree of centralising decision making within firms and a polarisation of skills in order to minimise the need for highly skilled, versatile and adaptable workers while ensuring a sustained growth in productivity levels. There was a clear separation between manual and non-manual labour. Furthermore, in this process of mass production where firms exclusively competed on the basis of price, a high degree of specialisation of workers' tasks was seen as a precondition to achieving cost reduction in order to realise large economies of scale and gain new market shares. This extreme fragmentation of tasks led, inevitably, to the deskilling of jobs (Boyer, 1995; Lundvall and Johnson,

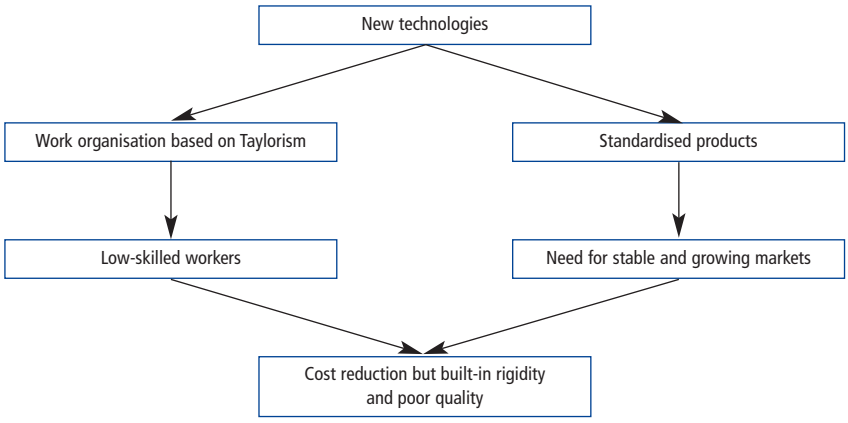
Box 1 – What do we mean by continuing vocational training at the initiative of the enterprise?

There is a profusion of definitions associated with the concept of continuing vocational training. The latter is often referred to under different terms: employer training, company training, workplace training, employer-provided training, enterprise-based training, work-related training, private sector training, etc. In order to avoid any confusion, it is worthwhile to define this concept.

Vocational training covers both initial vocational training and continuing vocational training. Here we are addressing only issues related to CVT, which, moreover, may be financed by individuals, public authorities or enterprises. The chapter subject is CVT financed by enterprises – what we call 'continuing vocational training at the initiative of the enterprise'. Continuing vocational training is defined as 'training measures or activities, which the enterprise finances wholly or partly for their employees who have an employment contract' (European Commission, 2002).

This definition calls for a few remarks. Firstly, the primary objective of CVT at the initiative of the enterprise is the acquisition of new skills or the development of existing skills by employees having an employment contract. Consequently, measures for training apprentices or unemployed persons are not considered in this chapter. Secondly, the financing of CVT in total or partly by enterprises can be direct or indirect. Part financing could include the use of work time for the training activity. Thirdly, enterprises may provide CVT for their employees through external as well as internal courses. Finally, CVT at the initiative of the enterprise is different from other forms of training that cannot be distinguished from work, such as on-the-job training (i.e. training carried out in the individual's work setting, using the job as the medium for learning). The latter falls into the category non-formal and informal learning, which is growing in importance, as learning becomes more embedded in work, given the nature of the modern workplace and the need for constant change, and the development of the learning organisation. However, due to the heterogeneity of the data on non-formal and informal learning, this is not covered in the scope of this chapter.

Figure 1: **The Fordist model of production**



Source: based on Boyer (1995).

1994) but a relative social peace was ensured in this model by a system of employment relations that, in particular, institutionalised the distribution of productivity gains between the workers and the firm.

This institutionalised distribution of productivity gains played an essential role in the Fordist model of production. Not only did it contribute to achieving a relative social peace in the workplace, but it also fuelled the economic performance of the model itself, as shown by the sustained economic growth of the post-war period. The period was indeed remarkable for two reasons (Juillard, 1995). On the one hand, the growth in productivity was proportional to the increase in real wages. The constant increase in real wages contributed to a continuous expansion of demand for consumer goods and subsequently to the development of mass production in Western EU Member States, following the Fordist productive model. On the other hand, the constancy of the labour income share had, parallel to it, the constancy of the capital income share, which allowed firms to self-finance their investments for expansion and rationalisation/modernisation.

Despite the apparent success of the Fordist model of production in Western Europe after World War II, the economic situation started to deteriorate at the end of the 1960s and the beginning of the 1970s. During that period, the application of the management principles of Fordism started to be counterproductive while the strengths of the system of employment relations became weaknesses and the Fordist organisation proved to be largely ineffective following a series of macro-economic changes (Boyer and Durand, 1997; Boyer and Didier, 1998; Lundvall and Johnson, 1994). Among the many factors that called into question the apparent pre-eminence of this model of production in industrialised economies in the 1970s were the following:

- Demand became more uncertain in both volume and pattern. Overcapacity rapidly appeared in

many industries and the mass production process was too rigid to satisfy an increasing demand for vertically and horizontally differentiated products. This model was all the more inadequate to satisfy the new needs, which led to an emergence of problems with quality.

- The growing internationalisation of trade exacerbated the problems associated with the rising uncertainty of demand because, in many cases, markets were no longer domestic but worldwide and thereby more difficult to control. This increasing internationalisation also sharpened competition among firms.

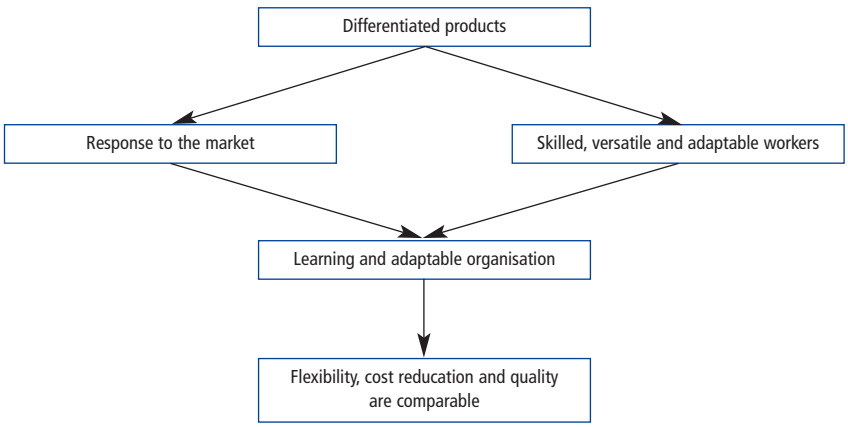
- Systematic incremental innovation started to become a prerequisite for firms to survive in more competitive and rapidly changing environments (Lundvall and Johnson, 1994). However, many Western EU Member States did not develop active research and development policies during the years of Fordism, except for a few mission-oriented sectors such as defence (Boyer, 1995). In addition, the Fordist productive model led to the deskilling of workers while innovation required a well-educated, versatile and adaptable workforce. Moreover, the organisation of the large and vertically integrated firms under the Fordist era appeared to be too rigid to favour systemic incremental innovation that required strong interactions among many different actors, within and outside their boundaries.

- Lastly, the rise of information and communication technologies (ICT) rapidly made obsolete a model of mass production based on single-purpose production equipment by opening the way for more flexible production processes, capable of responding rapidly to changes in demand, in terms of both volume and patterns. Moreover, the methods of work organisation in the Fordist-type firm were not adapted for the use of these technologies. Numerous studies have indeed related the changes in methods of work organisation – leading, in particular, to flatter structures and the upskilling of skills – to the use of ICT (see, European Commission, 2005a for a survey on this).

These changes in the economic context of the post-war period in the advanced capitalist countries implied a transition from a Fordist-type model of production to a post-Fordist productive model[1] (Figure 2). In the post-Fordist production model, production was differentiated and quality-oriented in order to satisfy an increasingly diversified demand. Consequently, single-purpose production equipment was replaced by new equipment allowing for more flexibility in the production process in order to maximise economies of scope. Greater efforts were devoted towards improving the quality of products, through the improvement of existing products and the development of new products, both resulting from innovation.

New methods of work organisation accompanied these changes in the production process. The differences in the way work was organised in the Fordist firm and the post-Fordist firm could be demonstrated by comparing the typical American firm with the typical Japanese firm in the 1980s (Aoki, 1986). In the typical American firms, emblematic of the Fordist model, the jobs of workers were specified according to a detailed job classification scheme defined in accordance with the trade unions. By contrast, in the Japanese firms, workers' jobs were not specified exhaustively and workers rotated among several jobs. A second key difference concerned the decision process. While in the typical American firm decisions were hierarchically organised, the typical Japanese approach was marked by a flatter structure in order to encourage horizontal coordination among workers to allow for rapid problem solving and learning because the environment was more uncertain. Finally, the typical Japan-

Figure 2: **The post-Fordist model of production**



Source: based on Boyer (1995).

1 Here we refer only to general trends. Economists such as Storper and Salais (1994) argue that there was a durable diversity of 'worlds of production', i.e. models of production, rather than a single new alternative model of production. The same goes for the forms of work organisation since there was not a full transition towards a universal model of work organisation (European Commission, 2007a).

ese firm was less integrated than its American counterpart. Firms were organised around networks. Workers were encouraged to participate in a process of interactive learning taking place at a great number of interfaces, not only inside but also outside the firms (Lundvall and Johnson, 1994).

The transition from a Fordist to a post-Fordist productive model therefore put human capital at the centre of the firm. While low-skilled and highly specialised workers were the archetypal workers of the Fordist firm, high-skilled, versatile and adaptable workers become essential elements of the post-Fordist one where competition is based on innovation and quality (Boyer, 1995; Lindbeck and Snower, 2000).

Having a good supply of qualified and adaptable workers through the education system is thus crucial in the context of this new model of production. It is nevertheless insufficient and needs to be supplemented by CVT for two reasons.

On one hand, technological and organisational developments in the process of production have made the skills of workers that entered the workforce during the Fordist era economically obsolete because these developments have changed the skills demanded for many specific jobs.[2] Several empirical studies have shown that the introduction of new methods of work organisation within the firms, as well as the acceleration of technical change over past decades, has indeed led to an increased need for upskilling the workforce (Capelli et al., 1997; European Commission, 2005b). For this reason, the need for CVT has pushed up the agenda in order to upgrade the skills of these workers.

On the other hand, a continual upgrading of skills – not only for the workers that entered the labour force a few decades ago but also for the relatively new entrants – has become a necessity in the post-Fordist era due to a rapid change in economic conditions and high requirements for rapid learning and innovation (Boyer, 1995; Lundvall and Johnson, 1994). A number of empirical studies have shown that firms which adopt new forms of work organisation, encouraging in particular innovation, autonomy, learning and quality, often tend to provide higher training to their employees (Osterman, 1995; Lynch and Black, 1998; Whitfield, 2000; Behaghel and Greenan, 2005; Zaroma, 2006; Arundel et al., 2006). In order to gauge the effects of the introduction of new forms of work organisation on the likelihood of accessing to training in the EU Member States, this chapter use binary probit regression.

Box 2 – Probit model of the determinants of continuing vocational training at the initiative of enterprise

A large body of this chapter discusses the determinants of vocational training at the initiative of the enterprise. Bivariate plots or cross-tabulations are used in order to examine the participation of employees in CVT. In that respect, simple bivariate plots or cross-tabulations of CVT with different observable characteristics, such as gender, age or level of education, can be used. However, bivariate plots or simple regressions have a major drawback since they ignore the impact of another dependent variable on the independent variable. This is unsatisfactory because frequently more than one factor matters. Take for instance, the relationship between participation in CVT and age. Simple bivariate cross-tabulations of age and training may lead to misleading conclusions if age is correlated with other factors (i.e. level of schooling) that are also associated with the likelihood of workers participating in training (i.e. the omitted variable bias).

In order to disentangle the relative importance of factors that may be related to participation in training, multivariate regression techniques are typically used. Binary probit regressions are standard when the dependent variable is a dummy variable (i.e. 0 or 1), as this is the case for participation in training paid for or provided by their employer. Bivariate probit regressions are not used because of the very low number of employees that pay for training themselves, as reported in the fourth *European Working Conditions Survey* (see below). In this chapter, we characterise the empirical relationship between participation of employees to CVT and other characteristics (i.e. workers', establishment, job-related and institutional characteristics) with the following two probit specifications:

(1) Prob $\{T_{2005}=1\} = \Phi(\alpha_c + Z_1'\beta_1)$

(2) Prob $\{T_{2005}=1\} = \Phi(Z_2'\beta_2)$

Where T_{2005} is a dummy equal to 1 if training paid for or provided by the employer occurred during the 12 months preceding the survey (2005) and 0 otherwise the reference year, α_c are country effects, Z_1 and Z_2 are vectors of explanatory variables respectively, workers', establishment and job-related characteristics; workers', establishment,

2 Two main types of skills obsolescence can be distinguished: technical and economic skills obsolescence (Rosen, 1975; de Grip and van Loo, 2002). Technical skills obsolescence is caused by changes that stem from workers themselves (e.g. illness, ageing) while economic skills obsolescence is due to changes in the job or work environment.

job-related and institutional characteristics), β_1 and β_2 are vectors of parameters and Φ is the standard normal distribution. In these two specifications, only employees with an indefinite contract or a fixed-term contract are considered in each regression. Employees who have a temporary employment agency contract, apprenticeship or other training scheme are excluded.

Most of the variables included in the vector Z are drawn from the fourth *European Working Conditions Survey* (Parent-Thirion et al., 2007). The dependant variable in the two probit specifications corresponds to question 28A: 'Over the past 12 months, have you undergone training paid for or provided by your employer, or by yourself if you are self-employed?'. The survey is carried out simultaneously by the European Foundation for the Improvement of Living and Working Conditions in all EU Member States. It only covers individuals in employment. The survey questionnaire asks more than 100 questions, including questions on household characteristics, time use, work organisation, perceived health hazards and access to training. The survey methodology is based on a multi-stage random sampling method called 'random-walk' involving face-to-face interviews conducted at the respondent's principal residence. This survey was carried out in each of the 27 EU Member States between 19 September and 30 November 2005. Approximately 30 000 workers were interviewed. The survey questionnaire was directed at approximately 1 000 workers per country with the exceptions of Estonia, Cyprus, Luxembourg, Malta and Slovenia which had only 600 respondents each.

Table 1 reports on the estimated change in the probability of undergoing training, paid for or provided by the employer, associated with each specific characteristic for an employee (those with a fixed-term or indefinite contract) otherwise identical to the reference employee. The reference employee is a French employee working in a medium-sized enterprise (50–249 employees) whose principal activity is in the manufacturing sector. This employee is male, blue-collar and highly skilled with upper secondary education. He has an indefinite and full-time contract and has been in his company for between two and six years. He is aged between 25 and 39 years old and has a low income.

Table 1 - Probit estimates of the determinants of continuing vocational training at the initiative of enterprise

		First probit model		Second probit model	
Institutional characteristics	**Lifelong learning**				
	Participation in lifelong leaning			0.247	***
	Active labour market policies				
	Expenditures on ALMPs (in percentage of GDP)			-0.158	**
	Wage compression				
	90–50 wage differential			-0.166	***
	50–10 wage differential			0.046	
Establishment characteristics	**Sector (reference: manufacturing)**				
	Agriculture, hunting, forestry, and fishing	0.083		0.036	
	Mining and quarrying	0.514	***	0.381	
	Electricity, gas, and water	0.315	***	0.251	
	Construction	-0.106	*	-0.077	
	Wholesale and retail trade	0.029		0.008	
	Hotels and restaurants	-0.321	***	-0.389	***
	Transport, storage and communication	0.227	***	0.198	***
	Financial intermediation and insurance	0.398	***	0.363	***
	Real estate, renting and business activities	-0.022		-0.007	
	Public administration and defence, compulsory social security	0.333	***	0.365	***
	Education	0.201	***	0.173	***
	Health and social security	0.203	***	0.194	***
	Other community, social and personal service activities	0.227	***	0.140	
	Enterprise size (reference: medium enterprises)				
	Micro-enterprise (fewer than 10 employees)	-0.195	***	-0.181	***
	Small enterprises (10–49 employees)	-0.135	***	-0.126	***
	Large enterprises (250+ employees)	0.030		0.030	
Worker characteristics	**Gender (reference: male)**				
	Female	0.050	***	0.037	
	Educational attainment (reference: upper secondary education)				
	Pre-primary education (ISCED 0)	-1.336	***	-1.337	***
	Primary education (ISCED 1)	-0.196	**	-0.159	*
	Lower secondary education (ISCED 2)	-0.129	***	-0.175	*
	Post-secondary non-tertiary education (ISCED 4)	0.100	**	0.102	**
	First stage of tertiary education (ISCED 5)	0.163	***	0.174	***
	Second stage of tertiary education (ISCED 6)	0.077		0.144	
	Age (reference: between 25 and 39 years old)				
	Less than 24 years old	-0.053		-0.015	
	Between 40 and 54 years old	-0.018		-0.016	
	55 years old and over	-0.211	***	-0.270	***

cont'd		First probit model		Second probit model	
Job-related characteristics	**Indefinite/non indefinite (reference: indefinite contract)**				
	Fixed term contract	-0.001		-0.007	
	Full-time/part-time (reference: full-time contract)				
	Part-time contract	0.020		0.040	
	Job tenure (reference: between 2 and 6 years of job tenure)				
	Less than one year of job tenure	-0.183	***	-0.193	***
	Between 1 and 2 years of job tenure	-0.029		-0.018	
	Between 6 and 15 years of job tenure	-0.046		-0.019	
	More than 15 years of job tenure	-0.008		0.018	
	Income level (reference: low income level)				
	Lowest income level	-0.150	***	-0.188	***
	High income level	0.105	***	0.089	**
	Highest income level	0.231	***	0.202	***
	Occupation (reference: blue-collar high-skill)				
	White-collar high-skill	0.428	***	0.436	***
	White-collar low-skill	0.323	***	0.363	***
	Blue-collar low-skill	0.202	***	0.267	***
Workplace practices characteristics	**Workplace practices**				
	Job rotation	0.133	***	0.120	***
	Team work	0.157	***	0.166	***
	Quality norms	0.066	**	0.042	
	Responsability for quality control	0.031		0.086	***
	Problem solving activities	0.059		0.047	
	Monotony of tasks	-0.079	***	-0.068	**
	Complexity of tasks	0.092	***	0.060	*
	Learning new things in work	0.419	***	0.459	***
	Discretion in fixing work methods	0.080	**	0.092	***
	Discretion in setting work pace	0.009		0.010	
	Repetitiveness of tasks	-0.006		-0.028	
Country	**Country (reference: France)**				
	Belgium	0.355	***		
	Czech Republic	0.015			
	Denmark	0.190	**		
	Germany	-0.120			
	Estonia	0.159			
	Greece	-0.326	***		
	Spain	-0.188	*		
	Ireland	0.503	***		
	Italy	-0.075			
	Cyprus	-0.029			
	Latvia	-0.155	*		
	Lithuania	0.172	*		
	Luxembourg	0.197	**		
	Hungary	-0.180	**		
	Malta	0.197	*		
	The Netherlands	-0.050			
	Austria	0.454	***		
	Poland	0.103			
	Portugal	-0.228	**		
	Slovenia	0.322	***		
	Slovakia	0.300	***		
	Finland	0.631	***		
	Sweden	0.575	***		
	United Kingdom	0.457	***		
	Bulgaria	-0.835	***		
	Romania	-0.265	***		
	Observations	13025		11162	
	Pseudo R-squared	0.174		0.160	

Source: DG EMPL estimates based on the fourth *European Working Conditions Survey*.
***, **, *, statistically significant at 1%, 5% and 10% levels respectively.
Note: Each probit model estimates change in the probability of undergoing training, paid for or provided by the employer, associated with each specific characteristic for an employee (on a fixed-term or indefinite contract) otherwise identical to the reference employee. The sample population is employees in the EU-27 interviewed in the framework of the fourth *European Working Conditions Survey* for the first probit model. For the second probit model, the sample population is employees in all the EU-27 expect Romania, Bulgaria, Estonia, Lithuania, Malta and Slovakia interviewed in the framework of the fourth *European Working Conditions Survey*. The reference individual is indicated in the table. The dependant variable is the participation in training paid for or provided by employers over the past 12 months at the time of the interview. Only employees with an indefinite contract or a fixed-term contract are considered in each regression. Employees who have a temporary employment agency contract or apprenticeship or other training scheme are excluded.

Results of the first probit model on the basis of the fourth *European Working Conditions Survey* data (Box 2) indicate that the probability of participating in CVT is higher for employees with jobs involving job rotation, teamwork, meeting precise quality standards, complex tasks and learning new things on their own, and also for employees able to choose or change their methods of work. On the contrary, employees with jobs involving monotonous tasks are, all things being equal, less likely to participate in CVT (Table 1, see page 204).

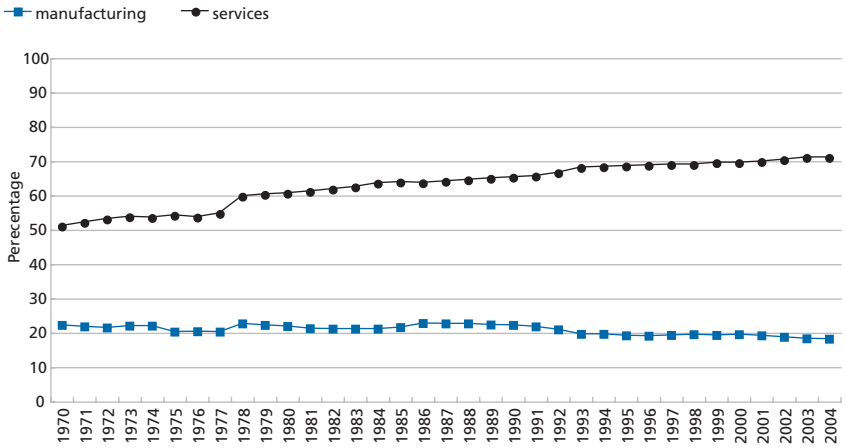
In that perspective, CVT allows for the development of efficient internal labour markets within firms, complementary to external labour markets, to respond to changes in economic conditions. Caroli and Walkowiak (2007) show that skill upgrading through CVT following technological changes takes place in France, mostly through internal labour market adjustments, without relying heavily on support from the external market. The importance of internal labour markets is acknowledged by the European Commission. The recently adopted Commission's 2007 Communication *Towards common principles of flexicurity: More and better jobs through flexibility and security* recognises that flexibility goes beyond the ease or difficulty of hiring and firing employees (i.e. external flexibility) and can also be provided within the firm, either via flexible working-time arrangements (i.e. internal flexibility) or high-quality organisation of work which is capable of mastering new skills and productive needs (i.e. functional flexibility), as is the case in firms that adopt work practices encouraging innovation, autonomy, learning and quality.[3] However, there are indications that such new work practices have also resulted in an increased demand from employers for broader-based forms of skills, often referred under the term 'generic skills'[4], alongside more traditional technical skills (Griffiths and Guile, 2004).

2.1.2. The employment shift towards services

Not only have Western European economies been affected by the erosion of the Fordist model at the beginning of the 1970s, but they have also experienced major sectoral changes. In particular, there has been a massive employment shift away from manufacturing and towards services.

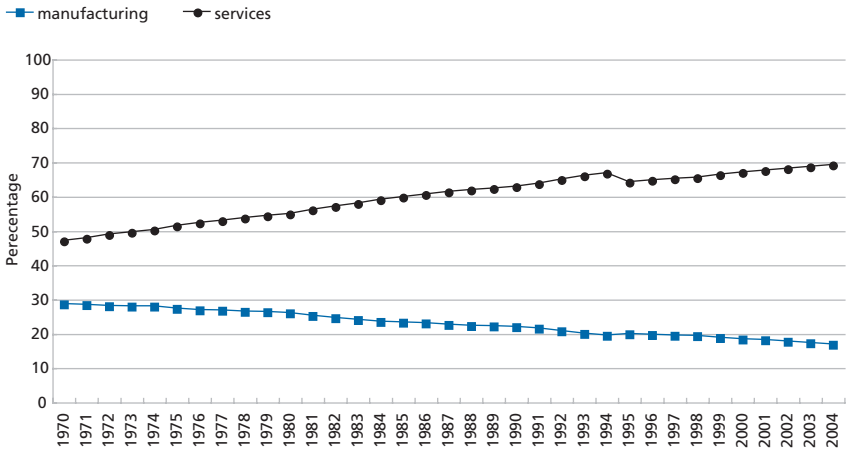
When measured as a percentage of the total value added or employment, the decline of manufacturing and the growth of services in Western European economies over the past decades, and subsequently in the Central and Eastern European economies, are evident. As shown in chart 1, the value added from EU manufacturing industries accounted for roughly 22% of total economic activity in 1970. By 2004, manufacturing's share of EU output had shrunk to just over 18%. Over the past 30 years, the number of people engaged in manufacturing in relation to the total economy has also fallen, from a high of over 29% in 1970 to fewer

Chart 1: **Long-term trends in value added in the EU by sector, 1970–2004**



Source: EU KLEMS database, March 2007, http://www.euklems.net
Note: EU-15: 1970–1994; EU-25: 1995–2004.

Chart 2: **Long-term trends in the number of persons employed in the European Union by sector, 1970–2004**



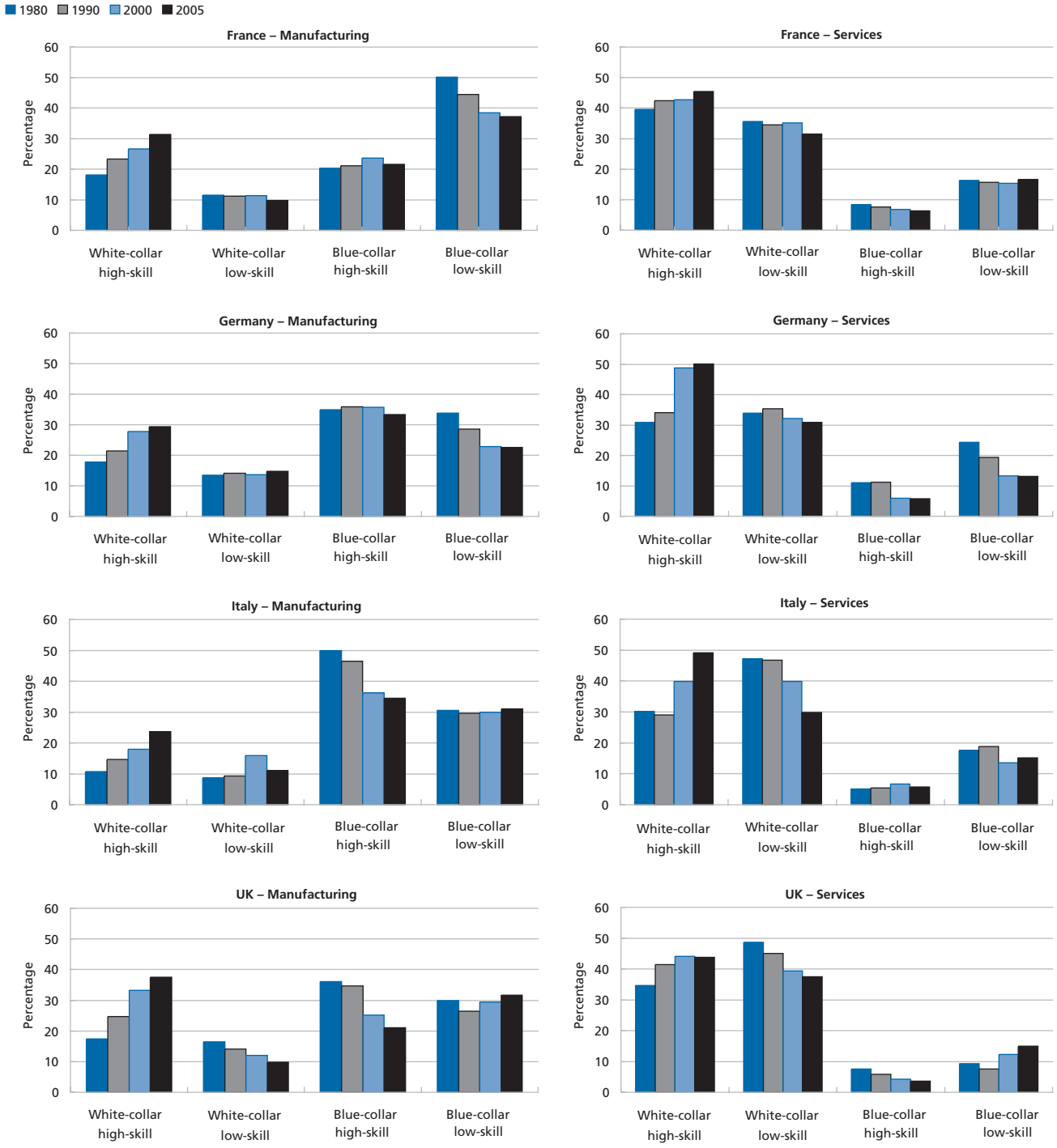
Source: EU KLEMS database, March 2007, http://www.euklems.net
Note: EU-15: 1970–1994; EU-25: 1995–2004.

3 See also European Commission (2007a).

4 The concept of generic skills is nevertheless ubiquitous (Griffiths and Guile, 2004).

than 17% in 2004 (Chart 2). During the same period, the value-added share of the services sector relative to the total economic activity climbed from 49% to 67%. Many reasons explain the growing importance of services in these economies and the employment shift away from manufacturing towards services. It is not only the result of the reallocation of resources towards these activities due to their low productivity growth. This growing importance of services can also be related to demand-side factors, such as a high income elasticity of demand for certain services; demographic developments; the provision of some services as public goods; and finally the increasing role of services as providers of intermediate inputs (Wölfl, 2005).

Chart 3: Changes in the occupational employment structure in selected EU Member States since the 1980s by sector



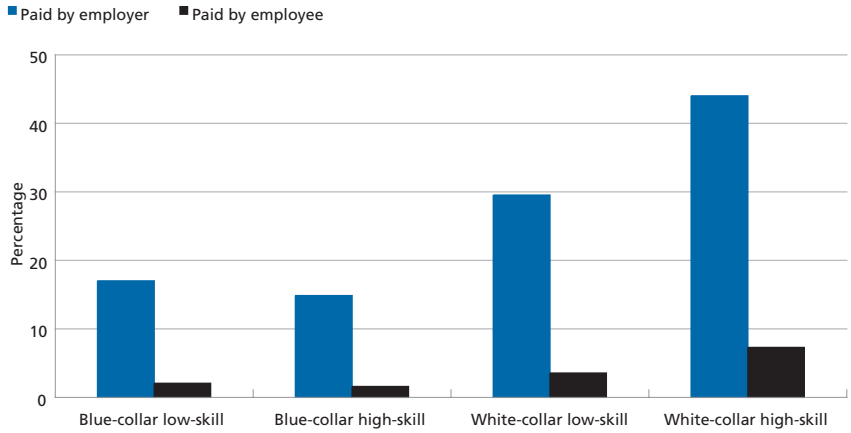
Source: OECD (1998), Eurostat (Labour Force Survey).
Note: White-collar high-skill consists of ISCO groups 1, 2 and 3; white-collar low-skill of ISCO groups 4 and 5; blue-collar high-skill of ISCO groups 6 and 7; and blue-collar low-skill of ISCO groups 8 and 9.

The employment shift from manufacturing to services in Western Europe has been accompanied by a substantial change in the occupational employment structure. Since the 1980s, there has been, in particular, a significant rise in white-collar, highly skilled occupations and, at the same time, a relative decrease in blue-collar occupations in these economies. This change in the occupational employment structure is particularly noticeable in four major Western EU Member States – namely, France, Germany, Italy and the United Kingdom – for which comparable data are available over that long period (Chart 3, see page 207). Although this change reflects, for instance, the growing role of technology and knowledge-intensive activities in these economies and the decline of Fordism characterised by low-skilled jobs[5], it is also a direct consequence of the employment shift towards services. Indeed the proportion of white-collar, highly skilled jobs is traditionally relatively high in the services sector. For instance, they represented between 45 and 50% of total employment occupations in services in France and Germany respectively in 2005, compared to approximately 31 and 29% in manufacturing (Chart 3, see previous page). At the beginning of the 1980s, the share of white-collar, highly skilled occupations in total employment in the services sector was already substantially higher in these two countries than in the manufacturing sector.

The rapid increase in the employment share of services in Western Europe associated with higher skill requirements for service occupations has contributed towards strengthening the need for CVT in many modern services, such as financial services, as well as in social services (Boyer, 2000). Results from the fourth *European Working Conditions Survey* (Chart 4) show that the levels of CVT increase with the skill levels of occupations. Simple bivariate cross-tabulations of employment by occupation and training may nevertheless lead to misleading conclusions if employment occupation is correlated with other factors (e.g. level of schooling) that are also associated with the likelihood of workers participating in training. In order to disentangle the relative importance of factors that may be related to participating in training, multivariate regression techniques are typically used in many empirical studies. Using data from the *International Adult Literary Survey*[6] and the *European Community Household Panel*[7], these studies indicate that, all things being equal, the probability of receiving training increases with the skills level of occupation (OECD, 2003; Bassanini et al., 2005). Results of our first probit model on all EU Member States also show that the likelihood of participation in CVT rises with the skill content of occupation (Table 1, see page 204). In consequence, it is not surprising that the levels of training in the European Union are higher in most service activities – especially public administration, finance and insurance, and education and heath – than in manufacturing (Chart 5).

The need for CVT in many sector activities is high because many workers joined firms during the Fordist era with low educational attainment levels to occupy very specific jobs characterised by low-skill requirements. While technological and organisational developments in the production process have made the skills of many of these workers economically obsolete, the shift in the sectoral structure of employment has decreased the demand for several occupations associated with manufacturing activities. This shift in the sectoral structure of employment is, in that respect, a second cause of the economic obsolescence of the skills of many workers that entered the labour force during the years of Fordism. The situation of these workers has even worsened since the 1990s with the introduction of new technologies. Indeed modern services, such as wholesale and retail trade, finance, insurance and business

Chart 4: Number of employees who participated in continuing vocational training in the European Union by employment occupations, 2005



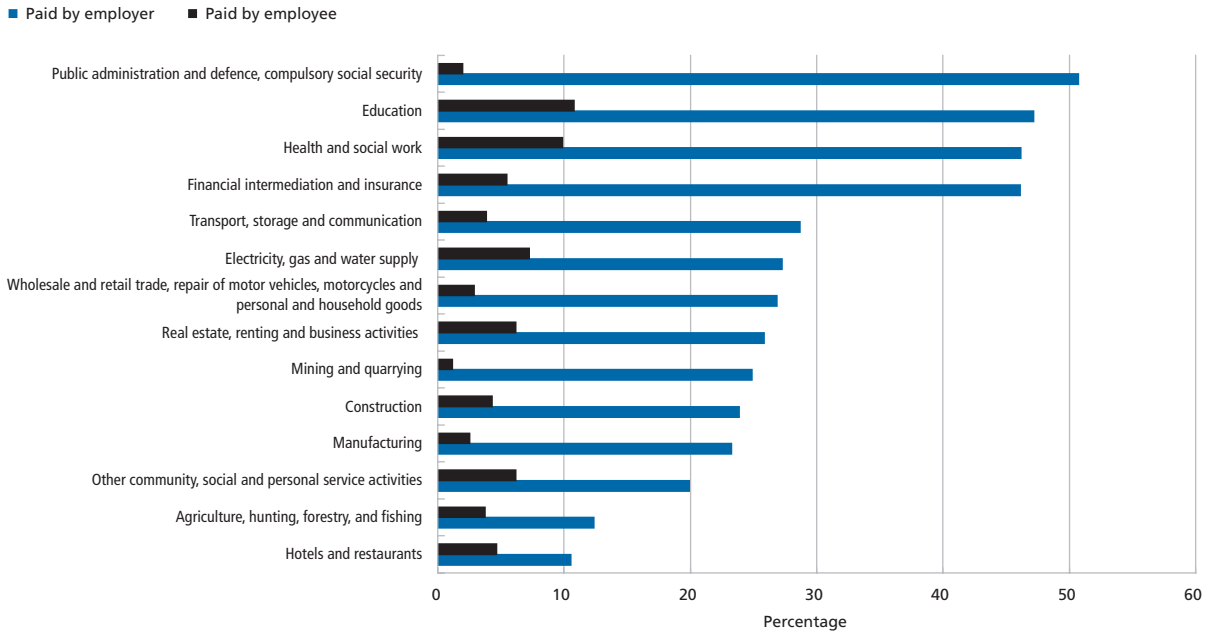
Source: DG EMPL calculations based on the fourth *European Working Conditions Survey*.
Note: White-collar high-skill consists of ISCO groups 1, 2 and 3; white-collar low-skill of ISCO groups 4 and 5; blue-collar high-skill of ISCO groups 6 and 7; and blue-collar low-skill of ISCO groups 8 and 9.

5 A recent study commissioned by the European Commission has found that the skill upgrading process within sectors contributed more to the increasing demand for highly skilled workers than shifts of overall employment between sectors (European Commission, 2007b).

6 This survey covers the following countries: Australia, Belgium (Flanders only), Canada, the Czech Republic, Denmark, Finland, Hungary, Ireland, Italy, the Netherlands, New Zealand, Norway, Poland, Switzerland, the United Kingdom and the United States.

7 This survey covers the following countries: Austria, Belgium, Finland, France, Greece, Ireland, Italy, Netherlands, Portugal, Spain and the United Kingdom.

Chart 5: **Number of employees who participated in continuing vocational training in the European Union by sector, 2005**



Source: DG EMPL calculations based on the fourth *European Working Conditions Survey*.

Table 2 - **Innovation density and R&D intensity in the European Union by sector, 2004**

	Innovation density	R&D intensity
Manufacturing	41.7	1.0
Services	37.0	0.2

Source: Eurostat (fourth *Community Innovation Survey*), DG RTD estimates for R&D intensity based on Eurostat data.

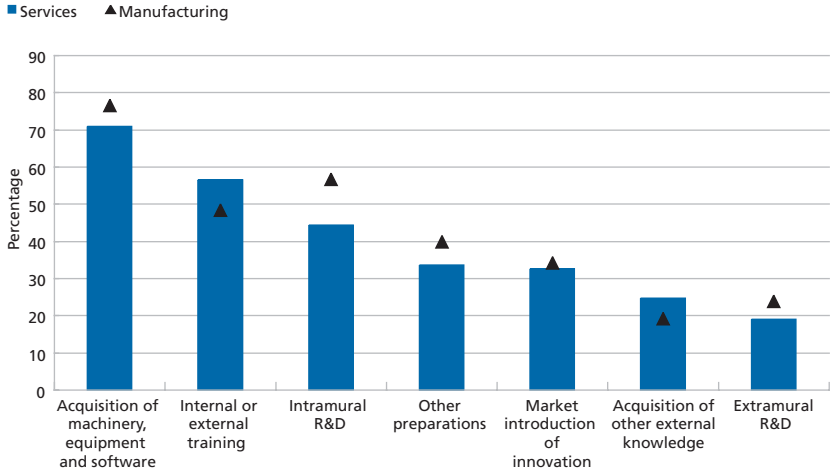
services, have been characterised by a growing use of ICT by firms in order to boost productivity (European Commission, 2005a). The diffusion of these technologies in many service-sector firms has reinforced the importance of CVT in order to reduce the digital divide between older and younger workers (Friedberg, 1999).

However, it would be a mistake to conclude at this stage that the structural shift towards services, coupled with a significant change in the occupational employment structure has increased the need for CVT for older workers only. Indeed, many service sector firms are becoming more innovative and knowledge-intensive, contrary to widespread wisdom.

Certainly the research and development (R&D) intensity of the services sector – measured by the share of business R&D expenditure in the value added of the services sector – is much lower than the R&D intensity of the manufacturing sector (Table 2). This relatively low R&D intensity in services can nevertheless be related to the innovation process in services itself which is, in many respects, different from that in manufacturing (Tamura et al., 2005). In other words, these low investments in R&D do not preclude any substantial innovative activities in services, as shown by the results from the new fourth *Community Innovation Survey*. When looking at the results of the survey (covering the three-year period 2002–2004), the innovation density of firms – defined as the proportion of firms reporting an innovation activity either through the introduction of new or significantly improved products to the market or the implementation of new or significantly improved processes – amounted to around 37% in the services sector within the European Union, compared to nearly 42% in the manufacturing sector (Table 2).

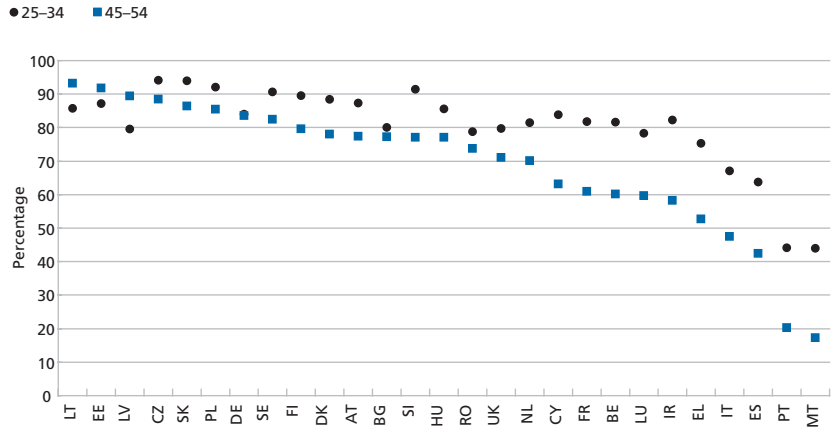
Of course training is useful for these service-sector firms in order to increase the ability of their workers to learn and innovate. However, what is relatively unexpected is the high significance given by these firms to training to sustain their innovation activity compared to other innovation mechanisms, such as intramural R&D, extramural R&D or the acquisition of external knowledge through the purchase or licensing of patents and non-patented inventions, know-how and other types of knowledge. Among these service-sector firms engaged in innovation activity during the three-year period 2002–2004, around 56% of them report, in the fourth *Communication Innovation Survey*, that they provided internal or external training for their personnel specifically for the development and/or introduction of innovations, compared to less than 50% in the manufacturing sector (Chart 6, see page 210).

Chart 6: **Innovation mechanisms used by service-sector firms engaged in innovation activity in the European Union, by sector, 2004**



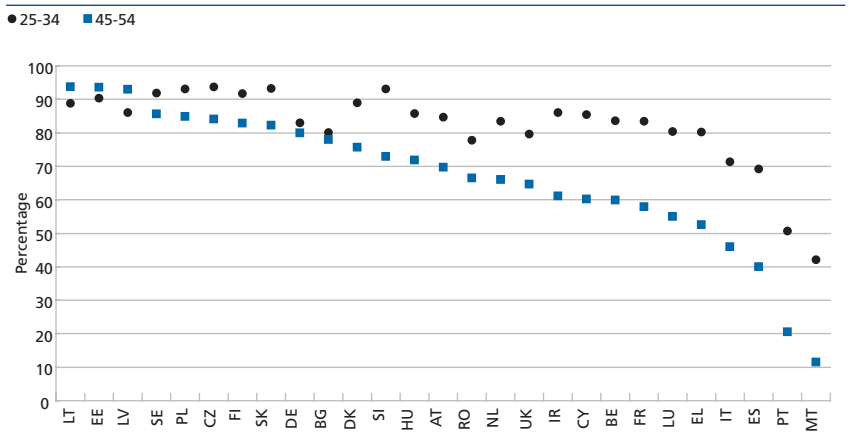
Source: Eurostat (fourth *Community Innovation Survey*).
Note: European Union: EU-27 less Bulgaria, Ireland, Latvia, Malta, Austria, Slovenia, Finland and the United Kingdom.

Chart 7: **Population that has attained at least upper secondary education in EU Member States by age group, 2006**



Source: Eurostat (*Labour Force Survey*).

Chart 8: **Population of females that has attained at least upper secondary education in EU Member States by age group, 2006**



Source: Eurostat (*Labour Force Survey*).

2.1.3. The rise in educational attainment of the workforce

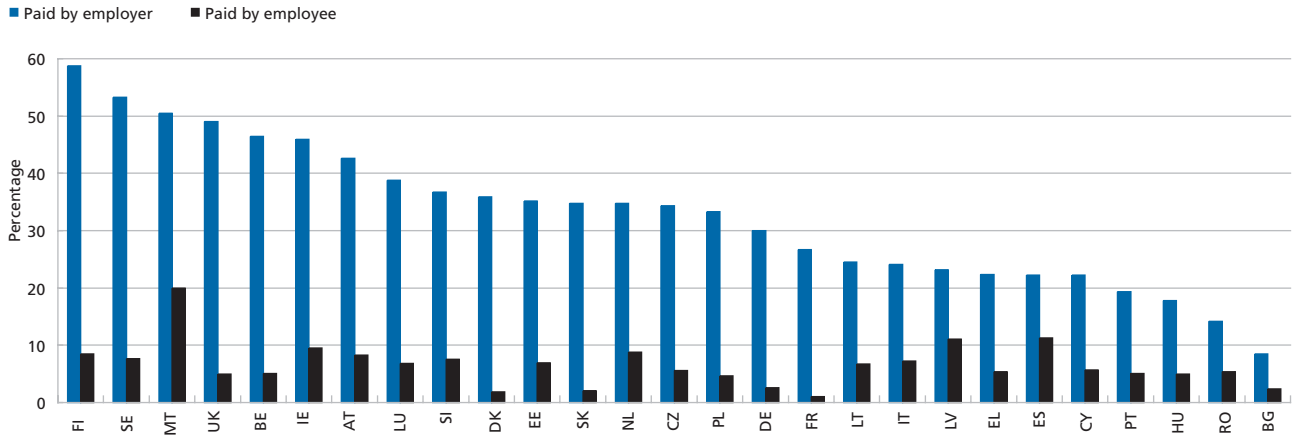
The expansion of high-skilled occupations in EU Member States over past decades, due notably to the growth of the services sector and the decline of Fordism, has happened alongside a substantial rise in the educational attainment of the workforce (European Commission, 2006a), thereby increasing the need for CVT for older workers.

The rise in the educational attainment of the whole population is particularly observable in Southern EU Member States – namely Portugal, Spain, Malta, Cyprus, Italy and Greece – where the population aged 45–54 years is characterised on average by a low educational attainment level compared to the 25–34 age group (Chart 7). Less than 50% of the older group has indeed attained at least upper secondary education in many of these countries. The difference in educational attainment level between the 25–34 and the 45–54 age groups is also evident in Member States such as France, Luxembourg, Belgium, Ireland.

The substantial rise in the educational attainment of the female population over the last few decades has contributed towards accentuating the differences in human capital (in the form of initial education) between the younger and older workers. In many Member States the difference in the share of population with at least upper secondary education aged 25–34 years and 45–54 years is higher for females (Chart 8). This trend is again very apparent in Southern Member States where younger women tend to be more educated than their elders.

The older workers, particularly women, that entered the labour force a few decades ago without a relatively strong academic background have therefore had to face direct competition from new entrants who are, on average, better educated. Such a difference in human capital (in the form of initial education) between the two

Chart 9: **Number of employees who participated in continuing vocational training in EU Member States, 2005**



Source: DG EMPL calculations based on the fourth *European Working Conditions Survey*.

generations calls for an increased access to CVT for older workers in order to reduce a possible segmentation of internal labour markets within firms (Boyer, 2000).

From the preceding developments, it is clear that CVT has become increasingly important for both workers and firms, given the long-term trends and the particularities of the structural changes that have affected modern economies, particularly in the European Union, over past decades. Nevertheless, there remain very sharp differences among EU Member Sates in terms of levels of training, as shown by the results of the fourth *European Working Conditions Survey* (Chart 9). In 2005, Nordic countries such as Finland and Sweden ranked joint first in terms of the amount of training received by workers at work. At the other end of the scale are most Southern, Central and Eastern EU Member States, where the levels of training are very low, barely reaching 20% of employees.

Despite the growing importance of continuing vocational training in our economies, the quantitative evidence of its benefits for employees, employers and the society needs to be assessed. The next sub-section gives a short (non-technical) review[8] of the empirical literature on the economic benefits of CVT for both employees and employers through, notably, an increase in wages and an increase in productivity. Moreover, it discusses the social returns of continuing vocational training in relation to those of initial education.

2.2. The economic benefits of continuing vocational training

2.2.1. Economic benefits for employees

A growing empirical literature examining the effects of CVT on wages has emerged due to the growing availability of new datasets encompassing direct measures on training (for the United States: Brown, 1989; Barron et al., 1989; Lynch, 1992; Veum, 1995a; Loewenstein and Spletzer, 1998, 1999b).

The early literature on the subject gives strong evidence that CVT increases wage growth. However the results from this literature have been questioned over recent years because the magnitude of the economic returns from CVT is quite high, especially when compared to that of formal education. In many cases the effects of CVT on wages are roughly similar to the economic returns from an additional year of formal education, which generally amount to between 5% and 15% (European Commission, 2006a). This result is rather curious given that the CVT duration is often very short (Schone, 2004).

Over recent years, the empirical literature on the subject has attempted to explain why the economic returns to CVT are so high and to refine estimation techniques (Schone, 2004; Booth and Bryan, 2007; Leuven and Oosterbeek, 2007). Estimating the wage effects of training is indeed not without its difficulties due to conceptual and methodological problems posed by the endogeneity of training. Indeed workers who participate in CVT activities are just as likely to have different observable (e.g. higher levels of

8 There are many conceptual and methodological problems associated with the measurement of the economic returns on workplace training. A detailed discussion of these problems is far beyond the scope of this chapter. For more details on these problems, see, for instance, Leuven and Oosterbeek (2002), Leuven (2004), Frazis and Loewenstein (2003), Bassanini et al. (2005), and Dearden et al. (2006). For a non-technical survey of the empirical literature on the benefits of workplace training, see Asplund (2004).

schooling) or unobservable (e.g. higher abilities) characteristics as other workers do. Moreover, firms are also likely to choose CVT for those workers who have the highest expected productivity. Several recent studies have aimed to correct for this possible endogenous bias using different techniques (e.g. Heckman-type selection models, instrumental variables, fixed-effect estimators) (Leuven and Oosterbeek, 2007). These studies have found more mixed results (for France, Goux and Maurin, 2000; for Germany, Pischke, 2001), although some still indicate positive wage effects of CVT (for Norway, Schone, 2004; OECD, 2004a; for the United Kingdom, Booth and Bryan, 2007). However, these mixed results can be interpreted as the existence of a compressed wage structure relative to productivity differentials, as we will see later in the chapter[9].

Finally, it is worthwhile to note that several empirical studies have examined the wage effects of CVT on the different categories of employees. Results from these studies indicate that the wage effects are generally lower for the workers with low educational attainment levels than for those with a stronger academic background (Bassanini et al., 2005).

Beyond the wage effects of CVT, other economic benefits for employees have also been identified. Training is usually assumed to provide workers with increased promotional opportunities and improved employability and job security (Blundell et al., 1996; Wooden et al., 2001; OECD, 2004a), especially in the case of both older and low-educated workers. Continuing vocational training is associated with job satisfaction too (European Commission, 2007a).

2.2.2. Economic benefits for employers

Few empirical studies (for the United States: Bartel, 1994; Black and Lynch, 1996; for France and Sweden, Ballot et al., 2006; for the United Kingdom: Dearden et al., 2006; for Germany: Zwick, 2007) have intended to measure the effects of CVT on productivity.

These studies are small compared to those on the wage effects of CVT because the direct measures of productivity are scarce. Although the effects of CVT on productivity gains could indeed be, at first sight, measured indirectly through wage increases, the new theoretical training literature has nevertheless suggested that the strict relationship between wages and productivity is often hard to identify due to labour market imperfections that lead to wage compression[10].

Moreover, although a positive effect of CVT on productivity at the firm level is usually found, it is advisable to remain cautious because these studies often face quite similar conceptual and methodological problems, as in the case of studies on the wage effects of training, leading to estimation bias (Dearden et al., 2006; Zwick, 2007). Training is endogenous and therefore cannot be strictly treated as an exogenous variable in the productivity equation. Firstly, firms do not randomly choose to provide CVT. Indeed, as noticed by Zwick (2007), transitory shocks resulting from the introduction of new technology or from changes in labour market institutions may change output and may thus lead to changes in training efforts. There is therefore likely to be a selection bias. Secondly, firms may differ from each other with respect to some characteristics such as employer-employee relationships or corporate cultures that are constant over time but which remain unobservable. This unobserved heterogeneity is also a source of estimation bias because it can explain why some firms that offer training are structurally more productive than others. Lastly, another source of potential estimation bias lies in omitted variables that are not controlled for but which have an impact on productivity and training. The most recent studies that have intended to correct for these possible sources of estimation bias still indicate a positive effect of training on productivity (Ballot et al., 2006; Dearden et al., 2006; Zwick, 2007).

In this section, the importance of CVT for employers and employees in terms of productivity and wages has been emphasised. Attention has also been drawn to the new economic context in which CVT lies: the emergence of a new world of production oriented towards innovation and quality in which highly skilled and versatile workers are key elements; a major structural change that has led to a massive employment shift from manufacturing to the services sector associated with higher skill requirements; and finally, the rise in educational attainment of the new entrants into the labour force. It has also been argued that the issue of the importance of CVT in today's economy should be, first and foremost, understood in relation to this new economic context.

2.2.3. Social returns to continuing vocational training

Most the economic benefits, from continuing vocational training, discussed so far are of private nature. A large theoretical literature underscores the possibility that the social returns to education could be higher than the private returns because education may be a source of positive externalities (European Commission, 2006a). For instance, an important positive externality from initial education is that one person may benefit – in terms of higher productivity and earnings – from another's education without any compensation. Moreover, education can generate non-economic (i.e. non-pecuniary) benefits such as better health, crime

9 See section 3.1.3.

10 See section 3.1.3.

reduction, higher civic participation which are beneficial for the society as a whole.

The theoretical literature is nevertheless much more reduced with regards to the social returns of continuing vocational training (Cahuc and Zylbergberg, 2006). First of all, continuing vocational training may induce positive externalities in the sense that one employee may benefit from another's knowledge acquired in the context of training. However, these positive externalities generated by continuing vocational training are likely to be primarily local, inside a firm or an industry. In addition, initial education has non-pecuniary benefits in terms of crime reduction or higher civic participation because it mainly improves the non-cognitive abilities of individuals, such as motivation and self-discipline. These externalities do not really concern continuing vocational training for the employed. However, these externalities may be more significant when employed become unemployed.

3. Ensuring efficiency and equity in continuing vocational training

In the previous section, the growing importance of CVT in today's economy and the need to sustain it was shown. When considering sustainable CVT, two common objectives of education and training policies should be pursued: efficiency in the allocation of resources and equity in the distribution of these resources (Woessmann, 2006). These two objectives are multidimensional[11] because they cover a variety of concepts. In this section, we restrict these objectives to efficiency in the allocation of resources and equity in the distribution of these resources.

There is efficiency in the allocation of resources for training if employers and employees are fully rewarded for the training costs they have incurred. In these circumstances, there is no need for government intervention to encourage training provision or skills acquisition (Booth and Snower, 1996). Instead, the role of government would be to ensure that the market for training remains free and to guarantee the achievement of the second overall objective of education and training policies: equity in the distribution of resources for training.

Likewise, there is equity in the distribution of resources for training if the access to training only depends on characteristics that are relevant for training, such as motivation and effort, as opposed to other characteristics such as the initial level of education, age and gender (Oosterbeek, 1999). The equal access of workers to CVT is not only essential because a highly skilled workforce is seen as a key engine of economic growth in today's economy (European Commission, 2006a), but also because CVT is assumed to provide workers with better promotional opportunities, higher wages and improved job security.

Hence, before discussing equity considerations in the access to training in more detail, it is essential to examine whether the market for training is a free market, and to identify market failures that may hamper the incentives for employers to provide adequate training to their employees or for the latter to acquire new skills. Indeed, a number of authors have emphasised possible market failures (Ritzen and Stern, 1991; Booth and Snower, 1996). The following review of possible market failures presented is by no means exhaustive. Rather it is intended to provide a conceptual framework for understanding when and why public policies towards CVT are justified on efficiency grounds. This review is relevant given the significant amount of funds allocated by governments in the EU Member States to CVT, on the one hand, and the diversity of policy instruments to foster training of the employed on the other (Booth and Snower, 1996; EIM and SEOR, 2005).

3.1. Market failures in continuing vocational training

3.1.1. The training market as a free market

From a theoretical perspective, a free market in CVT would imply that both employees and employers are fully rewarded for the training costs they have incurred in relation to this activity, so that the benefits from training are only reaped by them and the costs from training are only borne by them. In other words, the private benefits from training are identical to the social benefits generated from this activity. In a similar way, the private costs from training are equivalent to the social costs. In such a situation, the free market would be efficient since it provides employers and employees with adequate incentives respectively to provide training and to acquire adequate skills without the need for government intervention. The role of government should thus be confined to ensuring that the training market remains free. Put differently, the allocation of resources in such a market would be optimal since it would not be possible to increase the satisfaction of certain people without decreasing the satisfaction of others. In such a view, training is not so different from other ordinary goods such as apples or haircuts (Booth and Snower, 1996).

Investing in human capital through training is nevertheless different from

11 Commission staff working document (2006), accompanying document to the Communication from the Commission's 2006 Communication *Efficiency and equity in European education and training systems.*

investing in other forms of capital. While an employer can hold the full property rights on physical capital, this is not possible for human capital because the latter is, by definition, embedded or embodied in the person investing (Becker, 1993), namely the trainee. Consequently, trained employees have the choice of how to use their own human capital (Leuven, 2005; Bassanini et al., 2005): they can choose to stay in the firm after having received training or they can separate from the training firm. This distinctive attribute of human capital opposed to physical capital is central because it implies that employers and employees have to agree on the division of the costs and benefits from training. Such a condition is at the heart of the theoretical literature on training.

The theoretical argument for a free market in training was strongly defended by the standard human capital theory, developed notably by the economist Gary Becker (1962). Acknowledging the fact that human capital is embodied in employees, Becker examines the optimal division of the costs and benefits of training between employees and employers in the case of a perfectly competitive labour market, that is a market in which no firm or worker has the power to influence wages. Becker distinguishes between two forms of training: 'general' and 'specific'. General training has a productive value that is useful to many firms whereas specific training is only useful to a particular one. As a consequence of this distinction, Becker shows that employees have to bear the full costs of general training while the costs of specific training are to be financed by employers.

The theoretical explanation for this difference in the distribution of the costs between general and specific training is relatively straightforward (Leuven, 2005; Stevens, 1999; Bassanini et al., 2005).

Since general training has a value for numerous employers and in a situation where labour markets are perfectly competitive, the employee will be paid a wage equal in value to his marginal productivity after having received training. If the firm decides to pay him less than this marginal productivity value, he may immediately resign and join another firm which will offer him a higher wage. However, as the employee reaps the full benefits of general training and may be 'poached' by other firms acting as free-riders, the employer also has to pay the full training costs associated with this activity. The training costs may be financed through a decrease in the wage of the employee during the training period or through a loan on the capital markets assuming they are perfectly competitive.

Conversely, because specific training only has value for a specific firm, the employer will not necessarily pay the employee its marginal productivity afterwards because the latter will receive only the market wage in other firms if he decides to resign. Nevertheless, as the current employer receives the full benefits from specific training, he also has to finance all the costs. Hashimoto (1981) demonstrated that the firm has, nonetheless, incentives to share the benefits of such training in the form of a wage slightly higher than the market wage in order to reduce costly turnover. The training costs are also likely to be shared between the employer and employee.

How relevant are the theoretical predictions of the standard training literature in practice? Several recent empirical studies have questioned the predictions of the standard literature on training. Using data from the *International Adult Literacy Survey* (IALS) for four countries – namely, Canada, the Netherlands, Switzerland and the United States – Leuven and Oosterbeek (1999) show that firms provide substantial financial support for training initiated by their employees and for off-the-job training, which is often seen as general training (Loewenstein and Spletzer, 1998; 1999a). Bishop (1997), in his literature survey, gives strong empirical evidence that employers are sharing the costs and benefits of 'general' training. Confronting the predictions of the standard human theory with data from the *British Household Panel Survey* for the period 1998–2000, Booth and Bryan (2005) find that employers finance training that is 'transferable' across employers. The reason why employers finance training, which is perceived as general, may nevertheless be explained by the fact that trainees accept lower starting wages and/or lower wages while in training. However, the results of the empirical literature in that respect are not clear-cut (Veum, 1995b; Loewenstein and Spletzer, 1998; Barron et al., 1999; Silician, 2001).

3.1.2. Capital market imperfections

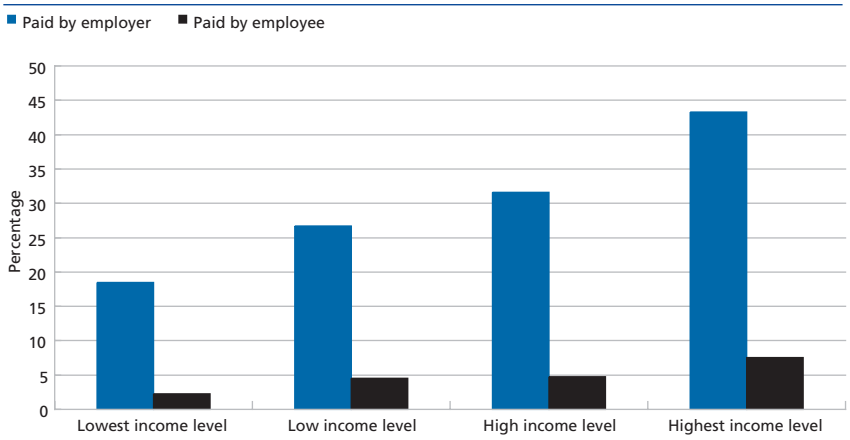
In the previous paragraphs, the theoretical argument of the standard literature on human capital for a free market in CVT in a context of perfectly competitive capital and labour markets has been presented. This theoretical literature only admits a case where there could be an underinvestment in training. This case appears in the presence of capital market imperfections. It mainly concerns 'general' training for which the employee has to support all the costs.

From a theoretical point of view, an inefficient investment into general training can arise in a situation where the employee is credit constrained while the labour market remains perfectly competitive.

Access to capital markets for finance investment in general training is problematical because human capital, contrary to other kinds of capital, is poor collateral to lenders (Becker, 1993). In other words, human capital by itself cannot act as a guarantee for lenders in the case of default. Employees can fail to refund the loan, for instance, by working less than expected or by accepting low wages. Because there is a moral hazard resulting from asymmetric information between the borrower, for example the employee, and the lender, the latter is likely to request a

very high interest rate which would hamper the capability of the former to enter into a contract (Stevens, 1999).[12] Such a moral hazard can also result in a situation where it is not possible to write a complete contract (Stevens, 2001). Another associated problem is caused by risk-adverse behaviour (Layard et al., 1995): if the returns of training are uncertain[13], as a result of a potential shock in the demand for skills or a possible misuse of some acquired skills, and if employees cannot be insured against the risk of inadequate returns, then they will be discouraged to invest in training.

Chart 10: **Number of employees who participated in continuing vocational training in the European Union by income level, 2005**



Source: DG EMPL calculations based on the fourth *European Working Conditions Survey*.
Note: In the fourth *European Working Conditions Survey*, pay was measured by asking respondents to position their usual monthly earnings in their main paid job on a 10-point scale corresponding to the 10 income deciles in each country. Here the income variable has been transformed from a 10-point to a 4-point scale.

Given that capital market imperfections may reduce the demand for CVT, leading to an under-investment in it, it is necessary to assess how significant they are in practice. The significance of credit constraints that may face workers to finance general training is particularly difficult to assess due to the scarcity of relevant empirical studies. Simple bivariate cross-tabulations of the levels of income and training reported in the fourth *European Working Conditions Survey* show that, in the European Union, the levels of training received from employers and paid for by the employees themselves is lower for employees with the lowest incomes compared to the others (Chart 10). Obviously several economic forces (e.g. low level of schooling) are likely to affect the decisions of employees with the lowest incomes to finance training. However, the ratio of the level of training paid by employees to the level of training paid by employers is lower for employees with the lowest incomes than for the other employees. Consequently, it may be the case that these employees face credit constraints and that they are more risk-adverse than other employees due to their low income. Moreover, results from our first probit model indicate the probability that the employees with the lowest incomes receive less training than the employees with higher incomes. In other words, not only may employees with the lowest incomes face liquidity constraints but they are also, all things being equal, less likely to participate in CVT (Table 1, see page 204).

Another interesting empirical argument for the existence of financial constraints is also given in an OECD study (2003). Using the results of the *International Adult Literacy Survey* over the 1990s for a sample of 16 industrialised countries, of which 10 are EU Member States[14], the OECD indicates in this study that about 7% of trained workers and 5% of non-trained workers reported that they could not fully or partially finance the costs of the training courses that they wanted to take for career or job-related reasons. Moreover, using multivariate regression techniques, this study also shows that, all things being equal, the probability of reporting financial constraints is even higher for workers in elementary occupations or clerks than for managers.

3.1.3. Labour market imperfections

The consequences of potential labour market imperfections on the efficiency of investment in CVT have also been examined more recently in new theoretical works (Acemoglu, 1997; Acemoglu and Pischke, 1998, 1999a, 1999b; Stevens, 1994; Katz and Zierman, 1990; Booth and Zoega, 1999).[15] Once the hypotheses of perfectly competitive labour markets are relaxed, investment in general training is also likely to be inefficient.

While in perfect labour markets firms do not invest in general training but have all the training costs borne by the trained workers, the presence of labour market frictions can lead to a very different theoretical prediction. There are many potential factors that can induce wage compression and labour market rents for employers (Acemoglu and Pischke, 1999b; Booth

12 However, the fact that potential trainees can be credit-constrained all the more since human capital is poor collateral is particularly true for blue-collar workers but such argument is less convincing for white-collar workers since training is often cheap for them (Ritzen and Stern, 1991).

13 As noticed by Ritzen and Stern (1991), investment in general and specific training is often risky. However, in the case of specific training, the employers have more possibilities to distribute the risks than employees have.

14 Australia, Belgium (Flanders only), Canada, the Czech Republic, Denmark, Finland, Hungary, Ireland, Italy, the Netherlands, New Zealand, Norway, Poland, Switzerland, the United Kingdom and the United States.

15 For detailed surveys on the new training literature, see, for instance, Leuven (2005); Bassanini et al. (2005); Brunello and De Paola (2006).

Box 3 – Trade unions and continuing vocational training: an ambiguous relationship

Not only can labour market imperfections result from search frictions or mobility costs, but they can be derived from institutional features such as minimum wage legislation (Acemoglu and Pischke, 2003), social security systems or the presence of unions. The latter can induce a compressed wage structure and therefore has an impact on CVT acquisition and provision, which is different from the prediction of the standard literature on human capital (Booth, Francesconi and Zoaga, 2003; Bassanini et al., 2005). The relationship between unions and CVT is nevertheless ambiguous.

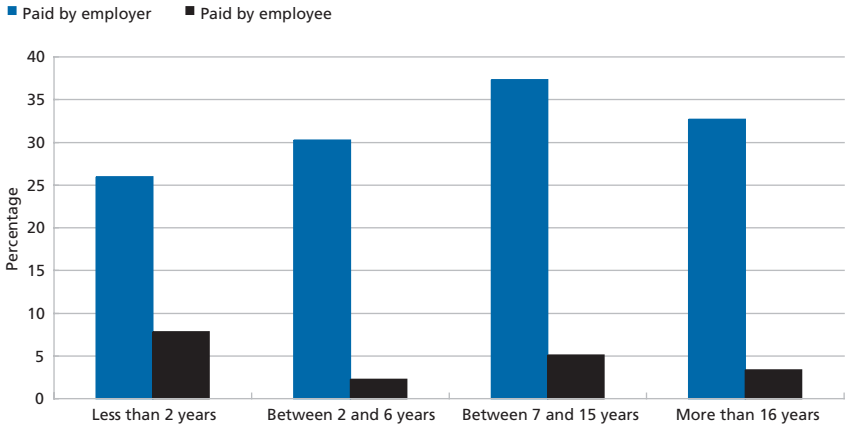
On the one hand, trade unions may lead to an increase in the provision of CVT because they may negotiate better training opportunities for their members, and because they may reduce labour turnover and thereby the risk of poaching by ensuring the commitment of workers to their contracts. Moreover, they may negotiate better training opportunities for the union-covered workers so that they receive more training in order to keep their skills up to date with higher returns compared to the non-union workers.

On the other hand, union wage bargaining may lead to a compressed wage structure that prevents employers from reducing the wages of trainees during the training period and then increase them afterwards. In those circumstances, both employers and employees have no incentive respectively to provide 'general' training and acquire 'general' skills.

and Zoaga, 2000; Bassanini et al., 2005) (Box 3). Among these potential factors can be cited search and matching frictions as well as mobility costs. If these labour market frictions induce a compressed wage structure, firms may react by financing general training. Indeed, trained workers will face relatively worse opportunities outside their current employers because the external wage structure is compressed. This compressed external wage structure incites current employers to compress the internal wage structure by paying workers at the same level as their outside alternatives because the former have bargaining power (i.e. the so-called monopsony power) over the latter. Wage compression thereby generates a rent for employers that encourages them to finance general training if there is a positive probability that workers will stay with them after training (Acemoglu and Pischke, 1999a). Otherwise, current employers will not be persuaded to sponsor general training because of the 'poaching externality': future employers will in fact benefit from general training without having to support its costs.

The risk of poaching stressed in the theoretical literature may be a reason why EU employees, who have been less than two years in the same company, received less training paid for by employers than, other employees with more years of job tenure (Chart 11), as reported in the fourth *European Working Conditions Survey*. However, other factors correlated with job tenure or contract duration, such as workers' characteristics (e.g. level of education) or establishment characteristics (e.g. industry sector), are also likely to affect the decision of employers to provide less training for these employers. Indeed, a higher-than-average proportion of unskilled workers hold fixed-term contracts in the European Union. Moreover, sectors characterised by short periods of job stability, such as wholesale and retail trade, real estate, hotels and restaurants, are often characterised by low levels of training (Parent-Thirion et al., 2007). Yet, a number of empirical studies using multivariate regression techniques find that, all things being equal, the probability of participating in CVT decreases when job turnover is high (Booth et al., 2003), rises with job tenure (Loewenstein and Spletzer, 1999b; Frazis et al., 2000; Majumdar, 2007), and is lower for temporary workers (Bassanini et al., 2005). The results of our first probit model also suggest that, in the European Union, such a likelihood is quite low for employees in jobs with less than one year of job tenure. Our results related to the probability of participation in CVT are, nevertheless, not statistically significant.

Chart 11: **Number of employees who participated in continuing vocational training in the European Union by job tenure, 2005**



Source: DG EMPL calculations based on the fourth *European Working Conditions Survey.*

According to the theoretical literature, a distorted wage structure coupled with a low turnover can thus be considered as a necessary condition for employers to accept bearing the costs of general training because it makes 'general' skills in fact 'specific' (Acemoglu and Pischke, 1999a, b). Booth and Zoega (2004) show that the wage compression defined by Acemoglu and Pischke (1999a, b), what the former call 'absolute wage compression', requires that the marginal effect of training on productivity to be greater than that on wages in absolute terms. However, such a definition of wage compression is not the one traditionally used in the economic literature. The latter, which they choose to call 'relative wage compression', is measured in terms of the ratio of productivity to wages. They demonstrate theoretically that, contrary to a relative wage compression, an absolute wage compression is a necessary condition for firms to finance general training. Indeed, firms will sponsor training even if the latter raises both productivity and wages in equal proportions so long as wages are lower than output.

Does a compressed wage structure coupled with a low probability of quit rate mean, from a theoretical perspective, that employers sponsor the full costs of 'general' training? Since employees also benefit from general training, employers may be less inclined to bear all the costs of this training. The distribution of the costs of general training between current employers and employees depends thus on the compressed wage structure: the more the wage structure is compressed, the more firms will be willing to pay for all the costs of general training.

It is, however, important to note here that, from a theoretical point of view, a compressed wage structure may lead to an under-investment even if 'general' skills turn into 'specific' skills. Indeed, the uncertainty about the turnover of employees incites employers not to invest the desired amount in general training. Moreover, because of the distorted external wage structure, employees have no incentives to invest in general training even if they are not credit-constrained, since they anticipate that their future employers will appropriate a fraction of the benefits from general training without any compensation (Acemoglu, 1997; Acemoglu and Pischke, 1999b).

A very similar theoretical argument is developed by Stevens (Stevens, 1994, 1996, 1999). Here, the presence of labour market imperfections can also be explained by the nature of training itself. Indeed, some skills are neither general nor specific but are 'transferable', meaning that they have a value for only a few firms.[16] As a result, the competition to possess such skills among firms is reduced and becomes insufficiently tight that it raises the expected wages of the trained employees to the level of their post-trained marginal productivity. Employers thus have some monopsony power over them all the more the employees face relatively high mobility costs or imperfect information. It could be argued that the trainee and the training firm would find an agreement in order to share the training costs. However, as training is 'transferable', it has also a value for other firms who may want to hire the trainee in the future. Since the benefits of training accrue to firms who may hire the trainee in the future, then the incentive of the trainee and the training firm to invest is reduced, resulting in an under-investment in 'transferable' training[17].

Because the recent theoretical works stress that labour market imperfections may reduce both the demand and supply of CVT, it is important to gauge how significant these imperfections are in practice. There is a growing empirical literature on the relationship between labour market imperfections and (general) training (Bassanini et al., 2005; Brunello and De Paola, 2006; Bassanini and Brunello, 2006). However, problems with the definition and measurement of general training (Ericson, 2004) hinder reaching clear-cut conclusions all the more since existing empirical studies follow different strategies to address this issue and are not systematic.

As already noted earlier in the chapter[18], several empirical studies show that many employers sponsor a significant part of CVT, which is often of a general nature. This can be interpreted as the existence of some monopsony power (Brunello and De Paola, 2006). The fact that the benefits from general training are appropriated by trained workers with some delay and/or when they join other employers (Loewenstein and Spletzer, 1998, 1999a; Booth and Bryan, 2005) also suggests that current employers have certain monopsony power (Bassanini and Brunello, 2006)[19]. A few related papers indicate that there is a negative relationship between the training wage premium and the incidence of general training (Bassanini and Brunello, 2006), which is again in sharp contrast with Becker's predictions. In line with the

16 Lazaar (2003) also questions the standard distinction between 'specific' and 'general' training. He argues that specific skills do not exist as such; instead, this is the combination of different general skills and it is how the firms value them that makes the skills specific.

17 Stevens (1996) mentions a few predictable responses that may persuade firms to address the problem of skill shortages resulting from an under-investment in 'transferable' skills. Among these responses, firms might choose to adopt methods of production that rely on mechanisation and low-skilled labour. Such predictable responses can be related to some key features of the Fordist model of production, as described in section 2.1.1.

18 See section 3.1.1.

19 However, as noticed by Bassanini and Brunello (2006), reasons other than the presence of labour market imperfections can explain why wages increase faster when trainees are hired by other firms. For example, workers may have participated in training in order to have the necessary skills required by other firms. See also OECD (2004).

results of these papers, the results of our second probit model show that, all things being equal, participation in CVT is less frequent in EU Member States where the 90–50 wage differential is high (Table 1, see page 204). However, a different paper finds opposite results for Norway (Ericson, 2004). Another way to empirically address the issue of the under-investment in general training is to look at whether voluntary turnover is affected by the general training provided by employers. In their study based on the *European Community Household Panel*, Brunello and De Paola (2006) find that there is a significant voluntary turnover among workers receiving employer-provided training, which tends to confirm the existence of the poaching problem.[20]

3.1.4. Information asymmetries

The theoretical discussion above identified the sources of a compressed wage structure and labour market rents that are essentially related to the presence of transactions in the labour market, e.g. matching and search frictions as well as mobility costs. There are, nevertheless, other reasons for wage compression. The latter may be due to asymmetric information between current and potential future employers as well as between current employers and their employees. While the presence of transaction costs in the labour market caused by matching and search frictions is relatively simple to recognise, the existence of asymmetric information may be more difficult to grasp. At least three cases of information problems can be considered from a theoretical perspective (Acemoglu and Pischke, 1999b; Leuven, 2005).

Firstly, the skills acquired by employees as a result of training provided by their current employers are not observable by future employers, especially if training is not certified (Katz and Ziderman, 1990; Chang and Wang, 1996) or does not receive some kind of accreditation (Ritzen and Stern, 1991)[21]. This lack of information for the potential employers reduces the competition for the possession of non-accredited skills acquired by the trainee. As a consequence, the outside wage will be lower than the marginal increase in the post-training productivity of the trainee. Current employers will thus be more inclined to finance general training due to the compressed wage structure.

Secondly, it is possible to argue that it is not training itself that is imperfectly observable by outside employers, but the ability of the trainees (Acemoglu and Pischke, 1998). The result of this adverse selection problem between the current employer and potential future employers is also a compressed wage structure that encourages firms to finance training.

Thirdly, while information asymmetry raises the monopsony power of employers over their employees, which incites the former to invest in general training, it also decreases the incentives of workers to invest in the acquisition of skills because part of the returns from training will accrue to their current employers. If employees have to exert effort for training to be productive, then employers have to give them the right incentives. However, since the effort of employees is barely observable by employers, firms cannot reward their trained employees at the level of their effort. This information asymmetry creates a hold-up opportunity for current employers, which is anticipated by the employees, thereby putting forward insufficient effort in training if the latter is not certified (Acemoglu and Pischke, 2000).

All the above information problems can be traced to the labour market. However, there is another information problem that is associated with the market of vocational training itself. This is the asymmetric information between employees and employers regarding the nature and the quality of training. Indeed, in many circumstances, the market for CVT is not entirely visible to them because training is, to some extent, hidden from the labour market if it is provided within firms (Stevens, 1999) or because employers and employees are not able distinguish between different providers of external vocational training. Thus, employers do not advertise prices for CVT provided internally and employees do not have enough information to take training decisions. Moreover, in the case of external vocational training, both employers and employees do not have enough information to invest in training decisions. Such information problems about the nature and quality of training may result in an under-investment, notably because training fails to become fully contractible.

How significant are these problems of asymmetric information in practice? Empirical studies that have attempted to test the predictions of the above models are still quite rare. Booth and Bryan (2005) indicate that their results for Britain suggest that accredited training financed by employers is more strongly associated with higher wages at both current and future employers than non-accredited training, and that only accredited training is transferable between employers. Beyond these empirical results, the significance of information problems in practice is

20 This conclusion seems at odds with the results obtained by Dreaden et al. (1997), which show that, in the United Kingdom, employers providing training to their employees have a lower probability than the average to lose them in the next year compared to employers who do not provide training to their employees. They nevertheless interpret this result as a sign that employers sponsor training to the employees they wish to retain.

21 For more discussion on accreditation and certification, see section 4.2.3.

testified by the fact that numerous industrialised countries, in the first place European ones, have undertaken policy initiatives to increase the certification of adult learning and to accredit related programmes in order to better signal the outcome of non-'specific' training, thereby making it more attractive for workers (OECD, 2007).[22]

In the first part of this section on efficiency, the provision of CVT gave strong theoretical arguments that both capital and labour market imperfections may be sources of market failures, making investment in training inefficient. Even though the empirical evidence of an inefficient investment in CVT still has to be taken cautiously, the possible presence of market failures is the rationale of government intervention on efficiency grounds. Moreover, even if the conclusions of the empirical literature about efficiency in investing in CVT are not clear-cut, public policies can still be justified by equity considerations. In such cases, the role of government intervention is to ensure that access to CVT depends on characteristics that are relevant only to this activity, such as motivation, effort and ability (Oosterbeek, 1999).

The equal access of workers to CVT is not only essential because a highly skilled labour force is seen as a key engine of economic growth in today's economy (European Commission, 2006a), but also because CVT is assumed to provide workers with better career opportunities, higher wages and increased job security. The principle of equal access in vocational training has even been enacted at EU level. Directive 76/207/EEC of 1976 applies for the first time, in its Article 1, the principle of equal treatment to the area of access to vocational training. Directive 76/207/EEC was modified in 2002 by Directive 2002/73/EC. Article 3 (1b) of Directive 76/207/EEC in the modified version specifies the meaning of equal treatment in the domain of training. Furthermore, Article 3 (2) of Directive 76/207/EEC in the modified version defines which measures are to be taken by Member States in order to comply with the principle of equal treatment. Yet, within the labour force, training is not received by all groups of workers on an equal basis.

3.2. Equity considerations

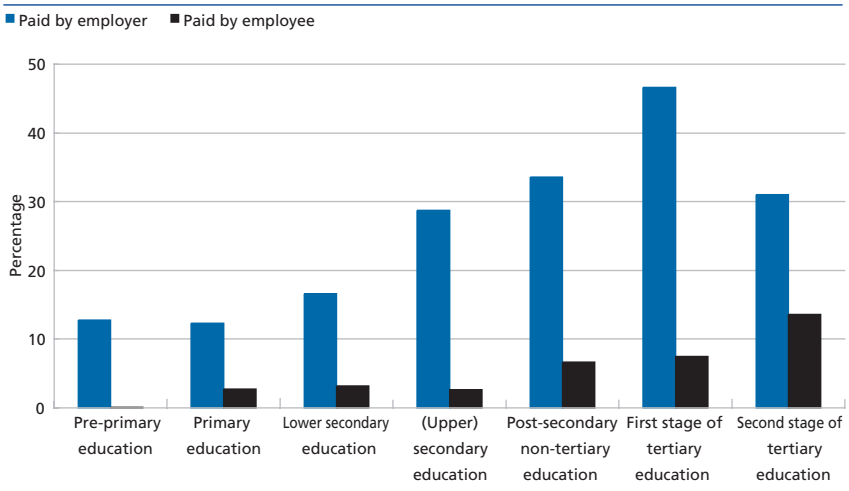
3.2.1. Level of educational attainment

Learning is a life-cycle process. This means that an investment at one stage of education raises not only the skills and competences attained at that stage but builds the foundation for the acquisition of further skills and competences at the next level. This skill-multiplier effect implies that education is a dynamic synergistic process in which early learning begets later learning (Heckman, 1999; Carneiro and Heckman, 2003)[23].

Because learning tends to lead to later learning, inequality of opportunity in education is likely to be amplified by unequal opportunities in training. As noticed by Brunello (2004), this idea of a complementarity between education and training was already underlined, in particular, by Rosen (1976) for whom education raised job-related learning skills and hence decreased training costs. As a consequence, the probability of accessing CVT is likely to be lower for workers with a low level of schooling than for those who are well educated, with all other factors being the same.

Is there empirical evidence that inequality of opportunity in education is likely to be amplified by unequal opportunities in training? Simple bivariate cross-tabulations of levels of schooling and training from the fourth *European Working Conditions Survey* show that the proportion of employees that reported to have received training increases with the levels of educational attainment, from pre-primary education to the first stage of tertiary education, and then slightly declines for the employees holding advanced tertiary educa-

Chart 12: **Number of employees who participated in continuing vocational training in the European Union by level of educational attainment, 2005**



Source: DG EMPL calculations based on the fourth *European Working Conditions Survey*.

22 See section 4.2.3.

23 See also Commission staff working document (2006), accompanying document to the Commission's 2006 Communication *Efficiency and equity in European education and training systems.*

tion degrees (Chart 12, see page 219). There is also a considerable body of research evidence that shows, using multivariate regression techniques, that, all things being equal, the likelihood of receiving training rises with the level of educational attainment, suggesting that education and training are complementary in the United States (Lillard and Tan, 1986; Lynch and Black, 1988; Loewenstein and Spletzer, 1999b; Frazis et al., 2000) and in some EU Member States (Brunello, 2004; Bassanini et al., 2005)[24]. The results of our first probit model for the European Union confirm that the probability of employees to participate in CVT rises with the level of schooling (Table 1, see page 204).

Clearly the disadvantaged position of low-educated workers in terms of accessing CVT is undesirable given the substantial individual benefits that training can bring, such as improved employability and job security while these workers are often in precarious situations, higher wages and better promotional opportunities (Wooden et al. 2001; OECD, 2004a).

3.2.2. Age

There are widespread concerns about the lower access to CVT for older people (CEDEFOP, 2006; European Commission, 2006b), particularly in a context of an ageing population in EU countries resulting from at least three demographic trends: a decrease in fertility rate, the ageing of the baby boomers and an increase in life expectancy at birth (European Commission, 2006b, 2007c).

A number of studies have suggested that older workers are likely to face several barriers in gaining training (Wooden et al., 2001). These barriers can be grouped into three broad categories: employer attitudes, lower learning ability and the attitudes of the older workers themselves.

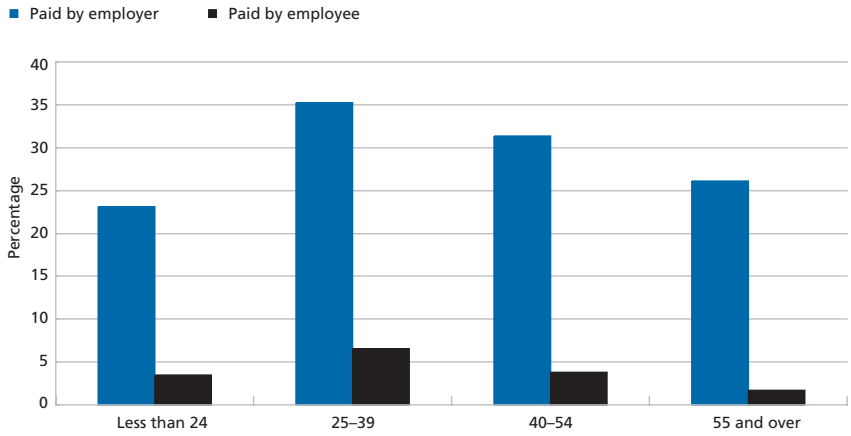
Many employers often hold stereotypical views about the productivity potential of older workers compared to their younger counterparts (Rosen and Jerdee, 1976a, b).

Moreover, older workers are frequently characterised as more difficult, and consequently more costly, to train. This problem is made worse by the fact that employers often have insufficient time left before the retirement of these workers to recoup the cost of that training. Rosen (1975), for instance, indicates that skills become obsolete not only because of external developments independent of workers, such as technological and organisational developments, but also because of the wear on skills resulting from the nature of the ageing process. More precisely, Rosen makes a distinction between the general depreciation of mental and physical capacities of the older workers and the declining capacity to learn and to adapt to new situations (de Grip and van Loo, 2002). The latter can obviously negatively influence their access to training (although the decline in physical and mental capacity occurs only at an older age); it is also very gradual, is subject to wide variations depending on the individuals concerned and can be reduced by preventive health policies (European Commission, 2006b).

Finally, the relatively disadvantaged position of older workers in terms of accessing CVT may be further aggravated by the attitudes of workers themselves. In many circumstances, older workers are less confident about their potential during and after the training period or do not see the financial advantages of such training.

Is there empirical evidence that older workers are less likely to receive training than other age groups? The unequal access of older workers to CVT seems to be supported by the fourth *European Working Conditions Survey*, although the differences among the age groups in terms of access to training are not considerable. Simple bivariate cross-tabulations of age and the levels of training show effectively that workers aged 45–54 and especially those aged 55 and over receive less training paid by their employer than the workers aged 25–39 (chart 13). A few empirical studies using multivariate regression techniques also indicate that the likelihood of receiving training is lower for older workers than for their younger counterparts in industri-

Chart 13: **Number of employees who participated in continuing vocational training in the EU–27 by age, 2005**



Source: DG EMPL calculations based on the fourth *European Working Conditions Survey*.

24 Oosterbeek (1988), nonetheless, argues that this complementarity is mainly due to omitted ability and self-selection problems. His results suggest that employers have no particular preferences for training well-educated employees or less-educated ones.

alised countries, including European ones (Wooden et al., 2001; OECD, 2003; Brunello, 2004; Bassanini et al., 2005; CEDEFOP, 2006). The results of our first probit model suggest that participation in CVT is also less frequent for older workers in the European Union (Table 1, see page 204).

There are several reasons why the position of older workers in terms of accessing CVT should be improved. An unequal access to training put these workers in a relatively bad position in the labour market *vis-à-vis* the workers that have entered the labour force recently with a higher level of schooling, especially in the context of the new production model where the requirement in terms of cognitive skills is on the rise. In fact many older workers entered the workforce during the Fordist era with a low level of educational attainment. Furthermore, due to the demographic changes that many industrialised countries have undergone over the past decades – in particular, the decline of fertility rates and the ageing of the baby-boom generation – many of these workers need to delay their exit from the workforce in order to sustain employment rates and social protection systems (pensions and healthcare systems) (European Commission, 2006b, 2007c). This necessitates an increased access of these workers to employer-provided training in order to maintain their employability.

3.2.3. Gender

The situation of women in the labour market has experienced dramatic changes over past decades in EU Member States.

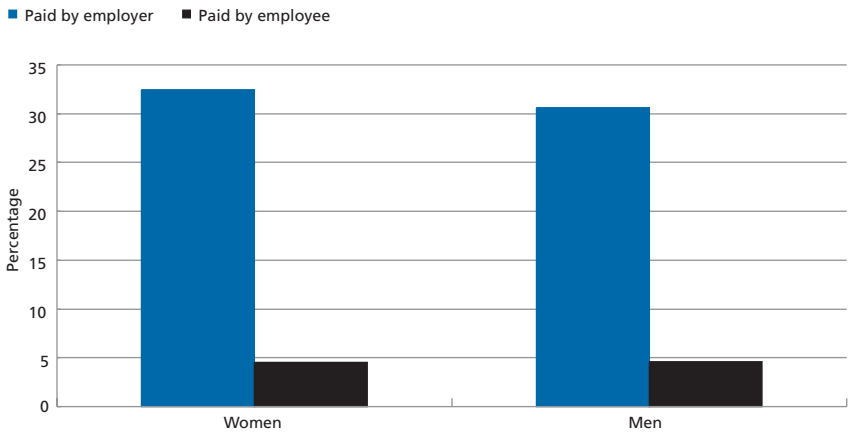
The employment rate of women has increased sharply, narrowing the gender gap in employment and unemployment. These developments result from changes in the labour supply behaviour of women, who report higher educational achievement than men in all Member States, and to a progressive change in role models and a push to improve the reconciliation of work and private life. Many factors have contributed to these developments (OECD, 2002), ranging from changes in household composition, which have given a growing importance to the incomes of women, to the expansion of policies related to family support, which have eased the participation of parents in the labour market.

Despite these developments, concerns remain that women and men still face inequalities in the labour market. In all EU Member States without exception, women still are still at a disadvantage compared to men in fields such as their participation in employment or pay levels (European Commission, 2007d). By extension, these concerns have also been expressed in terms of access to CVT.

Is there empirical evidence that women are less likely to access CVT than men? The results of simple bivariate cross-tabulations of gender and the levels of training using the fourth *European Working Conditions Survey* suggest that women and men have a relatively equal access to CVT (Chart 14). However, these results may be biased if gender is correlated with other factors that are also associated with the probability of women participating in CVT. For instance, the survey indicates that a higher proportion of female than male employees hold fixed-term contracts (Parent-Thirion et al., 2007). The results of our first probit show that women are more likely than males to participate in CVT (Table 1, see page 204). Bassanini et al. (2005) also suggest that women have, all things being equal, a higher probability to participate in CVT than men in EU Member States, although the difference is small. Nevertheless, other empirical studies for the United States indicate that men are more likely to receive training than women are (Lynch, 1992; Barron et al., 1993). However, other empirical works using advanced statistical techniques also do not come up with clear-cut conclusions on a gender gap in training participation. For instance, Arulampalam et al. (2004) find that, in Europe, women are typically no less likely than men to receive training.

In this section, we have argued that potential market failures in training justify government intervention on the ground of efficiency in order to provide employers and/or employees with the right incentives to invest in skill developments. Moreover, we have shown that policy intervention is also socially desirable in order to ensure equal access to CVT for disadvantaged groups, i.e. older workers, low-educated workers and, to a lesser extent, women. What kinds of government intervention might respond

Chart 14: **Number of employees who participated in continuing vocational training in the European Union by gender, 2005**



Source: DG EMPL calculations based on the fourth *European Working Conditions Survey.*

to these issues?

4. FINDING THE RIGHT BALANCE IN GOVERNMENT INTERVENTION

Government intervention can be in three forms for vocational training: provision, funding and regulation (Oosterbeek, 1999). Government provision of training differs significantly from government financing or regulation. In many circumstances, government financing or regulation may be justified in order to achieve the objectives of efficiency and equity, but government provision can only be justified in limited cases, where the capacity or infrastructure are lacking for private provision or government provision can be demonstrated to be the most effective and efficient means of provision (Middleton et al., 1993). Also governments have to be careful when choosing among these forms because their intervention may, in some cases, worsen the situation, leading to so-called 'government failures'. Most of the policy instruments are only partial solutions to strengthen CVT, meaning that they are not general remedies to all problems that may cause under-investment or make access to CVT unequal. While certain policy instruments may be good remedies in some situations, they may also have side effects that contribute to exacerbate problems in others (Oosterbeek, 1999). Finally, government intervention is not without problems. These problems include, for instance, possible deadweight and displacement as well as administrative complexity.

This section presents a quick overview of supply-side policies that aim at securing investment in CVT at the initiative of the enterprise and its benefits[25]. It first discusses the multiplicity of financing arrangements that have been set up across the EU Member States to strengthen investment in CVT by firms. There are various types of financing arrangements regarding CVT. These arrangements range from the absence of regulation for CVT through to subsidies and tax incentives offered to employers that provide training to compulsory training obligations set by governments for firms (Gasskov, 2001; Green et al., 2001). The section then considers policies that contribute towards influencing the returns on CVT.

4.1. Securing investment in continuing vocational training

4.1.1. Demand-led market regulation

Some governments have opted not to intervene in the financing of CVT. A well-known example of countries where there is almost no state regulation related to enterprise-based CVT is the United Kingdom, universal levies having been abolished (Greenhalgh, 1999). In this country there is no formalised funding mechanism such as a levy across the industrial sectors except for the construction and engineering industries which have their training boards. From time to time, the policy issue is raised as to whether continuing training should be funded through some kind of requirement (perhaps a levy) on employers. By and large, employers resist the concept of such measures and hold firmly to the principal of voluntarism. Thus employers expect that public funds will provide subvention for a substantial element of initial vocational education and training, and are firm in the view that the training of people outside employment is a matter for the state or the individual.

Although employers and individuals are the main contributors to the cost of adult education and training, public subsidies are being used in the areas of market failure where private contributions are not forthcoming. Full public expenditure on adults' learning is used to train some key competencies (literacy, language and numeracy) and on lower-level courses without which individuals may not be employable on a permanent basis.

Such a demand-led approach has been criticised on the ground because it does not provide the right incentives to workers and firms to invest in skills, resulting in under-investment in CVT (Green et al., 2001). For instance, at the end of the 1980s, the United Kingdom was said to be trapped in a 'low-skills equilibrium', in which the majority of firms were operated by poorly trained managers and employees producing low-quality goods and services. The apparent absence of skill shortages at the time was seen as the result of the decisions of employers to adapt their methods of production to these low levels of skills (Finegold and Soskice, 1988; Gasskov, 2001).

Despite these criticisms of the demand-led approach, chart 9 (see page 211) shows that a large number of employers in the United Kingdom especially invest in CVT compared to other countries with a more regulated approach (Greenhalgh, 1999). Besides, this approach does not suffer from the problems of deadweight and displacement that is associated with public support to CVT. Moreover, it allows for much more flexibility than state-regulated or social-partnership approaches (Green et al., 2001).

25 Because continuing vocational training consists of training measures or activities, which enterprises finance wholly or partly for their employees who have a working contract, the section does not discuss financial arrangements or policy instruments targeted towards individuals – either employed or unemployed – and covers only those which are targeted to firms. The reader interested by a presentation of instruments targeted to individuals in the broader context of lifelong learning may see OECD (2003, 2004b, 2005), EIM and SEOR (2005), and Bassanini et al. (2005).

4.1.2. Subsidies, tax incentives and loan arrangements

Instead of opting for a neutral approach, several governments in the European Union have provided various financial and fiscal incentives to employers in order that they may invest in CVT, as shown by Figure 3 which presents a schematic view of financial flows in the vocational training market.

Subsidies to firms are used by governments to share the direct costs of training and also a substantial share of the indirect costs (e.g. foregone income) of internal [Area C] or external [Area B] training borne by the firms. These subsidies are frequently granted to firms on a selective basis, often to firms in the framework of active labour market policies (European Commission, 2006c) in order to provide training to at-risk workers so that they are not excluded from the labour market.[26] Subsidies are also often used by governments to support the training of workers in small and medium-size enterprises (Gasskov, 2001), who are often less likely to receive CVT than their counterparts in larger firms, as shown by the results of our first probit model (Table 1, see page 204).

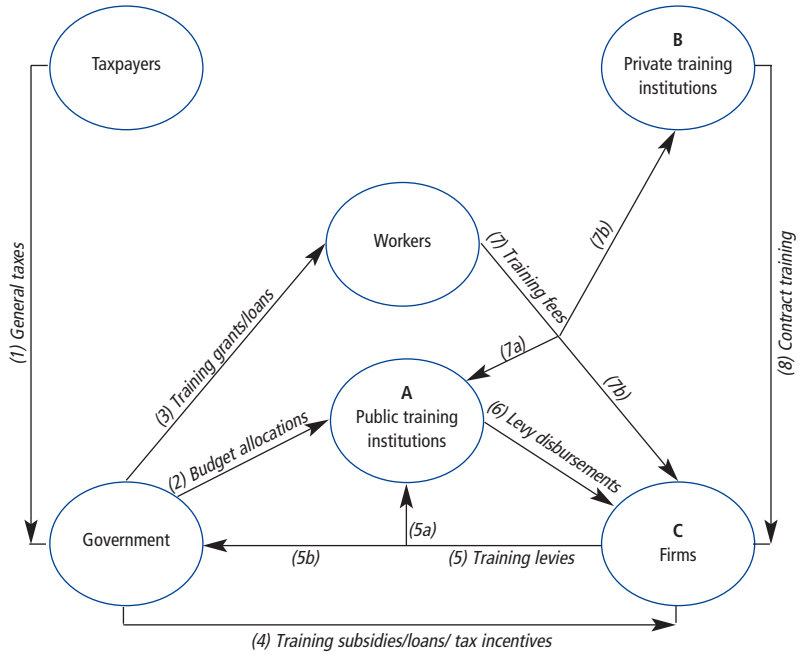
Governments also provide various tax incentives for employers in order to persuade them to invest in continuing vocational training [4]. These tax incentives for firms usually allow them to deduct more than the total costs of training (or an increase above a certain threshold) from their taxable profits or revenues (Gasskov, 2001; Bassanini et al., 2005). Tax incentives vary across industrialised countries according to the amount and types of training costs that are eligible for deduction. Concerning the types of training costs, governments may restrict the scope of deduction to only those that result from external training. Moreover, government support for CVT by means of tax incentives can be targeted towards specific firms like SMEs (small and medium-sized enterprises) or groups of workers (e.g. low-skilled, older workers) (OECD, 2006).

Finally, government intervention to support CVT can take the form of training loans [4], especially for SMEs (Gasskov, 2001).

These financial and fiscal instruments, which support investment in CVT, have advantages and disadvantages. Governments can efficiently increase the level of CVT by granting subsidies to firms in proportion to their investment in CVT. In this respect, subsidies are particularly appropriate because they correct market failures (e.g. poaching externality) while ensuring that the private benefits of training accrue to the firms that invest in training (Cahuc and Zylbergerg, 2006). As we will see later in this chapter, levy exemption schemes do not allow for correcting these market failures in a satisfactory way. Moreover, even in the absence of under-investment in CVT, subsidies or tax incentives may increase the skills of workers at the bottom end of the skills distribution and serve to reduce income inequality (Acemoglu, 2001). Finally, subsidies/grants increase the returns to training while loans do not affect returns (when interest rates are market-based). Subsidies/grants are therefore more appropriate to correct for labour market imperfections while loans are the more efficient government instrument to combat capital market imperfections.

Although these financial and fiscal instruments seem appropriate to persuade employers to invest in CVT, an important question in the assessment of the effectiveness of these instruments is what would have happened in their absence? This question implies considering the two key components of the additional impact of public support: deadweight and dis-

Figure 3: **A schematic view of financial flows in the vocational training market**



Source: based on Middleton et al. (1993).

26 Note that governments also allocate part of their training budget to public training institutions, especially to support the unemployed through labour market (re-) training [2].

placement. An increase in the participation of employees on CVT in firms that have benefited from public support that can be judged to have occurred anyway, in the absence of any assistance, is termed deadweight. Even if the conclusion is that zero deadweight exists, the possibility still remains that public support provided to a particular firm or to specific groups of workers may displace training participation in other firms or other groups of workers. Unfortunately, empirical studies on the effectiveness of fiscal and financial public support to CVT are few. The results of our second probit model showed that the participation of employees to CVT is less frequent in EU Member States where expenditure on active labour market policies in relation to GDP is high. This might suggest that there is a substitution effect between CVT and labour market (re)training (Table 1, see page 204). In addition, a recent evaluation by Leuven and Oosterbeek (2004) on the implementation of a tax law in the Netherlands in 1998, allowing Dutch employers to claim an extra tax deduction when they train employees aged 40 years or older, reveals that many firms respond to this new tax incentive by substituting training for workers above 40 for the training of those below it.

4.1.3. Collective labour arrangements

Some EU Member States have established collective labour arrangements where the responsibility for a vocational training policy is jointly shared between social partners and the government (Gasskov, 2001; Green et al., 2001; Smith and Billet, 2005). Indeed, the increasing need for CVT in the changing economic context has become a key subject in dialogue among social partners, firms and governments. Tripartite or bipartite dialogue on collective bargaining has often resulted in the inclusion of special clauses related to training in collective agreements. The introduction of these special training clauses has led in particular to the creation of (inter-) sectoral training funds covering specific industry sectors and groups of sectors, which allows employers to provide training that is paid by funding from these (inter-) sectoral funds.

The main features of (inter-) sectoral training funds can be described as follows (Gasskov, 2001). Sectoral training funds are instituted on a voluntary basis under sectoral agreements and are administered by bipartite bodies. (Inter-) sectoral training funds finance the development of training policies at the industry level.

Box 4 – The European Social Fund support for restructuring and training

What is the European Social Fund?

The European Social Fund (ESF) is one of the EU's Structural Funds, set up to reduce differences in prosperity and living standards across EU Member States and regions and therefore promoting economic and social cohesion. The ESF is devoted to promoting employment in the European Union. It helps Member States make Europe's workforce and companies better equipped to face new, global challenges. Funding is spread across the Member States and regions, in particular to those where economic development is less advanced.

Among the various fields of activity of the European Social Fund, one can cite its support for restructuring and training.

The European Social Fund support for restructuring

For the 2007–2013 programming period, the ESF is supporting actions aimed at anticipating and managing economic and structural changes to ensure more and better jobs for Europe.

As European firms have undergone and are undergoing restructuring, it is important to pursue policies aimed at parallel improvements of flexibility and security for workers and enterprises that will help maintain human capital and employability. A major aim is to move away from 'corporate restructurings' that include job losses and are essentially a reaction to events, and instead to anticipate such events and circumstances in ways that allow for smooth changes that support jobs. For this, forward-looking planning of human resources is a core issue. Creating conditions which will support human capital and employment security depends on several factors: the qualifications of the workforce, including their 'transferable' skills; the internal flexibility of companies, including issues such as multiskilling and working-time arrangements; and external flexibility in the form of company outplacements, for example.

The development of mechanisms for such 'active employment measures' requires partnerships between many actors at national, regional and local levels, as well as at Community level.

The ESF is funding national and regional projects in the following areas:

- Systems that anticipate change, including projects supporting employment observatories that predict economic change, and identify future training needs and communicate these to the regions, sectors, companies and training providers. Also, partnership systems that link employers, trade unions, workers and social partners together in efforts to anticipate and manage restructuring.

- Company and sector restructuring, including projects to develop early-warning systems in companies; to build sectoral networks between companies, trade unions and others that can help foresee and manage change in an integrated manner; and to support business networks and consulting on change management.
- Support to individuals in order that workers become more adaptable, mainly given under the priority 'workforce adaptability'.

The European Social Fund support for training

To help meet the objectives of the EU Strategy for Growth and Jobs, European workers must be among the best in the world: well educated and trained, with the skills to meet the demands of the knowledge economy and take it forward.

The European Union has a comprehensive set of policies and strategies, at European, national and regional levels, to improve the qualifications of the European workforce. Many of these improve higher education and vocational training systems, and build better links between these training providers and industry – to ensure that the skills they teach are those that companies need, today and in the future.

The ESF 2007–2013 priority for human capital covers all activities concerning education and training. Not only does it aim towards improving the quality and availability of education and training to help people get a job, but it also supports training as a lifelong process to help workers keep their jobs, advance in their jobs, prepare themselves to change jobs, and get back into work if they have lost their jobs.

The ESF supports:

- The design and introduction of reforms in education and training systems that make people more employable, make initial and vocational training more relevant to employers' needs, and update the skills of the educators and trainers to take account of the need for innovation and the knowledge-based economy;
- Networks between higher education institutions, research and technology centres and enterprises. These organisations are all involved in vocational training, so communication between them is critical for the relevance and effectiveness of training programmes – and also for the design and implementation of innovative approaches to lifelong learning.

In the less-developed EU regions, the ESF is funding additional types of activity in order to:

- Implement reforms in education and training systems in ways that raise people's awareness of the importance of the needs of the knowledge-based economy, and in particular the need for lifelong learning;
- Increase participation in lifelong learning by reducing early school-leaving, reducing gender disparities in some subjects and improving access to quality education;
- Expand the pool of researchers and innovators by supporting postgraduate studies and the training of researchers.

Funds are mostly financed by firms through (inter-) sectoral training levies, although several funds have received financial support from the European Social Fund (Box 4). Sometimes employees have also participated in the financing of these (inter) sectoral training funds through compulsory payroll contributions. Governments can also contribute to (inter)sectoral training funds on a voluntary basis in order, for instance, to sustain the access to CVT for certain disadvantaged groups of workers and firms.

4.1.4. Compulsory arrangements

Many industrialised countries have taken initiatives, through compulsory arrangements, in order to ensure a minimum financial commitment of firms in CVT. These compulsory arrangements mainly consist of training levies (5 and 6 on Figure 3, see page 223) (OECD, 2006; Bassanini et al., 2005). Several common types of training levies, relevant for CVT, can be identified: levy exemptions, levy grants and levy reimbursements (Gasskov, 2001).[27]

Based on a percentage of firms' payrolls fixed by governments, levy exemption schemes, also called train-or-pay schemes, set up predetermined minimum levels of funding in CVT to be committed to by employers. Firms can then reduce their levy obligations and even be exempted of such obligations by financing training to their employees. Unspent funds are then transferred to special funds.

Levy-grant schemes are also based on firms' payrolls. Payroll contributions are collected from employers by governments or sectoral bodies and then

27 In addition to these schemes, revenue-generating levies should be mentioned. Revenue-generating levies are based principally on firms' payrolls and have the main purpose of financing national or sectoral vocational education and public training institutions [5a, b]. The emphasis is on providing public sector training, especially for the unemployed, rather than encouraging firms to invest in training. Because revenue-generating schemes do not provide incentives for firms to invest in continuing vocational training, they are not mentioned in the main text.

redistributed among firms in the form of grants. These grants do not necessarily reflect firms' levy contributions because they are conditional on certain criteria – corresponding, for instance, to national or sectoral training priorities – that firms have to meet once they have adopted their training plans.

Conversely to levy-grant schemes, levy-reimbursement schemes allow firms to be offered grants to cover at least part of their training costs. These schemes usually encourage ad hoc approaches to training provision, rather than inciting firms to develop systematic training plans.

Levy-based schemes have advantages and disadvantages (Gasskov, 2001). The main advantage of these schemes is that they ensure that firms invest in CVT at a level that is likely to be higher than the one provided by the free market, mainly because of the poaching externality. In addition, these schemes contribute to the development of a CVT culture by equalising training expenditures among firms. Moreover, levy-based schemes allow, to a certain extent, management of the profile and quality of the CVT provided by employers, either internally or externally, by establishing conditions that firms must meet in order for training programmes to be eligible for financing from these schemes.

In spite of these advantages, levy-based schemes have several drawbacks. They may not be powerful enough to induce additional investment by firms given that, above the threshold, the investment decisions of firms are only governed by the rules of the free market (Cahuc and Zylberberg, 2006). Then, mandatory investments made by employers in CVT may not be 'additional' to non-mandatory financing and consequently may substitute or tend to 'crowd out' investment that would have been provided by firms in any case. Experiences in many countries show also that levy-based schemes do not allow all firms to recover their levy contributions entirely; in many cases, large firms tend to benefit most from levy-grant and training-cost reimbursement schemes, while smaller firms pay levies but do not often get any financial returns. Furthermore, levies for training fall upon employers, who are supposed to bear the burden of these taxes. But do employers bear the cost of the taxes, or are they passed onto employees in the form of lower net wages? Suppose the costs are passed on to employees: the levy-based schemes, especially the levy-exemption ones, are not really equitable because they make all the workers pay for only a small number of them, the workers who are well-educated, in the prime of life, in highly skilled occupations, who have indefinite contracts. Indeed, the results of our first probit model show that disadvantaged groups of workers – namely low-educated and older workers – and workers with temporary contracts have a lower probability of participating in continuing vocational training.

4.2. Securing the benefits of continuing vocational training

4.2.1. Productivity and wage-bargaining systems

When labour markets are imperfectly competitive, the supply of CVT by firms is higher than in perfect competition because the induced compressed wage structure generates a rent for employers that encourages them to finance 'general' training if there is a positive probability that workers will stay with them afterwards. A number of empirical studies have shown that such theoretical predictions of the new training literature are consistent with empirical evidence (e.g. Brunello, 2004; Bassanini and Brunello, 2006). The results of our second probit model also show that the higher the 90–50 wage differential is, the lower the likelihood is of employees participating in CVT (Table 1, see page 204).

This evidence suggests that reforms aiming at developing a policy mix to encourage a greater alignment of wages and productivity should be treated cautiously because such reforms may reduce the rents of employers induced by their investment in CVT, thereby aggravating under-investment in human capital for workers (Bassanini and Brunello, 2006), even if they may have positive effects on the demand-side.

4.2.2. Payback clauses

In the context of imperfectly competitive labour markets, the idea that employers under-invest in CVT because they fear that potentially trained employees will quit the firm after the training period to join other firms that choose to free-ride has been outlined in the previous section. In order to reduce the risk that trained employees leave their current employers after training without allowing the latter to recoup the benefits of their investment (i.e. risk of poaching), the introduction of 'payback clauses' can be helpful. These clauses, which are provided by law or instituted in collective agreements or individual contracts in many EU Member States (OECD, 2006), stipulate that an employee leaving the firm within a specified period after a training spell has to agree to reimburse at least part of the training costs borne by the employer. Not only are payback clauses attractive for employers, but they can also be useful for employees that are credit-constrained since they allow them to share the costs of training, by having a loan from their employers with a low risk of default (OECD, 2003).

Although attractive, payback clauses have several drawbacks. The enforcement of theses clauses by employers may be difficult if trained employees are credit-constrained, especially if firms overstate the training costs, or encourage their employers to lay them off. Then, payback clauses may diminish the incentives of many employees

to participate in CVT if the training has a poor content and quality. Indeed, in the case of voluntary quitting, employees will have to reimburse the training costs to their current employers even if the benefits of CVT are low (Bassanini et al., 2005). As a consequence, the argument for a payback clause may make sense only in cases where the training is certified. In addition, payback clauses do not entirely prevent trained employees from quitting their current employers after training since future employers may pay them higher wages, allowing them to reimburse the training costs and to appropriate the additional benefits. Finally, these clauses may also reduce the incentives of low-educated workers to acquire new skills because the returns to CVT for them are often low (OECD, 2006).

4.2.3. Quality, accreditation and certification

The quality and nature of training programmes afforded by private training institutions [Area B on Figure 3] are often difficult to assess by employees and employers because of a shortage of information. The consequence of such incomplete information is that both workers and firms face difficulties when taking training decisions, resulting in under-investment in CVT (see section 3.1.4.).

An important policy dimension is the accreditation of training providers, used in many EU Member States to harmonise and legitimise a wide variety of training providers (Box 5). This means compelling training providers to meet a set of fixed minimum standards in order to be incorporated in a vocational education and training system. Accreditation is particularly significant for CVT in which there is often little regulation and review of quality. Such accreditation can thus improve the information available to employees and employers and consequently increases investment in CVT at the initiative of the enterprise. The process of granting accredited status to a training institution should be undertaken by independent institutions, either public or private. However, in any case, such accreditation processes should be regulated by governments in order to ensure a fair competition among external training providers since such activity can lead to the creation of (too) high entry barriers in the market of vocational training (Cahuc and Zylbergerg, 2006).

Although policies targeted toward quality assurance are likely to have a positive impact on investment in CVT at the initiative of the enterprise, policies supporting the certification, validation or recognition of skills acquired after training may have more mixed effects (Box 5) (see section 3.1.4.).

On the one hand, certification, by reducing asymmetric information between employees and outside employers, increases the probability of employees leaving after the training period and may therefore discourage firms from investing in CVT due to the poaching problem. One solution to this poaching problem could be to establish universal levies in order to make all firms pay for CVT, including the poaching firms.

On the other hand, certification may have positive effects on the demand-side since it may incite employees to devote more effort to the acquisition of new skills in the context of CVT.

Box 5 – Towards the implementation of common European tools for quality assurance, accreditation and certification: examples of policy initiatives

A Common Quality Assurance Framework (CQAF)

In order to improve the quality of CVT, efforts have been undertaken by EU Member States and the social partners, with the support of the European Commission, to enhance European cooperation in the field of quality assurance in vocational education and training through the promotion of a Common Quality Assurance Framework (CQAF), following the May 2004 Council Conclusions on *Quality assurance in vocational education and training*. The CQAF constitutes a European reference framework to ensure and develop quality in vocational education and training, building on the key principles of the most relevant, existing quality assurance models. It may be considered as a cross reading instrument that can help policy-makers and practitioners get a better insight as to how the existing quality assurance models work, identify areas of provision that need improvement, and take decisions on how to improve them, based on common quantitative and qualitative references. It also allows for capturing and classifying best practices within and across Member States.

A European Credit System for vocational training and education (ECVTS)

Significant efforts have been made in the EU context to develop and test a European Credit System for vocational training and education (ECVTS). The objective of the ECVTS is to create a European framework which will facilitate the transfer, validation and recognition of learning outcomes acquired by individuals moving from one learning context to another or from one qualification system to another, particularly during a mobility period, and who wish to obtain a qualification.

Certification may complement the use of financial and fiscal incentives targeted towards firms by enabling the government to monitor whether a firm receiving such incentives is actually providing training to its employees (Acemoglu, 2001). Moreover, the certification, validation and recognition of skills acquired in the context of CVT are essential to ease their transferability among firms and thereby to support job-to-job mobility, which is important for the implementation of flexicurity policies[28].

The possible mixed effects of policies supporting the certification, validation and recognition of skills acquired during training on investment in CVT should, nevertheless, be kept in mind.

5. CONCLUSIONS AND POLICY IMPLICATIONS

This chapter has shown that the growing importance of CVT in EU Member States results from the long-term trends and the specificities of the structural changes that have characterised modern economies over past decades.

The latter have indeed been marked by a transition from a Fordist-type model of production based on mass production and consumption to a post Fordist-type productive model driven by quality and innovation. In addition, European economies have experienced a significant employment shift towards services. Lastly, the education attainment level of the workforce in these economies has significantly risen.

These changes have raised the need for CVT in order to guarantee that workers who entered the workforce a few decades ago with a relatively low educational attainment level have the skills required to participate effectively in the new production process that prevails in today's economy. Moreover, these changes have put an increasing pressure on the new generations of workers to keep acquiring the skills necessary to learn and innovate in a new era characterised by rapid change and learning. Despite the growing need to invest in CVT, many EU Member States – primarily the Southern European and new Member States – exhibit comparatively low levels of CVT.

Against this background, the chapter has suggested that there are four good reasons which call for the strengthening of CVT in the context of the Lisbon Strategy for Growth and Jobs. These reasons may constitute the objectives that policies targeted towards CVT could pursue:

- reduce social exclusion and income inequality by increasing the human capital of at-risk workers;
- sustain our social protection systems (pensions and healthcare systems) by keeping older workers active in the labour market;
- support the implementation of flexicurity policies by making internal labour markets more dynamic and by enhancing job-to-job mobility;
- increase the innovation capacity of European firms by allowing workers to continually upgrade their skills to respond more rapidly to changes in economic conditions.

This chapter has, nevertheless, provided evidence that these objectives are far from being reached for reasons:

- Firstly, access to CVT is unequal because workers with low levels of schooling and income are less likely than their counterparts to participate in CVT at the initiative of the enterprise. Consequently they are not able to increase their human capital and their employability, which increases the risk of social exclusion and income inequality.
- Secondly, older workers – who entered the labour force a few decades ago, often with low levels of schooling – are less likely to participate in CVT at the initiative of the enterprise than their younger counterparts. This increases the older workers' probability to exit the labour force early, thereby aggravating our social protection systems.
- Thirdly, while there are signs that CVT makes internal labour markets more dynamic by supporting functional flexibility, the transferability of workers' skills acquired during training is restricted by the fact that these skills are often not observable to firms and that the market for CVT is, to some extent, hidden from the labour market.
- Finally, while training is an important means for firms to sustain their innovation activity compared to other innovation mechanisms, such as intramural or extramural R&D, the likelihood of participating in CVT remains quite low in micro and small enterprises in Europe.

What can be the role of government in achieving these objectives? This chapter has stressed that government intervention in CVT at the initiative of the enterprise can be justified to ensure that the two traditional objectives of education and training are reached, namely efficiency and equity.[29]

Regarding efficiency, there are indications that the free market cannot provide an efficient level of investment in CVT at the initiative of the enterprise because of possible market failures.

Probably the most prominent market failure related to CVT at the initiative of the enterprise is the poaching problem. This refers to the possibility of a trained employee leaving the firm that provided the training in order to join another firm, who did not pay for such activity but who gains some of the resulting benefits. In many circum-

28 See the recently adopted Commission's 2007 Communication *Towards common principles of flexicurity: More and better jobs through flexibility and security*.

29 See the EC's 2006 Communication, *Efficiency and equity in European education and training systems*.

stances, such market failure does not provide adequate incentives for employers to invest in CVT. Such uncertainty, created by the risk of poaching, may explain the probability of why employees in the European Union with less than one year of job tenure receive lower levels of CVT than their counterparts with more years of job tenure.

Employers may nevertheless be persuaded to invest in CVT in the presence of a compressed wage structure, which rewards trained workers relatively less for their skills. Consequently, a compressed wage structure may encourage further investment in CVT, because it increases the returns to firms from raising the productivity of their employees. Our empirical findings have shown that participation in CVT at the initiative of the enterprise is actually more frequent in countries where the wage structure is compressed. At the same time, this investment is likely to remain inefficient, especially if the wage structure is too compressed because it diminishes the incentives of employees to participate in training.

Another important market failure, which is likely to generate an inefficient or under-investment in CVT, is the lack of information to employees and employers regarding the nature and the quality of CVT.

Regarding equity, this chapter has provided empirical evidence that access to CVT at the initiative of the enterprise is unequal among workers, as discussed above.

Some groups of employees have a lower likelihood to participate in CVT than others in the European Union. These groups of workers are the older workers, the less educated, those with low professional experience, and the workers with the lowest income. Paradoxically, training needs are the highest among these workers.

How can government intervention help achieve efficiency and equity in CVT at the initiative of the enterprise? Supply-side policies designed to secure investment in this area may contribute to reduce under-investment in CVT, while, in certain circumstances, ensuring equal access of all workers to training. These policies may also affect the benefits of continuing training.

Several supply-side policies aiming at securing investment in CVT have been identified in the chapter. These policies include fiscal incentives and subsidies, collective labour agreements and compulsory agreements through levy-based schemes.

Governments may equitably and efficiently increase the level of CVT by granting subsidies to firms in proportion to their investment in CVT. Even in the absence of under-investment in CVT at the initiative of the enterprise, subsidies and tax incentives may contribute to reducing inequality by being targeted towards certain categories of firms, such as micro or small firms or of workers, for instance those at the bottom end of the skills distribution. However, they also have a major disadvantage because they may have deadweight and displacement effects.

Collective labour agreements leading to the creation of (inter-) sectoral training funds have the advantage of little need for government intervention. But, transparency of these training funds should be ensured.

Finally, the main advantage of levy-based schemes (i.e. levy exemption and levy-reimbursement schemes) is that they ensure that employers invest in CVT at a level that is likely to be higher than the one provided by the free market. Nevertheless, these schemes have drawbacks. Firstly, they may not be powerful enough to induce additional investment by firms given that, above the threshold, the investment decisions of firms are only governed by the rules of the free market. Furthermore, these schemes are often inequitable. For instance, levy-reimbursement schemes do not allow all firms, in particular small ones, to recover their levy contributions entirely. Another example is given by levy-exemption schemes. These schemes often make all workers pay for a scheme that benefits only a small number of them: those who are well educated, in the prime age group, in highly skilled occupations or who have been with their employers a long time.

A diversity of supply-side policies aimed at securing the benefits from CVT has been discussed in this chapter.

Results from the theoretical literature suggest that reforms aiming at developing a policy mix to encourage a greater aligment of wages and productivity should be considered with caution because they may reduce the benefits from CVT that accrue to training firms, although they may have positive effects on the demand-side.

On the contrary, policy instruments aimed at reducing turnover such as payback clauses may be useful since they, to a certain extent, allow employers to secure the benefits of their investment in CVT.

Lastly, policies promoting quality, accreditation and certification of training may have mixed effects on investment in CVT. On the one hand, the accreditation of training contributes towards improving the information on the quality and nature of training, thereby helping employers to take training decisions. On the other hand, the certification of training may reduce the incentives of firms to provide CVT to their employees because it increases the transferability of their employees' skills by making them more visible to other employers. Nevertheless, on the demand-side, the certification of training remains essential to persuade employees to devote more effort to the acquisition of new skills. Moreover, it is socially desirable because it eases job-to-job mobility and consequently helps in the implementation of flexicurity policies.

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Chapter 5

THE LABOUR INCOME SHARE IN THE EUROPEAN UNION

1. INTRODUCTION

1.1. Background

In recent years, the evolution of the labour income share has gained the attention of policy-makers, academics and commentators across the world.[1] This has happened in the context of a widespread perception that globalisation tilted the functional distribution of income in favour of capital and that technological progress has become biased against labour, especially against low-skilled workers. Indeed, after having peaked in the late 1970s and early 1980s, the labour income share started to decline in most European Union (EU) Member States and now stands at low levels by historical standards. At the same time, there was also a significant change in the distribution of the overall wage bill, characterised by a gradual fall in the share of unskilled workers and a steady rise in the share of skilled workers.

The socio-economic importance of these developments can hardly be underestimated as it involves issues of equity and economic efficiency, as well as macro-economic stability. Firstly, labour's share in gross domestic product provides a good indicator of the extent to which national income is distributed between capital and labour, and in recent years there has been a growing body of opinion that workers are not getting their fair share of the gains from technological progress and globalisation (Roach, 2006; Bernanke, 2007). As the labour income share – along with the unemployment rate, relative wages, the structure of ownership of assets, income taxes and benefits – determines the personal income distribution, then a clear understanding of the drivers of the labour income share is of particular relevance from the perspective of social cohesion (Checchi and Garcia-Penalosa, 2005)[2].

Secondly, the evolution of the labour income share also concerns issues of economic efficiency. If the labour income share is above its trend level there will be downward pressure on employment and wages to the point where equilibrium (between real wages and productivity) is restored. However, if real wages are not flexible enough downwards in the face of adverse shocks, then there will be higher employment and output volatility in the short to medium run and higher equilibrium unemployment in the medium to long run (due to a misalignment of real wages with labour productivity). Moreover, to the extent that the labour income share is perceived to be the result of the ongoing process of the international division of labour, pressures may arise to impose protectionist measures which may lead to a decrease in economic efficiency.

Thirdly, the dynamics of the labour income share also affects macro-economic stability through, among other things, its impact on the composition of the tax base and the different components of aggregate demand. Indeed, given the different tax rates applied to labour income and capital income, a change in the distribution of factor income could have significant effects for fiscal revenue and thus also for the balance of a country's public finances. Moreover, as the marginal propensity to spend out of disposable labour income is higher than the marginal propensity to spend out of capital income, and investment decisions are, to a large extent, determined by the rate of return on capital, a shift in the allocation of gross domestic product between capital and labour can have important implications for the level and composition of domestic demand (Stockhammer et al., 2007). In addition, as the labour income share is also a measure of the extent to which real wages and productivity evolve together in an economy, its development can have important implications for an economy's international competitiveness.

1.2. Coverage of the chapter

This chapter explores the mechanisms underlying the recent evolution of the labour income share and considers possible policy responses in the context of social cohesion in the EU. This study does not intend to elaborate on the evolution of the labour income share in individual EU Member States, but will rather draw some general lessons by studying a diverse set of country experiences. Moreover, it will deal solely with the distribution of gross

1 Generally speaking, the labour income share measures the ratio of total labour compensation to gross domestic product. Synonyms for 'labour income share' include 'labour share' and 'wage share'.

2 In an empirical analysis covering 16 OECD countries over the period from 1960 until 1996, Checchi and Garcia-Penalosa (2005) find that the labour income share is a significant determinant of overall inequality patterns and that stronger unions, minimum wages and a more generous unemployment benefit tend to reduce income inequality through wage compression and through a reduction in the rewards to capital. Nevertheless, they also emphasise that their analysis is a static one and that more research is needed to examine the dynamic feedbacks between labour market institutions and capital formation.

domestic product between the production factors. This chapter does not therefore discuss personal income distribution, nor the allocation of the wage bill between wages and employment or the impact of some of the underlying drivers, such as technological progress and globalisation, on the size of gross domestic product.

The next section describes the evolution of the labour income share in the EU for the period from 1960 until 2006, and compares it with the evolution of the labour income share in the United States and Japan.[3] There it is highlighted that in most of the EU-15 countries the labour income share reached a peak in the second half of the 1970s and early 1980s, and subsequently declined towards levels that are below those that were attained before the first oil price shock.

Traditionally the evolution of the labour income share has been studied in the context of economic growth theory and in this literature the constancy of the labour income share has long been considered as one of the important regularities that characterises economic growth (Kaldor, 1963; Barro and Sala-i-Martin, 1995). However, as time progressed and the data clearly indicated that the labour income share was not evolving in a stable way, researchers started to test new hypotheses regarding the mechanisms that drive the labour income share (Blanchard, 1997; Bentolila and Saint-Paul, 2003; IMF, 2007), and it is this literature on which this chapter will build further.

In sections 3 to 5 it is investigated as to what extent the evolution of the labour income share can be seen as the outcome of the interaction between shocks, production technology, institutions, globalisation, and shifts in the skill (and sectoral) composition of the economy. First, the relationship between the nature of the production technology and the labour income share is examined. There, the analysis not only stresses the importance of the degree of substitutability between capital and labour and relative factor endowments, but also focuses on the effects of technological progress that is biased against (low-skilled) workers. Next, the impact of goods and labour market institutions is studied. Such institutions create rents in the goods market and affect the distribution of rents between labour and capital through their impact on the bargaining power of the production factors. Moreover, as these institutions also affect the adjustment costs in the labour market, it is also investigated as to what extent they affect the behaviour of the labour income share over the business cycle. Finally, the theoretical analysis concludes with a description of the transmission mechanisms through which globalisation affects the functional income distribution .

In section 6, a system of income share equations is estimated with data retrieved from various sources, including the recently released EU KLEMS database[4]. This data allows an estimate of the different drivers' impact on the income share of the low, medium and high-skilled workers, as well as on the income share of aggregate labour. Subsequently, the estimated system is used to gauge the contribution of the different drivers to the recent decline of the aggregate labour income share, and to the evolution of the income share of the different skill types.

Finally, the last section summarises the most important findings and draws some policy conclusions. The first annex to this chapter describes the data that is used in this chapter. The data sources include the Commission's AMECO database, the EU KLEMS database and the Bassanini and Duval (2006) database. The second annex derives some basic analytical results that should help to clarify the details of the impact of the drivers on the labour income share.

2. THE EVOLUTION OF THE LABOUR INCOME SHARE IN THE EU, 1960–2006

The labour income share is defined as the total compensation of labour divided by gross domestic product. However, the exact measurement of the nominator as well as the denominator is not always straightforward (Gollin, 2002; Gomme and Rupert, 2004; Krueger, 1999; Askenazy, 2003). Data for the compensation of employees is usually readily available for the EU Member States. However, data on the labour income of the self-employed has to be estimated as the national accounts record labour income of self-employed together with capital income of corporations and quasi-corporations. A common practice is to assume that the wage rates of employees and the self-employed are the same and adjust the labour income share accordingly[5]. Further adjustments to the cal-

3 It should also be noted that for the countries that have acceded to the European Union since 2004, the analysis will cover only the period ranging from the (mid-) 1990s to 2006.

4 See www.euklems.net/ for more details regarding this database.

5 The adjusted labour share is then calculated as $\frac{\frac{\text{compensation of employees}}{\text{number of employess}} \text{ total employment}}{\text{gross domestic employment at marquet price}} \times 100$, a measure which is readily available in the Commission's AMECO database as variable ALCD0. Askenazy (2003) notes that such an adjustment is implicitly based on the assumption that the composition of self-employed remains constant over time, which is not necessarily the case. For instance, a high proportion of self-employed was working in the agricultural sector in the 1960s compared with a high proportion of self-employed in the liberal professions (e.g. lawyers, medical doctors, etc.) in the 2000s.

culated labour income share could include adjustments to the value added of the financial sector[6], the measurement of capital income of the non-market producers[7], and the use of gross domestic product at current factor costs instead of gross domestic product at current market prices[8].

In this chapter, the labour income share is measured as the compensation of the total number of employed divided by gross domestic product at current market prices[9], whereby the wage bill of the self-employed is calculated under the assumption that the wage rate of the self-employed is equal to the wage rate of the employees. From now on we will refer to this 'adjusted labour income share' as the 'labour income share'. For the EU-15 Member States the labour share is available from 1960, while for the Member States that have acceded since 2004 the data is only available from the mid-1990s.

The following sections briefly review the trend and cyclical developments in the labour income share in the European Union, the United States and Japan. Special attention is also being paid to the development of the shares of the different skill types, though the latter is not only of interest to understand the evolution of the aggregate but also to study the issue from the perspective of social cohesion.

2.1. The labour income share in the EU, the US and Japan

Chart 1 (see page 240) and Table 1 (see page 240) illustrate the evolution of the labour income share in the EU-15 for the period ranging from 1960 until 2006[10]. After having increased during the 1960s and the first half of the 1970s with a peak of 69.9% of GDP in 1975, the labour income share began a gradual decline and reached a low of 57.8% of GDP in 2006, with the actual labour income share falling below its trend in recent years. The evolution of the labour income share in the EU-27 as of 1995 is also shown in Chart 1. Due to the relative small share of the new Member States' economies in the aggregate, the addition of the labour income share of the 12 new Member States does not alter the overall trend in a significant way.

Chart 2 shows the evolution of the labour income share in the United States. Compared with the EU, the American labour income share behaved in a more stable way, reaching a high of 65.9% of GDP in 1970 and a low of 60.9% of GDP in 2005. Moreover, the American labour income share also has a much lower coefficient of variation over the 1960–2006 period (Table 1 - see page 240). Nevertheless a formal statistical test shows that the hypothesis of a non-stationary labour income share could not be rejected at a high confidence level for the United States, as well as for the EU-15 and Japan.[11]

In Japan (Chart 3 - see page 240), the labour income share displayed a marked upward trend from the mid-1960s to the early 1970s, reaching a peak of 76% of GDP around 1975–1977, after which it started a noted fall until the mid-1990s, followed by a further decline towards a low of 60% of GDP in 2006. All in all, charts 1 to 3 show that the labour income share was the most stable in the United States, and that the difference between the highest and lowest level was largest in Japan.

It should be noted that although there is no consensus in the literature regarding the exact way to measure the labour income share, the finding of a hump-shaped profile for the (adjusted) labour income share in the EU over the period covered by our sample has also been documented by Bentolila and Saint Paul (2003), Blanchard (2006), BIS (2006), IMF (2005; 2007), OECD (2007), Orellana et al. (2005) and de Serres et al. (2002).

Before examining the likely forces behind this behaviour, we will have a closer look at the evolution of the labour income share in the different EU Member States and describe the evolution of the income shares of the different skill types of workers.

6 See for instance Askenazy (2003).

7 By construction, the national accounts do not allow for capital income of the non-market producers (including healthcare, education and administration), as the only sources of income are labour income and capital depreciation allowances. As a consequence, the inclusion of the public sector tends to increase the labour income share.

8 Gross domestic product at factor cost is not explicitly present in ESA 1995. However, gross domestic product at factor costs can easily be calculated as gross domestic product at market prices minus taxes on production and imports, plus subsidies. The adjusted labour share is then calculated as x 100, a measure that is readily available in the Commission's AMECO database as variable ALCD2.

9 By using gross domestic product at current market prices the analysis explicitly takes into account the fact that the government absorbs part of value added.

10 The labour income shares for EU-15 and EU-27 are calculated on the basis of the country aggregates of the different components in the nominator and denominator.

11 Column 8 of Table 1 shows t-student statistics for the Augmented Dickey-Fuller test, whereby the null hypothesis of non-stationarity (i.e. a unit root) is tested against the alternative hypothesis of stationarity. If the computed student-t statistic is smaller than the lower critical value for a particular number of observations, the null-hypothesis has to be rejected and the alternative hypothesis accepted. For the current sample size, the critical values at the 1%, 5% and 10% confidence level are respectively -4.17, -3.51 and -3.19.

Labour income share

Chart 1: **EU-15 and EU-27**

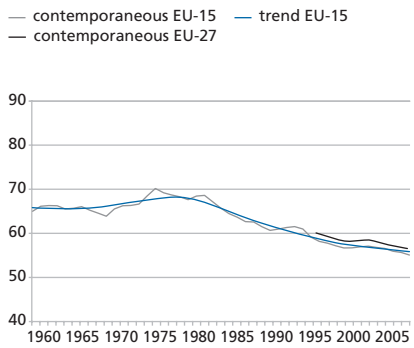


Chart 2: **The United States**

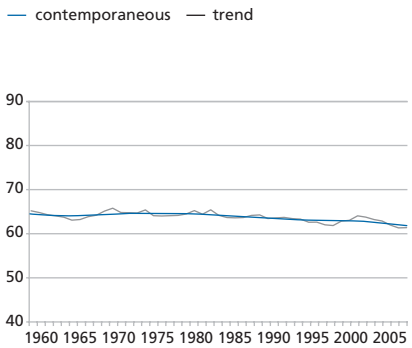
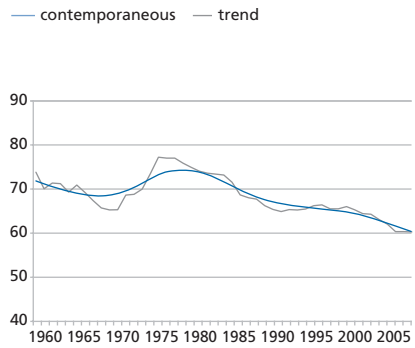


Chart 3: **Japan**



Source: AMECO database and own calculations.

Table 1 - **The labour income share in the EU-15 Member States – summary**

	Average	Coefficient	Maximum		Minimum		ADF-	Fluctuations		
	1960–2006	of variation	share	year	share	year	t-value	synchron.	persistence	variability
Belgium	61.3	5.5	66.9	1981	55.2	1961	-1.49	-0.0	0.67	0.67
Denmark	59.1	3.1	62.9	1975	56.3	2005	-2.98	-0.5	0.34	0.47
Germany	61.6	4.1	66.1	1974	55.9	2006	-1.49	0.2	0.54	0.42
Greece	66.5	12.5	91.9	1960	57.0	2003	-3.50	-0.3	0.40	0.78
Spain	62.4	5.8	67.9	1976	54.5	2006	-2.68	-0.0	0.71	0.49
France	61.4	5.3	66.9	1981	56.7	1998	-1.62	-0.4	0.62	0.63
Ireland	62.1	12.1	71.2	1975	47.1	2002	-1.59	-0.5	0.45	0.54
Italy	62.5	8.5	69.7	1975	53.3	2000	-1.76	-0.5	0.43	0.64
Luxembourg	52.6	7.1	62.2	1977	46.4	1969	-2.20	-0.4	0.42	0.66
Netherlands	63.0	5.7	70.4	1975	56.7	2006	-2.09	-0.1	0.54	0.54
Austria	66.2	6.9	72.9	1978	55.8	2006	-1.52	-0.3	0.50	0.69
Portugal	67.0	9.4	87.9	1975	59.6	1969	-1.80	-0.2	0.60	1.14
Finland	62.5	8.0	70.3	1966	53.7	2000	-2.74	-0.2	0.57	0.55
Sweden	62.1	5.8	69.2	1977	55.4	1995	-2.77	-0.1	0.67	0.75
United Kingdom	65.3	2.8	72.2	1975	61.8	1997	-4.07	-0.2	0.61	0.70
EU-15	**64.2**	**5.6**	**69.9**	**1975**	**57.8**	**2006**	**-1.72**	**-0.1**	**0.65**	**0.51**
Japan	68.0	6.4	76.4	1975	60.2	2006	-1.77	-0.6	0.69	0.61
United States	63.7	1.8	65.9	1970	60.9	2005	-2.49	-0.1	0.53	0.34

Source: AMECO database and own calculations.
Note: Coefficient of variation: standard deviation of labour share divided by mean; maximum/minimum share: maximum/minimum value recorded for the share; maximum/minimum year: year in which the maximum/minimum was observed; ADF t-value: t-value for augmented Dickey-Fuller test (unit root test with constant and trend); fluctuations-synchron: correlation between trend-deviation in labour income share and trend-deviation in GDP; fluctuations-persistence: coefficient of auto-correlation; fluctuations-variability: standard deviation of fluctuations in labour income share divided by standard deviation of fluctuations in GDP.

2.2. The labour income share in the EU Member States

2.2.1 The EU-15

Chart 4 shows the evolution of the labour income share for the total economy in each of the 27 EU Member States.[12] The solid lines show the actual observations of the labour income share, while the dotted lines display the underlying trend. Table 1 summarises the main characteristics of the evolution of the labour share in each of the 15 Member States over the period from 1960 until 2006. Given the limited number of observations, Table 2 (see page 243) summarises the evolution of the labour income share in the new Member States for the period ranging from the mid-1990s until 2006.

Following an increase during the 1960s and especially in the early 1970s, the labour income share started to fall in most of the EU-15 from the second half of the 1970s until the early 1980s.[13] In six of the EU-15, the labour income share reached a peak in 1975[14], while in 11 Member States

12 Readers should take note of the fact that the scales of the graphs are not uniform.

13 Greece is an important exception to this rule, as its labour share fell from close to 90% in the early 1960s to about 60% in the early 1970s.

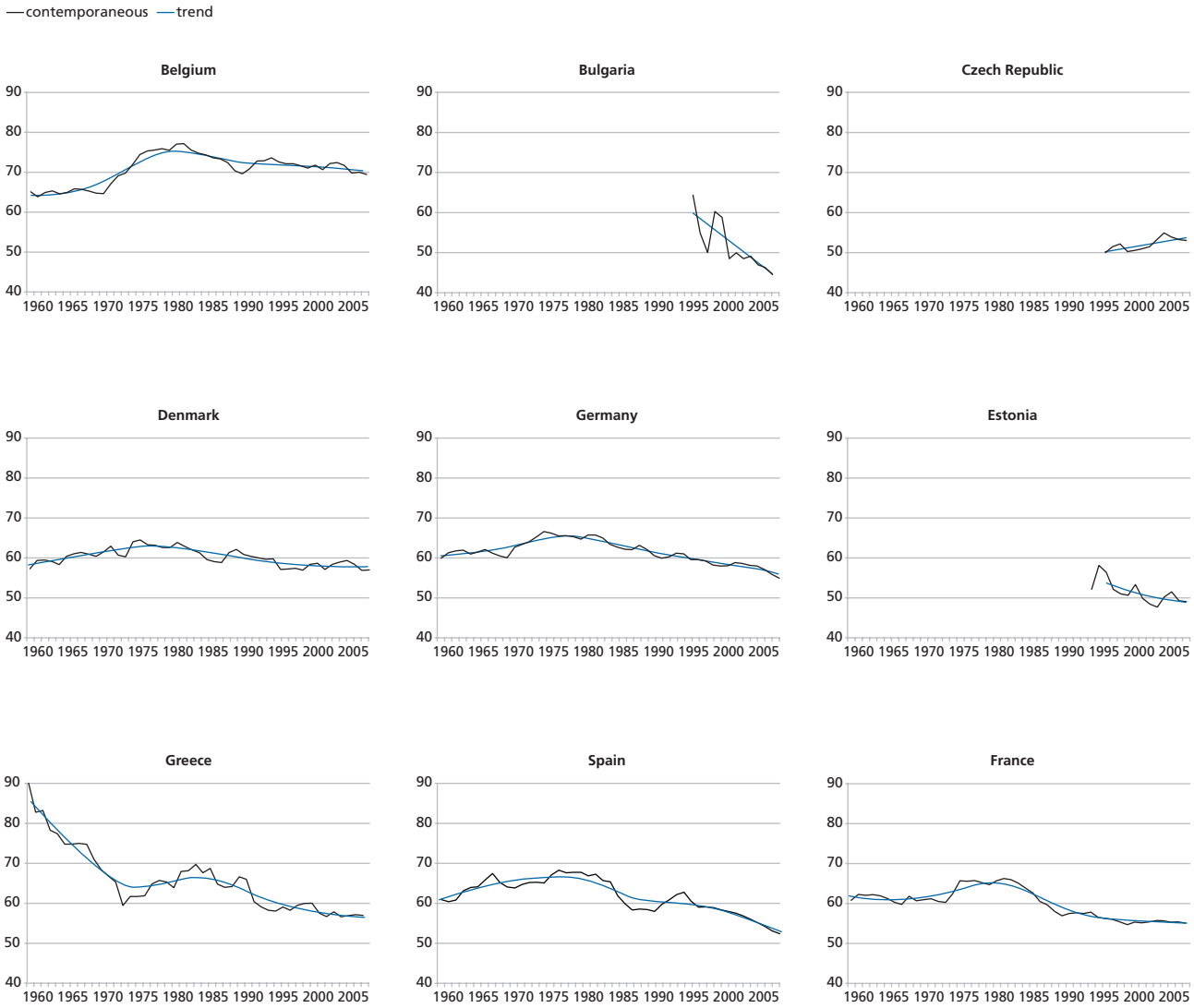
14 Denmark, Ireland, Italy, the Netherlands, Portugal and the United Kingdom.

it peaked between 1974 and 1978[15]. In Belgium and France, the labour share reached its peak in 1981, while in Finland the peak was reached in 1966 and in Greece in 1960. Subsequently, in most of the EU-15 the labour share decline had reached a low in the late 1990s to early 2000s which was, on the whole, lower than the levels reached in the 1960s or 1970s. Only in Belgium, Luxembourg and Portugal was the labour income share lower in the 1960s than in the 1990s or 2000s.

In recent years, the fall in the labour income share seems to have been levelling off in some Member States (e.g. France, Belgium and Finland) or even showing a rebound in others (e.g. Ireland and Italy). Nevertheless, some countries continue to experience a downward trend (e.g. Austria, the Netherlands, Greece and Spain).

Overall, the labour income share was not stable in most of the EU-15 over the period ranging from 1960 until 2006[16] and the differences between the lows and highs are quite notable. The smallest difference is recorded for Denmark, where the difference is just 6.6 percentage points, and the largest difference is recorded for Greece, where the difference is a significant 34.9 percentage points. In Portugal the difference between peak and trough amounts to 28.3 percentage points while in Ireland it reaches 24.1 percentage points. In the other EU-15 Member States, the differences were between 10.2 percentage points and 17.1 percentage points.

Chart 4: **Labour income share in Europe**



15 The six countries mentioned in footnote 14 plus Germany, Spain, Luxembourg, Austria and Sweden.

16 The statistics in the eighth column of Table 1 underline the non-stationarity of the labour income share in most of the EU-15. Notable exceptions are the United Kingdom and Greece for which the null hypothesis of non-stationarity (i.e. a unit root) could be rejected at a fairly high confidence level. Due to the lack of sufficient observations a unit root test could not be performed on the data of the new Member States.

Chart 4: Labour income share in Europe (continued)

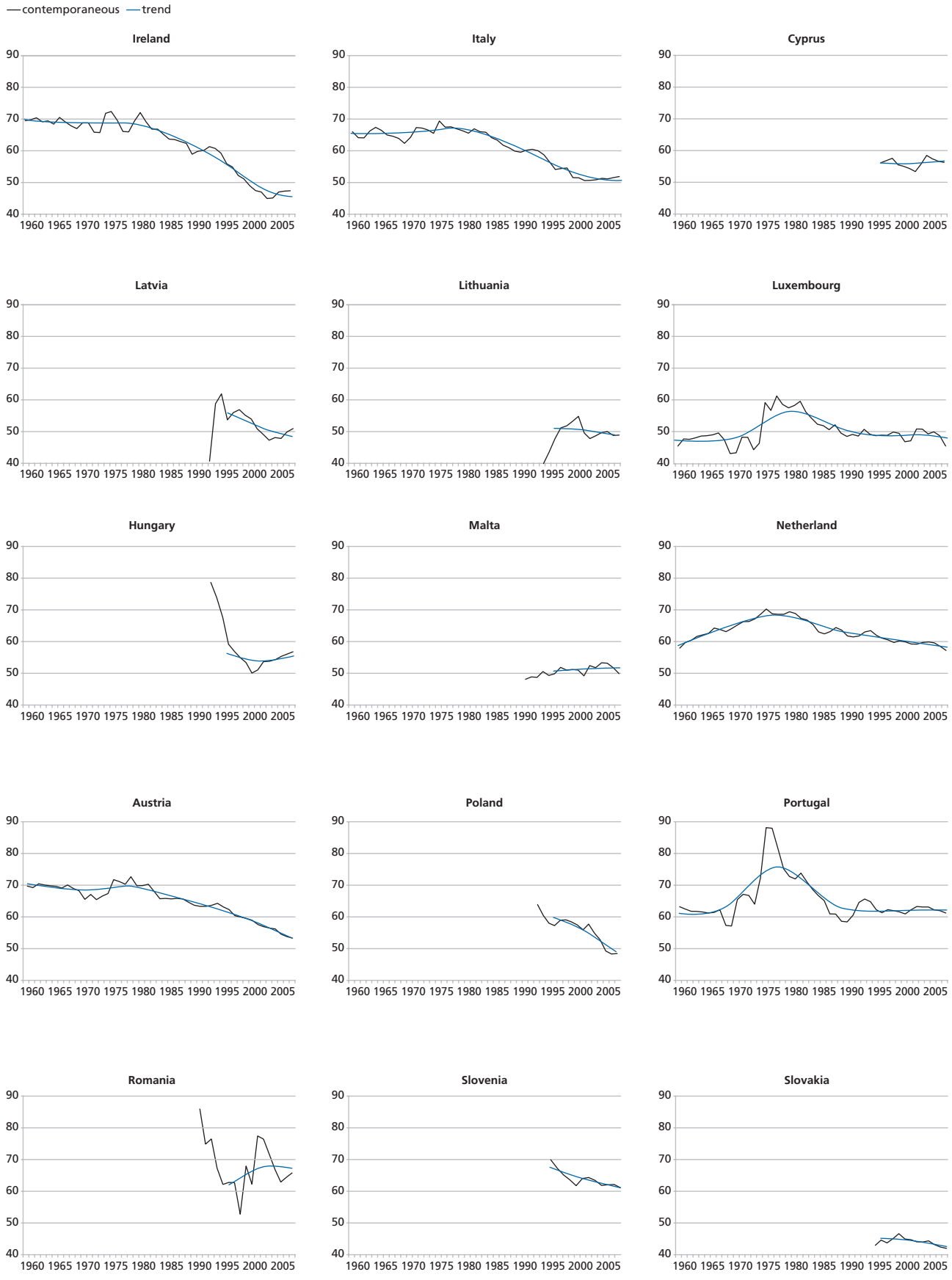
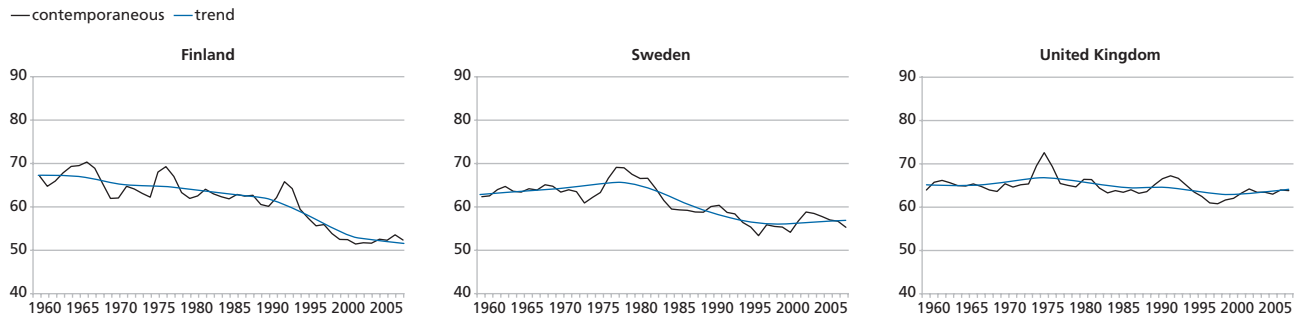


Chart 4: **Labour income share in Europe (continued)**



Source: AMECO database and own calculations.

2.2.2. The new Member States

In the new Member States, the income labour share has been on a downward trend since the mid-1990s, with the exception of the Czech Republic, Malta, Cyprus and Romania. The strongest variations in the labour income share are found in Latvia, Bulgaria, and Romania, while the weakest variations are found in Cyprus, the Czech Republic, Malta and Slovakia.

With the exception of the evolution in Cyprus and Malta, these developments occurred in countries undergoing deep structural transformations of their economies whereby, for instance, real wages have had to converge to meet productivity levels and the sectoral composition of the economies have had to adjust to the needs of a service-oriented, knowledge-based modern market economy.[17]

2.3. Wages, productivity and the labour income share

As an accounting exercise, the labour income share can be decomposed into the real wage and (the inverse of average) labour productivity[18]. When the real wage grows at a slower pace than labour productivity, the labour income share shows a decline, and vice versa. As we decompose labour productivity further, the evolution of the labour income share can be written in terms of the evolution of the real wage (in efficiency units), the capital-to-output ratio (i.e. the inverse of capital productivity) and the capital-to-labour (in efficiency units) ratio – whereby 'labour in efficiency units' refers to the fact that the labour stock has been aug-

Table 2 - **The labour income share in the new Member States**

	Average	Coefficient of variation	Maximum share	Maximum year	Minimum share	Minimum year
Bulgaria	51.1	10.9	62.2	1995	44.6	2006
Czech Republic	51.7	2.6	54.2	2003	49.9	1995
Estonia	51.5	5.0	57.4	1994	48.2	2002
Cyprus	57.2	2.2	59.3	2003	54.8	2001
Latvia	49.9	11.5	60.5	1994	37.6	1992
Lithuania	48.6	7.0	53.9	1999	40.4	1993
Hungary	55.4	9.6	68.3	1992	50.1	1999
Malta	51.0	2.8	53.3	2003	48.6	1990
Poland	55.5	7.3	62.5	1992	48.6	2005
Romania	68.2	10.5	84.1	1990	54.3	1997
Slovenia	64.4	3.6	69.8	1995	61.9	2006
Slovakia	44.3	2.8	46.9	1998	42.3	2006

Source: AMECO database and own calculations.
Note: Sample size: MT, RO: 1990–2006; LV, HU, PL: 1992–2006; EE, LT: 1993–2006; SK: 1994–2006; BG, CZ, CY, SI: 1995–2006.

17 Though measurement problems related to the assumptions regarding the renumeration of the self-employed may also account for some of the decline (Askenazy, 2003).

18 Let L be employment, W the nominal wage rate, Q value added and P the price level, then the labour share, LS, is defined as

$$LS = \frac{WL}{PQ} = \frac{W}{P}\frac{1}{\left(\frac{Q}{L}\right)}$$

i.e. the ratio of the real wage and (average) labour productivity, which shows that the labour share is also a measure of the real unit labour cost. Conventionally, the level of real unit labour costs is expressed relative to a base year, while the labour income share is expressed in levels.

mented by an index of technological progress[19].

Table 3 shows the annual growth rates of the labour income share and its components (in percent) in the EU-15 for the sub-periods ranging from 1960–1980 and from 1981–2006. During the first sub-period the labour income share was characterised by a steady increase in most of the EU-15, while the second sub-period was characterised by a decline in the indicator. Comparing the two sub-periods, it is striking to note that in the period ranging from 1981–2006 the real wage (measured in efficiency units) showed a negative average growth rate for all Member States, except for Portugal where it was slightly above zero, indicating that during this period its real wage growth did not keep up with technological progress. The strongest negative growth is recorded for Ireland, where the real wage (measured in efficiency units) decreased at an average annual rate of 2.62%, followed by Luxembourg, the Netherlands and Finland where the average annual decline is equal, respectively, to 1.64, 1.39 and 1.38%. At the same time, it should also be noted how the signs of the growth rates of the capital-to-output ratio and the capital-to-labour ratio varied across countries.

Due to a lack of data, Table 4 only shows average growth rates for the labour share, the real wage and (average) labour productivity for the countries that joined the EU in recent years, covering the period mid-1990s to 2006. In 7 of the 12 Member States the labour share showed a negative average growth rate, indicating that real wages grew more slowly than productivity over the reference period. Given the deep structural reforms that were still going on in these countries in the mid-1990s, the data in this table should be interpreted with caution as, for instance, specific results may be very sensitive to the choice of the starting year of the sample over which averages are taken.

Taken together, these different Member State experiences clearly show that changes in the real wage rate and the components of productivity cause changes in the labour income share that may differ significantly across countries and periods. This illustrates then that simply looking at the evolution of the components of the labour income share is not enough to understand the behaviour of the labour income share, and that a more thorough investigation of the issue is warranted. This examination will be tackled in the next section.

Table 3 - **Components of the labour income share by country: EU-15 (average annual growth rates)**

	Period 1960–1980				Period 1981–2006			
	Labour share	Real wage[1]	Capital-to-output ratio	(inverted) Capital-to-labour ratio[1]	Labour share	Real wage[1]	Capital-to-output ratio	(inverted) Capital-to-labour ratio[1]
Belgium	0.84	0.11	-0.83	1.56	-0.40	-0.40	-0.03	0.03
Denmark	0.48	0.03	-0.66	1.11	-0.39	-0.84	-0.59	1.05
Germany	0.40	NA	0.22	NA	-0.60	-1.08	-0.05	0.18
Greece	-1.76	-0.60	1.12	-2.28	-0.46	-0.31	0.70	-0.85
Spain	0.40	0.22	-0.59	0.76	-0.78	-0.59	0.57	-0.76
France	0.33	0.39	0.04	-0.10	-0.58	-0.66	0.14	-0.06
Ireland	0.16	1.17	1.18	-2.18	-1.40	-2.62	-1.29	2.51
Italy	-0.03	-0.04	-0.43	0.43	-0.76	-0.75	0.41	-0.42
Luxembourg	1.04	-0.26	-1.10	2.40	-0.80	-1.64	-0.88	1.72
Netherlands	0.91	0.82	0.47	-0.39	-0.75	-1.39	-0.32	0.96
Austria	0.01	0.21	-0.23	0.03	-0.89	-0.72	0.40	-0.57
Portugal	0.58	-0.44	-1.83	2.85	-0.55	-0.11	1.13	-1.58
Finland	-0.30	-0.12	0.01	-0.19	-0.58	-1.38	-0.92	1.72
Sweden	0.28	0.63	0.43	-0.78	-0.62	-0.99	-0.37	0.75
United Kingdom	0.17	0.13	-0.06	0.09	-0.14	-0.52	-0.65	1.04
Japan	0.02	-0.04	-0.28	0.34	-0.77	-0.47	0.76	-1.06
United States	0.00	-0.38	-0.69	1.07	-0.27	-0.51	-0.37	0.62

Source: AMECO database and own calculations.
Note: 1: Measured in efficiency units. Efficiency units are available for Germany as of 1991. Averages for Germany are averages of available data.

19 The equation in the previous footnote can be rewritten in terms of log growth rates as

$$d\ln(LS) = d\ln\left(\frac{W}{PA}\right) + d\ln\left(\frac{K}{Q}\right) - d\ln\left(\frac{K}{LA}\right)$$

where K is the capital stock and where A is an index of labour-augmenting technological progress which is calculated by dividing the Solow residual for each year by the contemporaneous share of labour and integrating it over time. See Blanchard (1997; 2006) who applies this type of adjustments to the real wage (and the capital-to-labour ratio) in order to take out the trend drift in wage growth that can be attributed to technological progress.
In this context, 'real wage in efficiency units' refers to the real wage divided by the index of technological progress, i.e., $\left(\frac{W}{PA}\right)$ while 'labour in efficiency units' refers to the labour stock augmented by the index of technological progress, i.e. L A.

Table 4 - **Components of the labour income share by country: the new Member States (average annual growth rates)**

	Labour share	Real wage	(Inverted) average labour productivity
Bulgaria	-3.03	-1.22	-1.79
Czech Republic	0.46	3.40	-2.94
Estonia	-1.24	6.08	-7.32
Cyprus	0.02	1.41	-1.39
Latvia	-1.80	4.60	-6.40
Lithuania	0.87	6.88	-6.01
Hungary	-1.00	2.51	-3.52
Malta	0.09	1.83	-1.74
Poland	-1.35	3.16	-4.51
Romania	0.43	4.69	-4.26
Slovenia	-1.09	2.72	-3.81
Slovakia	-0.19	4.11	-4.30

Source: AMECO database and own calculations.
Note: Sample size: MT, RO: 1990–2006; LV, HU, PL: 1992–2006; EE, LT: 1993–2006; SK: 1994–2006; BG, CZ, CY, SI: 1995–2006.

2.4. The cyclical behaviour of the labour income share

Charts 1 and Table 1 (see page 240) indicate that, where possible, a clear distinction should be made between transitory developments in the labour income share that are due to the business cycle or temporary shocks, and trend developments which are more likely to be caused by structural changes in the underlying drivers.

More precisely, the statistics in the third-to-last column of Table 1 show that, with the exception of Germany, the labour share behaved counter-cyclical, i.e. it rose above its trend value during an economic downturn and fell below its trend during an economic upswing[20]. In the EU, the strongest counter-cyclical behaviour is found in Denmark, Ireland and Italy, and the weakest in Belgium and Spain.

The penultimate column of Table 1 gives an indication of the degree with which a deviation from trend persists[21]. There we see that trend deviations show the highest persistence in Spain, Belgium and Sweden, and the lowest in Denmark, Greece, Ireland, Italy and Luxembourg.

The last column of Table 1 measures the degree of the relative volatility of the fluctuations in the labour income share by comparing them with the volatility of the fluctuations in output.[22] Clearly, in all Member States, except Portugal, the fluctuations in the labour share are less volatile than the fluctuations in output, with the least volatility in Germany and Denmark.

2.5. Skill composition of the wage bill

Using data available under the EU KLEMS research project[23], charts 5, 6 and 7 (see page 246) show the evolution of the different skill-types' share in the aggregate labour income in a representative set of EU Member States[24], the United States and Japan for the period 1980–2004.

These charts show that the share of the low-skilled in total labour compensation declined steadily in each of the regions. In the EU and Japan, for example, the share of the low-skilled was higher than the share of the high-skilled at the beginning of the reference period, but it fell below the share of the high-skilled by the early - 1990s in the EU and by the mid-1980s in Japan. In the United States, the share of the high-skilled was larger than the share of the low-skilled throughout the period and, furthermore, rising so that it approached a similar size to the share of the medium-skilled by the mid-2000s. In all three economic areas, the share of the medium-skilled was larger than the sum of the shares of the low and medium-skilled, except for the United States around the turn of the century.

The two principal findings from this section can be summarised as follows. Firstly, the aggregate labour income share was not stable over the past four decades. This was especially the case for the labour income share in continental Europe and Japan, and to a lesser extent for the labour income share in the Anglo-Saxon countries. There is a general consensus in the literature that, whichever degree of sophistication is used for the measurement of the labour income share, it started to decline in most EU Member States shortly after the first oil price shock and that it fell towards levels which are well below those attained in the1960s. Secondly, there was also an important change in the composition of the wage bill, with the share of the low-skilled showing a marked decline and the share of the high-skilled workers displaying a steady rise.

20 Counter-cyclical behaviour means that there is a negative correlation between the fluctuations in the labour income share and output.

21 The persistence of the trend deviation is measured by the regression coefficient rho in the equation
$(LS_t\text{-}LS\_trend_t) = rho\ (LS_{t-1}\text{-}LS\_trend_{t-1}) + u_t$

22 Volatility is measured by the standard deviation in the trend deviation of the variable.

23 The EU KLEMS research project is funded by the European Commission, Research Directorate General as part of the 5th Framework Programme, Priority 8, 'Policy Support and Anticipating Scientific and Technological Needs'. As such these data are not official data.

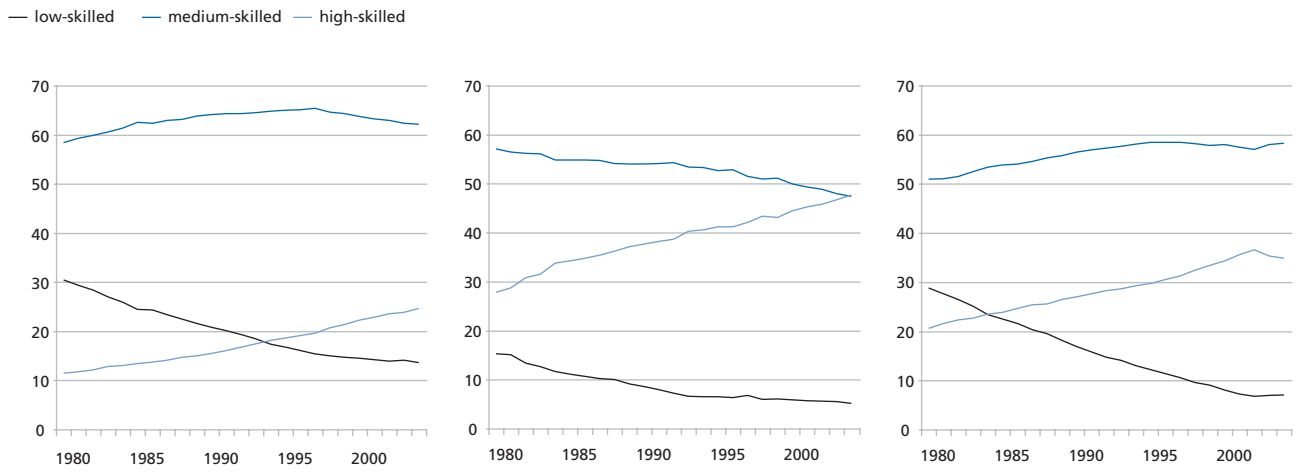
24 Charts 5, 6 and 7 show the aggregate for a select set of countries for which the data is available as of 1980. The 10 EU countries for which the data is available are Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Finland and the United Kingdom. See Timmer et al. (2007) for the definition of the skill types in the Member States.

Share in total labour compensation

Chart 5: **10 Member States**

Chart 6: **The United States**

Chart 7: **Japan**



Source: EU KLEMS database and own calculations.

The subsequent analysis will explore to what extent technological progress, globalisation and changes in labour market institutions, as well as policies, contributed to these developments.

3. THE LABOUR INCOME SHARE AND THE PRODUCTION TECHNOLOGY

In an influential paper published in the early 1960s, Kaldor (1963) identified the constancy of the labour income share as one of the important empirical regularities characterising economic growth (in the United States).[25] This 'empirical fact' found its theoretical underpinning in the basic neo-classical growth model.

The basic neo-classical growth model assumes perfect competition in the goods and factor markets, no adjustment costs and, most importantly, a production technology with a unit elasticity of substitution between capital and labour. A unit substitution elasticity implies, for instance, that when the relative factor prices change the relative factor inputs change within the same proportion – but in the opposite direction. In this model, the labour income share is always at its natural level and this level is solely determined by the underlying parameters of the exogenous production technology[26]. As a consequence, in this model, (labour market) policies are unable to influence the labour income share.

As the basic neo-classical growth model is not capable of explaining the hump-shaped profile of the labour income share observed in most of the EU Member States over the last 40 years, researchers started to explore the implications of changes in the assumptions concerning, among other things, the value of the elasticity of substitution between labour and capital (Rowthorn, 1999), the nature of technological progress (Acemoglu, 1998; 2002; 2003), the degree of (international) competition in labour and goods markets (Blanchard and Giavazzi, 2003; Harrison, 2002; IMF, 2007), the sectoral composition of the economy (Serres et al., 2002), as well as the size of adjustment costs (Kessing, 2003).

As it seems unlikely that the relaxation of only one of these assumptions will be capable of providing a full explanation of the labour income share's behaviour over the past decades, the subsequent analysis will examine the impact of several of these issues. Firstly, it will be demonstrated how the qualitative nature of a change in the relative endowment of labour and capital and technological progress depends, to a large extent, on the size of the elasticity of substitution between capital and labour. Next, it will be examined how labour and product market institutions, as well as globalisation, affect the labour income share. Finally, a system of labour income share equations will be estimated in order to determine the empirical significance of the different drivers.

3.1. Factor substitution and the labour income share

The prediction of a constant labour income share is closely related to the assumption of a unitary elasticity of

25 Though a thorough criticism of this fact was already formulated by Solow (1958).

26 It should be noted that in this model the parameters of the production function may be subject to random shocks, giving rise to a volatile labour income share. Nevertheless, in such a stochastic environment, the basic policy implication of the neo-classical growth model should remain valid, i.e. polices cannot influence the labour income share. See also Annex B.

substitution between labour and capital. Once this elasticity takes a different value, the labour income share no longer remains constant when, for instance, relative factor endowments change. Moreover, the direction in which the labour income share responds to a change in relative factor endowments depends to a large extent on the size of the elasticity of substitution between labour and capital. When the elasticity of substitution between capital and labour is smaller (larger) than 1, the labour income share will increase (decrease) if the capital-to-labour ratio (measured in efficiency units) increases[27]. Indeed, when capital grows faster than labour, a change in relative prices is needed to absorb this shock, and this price adjustment will have to be larger the smaller the elasticity of substitution between capital and labour is[28]. As such, the price effect will dominate the quantity effect if the substitution elasticity is below 1 so that the labour income share increases. Alternatively, in the case of an elasticity of substitution larger than 1, the quantity effect will be stronger than the price effect and the labour income share will decrease when the capital-to-labour ratio increases. This shows, then, that both the capital-to-labour ratio and the elasticity of substitution between capital and labour are two important determinants of the distribution of gross domestic product.

Before investigating the empirical relevance of the capital-to-labour ratio for the evolution of the labour income share in a more systematic way, the following remarks can already be made. Firstly, several estimates of the elasticity of substitution are presented in the literature. Rowthorn (1999), for instance, reports (indirect) estimates for the substitution elasticity that are well below 1 for 19 countries[29]. Antras (2004) obtains estimates of the elasticity of substitution that are significantly below 1 if biased technical change is allowed for.

Secondly, if an elasticity of substitution lower than 1 is assumed, then the rise in the labour income share until the late 1970s (or early 1980s in some countries) should have been accompanied by an increase in the capital-to-labour ratio and a decline in the labour income share as of the mid-1980s with a decline in the capital-to-labour ratio. Alternatively, if an elasticity of substitution that is larger than 1 is assumed, then a declining capital-to-labour ratio until the late 1970s and a rising capital-to-labour ratio as of the mid-1980s would be expected.

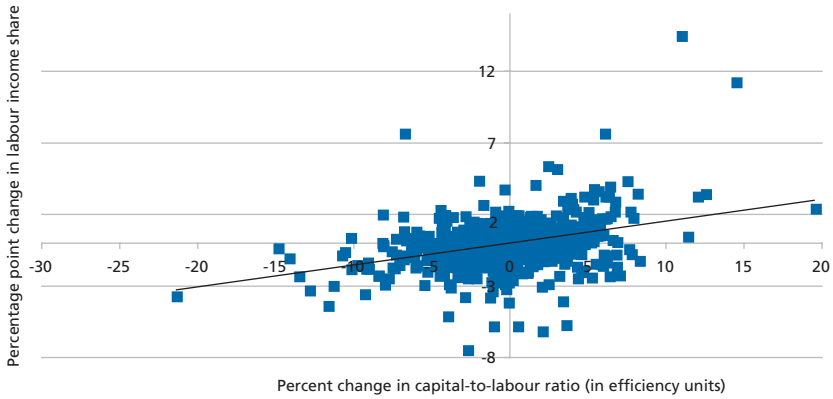
Chart 8 shows the correlation between the annual change in the capital-to-labour ratio (measured in efficiency units) and the labour income share. Although this chart shows some correlation, it should be clear from this first look at the data that the capital-to-labour ratio (measured in efficiency units) cannot be considered as the sole driver of the labour income share and that a further analysis of the issue is needed.

3.2. Direction of technological progress and labour income share

3.2.1. Capital and labour-augmenting technological progress

One popular interpretation of the facts described in the previous section is that the labour income share rose during the 1960s and 1970s because at that time technological progress was of a labour-augmenting nature (assuming an elasticity of substitution larger than 1), while the labour

Chart 8: **Labour income share vs. capital-to-labour ratio (in efficiency units)**



Source: AMECO database and own calculations.

27 See also Annex B.

28 In the case of a small open economy that faces an exogenous interest rate such a change in relative factor prices would then be carried by wages. See, for example, Cotis and Rignols (1998) for an illustration of the importance of the behaviour of an exogenous interest rate to explain the evolution of the labour income share in France.

29 Rowthorn (1999) estimates the substitution elasticity indirectly on the basis of the estimation of the labour demand functions while assuming that labour earns its marginal product. Other studies presenting estimates below 1 include Krusell et al. (2000). However, alternative estimation procedures find results that indicate that the elasticity of substitution may be higher than 1, see Duffy and Papgeoriou (2000) or Caballero and Hammour (1998). The latter estimate the substitution elasticity assuming a putty-clay aggregate production function so that only the capital-output ratio of new production units is considered. They obtain estimates for the substitution elasticity in France that are between 2.4 and 6.5.

income share fell during the 1980s and 1990s because technological progress became capital-augmenting in response to the inertia of real wages in order to adjust to higher oil prices (and other negative shocks).

In this context Acemoglu (2003) developed a model[30] that endogenises the direction of technological progress, and he shows that profit maximisation leads to technical change that is purely labour-augmenting in the long run. It is only when the economy deviates from its steady state that technological progress becomes capital-augmenting and pulls the labour income share back to its equilibrium. For example, if the user cost of capital increases exogenously, firms will have an incentive to reduce their investment in capital which leads to a fall in the labour income share – assuming a low substitution elasticity. Investment in capital can be reduced by directing spending towards research and development activities that augment the efficiency of the capital stock. This capital-augmenting research, which is an endogenous response to the exogenous increase in the user cost of capital, will then contribute to an increase in the labour income share up to the point where the labour income share is back to the level that was reached before the exogenous shock in the user cost of capital occurred. This model implies then that the economy has a self-equilibrating mechanism in the form of R&D spending that drives the labour income share back to its 'natural' level.

3.2.2. Technological progress, skill bias and labour income share

Charts 5, 6 and 7 (see page 246) show that in the EU, the United States and Japan the share of the low-skilled workers in the overall wage bill has been declining gradually since the early 1980s[31] and that the share of the high-skilled workers has been on a steady rise.

Two hypotheses have been presented in the literature to explain this phenomenon: one referring to globalisation and the other one to skill-biased technological progress (Feenstra, 2004; 2007). Focusing on technological progress[32], empirical research indicates that new technologies substitute for that unskilled labour characterised by repetitive routine tasks[33], while they complement skilled workers in their problem solving tasks[34]. See Krusell et al. (2000), Johnson (1997) and Autor et al. (1998; 2003) for (an overview of) estimates of substitution elasticities between capital and workers of different skill levels.

These different degrees of substitution between the different skill groups and capital imply that changes in the capital intensities of the production process can have quite different effects on the income shares of the various skill types. In reality, these differences can be so large that capital deepening effectively increases the income share of the skilled workers but lowers the share of the unskilled workers as the latter are substituted by capital, (Griliches, 1969), or have to accept lower wages[35].

Moreover, it should also be noted that the complementarity between capital and skills does not come by nature, but by design. Acemoglu (1998) derives this property in the context of a model where technologies are non-rival goods that can easily be used across different firms at low marginal cost so that profit-maximising firms have a strong incentive to develop technologies which complement the production factor that is most abundant. By applying this idea to the European and American context, it could be argued that with the strong, (policy-) induced increase in the supply of skilled labour in recent decades, technological progress became more complementary to skilled labour. This then caused a virtuous circle whereby higher labour productivity (and thus also higher wages for the skilled workers) created an additional increase in the supply of skilled labour, which in turn stimulated the further development of skill-complementary technologies.

Closely related to the change in the skill composition of labour income is the change in the sectoral composition of the economy. The behaviour of the aggregate labour income share can then be seen as reflecting changes in the underlying sectoral composition of aggregate output, whereby sectors with a lower than average labour income share, such as the information and communication technology (ICT) sector, have gained in importance in recent years (Serres et al., 2002; Lawless and Whelan, 2006).

4. THE LABOUR INCOME SHARE AND INSTITUTIONS

The previous analysis assumed perfect competition in the goods and labour market so that the labour income share was solely determined by technological factors. If this assumption is abandoned, it should be noted that imperfect competition in the product market creates rents, which are distributed between capital and labour as a function of their

30 This model satisfies the standard assumptions of endogenous growth theory, though with the explicit assumption that capital can be accumulated asymptotically but human capital cannot because of the finite time of individuals to invest in human capital.

31 Period for which the first observations are available.

32 The impact of globalisation will be discussed in Section 5.

33 i.e. the substitution elasticity between capital and low-skilled labour is greater than 1.

34 i.e. the substitution elasticity between capital and high-skilled labour is smaller than 1.

35 If they accept less favourable working conditions, a fall in the labour income share does not necessarily follow.

relative bargaining power (Blanchard and Giavazzi, 2003). It may therefore be worthwhile to explore to what extent rents in the goods market and the bargaining process in the labour market have an impact on the evolution of the labour income share.

Moreover, as labour market institutions also affect the adjustment process over the business cycle, it may be of some importance to examine to what extent labour market institutions give rise to counter-cyclical fluctuations in the labour income share, as was described in Section 2.4.

4.1. Imperfect competition and the labour income share

Under imperfect competition, profit-maximising firms set their prices by charging a mark-up over the marginal cost of labour[36]. The size of this mark-up is to a large extent determined by the business cycle (Rotemberg and Woodford, 1999), and by regulations that affect competition (such as tariff barriers or standardisation measures) and entry costs.

In recent decades several major reforms have been introduced that reduce rents in the goods markets in the EU. These reforms include the further opening of domestic product and service markets under the Single Market Programme, and the introduction of the single currency enhancing price transparency across EMU (Economic and Monetary Union) Member States. As these measures increase competition in the goods market, they should have exerted upward pressure on the labour income share in the countries of the EU.[37] Indeed, in the case of imperfect competition in the goods market, a wedge is created between the real wage and the marginal productivity of labour. At the same time, output is lower than the level attained under perfect competition, but profits will be larger than under perfect competition. However, assuming that workers have no bargaining power, labour will lose out on its share in the profits and the labour income share will be lower than in the case of perfect competition. Increasing competition in the goods market will then lower the wedge between the real wage and marginal productivity of labour, so that the labour income share will increase. This result raises the question as to how the labour income share will behave if workers have some bargaining power.

In an imperfectly competitive labour market, workers and employers bargain over wages. The right-to-manage regime is generally considered to be the regime that captures bargaining practices in Europe fairly well (Layard et al., 2005).[38] Under this regime, bargaining proceeds in two stages. In the first stage the employees, usually represented by their trade unions, and employers bargain over the wage, and in the second stage the employers decide how many employees they will hire for the given wage. Under such a regime employees will be hired up to the point where the marginal labour productivity equals the real wage, and the size of the elasticity of substitution between capital and labour determines whether a fall in the bargaining power of employees leads to a decrease or increase in the labour income share (Bentolila and Saint Paul, 2003).

Although a reduction in the bargaining power of the workers leads to a decline in the real wage and, assuming an elasticity of substitution smaller than 1, to a decline in the labour income share in the short run, the long run effects may look different. Indeed, Blanchard and Giavazzi (2003) argue that as the labour income share falls and the profitability of capital increases, new firms will start to enter the market. Their entrance will increase competition, leading to a rise in total output as well as in the demand for labour and wages, which then causes a rebound in the labour income share.

Moreover, Acemoglu (2003) further underlines the complexity of these interactions by focusing on the endogeneity of the direction of technological progress, and he also relates the evolution of the labour income share to the evolution of the unemployment rate. His main point is that the strong bargaining power of trade unions in the 1970s allowed employees to resist downward pressures on real wages after the oil price shocks, leading initially to an increase in both the labour income share and the unemployment rate[39]. However, this development lowered the profitability of capital, so that it was accumulated at a slower pace and, more importantly, from the mid-1980s labour-saving technologies were introduced. As a result of this, the unemployment rate and the labour income share started to evolve in a different direction, whereby the unemployment rate continued to rise and the labour income share started to decline[40]. Nevertheless, as adjustment takes place and labour is reallocated between the production and R&D, the

36 Provided the absolute value of the demand elasticity is larger than 1.

37 Assuming perfect competition in the labour market. See also Section B.5 in Annex B.

38 Though Dumont et al. (2006) find empirical evidence allowing them to reject an efficient bargaining or right-to-manage framework in favour of a labour-hoarding framework.

39 Assuming a low substitution elasticity.

40 Alternatively, Blanchard (1997; 1998; 2006) refers to the reduced scope for labour hoarding, due to increased competition and higher corporate governance, to explain the decline in the labour income share and the simultaneous increase in the unemployment rate. However, he also points out that the resulting higher capital income share should improve the return on capital which will then in turn lead to a higher capital stock, and thus ultimately to a recovery of employment and the labour income share.

economy will ultimately return to its long-run balanced growth path.

A last point is that it should be noted that the bargaining power in the labour market is to a large extent determined by labour market institutions, such as unemployment benefits (relative to wages), and employment protection laws, but also by measures that affect capital mobility (Harrison, 2002) and the tax wedge. The latter acts as a disincentive to work and influences the attractiveness of work in the informal economy, thereby affecting the options of employees during the bargaining process.

Charts 9, 10 and 11 illustrate the correlation between annual percentage point changes in the labour income share and percent changes in some of the variables that determine the bargaining power of the employees.[41] These charts suggest that increases (decreases) in the trade union density are accompanied by increases (decreases) in the labour income change, that changes in unemployment benefits do not correlate with changes in the labour income share, and that changes in the tax wedge and the labour income share move in opposite directions.[42]

Furthermore, in addition to this suggestive evidence, there is also micro-econometric research, based on linked employer-employee data, which indicates that workers are capable of capturing rents accruing in profitable sectors. See Box 1.

These observations make it compelling to investigate in a more systematic way the empirical evidence regarding the link between the labour income share, and the determinants of bargaining power in the labour market and rents in the goods market. This will be done in Section 6 of this chapter.

Labour income share vs. trade union density, unemployment benefit replacement ratio and tax wedge

Chart 9: **Labour income share vs. trade union density**

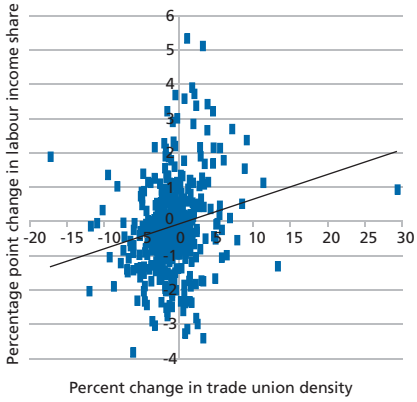


Chart 10: **Labour income share vs. unemployment benefit replacement ratio**

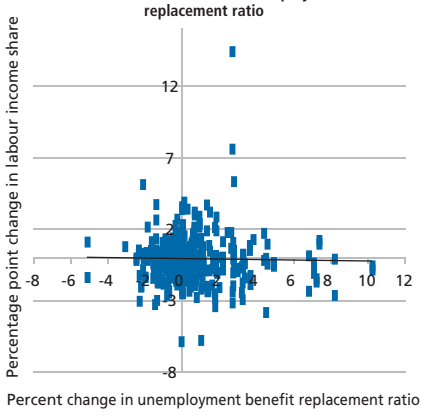
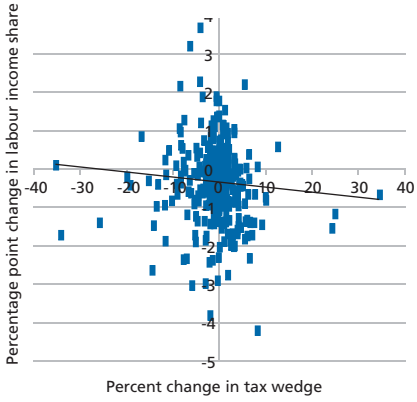


Chart 11: **Labour income share vs. taxe wedge**



Source: AMECO database, Bassanini and Duval (2006), and own calculations.

41 See Annex A for a description of the data underlying these and the following charts.

42 Nevertheless, here it should be stressed that – without further econometric analysis – such correlations do not allow us to make any firm statement about causal links between these indicators and the labour income share, as both may be driven by a third variable (including a common trend). Such an analysis will be provided in Section 6 of this chapter.

Box 1 – Inter-industry wage differentials and rent sharing

The empirical debate about the causes of earnings inequalities was reopened at the end of the 1980s in an article by Krueger and Summers (1988). These authors highlighted the fact that the structure of wages in the United States was not compatible with the competitive framework, according to which wage differentials at equilibrium were explained, either through differences in the quality of the labour force – measured in terms of productive capacity – or by so-called compensating differences. In other words, they showed that wage disparities persisted between agents with identical observed individual characteristics and working conditions, employed in different sectors. Since then, similar results have been obtained for many industrialised countries (Araï et al., 1996; Hartog et al., 1997, 2000; Lucifora, 1993; Vaïniomaki and Laaksonen, 1995).

Based on detailed matched worker-firm data for Belgium covering the period 1995–2002 and comprising data from the *Structure of Earnings Survey* and the *Structure of Business Survey*, Plasman et al. (2006) point to the existence of persistent but decreasing wage differentials among workers with the same observed characteristics and working conditions, employed in different sectors. The best paying industry over the period 1995–2002 was the electricity, gas, steam and hot water supply sector. Depending on the period considered, the average worker in this sector earns, all things being equal, between 27 and 31% more than the average worker in the whole economy. The hotel and restaurant sector is at the very bottom of the wage scale: the average worker's wage in this sector is, all things being equal, between 11 and 14% lower than that of the average worker in the economy.

These inter-industry wage differentials may of course derive from the fact that the unobserved quality of the labour force is not randomly distributed across sectors. In other words, high-paying industries might simply be those in which the unobserved quality of the labour force is highest. This potential explanation has been tested by Plasman et al. (2006) based on Martins' (2004a) methodology. The authors thus verified, based on quantile regressions, whether sectors with high average premiums pay even higher premiums to high-wage workers. Their empirical results show that unobserved ability only partially accounts for observed inter-industry wage differentials. Therefore it appears that the role of non-competitive forces should not be neglected.

The most natural non-competitive explanation for the existence of industry wage premiums is that they result from inter-sectoral variations in profits. This explanation has been investigated by Plasman et al. (2006) based on simple correlation coefficients and cross-sectional regressions. Their results show that industry wage premiums are significantly and positively correlated with industry profits, in all periods, both at the NACE two- and three-digit level. They thus support the hypothesis that industry wage premiums derive at least partly from the heterogeneity in sectoral profits.

The magnitude of rent sharing in the Belgian private sector and its contribution to observed inter-industry wage differentials has also been examined by Plasman et al. (2006). Their empirical results show firstly that individual gross hourly wages are significantly and positively related to firm profits-per-employee, even after controlling for group effects in the residuals, individual and firm characteristics, industry wage differentials and endogeneity of profits. The instrumented wage-profit elasticity estimated at the mean is equal to 0.063. However, workers at the top end of the wage distribution are found to obtain a significantly larger share of profits than those at the bottom of the wage distribution. Further results show that substantial wage differentials are still recorded between workers employed in different sectors after controlling for rent sharing. However, the proportion of significant industry wage premiums decreases from around 74 to 42%. The authors also find that dispersion in inter-industry wage differentials drops by almost one-third when profits are taken into account. These findings suggest that rent sharing accounts for a significant fraction of the inter-industry wage differentials.

Another empirical analysis of rent sharing can be found in Martins (2004b), who uses matched employer-employee panel data (*Quadros de Pessoal*, personnel records) from a subset of large firms based in Portugal, covering the period 1993–1995. He finds significant levels of rent sharing, indicating that workers who were to move from firms with 'low' profits to firms with 'high' profits would gain pay increases of about 15%. Moreover, when focusing only on firms with increasing levels of profits, the same pay increases grow to about 50%. The latter result may suggest that rent sharing exhibits some asymmetry: pay increases when profits increase while pay does not fall when profits decrease. Martins (2004b) also finds evidence that different groups of workers benefit differently from rent sharing. Men, more educated workers and more tenured workers tend to gain much more from their firms' rents than women, less educated workers and less tenure workers, respectively.

4.2. Other institutions and policies

Active labour market polices (ALMP) also affect the outcome of the labour income share. Active labour market policies are selective policies targeted at certain sub-groups in the labour market, and they include measures focused on training, public employment services and employment subsidies for specific groups of unemployed people or workers at risk of becoming unemployed. As such these policies have an impact on total employment and its composition, and thus also on the labour income share.

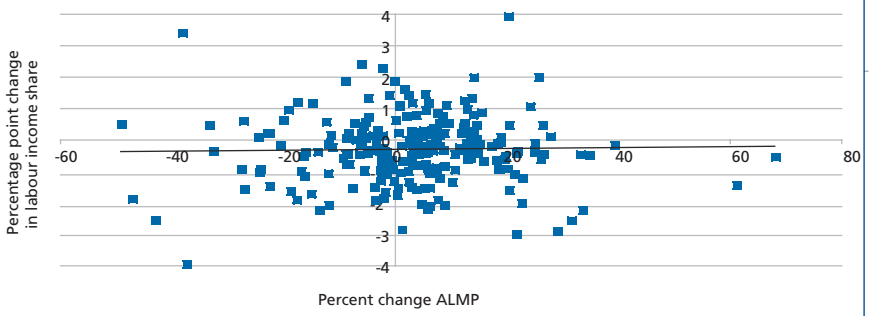
The effect of active labour market policies on the labour income share depends to a large extent on the elasticity of substitution between capital and labour, and, more importantly, on the effectiveness of these policies to allow workers to progress in their job and skill level, and enhance their complementarity with capital and the other production factors so that they no longer have to compete with a persistently cheaper capital stock, but can use it in their activities so that a further increase in the capital stock will lead to an increase in their labour income share.

If the elasticity of substitution between labour and capital is larger than 1, then an increase in employment leads to an increase in the labour share, on the basis that a high substitution elasticity allows for a smooth absorption of labour. By contrast, if the elasticity of substitution is smaller than 1, a policy-induced influx of workers into employment will lead to a decrease in the labour share. The previous section has already indicated that low-skilled workers have a high degree of substitutability with the other production factors, so it is to be expected that ALMPs will increase the income share of the low-skilled. Chart 12 shows the correlation between a change in the expenditures for ALMPs and the labour income share. Though the chart does not suggest a significant relationship between ALMP and the labour income share at the aggregate level, a more systematic investigation of the empirical link between ALMP and the labour income share, both at the aggregated level as well as the disaggregated level, will be made in Section 6.

The minimum wage may also affect the labour income share. In the case of a binding minimum wage, the wage will tend to be higher than the marginal productivity of labour, and labour will be able to extract a higher share from total revenues. Chart 13 shows the correlation between the annual changes in the labour income share and changes in the minimum wage for a selected group of countries where a statutory minimum wage exists. This chart suggests that the link between both variables is weak. Nevertheless, as such correlations are not controlled for the effects of third variables, a more systematic investigation of the link between the minimum wage and the labour income share will be carried out in Section 6.

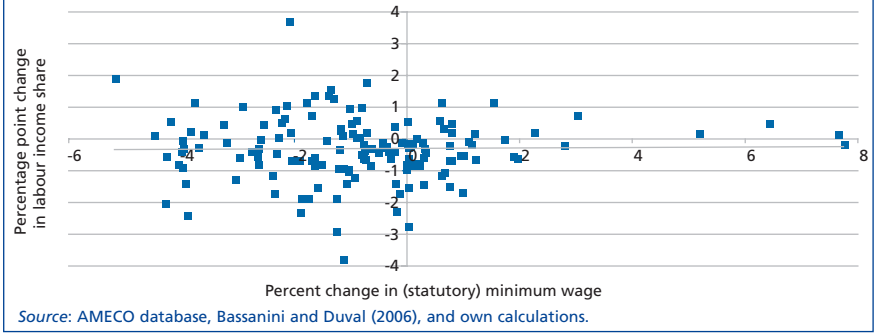
So far we have only considered the distribution of gross domestic product between labour and capital. However, a small part of gross domestic product (at market prices) accrues to the public sector in the form of indirect taxes (minus subsidies) imposed on production. In this chapter the share of the net indirect taxes is assumed to be exogenous. Nevertheless, changes in its size will induce a reallocation between labour and capital as both factors will try to mitigate part of the burden of an increased government take in value added. The empirical nature of these interactions will be established in Section 6.

Chart 12: **Labour income share vs. ALMP**



Source: AMECO database, Bassanini and Duval (2006), and own calculations.

Chart 13: **Labour income share vs.(statutory) minimum wage**



Source: AMECO database, Bassanini and Duval (2006), and own calculations.

4.3. A counter-cyclical labour income share

The evidence presented in Table 1 indicates that the labour income share behaves counter-cyclically over the business cycle. Labour hoarding may contribute to this behaviour as it causes labour demand to fall by less than output in downturns and rise by less than output during upswings, so that the labour income share, which is measured as the ratio of the two former variables, increases in a downturn and decreases in an upswing – provided that real wages do not move pro-cyclically over the business cycle.

Labour hoarding is to a large extent determined by adjustment costs, including hiring and firing costs. Part-time and fixed-term contracts are usually associated with lower hiring and firing costs, and give lower incentives to hoard labour. In addition, hiring and firing costs do not apply to the self-employed. Hence, to the extent that an economy has a low share of fixed-term and part-time employment, and a low share of self-employed, the labour income share will show a strong counter-cyclical pattern (Giammariolli et al., 2002). Imperfect information regarding the nature of the shocks that hit the economy (e.g. temporary or permanent) may reinforce the counter-cyclical effects of hiring and firing costs, as employers may seek to hoard labour in the face of a drop in aggregate demand that is perceived to be temporary. In a more formal setting, Kessing (2003) shows that with linear adjustment costs and a Cobb-Douglas technology, fluctuations in the labour income share are independent of the size of the shocks (in aggregate demand or wages) and depend only on the size of the adjustment costs (e.g. hiring and firing costs.)

Alternative mechanisms leading to counter-cyclical behaviour have been proposed in the literature. For instance, Gomme and Greenwood (1995) use a real business-cycle model to illustrate how the counter-cyclical behaviour of the labour income share reflects an optimal implicit contract between firms and employees, whereby firms cover workers against income fluctuations caused by the business cycle. In upswings the workers use part of their income to pay an 'insurance premium' to protect them against strong income fluctuations, and in downturns the firms add an insurance component to the workers' wage (by not cutting wages). In this way, labour income is to some degree protected against business cycle fluctuations, but is lower (than the trend income share) in upswings and higher in downturns. Firms are prepared to make such arrangements because they are less risk-averse than employees and they can monitor their employees so that they can distinguish between a loss in productivity caused by a downturn and a loss in productivity caused by, for instance, shirking. Young (2004) argues in the context of a real business cycle model that the counter-cyclical nature of the fluctuations in the labour share is due to exogenous, biased technological shocks.

Finally, it should also be noted that the counter-cyclical behaviour of the labour income share (caused by adjustment costs in the labour market) might be tempered by the cyclical behaviour of the price mark-up in the goods market. Indeed, Rotemberg and Woodford (1999) document that the price mark-up in the goods market behaves counter-cyclically, and the analysis in section 4.1 shows that a rise (fall) in the price mark-up exerts downward (upward) pressure on the labour income share. This implies that the effects stemming from a counter-cyclical mark-up in the goods market run in the opposite direction to the effects arising from the existence of adjustment costs in the labour market. Nevertheless, it is an empirical issue to determine the net outcome of these opposite effects.

5. The labour income share and globalisation

With the entrance of China, India, Brazil and the former Soviet-bloc (BRICs) into the world economy, the world supply of labour increased significantly – with estimates going as far as a quadrupling of the effective world supply of labour between 1980 and 2006 (IMF, 2007)[43]. As this increase in labour supply was not accompanied by a proportional increase in the world capital stock, the capital-to-labour ratio came under downward pressure across the world[44]; and to the extent that capital and labour are gross complements, this decline will have lowered the labour income share worldwide.

However, the importance of the impact of this increase in the global supply of labour on the labour income share in the developed world should not be exaggerated, as the data clearly indicates that the fall in the labour income share started well before the integration of the BRICs into the world economy. Nevertheless, to the extent that the entrance of the BRICs is responsible for the deterioration of the labour income share in Europe, a low global capital-to-labour ratio may persist for some time as it can only be restored through sustained investments in

43 This number takes also into account demographic developments in the world. Freeman (2006) estimates that with the entrance of China, India and the former Soviet-bloc, the supply of labour increased by 1.5 billion people worldwide, which is almost a doubling of the existing labour supply.

44 However, this overall decline in the capital-to-labour ratio should be qualified to the extent that, in effective terms, the increase will have been less pronounced as the new entrants possess relatively low skills.

capital and through capital-augmenting technological progress.

Apart from the worldwide shift in the relative supply of labour and capital, the specific mechanisms through which globalisation affects the labour income share in EU Member States mainly include the imports of final goods and the outsourcing of the production of intermediate goods.

Traditional trade theory[45] predicts that when trade barriers lower, countries will specialise further in the areas of their comparative advantage (which are primarily determined by relative factor endowments) so that capital-abundant countries will export more capital-intensive goods, and labour-abundant countries will export more labour-intensive goods. In this process, factor prices converge across countries along with traded good prices, so that the price of a country's relatively abundant production factor increases and the price of the relatively scarce production factor falls. Hence, to the extent that a country is to be considered as capital-abundant, the labour income share will fall in the wake of further trade liberalisation – provided that the elasticity of substitution between capital and labour is smaller than one.[46]

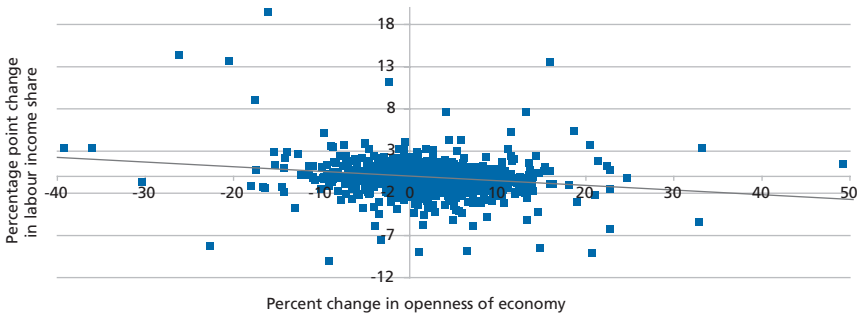
Although the predictions of the traditional trade models are unambiguous, they can be qualified in several ways. Consider first, for instance, the assumption of perfect competition. In imperfect competitive labour markets, globalisation adversely affects the relative bargaining position of the least mobile production factor (Harrison, 2002). To the extent that the fixed costs of relocating are much larger for workers than for capital (in the medium term) and globalisation enhances capital mobility, the bargaining position of labour would deteriorate so that wages would fall (relative to the price of capital), leading to a further decrease in the labour income share[47].

Furthermore, traditional trade models only consider international trade in final goods of different industries (usually two-sector, two-factor models), but the predictions of trade models become much richer once they distinguish between different skill types and the assumption is made that activities related to the different skill types within the same industry can be outsourced across the world (Feenstra 2004, 2007; Feenstra and Hanson, 1996). In traditional trade models, the demand for unskilled labour decreases in the developed countries because international trade causes a shift from low-skilled industries to high-skilled ones in these countries. However, once the outsourcing of activities within the same industry is allowed for, international trade will also create a shift away from low-skilled activities to high-skilled activities within that same industry. The expected effect on factor prices is then of the same nature as the effects of the movement of production factors between countries, thereby creating additional pressure on factor prices to converge worldwide.

Finally, it should be noted that although globalisation may reduce the labour income share in the Member States of the EU, this does not imply that globalisation would also lead to a decline in real wages or employment (of the low or high-skilled). Indeed, the further division of labour and increased opportunities to specialise in terms of technologies, products and markets, has the potential to enhance labour productivity, thereby creating room for non-inflationary wage increases, while at the same time supporting employment growth.

Graph 14 shows a negative correlation between the change in the indicator of the international openness of the economy[48] and the change in the labour income share for the EU, the United States and Japan over the period 1960–2006. However, as this correlation was not controlled for the effects of other variables it is clear that a more thorough investigation of the relation between these two variables is warranted.

Chart 14: **Labour income share vs. openness of economy**



Source: AMECO database, Bassanini and Duval (2006), and own calculations.

45 See the Heckscher-Ohlin-Samuleson model which assumes, among other things, two countries, two sectors, two goods, perfect competition, as well as identical technologies and tastes across countries.

46 It remains an empirical issue to assess to what extent the EU Member States are capital-abundant countries and to determine the size of the elasticity of substitution between labour and capital in order to fully understand the impact of globalisation. Indeed, while the EU Member States may be capital-abundant in terms of low-skilled labour, they are probably labour-abundant in terms of high-skilled labour. Moreover, as both skill types are expected to have a different degree of substitutability with capital, an empirical analysis of the impact of globalisation on the labour income share should reflect these potential differences between skill types.

47 Under the assumption of a low substitution elasticity.

48 Openness of the economy is measured as the sum of exports plus imports divided by gross domestic product.

6. Some empirical results

6.1. A system of income share equations

The previous sections have identified several variables that affect the evolution of the labour income share. This section assesses their empirical significance by estimating a system of income share equations for low, medium and high-skilled labour[49]. Such a system of equations allows us to calculate how a change in one of the explanatory variables induces a shift in the distribution of gross domestic product between the different production factors, and it also allows us to interpret the decline of the labour income share in Europe.

Each of these equations includes the following explanatory variables:

- the capital-to-labour ratio (in efficiency units) (see Section 3.1)
- the ICT-intensity of the production process (see Section 3.2)
- variables affecting the rents in the goods market (see Section 4.1)
- variables affecting the relative bargaining power in the labour market (see Section 4.1)
- active labour market policies (see Section 4.2)
- the direct government take in value added (i.e. indirect taxes imposed on production minus subsides, see Section 4.2).

Rents are primarily determined by product market regulation and the openness of the economy, while the bargaining power of the trade unions is determined by, among other things, trade union density, unemployment benefits, and the openness of the economy (which affects both rents in the goods market and bargaining power in the labour market). Finally, in order to capture cyclical movements, the equations also include the output gap (see Section 4.3).

Data for these variables were retrieved from various sources and they are described in more detail in Annex A. The aggregate labour income share, the capital to labour ratio and openness of the economy are calculated with data available in the Commission's AMECO database. Shares in total labour compensation according to skill-type and the indicator for the use of ICT services are from the EU KLEMS database[50]. The labour income share per skill type is obtained by multiplying the share of the skill types in total labour compensation (EU KLEMS) with the aggregate labour income share (AMECO). Data for expenditures on active labour market policies (ALMP)[51], employment protection legislation (EPL), product market regulation (PMR), unemployment replacement ratio, trade union density, the tax wedge and (statutory) minimum wages[52] are from various OECD databases, and are readily available and documented in the Bassanini and Duval (2006) database.

Table 5 (see page 256) shows the point estimates for the income share of the three skill types as well as for the labour aggregate for 13 countries for the period 1983–2002[53]. Standard errors are shown between parentheses. Several robustness checks were performed, including a check on the sensitivity of the point estimates to the deletion of countries from the data pool (i.e. the United States, Japan and the United Kingdom)[54], the addition of country-specific trends[55] and the use of instrumental variables in order to deal with possible simultaneity biases[56].

49 IMF (2007) follows a similar strategy although there a distinction is made between skilled and unskilled sectors.

50 In EU KLEMS, capital input is measured as capital services, rather than stocks.

51 ALMP expenditures are calculated per unemployed person and in order to ensure cross-country comparability this indicator is expressed as a percentage of GDP per capita. See also Bassanini and Duval (2006).

52 Reliable minimum wage series exist only for countries where minimum wages are statutory; countries with statutory minimums during the whole sample period are Belgium, France, Japan, the Netherlands, Spain and the United States. For the other countries where minimum wages may be collectively negotiated but for which we do not have observations, the variable was set to zero.

53 These countries are Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Finland, Sweden, the United Kingdom, the United States of America and Japan. The available data were pooled yielding an unbalanced dataset with 207 observations per equation. The equations have been estimated with least squares assuming fixed effects.

54 The sensitivity of the point estimates to the composition of the data pool was checked by deleting the non-European countries (i.e. the United States and Japan). This yielded a change in the sign of the parameter of only three variables, which are also not very significant in Table 5, i.e. the openness variable in the equation of the low and high-skilled, and the unemployment benefit variable in the equation of the high-skilled. An additional robustness check was made by deleting the United Kingdom from the pool, as it was the only country in the pool for which the null-hypothesis of a non-stationary labour income share could be rejected at a fairly high confidence level. Compared with the point estimates reported in Table 5, this deletion resulted in a change of the sign of two parameters, i.e. the one of the openness variable in the equation of the low-skilled workers and the one of the ALMP variable in the equation of the high-skilled workers.

55 Compared with the point estimates reported in Table 5, adding a country-specific trend changed the parameter value for only two variables, i.e. PMR in the equation of the medium-skilled and the openness variable in the equation of the high-skilled workers. In addition, there was a notable fall in the significance of the variable measuring ICT use in the equation of the high-skilled workers, as well as in the unemployment benefit variable in the equation of the low-skilled workers.

56 Estimation with instrumental variables changed the sign of three parameters, i.e. the parameter of the openness variable in the equation of the low-skilled workers, and the EPL variable and minimum wage variable in the high-skilled equation. The instruments are the lagged variables, and a country-specific trend and constant.

Table 5: **Estimation results of a system of equations**[1]

	Skill composition of labour			Total labour
	low-skilled	medium-skilled	high-skilled	
Constant	-32.577*** (5.213)	88.414*** (5.867)	45.863*** (2.742)	101.694*** (5.445)
Capital-labour ratio (in log)	-4.770*** (1.655)	8.900*** (1.862)	5.788*** (0.870)	9.917*** (1.728)
ICT use (in log)	-4.140*** (0.355)	1.587*** (0.399)	2.104*** (0.186)	-0.449 (0.370)
PMR (in log)	3.752*** (0.917)	0.111 (1.032)	-2.587*** (0.482)	1.276 (0.958)
Openness	0.003 (0.014)	-0.059*** (0.016)	0.004 (0.007)	-0.052*** (0.014)
Union density	-0.232*** (0.039)	0.190*** (0.044)	0.090*** (0.021)	0.048 (0.041)
UBenefit	-0.103*** (0.028)	-0.197*** (0.031)	-0.013 (0.015)	-0.312*** (0.029)
EPL (in log)	-2.071* (1.057)	-5.584*** (1.190)	3.060*** (0.556)	-4.595*** (1.104)
Labour tax wedge	-0.289*** (0.046)	0.042 (0.052)	-0.084*** (0.024)	-0.330*** (0.048)
Minimum wage	0.439*** (0.075)	-0.241*** (0.085)	-0.045 (0.040)	0.153* (0.079)
ALMP	0.056*** (0.010)	-0.057*** (0.011)	-0.005 (0.005)	-0.006 (0.010)
Output gap	-0.144*** (0.052)	0.220*** (0.059)	-0.031 (0.027)	0.045 (0.055)
Indirect tax share	0.178 (0.110)	-0.518*** (0.124)	0.260*** (0.058)	-0.080 (0.115)
Fixed country effects	Yes	Yes	Yes	Yes
Observations	207	207	207	207
R-squared	0.98	0.98	0.99	0.86

Source: EU KLEMS database, AMECO database and Bassanini and Duval (2006)
Note [1]: Standard errors are between brackets. One, two, and three asterisks indicate that the parameter is significant at the 10, 5, and 1% levels, respectively.

The point estimates in Table 5 illustrate that the impact of these drivers on the income shares of the different skill types may differ strongly. The key to interpreting these results is the scope for substitution between the different production factors. A case in point is the point estimates for the capital-to-labour ratio. The estimation results for this variable indicate that a rise in the capital-to-labour ratio raises the income share of the medium and high-skilled workers, but lowers the share of the low-skilled, thereby underlining the complementarity between capital and high and medium-skilled workers on the one hand, and the high degree of substitution between capital and low-skilled workers on the other. On balance, the impact on the high and medium-skilled workers dominates the impact on the low-skilled workers so that the parameter value of the capital-to-labour variable in the equation of the aggregate income share is larger than zero.[57]

An increase in the intensity at which ICT services are used in the production process[58] lowers the income share of the low-skilled, but raises the share of the medium and high-skilled workers. These results are in line with the results obtained for the capital-to-labour ratio. However, here the negative impact on the share of the low-skilled outweighs the positive impact on the share of the medium and high-skilled workers, so that on balance the intensity of ICT use has a negative impact on

57 The point estimates for the aggregate labour income share can be obtained either by adding the point estimates of the equations of the different skill types, or by estimating the equation of the labour aggregate directly. Estimating the aggregate labour income share equation directly, as was done for this exercise, has the advantage that it provides estimates for the standard errors in an easy way. Although the point estimates of the aggregate labour income share is equal to the sum of the point estimates of the different skill-types, the standard errors of the aggregate also captures the existence of co-variation between the impacts on the different skill types.

58 i.e. the use of ICT services per worker.

the aggregate labour income share – albeit not very significant.

Apart from these drivers which are directly related to the production technology, there are also market institutions that influence the evolution of the labour income share. In the product market, the degree of competition is, to a large extent, determined by the strictness of product market regulation (PMR) and the international openness of the economy[59]. The point estimates in Table 5 show that an increase in the strictness of PMR lowers the income share of the high-skilled workers and raises the income share of the low and medium-skilled workers – albeit not very significantly in the case of the medium-skilled workers. The net effect of an increase in the strictness of product market regulation on the aggregate labour income share is positive, but not very significant. Stricter PMR gives firms more power to increase their price mark-up over marginal costs. As profits accrue to capital (unless workers have a strong bargaining position) an increase in product market regulation will lead to a fall in the labour income share as is found for the high-skilled workers[60]. The fact that it rises for the low-skilled is somewhat puzzling, but could point towards the fact that PMR does not affect all sectors in the same way and that sectors have a different skill composition.

The bargaining power in the labour market is determined by several variables, including trade union density, unemployment benefit, employment protection legislation, the tax wedge and the openness of the economy. Point estimates are reported in Table 5 for each of these variables.

An increase in the density of trade union membership has a positive impact on the income share of the medium-skilled workers and to a smaller extent on the income share of the high-skilled workers, but it has a significant negative impact on the income share of the low-skilled workers. The former two effects dominate the latter so that the net effect on the total income share is positive – albeit not very significant. A higher trade union density increases the bargaining power of the workers which leads to higher unit wage rates. The outcome of this wage push on the income share of the different skill types is in line with the earlier described results, i.e. it yields an increase in the income shares of the medium and high-skilled (being complements to capital), and a decrease in the income share of the low-skilled (being substitutes to capital).

A rise in the unemployment benefit replacement ratio has a negative impact on the income share of all skill-types – albeit only significant for the low and medium-skilled workers. In view of the transmission mechanisms discussed earlier, and the idea that an increase in unemployment benefit increases the bargaining power of labour, it would be expected that an increase in the unemployment benefit would increase the labour income share of the medium and high-skilled workers and lower the income share of the low-skilled workers.

The strictness of EPL primarily has a significant negative effect on the income share of the medium-skilled workers and to a lesser extent on the income share of the low-skilled workers, while it has a significant positive effect on the share of the high-skilled. As the effect on the medium-skilled workers is by far the largest, the parameter of the EPL variable takes a negative value in the equation of the overall labour income share. Increases in EPL raise the bargaining power of employees, and thus also the wages of the workers. In line with earlier results, such wage hikes should then lead to a lower income share for the low-skilled workers and a higher income share for the high-skilled workers. The fact that in the equation of the medium-skilled workers the parameter has a significant negative value may indicate that EPL may also induce some other effects. Indeed, an alternative interpretation of EPL is that it provides job security to the individual jobholder, creating a kind of insurance contract between the employee and the employer for which the insurance premium is paid in the form of a lower wage, which then dampens the effect of the increased bargaining power.

The point estimates in Table 5 indicate that an increase in the labour tax wedge leads to a significant decline in the income share of the low and high-skilled, while the impact on the medium-skilled is not significant. In the equation of the aggregate labour income share the parameter value of the tax variable is negative and significant. An increase in the tax wedge acts as a disincentive to work or raises the attractiveness of working in the informal sector of the economy. As such it will reduce employment in the formal economy and should lead to a decrease in the income share of the low-skilled workers (with their relative high elasticity of substitution) and an increase in the income share of the high-skilled workers (with their relative low elasticity of substitution). The fact that it is not the case for the high-skilled workers may indicate that an additional transmission mechanism is operating.

The parameter of the variable measuring the openness of the economy has a significant negative value in the

59 The international openness of the economy also affects the bargaining position of labour in the labour market, and will be discussed below.

60 See also the analytical results in Annex B.

equation of the medium-skilled workers, and an insignificant positive value in the equation of the low and high-skilled workers. The negative effect in the share equation of the medium-skilled workers dominates so that an increase in the openness of the economy tends to decrease the total labour income share. In interpreting these results it should be remembered that an increase in the openness of the economy reduces the bargaining power of labour thereby putting downward pressure on wages (relative to the price of capital). Given the high degree of substitutability of low-skilled workers with capital (and the other skill types), a fall in the wage of the low-skilled will cause the income share of the low-skilled to increase. At the same time, the reduced bargaining power of labour will also decrease the wages of the medium-skilled workers, and, given their low degree of substitution with capital, this wage fall will induce a decrease in the income share of the medium-skilled workers.

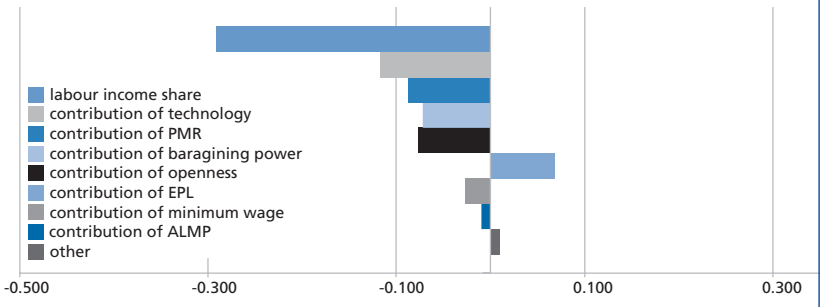
Focusing on the impact of ALMPs, the estimates indicate that the parameter value for this variable is greater than zero in the equation of the low-skilled and smaller than zero in the equation of the medium and high-skilled – albeit not significant for the latter. A main objective of ALMP is to activate well-targeted groups of unemployed people or people at risk of becoming unemployed, by giving them training that meets their needs, assist them in job searching, provide counselling and vocational guidance, etc. As such these measures primarily induce an increase in the employment of the low-skilled workers. Given the high degree of substitutability of the low-skilled with the other production factors, an increase in the employment of low-skilled can be absorbed without a big change in relative prices so that the income share of the low-skilled will rise. The point estimates indicate that it is primarily the share of the medium-skilled that will fall to compensate for the increase in the income share of the low-skilled. Nevertheless, as these two effects cancel each other out almost entirely, the net impact of ALMP on the aggregate labour income share is small.

The parameter value of the minimum wage variable is positive and very significant in the share equation of the low-skilled workers, while it is negative in the share equation of the medium and high-skilled workers. On balance, the value of this parameter is greater than zero in the share equation of aggregate labour. These point estimates indicate that a rise in the minimum wage increases the income share of the low-skilled, but that this happens at the expense of the medium and high-skilled workers and capital.[61]

In order to capture cyclical movements in the labour income share the output gap was added as an explanatory variable. The parameter associated with the output gap has a significant negative value in the equation of the low-skilled and a significant positive value in the equation of the medium-skilled workers, while the net impact of the output gap on the aggregate is positive.

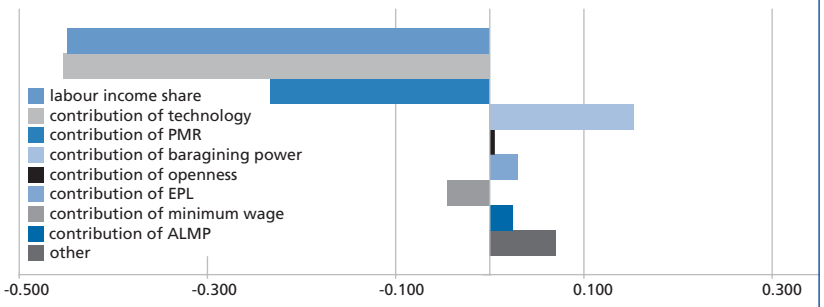
The parameter of net indirect taxes minus subsidies imposed on production has a significant negative value for the medium-skilled workers, an insignificant value for the low-skilled and a significant positive value for the high-skilled workers, indicating that it is primarily the medium-skilled workers who carry the burden of an increase in the government's share in

Chart 15: **Change in labour income share in EU-11: total (percentage points, annual averages)**



Note: EU-11 includes Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Finland, Sweden and the United Kingdom.

Chart 16: **Change in labour income share in EU-11: low-skilled (percentage points, annual averages)**



Note: EU-11 includes Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Finland, Sweden and the United Kingdom.

61 Estimating the equations with pooled data for the countries for which only the statutory minimum wage is available reduces the number of observations from 207 to 102, and affects mainly the sign of the parameter of the PMR and openness variables in the equation of the low-skilled workers, and of the unemployment benefit variable in the equation of the medium-skilled workers albeit that their significance is low.

62 i.e. the countries and the period for which all-explanatory variables are available. These countries are Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Finland, Sweden and the United Kingdom. The annual growth rates are averages of the country growth rates weighted by the countries' share in aggregate GDP.

value added. Nevertheless, the net impact on the labour income share is not significant.

6.2. The contribution of the different drivers

Charts 15 to 18 summarise the previous results by showing the average annual contributions of the different drivers to the labour income share for a selected group of EU Member States between 1983 and 2002[62]. Chart 15 illustrates the results for the aggregate labour income share, while charts 16 to 18 show the results for the income share of the different skill types. 'Technology' covers the capital-to-labour ratio and the indicator measuring the ICT use per employee; 'bargaining power' includes union density, unemployment benefit replacement ratio and the tax wedge, while the openness of the economy and EPL are shown as separate variables. 'Other' covers the contribution of the output gap, the indirect taxes minus subsidies and the residual.[63]

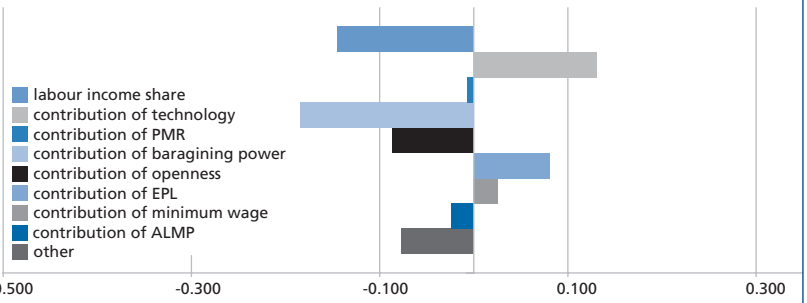
Chart 15 shows the results for the aggregate labour income share. At the aggregate level, technological progress has been the most important cause of the fall in the labour income share. However, the picture changes dramatically once a closer look is taken at the contribution of technological progress at the level of the different skill types. Comparing the charts for the different skill types, it is striking to note how in recent decades the income share of the high-skilled workers, and to a lesser extent the income share of the medium-skilled workers, has benefited in a marked way from technological progress, while the income share of the low-skilled workers has lost a substantial part due to technological progress. These results once again highlight the importance of the degree of substitution between the different labour types and capital.

The charts also show that the general decline in the strictness of product market regulation led to a fall in the total labour market income share. This overall negative contribution of PMR was primarily due to a strong fall in the income share of the low-skilled workers, while it had no impact on the income share of the medium-skilled workers and it increased the income share of the high-skilled workers in a notable way. The fall in the bargaining power of labour, measured here by the joint change in trade union density, the unemployment benefit replacement ratio and the tax wedge (which acts as a disincentive to work or raises the attractiveness of work in the informal sector of the economy), contributed to the overall decline in the labour income share. However, its distribution was not even: while the income share of the low-skilled workers increased, the income shares of the medium and high-skilled workers fell.

The further opening of the economy also played an important role in the decline of the labour income share, but to a lesser extent than technological progress and, in line with the earlier discussed point estimates, with most of the burden falling on the medium-skilled workers. Furthermore, the decrease in the strictness of EPL made a positive contribution to the overall labour income share. Also in line with the earlier discussed point estimates, it was primarily the income share of the low and medium-skilled workers which benefited from this deregulation, while the income share of the high-skilled declined somewhat.

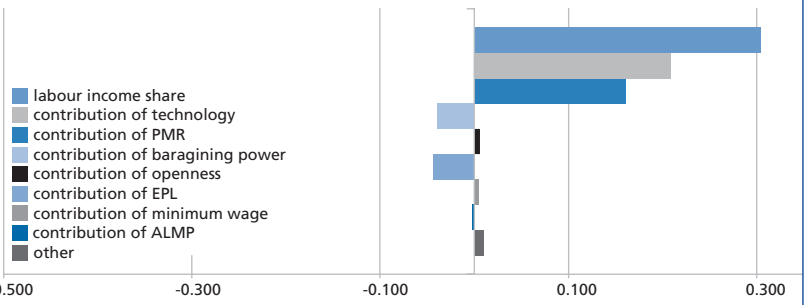
The charts show that the erosion of the minimum wage, measured by the decline in the ratio of the statutory minimum wage to the median wage, also contributed to the decline in the overall labour income share, and especially to the decline in the income share of the low-skilled workers.

Chart 17: **Change in labour income share in EU-11: medium-skilled (percentage points, annual averages)**



Note: EU-11 includes Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Finland, Sweden and the United Kingdom.

Chart 18: **Change in labour income share in EU-11: high-skilled (percentage points, annual averages)**



Note: EU-11 includes Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Finland, Sweden and the United Kingdom.

63 The equation was estimated in levels with fixed effects, implying that for each country the level values of the error terms sum up to zero over the sample. However, it should be noted that the first differences of the error terms do not necessarily add up to zero.

Finally, a modest increase in the labour income share of the low-skilled can be attributed to ALMP, while its impact on the aggregate labour income share is negligible.

7. CONCLUSIONS

The evolution of the labour income share involves issues of equity, economic efficiency as well as macroeconomic stability as it has, for example, an impact on personal income distribution and social cohesion, the direction of the adjustment in wages and employment, and the composition of aggregate demand.

This chapter illustrates how the labour income share in the EU started to decline around the second half of the 1970s and fell towards levels that are below those that were attained in the 1960s. In addition, the chapter also shows that the share of the low-skilled workers in the total wage bill fell gradually while the share of the high-skilled workers rose steadily. The rest of the chapter examines the drivers of these developments, both at a theoretical and empirical level.

A first result of the analysis is that the labour income share is not an invariant variable which is solely determined by the parameters of the production technology – as is predicted by the (basic) neo-classical growth model, but that capital deepening, technological progress, globalisation, labour and product market institutions and policies can have a significant impact on its evolution.

Another important result is that economic variables can have a significant different impact on the income share of the skilled and unskilled workers, and that the degree of substitution between the different production factors is at the heart of a clear understanding of the direction in which a change in an economic variable affects the labour income share. For instance, events that push up wages will lower the labour income share if the elasticity of substitution between labour and capital is high, and they will increase the labour income share if the substitution elasticity is low[64]. This insight is of particular interest when we look at the evolution of the income shares at the level of the different skill types, as it is found that capital and new technologies tend to substitute for low-skilled workers and tend to complement high-skilled workers.

A last major finding is that, for the period for which the data is available (i.e. from the mid-1980s to early 2000s), the estimation results clearly indicate that technological progress made the largest contribution to the fall in the aggregate labour income share, but that this loss was unevenly spread over the different skill types as the high-skilled workers were able to increase their share while the low-skilled workers lost income share as a result of technological progress. Globalisation also had a negative impact on the aggregate labour income share but to a lesser extent than technological progress, and its impact was primarily on the medium-skilled workers.

Following the insights of the theoretical and empirical analysis of this chapter, it is clear that in order to address any adverse developments in the distribution of gross domestic product between capital and labour and between the different skill types of labour, policy-makers have to vigorously pursue a well-balanced policy package. Macro-economic polices should be oriented towards stability and growth so that an economic environment is created that contributes to further capital deepening and technological progress. However, in order to realise the potential of the knowledge-based economy it is imperative that these policies are complemented by labour market polices that take into account the different responses of the different skill types, and, most importantly, by policies that a) allow the low-skilled to progress to a higher skill level so that the adverse effects, which stem from their high degree of substitutability with capital, can be mitigated, and b) address, at the same time, the social needs of the workers during this period of adjustment by providing them, for example, one-off, time-limited individual support that goes beyond passive measures[65].

In this context, policies based on flexicurity principles should be seen as the way forward to promote a fairer sharing of the returns from economic activity in the face of rapid technological progress and globalisation, without compromising on the issues of efficiency and stability.[66] Indeed, some degree of employment flexibility within a secure context should facilitate the creation of new jobs and the destruction of unproductive jobs, and facilitate the swift progression of workers to better rewarding jobs rather than keeping them trapped in low-skilled jobs, the income share of which is adversely impacted by capital deepening and technological progress.

64 This statement has to be qualified once we start to consider measures that drive a wedge between wages and the marginal productivity of labour.

65 At EU level, the European Globalisation Adjustment Fund (EGF) is a financial instrument aimed at cushioning the adverse effects of globalisation by providing one-off, time-limited individual support to workers who are severely and personally affected by globalisation-related redundancies. The EGF seeks to complement support provided by the employers and national authorities of the different Member States to workers in the form of job-search assistance, occupational guidance, tailor-made training and re-training, including IT skills and certification of acquired experience, outplacement assistance and entrepreneurship promotion or aid for self-employment, special time-limited measures, such as job-search allowances, mobility allowances or allowances to individuals participating in lifelong learning and training activities, measures to stimulate in particular disadvantaged or older workers, and measures to remain in or return to the labour market. For more details on the European Globalisation Adjustment Fund, see http://ec.europa.eu/employment_social/egf/index_en.html

66 See the recent EC Communication *Towards common principles of flexicurity: More and better jobs through flexibility and security* available at http://ec.europa.eu/employment_social/emplweb/news/news_en.cfm?id=263

Annex A – The data

Several sources were used to construct the database of this chapter.

The following variables were retrieved from the AMECO database (when available)[67]:

- adjusted labour income share, total economy (% GDP at market prices): ALCD0
- compensation of employees, total economy: UWCD
- total employment, persons: NETD
- employees, persons: NWTD
- gross domestic product at current market prices: UVGD
- net capital stock at 2000 prices, total economy: OKND
- exports of goods and services (national accounts) in current prices: UXGS
- imports of goods and services (national accounts) in current prices: UMGS
- total factor productivity: ZVGDF.

The following variables were retrieved (where available) from the EU KLEMS database[68]:

- high-skilled labour compensation (share in total labour compensation) LABHS
- medium-skilled labour compensation (share in total labour compensation) LABMS
- low-skilled labour compensation (share in total labour compensation) LABLS
- ICT-capital services, volume indices 1995 = 100, CAPIT_QI.

The policy variables are from different sources and are readily available in the Bassanini and Duval (2006) database, (B-D)[69]:

- The employment protection legislation indicator measures the strictness of employment protection legislation and allows for meaningful cardinal comparisons over time and across countries. The value of the EPL indicator ranges from 0 to 6, with a low score indicating a low level of labour market regulation. Variable EPL in B-D, see also OECD (2004).
- The product market regulation indicator measures regulatory impediments to product market competition in seven non-manufacturing industries (passenger air transport, railways passenger and freight services, road freight, gas, electricity, post and telecom). The value of the PMR indicator ranges between 0 and 6, with a low value indicating a low level of product market regulation. Variable REGREF in B-D, see also Conway et al. (2006).
- The unemployment replacement ratio measures the average of the unemployment benefit replacement rates covering two income groups (i.e. 100% and 67% of the average production worker earnings), three family types (i.e. single, with dependent spouse, with spouse in work), and three unemployment durations (i.e. first year, second and third years, and fourth and fifth years of unemployment). Variable ARR in B-D, see also the OECD Benefits and Wages Database.
- Trade union density measures the share of workers affiliated to a trade union. Variable UNDENS in B-D, see also OECD (2004).
- The tax wedge covers the wedge, expressed as a percentage of total labour cost, between the labour cost to the employer and the corresponding net take-home pay of the employee for a single-earner couple with two children receiving the average production worker wage. Variable TWCOUP in B-D, see also the OECD Taxing Wages Database.
- The expenditures on active labour market policies cover outlays for public employment services (PES) (placement, counselling and vocational guidance, job-search courses, assistance with displacement costs, administration of unemployment benefits, etc.), training (including unemployed adults and those at risk, and training for employed adults), youth measures (including special programmes concerning measures for unemployed and disadvantaged youth, support of apprenticeship and related forms of general youth training), subsidised employment and meas-

67 Available at http://ec.europa.eu/economy_finance/indicators/annual_macro_economic_database/ameco_en.htm

68 Available at www.euklems.net

69 Available at www.oecd.org/els/workingpapers See WP 35 in the list of working papers.

ures for the disabled. Here these expenditures are calculated per unemployed person and, in order to ensure cross-country comparability, this indicator is expressed as a percentage of GDP per capita. Variable ALMPU in B-D.

- The (statutory) minimum wages is measured as the ratio of statutory minimum wage to median wage. Reliable minimum wage series exist only for countries where minimum wages are statutory; countries with statutory minimums during the whole sample period are Belgium, France, Japan, the Netherlands, Spain and the United States. Variable RMINMED1 in B-D.

The openness of the economy is measured as the sum of exports plus imports divided by gross domestic product.

Trend labour income share is obtained by applying a Hodrick-Prescott filter to the historical series, with the smoothing parameter set equal to 100. The cyclical movement in the labour share is calculated by subtracting the trend labour income share from the historical series.

Data for Germany before re-unification have been extrapolated, based on data for West Germany using the information for the years when an overlap in the series for Germany and West Germany was available.

ANNEX B – SOME BASIC ANALYTICAL RESULTS ON THE LABOUR INCOME SHARE

This annex recalls some basic analytical results regarding the determination of the labour income share. The emphasis of this annex is on presentational clarity rather than academic rigor. Readers who want to learn more about the technical details are referred to the papers listed in the reference section.

After defining the elasticity of substitution between labour and capital, some analytical results regarding the labour income share are derived. These results illustrate the importance of the size of the elasticity of substitution in order to gauge the impact of a change in one of the drivers of the labour income share. First some general results are derived in the context of perfect competition in the goods and labour market. Next, it is investigated as to how imperfect competition in the goods and labour market affect the labour income share. Table B.1 summarises the main qualitative results.

Table B.1: **Effects of an exogenous change in selected variables on the labour income share – summary**

	Capital-labour substitution elasticity			Equation
	$\sigma<1$	$\sigma>1$	$\sigma=1$	
Capital-to-labour ratio	+	-	0	B.12
Labour-augmenting technological progress	-	+	0	B.13
Real wage	+	-	0	B.16
Minimum wage (binding)	+	+	+	
User cost of capital	-	+	0	B.18
Product market regulation	-/+	-	-	B.29
Employment adjustment costs	-	-	-	B.33

B.1 The elasticity of substitution

The elasticity of substitution, σ, measures the percentage change in factor proportions due to a change in the marginal rate of technical substitution, i.e.

$$(B.1)\quad \sigma = \frac{d\ln\left(\frac{L}{K}\right)}{d\ln\left(\frac{f_K}{f_L}\right)} \geq 0,$$

where f_L and f_K are the first derivatives w.r.t. labour and capital of the production function f(L,K)[70].
Depending on the specific nature of the production function, the elasticity of substitution can take some specific values:

$\sigma = 0$ in the case of no substitution (i.e. if Leontief production technology)
$\sigma = \infty$ in the case of perfect substitution (i.e. if no declining marginal factor productivity), and
$\sigma = 1$ in the case of a Cobb-Douglas production function.

70 The elasticity of substitution is non-negative provided the production function is a quasi-concave function.

B.2 The labour income share

A widely used production function is the Constant Elasticity of Substitution (CES) production function, which reads as:

$$(B.2)\quad Q=\left[\alpha(AL)^{-\rho}+(1-\alpha)(BK)^{-\rho}\right]^{-\frac{1}{\rho}}$$

where A and B are indices of productive efficiency, while ρ is the substitution parameter and α is the distribution parameter. For the parameters of this production function it holds that $-1<\rho<\infty$ and that $0<\alpha<1$. Labour- and capital-augmenting technical progress is measured by an increase in respectively A and B[71].

For the CES production function, the elasticity of substitution between capital and labour, σ, is found to be[62]:

$$(B.3)\quad \sigma=\frac{1}{1+\rho}>0$$

Assume that firms are price takers in the factor market, paying the nominal wage rate, W, and the nominal user cost, USER, and price takers in the goods market, receiving a price, P, for their output, Q. Profit maximisation gives then the first order conditions[73] :

$$(B.4)\quad \frac{W}{P}=\frac{\partial Q}{\partial L}=\alpha A^{-\rho}\left(\frac{Q}{L}\right)^{1+\rho}$$

and

$$(B.5)\quad \frac{USER}{P}=\frac{\partial Q}{\partial K}=(1-\alpha)B^{-\rho}\left(\frac{Q}{K}\right)^{1+\rho}$$

Equations (B.4) and (B.5) allow writing the labour income share, LS, and capital income share, CS, as[64]:

$$(B.6)\quad LS=\left(\frac{W}{P}\right)\frac{L}{Q}=\left(\frac{\partial Q}{\partial L}\right)\frac{L}{Q}=\alpha A^{-\rho}\left(\frac{Q}{L}\right)^{1+\rho}\frac{L}{Q}=\alpha\left(\frac{Q}{AL}\right)^{\rho}=\alpha\left(\frac{Q}{AL}\right)^{\frac{1-\sigma}{\sigma}}$$

and

$$(B.7)\quad CS=\left(\frac{USER}{P}\right)\frac{K}{Q}=\left(\frac{\partial Q}{\partial K}\right)\frac{K}{Q}=(1-\alpha)B^{-\rho}\left(\frac{Q}{K}\right)^{1+\rho}\frac{K}{Q}=(1-\alpha)\left(\frac{Q}{BK}\right)^{\rho}=(1-\alpha)\left(\frac{Q}{BK}\right)^{\frac{1-\sigma}{\sigma}}$$

71 We make the distinction between labour- and capital-augmenting technological progress for analytical reasons. In empirical applications, the inclusion of both labour- and capital-augmenting technological progress poses problems of identification. Labour-augmenting technological progress is usually assumed in the literature. See Barro and Sala-i-Martin (1995).

72 Indeed, note that $\frac{\partial Q}{\partial L}=\alpha A^{-\rho}\left(\frac{Q}{L}\right)^{1+\rho}$ and $\frac{\partial Q}{\partial K}=(1-\alpha)B^{-\rho}\left(\frac{Q}{K}\right)^{1+\rho}$ so that

$$\frac{\left(\frac{\partial Q}{\partial L}\right)}{\left(\frac{\partial Q}{\partial K}\right)}=\frac{\alpha}{1-\alpha}\left(\frac{A}{B}\right)^{-\rho}\left(\frac{K}{L}\right)^{1+\rho}\quad\text{or}\quad\left(\frac{K}{L}\right)=\left(\frac{1-\alpha}{\alpha}\right)^{\frac{1}{1+\rho}}\left(\frac{A}{B}\right)^{\frac{\rho}{1+\rho}}\left[\frac{\left(\frac{\partial Q}{\partial L}\right)}{\left(\frac{\partial Q}{\partial K}\right)}\right]^{\frac{1}{1+\rho}}$$

73 Whereby it should be noted that equation (B.2) can be rewritten as:

$$Q^{-\rho}=\alpha(AL)^{-\rho}+(1-\alpha)(BK)^{-\rho}$$

Which reads on total differentiating as:

$$-\rho\,Q^{-\rho-1}dQ=-\rho\,\alpha A^{-\rho}L^{-\rho-1}dL-\rho(1-\alpha)B^{-\rho}K^{-\rho-1}dK$$

74 Using $\sigma=\frac{1}{1+\rho}$ so that $\rho=\frac{1-\sigma}{\sigma}$.

In the case of a Cobb-Douglas production function, i.e. $\sigma = 1$, equations (B.6) and (B.7) reduce to the following:

$$(B.8) \quad LS = \alpha$$

and

$$(B.9) \quad CS = (1-\alpha)$$

Equation (B.8) shows that in the case of a unitary elasticity of substitution the labour income share is constant[75]. Checking the adding-up condition for the shares (B.6) and (B.7) yields[76]:

$$(B.10) \quad LS+CS = \alpha\left(\frac{Q}{AL}\right)^{\rho} + (1-\alpha)\left(\frac{Q}{BK}\right)^{\rho} = Q^{\rho}\left[\alpha(AL)^{-\rho} + (1-\alpha)(BK)^{-\rho}\right] = Q^{\rho}Q^{-\rho} = 1$$

B.3 Factor endowments and the labour income share

Using equations (B.2) and (B.6) the labour income share can be written in terms of the capital-labour ratio as:

$$(B.11) \quad LS = \alpha\left(\frac{Q}{AL}\right)^{\rho} = \alpha\left(\frac{\left[\alpha(AL)^{-\rho} + (1-\alpha)(BK)^{-\rho}\right]^{-\frac{1}{\rho}}}{AL}\right)^{\rho} = \alpha\left[\alpha + (1-\alpha)\left(\frac{BK}{AL}\right)^{-\rho}\right]^{-1} = \alpha\left[\alpha + (1-\alpha)\left(\frac{BK}{AL}\right)^{\frac{\sigma-1}{\sigma}}\right]^{-1}$$

$$= \frac{\alpha\left(\frac{BK}{AL}\right)^{\frac{1-\sigma}{\sigma}}}{\alpha\left(\frac{BK}{AL}\right)^{\frac{1-\sigma}{\sigma}} + (1-\alpha)}$$

The effect of a change in the capital-labour ratio on the labour income share is then equal to:

$$(B.12) \quad \frac{\partial LS}{\partial (K/L)} = \rho\alpha(1-\alpha)\left(\frac{Q}{AL}\right)^{2\rho}\left(\frac{B}{A}\right)^{-\rho}\left(\frac{K}{L}\right)^{-\rho-1} = \left(\frac{1-\sigma}{\sigma}\right)\alpha(1-\alpha)\left(\frac{Q}{AL}\right)^{2\left(\frac{1-\sigma}{\sigma}\right)}\left(\frac{BK}{AL}\right)^{-\left(\frac{1-\sigma}{\sigma}\right)}\left(\frac{K}{L}\right)^{-1} \begin{cases} > 0 & \text{if } \sigma < 1 \\ < 0 & \text{if } \sigma > 1 \end{cases}$$

and the effect of a change in the labour-augmenting productivity on the labour income share is equal to:

$$(B.13) \quad \frac{\partial LS}{\partial A} = \left(\frac{\sigma-1}{\sigma}\right)\alpha(1-\alpha)\left(\frac{Q}{AL}\right)^{2\left(\frac{1-\sigma}{\sigma}\right)}\left(\frac{BK}{AL}\right)^{-\left(\frac{1-\sigma}{\sigma}\right)}A^{-1} \begin{cases} > 0 & \text{if } \sigma > 1 \\ < 0 & \text{if } \sigma < 1 \end{cases}$$

Equation (B.11) allows us also to assess the impact of a change in the employment level, e.g. as a result of a transition from unemployment to employment, i.e.

$$(B.14) \quad \frac{\partial LS}{\partial L} = \left(\frac{\sigma-1}{\sigma}\right)\alpha(1-\alpha)\left(\frac{Q}{AL}\right)^{2\left(\frac{1-\sigma}{\sigma}\right)}\left(\frac{BK}{AL}\right)^{-\left(\frac{1-\sigma}{\sigma}\right)}L^{-1} \begin{cases} > 0 & \text{if } \sigma > 1 \\ < 0 & \text{if } \sigma < 1 \end{cases}$$

75 In empirical applications, this constancy of the labour share could be formulated as $LS_t = LS + u_t$ where u_t is a white noise random variable.

76 No indirect taxes minus subsidies are assumed.

B.4 Factor prices and the labour income share

Equation (B.4) allows writing the labour income share as a function of the real wage, i.e.:

$$(B.15)\quad LS = \frac{WL}{PQ} = \alpha^{\frac{1}{1+\rho}} A^{\frac{\rho}{1+\rho}} \left(\frac{W}{P}\right)^{\frac{\rho}{1+\rho}} = \alpha^{\sigma} \left(\frac{W}{P}\frac{1}{A}\right)^{(1-\sigma)}$$

The effect of a change in the real wage on the labour income share rate is then equal to:

$$(B.16)\quad \frac{\partial LS}{\partial (W/P)} = (1-\sigma)\,\alpha^{\sigma} A^{-(1-\sigma)} \left(\frac{W}{P}\right)^{-\sigma} \begin{array}{ll} > 0 & \text{if } \sigma < 1 \\ < 0 & \text{if } \sigma > 1 \end{array}$$

Similarly, one can derive from equation (B.5) that the capital share can be written in terms of the user cost of capital as:

$$(B.17)\quad CS = \frac{K\ USER}{PQ} = (1-\alpha)^{\frac{1}{1+\rho}} B^{\frac{\rho}{1+\rho}} \left(\frac{USER}{P}\right)^{\frac{\rho}{1+\rho}} = (1-\alpha)^{\sigma} \left(\frac{USER}{P}\frac{1}{B}\right)^{(1-\sigma)}$$

implying that a change in the user cost of capital has the following effect on the labour income share[77]:

$$(B.18)\quad \frac{\partial LS}{\partial (USER/P)} = (\sigma-1)\,(1-\alpha)^{\sigma} B^{-(1-\sigma)} \left(\frac{USER}{P}\right)^{-\sigma} \begin{array}{ll} > 0 & \text{if } \sigma > 1 \\ < 0 & \text{if } \sigma < 1 \end{array}$$

B.5 Imperfect competition in the goods market and the labour share

This section examines how imperfect competition in the goods market affects the labour income share.

Assume that there are N firms, i = 1, ….N, and that the production technology of firm i is in equation (B.2). Nominal wages, W, and the user cost, R, are given for each firm. Each firm faces a downward sloping demand function for its output, characterised by:

$$(B.19)\quad Q_i^d = AD \left(\frac{P_i}{P}\right)^{\eta}$$

where Q_i^d is demand for the output of firm i, AD is total real income, P_i is the price of output i, P is the general price level. The demand elasticity exceeds unity (in absolute terms), i.e. $\eta < -1$.

Firms choose the input mix and output prices in order to maximise their profits. Output prices are set with a view to clear the goods market, i.e. $Q_i^d = Q$. Profit maximisation implies then that:

$$(B.20)\quad \frac{\partial Q_i}{\partial L} = \frac{\eta}{1+\eta}\ \frac{W}{P_i}$$

$$(B.21)\quad \frac{\partial Q_i}{\partial K} = \frac{\eta}{1+\eta}\ \frac{USER}{P_i}$$

From equation (B.20), it follows that prices are set above the unit labour cost as:

$$(B.22)\quad P_i = \frac{\eta}{1+\eta} \frac{W}{\left(\frac{\partial Q_i}{\partial L}\right)} = \pi \frac{W}{\left(\frac{\partial Q_i}{\partial L}\right)}$$

with the price mark-up $\pi = \frac{\eta}{1+\eta} > 1$. The lower the competition in the goods market, the higher the value of π.

77 Remember that LS = 1 – CS.

Using equation (B.20), the labour income share can be written as:

$$(B.23) \quad LS = \frac{WL}{PQ} = \frac{1}{\pi}\left(\frac{\partial Q}{\partial L}\right)\frac{L}{Q} = \frac{1}{\pi}\alpha\left(\frac{Q}{AL}\right)^{\frac{1-\sigma}{\sigma}}$$

and the capital share as:

$$(B.24) \quad CS = \left(\frac{USER}{P}\right)\frac{K}{Q} = \frac{1}{\pi}\left(\frac{\partial Q}{\partial K}\right)\frac{K}{Q} = \frac{1}{\pi}(1-\alpha)\left(\frac{Q}{BK}\right)^{\frac{1-\sigma}{\sigma}}$$

Comparing equation (B.23) with equation (B.6) for the case of perfect competition in the goods market, the labour income share now also depends on the firm's scope to generate rents in the goods market.

Two remarks should be made here. First, note that in the case of imperfect competition:

$$(B.25) \quad LS + CS = \frac{1}{\pi}\alpha\left(\frac{Q}{AL}\right)^{\frac{1-\sigma}{\sigma}} + \frac{1}{\pi}(1-\alpha)\left(\frac{Q}{BK}\right)^{\frac{1-\sigma}{\sigma}} = \frac{1}{\pi}$$

i.e. $\left(1-\frac{1}{\pi}\right)$ measures the share of profits in total revenues. In the case of perfect competition in the labour market these profits accrue to the owners of the firm (by assumption also the owners of the capital).

Second, in the case that $\sigma = 1$, i.e. a Cobb-Douglas production technology, we get the labour share reduced to:

$$(B.26) \quad LS = \frac{1}{\pi}\alpha$$

and

$$(B.27) \quad CS = \frac{1}{\pi}(1-\alpha)$$

so that an increase in the mark-up, i.e. less competition in the goods market, always leads to a lower income share, i.e. :

$$(B.28) \quad \frac{\partial \ln(LS)}{\partial \pi} = -\frac{1}{\pi} < 0$$

Noting that in equilibrium $Q_i^d = Q$ and that $\eta = \frac{\pi}{1-\pi} < -1$, equation (B.23) allows us to derive the impact of a change in the mark-up π for the case that $\sigma \neq 1$, i.e.:

$$(B.29) \quad \frac{\partial \ln(LS)}{\partial \pi} = \frac{\partial\left[-\ln(\pi) + \ln(\alpha) - \frac{1-\sigma}{\sigma}\ln\left(\frac{AD}{AL}\right) + \frac{\pi}{1-\pi}\frac{1-\sigma}{\sigma}\ln\left(\frac{P_i}{P}\right)\right]}{\partial \pi} = -\frac{1}{\pi} + \left[\frac{1}{1-\pi} + \frac{\pi}{(1-\pi)^2}\right]\frac{1-\sigma}{\sigma}\ln\left(\frac{P_i}{P}\right)$$

$$= -\frac{1}{\pi} + \frac{1-\sigma}{\sigma}\left[\frac{1}{1-\pi}\left[\frac{1}{1-\pi}\ln\left(\frac{P_i}{P}\right)\right]\right] = -\frac{1}{\pi} + \frac{1-\sigma}{\sigma}\left[\frac{1}{1-\pi}\right] w \qquad < 0 \quad \text{if } \sigma > \frac{\pi w}{1+\pi w-\pi} = \frac{\eta w}{1+\eta w}$$

$$> \quad \text{if } \sigma < \frac{\pi w}{1+\pi w-\pi} = \frac{\eta w}{1+\eta w}$$

where use has been made of equation (B.19) to define the logarithm of the share[78]:

$$w = \ln\left(\frac{Q_i}{AD}\frac{P_i}{P}\right) = (\eta+1)\ln\left(\frac{P_i}{P}\right) = \left(\frac{\pi}{1-\pi}+1\right)\ln\left(\frac{P_i}{P}\right) = \left(\frac{1}{1-\pi}\right)\ln\left(\frac{P_i}{P}\right) \leq 0$$

B.6 Imperfect competition in the labour market and the labour share

Here we derive some stylised results in the context of a simple model with imperfect competition in the labour market. First we have a look at the impact of adjustment costs in labour demand on the labour income share. Next we have a look at the impact of a change in the bargaining power on the labour income share.

B.6.1 Labour costs

For analytical clarity, assume that in each period all labour has to be re-hired and that this happens at a cost proportional to the wage so that the total labour cost is equal to

W C L with c≥1

The first order conditions under profit maximisation read then as[79]:

$$\text{(B.30)}\quad \frac{W}{P} = \frac{1}{C}\frac{\partial Q}{\partial L} = \frac{1}{C}\alpha A^{-\rho}\left(\frac{Q}{L}\right)^{\frac{1}{\sigma}}$$

$$\text{(B.31)}\quad \frac{USER}{P} = \frac{\partial Q}{\partial K} = (1-\alpha)B^{-\rho}\left(\frac{Q}{K}\right)^{\frac{1}{\sigma}}$$

The labour share is then equal to:

$$\text{(B.32)}\quad LS = \frac{WL}{PQ} = \frac{1}{C}\left(\frac{\partial Q}{\partial L}\right)\frac{L}{Q} = \frac{1}{C}\alpha\left(\frac{Q}{AL}\right)^{\frac{1-\sigma}{\sigma}}$$

The effect of a change in the labour adjustment cost is then found to be:

$$\text{(B.33)}\quad \frac{\partial LS}{\partial C} = -\frac{1}{C^2}\alpha\left(\frac{Q}{AL}\right)^{\frac{1-\sigma}{\sigma}} = -\frac{1}{C}LS < 0$$

78 Furthermore note that $-\frac{1}{\pi} + \frac{1-\sigma}{\sigma}\left[\frac{1}{1-\pi}\right] w < 0$ if $\frac{1-\sigma}{\sigma}\left[\frac{\pi}{1-\pi}\right] w < 1$ or if $\frac{1-\sigma}{\sigma} < \frac{1-\pi}{\pi w}$

or if $\frac{1}{\sigma} < \frac{1+\pi w-\pi}{\pi w}$ or if $\frac{\pi w}{1+\pi w-\pi} < \sigma$ or if $\sigma > \frac{\eta w}{1+\eta w}$ as $\pi \lessgtr \frac{\eta}{1+\eta}$

79 No adjustment costs for capital are assumed.

B.6.2 Wage bargaining

Let workers and the employers bargain over the wage in a non-cooperative way, the wage is then of the form:

$$(B.34) \quad \frac{W}{P} = \gamma \frac{Q}{L} + (1-\gamma)\ RESW$$

where RESW is the reservation wage and the parameter $0 \leq \gamma \leq 1$, measures the bargaining power of the workers. (Cahuc and Zylberberg, 2004). When the workers have all the bargaining power, i.e. $\gamma = 1$, then total production Q is appropriated by the workers. When the workers have no bargaining power, i.e. $\gamma = 0$, the wage is equal to the reservation wage. The wage is a weighted average of the total product per employee and the reservation weight for a value for $\gamma = 1$, between 0 and 1.

Using equation (B.34) the labour income share can be written as:

$$(B.35) \quad LS = \frac{W\,L}{PQ} = \left(\gamma \frac{Q}{L} + (1-\gamma)\ RESW\right)\frac{L}{Q} = \gamma + (1-\gamma)\frac{RESW\ \ L}{Q}$$

which shows that

$$(B.36) \quad LS = 1 \quad \text{if} \quad \gamma = 1$$

and

$$(B.37) \quad LS = \frac{RESW\ \ L}{Q} \quad \text{if} \quad \gamma = 0$$

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Statistical Annex

Annex 1

MACRO ECONOMIC INDICATORS, ANNUAL PERCENTAGE GROWTH

European Union 27	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.6	1.8	2.7	2.9	3.0	3.9	2.0	1.2	1.3	2.5	1.8	3.0	2.9	2.7
Occupied Population	:	0.5	0.6	1.3	0.8	1.8	0.9	0.3	0.4	0.8	1.0	1.6	1.4	1.1
Labour productivity	:	1.5	2.3	1.8	2.4	2.3	1.1	1.1	1.2	1.9	1.0	1.5	1.6	1.6
Annual average hours worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Productivity per hour worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Harmonised CPI	:	:	7.3	4.6	3.0	3.5	3.2	2.5	2.1	2.3	2.3	2.3	2.2	2.1
Price delator GDP	3.5	2.9	3.4	2.2	1.5	1.8	2.6	2.8	2.4	2.1	2.0	2.0	2.4	2.1
Nominal compensation per employee	:	3.9	4.4	3.3	4.0	4.2	4.1	3.3	3.3	2.9	2.5	2.6	3.1	3.4
Real compensation per employee (GDP deflator)	:	1.0	0.9	1.1	2.5	2.3	1.4	0.5	0.9	0.7	0.5	0.6	0.7	1.2
Real compensation per employee (private consumption deflator)	:	0.8	0.3	1.4	2.5	1.5	1.4	1.3	1.2	0.8	0.4	0.4	1.1	1.4
Nominal unit labour costs	:	2.3	2.1	1.5	1.6	1.9	2.9	2.2	2.1	1.0	1.5	1.1	1.5	1.7
Real unit labour costs	:	-0.6	-1.3	-0.7	0.0	0.1	0.3	-0.6	-0.3	-1.2	-0.5	-0.9	-0.9	-0.4

European Union 25	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Real GDP	2.6	1.8	2.7	3.0	3.1	3.9	2.0	1.2	1.3	2.4	1.8	2.9	2.8	2.6
Occupied Population	:	0.6	1.0	1.5	1.1	1.7	1.0	0.4	0.4	0.8	1.0	1.5	1.4	1.1
Labour productivity	:	1.5	2.0	1.6	2.2	2.4	1.0	0.9	1.2	1.9	1.0	1.5	1.6	1.6
Annual average hours worked	:	:	:	:	:	:	-0.7	-0.9	-0.5	0.0	-0.2	0.0	-0.1	-0.1
Productivity per hour worked	:	:	:	:	:	:	1.6	1.7	1.4	1.7	1.0	1.4	1.5	1.5
Harmonised CPI	3.0	3.1	2.6	2.1	1.6	2.4	2.5	2.1	1.9	2.1	2.2	2.2	2.1	2.1
Price delator GDP	3.3	2.6	2.0	2.0	1.3	1.6	2.5	2.7	2.3	2.1	2.0	1.9	2.3	2.0
Nominal compensation per employee	:	3.5	3.1	2.8	3.5	4.1	3.8	3.2	3.3	3.0	2.4	2.6	3.1	3.3
Real compensation per employee (GDP deflator)	:	0.9	1.0	0.8	2.1	2.5	1.3	0.5	1.0	0.9	0.5	0.7	0.7	1.2
Real compensation per employee (private consumption deflator)	:	0.8	0.8	1.1	2.2	1.6	1.4	1.3	1.3	0.9	0.3	0.4	1.1	1.3
Nominal unit labour costs	:	2.0	1.0	1.2	1.3	1.7	2.8	2.3	2.1	1.1	1.4	1.1	1.4	1.6
Real unit labour costs	:	-0.5	-0.9	-0.8	0.0	0.1	0.3	-0.4	-0.2	-1.0	-0.5	-0.8	-0.8	-0.4

European Union 15	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.5	1.7	2.6	2.9	3.0	3.8	1.9	1.1	1.1	2.3	1.6	2.8	2.7	2.5
Occupied Population	0.8	0.6	1.0	1.8	1.8	2.2	1.4	0.6	0.5	0.8	0.8	1.3	1.4	1.1
Labour productivity	2.0	1.4	1.9	1.4	1.5	1.9	0.6	0.6	1.0	1.8	1.0	1.6	1.5	1.5
Annual average hours worked	:	-0.2	-0.4	-0.1	-0.3	-1.1	-0.4	-0.9	-0.5	-0.1	-0.4	-0.1	-0.2	-0.1
Productivity per hour worked	:	1.3	2.0	1.2	1.5	2.7	1.0	1.4	1.1	1.6	1.2	1.5	1.5	1.4
Harmonised CPI	2.8	2.4	1.7	1.3	1.2	1.9	2.2	2.1	2.0	2.0	2.1	2.2	2.0	2.0
Price delator GDP	2.7	2.1	1.6	1.7	1.1	1.4	2.4	2.6	2.3	2.0	1.9	1.9	2.2	2.0
Nominal compensation per employee	3.5	3.0	2.6	2.4	2.7	3.5	3.3	2.9	3.2	2.9	2.6	2.7	3.0	3.3
Real compensation per employee (GDP deflator)	0.8	0.9	1.0	0.7	1.5	2.0	0.9	0.2	0.9	0.9	0.6	0.8	0.8	1.3
Real compensation per employee (private consumption deflator)	0.8	0.8	0.8	1.1	1.6	1.2	1.0	1.1	1.2	0.9	0.5	0.5	1.1	1.4
Nominal unit labour costs	1.5	1.6	0.7	1.0	1.2	1.6	2.7	2.3	2.2	1.1	1.5	1.1	1.5	1.7
Real unit labour costs	-1.2	-0.5	-0.9	-0.7	0.1	0.1	0.3	-0.3	-0.1	-0.9	-0.4	-0.8	-0.7	-0.2

United States	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.5	3.7	4.5	4.2	4.5	3.7	0.8	1.6	2.5	3.9	3.2	3.3	2.2	2.7
Occupied Population	2.0	1.8	2.3	2.1	1.9	2.0	0.0	-0.3	0.9	1.1	1.7	1.9	1.3	0.6
Labour productivity	0.0	1.9	2.1	2.3	2.4	1.6	0.5	2.7	2.7	3.0	1.8	1.4	0.9	2.1
Annual average hours worked	0.4	-0.5	0.5	0.1	0.0	-0.6	-1.2	-1.0	-1.4	0.1	-0.3	:	:	:
Productivity per hour worked	0.1	2.4	1.6	2.0	2.5	2.4	2.0	3.0	3.0	2.8	1.8	:	:	:
Harmonised CPI	2.8	2.9	2.3	1.6	2.2	3.4	2.8	1.6	2.3	2.7	3.4	3.2	2.3	1.9
Price delator GDP	2.0	1.9	1.7	1.1	1.4	2.2	2.4	1.8	2.1	2.8	3.0	2.9	2.2	1.6
Nominal compensation per employee	2.0	2.6	3.5	5.4	4.2	5.7	2.4	3.6	4.3	4.2	3.7	4.5	4.1	5.3
Real compensation per employee (GDP deflator)	0.0	0.7	1.8	4.2	2.7	3.4	0.0	1.8	2.1	1.3	0.6	1.5	1.8	3.7
Real compensation per employee (private consumption deflator)	-0.1	0.5	1.8	4.4	2.5	3.1	0.3	2.1	2.3	1.5	0.8	1.7	2.1	3.3
Nominal unit labour costs	2.0	0.8	1.4	3.0	1.8	4.0	1.9	0.8	1.6	1.2	1.8	3.0	3.2	3.2
Real unit labour costs	0.0	-1.1	-0.3	1.8	0.3	1.8	-0.5	-0.9	-0.5	-1.6	-1.2	0.1	0.9	1.6

Japan	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.0	2.7	1.6	-2.0	-0.1	2.9	0.2	0.3	1.4	2.7	1.9	2.2	2.3	2.1
Occupied Population	0.1	0.4	0.7	-1.2	-1.4	-0.6	-0.8	-1.6	-0.3	0.2	0.4	0.4	0.3	0.3
Labour productivity	1.8	2.3	0.9	-0.9	1.3	3.5	0.9	1.9	1.7	2.5	1.5	1.8	2.0	1.8
Annual average hours worked	-0.7	0.4	-1.5	-1.2	-1.7	0.6	-0.7	-0.6	0.2	-0.7	-0.8	:	:	:
Productivity per hour worked	2.6	1.9	2.4	0.3	3.0	2.9	1.6	2.5	1.6	3.2	2.3	:	:	:
Harmonised CPI	-0.1	0.2	1.7	0.6	-0.3	-0.7	-0.6	-0.9	-0.3	0.0	-0.3	0.2	0.0	0.4
Price delator GDP	-0.5	-0.6	0.6	0.0	-1.3	-1.7	-1.2	-1.5	-1.6	-1.1	-1.3	-0.9	0.1	0.3
Nominal compensation per employee	1.6	0.4	1.5	-0.1	-1.1	0.4	-0.5	-1.6	-1.4	-1.3	0.2	0.7	1.3	1.7
Real compensation per employee (GDP deflator)	2.1	1.0	0.9	-0.2	0.2	2.2	0.7	0.0	0.2	-0.2	1.5	1.6	1.2	1.4
Real compensation per employee (private consumption deflator)	1.8	0.4	0.1	-0.3	-0.6	1.5	0.6	-0.1	-0.5	-0.6	1.0	1.0	1.4	1.4
Nominal unit labour costs	-0.2	-1.9	0.6	0.8	-2.3	-3.0	-1.4	-3.3	-3.1	-3.7	-1.2	-1.0	-0.7	-0.1
Real unit labour costs	0.3	-1.3	0.0	0.7	-1.0	-1.3	-0.2	-1.8	-1.6	-2.7	0.0	-0.1	-0.8	-0.4

Belgium	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.4	1.2	3.5	1.7	3.4	3.7	0.8	1.5	1.0	3.0	1.1	3.2	2.3	2.2
Occupied Population	1.5	0.3	0.5	1.6	1.3	2.0	1.4	-0.1	0.0	0.6	1.0	1.1	1.1	0.9
Labour productivity	0.9	0.9	3.0	0.1	2.1	1.7	-0.6	1.6	1.0	2.3	0.1	2.0	1.2	1.3
Annual average hours worked	-0.1	-0.1	1.2	-0.7	-0.7	0.0	0.1	0.1	-0.4	-1.3	0.8	0.0	-0.1	-0.1
Productivity per hour worked	1.0	1.0	1.8	0.8	2.8	1.7	-0.8	1.6	1.4	3.6	-0.7	2.0	1.3	1.4
Harmonised CPI	1.3	1.8	1.5	0.9	1.1	2.7	2.4	1.6	1.5	1.9	2.5	2.3	1.8	1.8
Price delator GDP	1.2	0.5	1.1	2.1	0.4	1.8	2.0	1.9	1.6	2.4	2.0	2.0	2.2	2.0
Nominal compensation per employee	1.4	1.4	3.4	1.4	3.5	2.0	3.6	3.8	1.6	2.0	2.4	3.2	2.5	2.5
Real compensation per employee (GDP deflator)	0.2	0.9	2.3	-0.7	3.1	0.2	1.6	1.9	0.0	-0.4	0.4	1.2	0.3	0.5
Real compensation per employee (private consumption deflator)	-0.1	0.4	1.9	0.1	3.3	-1.4	1.3	2.5	0.0	-0.5	-0.5	1.2	0.7	0.7
Nominal unit labour costs	0.5	0.6	0.3	1.2	1.4	0.3	4.3	2.1	0.6	-0.3	2.3	1.1	1.3	1.2
Real unit labour costs	-0.7	0.0	-0.7	-0.8	1.0	-1.5	2.2	0.3	-1.0	-2.6	0.3	-0.8	-0.9	-0.8

Bulgaria	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.9	-9.4	-5.6	4.0	2.3	5.4	4.1	5.6	5.0	6.6	6.2	6.1	6.1	6.2
Occupied Population	1.3	0.1	-3.9	-0.2	-2.1	4.9	-0.8	0.2	3.0	2.6	2.7	2.4	1.4	1.2
Labour productivity	1.6	-9.5	-1.7	4.2	4.4	0.5	4.9	5.3	2.0	3.9	3.5	3.6	4.6	4.9
Annual average hours worked	:	:	:	:	:	:	0.7	0.0	-0.7	1.4	-0.3	0.3	:	:
Productivity per hour worked	:	:	:	:	:	:	4.1	5.4	2.7	2.5	3.8	3.3	:	:
Harmonised CPI	:	:	:	18.7	2.6	10.3	7.4	5.8	2.3	6.1	6.0	7.4	4.2	4.3
Price delator GDP	62.8	120.8	948.3	23.7	3.7	6.7	6.7	3.3	1.8	5.1	3.8	8.1	4.0	4.2
Nominal compensation per employee	:	72.7	848.0	52.5	6.0	-9.9	14.9	5.9	5.1	4.9	5.9	8.2	9.0	9.5
Real compensation per employee (GDP deflator)	:	-21.8	-9.6	23.3	2.2	-15.6	7.7	2.5	3.2	-0.2	2.1	0.1	4.8	5.1
Real compensation per employee (private consumption deflator)	:	-21.3	-12.6	31.6	3.7	-13.8	8.4	1.7	4.8	0.5	0.7	2.9	5.6	5.8
Nominal unit labour costs	:	90.8	864.7	46.4	1.4	-10.3	9.6	0.5	3.0	1.0	2.4	4.5	4.2	4.3
Real unit labour costs	:	-13.6	-8.0	18.4	-2.2	-15.9	2.7	-2.7	1.2	-4.0	-1.3	-3.4	0.2	0.1

Czech Republic	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	5.9	4.0	-0.7	-0.8	1.3	3.6	2.5	1.9	3.6	4.2	6.1	6.1	4.9	4.9
Occupied Population	:	0.9	0.2	-1.5	-3.4	-0.2	0.5	0.6	-1.3	0.1	1.6	1.6	1.0	0.7
Labour productivity	:	3.3	-0.9	1.0	3.9	4.1	2.1	1.6	4.7	4.1	4.7	4.7	3.9	4.2
Annual average hours worked	:	-0.1	0.2	0.3	1.6	-0.1	-4.4	-1.1	0.1	0.5	-0.5	0.6	0.1	0.1
Productivity per hour worked	4.1	3.2	-1.1	0.5	3.2	3.9	6.7	2.4	4.9	3.6	4.9	3.8	3.8	4.2
Harmonised CPI	:	9.1	8.0	9.7	1.8	3.9	4.5	1.4	-0.1	2.6	1.6	2.1	2.4	2.9
Price delator GDP	10.2	10.3	8.4	11.1	2.8	1.5	4.9	2.8	0.9	3.5	0.7	1.7	1.8	2.7
Nominal compensation per employee	:	16.9	8.6	8.7	7.1	6.5	8.2	7.7	8.6	5.8	4.3	4.8	2.4	2.2
Real compensation per employee (GDP deflator)	:	5.9	0.2	-2.1	4.1	4.9	3.2	4.8	7.6	2.2	3.6	3.1	0.6	-0.6
Real compensation per employee (private consumption deflator)	:	8.1	-0.3	-0.1	5.1	3.3	4.1	6.4	9.0	2.7	2.6	2.4	0.1	-0.5
Nominal unit labour costs	:	13.1	9.6	7.7	3.0	2.3	6.0	6.0	3.8	1.6	-0.3	0.1	-1.4	-2.0
Real unit labour costs	:	2.5	1.2	-3.1	0.2	0.8	1.0	3.1	2.8	-1.9	-1.0	-1.6	-3.2	-4.6

Denmark	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	3.1	2.8	3.2	2.2	2.6	3.5	0.7	0.5	0.4	2.1	3.1	3.2	2.3	2.0
Occupied Population	1.0	1.0	1.2	1.5	1.0	0.4	0.8	-0.1	-1.3	0.0	0.7	1.9	0.4	-0.1
Labour productivity	2.1	1.8	2.0	0.7	1.6	3.1	-0.1	0.5	1.7	2.1	2.4	1.3	1.9	2.1
Annual average hours worked	0.4	-0.3	1.2	1.0	0.7	1.0	0.5	-0.4	-0.2	0.4	1.0	0.1	0.0	0.3
Productivity per hour worked	1.7	2.2	0.8	-0.4	0.8	2.1	-0.6	0.9	1.9	1.8	1.3	1.2	1.9	1.8
Harmonised CPI	2.0	2.1	2.0	1.3	2.1	2.7	2.3	2.4	2.0	0.9	1.7	1.9	1.9	2.2
Price delator GDP	1.3	2.0	2.0	1.2	1.7	3.0	2.5	2.3	1.6	2.0	3.2	2.2	3.0	2.8
Nominal compensation per employee	3.6	4.2	3.3	4.0	3.8	3.7	4.4	3.8	4.0	2.7	3.3	3.8	4.5	4.3
Real compensation per employee (GDP deflator)	2.3	2.1	1.3	2.8	2.1	0.7	1.9	1.4	2.3	0.7	0.1	1.5	1.5	1.4
Real compensation per employee (private consumption deflator)	1.7	2.6	1.3	2.6	1.8	0.9	2.0	2.0	2.7	1.2	1.1	1.7	2.5	2.1
Nominal unit labour costs	1.5	2.3	1.3	3.3	2.1	0.5	4.5	3.2	2.3	0.5	0.9	2.4	2.5	2.2
Real unit labour costs	0.2	0.3	-0.7	2.1	0.5	-2.4	1.9	0.9	0.6	-1.4	-2.2	0.2	-0.4	-0.6

Germany	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	1.9	1.0	1.8	2.0	2.0	3.2	1.2	0.0	-0.2	1.2	0.9	2.8	2.5	2.4
Occupied Population	0.2	-0.3	-0.1	1.2	1.4	1.9	0.4	-0.6	-1.0	0.4	-0.1	0.7	1.3	0.8
Labour productivity	2.7	2.3	3.2	1.9	1.5	2.3	1.4	1.1	1.5	1.7	1.5	2.5	1.7	1.8
Annual average hours worked	-0.9	-1.0	-0.6	-0.4	-0.8	-1.3	-1.0	-0.9	-0.4	0.2	-0.3	-0.1	-0.1	0.0
Productivity per hour worked	2.6	2.3	2.5	1.2	1.4	2.6	1.8	1.5	1.2	0.7	1.3	2.1	1.3	1.5
Harmonised CPI	:	1.2	1.5	0.6	0.6	1.4	1.9	1.4	1.0	1.8	1.9	1.8	1.9	1.7
Price delator GDP	1.9	0.5	0.3	0.6	0.4	-0.7	1.2	1.4	1.0	0.9	0.6	0.3	1.8	0.9
Nominal compensation per employee	4.8	2.4	2.3	2.1	2.0	3.0	2.3	1.9	2.5	1.5	0.5	1.2	1.6	2.4
Real compensation per employee (GDP deflator)	2.8	1.9	2.0	1.6	1.6	3.7	1.1	0.5	1.5	0.6	-0.1	1.0	-0.2	1.6
Real compensation per employee (private consumption deflator)	3.4	1.4	0.9	1.6	1.7	2.0	0.5	0.7	1.0	-0.1	-0.8	-0.1	0.0	1.2
Nominal unit labour costs	2.0	0.1	-0.9	0.3	0.5	0.7	0.9	0.9	1.0	-0.2	-1.0	-1.2	-0.1	0.6
Real unit labour costs	0.1	-0.4	-1.2	-0.3	0.2	1.4	-0.3	-0.5	-0.1	-1.1	-1.6	-1.5	-1.9	-0.3

Estonia	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	4.5	4.4	11.1	4.4	0.3	7.9	7.7	8.0	7.1	8.1	10.5	11.4	8.7	8.2
Occupied Population	-6.2	-2.3	0.0	-1.9	-4.4	-1.5	0.8	1.3	1.5	0.0	2.0	5.4	2.0	1.1
Labour productivity	11.4	6.9	11.1	6.8	5.3	11.0	6.8	6.3	6.2	8.0	8.6	5.5	7.4	7.2
Annual average hours worked	:	:	:	:	:	:	-0.4	0.2	0.1	0.6	0.7	2.0	0.6	0.5
Productivity per hour worked	:	:	:	:	:	:	7.2	6.4	5.5	7.5	7.6	3.7	6.0	6.5
Harmonised CPI	:	19.8	9.3	8.8	3.1	3.9	5.6	3.6	1.4	3.0	4.1	4.4	5.1	5.3
Price delator GDP	31.4	24.3	10.4	8.9	4.5	5.4	5.3	3.8	2.3	2.1	6.8	6.1	8.2	6.6
Nominal compensation per employee	42.6	24.0	20.4	15.5	14.9	9.9	9.5	9.1	13.5	12.6	11.5	11.8	14.3	12.5
Real compensation per employee (GDP deflator)	8.5	-0.2	9.0	6.0	10.0	4.3	4.0	5.1	11.0	10.2	4.4	5.4	5.6	5.6
Real compensation per employee (private consumption deflator)	14.3	-1.0	10.8	6.5	8.2	7.1	3.1	6.0	12.5	10.6	8.4	8.4	9.5	7.4
Nominal unit labour costs	28.0	16.0	8.4	8.1	9.2	-1.0	2.5	2.6	6.9	4.2	2.7	6.0	6.3	5.0
Real unit labour costs	-2.6	-6.7	-1.9	-0.7	4.5	-6.1	-2.6	-1.2	4.5	2.1	-3.8	-0.1	-1.7	-1.5

Ireland	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	9.8	8.0	12.5	9.5	11.6	10.2	5.8	6.0	4.3	4.3	5.5	6.0	5.0	4.0
Occupied Population	4.1	3.6	5.6	8.6	6.2	4.6	3.0	1.8	2.0	3.1	4.6	4.2	3.4	2.1
Labour productivity	5.5	4.3	6.5	0.9	5.0	5.3	2.8	4.2	2.3	1.2	0.9	1.7	1.5	1.8
Annual average hours worked	0.3	0.2	-2.4	-3.9	-1.2	-0.2	-0.5	-0.8	-1.2	-0.2	-0.2	-0.1	-0.3	-0.3
Productivity per hour worked	5.2	4.1	9.1	5.0	6.3	5.6	3.3	5.0	3.5	1.4	1.2	1.8	1.9	2.1
Harmonised CPI	2.8	2.2	1.3	2.1	2.5	5.3	4.0	4.7	4.0	2.3	2.2	2.7	2.6	2.2
Price delator GDP	2.9	1.6	2.9	5.7	3.2	5.5	5.5	5.0	2.5	1.8	3.5	2.9	3.0	2.6
Nominal compensation per employee	3.0	4.4	5.0	4.8	4.5	8.0	7.5	5.5	5.0	6.6	5.0	4.9	4.6	4.5
Real compensation per employee (GDP deflator)	0.1	2.7	2.0	-0.9	1.2	2.4	1.9	0.5	2.5	4.7	1.5	1.9	1.5	1.8
Real compensation per employee (private consumption deflator)	0.3	0.6	0.9	-0.8	-0.1	1.9	3.3	0.5	1.3	5.1	3.8	2.2	1.9	2.1
Nominal unit labour costs	-2.4	0.0	-1.5	3.9	-0.5	2.6	4.6	1.2	2.7	5.4	4.1	3.1	3.0	2.6
Real unit labour costs	-5.1	-1.5	-4.2	-1.7	-3.6	-2.8	-0.9	-3.5	0.2	3.5	0.6	0.2	0.0	0.0

Greece	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.1	2.4	3.6	3.4	3.4	4.5	5.1	3.8	4.8	4.7	3.7	4.3	3.7	3.7
Occupied Population*	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Labour productivity*	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Annual average hours worked	-0.4	-1.2	-1.6	-0.1	2.2	0.6	0.3	0.1	0.0	-3.1	-0.5	0.5	0.5	0.5
Productivity per hour worked	1.6	4.0	5.9	-0.6	1.2	4.0	5.2	3.7	3.4	5.0	2.8	2.2	1.7	1.9
Harmonised CPI	8.9	7.9	5.4	4.5	2.1	2.9	3.7	3.9	3.4	3.0	3.5	3.3	3.2	3.1
Price delator GDP	9.8	7.4	6.8	5.2	3.0	5.7	1.8	3.8	3.5	3.4	3.7	3.4	3.2	3.3
Nominal compensation per employee	13.0	8.8	13.7	5.3	6.5	6.0	5.7	10.0	4.6	5.8	6.5	5.9	5.3	5.0
Real compensation per employee (GDP deflator)	2.9	1.4	6.5	0.1	3.4	0.3	3.8	6.0	1.1	2.3	2.7	2.4	2.1	1.6
Real compensation per employee (private consumption deflator)	3.7	0.6	7.7	0.8	4.1	-1.5	3.5	7.3	1.7	3.2	2.7	2.4	2.2	1.9
Nominal unit labour costs	11.7	5.9	9.1	6.1	3.0	1.3	0.2	6.0	1.2	4.0	4.1	3.1	3.0	2.5
Real unit labour costs	1.7	-1.4	2.2	0.8	0.0	-4.2	-1.6	2.1	-2.2	0.6	0.4	-0.3	-0.2	-0.8

Spain	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.8	2.4	3.9	4.5	4.7	5.0	3.6	2.7	3.0	3.2	3.5	3.9	3.7	3.4
Occupied Population	1.9	1.7	3.6	4.5	4.6	5.1	3.2	2.4	3.1	3.5	3.8	3.3	3.1	3.0
Labour productivity	0.9	1.0	0.3	0.1	0.1	0.0	0.4	0.4	0.6	0.6	0.4	0.8	0.9	0.9
Annual average hours worked	0.0	-0.3	0.0	0.2	0.0	-0.1	-0.2	-0.3	-0.9	-1.0	-1.2	0.0	0.0	0.0
Productivity per hour worked	0.9	1.0	0.3	-0.2	0.1	0.1	0.7	0.6	0.8	0.7	0.9	0.5	0.6	0.4
Harmonised CPI	4.6	3.6	1.9	1.8	2.2	3.5	2.8	3.6	3.1	3.1	3.4	3.6	2.4	2.6
Price delator GDP	4.9	3.5	2.4	2.5	2.6	3.5	4.2	4.3	4.1	4.0	4.1	3.8	3.1	2.9
Nominal compensation per employee	3.7	4.0	2.3	2.0	2.0	2.9	3.6	3.3	3.6	3.1	2.6	3.4	3.2	2.7
Real compensation per employee (GDP deflator)	-1.2	0.5	-0.1	-0.5	-0.6	-0.6	-0.6	-1.0	-0.5	-0.9	-1.4	-0.4	0.1	-0.2
Real compensation per employee (private consumption deflator)	-1.1	0.8	-0.5	0.1	-0.2	-0.8	0.1	0.5	0.5	-0.4	-0.8	-0.2	0.6	0.3
Nominal unit labour costs	2.8	3.0	1.9	1.8	1.9	2.8	3.2	2.9	3.0	2.5	2.2	2.7	2.3	1.8
Real unit labour costs	-2.0	-0.5	-0.4	-0.6	-0.7	-0.6	-1.0	-1.4	-1.1	-1.5	-1.8	-1.1	-0.8	-1.1

France	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.1	1.1	2.2	3.5	3.3	3.9	1.9	1.0	1.1	2.5	1.7	2.0	2.4	2.3
Occupied Population	0.9	0.4	0.4	1.5	2.0	2.7	1.8	0.6	0.1	0.1	0.4	0.8	0.9	0.9
Labour productivity	1.6	1.2	2.0	2.2	1.3	1.0	-0.3	0.1	1.1	2.4	1.4	1.2	1.5	1.4
Annual average hours worked	-1.5	0.3	-0.4	-0.7	-0.4	-2.4	-0.8	-2.7	-0.4	1.6	-0.7	0.0	0.0	0.0
Productivity per hour worked	2.7	0.5	2.2	2.7	1.7	3.7	0.9	3.1	1.4	0.8	2.0	1.2	1.5	1.4
Harmonised CPI	1.8	2.1	1.3	0.7	0.6	1.8	1.8	1.9	2.2	2.3	1.9	1.9	1.5	1.7
Price delator GDP	1.3	1.6	1.0	0.9	0.0	1.4	2.0	2.4	1.9	1.6	1.7	2.3	1.9	1.8
Nominal compensation per employee	2.6	2.6	2.0	2.1	2.3	2.2	2.0	3.0	2.8	3.5	3.2	3.1	3.2	3.0
Real compensation per employee (GDP deflator)	1.2	1.0	1.0	1.2	2.2	0.7	0.0	0.6	0.9	1.9	1.4	0.8	1.2	1.2
Real compensation per employee (private consumption deflator)	1.6	0.9	1.1	1.9	2.8	-0.1	0.3	2.1	0.9	1.6	1.3	1.2	1.8	1.2
Nominal unit labour costs	1.0	1.3	0.0	-0.1	0.9	1.1	2.3	2.9	1.8	1.1	1.7	1.9	1.6	1.6
Real unit labour costs	-0.3	-0.3	-1.0	-1.0	0.9	-0.3	0.3	0.5	-0.1	-0.5	0.0	-0.4	-0.3	-0.2

Italy	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.8	0.7	1.9	1.4	1.9	3.6	1.8	0.3	0.0	1.2	0.1	1.9	1.9	1.7
Occupied Population	-0.2	0.6	0.3	1.0	1.1	1.9	2.0	1.7	1.5	0.4	0.3	1.7	1.1	1.0
Labour productivity	2.9	0.4	1.5	0.5	1.4	1.7	0.0	-0.9	-0.6	0.8	0.3	0.2	1.0	0.9
Annual average hours worked	0.1	0.8	-0.5	0.9	-0.2	-0.8	-1.0	-0.7	-0.3	-0.8	-0.8	0.2	-0.2	-0.2
Productivity per hour worked	2.9	-0.6	2.1	-0.4	1.1	2.4	0.8	-0.7	-1.1	1.5	0.6	0.0	1.0	0.9
Harmonised CPI	5.4	4.0	1.9	2.0	1.7	2.6	2.3	2.6	2.8	2.3	2.2	2.2	1.9	2.0
Price delator GDP	5.0	5.2	2.5	2.6	1.3	2.0	3.0	3.4	3.1	2.9	2.2	1.8	2.1	2.2
Nominal compensation per employee	4.3	6.2	4.2	-1.6	2.6	2.3	3.2	2.7	3.7	3.3	3.1	2.5	2.5	3.3
Real compensation per employee (GDP deflator)	-0.7	1.0	1.6	-4.1	1.3	0.3	0.2	-0.6	0.6	0.4	0.8	0.7	0.4	1.0
Real compensation per employee (private consumption deflator)	-1.6	2.1	1.9	-3.4	0.8	-1.0	0.5	-0.1	0.9	0.7	0.7	-0.2	0.5	1.2
Nominal unit labour costs	1.4	5.8	2.7	-2.1	1.2	0.6	3.2	3.7	4.3	2.4	2.8	2.3	1.6	2.3
Real unit labour costs	-3.4	0.6	0.1	-4.6	-0.1	-1.4	0.2	0.3	1.2	-0.4	0.5	0.5	-0.5	0.1

Cyprus	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	9.9	1.8	2.3	5.0	4.8	5.0	4.0	2.0	1.8	4.2	3.9	3.8	3.8	3.9
Occupied Population	:	0.5	0.6	1.6	1.8	1.6	2.2	2.1	3.8	3.8	3.6	1.5	1.5	1.5
Labour productivity	:	1.3	1.7	3.4	2.9	3.4	1.8	-0.1	-1.9	0.4	0.3	2.3	2.3	2.4
Annual average hours worked	:	:	:	:	:	:	7.1	-1.3	-1.2	-0.6	-1.1	0.0	0.0	0.0
Productivity per hour worked	:	:	:	:	:	:	-5.0	1.2	-0.8	1.0	1.4	2.3	2.3	2.4
Harmonised CPI	:	:	3.3	2.3	1.1	4.9	2.0	2.8	4.0	1.9	2.0	2.2	1.3	2.0
Price delator GDP	-0.5	2.3	2.4	2.9	2.3	3.8	3.4	1.2	5.1	3.3	2.4	2.5	2.3	2.3
Nominal compensation per employee	:	4.7	5.5	3.1	4.5	6.2	3.7	4.9	7.4	2.0	1.6	4.2	3.5	3.5
Real compensation per employee (GDP deflator)	:	2.4	3.0	0.1	2.1	2.3	0.3	3.7	2.2	-1.3	-0.8	1.7	1.2	1.2
Real compensation per employee (private consumption deflator)	:	2.0	3.4	1.5	2.3	2.4	1.3	2.4	3.3	0.1	-1.1	1.6	1.6	1.1
Nominal unit labour costs	:	3.4	3.7	-0.3	1.5	2.7	1.9	5.1	9.5	1.6	1.3	1.9	1.2	1.1
Real unit labour costs	:	1.0	1.2	-3.2	-0.8	-1.1	-1.5	3.9	4.2	-1.7	-1.1	-0.5	-1.0	-1.2

Latvia	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	-0.9	3.8	8.3	4.7	3.3	6.9	8.0	6.5	7.2	8.7	10.6	11.9	9.6	7.9
Occupied Population	-10.4	-1.9	4.4	-0.3	-1.8	-2.9	2.2	1.6	1.7	1.1	1.7	4.6	1.4	0.9
Labour productivity	10.6	5.8	3.7	5.0	5.2	10.1	5.7	4.8	5.4	7.5	8.7	7.0	8.1	6.9
Annual average hours worked	:	:	:	:	-0.5	0.7	-0.4	-0.4	1.0	-2.7	-0.2	0.2	0.2	0.2
Productivity per hour worked	:	:	:	:	5.7	9.4	6.2	5.2	4.4	10.5	9.0	6.7	7.9	6.7
Harmonised CPI	:	:	8.1	4.3	2.1	2.6	2.5	2.0	2.9	6.2	6.9	6.6	7.2	6.2
Price delator GDP	15.1	14.9	7.0	4.6	4.8	3.8	1.7	3.6	3.6	7.0	10.2	11.1	11.2	9.3
Nominal compensation per employee	8.8	27.3	13.0	6.2	7.5	6.9	3.4	4.0	11.3	14.3	25.5	21.7	18.0	15.0
Real compensation per employee (GDP deflator)	-5.5	10.9	5.6	1.5	2.6	3.0	1.7	0.4	7.5	6.9	13.9	9.6	6.1	5.2
Real compensation per employee (private consumption deflator)	:	9.5	4.0	1.5	5.7	3.3	1.1	1.8	8.0	6.8	15.5	12.4	9.3	8.0
Nominal unit labour costs	-1.7	20.4	8.9	1.1	2.2	-2.9	-2.2	-0.8	5.6	6.4	15.5	13.8	9.1	7.5
Real unit labour costs	-14.6	4.8	1.8	-3.3	-2.4	-6.5	-3.9	-4.2	2.0	-0.6	4.8	2.4	-1.9	-1.6

Lithuania	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	3.3	5.1	8.5	7.5	-1.5	4.1	6.6	6.9	10.3	7.3	7.6	7.5	7.3	6.3
Occupied Population	-1.9	0.9	0.6	-0.8	-2.2	-4.0	-3.8	3.6	2.2	0.0	2.5	1.7	0.7	0.1
Labour productivity	5.3	4.1	7.8	8.4	0.8	8.4	10.9	3.2	7.9	7.3	5.0	5.7	6.6	6.2
Annual average hours worked	:	-0.1	0.1	3.0	-3.0	6.6	-0.8	-1.6	-0.9	1.3	3.4	-0.8	0.5	0.4
Productivity per hour worked	:	4.3	7.8	5.2	3.9	1.6	11.8	4.8	8.9	6.0	1.5	6.6	6.1	5.8
Harmonised CPI	:	24.7	10.3	5.4	1.5	1.1	1.6	0.3	-1.1	1.2	2.7	3.8	4.7	4.4
Price delator GDP	46.4	20.0	12.6	4.0	-0.9	0.5	-0.3	0.1	-0.9	2.7	5.8	7.1	5.1	4.5
Nominal compensation per employee	67.5	33.2	22.9	15.5	2.6	-0.7	7.1	5.0	8.9	10.9	8.5	13.4	15.1	11.0
Real compensation per employee (GDP deflator)	14.4	10.9	9.2	11.1	3.5	-1.2	7.3	4.9	9.9	8.0	2.6	5.9	9.5	6.2
Real compensation per employee (private consumption deflator)	:	12.6	12.5	9.2	3.2	1.0	4.6	5.1	9.9	11.2	4.6	10.8	10.9	7.2
Nominal unit labour costs	59.1	27.9	14.0	6.6	1.8	-8.4	-3.4	1.7	0.9	3.3	3.4	7.3	8.0	4.5
Real unit labour costs	8.6	6.5	1.2	2.5	2.7	-8.9	-3.2	1.7	1.9	0.7	-2.3	0.2	2.8	0.0

Luxembourg	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	1.4	1.5	5.9	6.5	8.4	8.4	2.5	3.8	1.3	3.6	4.0	6.2	5.0	4.7
Occupied Population	2.6	2.6	3.1	4.5	5.0	5.6	5.5	2.9	1.8	2.3	2.9	3.7	3.6	3.2
Labour productivity	-1.1	-1.0	2.8	1.9	3.3	2.7	-2.9	0.9	-0.5	1.3	1.0	2.4	1.4	1.5
Annual average hours worked	0.9	-1.3	-0.2	-0.5	-0.1	-0.2	-1.0	-0.6	-1.3	-2.3	0.1	-0.8	-0.8	-0.8
Productivity per hour worked	-2.0	0.2	3.0	2.5	3.4	3.0	-1.8	1.5	0.8	3.7	0.9	3.3	2.2	2.3
Harmonised CPI	:	1.2	1.4	1.0	1.0	3.8	2.4	2.1	2.5	3.2	3.8	3.0	2.4	2.7
Price delator GDP	2.3	3.0	-1.9	-0.4	5.3	2.0	0.1	2.7	4.9	1.7	4.7	5.9	4.6	3.7
Nominal compensation per employee	1.4	1.9	2.6	0.9	4.0	5.3	3.5	3.6	1.9	4.2	3.7	2.3	3.0	2.8
Real compensation per employee (GDP deflator)	-0.9	-1.1	4.6	1.3	-1.3	3.3	3.4	0.8	-2.9	2.4	-1.0	-3.4	-1.5	-0.9
Real compensation per employee (private consumption deflator)	-0.6	0.5	1.2	-0.8	1.5	1.3	1.5	3.3	-0.5	1.6	0.0	-0.8	0.7	0.3
Nominal unit labour costs	2.5	2.9	-0.1	-1.0	0.7	2.5	6.5	2.7	2.4	2.8	2.6	-0.2	1.6	1.3
Real unit labour costs	0.2	-0.1	1.8	-0.6	-4.4	0.5	6.4	-0.1	-2.4	1.1	-2.0	-5.7	-2.8	-2.3

Hungary	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	1.5	1.3	4.6	4.9	4.2	5.2	4.1	4.4	4.2	4.8	4.1	4.0	2.4	2.6
Occupied Population	-3.5	-0.5	0.2	1.8	3.4	1.3	0.3	0.0	1.3	-0.7	0.0	0.7	-0.1	0.0
Labour productivity	5.2	1.8	4.5	3.1	1.2	3.7	3.6	4.4	3.3	5.4	3.7	3.1	2.7	2.8
Annual average hours worked	0.5	-0.2	1.2	-0.3	0.7	-0.3	-2.0	0.4	-1.4	-0.1	-0.1	-0.2	-0.6	-0.6
Productivity per hour worked	4.7	2.0	3.1	3.4	0.0	4.2	6.0	4.0	4.3	5.6	4.3	3.6	3.1	3.2
Harmonised CPI	:	23.5	18.5	14.2	10.0	10.0	9.1	5.2	4.7	6.8	3.5	4.0	7.5	3.8
Price delator GDP	26.7	21.2	18.5	12.6	8.4	9.9	8.5	7.8	5.8	4.4	2.2	2.7	6.2	3.4
Nominal compensation per employee	21.7	20.2	21.0	13.9	5.2	15.3	16.0	12.8	9.9	11.5	7.1	6.7	7.1	5.0
Real compensation per employee (GDP deflator)	-4.0	-0.8	2.1	1.1	-3.0	5.0	7.0	4.6	3.9	6.8	4.8	4.0	0.8	1.5
Real compensation per employee (private consumption deflator)	:	-2.2	2.5	0.2	-4.6	5.7	7.2	8.5	5.6	6.6	3.2	3.8	-0.4	1.0
Nominal unit labour costs	15.7	18.0	15.8	10.4	3.9	11.3	12.0	8.0	6.4	5.8	3.2	3.5	4.3	2.1
Real unit labour costs	-8.7	-2.6	-2.2	-2.0	-4.2	1.2	3.3	0.2	0.5	1.4	1.0	0.8	-1.8	-1.3

Malta	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	6.2	4.0	4.9	3.4	4.1	6.4	-1.1	1.9	-2.3	0.4	3.0	2.9	3.0	2.8
Occupied Population*	3.2	1.5	-0.1	0.5	:	:	1.8	0.6	1.0	-0.8	1.8	0.9	0.9	1.0
Labour productivity*	3.0	2.5	5.0	2.9	:	:	-2.8	1.4	-3.3	1.2	1.2	2.0	2.1	1.8
Annual average hours worked	:	:	:	:	:	:	-3.3	0.7	-0.8	1.9	-3.2	0.0	0.0	0.0
Productivity per hour worked	:	:	:	:	:	:	0.5	0.6	-2.5	-0.7	4.5	2.0	2.1	1.8
Harmonised CPI	:	:	3.9	3.7	2.3	3.0	2.5	2.6	1.9	2.7	2.5	2.6	1.4	2.1
Price delator GDP	4.8	0.3	0.4	2.1	1.1	1.7	2.9	2.7	4.6	1.4	2.4	2.6	2.3	2.2
Nominal compensation per employee	9.0	6.5	3.8	5.3	5.4	2.5	5.8	2.8	3.9	2.5	1.1	1.2	1.6	1.9
Real compensation per employee (GDP deflator)	4.0	6.2	3.4	3.2	4.3	0.7	2.8	0.1	-0.6	1.0	-1.2	-1.3	-0.7	-0.3
Real compensation per employee (private consumption deflator)	:	6.8	0.0	2.6	4.5	4.0	3.3	0.7	3.3	0.1	-1.4	-0.8	0.2	-0.2
Nominal unit labour costs	5.9	3.9	-1.1	2.4	0.9	-1.5	8.9	1.4	7.4	1.2	-0.1	-0.7	-0.5	0.1
Real unit labour costs	1.0	3.6	-1.5	0.3	-0.3	-3.1	5.8	-1.2	2.8	-0.2	-2.4	-3.2	-2.8	-2.1

Netherlands	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	3.0	3.4	4.3	3.9	4.7	3.9	1.9	0.1	0.3	2.0	1.5	2.9	2.8	2.6
Occupied Population	:	2.2	3.1	2.6	2.6	2.2	2.1	0.5	-0.5	-0.9	0.0	1.2	1.6	1.3
Labour productivity	:	1.1	1.2	1.0	2.3	2.0	0.3	0.3	1.4	3.4	1.8	1.8	1.7	1.5
Annual average hours worked	-1.3	-0.8	-1.3	1.4	0.1	-2.2	1.1	-1.1	-0.1	-0.6	-0.7	-0.5	-0.5	-0.5
Productivity per hour worked	2.1	2.0	2.5	-0.1	2.0	3.9	-1.2	0.7	0.9	3.5	2.2	2.1	1.7	1.8
Harmonised CPI	1.4	1.4	1.9	1.8	2.0	2.3	5.1	3.9	2.2	1.4	1.5	1.7	1.5	2.1
Price delator GDP	2.0	1.3	2.6	1.9	1.8	4.1	5.1	3.8	2.2	0.7	1.7	1.5	1.7	2.1
Nominal compensation per employee	1.5	1.7	2.5	3.8	4.0	5.0	5.4	5.2	4.2	3.8	1.5	1.0	3.4	3.8
Real compensation per employee (GDP deflator)	-0.5	0.4	-0.1	1.9	2.2	0.9	0.3	1.3	2.0	3.0	-0.2	-0.5	1.7	1.7
Real compensation per employee (private consumption deflator)	0.1	-0.3	0.2	1.7	2.0	1.2	0.9	2.1	1.8	3.0	-0.1	-0.9	1.9	1.8
Nominal unit labour costs	0.5	0.6	1.3	2.8	1.7	2.9	5.0	4.8	2.7	0.3	-0.3	-0.8	1.6	2.2
Real unit labour costs	-1.5	-0.7	-1.3	0.9	-0.1	-1.1	-0.1	1.0	0.5	-0.4	-2.0	-2.3	0.0	0.1

Austria	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	1.9	2.6	1.8	3.6	3.3	3.4	0.8	0.9	1.1	2.4	2.0	3.1	2.9	2.5
Occupied Population*	:	:	0.6	0.9	1.5	1.1	0.6	-0.4	-0.2	0.6	1.1	1.4	1.4	0.7
Labour productivity*	:	:	1.4	2.2	2.1	2.3	0.3	1.1	0.9	2.1	0.7	1.9	1.7	1.8
Annual average hours worked	:	1.8	0.6	0.1	-1.5	-0.5	-0.1	0.4	0.7	-0.1	-0.3	-0.1	0.2	0.2
Productivity per hour worked	:	1.2	0.7	2.5	3.3	2.7	0.3	0.9	0.5	1.9	1.2	1.7	1.3	1.5
Harmonised CPI	1.6	1.8	1.2	0.8	0.5	2.0	2.3	1.7	1.3	2.0	2.1	1.7	1.8	1.7
Price delator GDP	1.9	1.0	0.0	0.3	0.6	1.8	1.8	1.4	1.3	1.7	1.9	1.5	1.8	1.7
Nominal compensation per employee	3.2	1.7	1.1	2.7	2.2	2.1	1.4	2.1	2.0	1.7	1.6	2.3	2.4	2.5
Real compensation per employee (GDP deflator)	1.2	0.7	1.2	2.3	1.5	0.3	-0.4	0.7	0.6	0.0	-0.2	0.8	0.6	0.7
Real compensation per employee (private consumption deflator)	1.1	-0.2	-0.3	2.3	1.4	-0.5	-0.5	0.9	0.4	-0.2	-0.1	0.9	0.9	1.0
Nominal unit labour costs	1.3	-1.4	-0.2	0.4	0.1	-0.2	1.0	1.0	1.1	-0.4	0.9	0.4	0.7	0.7
Real unit labour costs	-0.7	-2.3	-0.2	0.1	-0.5	-1.9	-0.7	-0.4	-0.3	-2.1	-0.9	-1.1	-1.1	-1.0

Poland	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	7.0	6.2	7.1	5.0	4.5	4.2	1.1	1.4	3.8	5.3	3.5	5.8	6.1	5.5
Occupied Population	0.9	1.2	1.4	1.2	-3.9	-1.6	-2.2	-3.0	-1.2	1.3	2.3	3.3	2.4	1.9
Labour productivity	6.0	5.0	5.6	3.8	8.8	5.8	3.4	4.5	5.1	4.0	1.2	2.4	3.6	3.5
Annual average hours worked	:	:	:	:	:	:	-0.7	0.3	0.3	-0.1	0.6	0.2	0.0	0.1
Productivity per hour worked	:	:	:	:	:	:	4.1	4.3	4.8	4.0	0.6	2.3	3.6	3.4
Harmonised CPI	:	:	15.0	11.8	7.2	10.1	5.3	1.9	0.7	3.6	2.2	1.3	2.0	2.5
Price delator GDP	28.0	17.9	13.9	11.1	6.1	7.3	3.5	2.2	0.4	4.1	2.6	1.3	2.3	2.5
Nominal compensation per employee	34.1	27.1	20.6	14.0	13.7	10.8	10.2	2.2	1.7	1.8	2.1	3.9	5.1	3.9
Real compensation per employee (GDP deflator)	4.8	7.8	5.8	2.7	7.2	3.3	6.5	-0.1	1.3	-2.2	-0.5	2.5	2.7	1.3
Real compensation per employee (private consumption deflator)	5.4	7.1	5.2	3.1	7.1	0.8	6.1	-1.0	1.3	-1.1	-0.1	2.5	3.1	1.4
Nominal unit labour costs	26.5	21.1	14.2	9.9	4.5	4.7	6.5	-2.2	-3.2	-2.1	0.9	1.4	1.4	0.4
Real unit labour costs	-1.2	2.7	0.2	-1.1	-1.5	-2.4	3.0	-4.4	-3.6	-6.0	-1.7	0.1	-0.9	-2.1

Portugal	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	4.3	3.6	4.2	4.8	3.9	3.9	2.0	0.8	-0.7	1.3	0.5	1.3	1.8	2.0
Occupied Population	-0.7	1.6	1.6	2.7	1.4	2.3	1.8	0.5	-0.4	0.1	0.0	0.7	0.7	0.8
Labour productivity	5.1	2.0	2.6	2.0	2.5	1.6	0.2	0.3	-0.4	1.2	0.5	0.5	1.1	1.2
Annual average hours worked	3.7	-2.6	-1.7	-0.2	1.2	-2.9	0.1	0.1	-1.1	1.0	-0.5	0.0	0.0	0.0
Productivity per hour worked	1.3	4.7	4.4	2.2	1.3	4.6	0.1	0.2	0.8	0.3	1.0	0.5	1.1	1.1
Harmonised CPI	4.0	2.9	1.9	2.2	2.2	2.8	4.4	3.7	3.3	2.5	2.1	3.0	2.3	2.3
Price delator GDP	3.4	2.6	3.8	3.7	3.3	3.0	3.7	3.9	3.1	2.7	2.8	2.9	2.7	2.5
Nominal compensation per employee	7.2	6.1	6.0	5.3	4.9	6.6	5.4	4.0	2.8	2.6	2.9	2.4	2.7	2.8
Real compensation per employee (GDP deflator)	3.7	3.5	2.1	1.5	1.6	3.5	1.7	0.1	-0.3	-0.1	0.1	-0.5	0.0	0.3
Real compensation per employee (private consumption deflator)	2.9	3.2	3.0	2.9	2.6	3.1	2.0	1.0	-0.2	0.0	0.4	-0.9	0.4	0.5
Nominal unit labour costs	2.1	4.1	3.3	3.2	2.3	4.9	5.2	3.7	3.2	1.4	2.4	1.8	1.6	1.7
Real unit labour costs	-1.3	1.4	-0.5	-0.5	-0.9	1.8	1.5	-0.2	0.1	-1.3	-0.4	-1.0	-1.1	-0.9

Romania	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	7.1	3.9	-6.1	-4.8	-1.2	2.1	5.7	5.1	5.2	8.5	4.1	7.7	6.7	6.3
Occupied Population*	-5.2	-1.2	-3.8	-2.3	-4.5	2.5	-0.8	-2.7	-0.3	0.4	0.2	:	1.2	1.0
Labour productivity*	13.0	5.2	-2.3	-2.5	3.5	-0.3	6.6	8.1	5.5	8.0	3.9	:	5.4	5.3
Annual average hours worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Productivity per hour worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Harmonised CPI	:	38.8	154.8	59.1	45.8	45.7	34.5	22.5	15.3	11.9	9.1	6.6	4.6	4.5
Price delator GDP	35.3	45.3	147.2	55.3	47.7	44.2	37.4	23.4	24.0	15.0	12.2	10.4	9.8	8.1
Nominal compensation per employee	54.3	52.7	107.2	89.3	41.2	74.9	44.8	25.9	22.7	17.8	19.3	17.8	16.7	14.0
Real compensation per employee (GDP deflator)	14.1	5.1	-16.2	21.9	-4.4	21.3	5.4	2.0	-1.0	2.4	6.3	6.7	6.3	5.4
Real compensation per employee (private consumption deflator)	12.8	6.4	-19.4	26.8	-3.5	25.1	6.7	3.7	6.5	3.4	11.4	12.1	11.9	9.8
Nominal unit labour costs	36.5	45.1	112.1	94.3	36.5	75.5	35.8	16.5	16.3	9.0	14.7	12.5	10.7	8.2
Real unit labour costs	0.9	-0.1	-14.2	25.1	-7.6	21.7	-1.1	-5.6	-6.2	-5.2	2.2	1.9	0.8	0.1

Slovenia	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	4.1	3.7	4.8	3.9	5.4	4.1	2.7	3.5	2.7	4.4	4.0	5.2	4.3	4.0
Occupied Population	:	-2.0	-1.9	-0.2	1.4	0.8	0.5	1.5	-0.4	0.5	0.3	1.2	0.7	0.5
Labour productivity	:	5.9	6.9	4.1	3.9	3.3	2.2	1.9	3.1	3.9	3.7	4.0	3.6	3.4
Annual average hours worked	:	:	-1.1	-0.3	0.6	0.6	0.3	-1.2	0.5	-2.3	0.1	1.0	1.0	1.0
Productivity per hour worked	:	:	8.1	4.3	3.3	2.6	1.8	3.1	2.6	6.3	3.6	3.0	2.5	2.4
Harmonised CPI	:	9.9	8.3	7.9	6.1	8.9	8.6	7.5	5.7	3.7	2.5	2.5	2.6	2.7
Price delator GDP	23.0	11.1	8.4	6.8	6.4	5.4	8.7	7.9	5.8	3.3	1.5	2.3	2.8	2.8
Nominal compensation per employee	:	13.6	12.6	8.9	7.7	12.4	11.6	8.5	6.6	7.6	5.4	4.8	5.2	5.5
Real compensation per employee (GDP deflator)	:	2.3	3.9	1.9	1.2	6.7	2.6	0.6	0.8	4.2	3.8	2.4	2.4	2.6
Real compensation per employee (private consumption deflator)	:	2.6	3.7	1.9	1.2	4.2	3.6	0.6	1.2	4.2	3.1	2.3	2.6	2.9
Nominal unit labour costs	:	7.3	5.3	4.6	3.6	8.9	9.2	6.5	3.5	3.6	1.6	0.8	1.6	2.0
Real unit labour costs	:	-3.4	-2.8	-2.1	-2.6	3.3	0.4	-1.3	-2.2	0.3	0.1	-1.5	-1.2	-0.8

Slovakia	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	5.8	6.9	5.7	3.7	0.3	0.7	3.2	4.1	4.2	5.4	6.0	8.3	8.5	6.5
Occupied Population	0.2	2.3	-1.2	-0.4	-2.7	-1.8	0.6	-0.5	1.8	-0.3	1.4	2.3	1.7	0.9
Labour productivity	5.6	4.5	7.1	4.1	3.1	2.6	2.6	4.7	2.3	5.8	4.6	5.8	6.7	5.5
Annual average hours worked	:	-2.1	-0.3	-2.0	0.6	0.1	-0.7	-2.9	-4.2	2.1	2.0	0.4	0.1	0.1
Productivity per hour worked	:	6.8	7.4	6.2	2.5	2.5	3.3	7.8	6.8	3.6	2.6	5.4	6.6	5.4
Harmonised CPI	:	5.8	6.0	6.7	10.4	12.2	7.2	3.5	8.4	7.5	2.8	4.3	1.7	2.4
Price delator GDP	9.9	4.6	4.6	5.1	7.5	9.7	5.0	4.6	4.7	6.0	2.4	2.7	3.3	2.3
Nominal compensation per employee	20.6	7.2	15.4	13.2	6.9	11.9	6.2	9.3	8.1	9.2	5.1	7.7	7.4	6.9
Real compensation per employee (GDP deflator)	9.7	2.5	10.3	7.7	-0.6	2.1	1.1	4.5	3.2	3.0	2.7	4.8	4.0	4.5
Real compensation per employee (private consumption deflator)	10.4	2.3	10.5	6.7	-2.8	2.8	0.6	5.8	1.3	1.7	2.5	2.4	4.5	3.5
Nominal unit labour costs	14.1	2.5	7.8	8.7	3.7	9.1	3.5	4.4	5.6	3.2	0.5	1.7	0.6	1.3
Real unit labour costs	3.9	-2.0	3.0	3.5	-3.6	-0.5	-1.5	-0.2	0.8	-2.7	-1.8	-1.0	-2.6	-1.0

Finland	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	3.9	3.7	6.1	5.2	3.9	5.0	2.6	1.6	1.8	3.7	2.9	5.5	3.1	2.7
Occupied Population	1.8	1.4	3.3	2.0	2.5	2.2	1.5	1.0	0.1	0.4	1.4	1.4	1.0	0.7
Labour productivity	2.1	2.3	2.7	3.1	1.4	2.7	1.1	0.7	1.7	3.3	1.5	4.0	2.0	2.0
Annual average hours worked	0.1	-0.1	-0.2	-0.5	0.2	-0.8	-0.9	-0.3	-0.5	0.2	-0.3	0.2	0.1	0.1
Productivity per hour worked	2.1	2.4	2.9	3.7	1.1	3.6	2.1	1.0	2.1	3.1	1.9	3.8	2.0	1.9
Harmonised CPI	0.4	1.1	1.2	1.3	1.3	2.9	2.7	2.0	1.3	0.1	0.8	1.3	1.5	1.7
Price delator GDP	4.8	-0.2	2.2	3.4	0.9	2.6	3.0	1.3	-0.4	0.6	0.2	1.3	1.8	1.6
Nominal compensation per employee	4.1	2.6	1.6	4.5	2.2	3.7	4.7	1.8	2.8	3.6	3.8	3.4	2.6	3.6
Real compensation per employee (GDP deflator)	-0.6	2.8	-0.6	1.0	1.3	1.1	1.6	0.5	3.2	2.9	3.5	2.1	0.8	1.9
Real compensation per employee (private consumption deflator)	3.2	1.9	-0.3	2.3	0.7	-0.6	2.0	-0.4	3.2	2.6	3.6	1.4	0.9	1.9
Nominal unit labour costs	1.9	0.3	-1.1	1.3	0.8	1.0	3.5	1.1	1.1	0.2	2.2	-0.6	0.5	1.6
Real unit labour costs	-2.7	0.5	-3.2	-2.1	-0.1	-1.6	0.5	-0.1	1.5	-0.4	2.0	-1.9	-1.2	0.0

Sweden	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	3.9	1.3	2.3	3.7	4.5	4.3	1.1	2.0	1.7	4.1	2.9	4.2	3.8	3.3
Occupied Population	1.5	-0.8	-1.3	1.5	2.1	2.4	1.9	0.2	-0.3	-0.6	0.4	1.8	2.1	0.9
Labour productivity	2.3	2.2	3.7	2.1	2.4	1.9	-0.8	1.8	2.0	4.7	2.5	2.4	1.6	2.3
Annual average hours worked	0.3	0.5	0.3	-0.1	0.6	-1.4	-1.4	-1.4	-1.1	1.4	0.2	-0.3	-0.3	0.7
Productivity per hour worked	2.0	1.7	3.4	2.2	1.8	3.3	0.6	3.3	3.2	3.3	2.3	2.7	1.9	1.6
Harmonised CPI	2.7	1.0	1.8	1.0	0.5	1.3	2.7	1.9	2.3	1.0	0.8	1.5	1.2	1.9
Price delator GDP	3.6	1.0	1.7	0.6	0.9	1.4	2.1	1.6	2.0	0.2	1.2	1.8	2.5	2.0
Nominal compensation per employee	2.8	7.3	4.8	2.6	1.3	7.5	4.5	2.9	3.0	3.7	3.2	2.0	4.1	4.4
Real compensation per employee (GDP deflator)	-0.8	6.3	3.0	1.9	0.4	6.0	2.4	1.3	1.0	3.6	2.0	0.2	1.6	2.3
Real compensation per employee (private consumption deflator)	-0.3	6.2	3.1	2.0	0.0	6.2	2.4	1.1	1.2	2.9	1.9	0.7	3.1	2.6
Nominal unit labour costs	0.4	5.0	1.1	0.5	-1.0	5.5	5.4	1.0	1.0	-1.0	0.7	-0.4	2.4	2.1
Real unit labour costs	-3.0	4.0	-0.6	-0.1	-1.9	4.1	3.2	-0.6	-1.0	-1.1	-0.5	-2.1	0.0	0.0

United Kingdom	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	2.9	2.8	3.0	3.3	3.0	3.8	2.4	2.1	2.7	3.3	1.9	2.8	2.8	2.5
Occupied Population	1.2	0.9	1.8	1.0	1.4	1.2	0.8	0.8	1.0	1.0	0.9	0.8	0.8	0.6
Labour productivity	1.7	1.8	1.2	2.3	1.6	2.6	1.5	1.3	1.7	2.2	1.0	1.9	2.0	1.8
Annual average hours worked	0.1	-0.1	-0.1	-0.3	-0.7	-0.7	0.2	-1.1	-1.1	-0.3	0.3	-0.6	-0.6	-0.6
Productivity per hour worked	1.5	1.8	1.3	2.7	2.3	3.3	1.3	2.4	2.8	2.5	0.7	2.6	2.6	2.4
Harmonised CPI	2.7	2.5	1.8	1.6	1.3	0.8	1.2	1.3	1.4	1.3	2.1	2.3	2.3	2.0
Price delator GDP	2.7	3.5	2.9	2.7	2.2	1.3	2.2	3.1	3.1	2.6	2.2	2.4	2.6	2.3
Nominal compensation per employee	3.0	3.0	3.9	6.3	4.5	5.7	5.1	3.3	4.9	4.3	4.6	4.2	4.4	4.4
Real compensation per employee (GDP deflator)	0.3	-0.4	1.0	3.6	2.2	4.3	2.8	0.2	1.7	1.7	2.3	1.7	1.8	2.1
Real compensation per employee (private consumption deflator)	-0.3	-0.3	1.4	3.7	2.8	4.5	2.8	1.7	2.9	2.6	2.1	1.8	2.0	2.3
Nominal unit labour costs	1.3	1.2	2.6	3.9	2.8	3.0	3.5	2.0	3.1	2.0	3.6	2.2	2.4	2.6
Real unit labour costs	-1.4	-2.2	-0.2	1.2	0.6	1.7	1.3	-1.1	0.0	-0.6	1.3	-0.2	-0.2	0.3

Croatia	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	:	6.0	6.8	2.5	-0.9	2.9	4.4	5.6	5.3	4.3	4.3	4.8	4.8	4.5
Occupied Population	:	:	3.2	-3.0	-3.3	4.0	-5.4	4.2	0.6	1.7	0.8	2.0	1.8	1.6
Labour productivity	:	:	3.5	5.7	2.5	-1.1	10.4	1.4	4.7	2.5	3.5	2.7	2.9	2.9
Annual average hours worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Productivity per hour worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Harmonised CPI	:	:	:	:	4.0	4.6	3.8	1.7	1.8	2.0	3.3	3.2	2.3	3.0
Price delator GDP	:	3.6	7.4	8.4	3.8	4.7	4.0	3.6	3.9	3.9	3.2	3.4	2.5	3.3
Nominal compensation per employee	:	:	:	15.5	10.7	0.1	9.2	6.5	11.5	:	:	:	:	:
Real compensation per employee (GDP deflator)	:	:	:	6.5	6.7	-4.5	5.0	2.8	7.3	:	:	:	:	:
Real compensation per employee (private consumption deflator)	:	:	:	9.0	6.9	-5.1	4.2	4.2	9.5	:	:	:	:	:
Nominal unit labour costs	:	:	:	9.3	8.0	1.1	-1.1	5.1	6.5	:	:	:	:	:
Real unit labour costs	:	:	:	0.8	4.0	-3.4	-4.9	1.4	2.5	:	:	:	:	:

Macedonia FYR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	-1.1	1.2	1.4	3.4	4.3	4.5	-4.5	0.9	2.8	4.1	3.8	3.1	4.3	5.3
Occupied Population	:	:	:	5.5	0.9	0.9	8.9	-6.3	-2.9	-2.4	4.3	3.9	3.3	3.6
Labour productivity	:	:	:	-2.0	3.4	3.6	-12.3	7.7	5.8	6.6	-0.4	-0.8	1.0	1.7
Annual average hours worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Productivity per hour worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Harmonised CPI	:	:	:	:	-1.3	6.6	5.2	2.3	1.1	-0.4	0.5	3.2	2.0	2.5
Price delator GDP	17.1	2.9	3.9	1.4	2.7	8.2	3.6	3.4	0.3	1.3	3.2	3.8	2.9	2.9
Nominal compensation per employee	:	:	:	2.9	7.4	1.7	-1.1	1.4	:	:	:	:	:	:
Real compensation per employee (GDP deflator)	:	:	:	1.5	4.6	-6.0	-4.6	-1.9	:	:	:	:	:	:
Real compensation per employee (private consumption deflator)	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Nominal unit labour costs	:	:	:	5.0	3.9	-1.8	12.8	-5.8	:	:	:	:	:	:
Real unit labour costs	:	:	:	3.6	1.2	-9.3	8.9	-8.9	:	:	:	:	:	:

Turkey	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real GDP	7.2	7.0	7.5	3.1	-4.7	7.4	-7.5	7.9	5.8	8.9	7.4	6.1	4.9	5.9
Occupied Population	3.7	2.1	-2.5	2.8	2.1	-2.1	-0.3	-0.8	-1.0	3.0	1.4	1.2	1.3	1.5
Labour productivity	3.4	4.8	10.3	0.3	-6.7	9.7	-7.3	8.8	6.8	5.7	5.9	4.8	3.6	4.4
Annual average hours worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Productivity per hour worked	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Harmonised CPI	:	:	85.6	82.1	61.4	53.2	56.8	47.0	25.3	10.1	8.1	9.3	8.2	5.8
Price delator GDP	87.2	77.8	81.5	75.7	55.6	49.9	54.8	44.1	22.5	9.9	5.4	11.5	7.8	5.9
Nominal compensation per employee	71.2	90.3	103.0	76.2	84.4	44.9	43.6	37.9	27.9	16.5	12.1	12.3	12.7	11.5
Real compensation per employee (GDP deflator)	-8.5	7.0	11.8	0.3	18.6	-3.3	-7.3	-4.4	4.4	6.0	6.4	0.7	4.6	5.3
Real compensation per employee (private consumption deflator)	-11.1	13.4	11.7	-4.1	15.4	-3.5	-9.6	-2.1	5.5	8.5	6.0	1.2	4.3	5.5
Nominal unit labour costs	65.6	81.5	84.2	75.7	97.6	32.1	54.8	26.7	19.7	10.2	5.9	7.1	8.9	6.8
Real unit labour costs	-11.5	2.0	1.4	0.0	27.0	-11.8	0.0	-12.1	-2.3	0.3	0.5	-3.9	1.0	0.9

Source: DG ECFIN 's AMECO database and European Commission 2007 Spring Forecasts.
Note: In the case of Greece (1995-2008), Malta (1999-2000), Austria (1995-1996) and Romania (2006) employment growth data from AMECO and Annual Averages of Labour Force Data differed significantly due to methodological and/ or data source differences. For this reason no employment growth and productivity growth data is shown for these countries/ periods.

Annex 2 KEY EMPLOYMENT INDICATORS

Introduction to key employment indicators tables

The figures in the following "key employment indicators" tables refer to data available up to beginning of May 2007. LFS data for EU-27, EU-25 and EU-15 2005-2006 and for FR 2006: provisional.

The source for the indicator values is Eurostat, EU Labour Force Survey (annual averages), except for the following indicators which are from Eurostat, National Accounts:

3. Total employment levels (except for EL, PL, SK, SI (2004, 2005) and RO)
10. Share of self-employed in total employment
13. Share of total employment in Services
14. Share of total employment in Industry
15. Share of total employment in Agriculture

Notes for particular Member States/tables:

(a) Missing quarters are estimated by Eurostat before the transition to a continuous quarterly survey takes place in each country.

(b) General comments and breaks in series:

- PT (EU LFS indicators): break in 1998
- UK (EU LFS indicators): break in 2000
- RO (EU LFS indicators): break in 2002
- IT/AT (EU LFS indicators): break in 2004
- SE (EU LFS indicators): break in 2005
- ES (EU LFS indicators): break in 2005 due to the questionnaire revision; the impact has been estimated at +0,4 percentage point on employment rate (16-64 years old), +0.2 p.p. on activity rate (16-64 years old) and -0,4 p.p. on unemployment rate
- DE 1999-2004: national estimates
- TR 2000-2005: national LFS (except indicators 3, 10,13-15)

(c) Comments on specific indicators

Indicator 1	EU-27 and EU-25 estimate until 2004, LT 1998-2001 estimate, MT 2000-2001 estimate, PL estimate until 2005
Indicator 3	EL estimates based on the unit of 1000 jobs, AT figures in unit of 1000 jobs BE 2006 forecast, EL 2006 forecast, CY 2006 forecast, PL estimate, PT 2003-2006 forecast, RO 2003-2006 forecast, TR 2000-2006 forecast
Indicator 9	EU LFS spring results, BE 1999-2000 estimate
Indicator 10	BE 2006 forecast, EL estimate until 2005 2006 forecast, CY 2006 forecast, PL estimate, PT 2003-2006 forecast, RO 2003-2006 forecast
Indicator 11-12	DE 1999-2004 spring results, CY 1999-2003 spring results
Indicator 13-15	EL estimate until 2005, PL estimate
Indicator 20-23	Based on EU LFS estimated monthly results (harmonised unemployment series)
Indicator 23	LU provisional , SE 2005 provisional

Key employment indicators: European Union 27

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	:	:	474345	477652	478879	479673	480809	483286	485232
2. Population aged 15-64	:	:	:	:	:	319355	320701	321886	322590	323169	325446	326950
3. Total employment (000)	197586	198638	199935	202532	204309	207878	209871	210469	211294	212820	214820	217899
4. Population in employment aged 15-64	:	:	192222	194513	197212	198720	200588	200666	201604	203137	206194	210227
5. Employment rate (% population aged 15-64)	:	:	60.7	61.2	61.8	62.2	62.5	62.3	62.5	62.9	63.4	64.3
6. Employment rate (% population aged 15-24)	:	:	36.1	36.7	37.1	37.4	37.5	36.7	36.0	36.0	35.9	36.3
7. Employment rate (% population aged 25-54)	:	:	74.5	74.9	75.6	76.0	76.2	76.0	76.1	76.5	76.9	78.0
8. Employment rate (% population aged 55-64)	:	:	36.2	36.2	36.5	36.9	37.7	38.5	40.0	40.7	42.2	43.5
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	58.2	58.1	58.0	57.8	58.1	58.9
10. Self-employed (% total employment)	18.3	18.2	18.1	17.8	17.6	17.3	17.2	17.0	17.1	16.9	16.7	16.6
11. Part-time employment (% total employment)	:	:	15.9	15.9	15.9	16.2	16.2	16.2	16.5	17.2	17.8	18.1
12. Fixed term contracts (% total employees)	:	:	11.4	11.5	11.8	12.3	12.4	12.4	12.6	13.2	13.9	14.4
13. Employment in Services (% total employment)	63.4	63.9	64.3	64.7	65.5	66.1	66.5	67.2	67.7	68.1	68.4	68.6
14. Employment in Industry (% total employment)	28.4	28.1	27.7	27.5	26.9	26.5	26.3	26.0	25.6	25.4	25.2	25.0
15. Employment in Agriculture (% total employment)	8.2	8.1	8.0	7.8	7.6	7.4	7.2	6.8	6.7	6.5	6.4	6.4
16. Activity rate (% population aged 15-64)	:	:	:	:	:	68.6	68.6	68.6	68.8	69.3	69.7	70.1
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	45.9	45.6	45.0	44.3	44.3	44.1	44.0
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	82.6	82.5	82.6	82.8	83.3	83.6	84.1
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	39.7	40.3	41.1	42.7	43.6	45.2	46.3
20. Total unemployment (000)	:	:	:	:	:	19280	19041	20012	20363	20688	20095	18450
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	8.6	8.4	8.8	9.0	9.0	8.7	7.9
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	17.8	18.1	18.8	19.0	19.1	18.6	17.5
23. Long term unemployment rate (% labour force)	:	:	:	:	:	4.0	3.9	4.0	4.1	4.2	4.0	3.6
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	8.4	8.1	8.3	8.3	8.3	8.3	7.7
Male												
1. Total population (000)	:	:	:	:	:	230632	232430	233143	233626	234196	235537	236631
2. Population aged 15-64	:	:	:	:	:	158868	159637	160275	160704	161035	162195	163040
3. Total employment (000)	:	:	115549	116238	116446	117810	118471	118363	118547	118885	119811	121182
4. Population in employment aged 15-64	:	:	110448	111481	112379	112541	113128	112728	112937	113256	114763	116667
5. Employment rate (% population aged 15-64)	:	:	70.0	70.3	70.7	70.8	70.9	70.3	70.3	70.3	70.8	71.6
6. Employment rate (% population aged 15-24)	:	:	40.0	40.3	40.7	40.7	40.7	39.6	38.9	39.0	38.8	39.3
7. Employment rate (% population aged 25-54)	:	:	85.0	85.2	85.5	85.6	85.5	84.8	84.7	84.7	85.1	85.9
8. Employment rate (% population aged 55-64)	:	:	47.1	47.0	46.9	47.1	47.7	48.4	49.9	50.3	51.5	52.6
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	69.7	69.1	68.8	68.5	68.8	69.4
10. Self-employed (% total employment)	21.2	20.5	20.3	20.2	20.0	19.9	19.8	19.9	20.1	20.1	19.7	19.7
11. Part-time employment (% total employment)	:	:	6.2	6.3	6.4	6.5	6.6	6.6	6.7	7.0	7.4	7.7
12. Fixed term contracts (% total employees)	:	:	10.8	11.1	11.3	11.7	11.7	11.6	12.0	12.7	13.5	13.9
13. Employment in Services (% total employment)	53.7	54.0	54.9	55.1	56.0	56.5	56.8	57.3	57.7	57.9	58.1	58.1
14. Employment in Industry (% total employment)	37.2	37.0	36.7	36.5	35.9	35.6	35.4	35.2	34.9	34.8	34.7	34.7
15. Employment in Agriculture (% total employment)	9.1	9.1	8.4	8.3	8.1	8.0	7.7	7.5	7.5	7.3	7.2	7.2
16. Activity rate (% population aged 15-64)	:	:	:	:	:	77.1	77.0	76.8	76.9	77.0	77.3	77.5
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	49.4	49.2	48.5	47.9	47.8	47.7	47.4
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	91.9	91.6	91.4	91.4	91.4	91.7	91.9
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	50.7	51.1	51.7	53.3	54.0	55.2	56.1
20. Total unemployment (000)	:	:	:	:	:	9393	9380	10019	10233	10413	10100	9221
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	7.5	7.5	8.0	8.1	8.2	7.9	7.2
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	16.5	16.9	18.0	18.5	18.6	18.3	17.0
23. Long term unemployment rate (% labour force)	:	:	:	:	:	3.4	3.3	3.5	3.7	3.7	3.6	3.3
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	8.7	8.5	8.9	9.0	8.8	8.9	8.1
Female												
1. Total population (000)	:	:	:	:	:	243710	245220	245735	246045	246612	247747	248601
2. Population aged 15-64	:	:	:	:	:	160487	161064	161611	161886	162135	163251	163910
3. Total employment (000)	:	:	84386	86293	87863	90067	91400	92106	92747	93935	95009	96717
4. Population in employment aged 15-64	:	:	81780	83037	84837	86180	87460	87937	88667	89881	91431	93560
5. Employment rate (% population aged 15-64)	:	:	51.4	52.0	53.0	53.7	54.3	54.4	54.8	55.4	56.0	57.1
6. Employment rate (% population aged 15-24)	:	:	32.3	33.0	33.6	34.1	34.2	33.8	33.1	33.1	32.9	33.2
7. Employment rate (% population aged 25-54)	:	:	64.0	64.6	65.7	66.3	66.9	67.1	67.5	68.4	68.8	70.0
8. Employment rate (% population aged 55-64)	:	:	26.1	26.1	26.7	27.4	28.2	29.1	30.7	31.6	33.5	34.8
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	47.2	47.3	47.6	47.5	47.8	48.8
10. Self-employed (% total employment)	14.1	15.1	15.0	14.5	14.3	14.0	13.8	13.4	13.2	13.0	12.8	12.7
11. Part-time employment (% total employment)	:	:	29.2	28.7	28.5	28.9	28.6	28.5	29.0	30.0	31.0	31.2
12. Fixed term contracts (% total employees)	:	:	12.1	12.2	12.5	13.0	13.3	13.2	13.3	13.8	14.4	14.9
13. Employment in Services (% total employment)	77.2	77.8	77.1	77.6	78.0	78.3	78.7	79.6	80.2	80.7	81.2	81.5
14. Employment in Industry (% total employment)	15.9	15.6	15.5	15.4	15.1	15.0	14.8	14.4	14.0	13.8	13.4	13.2
15. Employment in Agriculture (% total employment)	6.9	6.6	7.3	7.0	6.9	6.7	6.5	6.0	5.8	5.5	5.4	5.3
16. Activity rate (% population aged 15-64)	:	:	:	:	:	60.1	60.2	60.5	60.9	61.6	62.1	62.8
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	42.3	41.9	41.4	40.6	40.8	40.5	40.5
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	73.3	73.4	73.7	74.3	75.2	75.5	76.2
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	29.5	30.1	31.1	32.7	33.7	35.8	37.1
20. Total unemployment (000)	:	:	:	:	:	9886	9661	9993	10130	10275	9994	9229
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	10.0	9.7	10.0	10.0	10.0	9.7	8.8
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	19.2	19.4	19.7	19.5	19.7	18.9	18.1
23. Long term unemployment rate (% labour force)	:	:	:	:	:	4.7	4.6	4.7	4.7	4.7	4.5	4.0
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	8.2	7.7	7.7	7.6	7.7	7.7	7.2

Source: Eurostat
Notes: EU LFS indicators: 2005-2006 provisional; Indicator 1: estimate until 2004.

Key employment indicators: European Union 25

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	:	443940	445175	447442	448693	450166	451385	453929	455950
2. Population aged 15-64	:	:	296106	297250	298248	298633	300049	301203	302348	302900	305142	306677
3. Total employment (000)	184810	185973	187755	190567	192801	196009	198094	198918	199658	201079	202971	205949
4. Population in employment aged 15-64	:	:	179443	181892	184747	186362	188387	189124	190217	191625	194595	198317
5. Employment rate (% population aged 15-64)	:	:	60.6	61.2	61.9	62.4	62.8	62.8	62.9	63.3	63.8	64.7
6. Employment rate (% population aged 15-24)	:	:	36.5	37.1	37.7	38.1	38.1	37.5	36.9	36.8	36.8	37.3
7. Employment rate (% population aged 25-54)	:	:	74.3	74.8	75.6	76.0	76.3	76.3	76.4	76.8	77.2	78.2
8. Employment rate (% population aged 55-64)	:	:	35.7	35.8	36.2	36.6	37.5	38.7	40.2	41.0	42.5	43.6
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	58.2	58.2	58.1	57.9	58.1	58.9
10. Self-employed (% total employment)	17.1	17.0	16.8	16.4	16.1	15.9	15.8	15.7	15.7	15.7	15.4	15.4
11. Part-time employment (% total employment)	:	:	16.0	15.9	16.1	16.2	16.3	16.6	17.0	17.7	18.4	18.8
12. Fixed term contracts (% total employees)	:	:	11.7	11.8	12.2	12.6	12.9	12.9	13.0	13.7	14.5	14.9
13. Employment in Services (% total employment)	65.3	65.9	66.2	66.6	67.3	67.9	68.3	68.9	69.4	69.8	70.1	70.3
14. Employment in Industry (% total employment)	28.1	27.8	27.5	27.3	26.8	26.5	26.2	25.8	25.4	25.1	24.9	24.7
15. Employment in Agriculture (% total employment)	6.5	6.4	6.3	6.1	5.9	5.6	5.5	5.3	5.2	5.1	5.0	5.0
16. Activity rate (% population aged 15-64)	:	:	67.7	68.0	68.5	68.7	68.7	69.0	69.3	69.7	70.2	70.5
17. Activity rate (% of population aged 15-24)	:	:	45.7	46.0	46.5	46.5	46.2	45.7	45.3	45.1	45.2	45.1
18. Activity rate (% of population aged 25-54)	:	:	81.7	82.0	82.4	82.6	82.5	82.8	83.1	83.6	83.9	84.3
19. Activity rate (% of population aged 55-64)	:	:	39.1	39.0	39.3	39.5	40.1	41.4	43.1	43.9	45.5	46.5
20. Total unemployment (000)	:	:	:	19083	18693	17898	17628	18519	19222	19488	19056	17393
21. Unemployment rate (% labour force 15+)	:	:	:	9.3	9.0	8.6	8.4	8.7	9.0	9.0	8.7	7.9
22. Youth unemployment rate (% labour force 15-24)	:	:	:	19.4	18.5	17.4	17.8	18.3	18.8	18.9	18.5	17.3
23. Long term unemployment rate (% labour force)	:	:	:	4.4	4.1	3.9	3.8	3.9	4.0	4.1	3.9	3.6
24. Youth unemployment ratio (% population aged 15-24)	:	:	9.2	8.9	8.7	8.4	8.0	8.2	8.4	8.3	8.4	7.8
Male												
1. Total population (000)	:	:	:	:	216195	216499	217749	218467	219285	219893	221263	222394
2. Population aged 15-64	:	:	147511	148252	148788	148673	149448	150056	150690	150989	152114	152969
3. Total employment (000)	:	:	108898	109710	110382	111570	112307	112201	112263	112576	113383	114733
4. Population in employment aged 15-64	:	:	103535	104663	105668	105917	106619	106493	106753	107032	108434	110206
5. Employment rate (% population aged 15-64)	:	:	70.2	70.6	71.0	71.2	71.3	71.0	70.8	70.9	71.3	72.0
6. Employment rate (% population aged 15-24)	:	:	40.3	40.7	41.3	41.4	41.4	40.5	39.8	39.8	39.7	40.3
7. Employment rate (% population aged 25-54)	:	:	85.1	85.4	85.7	86.0	85.9	85.4	85.2	85.2	85.5	86.3
8. Employment rate (% population aged 55-64)	:	:	46.6	46.6	46.7	46.9	47.7	48.8	50.3	50.7	51.8	52.8
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	70.0	69.6	69.2	68.9	69.1	69.7
10. Self-employed (% total employment)	19.9	19.6	19.4	19.1	18.9	18.7	18.6	18.7	18.8	18.9	18.5	18.5
11. Part-time employment (% total employment)	:	:	5.9	6.0	6.1	6.1	6.2	6.5	6.6	7.0	7.4	7.7
12. Fixed term contracts (% total employees)	:	:	11.1	11.3	11.6	12.0	12.1	12.1	12.4	13.2	14.0	14.4
13. Employment in Services (% total employment)	55.6	55.9	56.2	56.5	57.3	57.8	58.1	58.6	58.9	59.2	59.4	59.5
14. Employment in Industry (% total employment)	37.1	36.8	36.6	36.5	36.0	35.8	35.6	35.3	35.0	34.9	34.7	34.7
15. Employment in Agriculture (% total employment)	7.3	7.2	7.2	7.0	6.7	6.4	6.2	6.1	6.0	5.9	5.9	5.9
16. Activity rate (% population aged 15-64)	:	:	77.4	77.4	77.6	77.4	77.3	77.3	77.5	77.5	77.8	78.0
17. Activity rate (% of population aged 15-24)	:	:	49.7	49.8	50.2	49.9	49.8	49.2	48.8	48.5	48.7	48.4
18. Activity rate (% of population aged 25-54)	:	:	92.2	92.2	92.2	92.1	91.8	91.8	91.8	91.9	92.1	92.2
19. Activity rate (% of population aged 55-64)	:	:	51.0	50.8	50.7	50.6	51.1	52.2	53.8	54.5	55.5	56.4
20. Total unemployment (000)	:	:	:	9177	8998	8609	8580	9168	9579	9701	9497	8601
21. Unemployment rate (% labour force 15+)	:	:	:	7.9	7.7	7.3	7.3	7.7	8.1	8.1	7.9	7.1
22. Youth unemployment rate (% labour force 15-24)	:	:	:	17.5	16.8	16.0	16.4	17.4	18.3	18.2	18.1	16.7
23. Long term unemployment rate (% labour force)	:	:	:	3.6	3.4	3.2	3.2	3.3	3.5	3.6	3.5	3.2
24. Youth unemployment ratio (% population aged 15-24)	:	:	9.4	9.1	8.9	8.5	8.4	8.7	9.0	8.8	9.0	8.2
Female												
1. Total population (000)	:	:	:	:	227740	228673	229691	230224	230879	231491	232665	233556
2. Population aged 15-64	:	:	148597	148998	149460	149960	150602	151147	151658	151911	153029	153708
3. Total employment (000)	:	:	78857	80856	82419	84439	85787	86717	87395	88502	89589	91216
4. Population in employment aged 15-64	:	:	75912	77233	79082	80445	81769	82631	83464	84593	86161	88112
5. Employment rate (% population aged 15-64)	:	:	51.1	51.8	52.9	53.6	54.3	54.7	55.0	55.7	56.3	57.3
6. Employment rate (% population aged 15-24)	:	:	32.6	33.4	34.2	34.7	34.8	34.5	33.9	33.8	33.8	34.2
7. Employment rate (% population aged 25-54)	:	:	63.4	64.2	65.4	66.1	66.8	67.1	67.6	68.5	68.9	70.0
8. Employment rate (% population aged 55-64)	:	:	25.5	25.5	26.3	26.9	27.8	29.2	30.7	31.7	33.7	34.9
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	46.7	47.1	47.3	47.2	47.6	48.5
10. Self-employed (% total employment)	13.2	13.4	13.1	12.8	12.4	12.1	12.0	11.8	11.7	11.7	11.5	11.4
11. Part-time employment (% total employment)	:	:	29.8	29.3	29.6	29.5	29.6	29.7	30.3	31.4	32.4	32.7
12. Fixed term contracts (% total employees)	:	:	12.4	12.5	12.9	13.4	13.7	13.8	13.8	14.3	15.0	15.5
13. Employment in Services (% total employment)	79.0	79.6	79.9	80.2	80.6	80.9	81.3	81.9	82.5	83.0	83.4	83.7
14. Employment in Industry (% total employment)	15.5	15.2	15.0	14.9	14.7	14.5	14.2	13.8	13.4	13.0	12.7	12.4
15. Employment in Agriculture (% total employment)	5.5	5.2	5.1	4.9	4.7	4.6	4.5	4.3	4.1	4.0	3.9	3.8
16. Activity rate (% population aged 15-64)	:	:	58.1	58.7	59.5	60.0	60.2	60.7	61.2	62.0	62.5	63.1
17. Activity rate (% of population aged 15-24)	:	:	41.7	42.1	42.8	43.0	42.5	42.2	41.6	41.6	41.7	41.6
18. Activity rate (% of population aged 25-54)	:	:	71.0	71.7	72.6	73.1	73.2	73.8	74.4	75.4	75.7	76.3
19. Activity rate (% of population aged 55-64)	:	:	28.0	28.0	28.6	29.1	29.7	31.2	32.9	34.0	36.0	37.3
20. Total unemployment (000)	:	:	:	9907	9695	9289	9048	9352	9643	9788	9559	8791
21. Unemployment rate (% labour force 15+)	:	:	:	11.1	10.7	10.1	9.7	9.9	10.1	10.2	9.8	9.0
22. Youth unemployment rate (% labour force 15-24)	:	:	:	21.5	20.5	19.1	19.3	19.5	19.5	19.6	18.9	18.0
23. Long term unemployment rate (% labour force)	:	:	:	5.4	5.0	4.7	4.5	4.6	4.6	4.7	4.5	4.0
24. Youth unemployment ratio (% population aged 15-24)	:	:	9.1	8.7	8.6	8.3	7.7	7.7	7.7	7.8	7.9	7.4

Source: Eurostat
Notes: EU LFS indicators: 2005-2006 provisional; Indicator 1: estimate until 2004.

Key employment indicators: European Union 15

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	365962	367055	367997	368337	369708	370902	373067	374831	376752	378064	380661	382744
2. Population aged 15-64	245359	246161	246691	247585	248341	248387	249436	250392	251628	251946	254039	255370
3. Total employment (000)	154721	155663	157211	159894	162893	166402	168776	169914	170733	171975	173358	175637
4. Population in employment aged 15-64	147394	148358	149723	152118	155322	157530	159763	160760	161887	163079	165513	168427
5. Employment rate (% population aged 15-64)	60.1	60.3	60.7	61.4	62.5	63.4	64.0	64.2	64.3	64.7	65.2	66.0
6. Employment rate (% population aged 15-24)	37.5	36.9	37.2	38.2	39.6	40.5	40.9	40.6	39.9	40.0	39.8	40.1
7. Employment rate (% population aged 25-54)	73.2	73.5	73.9	74.6	75.7	76.5	77.0	77.1	77.1	77.6	77.8	78.7
8. Employment rate (% population aged 55-64)	36.0	36.3	36.4	36.6	37.1	37.8	38.8	40.2	41.7	42.5	44.1	45.3
9. FTE employment rate (% population aged 15-64)	55.6	55.5	55.7	56.3	57.1	58.0	58.6	58.8	58.7	58.5	58.6	59.3
10. Self-employed (% total employment)	16.2	16.0	15.8	15.5	15.1	14.9	14.8	14.7	14.8	14.8	14.6	14.6
11. Part-time employment (% total employment)	15.8	16.3	16.7	17.3	17.6	17.7	17.9	18.1	18.5	19.4	20.3	20.8
12. Fixed term contracts (% total employees)	12.0	12.0	12.4	13.0	13.4	13.7	13.5	13.1	13.1	13.6	14.3	14.7
13. Employment in Services (% total employment)	67.5	68.1	68.5	68.9	69.5	70.0	70.4	71.0	71.5	72.0	72.3	72.6
14. Employment in Industry (% total employment)	27.5	27.1	26.7	26.5	26.1	25.7	25.4	24.9	24.6	24.2	23.9	23.7
15. Employment in Agriculture (% total employment)	5.0	4.8	4.7	4.6	4.4	4.3	4.1	4.0	3.9	3.8	3.8	3.7
16. Activity rate (% population aged 15-64)	67.2	67.7	67.9	68.3	68.9	69.2	69.2	69.7	70.1	70.6	71.0	71.6
17. Activity rate (% of population aged 15-24)	47.5	47.0	47.0	47.4	48.2	48.2	47.8	47.8	47.5	47.6	47.8	47.8
18. Activity rate (% of population aged 25-54)	80.5	81.1	81.3	81.7	82.2	82.4	82.3	82.8	83.1	83.7	83.9	84.5
19. Activity rate (% of population aged 55-64)	39.1	39.8	40.1	40.1	40.3	40.8	41.5	42.9	44.5	45.5	47.1	48.3
20. Total unemployment (000)	16748	16956	16614	15820	14683	13318	12725	13479	14317	14640	14485	13704
21. Unemployment rate (% labour force 15+)	10.0	10.1	9.8	9.2	8.5	7.6	7.2	7.5	7.9	8.0	7.9	7.4
22. Youth unemployment rate (% labour force 15-24)	21.3	21.5	20.8	19.3	17.3	15.4	15.2	15.8	16.5	16.8	16.7	16.2
23. Long term unemployment rate (% labour force)	4.9	4.9	4.8	4.3	3.9	3.4	3.1	3.1	3.3	3.4	3.3	3.1
24. Youth unemployment ratio (% population aged 15-24)	10.0	10.2	9.7	9.2	8.5	7.7	6.9	7.2	7.6	7.6	8.0	7.7
Male												
1. Total population (000)	178230	178831	179352	179733	180510	180781	182005	182988	184035	184682	186058	187217
2. Population aged 15-64	122388	122877	123214	123821	124227	123917	124526	125034	125688	125837	126849	127601
3. Total employment (000)	90874	91007	91685	92789	94012	95393	96339	96396	96517	96669	97096	98047
4. Population in employment aged 15-64	86312	86473	87043	88222	89549	90156	91021	91034	91322	91428	92453	93767
5. Employment rate (% population aged 15-64)	70.5	70.4	70.6	71.2	72.1	72.8	73.1	72.8	72.7	72.7	72.9	73.5
6. Employment rate (% population aged 15-24)	41.0	40.3	40.7	41.7	43.1	43.9	44.3	43.6	42.8	42.9	42.7	43.1
7. Employment rate (% population aged 25-54)	85.4	85.2	85.3	85.8	86.5	87.2	87.3	86.8	86.5	86.4	86.6	87.2
8. Employment rate (% population aged 55-64)	47.2	47.3	47.2	47.3	47.5	48.0	48.9	50.1	51.6	52.2	53.1	54.1
9. FTE employment rate (% population aged 15-64)	69.3	68.9	69.1	69.7	70.3	71.1	71.5	71.2	70.7	70.3	70.4	70.8
10. Self-employed (% total employment)	18.8	18.8	18.5	18.3	18.0	17.8	17.7	17.8	17.9	18.0	17.7	17.7
11. Part-time employment (% total employment)	5.2	5.4	5.7	6.0	6.1	6.1	6.2	6.6	6.7	7.2	7.7	8.1
12. Fixed term contracts (% total employees)	11.3	11.2	11.7	12.3	12.6	12.8	12.5	12.2	12.2	12.9	13.6	14.0
13. Employment in Services (% total employment)	57.7	58.2	58.6	58.8	59.4	59.8	60.1	60.6	61.0	61.3	61.6	61.6
14. Employment in Industry (% total employment)	36.7	36.3	36.0	35.9	35.5	35.2	35.0	34.6	34.3	34.0	33.9	33.8
15. Employment in Agriculture (% total employment)	5.6	5.5	5.4	5.3	5.2	5.0	4.9	4.8	4.7	4.7	4.6	4.6
16. Activity rate (% population aged 15-64)	77.8	77.9	78.0	78.1	78.3	78.3	78.3	78.4	78.6	78.6	78.9	79.2
17. Activity rate (% of population aged 15-24)	51.0	50.6	50.5	51.0	51.7	51.6	51.4	51.2	51.0	50.9	51.2	51.1
18. Activity rate (% of population aged 25-54)	92.7	92.7	92.6	92.6	92.7	92.7	92.4	92.4	92.4	92.4	92.5	92.7
19. Activity rate (% of population aged 55-64)	51.4	51.8	51.8	51.7	51.5	51.6	52.2	53.4	55.1	55.8	56.8	57.6
20. Total unemployment (000)	8284	8418	8111	7580	6990	6297	6062	6543	7033	7197	7175	6729
21. Unemployment rate (% labour force 15+)	8.6	8.7	8.4	7.8	7.1	6.4	6.1	6.5	7.0	7.1	7.0	6.5
22. Youth unemployment rate (% labour force 15-24)	18.9	19.4	18.6	17.2	15.3	13.7	13.6	14.6	15.9	16.1	16.3	15.6
23. Long term unemployment rate (% labour force)	4.0	4.1	4.0	3.6	3.2	2.8	2.5	2.6	2.8	3.0	2.9	2.8
24. Youth unemployment ratio (% population aged 15-24)	10.0	10.3	9.8	9.3	8.6	7.7	7.1	7.6	8.1	8.0	8.5	8.0
Female												
1. Total population (000)	187727	188222	188644	188602	189197	190121	191062	191843	192717	193382	194603	195527
2. Population aged 15-64	122973	123286	123479	123764	124113	124469	124910	125358	125940	126110	127191	127769
3. Total employment (000)	63847	64656	65526	67104	68881	71010	72438	73518	74216	75306	76262	77590
4. Population in employment aged 15-64	61083	61886	62682	63898	65774	67375	68742	69726	70565	71651	73060	74661
5. Employment rate (% population aged 15-64)	49.7	50.2	50.8	51.6	53.0	54.1	55.0	55.6	56.0	56.8	57.4	58.4
6. Employment rate (% population aged 15-24)	34.0	33.4	33.7	34.7	36.0	36.9	37.4	37.5	37.0	37.0	36.8	37.1
7. Employment rate (% population aged 25-54)	61.0	61.8	62.3	63.2	64.7	65.8	66.7	67.3	67.7	68.8	69.1	70.2
8. Employment rate (% population aged 55-64)	25.3	25.8	26.1	26.3	27.1	28.0	29.1	30.7	32.2	33.2	35.4	36.8
9. FTE employment rate (% population aged 15-64)	42.3	42.5	42.8	43.2	44.3	45.4	46.2	46.8	47.1	47.1	47.4	48.2
10. Self-employed (% total employment)	12.4	12.1	11.9	11.7	11.3	11.0	10.8	10.7	10.7	10.7	10.6	10.6
11. Part-time employment (% total employment)	31.0	31.5	32.2	33.0	33.2	33.2	33.3	33.3	33.9	35.1	36.3	36.8
12. Fixed term contracts (% total employees)	13.0	12.9	13.4	13.8	14.3	14.7	14.6	14.3	14.1	14.4	15.0	15.5
13. Employment in Services (% total employment)	81.0	81.6	82.0	82.4	83.0	83.4	83.8	84.3	84.9	85.3	85.7	86.1
14. Employment in Industry (% total employment)	14.9	14.5	14.2	14.0	13.6	13.4	13.1	12.6	12.2	11.9	11.5	11.3
15. Employment in Agriculture (% total employment)	4.2	3.9	3.8	3.6	3.4	3.2	3.2	3.0	2.9	2.8	2.7	2.7
16. Activity rate (% population aged 15-64)	56.6	57.4	57.9	58.6	59.5	60.0	60.2	61.0	61.6	62.5	63.2	64.0
17. Activity rate (% of population aged 15-24)	44.0	43.4	43.4	43.8	44.6	44.7	44.2	44.3	44.0	44.2	44.4	44.4
18. Activity rate (% of population aged 25-54)	68.3	69.4	70.0	70.7	71.6	72.1	72.3	73.1	73.9	75.0	75.3	76.2
19. Activity rate (% of population aged 55-64)	27.4	28.4	28.9	29.0	29.6	30.3	31.1	32.8	34.3	35.5	37.8	39.3
20. Total unemployment (000)	8464	8537	8503	8240	7693	7020	6663	6936	7284	7442	7310	6976
21. Unemployment rate (% labour force 15+)	11.9	11.9	11.7	11.2	10.3	9.2	8.6	8.8	9.1	9.2	8.9	8.4
22. Youth unemployment rate (% labour force 15-24)	23.9	23.9	23.3	21.7	19.6	17.4	17.1	17.1	17.2	17.6	17.1	16.8
23. Long term unemployment rate (% labour force)	6.0	5.9	5.9	5.4	4.8	4.2	3.8	3.7	3.9	4.0	3.7	3.5
24. Youth unemployment ratio (% population aged 15-24)	10.0	10.0	9.7	9.1	8.5	7.8	6.8	6.8	7.0	7.3	7.6	7.3

Source: Eurostat
Notes: EU LFS indicators: 2005-2006 provisional.

Key employment indicators: Belgium

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	10103	10126	10153	10175	10214	10239	10263	10310	10356	10396	10477	10546
2. Population aged 15-64	6697	6696	6700	6702	6710	6719	6728	6758	6791	6818	6876	6941
3. Total employment (000)	3868	3881	3900	3960	4012	4091	4150	4144	4145	4172	4212	4250
4. Population in employment aged 15-64	3755	3765	3807	3850	3980	4068	4033	4047	4047	4114	4199	4233
5. Employment rate (% population aged 15-64)	56.1	56.2	56.8	57.4	59.3	60.5	59.9	59.9	59.6	60.3	61.1	61.0
6. Employment rate (% population aged 15-24)	27.4	26.8	26.3	26.8	28.2	29.1	29.7	29.4	27.4	27.8	27.5	27.6
7. Employment rate (% population aged 25-54)	73.2	73.5	74.1	74.3	76.2	77.4	76.6	76.5	76.5	77.3	78.3	78.4
8. Employment rate (% population aged 55-64)	22.9	21.9	22.1	22.9	24.6	26.3	25.1	26.6	28.1	30.0	31.8	32.0
9. FTE employment rate (% population aged 15-64)	53.4	53.3	53.8	53.9	55.7	57.4	55.8	55.4	54.7	55.8	56.3	55.8
10. Self-employed (% total employment)	18.3	18.3	18.2	17.7	17.4	17.0	16.6	16.5	16.4	16.3	16.3	16.1
11. Part-time employment (% total employment)	14.0	14.5	15.2	16.5	18.4	18.9	18.5	19.1	20.5	21.4	22.0	22.2
12. Fixed term contracts (% total employees)	5.4	6.0	6.6	8.2	9.9	9.1	8.8	8.1	8.4	8.7	8.9	8.7
13. Employment in Services (% total employment)	72.7	73.3	73.7	74.2	74.7	75.0	75.2	76.0	76.6	77.1	77.4	:
14. Employment in Industry (% total employment)	24.5	24.0	23.6	23.3	22.8	22.7	22.5	21.9	21.4	20.9	20.6	:
15. Employment in Agriculture (% total employment)	2.8	2.7	2.6	2.5	2.5	2.3	2.2	2.2	2.1	2.0	2.0	:
16. Activity rate (% population aged 15-64)	62.1	62.3	62.7	63.5	64.9	65.1	64.2	64.8	64.9	65.9	66.7	66.5
17. Activity rate (% of population aged 15-24)	34.8	33.7	33.2	33.8	35.7	35.3	35.7	35.7	35.0	35.3	35.0	34.7
18. Activity rate (% of population aged 25-54)	80.2	80.6	80.8	81.2	82.3	82.4	81.2	81.9	82.3	83.4	84.6	84.5
19. Activity rate (% of population aged 55-64)	23.9	22.9	23.2	24.1	25.9	27.1	25.9	27.7	28.9	31.2	33.3	33.6
20. Total unemployment (000)	407	401	390	400	371	302	286	331	362	379	390	382
21. Unemployment rate (% labour force 15+)	9.7	9.5	9.2	9.3	8.5	6.9	6.6	7.5	8.2	8.4	8.4	8.3
22. Youth unemployment rate (% labour force 15-24)	22.9	22.1	22.0	22.1	21.1	16.7	16.8	17.7	21.8	21.2	21.5	20.4
23. Long term unemployment rate (% labour force)	5.8	5.7	5.4	5.6	4.8	3.7	3.2	3.7	3.7	4.1	4.4	4.2
24. Youth unemployment ratio (% population aged 15-24)	7.4	6.9	7.0	7.0	7.5	6.2	6.1	6.3	7.6	7.5	7.5	7.1
Male												
1. Total population (000)	4944	4954	4966	4977	4994	5006	5018	5042	5067	5086	5127	5162
2. Population aged 15-64	3373	3372	3374	3375	3380	3384	3388	3403	3420	3443	3459	3491
3. Total employment (000)	2326	2327	2319	2332	2324	2367	2401	2382	2359	2373	2374	2384
4. Population in employment aged 15-64	2258	2256	2263	2265	2302	2351	2331	2323	2300	2337	2361	2371
5. Employment rate (% population aged 15-64)	66.9	66.9	67.1	67.1	68.1	69.5	68.8	68.3	67.3	67.9	68.3	67.9
6. Employment rate (% population aged 15-24)	30.5	30.7	30.2	30.4	31.2	32.8	33.2	32.2	29.9	30.1	29.7	30.4
7. Employment rate (% population aged 25-54)	86.2	86.1	86.0	85.6	86.3	87.3	86.5	86.1	85.0	85.8	86.1	85.9
8. Employment rate (% population aged 55-64)	33.5	31.8	31.7	32.1	33.8	36.4	35.1	36.0	37.8	39.1	41.7	40.9
9. FTE employment rate (% population aged 15-64)	67.2	67.0	67.1	66.9	68.6	70.7	68.6	67.6	66.7	67.6	67.4	66.9
10. Self-employed (% total employment)	19.5	19.8	19.8	19.3	18.8	18.8	18.6	18.5	18.3	18.7	18.7	18.9
11. Part-time employment (% total employment)	3.0	3.2	3.5	3.9	5.1	5.5	5.2	5.6	6.4	6.8	7.6	7.4
12. Fixed term contracts (% total employees)	3.8	4.3	4.7	6.0	7.3	6.7	6.3	5.8	6.2	6.4	6.8	6.9
13. Employment in Services (% total employment)	63.3	64.0	64.4	64.5	64.6	65.1	65.5	66.4	67.1	67.5	68.0	:
14. Employment in Industry (% total employment)	33.3	32.8	32.5	32.4	32.4	31.9	31.7	30.9	30.3	30.0	29.5	:
15. Employment in Agriculture (% total employment)	3.3	3.2	3.1	3.1	3.0	3.0	2.8	2.6	2.6	2.5	2.4	:
16. Activity rate (% population aged 15-64)	72.4	72.4	72.5	72.8	73.4	73.7	73.2	73.2	72.9	73.4	73.9	73.4
17. Activity rate (% of population aged 15-24)	37.3	36.7	36.2	37.0	38.4	38.7	39.6	38.9	38.4	37.7	37.6	37.4
18. Activity rate (% of population aged 25-54)	92.3	92.4	92.1	91.8	92.0	91.8	91.0	91.3	90.9	91.8	92.2	91.9
19. Activity rate (% of population aged 55-64)	34.9	33.4	33.3	33.9	35.3	37.5	36.3	37.5	38.9	40.4	43.4	42.7
20. Total unemployment (000)	186	182	179	189	178	141	147	167	192	191	196	192
21. Unemployment rate (% labour force 15+)	7.6	7.4	7.3	7.7	7.1	5.6	5.9	6.7	7.6	7.5	7.6	7.5
22. Youth unemployment rate (% labour force 15-24)	20.5	18.6	18.5	20.2	19.4	14.5	16.0	17.2	22.2	20.2	21.0	19.1
23. Long term unemployment rate (% labour force)	4.5	4.3	4.2	4.5	4.0	3.0	2.9	3.2	3.3	3.7	3.8	3.7
24. Youth unemployment ratio (% population aged 15-24)	6.8	6.0	6.0	6.6	7.2	5.9	6.4	6.7	8.5	7.6	7.9	7.0
Female												
1. Total population (000)	5159	5172	5187	5198	5220	5233	5245	5267	5289	5310	5350	5384
2. Population aged 15-64	3324	3324	3326	3327	3331	3336	3341	3355	3371	3375	3417	3450
3. Total employment (000)	1542	1555	1581	1628	1688	1725	1749	1762	1786	1799	1839	1866
4. Population in employment aged 15-64	1498	1510	1545	1585	1678	1717	1702	1724	1746	1777	1838	1862
5. Employment rate (% population aged 15-64)	45.0	45.4	46.5	47.6	50.4	51.5	51.0	51.4	51.8	52.6	53.8	54.0
6. Employment rate (% population aged 15-24)	24.2	22.8	22.2	23.0	25.1	25.4	26.0	26.5	24.7	25.4	25.2	24.7
7. Employment rate (% population aged 25-54)	60.0	60.7	61.8	62.8	65.8	67.2	66.5	66.8	67.8	68.5	70.4	70.7
8. Employment rate (% population aged 55-64)	12.9	12.4	12.9	14.0	15.7	16.6	15.5	17.5	18.7	21.1	22.1	23.2
9. FTE employment rate (% population aged 15-64)	39.6	39.7	40.5	40.9	42.9	44.2	43.0	43.2	42.9	44.4	45.6	45.2
10. Self-employed (% total employment)	16.4	16.0	15.7	15.4	15.5	14.5	13.9	13.8	13.8	13.1	13.1	12.6
11. Part-time employment (% total employment)	30.5	31.4	32.4	34.5	36.9	37.4	36.9	37.4	39.1	40.5	40.5	41.1
12. Fixed term contracts (% total employees)	7.7	8.3	9.2	11.2	13.2	12.3	12.0	11.2	11.1	11.7	11.4	10.9
13. Employment in Services (% total employment)	86.3	86.6	86.9	87.5	88.2	88.5	88.4	88.7	88.8	89.4	89.2	:
14. Employment in Industry (% total employment)	11.6	11.4	11.2	10.7	10.0	10.1	10.1	9.8	9.8	9.2	9.3	:
15. Employment in Agriculture (% total employment)	2.1	2.0	1.9	1.8	1.8	1.4	1.4	1.5	1.4	1.4	1.4	:
16. Activity rate (% population aged 15-64)	51.7	52.1	52.9	54.0	56.3	56.4	55.1	56.3	56.9	58.2	59.5	59.5
17. Activity rate (% of population aged 15-24)	32.4	30.8	30.3	30.5	32.8	31.8	31.7	32.4	31.4	32.8	32.3	31.9
18. Activity rate (% of population aged 25-54)	67.7	68.5	69.2	70.3	72.4	72.7	71.2	72.4	73.6	74.8	76.8	77.0
19. Activity rate (% of population aged 55-64)	13.5	12.9	13.5	14.8	16.8	17.1	15.9	18.2	19.2	22.1	23.4	24.6
20. Total unemployment (000)	220	219	211	211	192	161	138	164	170	188	194	190
21. Unemployment rate (% labour force 15+)	12.7	12.5	11.9	11.6	10.3	8.5	7.5	8.6	8.9	9.5	9.5	9.2
22. Youth unemployment rate (% labour force 15-24)	25.6	26.5	26.4	24.5	23.0	19.5	17.8	18.3	21.3	22.4	22.1	22.0
23. Long term unemployment rate (% labour force)	7.7	7.6	7.1	7.1	5.9	4.6	3.5	4.3	4.2	4.7	5.0	4.9
24. Youth unemployment ratio (% population aged 15-24)	8.2	8.1	8.1	7.5	7.8	6.5	5.7	5.9	6.7	7.3	7.1	7.2

Source: Eurostat
Notes: Indicator 3: 2006 forecast; Indicator 9: 1999-2000 estimate; Indicator 10: 2006 forecast.

Key employment indicators: Bulgaria

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	:	:	6835	7884	7877	7821	7786	7747	7706
2. Population aged 15-64	:	:	:	:	:	5491	5375	5357	5308	5306	5283	5238
3. Total employment (000)	:	3286	3157	3153	3088	3239	3215	3222	3317	3403	3495	3580
4. Population in employment aged 15-64	:	:	:	:	:	2768	2672	2709	2785	2877	2947	3072
5. Employment rate (% population aged 15-64)	:	:	:	:	:	50.4	49.7	50.6	52.5	54.2	55.8	58.6
6. Employment rate (% population aged 15-24)	:	:	:	:	:	19.7	19.8	19.4	20.7	21.5	21.6	23.2
7. Employment rate (% population aged 25-54)	:	:	:	:	:	68.5	67.2	67.6	69.2	71.2	73.0	75.7
8. Employment rate (% population aged 55-64)	:	:	:	:	:	20.8	24.0	27.0	30.0	32.5	34.7	39.6
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	50.3	50.6	52.5	54.5	55.7	58.6
10. Self-employed (% total employment)	:	:	:	:	:	28.2	29.3	29.2	28.7	28.5	27.8	27.8
11. Part-time employment (% total employment)	:	:	:	:	:	:	3.2	2.5	2.3	2.4	2.1	2.0
12. Fixed term contracts (% total employees)	:	:	:	:	:	:	6.3	5.3	6.5	7.4	6.4	6.2
13. Employment in Services (% total employment)	:	:	:	:	:	48.1	48.7	48.7	50.3	51.1	51.6	51.8
14. Employment in Industry (% total employment)	:	:	:	:	:	27.6	27.2	27.4	26.6	26.6	27.0	27.6
15. Employment in Agriculture (% total employment)	:	:	:	:	:	24.4	24.1	23.9	23.1	22.3	21.4	20.6
16. Activity rate (% population aged 15-64)	:	:	:	:	:	60.7	62.5	61.9	60.9	61.8	62.1	64.5
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	30.5	33.2	30.9	28.8	28.9	27.9	28.9
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	80.6	81.9	80.7	79.1	79.9	80.2	82.3
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	24.0	29.2	31.8	33.9	36.2	38.0	43.0
20. Total unemployment (000)	343	329	417	362	402	561	663	609	449	400	334	306
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	16.4	19.5	18.1	13.7	12.0	10.1	9.0
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	33.7	38.8	37.0	28.2	25.8	22.3	19.5
23. Long term unemployment rate (% labour force)	:	:	:	:	:	9.4	12.1	12.0	8.9	7.2	6.0	5.0
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	10.8	13.4	11.5	8.1	7.5	6.2	5.6
Male												
1. Total population (000)	:	:	:	:	:	3270	3818	3820	3792	3775	3754	3731
2. Population aged 15-64	:	:	:	:	:	2684	2647	2643	2616	2623	2614	2590
3. Total employment (000)	:	:	:	:	:	1724	1683	1693	1756	1805	1866	1902
4. Population in employment aged 15-64	:	:	:	:	:	1469	1394	1418	1466	1520	1569	1626
5. Employment rate (% population aged 15-64)	:	:	:	:	:	54.7	52.7	53.7	56.0	57.9	60.0	62.8
6. Employment rate (% population aged 15-24)	:	:	:	:	:	21.8	20.1	20.5	21.7	23.2	23.9	25.4
7. Employment rate (% population aged 25-54)	:	:	:	:	:	70.8	68.4	69.0	71.4	73.5	75.7	78.6
8. Employment rate (% population aged 55-64)	:	:	:	:	:	33.2	34.2	37.0	40.5	42.2	45.5	49.5
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	53.5	53.9	56.3	58.3	59.8	63.0
10. Self-employed (% total employment)	:	:	:	:	:	33.9	35.2	34.9	34.7	34.4	32.9	33.5
11. Part-time employment (% total employment)	:	:	:	:	:	:	2.9	2.1	1.9	2.1	1.7	1.5
12. Fixed term contracts (% total employees)	:	:	:	:	:	:	6.6	5.9	7.0	7.7	6.7	6.3
13. Employment in Services (% total employment)	:	:	:	:	:	40.7	41.9	42.2	43.8	44.6	44.7	44.3
14. Employment in Industry (% total employment)	:	:	:	:	:	30.4	29.0	29.0	28.8	29.0	30.0	31.1
15. Employment in Agriculture (% total employment)	:	:	:	:	:	28.8	29.0	28.8	27.5	26.4	25.3	24.6
16. Activity rate (% population aged 15-64)	:	:	:	:	:	66.2	67.0	66.4	65.4	66.4	67.0	68.8
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	34.9	35.6	34.2	31.5	31.8	31.1	31.3
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	83.3	84.2	83.0	81.8	82.9	83.3	85.1
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	38.4	41.7	43.7	45.6	47.2	49.9	53.6
20. Total unemployment (000)	180	171	220	190	213	303	364	337	246	222	183	156
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	16.7	20.2	18.9	14.1	12.5	10.3	8.6
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	36.1	42.0	40.1	31.0	27.0	23.4	18.9
23. Long term unemployment rate (% labour force)	:	:	:	:	:	9.6	12.6	12.5	9.2	7.3	6.1	4.8
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	13.1	15.4	13.8	9.8	8.6	7.3	5.9
Female												
1. Total population (000)	:	:	:	:	:	3566	4066	4057	4030	4010	3993	3975
2. Population aged 15-64	:	:	:	:	:	2807	2729	2714	2692	2683	2669	2647
3. Total employment (000)	:	:	:	:	:	1515	1532	1529	1561	1598	1629	1677
4. Population in employment aged 15-64	:	:	:	:	:	1299	1278	1290	1319	1357	1378	1446
5. Employment rate (% population aged 15-64)	:	:	:	:	:	46.3	46.8	47.5	49.0	50.6	51.7	54.6
6. Employment rate (% population aged 15-24)	:	:	:	:	:	17.7	19.4	18.4	19.6	19.6	19.4	21.0
7. Employment rate (% population aged 25-54)	:	:	:	:	:	66.3	65.9	66.1	67.1	68.8	70.3	72.8
8. Employment rate (% population aged 55-64)	:	:	:	:	:	10.3	14.7	18.2	21.0	24.2	25.5	31.1
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	47.2	47.5	48.8	50.8	51.6	54.3
10. Self-employed (% total employment)	:	:	:	:	:	21.7	22.8	22.9	22.0	21.9	21.9	21.3
11. Part-time employment (% total employment)	:	:	:	:	:	:	3.6	3.0	2.6	2.7	2.5	2.5
12. Fixed term contracts (% total employees)	:	:	:	:	:	:	5.9	4.7	6.0	7.0	6.2	6.1
13. Employment in Services (% total employment)	:	:	:	:	:	56.8	56.8	56.4	58.0	58.7	59.7	60.5
14. Employment in Industry (% total employment)	:	:	:	:	:	24.2	25.0	25.4	24.1	23.8	23.5	23.5
15. Employment in Agriculture (% total employment)	:	:	:	:	:	19.0	18.2	18.2	17.9	17.5	16.8	15.9
16. Activity rate (% population aged 15-64)	:	:	:	:	:	55.6	58.1	57.5	56.5	57.2	57.3	60.2
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	26.3	30.9	27.6	26.1	25.9	24.5	26.4
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	78.0	79.6	78.4	76.4	76.8	77.2	79.4
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	11.8	18.0	21.5	23.8	26.8	27.8	33.9
20. Total unemployment (000)	163	158	196	173	189	258	299	272	203	178	152	149
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	16.2	18.6	17.3	13.2	11.5	9.8	9.3
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	30.7	35.3	33.2	24.8	24.3	21.0	20.3
23. Long term unemployment rate (% labour force)	:	:	:	:	:	9.2	11.4	11.4	8.6	7.0	6.0	5.2
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	8.6	11.5	9.3	6.5	6.3	5.2	5.3

Source: Eurostat

Key employment indicators: Czech Republic

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	10250	10235	10222	10176	10171	10179	10196	10229	10265
2. Population aged 15-64	:	:	:	7070	7089	7116	7121	7149	7182	7231	7270	7307
3. Total employment (000)	5148	5195	5205	5125	4949	4941	4963	4991	4923	4931	5009	5088
4. Population in employment aged 15-64	:	:	:	4759	4653	4625	4631	4677	4647	4639	4710	4769
5. Employment rate (% population aged 15-64)	:	:	:	67.3	65.6	65.0	65.0	65.4	64.7	64.2	64.8	65.3
6. Employment rate (% population aged 15-24)	:	:	:	41.5	38.3	36.4	34.2	32.2	30.0	27.8	27.5	27.7
7. Employment rate (% population aged 25-54)	:	:	:	83.7	81.9	81.6	82.1	82.5	81.7	81.4	82.0	82.5
8. Employment rate (% population aged 55-64)	:	:	:	37.1	37.5	36.3	37.1	40.8	42.3	42.7	44.5	45.2
9. FTE employment rate (% population aged 15-64)	:	:	67.8	65.6	63.9	63.2	63.4	64.7	64.1	63.3	63.9	64.4
10. Self-employed (% total employment)	13.8	14.4	15.1	16.1	17.1	17.4	17.4	18.1	19.1	18.8	18.2	18.0
11. Part-time employment (% total employment)	:	:	:	5.7	5.6	5.3	4.9	4.9	5.0	4.9	4.9	5.0
12. Fixed term contracts (% total employees)	:	:	:	6.7	7.6	8.1	8.0	8.1	9.2	9.1	8.6	8.7
13. Employment in Services (% total employment)	53.1	52.6	52.4	53.0	55.0	56.0	56.2	56.9	57.5	57.6	57.9	58.7
14. Employment in Industry (% total employment)	40.5	41.2	41.7	41.4	39.8	39.1	39.2	38.8	38.3	38.4	38.1	37.6
15. Employment in Agriculture (% total employment)	6.4	6.1	5.9	5.6	5.2	4.8	4.6	4.3	4.2	4.0	4.0	3.7
16. Activity rate (% population aged 15-64)	:	:	:	72.0	72.0	71.3	70.8	70.6	70.2	70.0	70.4	70.3
17. Activity rate (% of population aged 15-24)	:	:	:	47.7	46.7	44.4	41.5	38.7	36.8	35.2	34.0	33.5
18. Activity rate (% of population aged 25-54)	:	:	:	88.5	88.6	88.4	88.4	88.2	87.8	87.8	88.3	88.2
19. Activity rate (% of population aged 55-64)	:	:	:	38.6	39.4	38.2	39.0	42.4	44.2	45.1	46.9	47.7
20. Total unemployment (000)	:	:	:	328	444	445	409	373	398	426	410	372
21. Unemployment rate (% labour force 15+)	:	:	:	6.4	8.6	8.7	8.0	7.3	7.8	8.3	7.9	7.1
22. Youth unemployment rate (% labour force 15-24)	:	:	:	12.8	17.7	17.8	17.3	16.9	18.6	21.0	19.2	17.5
23. Long term unemployment rate (% labour force)	:	:	:	2.0	3.2	4.2	4.2	3.7	3.8	4.2	4.2	3.9
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	6.2	8.4	8.0	7.3	6.5	6.8	7.4	6.5	5.9
Male												
1. Total population (000)	:	:	:	4964	4954	4949	4932	4934	4941	4959	4987	5012
2. Population aged 15-64	:	:	:	3517	3524	3538	3545	3563	3582	3616	3646	3671
3. Total employment (000)	:	:	:	2884	2777	2771	2787	2813	2780	2782	2845	2889
4. Population in employment aged 15-64	:	:	:	2671	2607	2589	2595	2632	2619	2615	2671	2704
5. Employment rate (% population aged 15-64)	:	:	:	76.0	74.0	73.2	73.2	73.9	73.1	72.3	73.3	73.7
6. Employment rate (% population aged 15-24)	:	:	:	47.3	42.3	39.3	37.1	35.3	32.3	30.1	31.3	31.5
7. Employment rate (% population aged 25-54)	:	:	:	91.3	89.5	89.3	89.7	90.2	89.7	89.2	89.8	90.4
8. Employment rate (% population aged 55-64)	:	:	:	53.2	53.6	51.7	52.6	57.2	57.5	57.2	59.3	59.5
9. FTE employment rate (% population aged 15-64)	:	:	77.3	75.7	73.6	72.6	72.6	73.9	73.2	72.1	73.3	73.5
10. Self-employed (% total employment)	:	:	:	20.3	21.6	21.8	21.9	22.9	24.1	24.0	23.1	22.5
11. Part-time employment (% total employment)	:	:	:	2.6	2.4	2.2	2.2	2.2	2.3	2.3	2.1	2.2
12. Fixed term contracts (% total employees)	:	:	:	5.7	6.2	7.1	7.2	7.0	7.9	7.8	7.6	7.5
13. Employment in Services (% total employment)	:	:	:	42.6	44.4	45.7	46.3	46.8	47.2	47.4	47.9	48.8
14. Employment in Industry (% total employment)	:	:	:	50.8	49.3	48.4	48.0	47.9	47.6	47.7	47.3	46.8
15. Employment in Agriculture (% total employment)	:	:	:	6.7	6.3	5.9	5.7	5.3	5.1	4.9	4.8	4.4
16. Activity rate (% population aged 15-64)	:	:	:	80.0	79.9	79.1	78.6	78.6	78.0	77.9	78.4	78.3
17. Activity rate (% of population aged 15-24)	:	:	:	53.5	51.4	48.3	45.2	42.3	39.6	38.7	38.9	37.7
18. Activity rate (% of population aged 25-54)	:	:	:	95.1	95.1	94.9	94.9	94.8	94.4	94.6	94.8	94.8
19. Activity rate (% of population aged 55-64)	:	:	:	55.1	56.2	54.5	55.0	59.3	59.9	60.2	62.1	62.7
20. Total unemployment (000)	:	:	:	143	207	208	189	169	174	201	187	169
21. Unemployment rate (% labour force 15+)	:	:	:	5.0	7.3	7.3	6.7	5.9	6.2	7.1	6.5	5.8
22. Youth unemployment rate (% labour force 15-24)	:	:	:	11.5	17.4	18.5	17.6	16.6	18.3	22.2	19.3	16.6
23. Long term unemployment rate (% labour force)	:	:	:	1.5	2.4	3.5	3.4	3.0	2.9	3.4	3.4	3.1
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	6.3	9.1	9.1	8.1	7.0	7.3	8.6	7.5	6.3
Female												
1. Total population (000)	:	:	:	5286	5281	5273	5244	5238	5238	5237	5242	5252
2. Population aged 15-64	:	:	:	3554	3565	3578	3576	3586	3601	3615	3624	3636
3. Total employment (000)	:	:	:	2241	2173	2169	2176	2178	2144	2148	2164	2198
4. Population in employment aged 15-64	:	:	:	2087	2045	2036	2036	2045	2028	2024	2039	2065
5. Employment rate (% population aged 15-64)	:	:	:	58.7	57.4	56.9	56.9	57.0	56.3	56.0	56.3	56.8
6. Employment rate (% population aged 15-24)	:	:	:	35.8	34.3	33.5	31.4	29.2	27.6	25.4	23.4	23.7
7. Employment rate (% population aged 25-54)	:	:	:	76.0	74.2	73.7	74.4	74.7	73.5	73.4	74.0	74.5
8. Employment rate (% population aged 55-64)	:	:	:	22.9	23.2	22.4	23.1	25.9	28.4	29.4	30.9	32.1
9. FTE employment rate (% population aged 15-64)	:	:	58.5	55.7	54.5	53.9	54.2	55.6	55.1	54.6	54.6	55.3
10. Self-employed (% total employment)	:	:	:	10.7	11.3	11.7	11.7	12.0	12.7	12.2	11.8	12.1
11. Part-time employment (% total employment)	:	:	:	9.9	9.9	9.3	8.5	8.3	8.5	8.3	8.6	8.7
12. Fixed term contracts (% total employees)	:	:	:	7.7	9.1	9.4	8.9	9.3	10.7	10.7	9.8	10.1
13. Employment in Services (% total employment)	:	:	:	66.6	68.6	69.2	69.0	70.0	70.7	70.9	71.1	71.7
14. Employment in Industry (% total employment)	:	:	:	29.2	27.6	27.3	27.8	26.9	26.3	26.3	26.1	25.5
15. Employment in Agriculture (% total employment)	:	:	:	4.2	3.8	3.5	3.2	3.1	3.0	2.8	2.8	2.8
16. Activity rate (% population aged 15-64)	:	:	:	64.0	64.1	63.6	63.2	62.7	62.5	62.2	62.4	62.3
17. Activity rate (% of population aged 15-24)	:	:	:	42.0	42.0	40.6	37.9	35.2	34.0	31.5	28.9	29.2
18. Activity rate (% of population aged 25-54)	:	:	:	81.9	82.0	81.8	81.8	81.5	81.0	80.9	81.6	81.3
19. Activity rate (% of population aged 55-64)	:	:	:	23.9	24.4	23.7	24.6	27.2	30.0	31.3	32.9	34.0
20. Total unemployment (000)	:	:	:	185	237	237	220	205	224	225	224	202
21. Unemployment rate (% labour force 15+)	:	:	:	8.1	10.3	10.3	9.7	9.0	9.9	9.9	9.8	8.8
22. Youth unemployment rate (% labour force 15-24)	:	:	:	14.4	18.1	17.0	16.9	17.2	18.8	19.5	19.1	18.7
23. Long term unemployment rate (% labour force)	:	:	:	2.6	4.2	5.2	5.1	4.5	5.0	5.3	5.3	4.9
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	6.2	7.8	7.0	6.5	6.1	6.4	6.1	5.5	5.4

Source: Eurostat

Key employment indicators: Denmark

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	5198	5210	5232	5255	5277	5298	5321	5339	5359	5379	5396	5415
2. Population aged 15-64	3496	3514	3516	3523	3525	3532	3545	3538	3548	3559	3566	3569
3. Total employment (000)	2629	2655	2687	2727	2753	2764	2785	2784	2748	2748	2767	2816
4. Population in employment aged 15-64	2567	2594	2633	2646	2680	2694	2700	2684	2666	2693	2706	2762
5. Employment rate (% population aged 15-64)	73.4	73.8	74.9	75.1	76.0	76.3	76.2	75.9	75.1	75.7	75.9	77.4
6. Employment rate (% population aged 15-24)	64.6	65.2	66.6	65.3	65.5	66.0	62.3	63.5	59.6	62.3	62.3	64.6
7. Employment rate (% population aged 25-54)	81.3	81.9	82.4	83.1	83.9	84.2	84.4	84.1	83.5	83.7	84.5	86.1
8. Employment rate (% population aged 55-64)	49.8	49.1	51.7	52.0	54.5	55.7	58.0	57.9	60.2	60.3	59.5	60.7
9. FTE employment rate (% population aged 15-64)	66.8	67.0	68.1	67.8	69.7	69.3	69.8	69.7	68.4	68.6	68.1	69.0
10. Self-employed (% total employment)	7.6	7.4	7.2	6.9	6.8	6.6	6.5	6.6	6.6	6.4	6.3	6.3
11. Part-time employment (% total employment)	21.8	21.9	22.5	22.3	21.6	21.3	20.1	20.0	21.3	22.2	22.1	23.6
12. Fixed term contracts (% total employees)	11.6	10.9	10.6	9.9	9.6	9.7	9.2	9.1	9.3	9.5	9.8	8.9
13. Employment in Services (% total employment)	71.1	71.6	72.1	72.6	73.3	73.6	74.0	74.5	75.1	75.8	76.0	76.1
14. Employment in Industry (% total employment)	24.6	24.2	23.9	23.6	23.1	23.0	22.7	22.1	21.7	21.0	20.9	20.9
15. Employment in Agriculture (% total employment)	4.3	4.1	4.0	3.8	3.6	3.4	3.3	3.3	3.2	3.1	3.1	3.0
16. Activity rate (% population aged 15-64)	79.8	79.8	79.8	79.7	80.6	80.0	79.9	79.6	79.5	80.1	79.8	80.6
17. Activity rate (% of population aged 15-24)	72.2	73.0	72.9	71.3	72.3	70.7	68.0	68.6	65.6	67.9	68.1	69.9
18. Activity rate (% of population aged 25-54)	87.6	87.8	87.4	87.7	88.2	87.9	87.9	87.8	87.8	88.2	88.1	88.9
19. Activity rate (% of population aged 55-64)	54.6	52.8	55.0	55.1	57.5	58.2	60.5	60.4	63.3	63.9	62.8	63.2
20. Total unemployment (000)	188	178	148	137	147	122	130	131	155	160	140	114
21. Unemployment rate (% labour force 15+)	6.7	6.3	5.2	4.9	5.2	4.3	4.5	4.6	5.4	5.5	4.8	3.9
22. Youth unemployment rate (% labour force 15-24)	9.6	9.7	7.7	7.3	9.1	6.2	8.3	7.4	9.2	8.2	8.6	7.7
23. Long term unemployment rate (% labour force)	2.0	1.8	1.5	1.3	1.1	0.9	0.9	0.9	1.1	1.2	1.1	0.8
24. Youth unemployment ratio (% population aged 15-24)	7.6	7.8	6.3	5.9	6.8	4.8	5.7	5.1	6.0	5.6	5.9	5.4
Male												
1. Total population (000)	2560	2573	2579	2584	2609	2620	2632	2640	2650	2662	2671	2682
2. Population aged 15-64	1766	1774	1775	1780	1783	1783	1792	1786	1794	1798	1799	1803
3. Total employment (000)	1449	1457	1462	1472	1483	1481	1490	1488	1479	1470	1478	1502
4. Population in employment aged 15-64	1411	1420	1428	1423	1441	1441	1438	1429	1429	1433	1436	1464
5. Employment rate (% population aged 15-64)	79.9	80.0	80.5	79.9	80.8	80.8	80.2	80.0	79.6	79.7	79.8	81.2
6. Employment rate (% population aged 15-24)	67.5	67.5	68.5	64.8	68.2	68.5	64.5	65.5	61.5	63.4	63.9	65.0
7. Employment rate (% population aged 25-54)	87.0	88.0	88.3	88.5	88.6	88.5	88.2	88.4	87.9	87.6	88.3	90.1
8. Employment rate (% population aged 55-64)	64.7	61.7	62.7	61.3	62.6	64.1	65.5	64.5	67.3	67.3	65.6	67.1
9. FTE employment rate (% population aged 15-64)	76.6	76.4	76.9	76.2	77.6	76.9	76.9	76.7	75.4	75.7	75.6	76.1
10. Self-employed (% total employment)	9.9	9.8	9.5	9.1	9.1	8.8	9.0	9.1	8.8	8.7	8.5	8.3
11. Part-time employment (% total employment)	10.8	11.4	12.2	11.1	10.4	10.2	10.2	11.1	11.6	12.1	12.7	13.3
12. Fixed term contracts (% total employees)	10.7	10.6	10.2	9.2	8.6	8.5	7.7	7.9	8.2	8.7	8.5	8.0
13. Employment in Services (% total employment)	60.4	61.4	61.1	61.6	62.3	62.7	63.2	64.0	64.4	65.3	65.7	65.4
14. Employment in Industry (% total employment)	33.8	32.9	33.1	32.9	32.4	32.4	31.9	31.2	30.9	30.2	29.9	30.1
15. Employment in Agriculture (% total employment)	5.9	5.7	5.8	5.5	5.3	4.8	4.9	4.8	4.7	4.6	4.4	4.4
16. Activity rate (% population aged 15-64)	85.4	85.2	84.8	83.8	84.9	84.2	83.8	83.6	83.8	84.0	83.6	84.1
17. Activity rate (% of population aged 15-24)	74.3	74.5	74.2	70.6	74.9	73.4	70.2	70.7	67.7	69.7	70.0	70.5
18. Activity rate (% of population aged 25-54)	92.1	92.7	92.4	92.0	92.3	91.7	91.4	91.9	91.8	91.5	91.7	92.3
19. Activity rate (% of population aged 55-64)	70.3	66.1	66.3	64.4	65.5	66.7	68.4	67.1	70.4	71.3	68.7	69.6
20. Total unemployment (000)	86	81	68	59	70	59	63	65	74	78	68	52
21. Unemployment rate (% labour force 15+)	5.6	5.3	4.4	3.9	4.6	3.9	4.1	4.3	4.8	5.1	4.4	3.3
22. Youth unemployment rate (% labour force 15-24)	8.2	8.5	6.8	7.1	9.3	6.6	8.1	7.3	9.2	8.9	8.6	7.9
23. Long term unemployment rate (% labour force)	1.8	1.5	1.2	0.9	1.0	0.8	0.8	0.7	1.2	1.1	1.1	0.7
24. Youth unemployment ratio (% population aged 15-24)	6.8	7.1	5.7	5.8	6.7	5.0	5.7	5.2	6.2	6.2	6.1	5.6
Female												
1. Total population (000)	2638	2637	2654	2671	2669	2678	2689	2699	2708	2717	2725	2733
2. Population aged 15-64	1733	1743	1744	1743	1743	1749	1752	1752	1753	1762	1767	1767
3. Total employment (000)	1180	1198	1225	1255	1270	1283	1295	1296	1269	1278	1290	1314
4. Population in employment aged 15-64	1157	1174	1205	1223	1239	1253	1261	1256	1237	1261	1270	1297
5. Employment rate (% population aged 15-64)	66.7	67.4	69.1	70.2	71.1	71.6	72.0	71.7	70.5	71.6	71.9	73.4
6. Employment rate (% population aged 15-24)	61.4	62.5	64.2	65.8	62.7	63.3	60.1	61.4	57.6	61.1	60.5	64.1
7. Employment rate (% population aged 25-54)	75.4	75.7	76.7	77.6	79.2	79.8	80.6	79.8	79.0	79.8	80.6	82.0
8. Employment rate (% population aged 55-64)	35.9	37.1	40.3	42.0	45.8	46.6	49.7	50.4	52.9	53.3	53.5	54.3
9. FTE employment rate (% population aged 15-64)	57.3	58.0	59.7	59.8	62.1	62.2	63.0	63.1	61.8	61.9	61.1	62.5
10. Self-employed (% total employment)	4.8	4.6	4.4	4.3	4.2	4.1	3.5	3.8	4.0	3.8	3.8	4.1
11. Part-time employment (% total employment)	35.4	34.7	34.9	35.5	34.7	34.1	31.6	30.3	32.7	33.8	33.0	35.4
12. Fixed term contracts (% total employees)	12.6	11.4	11.0	10.6	10.7	11.1	10.7	10.3	10.4	10.3	11.3	10.0
13. Employment in Services (% total employment)	84.1	84.1	85.1	85.3	85.8	85.9	86.3	86.5	87.4	87.9	87.7	88.2
14. Employment in Industry (% total employment)	13.5	13.7	13.1	12.9	12.6	12.2	12.1	11.9	11.1	10.7	10.8	10.4
15. Employment in Agriculture (% total employment)	2.4	2.2	1.8	1.8	1.6	1.9	1.6	1.6	1.5	1.5	1.5	1.4
16. Activity rate (% population aged 15-64)	74.0	74.2	74.7	75.6	76.1	75.6	75.9	75.5	75.1	76.2	75.9	77.0
17. Activity rate (% of population aged 15-24)	69.8	71.1	71.0	71.8	69.7	67.8	65.8	66.4	63.5	66.0	66.2	69.3
18. Activity rate (% of population aged 25-54)	83.0	82.8	82.5	83.5	84.1	84.0	84.4	83.7	83.7	84.8	84.5	85.4
19. Activity rate (% of population aged 55-64)	40.2	40.2	43.5	45.3	48.9	49.0	51.9	52.9	55.9	56.5	56.8	56.7
20. Total unemployment (000)	102	97	80	78	77	63	67	66	81	81	72	62
21. Unemployment rate (% labour force 15+)	8.1	7.5	6.2	6.0	5.8	4.8	5.0	5.0	6.1	6.0	5.3	4.5
22. Youth unemployment rate (% labour force 15-24)	11.3	11.0	8.8	7.4	8.9	5.7	8.5	7.5	9.2	7.4	8.6	7.5
23. Long term unemployment rate (% labour force)	2.2	2.1	1.9	1.7	1.3	1.1	1.0	1.0	1.0	1.3	1.2	0.9
24. Youth unemployment ratio (% population aged 15-24)	8.5	8.5	6.8	6.0	7.0	4.5	5.8	5.0	5.9	4.9	5.7	5.2

Source: Eurostat

Key employment indicators: Germany

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	80594	80712	80645	80895	80962	81132	81345	81558	81598	81589	81529	81501
2. Population aged 15-64	54838	55007	55001	55188	55145	55062	54973	54852	54675	54450	54765	54549
3. Total employment (000)	37603	37496	37462	37910	38425	39145	39315	39092	38722	38879	38822	39109
4. Population in employment aged 15-64	35433	35238	35015	35281	35931	36105	36179	35883	35512	35413	35838	36645
5. Employment rate (% population aged 15-64)	64.6	64.1	63.7	63.9	65.2	65.6	65.8	65.4	65.0	65.0	65.4	67.2
6. Employment rate (% population aged 15-24)	47.7	45.5	44.6	45.3	47.2	47.2	47.0	45.7	44.2	41.9	42.0	43.3
7. Employment rate (% population aged 25-54)	76.9	76.7	76.6	77.2	78.7	79.3	79.3	78.7	77.9	78.1	77.4	78.8
8. Employment rate (% population aged 55-64)	37.7	37.9	38.1	37.7	37.8	37.6	37.9	38.9	39.9	41.8	45.4	48.4
9. FTE employment rate (% population aged 15-64)	59.7	58.7	57.9	57.7	58.3	58.6	58.6	58.1	57.5	56.6	56.8	57.8
10. Self-employed (% total employment)	10.0	10.0	10.2	10.2	10.0	10.0	10.1	10.2	10.5	10.9	11.2	11.2
11. Part-time employment (% total employment)	16.3	16.7	17.6	18.4	19.0	19.4	20.3	20.8	21.7	22.3	24.0	25.8
12. Fixed term contracts (% total employees)	10.5	11.2	11.8	12.4	13.1	12.7	12.4	12.0	12.2	12.4	14.2	14.5
13. Employment in Services (% total employment)	64.6	65.7	66.5	67.1	68.0	68.7	69.3	70.1	70.7	71.3	71.9	72.4
14. Employment in Industry (% total employment)	32.6	31.7	31.0	30.4	29.5	28.9	28.3	27.6	27.0	26.4	25.9	25.5
15. Employment in Agriculture (% total employment)	2.9	2.6	2.5	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.2
16. Activity rate (% population aged 15-64)	70.5	70.4	70.6	70.8	71.2	71.1	71.5	71.7	72.1	72.6	73.8	75.0
17. Activity rate (% of population aged 15-24)	52.2	50.4	49.8	50.1	51.6	51.5	51.3	50.7	50.0	48.0	49.7	50.2
18. Activity rate (% of population aged 25-54)	83.4	83.6	84.1	84.6	85.2	85.3	85.5	85.6	86.0	86.5	86.4	87.1
19. Activity rate (% of population aged 55-64)	42.9	43.9	44.9	44.5	43.7	42.9	42.9	43.9	45.5	47.8	52.0	55.3
20. Total unemployment (000)	3172	3388	3644	3542	3205	2922	3047	3340	3695	3931	3893	3432
21. Unemployment rate (% labour force 15+)	8.0	8.5	9.1	8.8	7.9	7.2	7.4	8.2	9.0	9.5	9.5	8.4
22. Youth unemployment rate (% labour force 15-24)	14.9	15.6	16.2	15.0	12.7	10.6	12.8	14.2	14.6	15.0	14.8	14.2
23. Long term unemployment rate (% labour force)	3.9	4.1	4.6	4.5	4.1	3.7	3.7	3.9	4.5	5.4	5.0	4.7
24. Youth unemployment ratio (% population aged 15-24)	4.5	4.9	5.2	4.8	4.5	4.3	4.2	5.0	5.8	6.0	7.7	6.9
Male												
1. Total population (000)	39184	39275	39283	39426	39501	39593	39736	39877	39931	39947	39938	39957
2. Population aged 15-64	27709	27761	27789	27865	27813	27751	27715	27642	27549	27451	27559	27486
3. Total employment (000)	21690	21466	21382	21544	21679	21972	21954	21649	21338	21394	21318	21395
4. Population in employment aged 15-64	20427	20158	19970	20027	20245	20230	20175	19845	19540	19434	19636	20007
5. Employment rate (% population aged 15-64)	73.7	72.6	71.9	71.9	72.8	72.9	72.8	71.8	70.9	70.8	71.3	72.8
6. Employment rate (% population aged 15-24)	49.6	47.9	47.0	47.8	49.8	49.7	49.3	46.9	45.4	43.6	43.7	45.0
7. Employment rate (% population aged 25-54)	87.0	86.1	85.7	85.8	86.9	87.2	86.9	85.6	84.3	83.9	83.7	84.9
8. Employment rate (% population aged 55-64)	48.5	47.8	47.5	47.2	46.8	46.4	46.5	47.3	48.2	50.7	53.5	56.4
9. FTE employment rate (% population aged 15-64)	73.2	71.7	70.6	70.3	70.8	71.1	70.9	69.9	68.9	67.8	68.5	69.4
10. Self-employed (% total employment)	11.6	11.8	12.1	12.2	12.2	12.1	12.1	12.4	12.8	13.3	13.4	13.5
11. Part-time employment (% total employment)	3.6	3.8	4.3	4.7	4.9	5.0	5.3	5.8	6.1	6.5	7.8	9.3
12. Fixed term contracts (% total employees)	10.1	11.0	11.6	12.2	12.8	12.5	12.2	11.8	12.1	12.7	14.4	14.7
13. Employment in Services (% total employment)	53.2	54.2	54.9	55.7	56.5	57.3	58.0	58.7	59.4	60.2	61.1	61.6
14. Employment in Industry (% total employment)	43.7	43.0	42.2	41.5	40.7	39.9	39.2	38.5	37.8	37.0	36.2	35.7
15. Employment in Agriculture (% total employment)	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7
16. Activity rate (% population aged 15-64)	79.6	79.3	79.2	79.2	79.2	78.9	79.0	78.8	79.1	79.2	80.6	81.3
17. Activity rate (% of population aged 15-24)	54.5	53.6	53.3	53.6	54.9	54.7	54.3	53.1	52.7	50.8	52.5	52.9
18. Activity rate (% of population aged 25-54)	93.1	93.0	93.3	93.4	93.6	93.4	93.5	93.2	93.2	93.0	93.6	93.8
19. Activity rate (% of population aged 55-64)	54.4	54.6	55.1	54.8	53.7	52.4	52.2	53.0	54.9	57.8	61.2	64.0
20. Total unemployment (000)	1303	1488	1627	1589	1459	1359	1426	1614	1844	1975	1986	1741
21. Unemployment rate (% labour force 15+)	5.8	6.6	7.3	7.1	6.4	6.0	6.3	7.1	8.2	8.7	8.8	7.7
22. Youth unemployment rate (% labour force 15-24)	10.9	12.5	13.6	12.3	10.4	9.4	10.9	13.0	14.9	15.2	15.4	14.1
23. Long term unemployment rate (% labour force)	2.6	3.0	3.4	3.4	3.2	3.0	3.0	3.3	3.9	4.8	4.7	4.4
24. Youth unemployment ratio (% population aged 15-24)	5.0	5.7	6.2	5.8	5.1	5.0	5.0	6.2	7.2	7.2	8.8	7.8
Female												
1. Total population (000)	41410	41437	41362	41469	41461	41539	41610	41681	41668	41642	41590	41543
2. Population aged 15-64	27129	27246	27212	27324	27332	27311	27258	27210	27126	26999	27206	27063
3. Total employment (000)	15913	16030	16080	16366	16746	17173	17361	17443	17383	17484	17504	17714
4. Population in employment aged 15-64	15007	15080	15045	15254	15686	15876	16004	16038	15972	15979	16202	16638
5. Employment rate (% population aged 15-64)	55.3	55.3	55.3	55.8	57.4	58.1	58.7	58.9	58.9	59.2	59.6	61.5
6. Employment rate (% population aged 15-24)	45.7	43.0	42.1	42.7	44.5	44.6	44.7	44.5	43.0	40.2	40.2	41.4
7. Employment rate (% population aged 25-54)	66.4	67.0	67.3	68.3	70.3	71.2	71.6	71.6	71.4	72.1	71.0	72.7
8. Employment rate (% population aged 55-64)	27.1	28.2	28.7	28.3	28.8	29.0	29.4	30.6	31.6	33.0	37.5	40.6
9. FTE employment rate (% population aged 15-64)	46.1	45.8	45.2	45.0	45.8	46.1	46.5	46.4	46.2	45.5	45.2	46.5
10. Self-employed (% total employment)	7.8	7.5	7.6	7.5	7.2	7.3	7.6	7.6	7.7	7.9	8.6	8.6
11. Part-time employment (% total employment)	33.7	33.9	35.3	36.4	37.2	37.9	39.3	39.5	40.8	41.6	43.8	45.8
12. Fixed term contracts (% total employees)	11.1	11.4	12.1	12.6	13.4	13.1	12.7	12.2	12.3	12.2	14.0	14.3
13. Employment in Services (% total employment)	79.5	80.6	81.2	81.6	82.2	82.7	83.0	83.5	84.0	84.3	84.7	84.9
14. Employment in Industry (% total employment)	17.9	17.2	16.6	16.4	15.8	15.4	15.2	14.7	14.3	14.1	13.7	13.6
15. Employment in Agriculture (% total employment)	2.7	2.2	2.1	2.1	2.0	1.9	1.8	1.8	1.7	1.6	1.6	1.5
16. Activity rate (% population aged 15-64)	61.3	61.4	61.8	62.2	63.0	63.3	63.8	64.4	65.1	65.8	66.9	68.5
17. Activity rate (% of population aged 15-24)	49.9	47.1	46.2	46.6	48.3	48.2	48.1	48.3	47.3	45.0	46.8	47.4
18. Activity rate (% of population aged 25-54)	73.3	73.9	74.6	75.5	76.6	76.9	77.4	77.9	78.6	79.7	79.0	80.3
19. Activity rate (% of population aged 55-64)	31.5	33.3	34.7	34.1	33.7	33.5	33.6	34.8	36.2	37.8	43.1	46.6
20. Total unemployment (000)	1869	1900	2016	1953	1746	1563	1622	1727	1851	1956	1907	1691
21. Unemployment rate (% labour force 15+)	10.9	11.0	11.6	11.1	9.9	8.7	8.9	9.4	10.1	10.5	10.3	9.1
22. Youth unemployment rate (% labour force 15-24)	19.0	18.9	19.0	17.9	15.2	11.9	14.8	15.4	14.4	14.8	14.1	14.3
23. Long term unemployment rate (% labour force)	5.5	5.7	6.2	6.0	5.2	4.6	4.6	4.8	5.2	6.0	5.4	5.2
24. Youth unemployment ratio (% population aged 15-24)	4.1	4.1	4.2	3.9	3.8	3.6	3.4	3.8	4.3	4.9	6.6	6.0

Source: Eurostat
Notes: EU LFS indicators: 1994-2004 national estimates, 2005-2006 provisional; Indicators 11-12: 2004 spring results.

Key employment indicators: Estonia

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	1386	1374	1366	1361	1356	1350	1348	1343	1339
2. Population aged 15-64	:	:	:	914	914	916	916	912	911	910	910	913
3. Total employment (000)	634	619	619	607	581	572	577	584	592	592	604	637
4. Population in employment aged 15-64	:	:	:	590	562	554	559	566	573	573	586	621
5. Employment rate (% population aged 15-64)	:	:	:	64.6	61.5	60.4	61.0	62.0	62.9	63.0	64.4	68.1
6. Employment rate (% population aged 15-24)	:	:	:	35.5	30.1	28.3	28.1	28.2	29.3	27.2	29.1	31.6
7. Employment rate (% population aged 25-54)	:	:	:	78.8	76.7	75.6	76.0	76.8	77.8	78.8	79.6	84.2
8. Employment rate (% population aged 55-64)	:	:	:	50.2	47.5	46.3	48.5	51.6	52.3	52.4	56.1	58.5
9. FTE employment rate (% population aged 15-64)	:	:	64.6	65.0	61.6	59.5	59.9	60.9	61.3	61.8	63.4	67.1
10. Self-employed (% total employment)	6.9	7.5	7.8	8.6	8.6	9.0	8.2	8.1	8.9	9.6	8.1	8.1
11. Part-time employment (% total employment)	:	:	:	8.6	8.1	8.1	8.2	7.7	8.5	8.0	7.8	7.8
12. Fixed term contracts (% total employees)	:	:	:	2.1	2.5	3.0	2.5	2.7	2.5	2.6	2.7	2.7
13. Employment in Services (% total employment)	55.8	56.7	57.9	58.2	60.0	59.7	60.4	61.9	61.6	59.5	61.0	62.0
14. Employment in Industry (% total employment)	34.0	33.6	33.0	33.0	32.0	33.2	32.8	31.2	32.3	34.7	33.7	33.1
15. Employment in Agriculture (% total employment)	10.2	9.7	9.1	8.8	8.0	7.1	6.8	6.9	6.1	5.8	5.3	4.9
16. Activity rate (% population aged 15-64)	:	:	:	72.2	70.4	70.2	70.0	69.3	70.1	70.0	70.1	72.4
17. Activity rate (% of population aged 15-24)	:	:	:	42.5	38.9	37.4	36.5	34.2	36.9	34.7	34.6	35.9
18. Activity rate (% of population aged 25-54)	:	:	:	88.0	87.1	87.0	86.3	85.4	85.7	86.5	86.0	89.1
19. Activity rate (% of population aged 55-64)	:	:	:	53.5	51.3	51.3	53.2	55.7	56.3	55.7	59.0	61.0
20. Total unemployment (000)	:	:	64	61	74	84	82	67	66	64	52	41
21. Unemployment rate (% labour force 15+)	:	:	9.6	9.2	11.3	12.8	12.4	10.3	10.0	9.7	7.9	5.9
22. Youth unemployment rate (% labour force 15-24)	:	:	17.0	15.2	22.0	23.9	23.2	17.6	20.6	21.7	15.9	12.0
23. Long term unemployment rate (% labour force)	:	:	:	4.2	5.0	5.9	6.0	5.4	4.6	5.0	4.2	2.8
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	7.0	8.7	9.1	8.5	6.0	7.6	7.5	5.5	4.3
Male												
1. Total population (000)	:	:	:	639	632	628	627	624	621	619	616	616
2. Population aged 15-64	:	:	:	434	434	438	439	435	435	433	434	437
3. Total employment (000)	:	:	:	310	294	291	293	297	302	298	299	318
4. Population in employment aged 15-64	:	:	:	302	286	282	285	289	292	288	291	311
5. Employment rate (% population aged 15-64)	:	:	:	69.6	65.8	64.3	65.0	66.5	67.2	66.4	67.0	71.0
6. Employment rate (% population aged 15-24)	:	:	:	40.0	34.9	31.7	33.9	34.6	35.9	32.8	33.1	37.0
7. Employment rate (% population aged 25-54)	:	:	:	82.0	78.6	78.4	78.7	80.3	81.0	81.6	81.9	87.5
8. Employment rate (% population aged 55-64)	:	:	:	62.0	58.9	55.9	56.7	58.4	58.9	56.4	59.3	57.5
9. FTE employment rate (% population aged 15-64)	:	:	70.2	71.0	66.3	63.8	65.0	66.5	66.0	65.7	66.0	70.5
10. Self-employed (% total employment)	:	:	:	11.0	10.7	11.5	10.9	10.7	11.8	12.9	11.1	11.4
11. Part-time employment (% total employment)	:	:	:	5.9	5.9	5.3	5.1	4.8	5.4	5.4	4.9	4.3
12. Fixed term contracts (% total employees)	:	:	:	2.9	3.5	4.4	3.3	3.9	3.2	3.5	3.4	3.3
13. Employment in Services (% total employment)	:	:	:	47.2	49.0	48.1	48.0	49.8	50.0	48.0	49.1	48.3
14. Employment in Industry (% total employment)	:	:	:	41.1	40.6	42.4	42.3	40.7	41.7	44.0	43.7	45.0
15. Employment in Agriculture (% total employment)	:	:	:	11.7	10.4	9.6	9.7	9.5	8.3	8.0	7.2	6.6
16. Activity rate (% population aged 15-64)	:	:	:	79.0	76.8	75.6	74.9	74.6	75.0	74.4	73.6	75.8
17. Activity rate (% of population aged 15-24)	:	:	:	49.9	46.3	42.0	42.4	40.4	43.1	41.6	39.7	41.2
18. Activity rate (% of population aged 25-54)	:	:	:	92.0	90.5	90.9	90.2	90.1	89.6	90.1	89.2	92.8
19. Activity rate (% of population aged 55-64)	:	:	:	68.1	66.0	63.6	62.5	63.7	64.4	60.7	62.9	61.6
20. Total unemployment (000)	:	:	35	34	42	46	42	36	34	35	29	21
21. Unemployment rate (% labour force 15+)	:	:	10.3	9.9	12.5	13.8	12.6	10.8	10.2	10.4	8.8	6.2
22. Youth unemployment rate (% labour force 15-24)	:	:	18.9	16.7	21.9	23.8	19.4	14.3	16.9	21.2	16.6	10.0
23. Long term unemployment rate (% labour force)	:	:	:	4.4	5.5	6.7	6.6	6.3	4.8	5.6	4.2	3.1
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	9.9	11.4	10.3	8.5	5.8	7.3	8.8	6.6	4.1
Female												
1. Total population (000)	:	:	:	748	742	738	734	732	729	729	727	724
2. Population aged 15-64	:	:	:	480	480	479	478	478	476	476	476	475
3. Total employment (000)	:	:	:	297	286	281	283	287	291	295	305	319
4. Population in employment aged 15-64	:	:	:	290	278	272	274	277	281	286	296	310
5. Employment rate (% population aged 15-64)	:	:	:	60.3	57.8	56.9	57.4	57.9	59.0	60.0	62.1	65.3
6. Employment rate (% population aged 15-24)	:	:	:	32.0	26.0	24.8	21.9	21.6	22.7	21.6	25.1	26.1
7. Employment rate (% population aged 25-54)	:	:	:	75.9	74.8	73.1	73.5	73.6	74.8	76.2	77.5	81.1
8. Employment rate (% population aged 55-64)	:	:	:	41.6	39.2	39.0	42.1	46.5	47.3	49.4	53.7	59.2
9. FTE employment rate (% population aged 15-64)	:	:	59.5	59.6	57.3	55.7	55.2	55.9	57.0	58.3	61.2	63.9
10. Self-employed (% total employment)	:	:	:	6.0	6.4	6.4	5.4	5.4	5.9	6.3	5.1	4.8
11. Part-time employment (% total employment)	:	:	:	11.4	10.4	10.9	11.3	10.7	11.8	10.6	10.6	11.3
12. Fixed term contracts (% total employees)	:	:	:	1.3	1.6	1.7	1.8	1.5	1.8	1.8	2.0	2.2
13. Employment in Services (% total employment)	:	:	:	69.7	71.3	71.7	73.1	74.4	73.5	71.0	72.5	75.5
14. Employment in Industry (% total employment)	:	:	:	24.5	23.1	23.8	23.1	21.4	22.7	25.4	24.0	21.4
15. Employment in Agriculture (% total employment)	:	:	:	5.8	5.6	4.5	3.8	4.2	3.8	3.6	3.5	3.1
16. Activity rate (% population aged 15-64)	:	:	:	66.4	65.0	65.3	65.5	64.4	65.7	66.0	66.9	69.3
17. Activity rate (% of population aged 15-24)	:	:	:	36.3	32.5	32.7	30.3	27.9	30.6	27.8	29.5	30.6
18. Activity rate (% of population aged 25-54)	:	:	:	84.2	83.9	83.3	82.7	81.0	82.2	83.2	83.1	85.7
19. Activity rate (% of population aged 55-64)	:	:	:	43.1	40.9	42.0	46.0	49.8	50.3	51.9	56.0	60.5
20. Total unemployment (000)	:	:	29	27	32	38	39	31	32	29	23	19
21. Unemployment rate (% labour force 15+)	:	:	8.9	8.3	10.1	11.8	12.2	9.7	9.9	8.9	7.1	5.6
22. Youth unemployment rate (% labour force 15-24)	:	:	14.4	13.1	22.1	24.1	28.5	22.5	26.0	22.4	14.9	14.7
23. Long term unemployment rate (% labour force)	:	:	:	4.1	4.5	5.0	5.4	4.4	4.4	4.4	4.2	2.6
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	4.3	6.5	7.9	8.4	6.3	8.0	6.2	4.4	4.5

Source: Eurostat

Key employment indicators: Ireland

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	3543	3572	3621	3709	3753	3800	3859	3926	3991	4059	4149	4253
2. Population aged 15-64	2284	2335	2388	2457	2503	2546	2601	2661	2711	2761	2831	2913
3. Total employment (000)	1285	1331	1405	1526	1621	1696	1748	1779	1814	1870	1956	2039
4. Population in employment aged 15-64	1242	1293	1374	1489	1584	1660	1712	1742	1776	1830	1915	1999
5. Employment rate (% population aged 15-64)	54.4	55.4	57.6	60.6	63.3	65.2	65.8	65.5	65.5	66.3	67.6	68.6
6. Employment rate (% population aged 15-24)	37.6	37.6	41.4	45.6	49.1	50.4	49.3	47.6	47.5	47.7	48.7	50.0
7. Employment rate (% population aged 25-54)	64.9	66.5	68.1	70.9	73.4	75.3	76.3	76.1	75.9	76.8	77.9	78.4
8. Employment rate (% population aged 55-64)	39.2	39.7	40.4	41.7	43.7	45.3	46.8	48.0	49.0	49.5	51.6	53.1
9. FTE employment rate (% population aged 15-64)	50.8	51.5	53.2	55.6	58.7	60.7	60.8	60.9	60.6	61.0	61.0	61.0
10. Self-employed (% total employment)	20.5	19.9	19.4	19.8	19.2	18.6	18.1	17.9	17.7	17.6	16.9	16.1
11. Part-time employment (% total employment)	11.6	11.4	13.6	16.5	16.4	16.4	16.5	16.5	16.9	16.8	:	:
12. Fixed term contracts (% total employees)	10.0	9.3	9.0	7.2	5.1	5.9	5.3	5.3	5.2	4.1	3.7	3.4
13. Employment in Services (% total employment)	61.1	61.8	62.0	62.4	63.0	63.5	64.0	65.1	65.8	66.2	66.4	66.6
14. Employment in Industry (% total employment)	28.3	28.3	28.8	28.6	28.4	28.8	28.8	27.9	27.5	27.6	27.6	27.6
15. Employment in Agriculture (% total employment)	10.6	9.9	9.2	9.0	8.6	7.7	7.2	7.0	6.6	6.2	5.9	5.8
16. Activity rate (% population aged 15-64)	61.9	62.5	64.1	65.6	67.1	68.2	68.6	68.6	68.8	69.5	70.8	71.8
17. Activity rate (% of population aged 15-24)	46.6	45.8	49.1	51.4	53.7	54.2	53.1	52.0	52.3	52.4	53.3	54.7
18. Activity rate (% of population aged 25-54)	72.7	74.0	75.0	76.2	77.3	78.3	78.9	79.1	79.1	79.9	80.9	81.5
19. Activity rate (% of population aged 55-64)	42.3	42.5	43.0	43.9	45.4	46.5	48.0	49.3	50.2	50.8	53.1	54.4
20. Total unemployment (000)	178	174	152	123	97	75	72	83	90	89	89	95
21. Unemployment rate (% labour force 15+)	12.3	11.7	9.9	7.5	5.7	4.2	4.0	4.5	4.7	4.5	4.3	4.4
22. Youth unemployment rate (% labour force 15-24)	19.5	18.2	15.4	11.3	8.6	6.8	7.3	8.5	9.1	8.9	8.6	9.3
23. Long term unemployment rate (% labour force)	7.6	7.0	5.6	3.9	2.4	1.6	1.3	1.3	1.5	1.6	1.5	1.4
24. Youth unemployment ratio (% population aged 15-24)	9.0	8.2	7.7	5.8	4.6	3.8	3.8	4.4	4.8	4.7	4.6	4.7
Male												
1. Total population (000)	1763	1780	1804	1842	1864	1888	1919	1951	1983	2018	2067	2124
2. Population aged 15-64	1147	1173	1199	1233	1256	1280	1307	1337	1361	1387	1425	1470
3. Total employment (000)	802	821	854	918	966	1005	1030	1037	1053	1084	1126	1173
4. Population in employment aged 15-64	770	792	829	889	936	976	1002	1008	1024	1053	1095	1142
5. Employment rate (% population aged 15-64)	67.1	67.5	69.1	72.1	74.5	76.3	76.6	75.4	75.2	75.9	76.9	77.7
6. Employment rate (% population aged 15-24)	39.7	39.8	43.9	48.7	52.3	54.2	53.1	50.6	50.5	50.7	51.5	53.6
7. Employment rate (% population aged 25-54)	81.0	81.8	82.6	84.9	86.9	88.2	88.6	87.4	87.0	87.8	88.4	88.4
8. Employment rate (% population aged 55-64)	59.8	59.2	58.9	60.2	61.7	63.2	64.6	65.0	64.6	65.0	65.7	67.0
9. FTE employment rate (% population aged 15-64)	65.2	65.2	67.0	70.1	73.7	76.1	75.9	74.7	74.4	74.9	74.9	74.9
10. Self-employed (% total employment)	27.2	26.4	25.9	26.7	26.3	25.5	25.2	25.2	24.9	25.0	24.1	23.2
11. Part-time employment (% total employment)	5.1	4.9	6.0	7.5	7.2	6.9	6.6	6.5	6.6	6.1	:	:
12. Fixed term contracts (% total employees)	8.3	7.2	6.9	5.6	4.1	4.9	4.4	4.5	4.4	3.7	3.1	2.9
13. Employment in Services (% total employment)	49.7	50.3	50.1	49.8	50.0	50.5	50.4	51.1	51.7	51.8	51.5	51.4
14. Employment in Industry (% total employment)	35.1	35.6	36.5	37.0	37.1	37.9	38.6	38.2	38.1	38.5	39.2	39.6
15. Employment in Agriculture (% total employment)	15.2	14.1	13.4	13.2	12.9	11.6	10.9	10.7	10.1	9.8	9.3	9.0
16. Activity rate (% population aged 15-64)	76.4	76.3	77.1	78.2	79.1	79.9	79.9	79.2	79.3	79.9	80.6	81.5
17. Activity rate (% of population aged 15-24)	49.9	49.0	52.4	55.0	57.2	58.1	57.3	55.7	56.0	55.9	56.6	59.0
18. Activity rate (% of population aged 25-54)	90.9	91.3	91.1	91.5	91.8	92.0	91.8	91.2	91.0	91.8	92.1	92.1
19. Activity rate (% of population aged 55-64)	64.5	63.3	62.9	63.4	64.2	65.0	66.4	66.7	66.3	66.9	67.7	68.7
20. Total unemployment (000)	109	106	93	76	58	45	44	52	55	55	54	57
21. Unemployment rate (% labour force 15+)	12.2	11.5	9.9	7.7	5.7	4.3	4.1	4.7	5.0	4.9	4.6	4.6
22. Youth unemployment rate (% labour force 15-24)	20.8	19.0	16.0	11.6	8.6	6.8	7.6	9.3	9.7	9.3	9.1	10.0
23. Long term unemployment rate (% labour force)	8.1	7.5	6.2	4.7	3.0	2.0	1.7	1.8	1.9	2.0	1.9	1.8
24. Youth unemployment ratio (% population aged 15-24)	10.2	9.2	8.5	6.3	4.9	4.0	4.3	5.1	5.5	5.2	5.1	5.4
Female												
1. Total population (000)	1781	1792	1818	1867	1890	1912	1940	1975	2008	2041	2081	2130
2. Population aged 15-64	1138	1162	1189	1224	1247	1267	1293	1324	1350	1375	1406	1443
3. Total employment (000)	483	510	551	608	656	691	718	742	761	787	830	866
4. Population in employment aged 15-64	473	501	545	600	648	683	710	734	752	777	820	856
5. Employment rate (% population aged 15-64)	41.6	43.2	45.9	49.0	52.0	53.9	54.9	55.4	55.7	56.5	58.3	59.3
6. Employment rate (% population aged 15-24)	35.4	35.2	38.8	42.4	45.7	46.6	45.5	44.5	44.4	44.7	45.9	46.2
7. Employment rate (% population aged 25-54)	49.0	51.2	53.8	57.1	60.0	62.4	64.0	64.7	64.8	65.8	67.3	68.3
8. Employment rate (% population aged 55-64)	18.6	20.2	21.6	23.1	25.6	27.2	28.7	30.8	33.1	33.7	37.3	39.1
9. FTE employment rate (% population aged 15-64)	36.4	37.8	39.3	41.0	43.5	45.1	45.7	47.0	46.7	47.1	47.1	47.1
10. Self-employed (% total employment)	9.3	9.3	9.4	9.5	8.7	8.6	7.9	7.6	7.6	7.5	7.0	6.6
11. Part-time employment (% total employment)	22.4	22.0	25.4	30.0	30.1	30.3	30.7	30.6	31.0	31.5	:	:
12. Fixed term contracts (% total employees)	12.1	11.9	11.7	9.3	6.4	7.2	6.2	6.3	6.0	4.6	4.2	3.9
13. Employment in Services (% total employment)	79.6	80.1	80.0	81.3	82.1	82.4	83.4	84.8	85.4	86.0	86.8	87.4
14. Employment in Industry (% total employment)	17.3	16.7	17.1	16.1	15.5	15.5	14.8	13.5	12.9	12.6	11.9	11.3
15. Employment in Agriculture (% total employment)	3.1	3.1	2.9	2.6	2.4	2.1	1.8	1.7	1.7	1.4	1.3	1.3
16. Activity rate (% population aged 15-64)	47.3	48.6	51.1	52.9	55.0	56.3	57.1	57.8	58.3	59.0	60.8	61.9
17. Activity rate (% of population aged 15-24)	43.1	42.3	45.5	47.7	50.1	50.1	48.8	48.1	48.5	48.8	49.9	50.2
18. Activity rate (% of population aged 25-54)	54.6	56.8	59.1	60.9	62.9	64.7	66.0	66.9	67.2	68.0	69.6	70.7
19. Activity rate (% of population aged 55-64)	20.2	21.6	22.9	24.2	26.6	27.8	29.4	31.6	33.8	34.4	38.2	40.0
20. Total unemployment (000)	68	68	60	47	39	30	28	32	35	33	35	38
21. Unemployment rate (% labour force 15+)	12.5	11.8	9.9	7.3	5.6	4.2	3.8	4.1	4.3	4.1	4.0	4.1
22. Youth unemployment rate (% labour force 15-24)	17.9	17.2	14.6	11.0	8.6	7.0	6.9	7.6	8.4	8.5	8.0	8.5
23. Long term unemployment rate (% labour force)	6.7	6.1	4.6	2.8	1.6	1.0	0.8	0.8	1.0	1.0	0.8	0.9
24. Youth unemployment ratio (% population aged 15-24)	7.7	7.2	6.7	5.3	4.3	3.5	3.3	3.7	4.1	4.2	4.0	4.0

Source: Eurostat

Key employment indicators: Greece

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	10238	10255	10269	10390	10437	10472	10504	10542	10578	10616	10657	10710
2. Population aged 15-64	6771	6787	6812	7000	7043	7078	7099	7111	7119	7129	7132	7158
3. Total employment (000)	3832	3867	3880	4018	4031	4089	4086	4176	4275	4313	4369	4452
4. Population in employment aged 15-64	3702	3732	3754	3917	3937	3996	3999	4087	4181	4235	4287	4365
5. Employment rate (% population aged 15-64)	54.7	55.0	55.1	56.0	55.9	56.5	56.3	57.5	58.7	59.4	60.1	61.0
6. Employment rate (% population aged 15-24)	26.3	25.4	25.3	28.4	27.2	27.6	26.2	26.5	25.3	26.8	25.0	24.2
7. Employment rate (% population aged 25-54)	68.9	69.5	69.7	70.0	69.9	70.5	70.6	71.6	72.9	73.5	74.0	75.3
8. Employment rate (% population aged 55-64)	41.0	41.2	41.0	39.0	39.3	39.0	38.2	39.2	41.3	39.4	41.6	42.3
9. FTE employment rate (% population aged 15-64)	54.2	54.6	54.4	55.4	55.2	56.1	56.0	57.1	58.4	58.8	59.5	59.9
10. Self-employed (% total employment)	45.8	45.6	45.4	45.1	43.9	43.3	42.3	43.0	42.5	40.6	40.8	40.7
11. Part-time employment (% total employment)	4.8	5.0	4.8	5.6	5.8	4.5	4.0	4.4	4.3	4.6	5.0	5.7
12. Fixed term contracts (% total employees)	9.4	10.0	10.3	12.5	12.6	13.5	13.2	11.7	11.2	11.9	11.8	10.7
13. Employment in Services (% total employment)	55.9	56.0	57.0	57.7	58.0	58.8	59.2	60.1	60.9	62.6	62.7	:
14. Employment in Industry (% total employment)	24.5	24.7	24.2	24.3	23.9	23.9	24.0	23.8	23.7	22.9	22.9	:
15. Employment in Agriculture (% total employment)	19.6	19.4	18.8	18.0	18.1	17.3	16.8	16.2	15.5	14.5	14.4	:
16. Activity rate (% population aged 15-64)	60.4	61.1	61.3	63.2	63.8	63.8	63.3	64.2	65.2	66.5	66.8	67.0
17. Activity rate (% of population aged 15-24)	37.1	37.0	36.8	40.8	39.8	39.0	36.5	36.2	34.6	36.7	33.7	32.4
18. Activity rate (% of population aged 25-54)	74.3	75.2	75.7	77.1	77.9	78.1	77.8	78.8	79.8	81.1	81.5	82.0
19. Activity rate (% of population aged 55-64)	42.4	42.5	42.3	40.4	40.9	40.5	39.9	40.9	42.7	41.3	43.2	43.9
20. Total unemployment (000)	386	411	421	486	548	517	488	480	460	506	477	435
21. Unemployment rate (% labour force 15+)	9.2	9.6	9.8	10.8	12.0	11.2	10.7	10.3	9.7	10.5	9.8	8.9
22. Youth unemployment rate (% labour force 15-24)	28.5	31.0	30.8	29.9	31.5	29.1	28.0	26.8	26.8	26.9	26.0	25.2
23. Long term unemployment rate (% labour force)	4.6	5.2	5.3	5.8	6.5	6.1	5.5	5.3	5.3	5.6	5.1	4.8
24. Youth unemployment ratio (% population aged 15-24)	10.7	11.6	11.5	12.5	12.6	11.4	10.3	9.7	9.3	9.9	8.8	8.2
Male												
1. Total population (000)	4928	4928	4943	5100	5123	5139	5154	5172	5190	5207	5227	5255
2. Population aged 15-64	3255	3258	3276	3466	3488	3507	3519	3529	3537	3545	3551	3570
3. Total employment (000)	2453	2461	2453	2556	2547	2573	2574	2615	2663	2671	2697	2727
4. Population in employment aged 15-64	2361	2368	2363	2487	2480	2508	2514	2550	2595	2613	2636	2663
5. Employment rate (% population aged 15-64)	72.5	72.7	72.1	71.7	71.1	71.5	71.4	72.2	73.4	73.7	74.2	74.6
6. Employment rate (% population aged 15-24)	33.1	31.4	31.1	34.6	32.4	32.7	30.7	31.5	30.9	32.3	30.1	29.7
7. Employment rate (% population aged 25-54)	89.8	90.2	89.7	88.8	88.2	88.5	88.5	88.7	89.3	89.3	89.5	90.0
8. Employment rate (% population aged 55-64)	59.6	59.8	59.1	56.0	55.7	55.2	55.3	55.9	58.7	56.4	58.8	59.2
9. FTE employment rate (% population aged 15-64)	72.8	73.2	72.3	72.4	71.4	71.9	71.9	72.8	73.9	74.1	74.8	74.6
10. Self-employed (% total employment)	47.0	46.8	46.9	46.6	45.5	45.1	44.7	45.3	44.8	43.8	43.7	43.8
11. Part-time employment (% total employment)	2.7	3.0	2.6	3.2	3.4	2.6	2.2	2.3	2.2	2.2	2.3	2.9
12. Fixed term contracts (% total employees)	9.1	9.7	9.9	11.8	11.4	11.8	11.6	10.5	9.7	10.5	10.1	9.1
13. Employment in Services (% total employment)	52.5	52.5	53.3	52.9	53.3	53.7	53.4	54.2	54.8	56.3	56.0	:
14. Employment in Industry (% total employment)	29.8	30.1	29.7	30.5	30.1	30.1	30.7	30.7	30.7	30.3	30.7	:
15. Employment in Agriculture (% total employment)	17.7	17.4	17.0	16.6	16.6	16.1	15.9	15.1	14.5	13.5	13.4	:
16. Activity rate (% population aged 15-64)	77.5	77.6	77.2	77.6	77.5	77.4	77.1	77.6	78.3	79.0	79.2	79.1
17. Activity rate (% of population aged 15-24)	41.4	40.2	40.0	44.2	42.1	41.7	39.1	39.3	38.1	40.0	37.0	36.1
18. Activity rate (% of population aged 25-54)	94.6	94.7	94.5	94.4	94.5	94.4	94.1	94.1	94.3	94.6	94.6	94.7
19. Activity rate (% of population aged 55-64)	61.8	61.8	61.1	57.9	57.9	57.3	57.7	58.1	60.6	58.9	60.8	61.0
20. Total unemployment (000)	161	159	166	192	219	205	198	191	176	188	176	162
21. Unemployment rate (% labour force 15+)	6.2	6.1	6.4	7.0	7.9	7.4	7.1	6.8	6.2	6.6	6.1	5.6
22. Youth unemployment rate (% labour force 15-24)	19.8	21.5	22.0	21.3	22.9	21.5	21.5	19.9	18.9	19.1	18.7	17.7
23. Long term unemployment rate (% labour force)	2.5	2.7	2.8	3.1	3.7	3.5	3.2	3.1	3.0	3.0	2.6	2.6
24. Youth unemployment ratio (% population aged 15-24)	8.3	8.7	8.9	9.6	9.7	9.0	8.5	7.8	7.2	7.6	6.9	6.4
Female												
1. Total population (000)	5310	5327	5326	5289	5314	5333	5350	5369	5388	5409	5431	5455
2. Population aged 15-64	3517	3529	3536	3534	3555	3572	3580	3582	3583	3584	3581	3588
3. Total employment (000)	1379	1406	1427	1462	1484	1515	1512	1561	1611	1642	1672	1725
4. Population in employment aged 15-64	1341	1364	1391	1430	1457	1489	1485	1537	1586	1621	1651	1702
5. Employment rate (% population aged 15-64)	38.1	38.7	39.3	40.5	41.0	41.7	41.5	42.9	44.3	45.2	46.1	47.4
6. Employment rate (% population aged 15-24)	20.3	20.0	20.0	22.0	21.9	22.4	21.7	21.4	19.8	21.3	19.8	18.7
7. Employment rate (% population aged 25-54)	49.1	49.9	50.8	51.5	51.9	52.7	52.8	54.5	56.4	57.6	58.5	60.5
8. Employment rate (% population aged 55-64)	24.1	24.3	24.6	23.5	24.4	24.3	22.9	24.0	25.5	24.0	25.8	26.6
9. FTE employment rate (% population aged 15-64)	36.9	37.4	37.8	38.9	39.3	40.5	40.5	41.7	43.2	43.8	44.5	45.4
10. Self-employed (% total employment)	43.7	43.5	42.8	42.4	41.1	40.1	38.2	39.2	38.8	35.5	36.0	35.7
11. Part-time employment (% total employment)	8.4	8.7	8.5	10.0	10.0	7.8	7.2	8.0	7.7	8.5	9.3	10.2
12. Fixed term contracts (% total employees)	10.0	10.5	11.1	13.8	14.4	16.1	15.7	13.6	13.3	14.0	14.3	13.0
13. Employment in Services (% total employment)	61.9	62.0	63.5	66.1	66.1	67.3	69.1	69.9	70.9	72.9	73.5	:
14. Employment in Industry (% total employment)	15.1	15.2	14.6	13.4	13.3	13.2	12.6	12.1	12.0	10.9	10.5	:
15. Employment in Agriculture (% total employment)	23.0	22.8	21.9	20.4	20.6	19.4	18.3	17.9	17.1	16.2	16.0	:
16. Activity rate (% population aged 15-64)	44.6	45.8	46.6	49.0	50.3	50.5	49.7	51.0	52.2	54.1	54.5	55.0
17. Activity rate (% of population aged 15-24)	33.2	34.2	33.8	37.4	37.5	36.2	33.8	33.1	31.2	33.4	30.4	28.7
18. Activity rate (% of population aged 25-54)	55.2	56.8	57.9	60.0	61.5	62.0	61.7	63.4	65.2	67.6	68.2	69.1
19. Activity rate (% of population aged 55-64)	24.7	25.0	25.3	24.4	25.5	25.4	23.9	25.2	26.4	25.2	27.1	28.0
20. Total unemployment (000)	225	252	254	295	329	312	290	289	284	318	302	272
21. Unemployment rate (% labour force 15+)	14.1	15.2	15.2	16.7	18.1	17.1	16.1	15.6	15.0	16.2	15.3	13.6
22. Youth unemployment rate (% labour force 15-24)	38.3	41.0	40.4	40.2	41.4	38.1	35.8	35.3	36.6	36.3	34.8	34.7
23. Long term unemployment rate (% labour force)	8.1	9.3	9.2	10.1	10.7	10.1	9.0	8.6	8.9	9.4	8.9	8.0
24. Youth unemployment ratio (% population aged 15-24)	12.9	14.2	13.8	15.4	15.6	13.8	12.1	11.7	11.4	12.1	10.6	9.9

Source: Eurostat
Notes: Indicator 3: estimates based on the unit of 1000 jobs, 2006 forecast; Indicators 10, 13-15: estimate until 2005, Indicator 10: 2006 forecast.

Key employment indicators: Spain

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	38726	38944	39182	39352	39555	39927	40427	41063	41753	42440	43141	43835
2. Population aged 15-64	26400	26638	26794	26936	27085	27373	27742	28231	28729	29227	29755	30255
3. Total employment (000)	13569	13796	14293	14932	15617	16412	16931	17338	17878	18503	19212	19848
4. Population in employment aged 15-64	12393	12764	13251	13809	14583	15399	16039	16527	17188	17861	18834	19600
5. Employment rate (% population aged 15-64)	46.9	47.9	49.5	51.3	53.8	56.3	57.8	58.5	59.8	61.1	63.3	64.8
6. Employment rate (% population aged 15-24)	24.4	24.1	25.3	27.1	30.5	32.5	34.0	34.0	34.4	35.2	38.3	39.5
7. Employment rate (% population aged 25-54)	59.5	60.6	62.1	63.7	66.2	68.4	69.5	70.2	71.4	72.7	74.4	75.8
8. Employment rate (% population aged 55-64)	32.3	33.2	34.1	35.1	35.0	37.0	39.2	39.6	40.7	41.3	43.1	44.1
9. FTE employment rate (% population aged 15-64)	45.1	45.7	47.2	48.9	51.5	53.9	55.4	56.2	57.3	58.3	59.2	60.8
10. Self-employed (% total employment)	18.8	18.6	17.3	16.9	16.3	15.8	15.6	15.4	15.0	14.8	14.6	14.5
11. Part-time employment (% total employment)	7.5	7.6	7.9	7.8	8.0	7.9	8.0	8.0	8.2	8.7	12.4	12.0
12. Fixed term contracts (% total employees)	35.2	33.8	33.5	33.0	32.9	32.2	32.2	31.8	31.8	32.5	33.3	34.0
13. Employment in Services (% total employment)	63.9	63.9	63.6	63.7	63.8	63.8	63.8	64.2	64.7	65.1	65.3	65.4
14. Employment in Industry (% total employment)	28.2	28.3	28.9	29.2	29.6	29.9	30.1	29.9	29.7	29.5	29.5	29.6
15. Employment in Agriculture (% total employment)	7.9	7.8	7.4	7.1	6.6	6.3	6.1	5.9	5.7	5.4	5.2	5.0
16. Activity rate (% population aged 15-64)	59.0	61.6	62.4	63.0	63.9	65.4	64.7	66.2	67.6	68.7	69.7	70.8
17. Activity rate (% of population aged 15-24)	40.7	41.5	41.4	41.8	43.1	43.9	43.0	43.7	44.5	45.1	47.7	48.2
18. Activity rate (% of population aged 25-54)	72.1	75.2	75.8	76.2	76.9	78.0	76.6	78.2	79.6	80.6	80.9	82.0
19. Activity rate (% of population aged 55-64)	35.6	37.6	38.5	39.2	38.8	40.9	41.9	42.7	43.8	44.4	45.9	46.8
20. Total unemployment (000)	2956	2929	2785	2545	2159	1980	1877	2095	2174	2144	1913	1849
21. Unemployment rate (% labour force 15+)	18.4	17.8	16.7	15.0	12.5	11.1	10.3	11.1	11.1	10.6	9.2	8.6
22. Youth unemployment rate (% labour force 15-24)	39.7	39.2	36.4	33.1	27.3	24.3	23.2	24.2	24.6	23.9	19.7	18.0
23. Long term unemployment rate (% labour force)	10.3	9.4	8.7	7.5	5.7	4.6	3.7	3.7	3.7	3.4	2.2	1.9
24. Youth unemployment ratio (% population aged 15-24)	16.3	17.4	16.1	14.7	12.7	11.4	9.1	9.7	10.1	9.9	9.4	8.6
Male												
1. Total population (000)	18949	19033	19144	19241	19338	19545	19825	20172	20532	20894	21268	21641
2. Population aged 15-64	13065	13270	13348	13437	13514	13693	13908	14185	14456	14727	15019	15292
3. Total employment (000)	8951	9044	9329	9701	10029	10395	10644	10806	11011	11258	11532	11802
4. Population in employment aged 15-64	8165	8342	8604	8970	9364	9749	10077	10296	10583	10864	11294	11642
5. Employment rate (% population aged 15-64)	62.5	62.9	64.5	66.8	69.3	71.2	72.5	72.6	73.2	73.8	75.2	76.1
6. Employment rate (% population aged 15-24)	29.5	28.6	30.0	32.5	36.2	38.2	40.2	39.7	39.9	40.8	43.5	44.4
7. Employment rate (% population aged 25-54)	78.6	79.0	80.2	82.2	84.5	85.7	85.9	85.7	85.9	86.1	86.9	87.6
8. Employment rate (% population aged 55-64)	48.4	50.0	51.2	52.6	52.2	54.9	57.7	58.4	59.2	58.9	59.7	60.4
9. FTE employment rate (% population aged 15-64)	61.5	61.9	63.4	65.8	68.6	70.4	71.9	72.1	72.6	73.0	73.5	74.6
10. Self-employed (% total employment)	19.5	19.6	18.5	18.1	17.7	17.4	17.3	17.3	16.9	16.8	16.6	16.8
11. Part-time employment (% total employment)	2.9	3.0	3.0	2.9	2.9	2.8	2.8	2.6	2.6	2.8	4.5	4.3
12. Fixed term contracts (% total employees)	33.5	32.3	32.3	32.1	31.6	30.9	30.6	29.9	29.9	30.6	31.7	32.0
13. Employment in Services (% total employment)	54.0	53.9	53.3	53.2	52.9	52.8	52.4	52.7	52.7	52.6	52.5	52.0
14. Employment in Industry (% total employment)	36.9	36.9	38.0	38.5	39.3	39.7	40.3	40.2	40.5	40.8	41.2	42.0
15. Employment in Agriculture (% total employment)	9.1	9.1	8.7	8.3	7.8	7.5	7.3	7.1	6.8	6.6	6.4	6.1
16. Activity rate (% population aged 15-64)	75.0	76.2	76.7	77.3	77.9	78.8	78.4	79.1	80.0	80.4	80.9	81.3
17. Activity rate (% of population aged 15-24)	44.9	44.8	44.9	45.8	47.2	48.0	48.2	48.8	49.5	50.2	52.3	52.2
18. Activity rate (% of population aged 25-54)	91.7	92.9	92.8	92.9	93.0	93.1	91.7	92.1	92.5	92.5	92.4	92.5
19. Activity rate (% of population aged 55-64)	54.0	56.5	57.4	58.2	57.6	60.2	61.2	62.1	62.9	62.7	63.2	63.5
20. Total unemployment (000)	1493	1474	1360	1181	956	859	822	914	959	952	863	799
21. Unemployment rate (% labour force 15+)	14.8	14.3	13.1	11.2	9.0	7.9	7.5	8.1	8.2	8.0	7.0	6.4
22. Youth unemployment rate (% labour force 15-24)	33.2	32.6	29.7	25.9	20.5	18.1	17.3	19.2	20.2	19.4	16.7	15.1
23. Long term unemployment rate (% labour force)	6.6	6.7	6.1	4.9	3.6	2.8	2.3	2.3	2.4	2.2	1.4	1.2
24. Youth unemployment ratio (% population aged 15-24)	15.4	16.2	14.9	13.2	11.0	9.8	8.0	9.0	9.7	9.4	8.7	7.8
Female												
1. Total population (000)	19775	19911	20039	20111	20217	20382	20602	20891	21221	21547	21873	22193
2. Population aged 15-64	13336	13368	13446	13499	13571	13681	13834	14046	14273	14500	14736	14963
3. Total employment (000)	4618	4752	4964	5231	5588	6017	6287	6532	6867	7245	7680	8046
4. Population in employment aged 15-64	4228	4422	4648	4839	5219	5650	5962	6230	6605	6997	7540	7958
5. Employment rate (% population aged 15-64)	31.7	33.1	34.6	35.8	38.5	41.3	43.1	44.4	46.3	48.3	51.2	53.2
6. Employment rate (% population aged 15-24)	19.5	19.6	20.6	21.6	24.6	26.7	27.5	28.0	28.6	29.3	32.8	34.4
7. Employment rate (% population aged 25-54)	40.3	42.2	43.8	45.1	47.9	51.0	52.9	54.4	56.6	58.9	61.5	63.7
8. Employment rate (% population aged 55-64)	17.5	17.6	18.0	18.8	18.9	20.2	21.7	21.9	23.3	24.6	27.4	28.7
9. FTE employment rate (% population aged 15-64)	28.9	29.8	31.2	32.2	34.6	37.5	38.9	40.3	41.9	43.5	44.9	46.8
10. Self-employed (% total employment)	17.5	16.7	15.0	14.6	13.6	13.1	12.9	12.3	11.9	11.8	11.7	11.2
11. Part-time employment (% total employment)	16.4	16.5	17.0	16.8	17.1	16.8	16.8	16.8	17.1	17.9	24.2	23.2
12. Fixed term contracts (% total employees)	38.3	36.6	35.5	34.6	35.0	34.2	34.7	34.8	34.6	35.2	35.7	36.7
13. Employment in Services (% total employment)	81.9	81.8	82.1	82.5	82.6	82.0	82.5	82.7	83.4	84.0	84.4	85.1
14. Employment in Industry (% total employment)	12.3	12.8	12.7	12.6	12.9	13.6	13.3	13.3	12.7	12.4	12.1	11.4
15. Employment in Agriculture (% total employment)	5.7	5.4	5.2	4.9	4.5	4.4	4.2	4.0	3.9	3.6	3.5	3.4
16. Activity rate (% population aged 15-64)	43.3	47.1	48.2	48.9	50.0	52.0	50.9	53.1	55.1	56.8	58.3	60.2
17. Activity rate (% of population aged 15-24)	36.7	38.1	37.9	37.7	39.0	39.7	37.7	38.5	39.2	39.8	42.9	43.9
18. Activity rate (% of population aged 25-54)	52.6	57.4	58.8	59.5	60.7	62.8	61.3	64.1	66.5	68.3	69.0	71.2
19. Activity rate (% of population aged 55-64)	18.5	20.1	20.7	21.4	21.2	22.7	23.7	24.4	25.7	27.2	29.6	31.0
20. Total unemployment (000)	1463	1455	1425	1364	1203	1121	1055	1181	1215	1192	1050	1050
21. Unemployment rate (% labour force 15+)	24.6	23.8	22.6	21.1	18.0	16.0	14.8	15.7	15.3	14.3	12.2	11.6
22. Youth unemployment rate (% labour force 15-24)	47.9	47.7	45.1	42.4	36.3	32.5	31.2	31.1	30.8	30.1	23.5	21.6
23. Long term unemployment rate (% labour force)	16.4	13.9	13.0	11.6	9.0	7.4	6.0	5.9	5.7	5.0	3.4	2.8
24. Youth unemployment ratio (% population aged 15-24)	17.2	18.5	17.3	16.2	14.4	13.0	10.1	10.5	10.6	10.5	10.1	9.5

Source: Eurostat

Notes: EU LFS indicators: break in 2005 due to the questionnaire revision; the impact has been estimated at +0,4 percentage point on employment rate (16-64 years old), +0.2 p.p. on activity rate (16-64 years old) and -0,4 p.p. on unemployment rate.

Key employment indicators: France

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	56245	56424	56549	56661	56943	57326	57726	57987	58509	58534	59322	59797
2. Population aged 15-64	36778	36866	36927	36976	37172	37430	37682	37825	38184	38194	38749	39129
3. Total employment (000)	22694	22779	22879	23227	23697	24332	24764	24919	24951	24963	25095	25304
4. Population in employment aged 15-64	21893	21937	21994	22242	22645	23237	23659	23840	24161	24099	24467	24668
5. Employment rate (% population aged 15-64)	59.5	59.5	59.6	60.2	60.9	62.1	62.8	63.0	63.3	63.1	63.1	63.0
6. Employment rate (% population aged 15-24)	26.1	25.3	24.8	25.6	27.1	28.6	29.5	29.9	30.6	30.4	30.1	29.3
7. Employment rate (% population aged 25-54)	77.1	76.9	76.7	77.1	77.7	78.8	79.4	79.5	79.5	79.6	79.8	80.2
8. Employment rate (% population aged 55-64)	29.6	29.4	29.0	28.3	28.8	29.9	31.9	34.7	36.8	37.3	37.9	37.6
9. FTE employment rate (% population aged 15-64)	56.6	56.7	56.5	56.9	57.3	58.7	59.9	60.4	59.0	58.7	58.5	58.4
10. Self-employed (% total employment)	10.7	10.4	10.1	9.7	9.5	9.2	8.9	8.8	8.8	8.8	8.9	8.9
11. Part-time employment (% total employment)	15.8	16.3	17.0	17.3	17.1	16.7	16.3	16.4	16.5	16.7	17.2	17.2
12. Fixed term contracts (% total employees)	12.4	12.8	13.4	13.9	14.5	15.2	14.6	13.5	12.7	12.8	13.3	13.5
13. Employment in Services (% total employment)	71.6	72.1	72.7	73.2	73.8	74.1	74.4	74.8	75.2	75.6	75.9	76.2
14. Employment in Industry (% total employment)	23.8	23.4	22.9	22.5	22.1	21.9	21.8	21.4	21.1	20.8	20.5	20.4
15. Employment in Agriculture (% total employment)	4.6	4.5	4.4	4.3	4.1	4.0	3.8	3.7	3.7	3.6	3.5	3.4
16. Activity rate (% population aged 15-64)	67.8	68.1	68.1	68.4	68.7	68.7	68.7	69.1	69.4	69.5	69.5	69.4
17. Activity rate (% of population aged 15-24)	35.8	35.2	34.4	34.6	35.7	35.6	36.2	36.9	38.1	38.4	38.4	37.9
18. Activity rate (% of population aged 25-54)	86.3	86.4	86.2	86.4	86.4	86.3	86.1	86.3	86.2	86.5	86.7	87.0
19. Activity rate (% of population aged 55-64)	31.9	32.0	31.5	30.9	31.2	32.1	33.8	36.7	38.8	39.6	40.0	39.9
20. Total unemployment (000)	2787	2946	2940	2837	2711	2385	2226	2334	2567	2624	2682	2629
21. Unemployment rate (% labour force 15+)	11.1	11.6	11.5	11.1	10.5	9.1	8.4	8.7	9.4	9.6	9.7	9.4
22. Youth unemployment rate (% labour force 15-24)	27.0	28.5	28.4	25.6	23.4	20.1	19.4	19.7	20.7	21.8	22.7	23.1
23. Long term unemployment rate (% labour force)	4.4	4.5	4.7	4.5	4.1	3.5	3.0	3.0	3.7	3.9	4.0	4.0
24. Youth unemployment ratio (% population aged 15-24)	9.8	9.9	9.6	9.1	8.6	7.0	6.6	7.0	7.5	8.1	8.2	8.6
Male												
1. Total population (000)	27203	27288	27345	27405	27575	27789	28010	28152	28401	28420	28796	29043
2. Population aged 15-64	18102	18152	18178	18202	18331	18485	18631	18697	18869	18886	19132	19331
3. Total employment (000)	12624	12652	12676	12817	13055	13396	13605	13584	13542	13494	13510	13585
4. Population in employment aged 15-64	12164	12165	12169	12264	12466	12786	12992	12986	13102	13021	13168	13238
5. Employment rate (% population aged 15-64)	67.2	67.0	66.9	67.4	68.0	69.2	69.7	69.5	69.4	68.9	68.8	68.5
6. Employment rate (% population aged 15-24)	28.8	28.1	27.4	28.4	30.3	31.9	33.3	33.6	34.0	34.0	33.9	33.3
7. Employment rate (% population aged 25-54)	86.7	86.3	86.0	86.1	86.5	87.7	88.1	87.4	87.1	86.9	87.0	87.0
8. Employment rate (% population aged 55-64)	33.8	33.6	33.2	32.5	32.3	33.6	36.2	38.7	40.9	41.0	40.7	40.1
9. FTE employment rate (% population aged 15-64)	67.5	67.4	67.3	67.7	67.8	69.1	70.3	70.4	67.8	67.6	66.9	66.7
10. Self-employed (% total employment)	12.6	12.4	12.1	11.8	11.5	11.2	10.9	10.9	10.9	11.1	11.3	11.4
11. Part-time employment (% total employment)	5.1	5.3	5.5	5.6	5.5	5.3	5.0	5.2	5.4	5.3	5.7	5.7
12. Fixed term contracts (% total employees)	11.4	11.7	12.4	13.0	13.7	14.2	13.2	11.9	11.4	11.8	12.6	13.0
13. Employment in Services (% total employment)	61.5	61.9	62.5	63.1	63.7	64.0	64.3	64.6	64.8	65.3	65.4	65.3
14. Employment in Industry (% total employment)	32.9	32.5	31.9	31.4	31.0	30.9	30.9	30.6	30.5	30.1	29.9	30.1
15. Employment in Agriculture (% total employment)	5.6	5.6	5.5	5.4	5.2	5.0	4.9	4.8	4.7	4.6	4.7	4.6
16. Activity rate (% population aged 15-64)	75.0	75.2	75.1	75.2	75.3	75.2	75.2	75.5	75.5	75.2	75.1	74.8
17. Activity rate (% of population aged 15-24)	38.0	37.9	36.9	37.5	39.2	38.8	39.9	40.9	42.1	42.4	42.5	42.2
18. Activity rate (% of population aged 25-54)	95.2	95.2	94.9	94.6	94.4	94.2	94.0	93.8	93.5	93.5	93.5	93.5
19. Activity rate (% of population aged 55-64)	36.5	36.6	36.2	35.4	35.1	36.0	38.3	41.2	43.2	43.4	43.1	42.7
20. Total unemployment (000)	1286	1389	1397	1323	1260	1076	1010	1121	1246	1279	1301	1277
21. Unemployment rate (% labour force 15+)	9.4	10.0	10.1	9.5	9.0	7.6	7.0	7.8	8.5	8.7	8.8	8.6
22. Youth unemployment rate (% labour force 15-24)	23.5	25.7	25.9	23.3	21.5	18.0	17.4	18.2	19.8	20.8	21.3	21.4
23. Long term unemployment rate (% labour force)	3.6	3.7	3.9	3.8	3.4	2.9	2.4	2.6	3.4	3.5	3.5	3.7
24. Youth unemployment ratio (% population aged 15-24)	9.2	9.8	9.6	9.1	8.9	6.9	6.6	7.2	8.1	8.5	8.5	8.9
Female												
1. Total population (000)	29042	29136	29204	29257	29368	29537	29716	29835	30108	30114	30526	30753
2. Population aged 15-64	18676	18714	18749	18775	18842	18945	19051	19128	19315	19308	19617	19798
3. Total employment (000)	10070	10128	10204	10410	10642	10936	11160	11335	11409	11469	11585	11719
4. Population in employment aged 15-64	9729	9772	9825	9979	10178	10451	10667	10854	11059	11079	11300	11430
5. Employment rate (% population aged 15-64)	52.1	52.2	52.4	53.1	54.0	55.2	56.0	56.7	57.3	57.4	57.6	57.7
6. Employment rate (% population aged 15-24)	23.4	22.7	22.3	22.8	23.9	25.3	25.7	26.2	27.1	26.7	26.3	25.2
7. Employment rate (% population aged 25-54)	67.6	67.7	67.7	68.3	69.0	70.1	71.1	71.7	72.0	72.5	72.9	73.6
8. Employment rate (% population aged 55-64)	25.6	25.5	25.0	24.4	25.4	26.3	27.8	30.8	32.9	33.8	35.2	35.2
9. FTE employment rate (% population aged 15-64)	46.2	46.5	46.2	46.7	47.2	48.7	50.0	50.9	50.9	50.5	50.7	50.7
10. Self-employed (% total employment)	8.3	7.8	7.5	7.2	6.9	6.7	6.4	6.3	6.3	6.2	6.1	6.1
11. Part-time employment (% total employment)	29.1	30.0	31.2	31.6	31.4	30.8	30.1	29.8	29.7	30.1	30.7	30.6
12. Fixed term contracts (% total employees)	13.6	14.1	14.5	14.8	15.4	16.4	16.2	15.3	14.2	14.0	14.0	14.0
13. Employment in Services (% total employment)	83.8	84.4	84.8	85.2	85.6	86.1	86.2	86.8	87.2	87.4	88.0	88.5
14. Employment in Industry (% total employment)	12.8	12.4	12.1	11.8	11.5	11.3	11.2	10.8	10.4	10.1	9.8	9.4
15. Employment in Agriculture (% total employment)	3.4	3.2	3.1	3.0	2.8	2.7	2.6	2.4	2.4	2.5	2.2	2.1
16. Activity rate (% population aged 15-64)	60.8	61.1	61.2	61.9	62.3	62.4	62.4	63.0	63.5	63.9	64.1	64.1
17. Activity rate (% of population aged 15-24)	33.7	32.7	31.9	31.9	32.3	32.3	32.4	32.9	34.1	34.3	34.3	33.4
18. Activity rate (% of population aged 25-54)	77.5	77.8	77.8	78.4	78.6	78.5	78.5	78.9	79.2	79.8	80.2	80.7
19. Activity rate (% of population aged 55-64)	27.5	27.7	27.2	26.7	27.5	28.3	29.5	32.3	34.6	35.9	37.1	37.3
20. Total unemployment (000)	1502	1556	1543	1514	1451	1310	1217	1214	1322	1345	1381	1352
21. Unemployment rate (% labour force 15+)	13.1	13.5	13.3	12.9	12.2	10.9	10.0	9.8	10.5	10.6	10.7	10.4
22. Youth unemployment rate (% labour force 15-24)	30.7	31.6	31.2	28.3	25.6	22.5	21.8	21.7	21.7	23.0	24.4	25.3
23. Long term unemployment rate (% labour force)	5.3	5.4	5.5	5.3	4.9	4.3	3.6	3.5	4.1	4.3	4.5	4.3
24. Youth unemployment ratio (% population aged 15-24)	10.3	10.0	9.6	9.0	8.4	7.0	6.7	6.8	7.0	7.7	7.9	8.2

Source: Eurostat
Notes: EU LFS indicators: 2006 provisional.

Key employment indicators: Italy

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	56493	56605	56746	56857	56906	57044	57229	57382	57399	57442	58077	58435
2. Population aged 15-64	38634	38623	38648	38676	38633	38642	38645	38676	38692	38292	38588	38726
3. Total employment (000)	21841	21965	22035	22252	22494	22930	23423	23793	24150	24256	24333	24754
4. Population in employment aged 15-64	19691	19788	19837	20091	20357	20753	21169	21478	21710	22060	22214	22619
5. Employment rate (% population aged 15-64)	51.0	51.2	51.3	51.9	52.7	53.7	54.8	55.5	56.1	57.6	57.6	58.4
6. Employment rate (% population aged 15-24)	25.6	25.3	25.2	25.7	25.7	26.4	26.3	25.8	25.2	27.6	25.7	25.5
7. Employment rate (% population aged 25-54)	65.6	65.7	65.7	66.3	67.0	68.0	69.2	70.1	70.7	72.2	72.3	73.3
8. Employment rate (% population aged 55-64)	28.4	28.6	27.9	27.7	27.6	27.7	28.0	28.9	30.3	30.5	31.4	32.5
9. FTE employment rate (% population aged 15-64)	49.8	50.0	50.1	50.5	51.0	51.7	52.7	53.6	54.3	54.3	54.4	55.4
10. Self-employed (% total employment)	26.9	26.9	26.8	26.7	26.4	26.4	25.9	25.5	25.6	25.7	24.6	24.3
11. Part-time employment (% total employment)	6.3	6.5	6.8	7.3	7.9	8.4	8.4	8.6	8.5	12.7	12.8	13.3
12. Fixed term contracts (% total employees)	7.4	7.4	7.9	8.6	9.5	10.1	9.8	9.9	9.9	11.8	12.3	13.1
13. Employment in Services (% total employment)	63.1	63.9	64.2	64.5	65.1	65.8	66.1	66.4	66.8	67.0	67.3	67.5
14. Employment in Industry (% total employment)	30.9	30.4	30.3	30.3	29.9	29.4	29.2	29.1	29.0	28.8	28.6	28.4
15. Employment in Agriculture (% total employment)	6.0	5.7	5.6	5.3	4.9	4.8	4.7	4.5	4.2	4.2	4.1	4.1
16. Activity rate (% population aged 15-64)	57.8	58.1	58.2	59.0	59.6	60.1	60.6	61.1	61.5	62.7	62.5	62.7
17. Activity rate (% of population aged 15-24)	38.8	38.4	38.3	38.8	38.3	38.4	36.6	35.5	34.6	36.1	33.8	32.5
18. Activity rate (% of population aged 25-54)	71.9	72.2	72.4	73.2	73.8	74.3	75.1	75.7	76.3	77.5	77.4	77.8
19. Activity rate (% of population aged 55-64)	29.5	29.8	29.2	29.0	29.0	29.0	29.2	30.2	31.5	31.8	32.6	33.4
20. Total unemployment (000)	2544	2555	2584	2634	2559	2388	2164	2062	2048	1960	1889	1673
21. Unemployment rate (% labour force 15+)	11.2	11.2	11.3	11.3	10.9	10.1	9.1	8.6	8.4	8.0	7.7	6.8
22. Youth unemployment rate (% labour force 15-24)	30.3	30.4	30.2	29.9	28.7	27.0	24.1	23.1	23.7	23.5	24.0	21.6
23. Long term unemployment rate (% labour force)	7.1	7.3	7.3	6.8	6.7	6.3	5.7	5.1	4.9	4.0	3.9	3.4
24. Youth unemployment ratio (% population aged 15-24)	13.2	13.1	13.1	13.1	12.6	11.9	10.3	9.7	9.4	8.5	8.1	7.0
Male												
1. Total population (000)	27310	27372	27462	27541	27567	27651	27764	27858	27873	27830	28192	28406
2. Population aged 15-64	19110	19128	19174	19220	19206	19232	19258	19293	19309	19047	19248	19355
3. Total employment (000)	14199	14193	14192	14254	14305	14485	14649	14816	14990	14747	14816	15010
4. Population in employment aged 15-64	12776	12761	12748	12840	12920	13076	13201	13332	13438	13353	13460	13647
5. Employment rate (% population aged 15-64)	66.9	66.7	66.5	66.8	67.3	68.0	68.5	69.1	69.6	70.1	69.9	70.5
6. Employment rate (% population aged 15-24)	30.4	30.2	30.2	30.7	30.3	30.7	30.4	30.3	29.7	32.1	30.4	30.6
7. Employment rate (% population aged 25-54)	84.5	84.2	83.9	84.0	84.3	84.9	85.5	86.0	86.5	86.7	86.6	87.2
8. Employment rate (% population aged 55-64)	44.6	43.9	42.0	41.4	41.2	40.9	40.4	41.3	42.8	42.2	42.7	43.7
9. FTE employment rate (% population aged 15-64)	66.3	66.2	66.0	66.3	66.7	67.0	67.6	68.4	69.0	68.9	69.0	69.9
10. Self-employed (% total employment)	29.6	29.7	29.7	29.7	29.4	29.7	29.5	29.1	29.1	29.1	28.2	27.9
11. Part-time employment (% total employment)	2.9	3.0	3.1	3.4	3.5	3.7	3.5	3.5	3.2	4.8	4.6	4.7
12. Fixed term contracts (% total employees)	6.2	6.5	6.9	7.5	8.2	8.7	8.3	8.4	8.2	9.9	10.5	11.2
13. Employment in Services (% total employment)	57.3	57.8	58.2	58.3	58.5	59.0	59.1	59.1	59.2	58.2	58.2	58.3
14. Employment in Industry (% total employment)	36.6	36.2	36.0	36.1	36.1	35.7	35.7	35.9	36.1	36.9	37.0	37.0
15. Employment in Agriculture (% total employment)	6.1	6.0	5.9	5.6	5.4	5.3	5.2	5.0	4.7	4.9	4.8	4.7
16. Activity rate (% population aged 15-64)	73.5	73.4	73.2	73.6	73.8	74.1	74.1	74.3	74.7	74.9	74.6	74.6
17. Activity rate (% of population aged 15-24)	43.7	43.2	43.1	43.8	42.8	42.5	40.6	39.9	39.2	40.5	38.7	37.8
18. Activity rate (% of population aged 25-54)	90.4	90.3	90.0	90.3	90.5	90.6	90.7	91.0	91.5	91.4	91.2	91.3
19. Activity rate (% of population aged 55-64)	46.4	45.7	43.9	43.5	43.2	42.7	42.3	43.0	44.4	44.0	44.3	45.0
20. Total unemployment (000)	1223	1227	1232	1248	1202	1118	1008	960	936	925	902	801
21. Unemployment rate (% labour force 15+)	8.6	8.7	8.7	8.8	8.4	7.8	7.1	6.7	6.5	6.4	6.2	5.4
22. Youth unemployment rate (% labour force 15-24)	26.1	25.8	25.4	25.4	24.7	23.1	20.4	19.4	20.5	20.6	21.5	19.1
23. Long term unemployment rate (% labour force)	5.3	5.5	5.6	5.3	5.2	4.8	4.4	4.0	3.8	2.9	2.9	2.6
24. Youth unemployment ratio (% population aged 15-24)	13.2	13.0	12.8	13.0	12.5	11.7	10.2	9.6	9.5	8.4	8.3	7.2
Female												
1. Total population (000)	29183	29233	29284	29316	29339	29393	29465	29524	29525	29612	29885	30030
2. Population aged 15-64	19525	19496	19475	19457	19428	19410	19388	19383	19384	19245	19340	19371
3. Total employment (000)	7642	7773	7842	7998	8189	8445	8775	8977	9159	9509	9517	9744
4. Population in employment aged 15-64	6916	7027	7089	7250	7437	7677	7968	8146	8272	8706	8754	8971
5. Employment rate (% population aged 15-64)	35.4	36.0	36.4	37.3	38.3	39.6	41.1	42.0	42.7	45.2	45.3	46.3
6. Employment rate (% population aged 15-24)	20.9	20.4	20.3	20.7	21.3	22.1	22.1	21.3	20.6	23.1	20.8	20.1
7. Employment rate (% population aged 25-54)	46.6	47.3	47.6	48.5	49.6	50.9	52.8	54.0	54.9	57.8	57.9	59.3
8. Employment rate (% population aged 55-64)	13.5	14.5	14.8	15.0	15.0	15.3	16.2	17.3	18.5	19.6	20.8	21.9
9. FTE employment rate (% population aged 15-64)	33.8	34.3	34.5	35.0	35.7	36.7	38.1	39.2	39.9	40.2	40.3	41.4
10. Self-employed (% total employment)	22.1	21.9	21.5	21.4	21.0	20.6	20.1	19.7	19.8	20.3	18.9	18.8
11. Part-time employment (% total employment)	12.7	12.9	13.4	14.3	15.6	16.5	16.6	16.9	17.3	25.0	25.6	26.5
12. Fixed term contracts (% total employees)	9.3	8.8	9.4	10.3	11.5	12.2	11.9	12.0	12.2	14.5	14.7	15.8
13. Employment in Services (% total employment)	73.5	74.6	74.7	75.2	76.4	77.0	77.5	78.1	78.9	80.1	80.9	81.3
14. Employment in Industry (% total employment)	20.7	20.2	20.2	20.2	19.4	19.0	18.5	18.1	17.8	16.6	16.0	15.6
15. Employment in Agriculture (% total employment)	5.8	5.2	5.1	4.7	4.2	4.0	4.0	3.8	3.3	3.3	3.1	3.1
16. Activity rate (% population aged 15-64)	42.3	43.0	43.5	44.6	45.5	46.3	47.3	47.9	48.3	50.6	50.4	50.8
17. Activity rate (% of population aged 15-24)	34.1	33.7	33.6	33.9	34.0	34.3	32.6	31.0	29.9	31.7	28.7	26.9
18. Activity rate (% of population aged 25-54)	53.4	54.1	54.6	56.0	57.1	57.9	59.3	60.3	60.9	63.6	63.6	64.3
19. Activity rate (% of population aged 55-64)	14.1	15.2	15.5	15.7	15.8	16.1	16.9	18.1	19.3	20.4	21.5	22.5
20. Total unemployment (000)	1321	1328	1352	1386	1358	1271	1157	1103	1112	1036	986	873
21. Unemployment rate (% labour force 15+)	15.4	15.2	15.3	15.4	14.8	13.6	12.2	11.5	11.3	10.5	10.1	8.8
22. Youth unemployment rate (% labour force 15-24)	35.6	36.2	36.2	35.5	33.8	31.9	28.7	27.8	27.6	27.2	27.4	25.3
23. Long term unemployment rate (% labour force)	10.0	10.2	10.0	9.1	9.0	8.4	7.6	6.9	6.6	5.5	5.2	4.5
24. Youth unemployment ratio (% population aged 15-24)	13.2	13.3	13.3	13.2	12.7	12.1	10.5	9.7	9.2	8.6	7.9	6.8

Source: Eurostat
Notes: EU LFS indicators: break in 2004.

Key employment indicators: Cyprus

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	:	:	668	674	681	690	714	727	737
2. Population aged 15-64	:	:	:	:	:	438	444	449	460	479	494	500
3. Total employment (000)	:	298	299	304	310	315	321	328	341	353	366	371
4. Population in employment aged 15-64	:	:	:	:	:	288	301	308	318	330	338	348
5. Employment rate (% population aged 15-64)	:	:	:	:	:	65.7	67.8	68.6	69.2	68.9	68.5	69.6
6. Employment rate (% population aged 15-24)	:	:	:	:	:	37.0	38.4	37.0	37.6	37.5	36.7	37.4
7. Employment rate (% population aged 25-54)	:	:	:	:	:	78.3	80.8	82.2	82.6	82.4	81.8	82.6
8. Employment rate (% population aged 55-64)	:	:	:	:	:	49.4	49.1	49.4	50.4	49.9	50.6	53.6
9. FTE employment rate (% population aged 15-64)	:	:	:	:	62.7	64.0	66.2	67.4	67.8	68.0	66.9	67.9
10. Self-employed (% total employment)	:	24.0	23.5	23.2	23.2	23.3	22.8	22.2	22.8	22.6	22.1	22.1
11. Part-time employment (% total employment)	:	:	:	:	6.5	8.4	8.4	7.2	8.9	8.6	8.9	7.7
12. Fixed term contracts (% total employees)	:	:	:	:	10.3	10.7	10.8	9.1	12.5	12.9	14.0	13.1
13. Employment in Services (% total employment)	:	68.7	70.1	71.3	72.4	73.3	74.3	74.0	74.3	74.2	74.8	:
14. Employment in Industry (% total employment)	:	24.2	23.4	22.5	21.6	20.8	20.1	19.9	20.3	20.4	20.3	:
15. Employment in Agriculture (% total employment)	:	7.1	6.4	6.3	6.1	5.9	5.6	6.0	5.4	5.4	4.9	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	69.1	70.6	71.2	72.4	72.6	72.4	73.0
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	41.0	41.8	40.2	41.3	42.4	42.6	41.5
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	81.9	83.5	84.7	85.8	86.0	85.7	86.2
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	51.3	51.7	51.3	52.7	52.4	52.4	55.5
20. Total unemployment (000)	:	:	:	:	:	15	12	12	14	16	19	18
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	4.9	3.8	3.6	4.1	4.6	5.2	4.7
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	10.1	8.1	8.1	8.9	10.5	13.0	10.5
23. Long term unemployment rate (% labour force)	:	:	:	:	:	1.2	0.8	0.8	1.0	1.2	1.2	0.9
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	4.1	3.4	3.2	3.7	4.9	5.9	4.1
Male												
1. Total population (000)	:	:	:	:	:	324	327	330	333	347	354	360
2. Population aged 15-64	:	:	:	:	:	211	214	216	221	232	240	244
3. Total employment (000)	:	:	:	:	:	184	183	184	189	200	208	208
4. Population in employment aged 15-64	:	:	:	:	:	166	170	171	174	185	190	194
5. Employment rate (% population aged 15-64)	:	:	:	:	:	78.7	79.3	78.9	78.8	79.8	79.2	79.4
6. Employment rate (% population aged 15-24)	:	:	:	:	:	39.6	39.8	38.0	38.7	41.6	40.5	41.0
7. Employment rate (% population aged 25-54)	:	:	:	:	:	92.6	93.4	93.0	92.2	92.5	91.8	92.0
8. Employment rate (% population aged 55-64)	:	:	:	:	:	67.3	66.9	67.3	68.9	70.8	70.8	71.6
9. FTE employment rate (% population aged 15-64)	:	:	:	:	78.5	78.9	79.3	79.5	79.3	80.3	79.7	79.7
10. Self-employed (% total employment)	:	:	:	:	:	28.6	28.4	27.6	28.9	28.2	27.3	27.5
11. Part-time employment (% total employment)	:	:	:	:	3.4	4.5	5.0	4.0	5.5	4.8	5.0	4.3
12. Fixed term contracts (% total employees)	:	:	:	:	8.2	7.6	7.1	5.8	8.1	8.5	9.0	7.9
13. Employment in Services (% total employment)	:	:	:	:	:	65.9	65.8	65.2	64.7	64.1	64.6	:
14. Employment in Industry (% total employment)	:	:	:	:	:	27.5	27.7	27.8	28.7	29.4	29.4	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	6.6	6.4	7.0	6.6	6.5	6.0	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	81.4	81.5	81.3	82.2	83.0	82.9	82.7
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	42.4	42.5	41.3	42.6	46.3	46.6	45.0
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	95.3	95.3	95.2	95.2	95.2	95.3	95.3
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	69.6	69.5	69.7	73.2	74.2	73.2	74.1
20. Total unemployment (000)	:	:	:	:	:	6	5	5	7	7	9	9
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	3.2	2.6	2.9	3.6	3.6	4.3	4.1
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	6.9	6.3	7.9	8.8	9.4	11.9	9.9
23. Long term unemployment rate (% labour force)	:	:	:	:	:	0.5	0.6	0.5	0.7	0.9	0.8	0.7
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	2.8	2.7	3.3	3.9	4.7	6.1	4.0
Female												
1. Total population (000)	:	:	:	:	:	344	347	351	356	367	373	377
2. Population aged 15-64	:	:	:	:	:	227	230	233	239	247	254	257
3. Total employment (000)	:	:	:	:	:	131	138	144	151	154	158	163
4. Population in employment aged 15-64	:	:	:	:	:	122	132	138	144	145	148	155
5. Employment rate (% population aged 15-64)	:	:	:	:	:	53.5	57.2	59.1	60.4	58.7	58.4	60.3
6. Employment rate (% population aged 15-24)	:	:	:	:	:	34.7	37.1	36.0	36.6	33.8	33.2	34.1
7. Employment rate (% population aged 25-54)	:	:	:	:	:	64.6	69.0	72.0	73.6	72.8	72.2	73.6
8. Employment rate (% population aged 55-64)	:	:	:	:	:	32.1	32.2	32.2	32.7	30.0	31.5	36.6
9. FTE employment rate (% population aged 15-64)	:	:	:	:	48.0	50.2	54.1	56.3	57.2	56.6	55.0	56.7
10. Self-employed (% total employment)	:	:	:	:	:	15.8	15.4	15.3	15.1	15.2	15.3	15.3
11. Part-time employment (% total employment)	:	:	:	:	11.1	13.9	12.9	11.3	13.2	13.6	14.0	12.1
12. Fixed term contracts (% total employees)	:	:	:	:	12.9	14.3	14.8	12.7	17.1	17.7	19.5	19.0
13. Employment in Services (% total employment)	:	:	:	:	:	83.5	85.1	85.0	85.9	86.8	87.6	:
14. Employment in Industry (% total employment)	:	:	:	:	:	11.5	10.4	10.1	10.1	9.2	8.8	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	5.0	4.5	4.9	4.1	4.0	3.6	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	57.7	60.6	61.8	63.3	62.8	62.5	63.8
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	39.9	41.2	39.2	40.2	39.0	39.0	38.3
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	69.0	72.3	74.9	76.9	77.2	76.5	77.4
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	33.7	34.7	33.8	33.2	31.6	32.8	37.8
20. Total unemployment (000)	:	:	:	:	:	10	8	7	7	9	10	9
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	7.2	5.3	4.5	4.8	6.0	6.5	5.5
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	13.0	9.7	8.3	9.1	11.6	14.2	11.3
23. Long term unemployment rate (% labour force)	:	:	:	:	:	2.2	1.1	1.0	1.3	1.6	1.7	1.2
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	5.1	4.1	3.1	3.6	5.1	5.7	4.3

Source: Eurostat
Notes: Indicator 3: 2006 forecast; Indicators 10: 2006 forecast; Indicators 11-12: 1999-2003 spring results.

Key employment indicators: Latvia

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	2424	2402	2384	2366	2344	2330	2319	2305	2294
2. Population aged 15-64	:	:	:	1602	1601	1600	1594	1590	1588	1587	1583	1580
3. Total employment (000)	970	952	993	991	973	944	965	987	997	1008	1024	1073
4. Population in employment aged 15-64	:	:	:	959	941	920	935	960	982	988	1002	1047
5. Employment rate (% population aged 15-64)	:	:	:	59.9	58.8	57.5	58.6	60.4	61.8	62.3	63.3	66.3
6. Employment rate (% population aged 15-24)	:	:	:	33.3	32.3	29.6	28.8	31.0	31.5	30.5	32.6	35.9
7. Employment rate (% population aged 25-54)	:	:	:	76.0	74.6	73.6	75.4	76.1	77.7	77.9	78.4	81.1
8. Employment rate (% population aged 55-64)	:	:	:	36.3	36.6	36.0	36.9	41.7	44.1	47.9	49.5	53.3
9. FTE employment rate (% population aged 15-64)	:	:	:	58.2	57.2	56.0	57.6	59.9	61.1	60.8	62.3	64.0
10. Self-employed (% total employment)	14.9	14.6	18.9	17.6	16.5	15.0	15.0	13.8	13.0	13.2	11.6	11.7
11. Part-time employment (% total employment)	:	:	:	12.8	12.1	11.3	10.3	9.7	10.3	10.4	8.3	6.5
12. Fixed term contracts (% total employees)	:	:	:	8.0	7.6	6.7	6.7	13.9	11.1	9.5	8.4	7.1
13. Employment in Services (% total employment)	54.8	56.2	53.6	55.9	58.0	59.9	59.2	60.4	60.8	60.9	62.3	61.5
14. Employment in Industry (% total employment)	27.4	26.7	25.3	25.5	25.5	25.8	26.0	24.8	25.9	26.5	26.5	27.0
15. Employment in Agriculture (% total employment)	17.8	17.2	21.0	18.7	16.5	14.3	14.8	14.9	13.3	12.5	11.2	11.5
16. Activity rate (% population aged 15-64)	:	:	:	69.8	68.5	67.2	67.7	68.8	69.2	69.7	69.6	71.3
17. Activity rate (% of population aged 15-24)	:	:	:	45.0	42.5	38.1	36.9	39.1	38.4	37.2	37.7	40.8
18. Activity rate (% of population aged 25-54)	:	:	:	87.1	86.0	85.5	86.2	85.7	86.3	86.3	85.6	86.4
19. Activity rate (% of population aged 55-64)	:	:	:	40.6	39.9	39.7	41.4	46.3	47.9	52.3	53.8	57.1
20. Total unemployment (000)	163	176	178	165	158	150	143	138	119	118	101	80
21. Unemployment rate (% labour force 15+)	:	:	:	14.3	14.0	13.7	12.9	12.2	10.5	10.4	8.9	6.8
22. Youth unemployment rate (% labour force 15-24)	:	:	:	26.8	23.6	21.4	23.0	22.0	18.0	18.1	13.6	12.2
23. Long term unemployment rate (% labour force)	:	:	:	7.9	7.6	7.9	7.2	5.5	4.4	4.6	4.1	2.5
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	11.7	10.2	8.5	8.2	8.1	6.9	6.8	5.1	5.0
Male												
1. Total population (000)	:	:	:	1117	1105	1098	1089	1078	1071	1068	1062	1057
2. Population aged 15-64	:	:	:	765	765	765	764	762	761	764	763	763
3. Total employment (000)	:	:	:	513	506	483	487	504	512	516	528	550
4. Population in employment aged 15-64	:	:	:	498	490	471	473	490	503	507	515	537
5. Employment rate (% population aged 15-64)	:	:	:	65.1	64.1	61.5	61.9	64.3	66.1	66.4	67.6	70.4
6. Employment rate (% population aged 15-24)	:	:	:	37.7	36.9	34.7	32.8	36.4	37.1	36.4	38.7	42.8
7. Employment rate (% population aged 25-54)	:	:	:	79.5	77.8	74.8	76.7	78.1	80.7	80.4	81.7	83.7
8. Employment rate (% population aged 55-64)	:	:	:	48.1	49.9	48.4	46.2	50.5	51.3	55.8	55.2	59.5
9. FTE employment rate (% population aged 15-64)	:	:	:	63.0	63.0	60.7	61.5	63.5	66.3	66.8	66.7	67.3
10. Self-employed (% total employment)	:	:	:	18.7	17.6	16.4	17.1	15.6	14.9	14.3	13.4	13.4
11. Part-time employment (% total employment)	:	:	:	12.5	11.0	9.7	8.6	7.6	7.9	7.7	6.3	4.7
12. Fixed term contracts (% total employees)	:	:	:	10.2	10.0	8.8	8.5	17.0	13.1	11.6	10.7	8.8
13. Employment in Services (% total employment)	:	:	:	46.8	48.7	50.3	48.1	48.5	49.0	49.5	50.0	48.0
14. Employment in Industry (% total employment)	:	:	:	32.1	32.9	33.5	34.0	33.1	34.2	35.2	35.5	37.5
15. Employment in Agriculture (% total employment)	:	:	:	21.1	18.5	16.2	18.0	18.4	16.8	15.4	14.5	14.5
16. Activity rate (% population aged 15-64)	:	:	:	76.4	75.1	72.7	72.6	74.1	74.1	74.3	74.4	76.2
17. Activity rate (% of population aged 15-24)	:	:	:	50.0	49.0	44.1	42.2	44.6	44.5	43.3	43.8	47.8
18. Activity rate (% of population aged 25-54)	:	:	:	91.4	90.2	88.2	89.0	89.2	89.7	89.7	89.4	90.0
19. Activity rate (% of population aged 55-64)	:	:	:	55.8	54.4	54.0	52.9	57.1	56.1	60.4	61.0	64.4
20. Total unemployment (000)	100	107	100	90	85	82	81	78	62	62	53	45
21. Unemployment rate (% labour force 15+)	:	:	:	15.1	14.4	14.4	14.2	13.3	10.6	10.6	9.1	7.4
22. Youth unemployment rate (% labour force 15-24)	:	:	:	27.4	25.5	21.2	23.4	20.4	16.6	16.0	11.8	10.5
23. Long term unemployment rate (% labour force)	:	:	:	8.3	7.6	8.3	8.1	6.4	4.3	4.8	4.4	3.1
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	12.3	12.1	9.4	9.4	8.2	7.4	6.9	5.2	5.0
Female												
1. Total population (000)	:	:	:	1307	1297	1286	1277	1266	1258	1251	1244	1237
2. Population aged 15-64	:	:	:	836	836	835	831	828	826	823	820	817
3. Total employment (000)	:	:	:	478	467	462	478	483	486	492	496	523
4. Population in employment aged 15-64	:	:	:	461	451	449	462	471	478	482	487	510
5. Employment rate (% population aged 15-64)	:	:	:	55.1	53.9	53.8	55.7	56.8	57.9	58.5	59.3	62.4
6. Employment rate (% population aged 15-24)	:	:	:	28.8	27.6	24.4	24.6	25.4	25.7	24.4	26.2	28.7
7. Employment rate (% population aged 25-54)	:	:	:	72.7	71.6	72.5	74.3	74.3	74.9	75.5	75.3	78.6
8. Employment rate (% population aged 55-64)	:	:	:	27.5	26.6	26.7	30.0	35.2	38.8	41.9	45.3	48.7
9. FTE employment rate (% population aged 15-64)	:	:	:	53.8	52.0	51.6	54.1	56.7	56.5	55.2	58.1	60.9
10. Self-employed (% total employment)	:	:	:	16.3	15.4	13.6	12.8	11.9	11.0	12.1	9.7	9.9
11. Part-time employment (% total employment)	:	:	:	13.1	13.2	12.8	11.9	12.0	12.7	13.2	10.4	8.3
12. Fixed term contracts (% total employees)	:	:	:	5.7	5.1	4.6	5.0	10.8	9.1	7.3	6.2	5.4
13. Employment in Services (% total employment)	:	:	:	65.5	68.1	69.9	70.6	72.6	73.0	72.9	75.4	75.9
14. Employment in Industry (% total employment)	:	:	:	18.4	17.5	17.7	17.8	16.2	17.2	17.5	16.9	15.8
15. Employment in Agriculture (% total employment)	:	:	:	16.1	14.4	12.3	11.6	11.2	9.7	9.6	7.7	8.3
16. Activity rate (% population aged 15-64)	:	:	:	63.9	62.4	62.1	63.2	63.9	64.7	65.3	65.1	66.7
17. Activity rate (% of population aged 15-24)	:	:	:	39.8	35.8	31.9	31.5	33.4	32.1	31.0	31.3	33.6
18. Activity rate (% of population aged 25-54)	:	:	:	83.2	82.2	83.1	83.5	82.3	83.0	83.1	82.0	82.9
19. Activity rate (% of population aged 55-64)	:	:	:	29.2	29.1	29.0	32.8	38.2	41.8	46.1	48.5	51.6
20. Total unemployment (000)	63	69	79	75	73	69	62	60	57	56	48	35
21. Unemployment rate (% labour force 15+)	:	:	:	13.6	13.6	12.9	11.5	11.0	10.4	10.2	8.7	6.2
22. Youth unemployment rate (% labour force 15-24)	:	:	:	26.0	20.8	21.6	22.3	24.3	20.0	21.3	16.2	14.7
23. Long term unemployment rate (% labour force)	:	:	:	7.5	7.6	7.5	6.3	4.6	4.4	4.3	3.7	1.9
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	11.1	8.1	7.5	6.9	8.1	6.4	6.6	5.1	4.9

Source: Eurostat

Key employment indicators: Lithuania

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	3563	3537	3513	3483	3453	3445	3434	3424	3403
2. Population aged 15-64	:	:	:	2344	2330	2319	2312	2303	2305	2311	2322	2321
3. Total employment (000)	1480	1493	1502	1490	1457	1399	1346	1395	1426	1425	1461	1486
4. Population in employment aged 15-64	:	:	:	1460	1438	1370	1329	1379	1408	1413	1454	1476
5. Employment rate (% population aged 15-64)	:	:	:	62.3	61.7	59.1	57.5	59.9	61.1	61.2	62.6	63.6
6. Employment rate (% population aged 15-24)	:	:	:	33.1	31.1	25.9	22.7	23.8	22.5	20.3	21.2	23.7
7. Employment rate (% population aged 25-54)	:	:	:	78.2	77.6	75.2	74.1	76.9	78.9	79.4	81.0	81.7
8. Employment rate (% population aged 55-64)	:	:	:	39.5	40.9	40.4	38.9	41.6	44.7	47.1	49.2	49.6
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	59.4	58.0	60.3	62.0	60.3	62.4	63.3
10. Self-employed (% total employment)	18.8	23.1	23.6	20.4	20.1	19.7	19.9	20.2	20.5	18.7	17.1	15.8
11. Part-time employment (% total employment)	:	:	:	:	:	10.2	9.9	10.8	9.6	8.4	7.1	9.9
12. Fixed term contracts (% total employees)	:	:	:	:	:	4.4	5.8	7.2	7.2	6.3	5.5	4.5
13. Employment in Services (% total employment)	51.5	51.7	54.3	52.2	53.5	54.7	55.8	54.9	54.2	56.2	57.1	58.1
14. Employment in Industry (% total employment)	29.2	28.3	28.1	28.6	27.2	26.7	26.9	27.3	28.0	28.0	28.9	29.5
15. Employment in Agriculture (% total employment)	19.3	20.1	17.6	19.1	19.3	18.7	17.2	17.8	17.8	15.8	14.0	12.4
16. Activity rate (% population aged 15-64)	:	:	:	72.1	72.2	70.8	69.7	69.6	69.9	69.1	68.4	67.4
17. Activity rate (% of population aged 15-24)	:	:	:	43.2	42.2	36.9	33.1	30.9	30.0	26.2	25.1	26.3
18. Activity rate (% of population aged 25-54)	:	:	:	89.8	90.0	89.0	88.5	88.5	88.8	88.7	87.9	86.2
19. Activity rate (% of population aged 55-64)	:	:	:	42.4	43.4	45.1	44.9	46.9	50.5	52.6	52.8	52.9
20. Total unemployment (000)	:	:	:	226	235	277	273	220	204	184	133	89
21. Unemployment rate (% labour force 15+)	:	:	:	13.2	13.7	16.4	16.5	13.5	12.4	11.4	8.3	5.6
22. Youth unemployment rate (% labour force 15-24)	:	:	:	25.5	26.4	30.6	30.9	22.5	25.1	22.7	15.7	9.8
23. Long term unemployment rate (% labour force)	:	:	:	7.5	5.3	8.0	9.3	7.2	6.0	5.8	4.3	2.5
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	10.2	11.1	11.0	10.4	7.1	7.5	5.9	3.9	2.6
Male												
1. Total population (000)	:	:	:	1672	1658	1645	1626	1611	1607	1601	1597	1587
2. Population aged 15-64	:	:	:	1128	1121	1116	1109	1104	1108	1113	1119	1121
3. Total employment (000)	:	:	:	:	:	688	661	702	720	728	744	749
4. Population in employment aged 15-64	:	:	:	747	721	675	653	692	709	720	740	743
5. Employment rate (% population aged 15-64)	:	:	:	66.2	64.3	60.5	58.9	62.7	64.0	64.7	66.1	66.3
6. Employment rate (% population aged 15-24)	:	:	:	37.4	33.8	28.9	24.6	27.1	26.3	24.0	24.8	26.4
7. Employment rate (% population aged 25-54)	:	:	:	79.2	77.3	74.0	73.3	78.0	79.8	81.7	83.3	84.1
8. Employment rate (% population aged 55-64)	:	:	:	54.4	54.4	50.6	49.2	51.5	55.3	57.6	59.1	55.7
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	61.6	59.9	64.4	65.8	64.8	66.9	67.3
10. Self-employed (% total employment)	:	:	:	:	:	22.7	23.9	23.4	23.8	21.0	19.4	17.8
11. Part-time employment (% total employment)	:	:	:	:	:	9.2	8.4	9.4	7.4	6.5	5.1	7.9
12. Fixed term contracts (% total employees)	:	:	:	:	:	5.9	7.6	9.8	9.6	8.7	7.6	6.4
13. Employment in Services (% total employment)	:	:	:	:	:	44.2	44.7	44.7	44.5	46.3	46.5	45.9
14. Employment in Industry (% total employment)	:	:	:	:	:	33.4	33.6	33.9	34.3	35.6	36.9	39.6
15. Employment in Agriculture (% total employment)	:	:	:	:	:	22.4	21.7	21.4	21.2	18.2	16.6	14.6
16. Activity rate (% population aged 15-64)	:	:	:	78.2	76.6	74.5	73.7	73.6	73.5	72.8	72.1	70.5
17. Activity rate (% of population aged 15-24)	:	:	:	50.9	47.4	42.2	38.3	35.2	34.1	30.9	29.5	29.3
18. Activity rate (% of population aged 25-54)	:	:	:	92.4	91.0	89.9	89.7	90.5	90.5	90.7	90.1	88.7
19. Activity rate (% of population aged 55-64)	:	:	:	58.2	59.0	58.1	59.0	59.8	62.0	63.7	63.8	59.9
20. Total unemployment (000)	:	:	:	130	132	159	156	117	105	91	67	47
21. Unemployment rate (% labour force 15+)	:	:	:	14.6	15.1	18.6	18.6	14.2	12.7	11.0	8.2	5.8
22. Youth unemployment rate (% labour force 15-24)	:	:	:	30.1	29.5	32.3	34.4	22.6	22.9	22.5	15.9	10.0
23. Long term unemployment rate (% labour force)	:	:	:	7.9	6.1	9.4	10.8	7.6	6.0	5.5	4.2	2.5
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	13.4	13.5	13.3	13.8	8.1	7.8	7.0	4.7	2.9
Female												
1. Total population (000)	:	:	:	1891	1879	1868	1856	1842	1839	1832	1827	1817
2. Population aged 15-64	:	:	:	1216	1209	1204	1203	1200	1197	1197	1202	1200
3. Total employment (000)	:	:	:	:	:	711	685	693	706	698	717	737
4. Population in employment aged 15-64	:	:	:	713	717	695	676	687	699	693	714	733
5. Employment rate (% population aged 15-64)	:	:	:	58.6	59.4	57.7	56.2	57.2	58.4	57.8	59.4	61.0
6. Employment rate (% population aged 15-24)	:	:	:	28.6	28.2	22.8	20.9	20.5	18.5	16.5	17.4	20.9
7. Employment rate (% population aged 25-54)	:	:	:	77.4	77.9	76.3	74.8	75.8	78.0	77.3	78.8	79.5
8. Employment rate (% population aged 55-64)	:	:	:	28.3	30.6	32.6	31.1	34.1	36.7	39.3	41.7	45.1
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	57.3	56.2	56.5	58.4	56.1	58.1	59.5
10. Self-employed (% total employment)	:	:	:	:	:	16.8	16.0	17.0	17.2	16.3	14.7	13.9
11. Part-time employment (% total employment)	:	:	:	:	:	11.1	11.4	12.3	11.8	10.5	9.1	12.0
12. Fixed term contracts (% total employees)	:	:	:	:	:	3.1	4.2	4.9	4.8	3.9	3.6	2.7
13. Employment in Services (% total employment)	:	:	:	:	:	64.8	66.6	65.2	64.0	66.5	68.0	70.5
14. Employment in Industry (% total employment)	:	:	:	:	:	20.2	20.5	20.7	21.5	20.2	20.7	19.4
15. Employment in Agriculture (% total employment)	:	:	:	:	:	15.0	13.0	14.1	14.4	13.3	11.3	10.1
16. Activity rate (% population aged 15-64)	:	:	:	66.5	68.2	67.3	66.0	65.8	66.5	65.6	64.9	64.6
17. Activity rate (% of population aged 15-24)	:	:	:	35.5	36.9	31.5	27.8	26.6	25.8	21.4	20.5	23.1
18. Activity rate (% of population aged 25-54)	:	:	:	87.3	89.1	88.2	87.4	86.7	87.2	86.8	85.8	83.8
19. Activity rate (% of population aged 55-64)	:	:	:	30.4	31.6	35.2	34.3	37.2	41.8	44.2	44.5	47.6
20. Total unemployment (000)	:	:	:	96	103	118	117	102	98	94	66	43
21. Unemployment rate (% labour force 15+)	:	:	:	11.7	12.3	14.1	14.3	12.8	12.2	11.8	8.3	5.4
22. Youth unemployment rate (% labour force 15-24)	:	:	:	18.4	22.4	28.3	26.3	22.2	28.1	22.9	15.3	9.6
23. Long term unemployment rate (% labour force)	:	:	:	7.0	4.4	6.5	7.7	6.8	6.0	6.2	4.5	2.4
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	6.8	8.7	8.7	6.9	6.1	7.3	4.9	3.1	2.2

Source: Eurostat
Notes: Indicator 1: 1998-2001 estimate.

Key employment indicators: Luxembourg

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	404	411	416	420	425	430	433	436	443	446	450	456
2. Population aged 15-64	275	278	280	282	285	288	293	295	300	301	304	307
3. Total employment (000)	216	221	228	238	250	264	279	287	292	299	307	319
4. Population in employment aged 15-64	162	165	168	171	176	181	185	187	186	188	193	195
5. Employment rate (% population aged 15-64)	58.7	59.2	59.9	60.5	61.7	62.7	63.1	63.4	62.2	62.5	63.6	63.6
6. Employment rate (% population aged 15-24)	38.3	36.6	34.5	32.9	31.8	31.9	32.3	31.2	27.0	23.3	24.9	23.3
7. Employment rate (% population aged 25-54)	72.2	73.3	74.4	75.1	76.9	78.2	78.7	79.0	77.8	79.3	80.7	81.0
8. Employment rate (% population aged 55-64)	23.7	22.9	23.9	25.1	26.4	26.7	25.6	28.1	30.3	30.4	31.7	33.2
9. FTE employment rate (% population aged 15-64)	56.6	57.4	58.3	58.0	59.1	60.4	60.0	60.9	58.3	58.2	59.2	59.7
10. Self-employed (% total employment)	8.3	8.3	8.2	7.9	7.7	7.3	7.0	6.9	6.8	6.7	6.5	6.2
11. Part-time employment (% total employment)	8.5	8.0	8.2	9.1	9.8	10.4	10.4	10.7	13.4	16.4	17.4	17.1
12. Fixed term contracts (% total employees)	4.1	4.2	4.1	4.9	5.2	5.3	5.6	5.1	3.1	4.8	5.3	6.1
13. Employment in Services (% total employment)	70.4	71.4	72.1	73.0	74.3	75.4	76.1	76.5	77.0	77.4	77.6	77.9
14. Employment in Industry (% total employment)	27.6	26.6	25.9	25.3	24.1	23.1	22.5	22.1	21.7	21.3	21.1	20.8
15. Employment in Agriculture (% total employment)	2.1	2.0	2.0	1.7	1.6	1.5	1.4	1.4	1.3	1.3	1.3	1.3
16. Activity rate (% population aged 15-64)	60.6	61.2	61.6	62.1	63.2	64.1	64.4	65.2	64.6	65.8	66.6	66.7
17. Activity rate (% of population aged 15-24)	41.4	40.1	37.2	35.2	34.1	34.1	34.5	33.8	30.4	28.0	28.8	27.8
18. Activity rate (% of population aged 25-54)	74.1	75.3	76.1	76.9	78.5	79.7	80.0	81.0	80.4	83.0	83.9	84.5
19. Activity rate (% of population aged 55-64)	23.7	23.0	24.1	25.3	26.7	27.0	25.7	28.2	30.7	30.9	32.4	33.6
20. Total unemployment (000)	5	5	5	5	4	4	4	5	7	10	9	10
21. Unemployment rate (% labour force 15+)	2.9	2.9	2.7	2.7	2.4	2.3	2.0	2.7	3.7	5.1	4.5	4.7
22. Youth unemployment rate (% labour force 15-24)	7.2	8.2	7.9	6.9	6.9	7.1	7.1	7.7	11.0	16.8	13.7	16.2
23. Long term unemployment rate (% labour force)	0.7	0.8	0.9	0.9	0.7	0.6	0.6	0.7	0.9	1.1	1.2	1.4
24. Youth unemployment ratio (% population aged 15-24)	3.2	3.5	2.7	2.3	2.3	2.2	2.2	2.6	3.3	4.7	3.9	4.5
Male												
1. Total population (000)	199	203	206	208	211	212	214	216	219	221	223	232
2. Population aged 15-64	140	141	142	142	144	146	148	149	151	152	153	153
3. Total employment (000)	141	143	146	150	158	167	176	178	173	176	179	181
4. Population in employment aged 15-64	104	104	105	106	107	109	111	112	111	111	112	111
5. Employment rate (% population aged 15-64)	74.4	74.3	74.3	74.5	74.5	75.0	75.0	75.1	73.3	72.8	73.3	72.6
6. Employment rate (% population aged 15-24)	39.6	38.3	36.9	34.9	34.1	35.0	34.6	34.3	28.0	26.0	28.4	25.4
7. Employment rate (% population aged 25-54)	92.2	92.1	92.1	92.8	92.8	92.9	93.2	93.1	91.6	92.2	92.8	92.7
8. Employment rate (% population aged 55-64)	35.1	35.5	35.4	35.2	35.8	37.2	35.9	37.7	39.7	38.3	38.3	38.7
9. FTE employment rate (% population aged 15-64)	74.7	74.6	75.0	74.9	74.7	75.9	74.9	76.0	72.9	72.9	73.7	73.5
10. Self-employed (% total employment)	8.8	9.0	8.8	8.8	8.2	8.1	7.7	7.9	7.3	7.5	7.1	7.1
11. Part-time employment (% total employment)	1.4	1.1	1.0	1.5	1.5	1.7	1.4	1.8	1.6	2.5	2.5	2.6
12. Fixed term contracts (% total employees)	3.8	4.0	3.5	4.7	5.2	4.6	5.2	4.7	2.4	4.1	4.9	5.7
13. Employment in Services (% total employment)	60.1	60.8	61.2	63.0	64.3	65.2	66.1	66.2	67.7	68.8	68.7	68.7
14. Employment in Industry (% total employment)	37.6	36.7	36.3	35.1	34.0	33.0	32.2	32.1	30.8	29.7	29.7	29.8
15. Employment in Agriculture (% total employment)	2.3	2.5	2.4	1.9	1.7	1.8	1.7	1.7	1.6	1.4	1.5	1.5
16. Activity rate (% population aged 15-64)	76.1	76.1	75.8	75.9	75.9	76.3	76.3	76.7	75.5	75.6	76.0	75.3
17. Activity rate (% of population aged 15-24)	42.8	42.1	39.2	37.1	36.3	37.2	37.1	36.6	31.0	29.6	32.1	30.6
18. Activity rate (% of population aged 25-54)	93.9	93.7	93.6	94.3	94.2	94.2	94.4	94.9	94.1	95.3	95.5	95.3
19. Activity rate (% of population aged 55-64)	35.1	35.6	35.6	35.2	36.2	37.9	36.1	37.9	40.1	38.8	39.4	38.9
20. Total unemployment (000)	2	2	2	2	2	2	2	2	3	4	4	4
21. Unemployment rate (% labour force 15+)	2.0	2.2	2.0	1.9	1.8	1.8	1.7	2.0	3.0	3.7	3.5	3.5
22. Youth unemployment rate (% labour force 15-24)	6.6	8.0	6.5	6.5	6.1	6.5	7.5	6.1	9.7	12.0	11.7	17.0
23. Long term unemployment rate (% labour force)	0.6	0.7	0.7	0.7	0.6	0.5	0.5	0.6	0.9	0.8	1.2	1.2
24. Youth unemployment ratio (% population aged 15-24)	3.2	3.8	2.3	2.2	2.2	2.2	2.5	2.3	3.0	3.6	3.8	5.2
Female												
1. Total population (000)	204	208	210	212	215	218	219	221	224	224	227	225
2. Population aged 15-64	136	138	139	140	141	142	145	146	148	149	151	154
3. Total employment (000)	74	78	82	88	92	97	103	108	118	123	129	138
4. Population in employment aged 15-64	58	60	63	65	69	71	74	76	76	77	81	84
5. Employment rate (% population aged 15-64)	42.6	43.8	45.3	46.2	48.6	50.1	50.9	51.6	50.9	51.9	53.7	54.6
6. Employment rate (% population aged 15-24)	36.9	34.8	32.1	30.8	29.4	28.8	29.8	28.0	26.1	20.5	21.3	21.2
7. Employment rate (% population aged 25-54)	51.4	53.9	56.1	56.9	60.5	63.0	63.9	64.6	63.8	66.2	68.4	69.5
8. Employment rate (% population aged 55-64)	12.6	10.8	12.9	15.5	17.2	16.4	15.2	18.4	20.6	22.2	24.9	27.8
9. FTE employment rate (% population aged 15-64)	38.1	39.9	41.3	41.2	43.5	44.6	45.1	45.7	43.7	43.3	44.4	46.1
10. Self-employed (% total employment)	7.5	7.0	7.1	6.5	6.7	6.0	5.8	5.3	6.2	5.5	5.7	5.1
11. Part-time employment (% total employment)	21.8	20.5	21.0	22.0	24.0	25.1	25.8	25.3	30.7	36.3	38.2	36.2
12. Fixed term contracts (% total employees)	4.7	4.6	5.0	5.2	5.2	6.6	6.4	5.6	4.2	5.8	5.8	6.6
13. Employment in Services (% total employment)	89.7	90.6	91.2	90.2	91.7	92.7	92.6	92.7	91.9	91.0	91.6	92.0
14. Employment in Industry (% total employment)	8.6	8.2	7.6	8.4	6.9	6.3	6.5	6.5	7.2	7.9	7.6	7.1
15. Employment in Agriculture (% total employment)	1.7	1.3	1.2	1.3	1.4	1.1	0.9	0.8	0.9	1.0	0.9	0.9
16. Activity rate (% population aged 15-64)	44.6	45.9	47.1	48.1	50.3	51.6	52.2	53.6	53.5	55.8	57.0	58.2
17. Activity rate (% of population aged 15-24)	40.0	38.0	35.1	33.2	31.7	30.9	31.8	30.9	29.7	26.4	25.5	25.0
18. Activity rate (% of population aged 25-54)	53.5	56.1	58.0	59.1	62.3	64.7	65.3	66.8	66.5	70.4	72.2	73.8
19. Activity rate (% of population aged 55-64)	12.7	10.8	13.0	15.8	17.4	16.4	15.2	18.5	21.2	22.6	25.1	28.5
20. Total unemployment (000)	3	3	3	3	2	2	2	3	4	6	5	6
21. Unemployment rate (% labour force 15+)	4.3	4.2	3.9	4.0	3.3	3.1	2.6	3.7	4.7	7.1	5.8	6.2
22. Youth unemployment rate (% labour force 15-24)	7.8	8.4	9.5	7.3	7.9	7.9	6.6	9.6	12.4	22.3	16.2	15.2
23. Long term unemployment rate (% labour force)	1.0	1.1	1.3	1.1	0.9	0.6	0.6	0.9	0.9	1.4	1.2	1.6
24. Youth unemployment ratio (% population aged 15-24)	3.1	3.2	3.1	2.4	2.3	2.1	2.0	2.9	3.6	5.9	4.1	3.8

Source: Eurostat
Notes: Indicator 23: provisional.

Key employment indicators: Hungary

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	10098	10075	10016	9972	9924	10038	10012	9980	9944	9932	9921
2. Population aged 15-64	:	6835	6833	6801	6783	6764	6851	6849	6836	6826	6815	6816
3. Total employment (000)	3619	3601	3608	3672	3796	3844	3854	3856	3906	3879	3879	3905
4. Population in employment aged 15-64	:	3564	3579	3653	3769	3806	3850	3850	3897	3875	3879	3906
5. Employment rate (% population aged 15-64)	:	52.1	52.4	53.7	55.6	56.3	56.2	56.2	57.0	56.8	56.9	57.3
6. Employment rate (% population aged 15-24)	:	27.9	29.8	33.9	34.9	33.5	30.7	28.5	26.8	23.6	21.8	21.7
7. Employment rate (% population aged 25-54)	:	70.2	69.8	70.3	72.3	73.0	73.1	73.0	73.7	73.6	73.7	74.2
8. Employment rate (% population aged 55-64)	:	17.7	17.7	17.3	19.4	22.2	23.5	25.6	28.9	31.1	33.0	33.6
9. FTE employment rate (% population aged 15-64)	:	52.1	52.0	53.1	55.4	56.0	56.0	56.2	56.9	56.5	56.6	57.2
10. Self-employed (% total employment)	17.8	17.9	17.2	16.0	15.6	15.1	14.4	13.8	13.4	14.2	13.8	12.7
11. Part-time employment (% total employment)	:	:	3.7	3.8	3.8	3.5	3.6	3.6	4.4	4.7	4.1	4.0
12. Fixed term contracts (% total employees)	:	:	6.6	6.5	6.2	7.1	7.5	7.3	7.5	6.8	7.0	6.7
13. Employment in Services (% total employment)	58.7	58.6	58.5	58.0	58.8	59.8	59.5	59.8	61.3	62.0	62.7	63.0
14. Employment in Industry (% total employment)	33.1	33.0	33.5	34.4	34.3	33.9	34.3	34.2	33.4	32.9	32.4	32.3
15. Employment in Agriculture (% total employment)	8.2	8.4	8.0	7.6	6.9	6.4	6.2	6.1	5.4	5.1	4.9	4.8
16. Activity rate (% population aged 15-64)	:	57.9	57.6	58.7	59.8	60.1	59.6	59.7	60.6	60.5	61.3	62.0
17. Activity rate (% of population aged 15-24)	:	34.6	35.9	40.0	40.1	38.3	34.6	32.6	31.0	27.9	27.1	26.8
18. Activity rate (% of population aged 25-54)	:	76.8	75.8	75.9	77.1	77.3	77.1	77.0	77.8	77.9	78.7	79.6
19. Activity rate (% of population aged 55-64)	:	18.8	18.8	18.3	19.9	22.9	24.2	26.4	29.8	32.0	34.3	34.9
20. Total unemployment (000)	391	380	355	337	283	261	235	240	245	253	302	317
21. Unemployment rate (% labour force 15+)	:	9.6	9.0	8.4	6.9	6.4	5.7	5.8	5.9	6.1	7.2	7.5
22. Youth unemployment rate (% labour force 15-24)	:	18.5	17.0	15.0	12.6	12.4	11.3	12.7	13.4	15.5	19.4	19.1
23. Long term unemployment rate (% labour force)	:	5.2	4.5	4.2	3.3	3.1	2.6	2.5	2.4	2.7	3.2	3.4
24. Youth unemployment ratio (% population aged 15-24)	:	6.7	6.1	6.0	5.1	4.8	3.9	4.1	4.1	4.3	5.2	5.1
Male												
1. Total population (000)	:	4801	4799	4773	4750	4726	4756	4742	4722	4703	4698	4692
2. Population aged 15-64	:	3322	3334	3324	3315	3313	3340	3338	3329	3329	3328	3328
3. Total employment (000)	:	:	2006	2022	2086	2111	2106	2104	2118	2106	2104	2124
4. Population in employment aged 15-64	:	1975	1990	2011	2069	2089	2102	2100	2113	2102	2101	2122
5. Employment rate (% population aged 15-64)	:	59.5	59.7	60.5	62.4	63.1	62.9	62.9	63.5	63.1	63.1	63.8
6. Employment rate (% population aged 15-24)	:	31.3	33.6	37.6	38.7	37.3	34.4	31.2	29.8	26.3	24.4	24.5
7. Employment rate (% population aged 25-54)	:	77.7	77.4	76.8	78.7	79.2	79.4	79.7	80.1	80.5	80.3	81.0
8. Employment rate (% population aged 55-64)	:	27.2	27.0	27.0	29.7	33.2	34.1	35.5	37.8	38.4	40.6	41.4
9. FTE employment rate (% population aged 15-64)	:	60.1	60.4	60.5	63.2	63.6	63.4	63.6	64.0	63.7	63.5	64.5
10. Self-employed (% total employment)	:	:	21.1	19.5	19.3	18.8	17.8	17.0	16.9	17.7	17.1	15.8
11. Part-time employment (% total employment)	:	:	2.0	2.3	2.4	2.0	2.2	2.3	2.8	3.2	2.7	2.6
12. Fixed term contracts (% total employees)	:	:	7.0	7.1	6.5	7.7	8.1	7.9	8.3	7.5	7.6	7.4
13. Employment in Services (% total employment)	:	:	48.7	47.7	48.4	49.9	49.9	49.8	50.6	51.1	51.4	51.6
14. Employment in Industry (% total employment)	:	:	40.4	41.9	42.0	41.3	41.7	42.0	41.7	41.6	41.9	41.8
15. Employment in Agriculture (% total employment)	:	:	10.8	10.5	9.6	8.9	8.4	8.2	7.7	7.3	6.8	6.6
16. Activity rate (% population aged 15-64)	:	66.6	66.2	66.6	67.6	67.9	67.2	67.1	67.6	67.2	67.9	68.7
17. Activity rate (% of population aged 15-24)	:	39.6	41.3	45.1	45.0	43.2	39.2	36.0	34.6	31.4	30.3	30.1
18. Activity rate (% of population aged 25-54)	:	85.7	84.5	83.5	84.3	84.4	84.2	84.3	84.8	85.0	85.5	86.5
19. Activity rate (% of population aged 55-64)	:	28.9	28.8	28.5	30.8	34.5	35.4	36.9	38.9	39.7	42.3	43.1
20. Total unemployment (000)	236	226	214	199	168	159	143	139	139	137	159	165
21. Unemployment rate (% labour force 15+)	:	10.2	9.7	9.0	7.5	7.0	6.3	6.2	6.1	6.1	7.0	7.2
22. Youth unemployment rate (% labour force 15-24)	:	19.9	18.6	16.6	13.7	13.6	12.3	13.2	13.8	16.2	19.6	18.6
23. Long term unemployment rate (% labour force)	:	5.8	4.9	4.5	3.7	3.5	3.0	2.8	2.5	2.8	3.3	3.3
24. Youth unemployment ratio (% population aged 15-24)	:	8.3	7.7	7.5	6.2	5.9	4.8	4.8	4.8	5.1	6.0	5.6
Female												
1. Total population (000)	:	5297	5275	5243	5222	5199	5282	5270	5258	5241	5234	5228
2. Population aged 15-64	:	3513	3500	3477	3468	3452	3511	3512	3506	3497	3486	3488
3. Total employment (000)	:	:	1602	1649	1711	1734	1748	1751	1788	1773	1775	1781
4. Population in employment aged 15-64	:	1588	1588	1642	1700	1717	1747	1750	1785	1773	1777	1784
5. Employment rate (% population aged 15-64)	:	45.2	45.4	47.2	49.0	49.7	49.8	49.8	50.9	50.7	51.0	51.1
6. Employment rate (% population aged 15-24)	:	24.4	26.0	30.2	31.1	29.7	26.9	25.8	23.8	20.8	19.2	18.8
7. Employment rate (% population aged 25-54)	:	62.9	62.5	63.9	66.1	66.9	67.0	66.5	67.4	67.0	67.2	67.6
8. Employment rate (% population aged 55-64)	:	10.1	10.3	9.6	11.3	13.3	14.9	17.6	21.8	25.0	26.7	27.1
9. FTE employment rate (% population aged 15-64)	:	44.5	43.9	46.0	47.9	48.7	48.8	49.1	50.0	49.5	49.9	50.2
10. Self-employed (% total employment)	:	:	12.4	11.6	11.2	10.5	10.2	10.0	9.2	10.1	9.8	9.1
11. Part-time employment (% total employment)	:	:	5.6	5.5	5.5	5.2	5.2	5.1	6.2	6.3	5.8	5.6
12. Fixed term contracts (% total employees)	:	:	6.1	5.8	5.8	6.5	6.8	6.6	6.7	6.1	6.4	6.0
13. Employment in Services (% total employment)	:	:	70.9	70.6	71.4	71.7	71.1	71.7	73.9	74.9	76.1	76.4
14. Employment in Industry (% total employment)	:	:	24.7	25.3	25.0	24.9	25.5	24.7	23.5	22.6	21.2	20.9
15. Employment in Agriculture (% total employment)	:	:	4.4	4.1	3.7	3.3	3.4	3.6	2.6	2.6	2.7	2.7
16. Activity rate (% population aged 15-64)	:	49.7	49.3	51.2	52.3	52.7	52.4	52.7	53.9	54.0	55.1	55.5
17. Activity rate (% of population aged 15-24)	:	29.6	30.5	34.7	35.0	33.3	29.9	29.3	27.3	24.3	23.8	23.4
18. Activity rate (% of population aged 25-54)	:	68.2	67.2	68.6	70.0	70.4	70.1	69.9	71.0	70.9	72.1	72.9
19. Activity rate (% of population aged 55-64)	:	10.7	10.8	10.2	11.4	13.5	15.1	18.0	22.4	25.8	27.7	28.2
20. Total unemployment (000)	154	153	140	138	114	102	92	101	106	116	143	152
21. Unemployment rate (% labour force 15+)	:	8.8	8.1	7.8	6.3	5.6	5.0	5.4	5.6	6.1	7.4	7.8
22. Youth unemployment rate (% labour force 15-24)	:	16.6	14.8	13.0	11.2	10.8	10.0	11.9	12.8	14.4	19.0	19.8
23. Long term unemployment rate (% labour force)	:	4.5	4.0	3.8	2.9	2.5	2.1	2.2	2.3	2.6	3.2	3.4
24. Youth unemployment ratio (% population aged 15-24)	:	5.2	4.5	4.5	4.0	3.6	3.0	3.5	3.5	3.5	4.5	4.6

Source: Eurostat

Key employment indicators: Malta

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	:	:	389	393	396	399	400	402	405
2. Population aged 15-64	:	:	:	:	:	263	267	269	271	272	274	276
3. Total employment (000)	132	134	134	134	135	146	149	150	151	150	153	154
4. Population in employment aged 15-64	:	:	:	:	:	143	145	147	147	147	148	152
5. Employment rate (% population aged 15-64)	:	:	:	:	:	54.2	54.3	54.4	54.2	54.0	53.9	54.8
6. Employment rate (% population aged 15-24)	:	:	:	:	:	52.8	52.3	50.5	47.2	46.2	45.3	44.7
7. Employment rate (% population aged 25-54)	:	:	:	:	:	60.6	61.0	61.6	61.8	62.1	62.4	64.4
8. Employment rate (% population aged 55-64)	:	:	:	:	:	28.5	29.4	30.1	32.5	31.5	30.8	30.0
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	54.2	53.4	53.7	53.0	52.6	51.1	53.0
10. Self-employed (% total employment)	12.1	11.9	11.9	11.9	11.9	11.8	11.2	11.2	11.5	11.7	11.7	11.8
11. Part-time employment (% total employment)	:	:	:	:	:	6.8	7.4	8.3	9.2	8.7	9.6	10.1
12. Fixed term contracts (% total employees)	:	:	:	:	:	4.1	4.0	4.3	3.6	4.0	4.5	3.8
13. Employment in Services (% total employment)	:	:	62.3	62.0	63.1	63.7	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	35.7	36.0	35.0	34.3	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	2.0	2.0	2.0	1.9	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	58.0	58.1	58.5	58.6	58.2	58.1	59.2
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	58.7	60.8	58.8	56.5	55.3	54.4	53.3
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	64.3	63.8	65.0	65.4	65.3	65.7	68.0
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	29.6	30.1	30.7	33.4	32.3	31.9	30.8
20. Total unemployment (000)	7	8	10	10	11	10	12	12	12	12	12	12
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	6.7	7.6	7.5	7.6	7.4	7.3	7.4
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	13.7	18.8	17.1	17.2	16.8	16.4	16.9
23. Long term unemployment rate (% labour force)	:	:	:	:	:	4.4	3.7	3.3	3.2	3.4	3.4	2.9
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	5.9	8.5	8.3	9.3	9.2	9.1	8.6
Male												
1. Total population (000)	:	:	:	:	:	193	195	196	198	198	199	201
2. Population aged 15-64	:	:	:	:	:	132	134	135	136	137	138	139
3. Total employment (000)	:	:	:	:	:	102	105	104	105	105	106	106
4. Population in employment aged 15-64	:	:	:	:	:	99	103	101	102	103	102	104
5. Employment rate (% population aged 15-64)	:	:	:	:	:	75.0	76.2	74.7	74.5	75.1	73.8	74.5
6. Employment rate (% population aged 15-24)	:	:	:	:	:	53.4	54.3	51.7	49.1	50.4	46.7	47.3
7. Employment rate (% population aged 25-54)	:	:	:	:	:	88.1	90.0	88.5	88.3	88.8	88.9	89.8
8. Employment rate (% population aged 55-64)	:	:	:	:	:	50.8	50.4	50.8	53.8	53.4	50.8	50.4
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	76.5	76.3	75.7	75.3	75.5	72.0	74.4
10. Self-employed (% total employment)	:	:	:	:	:	14.4	13.6	14.1	13.8	14.5	14.7	14.9
11. Part-time employment (% total employment)	:	:	:	:	:	3.0	3.2	3.9	3.8	4.1	4.5	4.8
12. Fixed term contracts (% total employees)	:	:	:	:	:	3.4	2.8	3.4	3.0	3.1	3.7	2.7
13. Employment in Services (% total employment)	:	:	:	:	:	59.5	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	38.0	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	2.5	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	80.5	81.3	80.1	80.2	80.2	79.1	79.7
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	60.9	64.8	61.1	58.8	59.9	56.4	57.3
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	93.5	94.0	93.2	93.5	93.3	93.2	94.1
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	52.7	51.6	52.0	55.5	54.7	53.1	51.6
20. Total unemployment (000)	5	5	6	7	7	7	8	7	8	7	7	7
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	6.4	6.9	6.6	6.9	6.6	6.5	6.5
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	14.9	20.5	17.6	16.8	16.3	16.8	17.9
23. Long term unemployment rate (% labour force)	:	:	:	:	:	4.5	3.9	3.5	3.4	3.7	3.4	3.1
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	7.5	10.5	9.4	9.7	9.5	9.7	10.0
Female												
1. Total population (000)	:	:	:	:	:	196	198	200	201	202	203	204
2. Population aged 15-64	:	:	:	:	:	131	133	134	135	136	136	137
3. Total employment (000)	:	:	:	:	:	44	44	46	47	45	47	49
4. Population in employment aged 15-64	:	:	:	:	:	43	43	45	45	44	46	48
5. Employment rate (% population aged 15-64)	:	:	:	:	:	33.1	32.1	33.9	33.6	32.7	33.7	34.9
6. Employment rate (% population aged 15-24)	:	:	:	:	:	52.2	50.2	49.2	45.2	41.8	43.9	42.0
7. Employment rate (% population aged 25-54)	:	:	:	:	:	32.7	31.4	34.2	34.7	34.8	35.4	38.4
8. Employment rate (% population aged 55-64)	:	:	:	:	:	8.4	10.2	10.9	13.0	11.5	12.4	11.2
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	31.7	30.4	31.7	30.6	29.7	30.1	31.5
10. Self-employed (% total employment)	:	:	:	:	:	5.9	5.6	4.6	6.4	5.3	5.2	5.0
11. Part-time employment (% total employment)	:	:	:	:	:	15.5	17.5	18.3	21.3	19.3	21.1	21.8
12. Fixed term contracts (% total employees)	:	:	:	:	:	5.6	6.4	5.9	4.8	5.8	6.1	6.0
13. Employment in Services (% total employment)	:	:	:	:	:	73.5	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	25.8	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	0.7	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	35.2	34.6	36.7	36.8	36.0	36.9	38.3
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	56.3	56.6	56.4	54.0	50.6	52.4	49.1
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	34.6	33.1	36.2	36.8	36.8	37.6	41.2
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	8.8	10.3	11.1	13.1	11.9	12.4	11.7
20. Total unemployment (000)	2	3	3	3	4	4	5	5	5	4	5	5
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	7.4	9.3	9.3	9.1	9.0	9.0	9.2
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	12.3	16.9	16.7	17.8	17.4	16.0	15.7
23. Long term unemployment rate (% labour force)	:	:	:	:	:	4.2	2.7	2.4	2.4	3.0	3.2	2.6
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	4.1	6.4	7.2	8.8	8.8	8.5	7.1

Source: Eurostat
Notes: Indicator 1: 2000-2001 estimate.

Key employment indicators: Netherlands

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	15217	15290	15383	15485	15591	15680	15837	15964	16037	16119	16107	16142
2. Population aged 15-64	10494	10532	10575	10618	10670	10722	10801	10871	10920	10960	10943	10964
3. Total employment (000)	6835	7005	7239	7533	7825	8071	8283	8324	8283	8205	8208	8306
4. Population in employment aged 15-64	6789	6981	7248	7458	7650	7819	8005	8089	8042	8014	8013	8152
5. Employment rate (% population aged 15-64)	64.7	66.3	68.5	70.2	71.7	72.9	74.1	74.4	73.6	73.1	73.2	74.3
6. Employment rate (% population aged 15-24)	54.6	54.9	58.6	61.9	64.5	68.7	70.4	70.0	68.3	65.9	65.2	66.2
7. Employment rate (% population aged 25-54)	74.9	76.8	78.7	80.0	81.1	81.7	82.8	82.8	82.6	82.5	82.9	84.2
8. Employment rate (% population aged 55-64)	28.9	30.5	32.0	33.9	36.4	38.2	39.6	42.3	44.3	45.2	46.1	47.7
9. FTE employment rate (% population aged 15-64)	51.4	52.1	54.1	55.6	56.8	57.5	58.1	58.1	57.2	56.5	56.4	57.3
10. Self-employed (% total employment)	11.6	11.7	11.9	12.2	12.6	13.1	13.7	13.5	13.5	13.8	14.1	13.9
11. Part-time employment (% total employment)	37.4	38.0	37.9	38.9	39.7	41.5	42.2	43.9	45.0	45.5	46.1	46.2
12. Fixed term contracts (% total employees)	11.4	12.3	11.8	13.0	12.3	13.7	14.3	14.4	14.5	14.8	15.5	16.6
13. Employment in Services (% total employment)	75.2	75.8	76.1	76.6	77.0	77.3	77.5	77.9	78.5	79.1	79.4	79.8
14. Employment in Industry (% total employment)	21.6	21.0	20.6	20.1	19.7	19.4	19.0	18.7	18.1	17.7	17.4	17.0
15. Employment in Agriculture (% total employment)	3.2	3.2	3.2	3.2	3.3	3.3	3.4	3.4	3.4	3.3	3.2	3.1
16. Activity rate (% population aged 15-64)	69.3	70.3	72.0	73.0	74.1	75.2	75.8	76.5	76.5	76.6	76.9	77.4
17. Activity rate (% of population aged 15-24)	62.1	61.6	64.5	67.4	69.3	72.9	73.8	73.7	72.9	71.6	71.0	70.8
18. Activity rate (% of population aged 25-54)	79.4	80.7	82.0	82.5	83.3	83.7	84.3	84.8	85.3	85.9	86.5	87.1
19. Activity rate (% of population aged 55-64)	30.0	31.7	33.0	34.5	37.3	39.0	40.2	43.3	45.5	46.9	48.1	49.6
20. Total unemployment (000)	478	443	374	296	253	230	183	232	311	387	402	336
21. Unemployment rate (% labour force 15+)	6.6	6.0	4.9	3.8	3.2	2.8	2.2	2.8	3.7	4.6	4.7	3.9
22. Youth unemployment rate (% labour force 15-24)	11.4	11.1	9.1	7.6	6.8	5.7	4.5	5.0	6.3	8.0	8.2	6.6
23. Long term unemployment rate (% labour force)	3.1	3.0	2.3	1.5	1.2	0.8	0.6	0.7	1.0	1.6	1.9	1.7
24. Youth unemployment ratio (% population aged 15-24)	7.5	6.7	5.9	5.5	4.8	4.2	3.4	3.7	4.6	5.7	5.8	4.6
Male												
1. Total population (000)	7560	7595	7642	7690	7741	7789	7865	7930	7969	8012	7992	8006
2. Population aged 15-64	5323	5342	5363	5382	5405	5431	5469	5502	5525	5543	5519	5524
3. Total employment (000)	4045	4113	4231	4370	4479	4610	4695	4681	4626	4569	4537	4577
4. Population in employment aged 15-64	4006	4087	4227	4314	4372	4460	4526	4536	4479	4447	4411	4471
5. Employment rate (% population aged 15-64)	75.3	76.5	78.8	80.2	80.9	82.1	82.8	82.4	81.1	80.2	79.9	80.9
6. Employment rate (% population aged 15-24)	55.2	55.3	60.2	62.8	64.6	70.0	71.2	70.6	68.9	66.3	65.5	67.2
7. Employment rate (% population aged 25-54)	88.0	89.3	90.7	91.4	91.7	92.2	92.7	91.8	90.6	90.2	90.3	91.4
8. Employment rate (% population aged 55-64)	39.7	41.4	44.3	47.5	49.6	50.2	51.1	54.6	56.7	56.9	56.9	58.0
9. FTE employment rate (% population aged 15-64)	69.0	69.7	71.7	73.1	73.8	74.7	75.0	74.7	73.2	72.0	71.7	72.3
10. Self-employed (% total employment)	12.6	13.0	13.2	13.7	14.0	14.8	15.3	15.5	15.9	16.1	16.6	16.5
11. Part-time employment (% total employment)	16.7	16.9	17.2	18.1	18.0	19.3	20.0	21.2	22.0	22.3	22.6	23.0
12. Fixed term contracts (% total employees)	9.1	9.3	9.3	10.5	9.7	11.2	11.9	12.1	12.9	13.4	14.3	15.4
13. Employment in Services (% total employment)	65.8	66.4	66.9	67.8	68.1	68.4	68.6	68.8	69.2	69.6	70.0	70.4
14. Employment in Industry (% total employment)	30.0	29.5	29.1	28.3	27.9	27.6	27.4	27.0	26.5	26.1	25.9	25.5
15. Employment in Agriculture (% total employment)	4.2	4.1	4.0	3.9	4.0	4.0	4.1	4.2	4.3	4.2	4.1	4.1
16. Activity rate (% population aged 15-64)	79.7	80.3	81.9	82.6	82.9	84.1	84.3	84.5	84.0	83.9	83.7	83.9
17. Activity rate (% of population aged 15-24)	62.1	62.1	65.9	68.1	68.8	73.7	74.4	74.5	73.5	72.0	71.2	71.5
18. Activity rate (% of population aged 25-54)	92.4	92.8	93.5	93.4	93.4	93.9	94.0	93.6	93.5	93.7	93.8	94.1
19. Activity rate (% of population aged 55-64)	41.1	42.7	45.3	48.2	50.6	51.2	51.8	55.8	58.2	59.1	59.5	60.4
20. Total unemployment (000)	234	205	163	132	104	102	83	116	165	204	209	167
21. Unemployment rate (% labour force 15+)	5.5	4.8	3.7	3.0	2.3	2.2	1.8	2.5	3.5	4.3	4.4	3.5
22. Youth unemployment rate (% labour force 15-24)	10.7	10.5	7.9	7.4	5.2	4.9	4.3	5.2	6.3	7.9	8.0	6.1
23. Long term unemployment rate (% labour force)	2.9	2.6	1.8	1.3	0.9	0.6	0.5	0.6	1.0	1.5	1.9	1.6
24. Youth unemployment ratio (% population aged 15-24)	6.9	6.7	5.7	5.2	4.2	3.7	3.2	3.9	4.6	5.7	5.7	4.3
Female												
1. Total population (000)	7657	7695	7741	7795	7850	7890	7972	8035	8068	8107	8116	8136
2. Population aged 15-64	5171	5190	5213	5236	5266	5291	5332	5368	5395	5417	5424	5441
3. Total employment (000)	2790	2892	3008	3163	3346	3461	3588	3644	3657	3636	3672	3729
4. Population in employment aged 15-64	2783	2894	3022	3145	3278	3359	3479	3553	3562	3567	3603	3681
5. Employment rate (% population aged 15-64)	53.8	55.8	58.0	60.1	62.3	63.5	65.2	66.2	66.0	65.8	66.4	67.7
6. Employment rate (% population aged 15-24)	54.0	54.5	57.0	61.0	64.4	67.3	69.6	69.5	67.8	65.4	64.9	65.1
7. Employment rate (% population aged 25-54)	61.3	63.7	66.3	68.3	70.2	70.8	72.5	73.6	74.4	74.6	75.5	77.0
8. Employment rate (% population aged 55-64)	18.3	19.7	19.9	20.3	23.1	26.1	28.0	29.9	31.8	33.4	35.2	37.2
9. FTE employment rate (% population aged 15-64)	33.8	34.5	36.6	38.3	40.0	40.5	41.6	42.0	41.7	41.5	41.7	42.9
10. Self-employed (% total employment)	10.2	9.7	10.0	10.2	10.7	10.9	11.4	10.9	10.4	11.0	11.1	10.8
11. Part-time employment (% total employment)	67.4	68.1	67.3	67.6	68.9	71.0	71.3	73.1	74.1	74.7	75.1	74.7
12. Fixed term contracts (% total employees)	14.6	16.3	15.3	16.4	15.6	16.8	17.4	17.1	16.4	16.5	16.9	18.0
13. Employment in Services (% total employment)	89.2	89.7	89.5	89.1	89.3	89.3	89.5	89.9	90.5	90.8	90.9	91.2
14. Employment in Industry (% total employment)	8.9	8.3	8.3	8.6	8.4	8.3	7.9	7.8	7.4	7.1	7.0	6.8
15. Employment in Agriculture (% total employment)	1.9	2.0	2.2	2.3	2.3	2.3	2.6	2.3	2.2	2.1	2.1	2.0
16. Activity rate (% population aged 15-64)	58.6	60.1	61.8	63.2	65.2	66.0	67.1	68.3	68.7	69.2	70.0	70.7
17. Activity rate (% of population aged 15-24)	62.3	61.1	63.0	66.8	69.8	72.0	73.1	73.0	72.3	71.1	70.8	70.1
18. Activity rate (% of population aged 25-54)	66.0	68.2	70.1	71.3	72.9	73.2	74.3	75.7	77.0	77.9	79.0	80.1
19. Activity rate (% of population aged 55-64)	19.0	20.9	20.9	20.9	24.0	26.7	28.4	30.6	32.6	34.4	36.5	38.6
20. Total unemployment (000)	244	238	211	164	150	128	100	116	145	183	194	169
21. Unemployment rate (% labour force 15+)	8.1	7.7	6.6	5.0	4.4	3.6	2.8	3.1	3.9	4.8	5.1	4.4
22. Youth unemployment rate (% labour force 15-24)	12.1	11.8	10.4	7.9	8.5	6.5	4.8	4.8	6.3	8.1	8.4	7.1
23. Long term unemployment rate (% labour force)	3.4	3.7	3.1	1.8	1.5	1.0	0.7	0.9	1.1	1.6	1.9	1.8
24. Youth unemployment ratio (% population aged 15-24)	8.2	6.7	6.1	5.8	5.4	4.7	3.6	3.5	4.6	5.7	5.9	4.9

Source: Eurostat

Key employment indicators: Austria

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	7887	7899	7908	7915	7930	7944	7963	7893	7998	8045	8109	8155
2. Population aged 15-64	5309	5316	5324	5333	5345	5375	5404	5356	5459	5485	5516	5532
3. Total employment (000)	3918	3932	3967	4017	4083	4122	4147	4142	4140	4139	4158	4216
4. Population in employment aged 15-64	3650	3607	3611	3621	3666	3678	3707	3682	3763	3716	3786	3881
5. Employment rate (% population aged 15-64)	68.8	67.8	67.8	67.9	68.6	68.5	68.5	68.7	68.9	67.8	68.6	70.2
6. Employment rate (% population aged 15-24)	57.4	55.3	54.7	54.5	54.1	52.4	51.3	51.7	51.1	51.9	53.1	54.0
7. Employment rate (% population aged 25-54)	80.6	80.3	80.8	81.0	81.9	82.6	82.9	83.6	84.0	82.6	82.6	83.5
8. Employment rate (% population aged 55-64)	29.7	29.1	28.3	28.4	29.7	28.8	28.9	29.1	30.3	28.8	31.8	35.5
9. FTE employment rate (% population aged 15-64)	65.8	63.6	63.5	63.8	63.9	63.5	63.4	62.9	63.2	60.6	60.7	61.0
10. Self-employed (% total employment)	20.2	20.6	20.6	20.7	20.7	20.5	20.4	20.5	20.2	19.9	19.4	19.2
11. Part-time employment (% total employment)	13.6	14.0	14.7	15.7	16.4	16.3	18.2	19.0	18.7	19.8	21.1	21.8
12. Fixed term contracts (% total employees)	6.8	7.9	7.8	7.9	7.9	8.0	7.9	7.4	6.9	9.6	9.1	9.0
13. Employment in Services (% total employment)	59.1	59.9	60.5	61.2	61.9	62.8	63.3	64.0	64.2	64.8	65.1	65.7
14. Employment in Industry (% total employment)	26.1	25.6	25.2	24.8	24.3	23.9	23.5	22.9	23.0	22.8	23.1	22.9
15. Employment in Agriculture (% total employment)	14.7	14.5	14.3	14.0	13.8	13.4	13.1	13.1	12.8	12.4	11.8	11.4
16. Activity rate (% population aged 15-64)	71.4	70.8	70.9	71.0	71.2	71.0	71.0	71.6	72.0	71.3	72.4	73.7
17. Activity rate (% of population aged 15-24)	60.6	59.1	58.5	58.0	59.2	55.4	54.5	55.1	55.0	57.4	59.2	59.4
18. Activity rate (% of population aged 25-54)	83.5	83.5	84.2	84.4	84.7	85.3	85.4	86.6	87.3	86.3	86.4	87.1
19. Activity rate (% of population aged 55-64)	30.8	30.4	29.6	29.8	29.1	30.5	30.1	30.8	32.0	29.9	33.0	36.8
20. Total unemployment (000)	148	163	164	170	150	138	138	163	166	188	208	196
21. Unemployment rate (% labour force 15+)	3.9	4.3	4.4	4.5	3.9	3.6	3.6	4.2	4.3	4.8	5.2	4.8
22. Youth unemployment rate (% labour force 15-24)	5.6	6.3	6.7	6.4	5.4	5.3	5.8	6.7	8.1	9.4	10.3	9.2
23. Long term unemployment rate (% labour force)	1.0	1.2	1.3	1.3	1.2	1.0	0.9	1.1	1.1	1.3	1.3	1.3
24. Youth unemployment ratio (% population aged 15-24)	3.2	3.8	3.9	3.5	3.0	2.8	3.1	3.4	3.9	5.6	6.1	5.4
Male												
1. Total population (000)	3809	3815	3819	3821	3830	3840	3854	3805	3877	3898	3939	3964
2. Population aged 15-64	2656	2658	2659	2661	2663	2678	2693	2653	2718	2728	2745	2753
3. Total employment (000)	2238	2239	2251	2275	2303	2324	2319	2280	2285	2279	2278	2305
4. Population in employment aged 15-64	2085	2054	2049	2050	2067	2069	2060	2026	2076	2043	2070	2118
5. Employment rate (% population aged 15-64)	78.5	77.3	77.1	77.0	77.6	77.3	76.4	76.4	76.4	74.9	75.4	76.9
6. Employment rate (% population aged 15-24)	61.0	58.8	58.3	57.9	58.6	57.0	55.6	56.0	55.7	56.0	56.8	58.2
7. Employment rate (% population aged 25-54)	91.0	90.1	90.4	90.5	90.8	91.3	90.6	91.1	91.1	89.4	89.1	89.9
8. Employment rate (% population aged 55-64)	42.2	41.6	40.3	40.5	42.6	41.2	40.1	39.6	40.4	38.9	41.3	45.3
9. FTE employment rate (% population aged 15-64)	78.3	76.0	75.9	76.4	76.9	76.2	76.0	74.8	74.9	72.6	72.0	72.6
10. Self-employed (% total employment)	20.5	20.8	21.1	21.4	21.6	21.6	21.8	22.2	22.2	23.0	22.3	21.7
11. Part-time employment (% total employment)	3.8	3.7	4.1	4.4	4.2	4.1	4.8	5.1	4.7	4.9	6.1	6.5
12. Fixed term contracts (% total employees)	6.6	7.8	7.5	8.0	7.9	7.4	7.2	7.6	7.1	10.2	9.3	9.1
13. Employment in Services (% total employment)	49.9	50.4	50.7	51.3	51.8	52.2	53.1	53.0	52.9	54.7	54.4	55.0
14. Employment in Industry (% total employment)	36.6	36.5	36.1	35.8	35.3	34.6	34.3	34.1	34.4	33.1	33.8	33.5
15. Employment in Agriculture (% total employment)	13.5	13.1	13.2	13.0	13.0	13.1	12.7	12.9	12.7	12.2	11.9	11.5
16. Activity rate (% population aged 15-64)	81.1	80.5	80.3	80.3	80.5	80.1	79.4	79.6	79.9	78.5	79.3	80.5
17. Activity rate (% of population aged 15-24)	64.1	62.7	62.0	61.2	63.9	60.3	59.2	59.9	60.3	61.7	63.6	63.9
18. Activity rate (% of population aged 25-54)	93.6	93.4	93.9	94.1	93.9	94.0	93.7	94.3	94.6	92.9	92.8	93.2
19. Activity rate (% of population aged 55-64)	44.0	43.8	42.5	42.8	42.2	43.6	42.1	42.1	42.9	40.6	43.0	47.3
20. Total unemployment (000)	65	76	76	79	71	65	66	85	84	94	107	98
21. Unemployment rate (% labour force 15+)	3.1	3.6	3.6	3.8	3.3	3.1	3.1	4.0	4.0	4.4	4.9	4.4
22. Youth unemployment rate (% labour force 15-24)	4.5	5.3	5.5	5.0	4.3	4.7	5.2	6.4	7.3	9.0	10.5	9.0
23. Long term unemployment rate (% labour force)	0.7	0.9	1.0	1.0	0.9	0.9	0.7	1.0	1.1	1.3	1.2	1.3
24. Youth unemployment ratio (% population aged 15-24)	3.1	4.0	3.7	3.3	2.9	3.0	3.4	3.9	4.5	5.7	6.8	5.7
Female												
1. Total population (000)	4078	4083	4089	4093	4100	4104	4109	4088	4120	4147	4170	4191
2. Population aged 15-64	2653	2658	2665	2672	2682	2696	2711	2704	2741	2757	2770	2779
3. Total employment (000)	1680	1693	1716	1742	1780	1799	1828	1861	1855	1860	1880	1911
4. Population in employment aged 15-64	1565	1553	1562	1571	1599	1608	1647	1656	1688	1673	1717	1764
5. Employment rate (% population aged 15-64)	59.0	58.4	58.6	58.8	59.6	59.6	60.7	61.3	61.6	60.7	62.0	63.5
6. Employment rate (% population aged 15-24)	53.8	51.8	51.1	51.2	49.7	47.9	47.1	47.4	46.5	47.9	49.4	49.9
7. Employment rate (% population aged 25-54)	70.1	70.3	71.0	71.3	73.0	73.8	75.2	76.2	76.9	75.8	76.0	77.0
8. Employment rate (% population aged 55-64)	18.2	17.3	17.0	17.1	17.6	17.2	18.4	19.3	20.8	19.3	22.9	26.3
9. FTE employment rate (% population aged 15-64)	53.4	51.2	51.3	51.3	51.0	51.0	50.9	51.2	51.6	49.0	50.0	49.9
10. Self-employed (% total employment)	19.9	20.3	19.9	19.8	19.5	19.0	18.7	18.4	17.9	16.1	15.9	16.1
11. Part-time employment (% total employment)	26.8	27.6	28.5	30.5	32.2	32.2	35.0	35.9	36.0	38.0	39.3	40.2
12. Fixed term contracts (% total employees)	6.9	8.1	8.1	7.7	8.0	8.8	8.7	7.3	6.7	9.0	8.8	8.9
13. Employment in Services (% total employment)	70.7	71.8	72.9	73.4	74.3	75.6	75.6	76.6	77.2	76.6	77.6	78.0
14. Employment in Industry (% total employment)	13.0	12.0	11.5	11.3	11.0	10.8	10.7	10.0	9.8	10.7	10.7	10.6
15. Employment in Agriculture (% total employment)	16.3	16.2	15.5	15.3	14.7	13.6	13.7	13.3	12.9	12.7	11.7	11.4
16. Activity rate (% population aged 15-64)	61.7	61.2	61.5	61.7	62.0	62.0	62.5	63.7	64.3	64.2	65.6	67.0
17. Activity rate (% of population aged 15-24)	57.0	55.4	55.1	54.9	54.7	50.5	49.7	50.3	49.8	53.3	54.8	55.1
18. Activity rate (% of population aged 25-54)	73.1	73.3	74.3	74.6	75.5	76.5	77.2	79.0	79.9	79.6	79.9	80.9
19. Activity rate (% of population aged 55-64)	18.7	17.9	17.4	17.7	16.8	18.0	18.8	20.1	21.7	19.9	23.5	26.9
20. Total unemployment (000)	83	86	89	90	79	73	72	78	82	94	101	98
21. Unemployment rate (% labour force 15+)	5.0	5.3	5.4	5.4	4.7	4.3	4.2	4.4	4.7	5.3	5.5	5.2
22. Youth unemployment rate (% labour force 15-24)	6.8	7.4	7.9	7.9	6.6	6.0	6.5	7.1	8.9	9.8	10.1	9.4
23. Long term unemployment rate (% labour force)	1.5	1.5	1.6	1.8	1.5	1.2	1.1	1.2	1.1	1.4	1.4	1.3
24. Youth unemployment ratio (% population aged 15-24)	3.2	3.6	4.0	3.7	3.0	2.7	2.8	2.9	3.2	5.4	5.4	5.1

Source: Eurostat
Notes: EU LFS indicators: break in 2004; Indicator 3: figures in unit of 1000 jobs.

Key employment indicators: Poland

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	37922	37978	37985	38033	38109	38070	37657	37601	37527	37446
2. Population aged 15-64	:	:	25005	25247	25461	25739	25986	26159	26031	26142	26211	26325
3. Total employment (000)	14791	14968	15177	15356	14757	14526	14207	13782	13617	13795	14116	14577
4. Population in employment aged 15-64	:	:	14726	14894	14664	14155	13866	13470	13324	13504	13834	14338
5. Employment rate (% population aged 15-64)	:	:	58.9	59.0	57.6	55.0	53.4	51.5	51.2	51.7	52.8	54.5
6. Employment rate (% population aged 15-24)	:	:	28.9	28.5	25.9	24.5	24.0	21.7	21.2	21.7	22.5	24.0
7. Employment rate (% population aged 25-54)	:	:	74.7	75.3	73.8	70.9	69.2	67.4	67.5	68.2	69.6	71.8
8. Employment rate (% population aged 55-64)	:	:	33.9	32.1	31.9	28.4	27.4	26.1	26.9	26.2	27.2	28.1
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	52.9	50.7	50.3	50.2	51.1	52.9
10. Self-employed (% total employment)	29.7	29.5	28.3	27.1	26.9	27.4	28.0	28.1	27.3	26.7	25.8	25.7
11. Part-time employment (% total employment)	:	:	10.6	10.4	10.5	10.5	10.3	10.8	10.5	10.8	10.8	9.8
12. Fixed term contracts (% total employees)	:	:	4.8	4.7	4.6	5.8	11.7	15.4	19.4	22.7	25.7	27.3
13. Employment in Services (% total employment)	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
14. Employment in Industry (% total employment)	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9
15. Employment in Agriculture (% total employment)	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
16. Activity rate (% population aged 15-64)	:	:	65.9	65.7	65.9	65.8	65.5	64.6	63.9	64.0	64.4	63.4
17. Activity rate (% of population aged 15-24)	:	:	36.7	36.2	36.1	37.8	39.7	37.8	36.4	35.9	35.7	34.2
18. Activity rate (% of population aged 25-54)	:	:	82.6	82.6	82.5	82.4	81.9	81.5	81.4	81.9	82.5	81.7
19. Activity rate (% of population aged 55-64)	:	:	35.8	34.1	34.5	31.3	30.2	29.1	30.1	29.6	30.5	30.7
20. Total unemployment (000)	2279	2241	1849	1730	2300	2788	3170	3431	3323	3230	3045	2344
21. Unemployment rate (% labour force 15+)	:	:	10.9	10.2	13.4	16.1	18.2	19.9	19.6	19.0	17.7	13.8
22. Youth unemployment rate (% labour force 15-24)	:	:	23.2	22.5	30.1	35.1	39.5	42.5	41.9	39.6	36.9	29.8
23. Long term unemployment rate (% labour force)	:	:	5.0	4.7	5.8	7.4	9.2	10.9	11.0	10.3	10.2	7.8
24. Youth unemployment ratio (% population aged 15-24)	:	:	7.8	7.7	10.2	13.3	15.7	16.1	15.2	14.2	13.2	10.2
Male												
1. Total population (000)	:	:	18308	18335	18339	18371	18408	18381	18169	18139	18104	18052
2. Population aged 15-64	:	:	12321	12447	12561	12713	12832	12919	12873	12940	12986	13027
3. Total employment (000)	:	:	8466	8529	8121	8004	7797	7529	7432	7565	7809	8072
4. Population in employment aged 15-64	:	:	8227	8279	8064	7783	7592	7352	7271	7400	7643	7927
5. Employment rate (% population aged 15-64)	:	:	66.8	66.5	64.2	61.2	59.2	56.9	56.5	57.2	58.9	60.9
6. Employment rate (% population aged 15-24)	:	:	33.9	32.7	29.5	27.3	26.6	24.2	23.9	24.8	25.4	26.9
7. Employment rate (% population aged 25-54)	:	:	82.8	83.1	80.5	77.6	75.4	73.0	73.0	73.9	76.1	78.3
8. Employment rate (% population aged 55-64)	:	:	43.1	41.5	40.6	36.7	35.6	34.5	35.2	34.1	35.9	38.4
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	59.2	56.7	56.1	56.4	57.9	60.0
10. Self-employed (% total employment)	:	:	30.0	28.9	29.0	29.5	29.9	30.4	29.8	28.9	27.9	28.0
11. Part-time employment (% total employment)	:	:	8.3	8.1	8.0	8.2	8.3	8.5	8.2	8.2	8.0	7.1
12. Fixed term contracts (% total employees)	:	:	5.6	5.3	5.2	6.5	12.4	16.4	20.8	23.7	26.5	28.5
13. Employment in Services (% total employment)	:	:	:	:	44.5	44.5	44.4	44.4	44.4	44.2	44.2	44.1
14. Employment in Industry (% total employment)	:	:	:	:	35.3	35.5	35.8	35.7	35.5	35.7	35.8	35.8
15. Employment in Agriculture (% total employment)	:	:	:	:	20.1	20.1	19.8	19.9	20.1	20.1	20.0	20.2
16. Activity rate (% population aged 15-64)	:	:	73.3	72.8	72.5	71.7	71.5	70.6	70.0	70.1	70.8	70.1
17. Activity rate (% of population aged 15-24)	:	:	41.7	40.5	40.1	40.9	43.1	41.6	40.5	39.7	39.5	37.5
18. Activity rate (% of population aged 25-54)	:	:	89.8	89.6	88.9	88.3	87.7	87.2	87.1	87.8	88.7	88.2
19. Activity rate (% of population aged 55-64)	:	:	45.5	44.1	44.3	40.4	39.6	38.7	39.7	39.1	40.9	42.6
20. Total unemployment (000)	1136	1098	840	782	1097	1347	1583	1779	1738	1681	1553	1202
21. Unemployment rate (% labour force 15+)	:	:	9.1	8.5	11.8	14.4	16.9	19.1	19.0	18.2	16.6	13.0
22. Youth unemployment rate (% labour force 15-24)	:	:	20.4	20.2	28.5	33.3	38.3	41.9	40.9	37.7	35.7	28.3
23. Long term unemployment rate (% labour force)	:	:	3.7	3.5	4.5	6.0	7.8	9.7	10.3	9.6	9.3	7.1
24. Youth unemployment ratio (% population aged 15-24)	:	:	7.8	7.8	10.6	13.6	16.5	17.4	16.6	15.0	14.1	10.6
Female												
1. Total population (000)	:	:	19610	19639	19642	19659	19699	19688	19487	19461	19422	19394
2. Population aged 15-64	:	:	12685	12800	12899	13027	13153	13241	13158	13203	13225	13298
3. Total employment (000)	:	:	6711	6827	6636	6522	6410	6253	6185	6230	6307	6506
4. Population in employment aged 15-64	:	:	6501	6616	6603	6372	6274	6119	6054	6103	6191	6411
5. Employment rate (% population aged 15-64)	:	:	51.3	51.7	51.2	48.9	47.7	46.2	46.0	46.2	46.8	48.2
6. Employment rate (% population aged 15-24)	:	:	24.0	24.3	22.4	21.8	21.5	19.3	18.3	18.6	19.6	21.0
7. Employment rate (% population aged 25-54)	:	:	66.6	67.5	67.0	64.3	63.0	61.9	62.1	62.6	63.1	65.3
8. Employment rate (% population aged 55-64)	:	:	26.1	24.1	24.5	21.4	20.4	18.9	19.8	19.4	19.7	19.0
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	46.7	44.9	44.7	44.2	44.5	46.0
10. Self-employed (% total employment)	:	:	26.1	24.9	24.5	24.8	25.7	25.4	24.3	24.1	23.1	22.9
11. Part-time employment (% total employment)	:	:	13.6	13.2	13.6	13.4	12.7	13.4	13.2	14.0	14.3	13.0
12. Fixed term contracts (% total employees)	:	:	4.0	4.0	3.9	4.9	10.9	14.4	17.8	21.5	24.7	26.0
13. Employment in Services (% total employment)	:	:	:	:	64.9	64.9	64.9	65.1	65.2	65.5	65.7	65.9
14. Employment in Industry (% total employment)	:	:	:	:	16.9	16.9	16.5	16.5	16.6	16.2	16.0	16.1
15. Employment in Agriculture (% total employment)	:	:	:	:	18.2	18.2	18.6	18.4	18.2	18.2	18.2	18.1
16. Activity rate (% population aged 15-64)	:	:	58.8	58.8	59.4	59.9	59.7	58.7	58.0	57.9	58.1	56.8
17. Activity rate (% of population aged 15-24)	:	:	31.9	32.0	32.2	34.8	36.4	34.1	32.2	32.0	31.8	30.7
18. Activity rate (% of population aged 25-54)	:	:	75.4	75.6	76.1	76.5	76.2	75.8	75.8	76.0	76.4	75.4
19. Activity rate (% of population aged 55-64)	:	:	27.6	25.6	26.2	23.6	22.2	20.9	22.0	21.4	21.5	20.3
20. Total unemployment (000)	1143	1143	1009	948	1204	1441	1587	1652	1585	1550	1493	1142
21. Unemployment rate (% labour force 15+)	:	:	13.0	12.2	15.3	18.1	19.8	20.9	20.4	19.9	19.1	14.9
22. Youth unemployment rate (% labour force 15-24)	:	:	26.6	25.1	32.0	37.2	41.0	43.3	43.1	41.9	38.3	31.6
23. Long term unemployment rate (% labour force)	:	:	6.7	6.3	7.4	9.1	10.8	12.3	11.7	11.0	11.4	8.6
24. Youth unemployment ratio (% population aged 15-24)	:	:	7.9	7.6	9.8	13.0	14.9	14.8	13.9	13.4	12.2	9.7

Source: Eurostat
Notes: Indicator 1: estimate until 2005; Indicator 3: estimate; Indicators 10, 13-15: estimate.

Key employment indicators: Portugal

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	9970	10029	10081	10116	10156	10211	10284	10357	10435	10504	10563	10586
2. Population aged 15-64	6938	6924	6888	6842	6871	6909	6950	6992	7038	7084	7115	7116
3. Total employment (000)	:	:	:	:	4840	4924	5004	5029	5010	5015	5017	5048
4. Population in employment aged 15-64	4419	4442	4527	4572	4633	4724	4796	4812	4792	4806	4800	4830
5. Employment rate (% population aged 15-64)	63.7	64.1	65.7	66.8	67.4	68.4	69.0	68.8	68.1	67.8	67.5	67.9
6. Employment rate (% population aged 15-24)	40.6	40.7	43.1	42.5	42.6	42.2	42.9	42.2	38.8	37.1	36.1	35.8
7. Employment rate (% population aged 25-54)	77.8	77.9	78.7	80.1	80.6	81.8	82.3	81.5	81.0	81.1	80.8	81.3
8. Employment rate (% population aged 55-64)	46.0	47.3	48.5	49.6	50.1	50.7	50.2	51.4	51.6	50.3	50.5	50.1
9. FTE employment rate (% population aged 15-64)	61.9	61.8	62.5	65.1	65.6	66.7	67.5	67.6	66.5	66.4	65.9	66.5
10. Self-employed (% total employment)	:	:	:	:	25.2	24.5	24.6	24.3	24.5	24.1	24.1	24.1
11. Part-time employment (% total employment)	7.9	9.2	10.6	11.0	11.0	10.9	11.1	11.2	11.7	11.3	11.2	11.3
12. Fixed term contracts (% total employees)	11.6	13.1	15.0	17.2	18.7	19.9	20.3	21.5	20.6	19.8	19.5	20.6
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	68.9	69.3	70.5	70.6	70.8	71.4	72.1	72.7	72.9	73.0	73.4	73.9
17. Activity rate (% of population aged 15-24)	48.1	48.1	49.8	47.6	46.8	46.3	47.3	47.7	45.4	43.8	43.0	42.7
18. Activity rate (% of population aged 25-54)	83.0	83.0	83.4	83.9	84.1	84.8	85.3	85.3	85.9	86.3	87.1	87.7
19. Activity rate (% of population aged 55-64)	47.5	49.0	50.2	51.3	51.8	52.4	51.9	53.4	54.0	53.2	53.8	53.5
20. Total unemployment (000)	345	347	329	260	232	210	214	271	342	365	422	428
21. Unemployment rate (% labour force 15+)	7.3	7.3	6.8	5.1	4.5	4.0	4.0	5.0	6.3	6.7	7.6	7.7
22. Youth unemployment rate (% labour force 15-24)	16.5	16.7	15.1	10.7	9.1	8.8	9.4	11.6	14.5	15.3	16.1	16.2
23. Long term unemployment rate (% labour force)	3.1	3.3	3.2	2.2	1.8	1.7	1.5	1.7	2.2	2.9	3.7	3.8
24. Youth unemployment ratio (% population aged 15-24)	7.5	7.4	6.6	5.1	4.3	4.1	4.4	5.5	6.6	6.7	6.9	6.9
Male												
1. Total population (000)	4816	4855	4851	4871	4893	4922	4961	5001	5042	5083	5115	5125
2. Population aged 15-64	3368	3358	3347	3346	3365	3388	3414	3440	3467	3498	3516	3518
3. Total employment (000)	:	:	:	:	2670	2712	2750	2757	2728	2726	2708	2729
4. Population in employment aged 15-64	2475	2482	2526	2538	2550	2593	2627	2632	2599	2595	2581	2601
5. Employment rate (% population aged 15-64)	73.5	73.9	75.5	75.9	75.8	76.5	77.0	76.5	75.0	74.2	73.4	73.9
6. Employment rate (% population aged 15-24)	45.2	45.8	48.6	46.9	47.4	48.1	48.7	47.8	43.1	41.5	40.5	39.8
7. Employment rate (% population aged 25-54)	89.0	88.8	89.1	89.8	89.6	89.9	90.1	89.2	87.8	87.4	86.7	87.4
8. Employment rate (% population aged 55-64)	61.4	62.7	63.2	62.9	61.4	62.1	61.6	61.9	62.1	59.1	58.1	58.2
9. FTE employment rate (% population aged 15-64)	72.2	72.1	72.8	76.1	75.6	76.5	77.5	77.2	75.5	74.4	73.6	74.1
10. Self-employed (% total employment)	:	:	:	:	26.1	25.7	25.7	25.6	25.8	25.7	25.4	25.3
11. Part-time employment (% total employment)	4.2	5.1	5.9	6.1	6.4	6.4	6.7	7.0	7.3	7.1	7.0	7.4
12. Fixed term contracts (% total employees)	10.5	12.5	14.1	16.1	17.2	18.3	18.4	19.9	19.0	18.7	18.7	19.5
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	77.7	78.1	79.3	79.3	79.1	79.2	79.6	80.0	79.6	79.1	79.0	79.5
17. Activity rate (% of population aged 15-24)	50.1	50.9	52.9	51.3	51.2	51.5	52.5	53.0	49.2	47.9	46.9	46.6
18. Activity rate (% of population aged 25-54)	93.5	93.1	93.1	93.1	92.9	92.5	92.6	92.5	92.3	92.2	92.4	92.9
19. Activity rate (% of population aged 55-64)	63.1	64.6	65.4	65.3	63.9	64.4	63.6	64.3	65.2	62.8	62.4	62.7
20. Total unemployment (000)	170	170	161	115	112	93	92	121	161	173	198	195
21. Unemployment rate (% labour force 15+)	6.5	6.5	6.1	4.1	4.0	3.2	3.2	4.1	5.5	5.8	6.7	6.5
22. Youth unemployment rate (% labour force 15-24)	15.0	14.3	12.0	8.5	7.4	6.6	7.2	9.8	12.4	13.5	13.6	14.5
23. Long term unemployment rate (% labour force)	3.3	3.2	3.0	1.7	1.5	1.4	1.2	1.4	1.8	2.6	3.2	3.3
24. Youth unemployment ratio (% population aged 15-24)	4.9	5.1	4.3	4.4	3.8	3.4	3.8	5.2	6.1	6.5	6.4	6.8
Female												
1. Total population (000)	5153	5174	5230	5244	5263	5289	5323	5357	5393	5421	5448	5461
2. Population aged 15-64	3568	3566	3540	3496	3506	3521	3536	3553	3572	3586	3599	3598
3. Total employment (000)	:	:	:	:	2169	2212	2253	2272	2282	2289	2308	2318
4. Population in employment aged 15-64	1941	1957	1999	2033	2084	2131	2168	2180	2193	2211	2219	2229
5. Employment rate (% population aged 15-64)	54.4	54.9	56.5	58.2	59.4	60.5	61.3	61.4	61.4	61.7	61.7	62.0
6. Employment rate (% population aged 15-24)	35.4	34.9	37.4	38.1	37.7	36.2	37.0	36.5	34.4	32.5	31.4	31.6
7. Employment rate (% population aged 25-54)	67.4	67.8	68.9	70.7	72.0	73.9	74.7	74.0	74.3	74.9	74.9	75.3
8. Employment rate (% population aged 55-64)	32.6	34.3	36.1	38.0	40.3	40.6	40.3	42.2	42.4	42.5	43.7	42.8
9. FTE employment rate (% population aged 15-64)	52.3	52.2	53.1	54.8	56.0	57.3	57.9	58.4	57.9	58.6	58.5	59.1
10. Self-employed (% total employment)	:	:	:	:	24.1	23.1	23.1	22.9	22.9	22.2	22.6	22.7
11. Part-time employment (% total employment)	12.7	14.5	16.6	17.1	16.7	16.4	16.4	16.4	16.9	16.3	16.2	15.8
12. Fixed term contracts (% total employees)	12.8	13.9	16.2	18.5	20.5	21.9	22.5	23.4	22.3	21.1	20.4	21.7
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	60.4	60.9	62.1	62.3	62.9	63.9	64.8	65.6	66.5	67.0	67.9	68.4
17. Activity rate (% of population aged 15-24)	44.6	44.3	46.3	43.9	42.5	41.0	42.1	42.4	41.5	39.5	38.9	38.7
18. Activity rate (% of population aged 25-54)	73.4	73.7	74.4	75.1	75.7	77.4	78.2	78.4	79.7	80.6	81.8	82.7
19. Activity rate (% of population aged 55-64)	33.9	36.0	37.6	39.1	41.2	41.8	41.5	43.8	44.0	44.8	46.1	45.1
20. Total unemployment (000)	175	178	168	144	120	117	122	149	181	192	224	233
21. Unemployment rate (% labour force 15+)	8.2	8.2	7.6	6.3	5.2	4.9	5.0	6.0	7.2	7.6	8.7	9.0
22. Youth unemployment rate (% labour force 15-24)	18.4	19.8	18.9	13.2	11.1	11.5	12.1	13.9	17.0	17.6	19.1	18.4
23. Long term unemployment rate (% labour force)	3.2	3.5	3.5	2.8	2.1	2.0	1.9	2.2	2.7	3.4	4.2	4.4
24. Youth unemployment ratio (% population aged 15-24)	9.3	9.4	8.8	5.8	4.8	4.8	5.1	5.9	7.0	6.9	7.4	7.1

Source: Eurostat
Notes: EU LFS indicators: break in 1998; Indicator 3: 2003-2006 forecast; Indicator 10: 2003-2006 forecast.

Key employment indicators: Romania

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	22328	22377	22346	22334	22326	22309	21686	21638	21609	21575
2. Population aged 15-64	:	:	15158	15190	15189	15231	15277	15327	14933	14964	15021	15035
3. Total employment (000)	:	:	10867	10770	10649	10653	10603	9591	9155	9103	9115	9291
4. Population in employment aged 15-64	:	:	9912	9754	9598	9590	9529	8833	8602	8635	8651	8838
5. Employment rate (% population aged 15-64)	:	:	65.4	64.2	63.2	63.0	62.4	57.6	57.6	57.7	57.6	58.8
6. Employment rate (% population aged 15-24)	:	:	36.5	35.5	33.5	33.1	32.6	28.7	26.4	27.9	24.9	24.0
7. Employment rate (% population aged 25-54)	:	:	80.6	79.0	78.1	77.5	76.6	72.7	73.1	72.9	73.3	74.7
8. Employment rate (% population aged 55-64)	:	:	52.1	51.5	49.6	49.5	48.2	37.3	38.1	36.9	39.4	41.7
9. FTE employment rate (% population aged 15-64)	:	:	67.5	65.6	64.5	:	62.9	58.4	58.5	58.3	58.2	59.0
10. Self-employed (% total employment)	36.3	37.2	40.2	41.2	44.7	46.2	46.1	44.6	46.2	41.6	43.2	43.2
11. Part-time employment (% total employment)	:	:	14.9	15.8	15.9	16.5	16.6	11.8	11.5	10.6	10.2	9.7
12. Fixed term contracts (% total employees)	:	:	3.0	3.0	3.0	2.8	3.0	1.0	2.0	2.5	2.4	1.8
13. Employment in Services (% total employment)	31.9	30.3	30.4	31.2	30.4	31.3	31.6	33.9	:	:	:	:
14. Employment in Industry (% total employment)	33.6	34.3	32.0	30.7	28.4	27.3	27.5	29.9	:	:	:	:
15. Employment in Agriculture (% total employment)	34.4	35.5	37.6	38.1	41.2	41.4	40.9	36.2	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	69.9	68.9	68.4	68.4	67.3	63.4	62.2	63.0	62.3	63.6
17. Activity rate (% of population aged 15-24)	:	:	45.6	44.1	42.1	41.4	40.0	37.4	32.9	35.8	31.2	30.6
18. Activity rate (% of population aged 25-54)	:	:	84.5	83.2	83.2	83.0	81.6	78.6	78.0	78.3	78.2	79.9
19. Activity rate (% of population aged 55-64)	:	:	52.5	51.8	50.1	50.0	48.7	37.9	38.8	37.9	40.4	42.8
20. Total unemployment (000)	1163	764	630	638	769	821	750	884	692	800	705	752
21. Unemployment rate (% labour force 15+)	:	:	5.3	5.4	6.6	7.2	6.6	8.4	7.0	8.1	7.2	7.4
22. Youth unemployment rate (% labour force 15-24)	:	:	16.3	15.8	18.7	20.0	18.6	23.2	19.6	21.9	20.2	21.8
23. Long term unemployment rate (% labour force)	:	:	2.5	2.3	2.9	3.7	3.3	4.6	4.3	4.8	4.0	4.3
24. Youth unemployment ratio (% population aged 15-24)	:	:	9.1	8.6	8.6	8.3	7.5	8.7	6.5	7.8	6.3	6.6
Male												
1. Total population (000)	:	:	10866	10888	10866	10864	10863	10855	10549	10527	10521	10506
2. Population aged 15-64	:	:	7463	7484	7481	7512	7543	7577	7397	7423	7467	7481
3. Total employment (000)	:	:	5834	5767	5672	5661	5625	5170	4989	4926	4979	5052
4. Population in employment aged 15-64	:	:	5366	5271	5164	5155	5115	4817	4718	4705	4760	4835
5. Employment rate (% population aged 15-64)	:	:	71.9	70.4	69.0	68.6	67.8	63.6	63.8	63.4	63.7	64.6
6. Employment rate (% population aged 15-24)	:	:	40.4	39.4	36.9	35.8	35.2	31.4	29.9	30.7	28.2	27.3
7. Employment rate (% population aged 25-54)	:	:	87.4	85.3	84.3	83.7	82.8	79.6	80.1	79.2	80.0	80.8
8. Employment rate (% population aged 55-64)	:	:	60.7	59.5	56.9	56.0	54.3	42.7	43.5	43.1	46.7	50.0
9. FTE employment rate (% population aged 15-64)	:	:	75.6	73.3	71.3	70.5	69.4	65.1	65.2	64.3	65.1	65.1
10. Self-employed (% total employment)	:	:	36.3	38.1	42.1	44.4	44.5	43.3	45.5	42.0	43.8	44.2
11. Part-time employment (% total employment)	:	:	12.6	13.5	13.8	14.6	14.9	10.9	10.9	10.2	10.0	9.5
12. Fixed term contracts (% total employees)	:	:	3.0	3.0	3.0	2.8	3.2	1.1	2.2	2.9	2.8	2.0
13. Employment in Services (% total employment)	:	:	27.4	28.1	27.5	28.5	29.5	31.2	:	:	:	:
14. Employment in Industry (% total employment)	:	:	38.1	36.6	33.8	32.2	31.7	34.3	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	34.4	35.3	38.7	39.3	38.8	34.4	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	76.6	75.7	75.2	75.0	73.6	70.4	69.3	70.0	69.4	70.7
17. Activity rate (% of population aged 15-24)	:	:	49.5	49.0	47.2	46.0	43.8	41.5	37.5	40.5	35.9	35.1
18. Activity rate (% of population aged 25-54)	:	:	91.4	90.0	90.2	90.0	88.5	86.4	85.8	85.7	85.8	87.1
19. Activity rate (% of population aged 55-64)	:	:	61.4	60.1	57.7	56.9	55.3	43.9	44.6	44.9	48.4	52.0
20. Total unemployment (000)	508	355	315	345	452	482	436	515	408	491	420	463
21. Unemployment rate (% labour force 15+)	:	:	5.0	5.5	7.3	7.8	7.2	9.1	7.6	9.1	7.8	8.3
22. Youth unemployment rate (% labour force 15-24)	:	:	14.8	15.6	20.1	22.2	19.7	24.3	20.3	24.2	21.6	22.8
23. Long term unemployment rate (% labour force)	:	:	2.1	2.2	3.0	3.9	3.5	4.8	4.6	5.5	4.6	4.8
24. Youth unemployment ratio (% population aged 15-24)	:	:	9.1	9.5	10.3	10.2	8.6	10.1	7.6	9.8	7.7	7.8
Female												
1. Total population (000)	:	:	11462	11489	11480	11471	11463	11454	11136	11111	11089	11069
2. Population aged 15-64	:	:	7694	7706	7708	7719	7733	7750	7536	7541	7554	7554
3. Total employment (000)	:	:	5034	5003	4977	4992	4978	4421	4166	4178	4135	4239
4. Population in employment aged 15-64	:	:	4548	4484	4435	4435	4414	4016	3884	3930	3891	4003
5. Employment rate (% population aged 15-64)	:	:	59.1	58.2	57.5	57.5	57.1	51.8	51.5	52.1	51.5	53.0
6. Employment rate (% population aged 15-24)	:	:	32.7	31.6	30.2	30.5	30.0	26.1	22.9	25.1	21.6	20.6
7. Employment rate (% population aged 25-54)	:	:	74.0	72.7	72.0	71.2	70.6	65.9	66.0	66.6	66.5	68.6
8. Employment rate (% population aged 55-64)	:	:	44.6	44.5	43.3	43.8	42.9	32.6	33.3	31.4	33.1	34.5
9. FTE employment rate (% population aged 15-64)	:	:	59.6	58.2	57.9	:	56.5	51.9	51.8	52.4	51.4	53.0
10. Self-employed (% total employment)	:	:	44.6	44.8	47.6	48.2	47.9	46.2	47.0	41.1	42.5	42.0
11. Part-time employment (% total employment)	:	:	17.5	18.3	18.2	18.6	18.4	13.0	12.2	11.2	10.5	9.8
12. Fixed term contracts (% total employees)	:	:	3.0	3.0	3.1	2.8	2.8	0.8	1.7	2.0	1.9	1.6
13. Employment in Services (% total employment)	:	:	33.9	34.8	33.7	34.5	33.9	37.1	:	:	:	:
14. Employment in Industry (% total employment)	:	:	24.8	23.9	22.2	21.7	22.8	24.6	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	41.3	41.3	44.1	43.8	43.3	38.3	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	63.5	62.3	61.8	61.9	61.1	56.6	55.3	56.2	55.3	56.6
17. Activity rate (% of population aged 15-24)	:	:	41.8	39.3	37.1	36.8	36.3	33.4	28.2	31.0	26.5	25.9
18. Activity rate (% of population aged 25-54)	:	:	77.7	76.4	76.3	76.0	74.8	70.8	70.1	70.9	70.7	72.6
19. Activity rate (% of population aged 55-64)	:	:	44.8	44.5	43.5	43.9	43.1	32.8	33.6	31.9	33.5	34.8
20. Total unemployment (000)	655	409	315	294	318	340	314	369	284	309	284	288
21. Unemployment rate (% labour force 15+)	:	:	5.7	5.3	5.8	6.4	5.9	7.7	6.4	6.9	6.4	6.3
22. Youth unemployment rate (% labour force 15-24)	:	:	18.2	16.1	17.0	17.2	17.4	21.8	18.7	18.9	18.4	20.3
23. Long term unemployment rate (% labour force)	:	:	2.9	2.5	2.8	3.4	3.0	4.3	4.1	3.8	3.4	3.7
24. Youth unemployment ratio (% population aged 15-24)	:	:	9.1	7.7	6.9	6.3	6.3	7.3	5.3	5.8	4.9	5.2

Source: Eurostat
Notes: EU LFS indicators: break in 2002; Indicator 3: 2003-2006 forecast; Indicator 10: 2003-2006 forecast.

Key employment indicators: Slovenia

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	1993	1988	1985	1983	1989	1992	1995	1996	1997	1999	2006
2. Population aged 15-64	:	1391	1387	1385	1384	1397	1399	1401	1405	1405	1402	1407
3. Total employment (000)	912	894	877	875	888	895	899	913	909	943	949	961
4. Population in employment aged 15-64	:	857	868	872	861	877	893	889	879	917	925	937
5. Employment rate (% population aged 15-64)	:	61.6	62.6	62.9	62.2	62.8	63.8	63.4	62.6	65.3	66.0	66.6
6. Employment rate (% population aged 15-24)	:	37.8	40.0	37.5	34.0	32.8	30.5	30.6	29.1	33.8	34.1	35.0
7. Employment rate (% population aged 25-54)	:	81.4	81.0	81.6	81.7	82.6	83.6	83.4	82.5	83.8	83.8	84.2
8. Employment rate (% population aged 55-64)	:	19.1	21.8	23.9	22.0	22.7	25.5	24.5	23.5	29.0	30.7	32.6
9. FTE employment rate (% population aged 15-64)	:	60.5	60.9	61.8	60.8	61.5	62.4	62.7	60.9	63.3	64.1	65.0
10. Self-employed (% total employment)	18.8	18.3	18.7	18.5	18.5	18.0	17.6	17.6	17.2	17.1	16.9	16.7
11. Part-time employment (% total employment)	:	:	:	:	6.1	6.5	6.1	6.1	6.2	9.3	9.0	9.2
12. Fixed term contracts (% total employees)	:	:	:	:	10.5	13.7	13.0	14.3	13.7	17.8	17.4	17.3
13. Employment in Services (% total employment)	45.9	47.5	47.9	48.6	49.5	50.0	50.6	52.3	53.1	54.0	54.5	55.3
14. Employment in Industry (% total employment)	39.9	38.9	38.6	38.3	38.1	38.1	37.9	36.7	36.2	35.7	35.4	35.1
15. Employment in Agriculture (% total employment)	14.2	13.6	13.5	13.1	12.4	11.9	11.5	11.0	10.7	10.3	10.1	9.7
16. Activity rate (% population aged 15-64)	:	66.2	67.3	68.2	67.3	67.5	68.1	67.8	67.1	69.8	70.7	70.9
17. Activity rate (% of population aged 15-24)	:	45.3	47.9	45.5	41.3	39.2	37.1	36.6	35.2	40.3	40.5	40.6
18. Activity rate (% of population aged 25-54)	:	86.0	85.7	87.0	87.1	87.4	88.0	88.1	87.5	88.6	88.8	89.0
19. Activity rate (% of population aged 55-64)	:	19.6	22.4	24.5	23.1	24.0	26.5	25.2	24.3	29.9	32.1	33.4
20. Total unemployment (000)	66	65	67	72	70	65	60	61	64	63	66	61
21. Unemployment rate (% labour force 15+)	:	6.9	6.9	7.4	7.3	6.7	6.2	6.3	6.7	6.3	6.5	6.0
22. Youth unemployment rate (% labour force 15-24)	:	17.5	17.2	17.8	17.6	16.3	17.8	16.5	17.3	16.1	15.9	13.9
23. Long term unemployment rate (% labour force)	:	3.4	3.4	3.3	3.3	4.1	3.7	3.5	3.5	3.2	3.1	2.9
24. Youth unemployment ratio (% population aged 15-24)	:	7.5	7.9	8.1	7.3	6.4	6.6	6.1	6.1	6.5	6.5	5.6
Male												
1. Total population (000)	:	967	970	968	967	972	974	976	976	977	979	984
2. Population aged 15-64	:	696	701	702	701	707	709	710	712	712	713	716
3. Total employment (000)	:	:	:	:	480	484	489	496	496	513	516	524
4. Population in employment aged 15-64	:	459	470	471	466	475	487	484	479	499	502	510
5. Employment rate (% population aged 15-64)	:	66.0	67.0	67.2	66.5	67.2	68.6	68.2	67.4	70.0	70.4	71.1
6. Employment rate (% population aged 15-24)	:	39.4	43.5	39.5	35.8	35.7	34.1	34.4	33.7	38.8	38.1	39.2
7. Employment rate (% population aged 25-54)	:	84.9	84.3	85.2	85.2	85.7	87.0	86.7	85.7	86.4	86.4	87.1
8. Employment rate (% population aged 55-64)	:	27.6	29.4	31.8	31.1	32.3	35.9	35.4	33.2	40.9	43.1	44.5
9. FTE employment rate (% population aged 15-64)	:	65.5	65.8	66.2	65.5	66.1	67.9	67.7	66.1	68.3	69.1	69.5
10. Self-employed (% total employment)	:	:	:	:	21.2	20.6	20.2	20.5	20.3	19.5	19.2	19.2
11. Part-time employment (% total employment)	:	:	:	:	5.2	5.3	5.0	4.9	5.2	7.9	7.2	7.2
12. Fixed term contracts (% total employees)	:	:	:	:	9.9	12.7	12.1	12.6	12.6	16.7	15.7	15.5
13. Employment in Services (% total employment)	:	:	:	:	40.7	41.9	42.1	43.7	43.8	44.4	44.9	45.3
14. Employment in Industry (% total employment)	:	:	:	:	47.2	46.5	46.4	45.2	45.3	45.3	45.2	45.0
15. Employment in Agriculture (% total employment)	:	:	:	:	12.1	11.6	11.5	11.1	10.9	10.3	10.0	9.8
16. Activity rate (% population aged 15-64)	:	71.1	71.9	72.6	71.8	71.9	72.8	72.5	72.0	74.5	75.1	74.9
17. Activity rate (% of population aged 15-24)	:	47.2	51.1	47.7	43.2	41.7	40.5	40.4	39.9	45.1	44.5	44.4
18. Activity rate (% of population aged 25-54)	:	89.9	89.1	90.7	90.6	90.6	91.1	91.2	90.6	91.0	91.1	91.0
19. Activity rate (% of population aged 55-64)	:	28.5	30.5	32.9	33.0	34.6	37.5	36.7	34.5	42.5	45.4	45.8
20. Total unemployment (000)	38	35	35	38	37	34	30	31	33	32	33	27
21. Unemployment rate (% labour force 15+)	:	7.0	6.8	7.3	7.1	6.5	5.6	5.9	6.3	5.8	6.1	4.9
22. Youth unemployment rate (% labour force 15-24)	:	17.1	15.4	16.9	16.8	14.6	15.7	15.0	15.6	13.9	14.5	11.6
23. Long term unemployment rate (% labour force)	:	3.7	3.6	3.3	3.5	4.1	3.5	3.4	3.4	3.1	2.9	2.4
24. Youth unemployment ratio (% population aged 15-24)	:	7.9	7.6	8.2	7.4	6.1	6.4	6.1	6.2	6.2	6.5	5.2
Female												
1. Total population (000)	:	1025	1018	1017	1016	1017	1018	1019	1020	1020	1021	1022
2. Population aged 15-64	:	696	686	683	683	689	690	691	693	693	690	691
3. Total employment (000)	:	:	:	:	407	411	410	417	413	430	434	438
4. Population in employment aged 15-64	:	398	398	400	394	403	406	405	400	419	423	427
5. Employment rate (% population aged 15-64)	:	57.1	58.0	58.6	57.7	58.4	58.8	58.6	57.6	60.5	61.3	61.8
6. Employment rate (% population aged 15-24)	:	36.1	36.4	35.4	32.2	29.7	26.8	26.5	24.3	28.6	29.8	30.3
7. Employment rate (% population aged 25-54)	:	77.8	77.5	77.8	78.0	79.3	80.1	80.0	79.3	81.2	81.1	81.2
8. Employment rate (% population aged 55-64)	:	11.5	14.6	16.1	13.4	13.8	15.8	14.2	14.6	17.8	18.5	21.0
9. FTE employment rate (% population aged 15-64)	:	55.6	55.9	57.2	56.1	56.8	56.9	57.6	55.5	58.1	58.9	60.3
10. Self-employed (% total employment)	:	:	:	:	15.4	14.9	14.4	14.1	13.5	14.3	14.1	13.7
11. Part-time employment (% total employment)	:	:	:	:	7.2	7.8	7.4	7.5	7.5	11.0	11.1	11.6
12. Fixed term contracts (% total employees)	:	:	:	:	11.2	14.8	14.0	16.1	14.9	19.1	19.3	19.3
13. Employment in Services (% total employment)	:	:	:	:	60.3	59.9	60.9	62.6	64.5	65.6	66.3	67.8
14. Employment in Industry (% total employment)	:	:	:	:	27.0	27.8	27.7	26.5	25.2	24.1	23.5	22.7
15. Employment in Agriculture (% total employment)	:	:	:	:	12.7	12.3	11.4	10.9	10.3	10.3	10.2	9.5
16. Activity rate (% population aged 15-64)	:	61.4	62.7	63.6	62.6	62.9	63.2	63.0	62.1	65.0	66.1	66.7
17. Activity rate (% of population aged 15-24)	:	43.3	44.5	43.3	39.4	36.4	33.7	32.5	30.3	35.4	36.3	36.4
18. Activity rate (% of population aged 25-54)	:	82.0	82.1	83.1	83.4	84.2	84.7	84.9	84.3	86.1	86.4	87.0
19. Activity rate (% of population aged 55-64)	:	11.9	15.0	16.4	13.7	14.1	16.2	14.4	14.9	18.1	18.9	21.4
20. Total unemployment (000)	29	29	32	34	33	31	30	30	31	31	33	34
21. Unemployment rate (% labour force 15+)	:	6.7	7.1	7.5	7.5	7.0	6.8	6.8	7.1	6.8	7.0	7.2
22. Youth unemployment rate (% labour force 15-24)	:	18.0	19.3	18.8	18.6	18.3	20.4	18.6	19.8	19.2	17.8	16.8
23. Long term unemployment rate (% labour force)	:	3.1	3.3	3.3	3.1	4.2	4.0	3.6	3.6	3.4	3.3	3.5
24. Youth unemployment ratio (% population aged 15-24)	:	7.2	8.1	7.9	7.1	6.7	6.9	6.0	6.0	6.8	6.4	6.1

Source: Eurostat

Key employment indicators: Slovakia

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	5358	5369	5377	5379	5384	5389	5370	5379	5389
2. Population aged 15-64	:	:	:	3619	3657	3693	3723	3728	3733	3792	3824	3862
3. Total employment (000)	:	:	:	2199	2132	2102	2121	2123	2162	2168	2215	2302
4. Population in employment aged 15-64	:	:	:	2191	2125	2096	2115	2118	2155	2160	2207	2295
5. Employment rate (% population aged 15-64)	:	:	:	60.6	58.1	56.8	56.8	56.8	57.7	57.0	57.7	59.4
6. Employment rate (% population aged 15-24)	:	:	:	35.0	31.0	29.0	27.7	27.0	27.4	26.3	25.6	25.9
7. Employment rate (% population aged 25-54)	:	:	:	78.5	76.1	74.7	74.8	75.0	76.0	74.7	75.3	77.2
8. Employment rate (% population aged 55-64)	:	:	:	22.8	22.3	21.3	22.4	22.8	24.6	26.8	30.3	33.1
9. FTE employment rate (% population aged 15-64)	:	:	:	60.6	58.0	56.4	55.7	55.8	57.0	55.7	56.7	58.3
10. Self-employed (% total employment)	6.6	6.5	6.5	7.1	8.0	8.3	8.8	9.1	10.1	12.3	13.0	13.0
11. Part-time employment (% total employment)	:	:	:	2.3	2.1	2.1	2.3	1.9	2.4	2.7	2.5	2.8
12. Fixed term contracts (% total employees)	:	:	:	4.2	3.9	4.8	4.9	4.9	4.9	5.5	5.0	5.1
13. Employment in Services (% total employment)	53.9	54.4	54.3	56.2	57.9	59.4	60.2	60.8	61.1	61.0	62.6	62.7
14. Employment in Industry (% total employment)	37.2	37.6	38.1	36.8	36.0	35.1	34.5	34.3	34.4	34.6	33.7	33.8
15. Employment in Agriculture (% total employment)	8.9	8.0	7.6	7.0	6.2	5.6	5.3	5.0	4.5	4.4	3.7	3.6
16. Activity rate (% population aged 15-64)	:	:	:	69.3	69.5	69.9	70.4	69.9	70.0	69.7	68.9	68.6
17. Activity rate (% of population aged 15-24)	:	:	:	46.8	46.8	46.0	45.5	43.4	41.1	39.3	36.6	35.3
18. Activity rate (% of population aged 25-54)	:	:	:	87.4	87.6	88.4	88.9	88.6	89.5	88.9	88.0	87.6
19. Activity rate (% of population aged 55-64)	:	:	:	24.6	24.6	24.3	25.5	26.9	28.5	31.7	35.0	36.7
20. Total unemployment (000)	291	269	279	317	417	485	507	487	460	483	430	355
21. Unemployment rate (% labour force 15+)	:	:	:	12.6	16.4	18.8	19.3	18.7	17.6	18.2	16.3	13.4
22. Youth unemployment rate (% labour force 15-24)	:	:	:	25.1	33.8	36.9	39.2	37.7	33.4	33.1	30.1	26.6
23. Long term unemployment rate (% labour force)	:	:	:	6.5	7.8	10.3	11.3	12.2	11.4	11.8	11.7	10.2
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	11.8	15.8	17.0	17.8	16.3	13.7	13.0	11.0	9.4
Male												
1. Total population (000)	:	:	:	2593	2600	2604	2602	2608	2613	2601	2609	2616
2. Population aged 15-64	:	:	:	1780	1802	1822	1836	1842	1847	1878	1899	1922
3. Total employment (000)	:	:	:	1210	1164	1137	1143	1153	1174	1191	1232	1292
4. Population in employment aged 15-64	:	:	:	1207	1159	1133	1139	1149	1170	1186	1227	1288
5. Employment rate (% population aged 15-64)	:	:	:	67.8	64.3	62.2	62.0	62.4	63.3	63.2	64.6	67.0
6. Employment rate (% population aged 15-24)	:	:	:	38.0	32.9	29.8	28.9	28.7	29.3	28.0	28.1	29.2
7. Employment rate (% population aged 25-54)	:	:	:	84.9	81.7	79.6	79.0	79.5	80.5	80.0	81.4	84.1
8. Employment rate (% population aged 55-64)	:	:	:	39.1	36.8	35.4	37.7	39.1	41.0	43.8	47.8	49.8
9. FTE employment rate (% population aged 15-64)	:	:	:	69.0	65.2	62.7	61.5	61.7	63.2	62.5	63.9	66.6
10. Self-employed (% total employment)	:	:	:	9.5	10.8	11.3	11.9	12.6	13.5	16.4	17.6	17.2
11. Part-time employment (% total employment)	:	:	:	1.1	1.2	1.1	1.2	1.1	1.3	1.4	1.3	1.3
12. Fixed term contracts (% total employees)	:	:	:	4.0	4.1	5.1	5.1	5.2	5.3	6.0	5.1	5.0
13. Employment in Services (% total employment)	:	:	:	44.4	46.1	47.7	48.4	49.4	49.6	49.4	51.3	51.3
14. Employment in Industry (% total employment)	:	:	:	46.6	45.8	44.7	44.3	44.0	44.3	44.5	43.5	43.8
15. Employment in Agriculture (% total employment)	:	:	:	9.0	8.2	7.6	7.2	6.6	6.1	6.1	5.1	5.0
16. Activity rate (% population aged 15-64)	:	:	:	77.2	76.9	76.8	77.4	76.7	76.7	76.5	76.5	76.4
17. Activity rate (% of population aged 15-24)	:	:	:	51.8	50.9	49.4	49.8	47.5	44.9	42.9	40.7	39.7
18. Activity rate (% of population aged 25-54)	:	:	:	93.7	93.7	93.9	94.0	93.4	94.1	93.8	93.8	94.0
19. Activity rate (% of population aged 55-64)	:	:	:	42.0	41.1	41.0	43.1	46.3	48.1	51.9	55.1	55.2
20. Total unemployment (000)	152	134	141	168	227	266	282	264	247	251	225	181
21. Unemployment rate (% labour force 15+)	:	:	:	12.2	16.3	18.9	19.8	18.6	17.4	17.4	15.5	12.3
22. Youth unemployment rate (% labour force 15-24)	:	:	:	26.6	35.3	39.7	42.1	39.5	34.8	34.7	31.0	26.4
23. Long term unemployment rate (% labour force)	:	:	:	6.0	7.4	10.3	11.3	11.9	11.3	11.3	11.2	9.4
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	13.8	18.0	19.6	21.0	18.7	15.6	14.9	12.6	10.5
Female												
1. Total population (000)	:	:	:	2766	2770	2774	2776	2776	2777	2768	2770	2773
2. Population aged 15-64	:	:	:	1839	1855	1871	1886	1886	1886	1914	1926	1940
3. Total employment (000)	:	:	:	988	968	964	978	970	988	977	983	1010
4. Population in employment aged 15-64	:	:	:	985	966	963	976	969	985	974	980	1008
5. Employment rate (% population aged 15-64)	:	:	:	53.5	52.1	51.5	51.8	51.4	52.2	50.9	50.9	51.9
6. Employment rate (% population aged 15-24)	:	:	:	32.1	29.0	28.2	26.5	25.3	25.4	24.6	23.1	22.5
7. Employment rate (% population aged 25-54)	:	:	:	72.1	70.6	69.8	70.7	70.6	71.5	69.3	69.2	70.2
8. Employment rate (% population aged 55-64)	:	:	:	9.4	10.3	9.8	9.8	9.5	11.2	12.6	15.6	18.9
9. FTE employment rate (% population aged 15-64)	:	:	:	52.4	51.0	50.2	50.1	50.0	50.9	49.1	49.6	50.2
10. Self-employed (% total employment)	:	:	:	4.2	4.6	4.8	5.1	5.0	6.1	7.2	7.1	7.5
11. Part-time employment (% total employment)	:	:	:	3.8	3.2	3.1	3.5	2.7	3.8	4.2	4.1	4.7
12. Fixed term contracts (% total employees)	:	:	:	4.4	3.6	4.5	4.7	4.5	4.6	5.1	4.9	5.2
13. Employment in Services (% total employment)	:	:	:	69.9	71.4	72.7	73.3	73.5	74.1	74.3	75.9	76.5
14. Employment in Industry (% total employment)	:	:	:	25.5	24.7	24.1	23.5	23.3	23.3	23.3	22.1	21.7
15. Employment in Agriculture (% total employment)	:	:	:	4.6	3.8	3.3	3.2	3.2	2.6	2.4	2.0	1.9
16. Activity rate (% population aged 15-64)	:	:	:	61.7	62.3	63.2	63.7	63.2	63.5	63.0	61.5	60.9
17. Activity rate (% of population aged 15-24)	:	:	:	41.9	42.7	42.6	41.3	39.2	37.2	35.7	32.4	30.9
18. Activity rate (% of population aged 25-54)	:	:	:	81.1	81.5	82.9	83.9	83.9	84.8	84.1	82.1	81.2
19. Activity rate (% of population aged 55-64)	:	:	:	10.3	11.1	10.7	11.0	11.1	12.4	14.8	18.1	20.9
20. Total unemployment (000)	140	135	138	150	190	220	225	223	213	232	205	175
21. Unemployment rate (% labour force 15+)	:	:	:	13.1	16.4	18.6	18.7	18.7	17.7	19.2	17.2	14.7
22. Youth unemployment rate (% labour force 15-24)	:	:	:	23.4	32.1	33.8	35.7	35.5	31.7	31.0	28.8	27.0
23. Long term unemployment rate (% labour force)	:	:	:	7.1	8.3	10.2	11.3	12.5	11.7	12.4	12.3	11.2
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	9.8	13.7	14.4	14.7	13.9	11.8	11.1	9.3	8.3

Source: Eurostat

Key employment indicators: Finland

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	5088	5105	5119	4171	4353	4920	5166	5180	5193	5205	5225	5242
2. Population aged 15-64	3398	3404	3413	3416	3441	3452	3450	3458	3464	3467	3476	3484
3. Total employment (000)	2053	2081	2150	2192	2247	2297	2330	2353	2355	2365	2398	2431
4. Population in employment aged 15-64	2094	2125	2160	2212	2282	2319	2350	2354	2345	2345	2378	2416
5. Employment rate (% population aged 15-64)	61.6	62.4	63.3	64.6	66.4	67.2	68.1	68.1	67.7	67.6	68.4	69.3
6. Employment rate (% population aged 15-24)	29.8	30.6	34.2	36.1	40.0	41.1	41.8	40.7	39.7	39.4	40.5	42.1
7. Employment rate (% population aged 25-54)	76.4	77.3	77.7	79.1	80.4	80.9	81.5	81.6	81.1	81.0	81.7	82.4
8. Employment rate (% population aged 55-64)	34.4	35.4	35.6	36.2	39.0	41.6	45.7	47.8	49.6	50.9	52.7	54.5
9. FTE employment rate (% population aged 15-64)	56.5	57.5	59.5	60.6	64.2	64.9	65.7	65.8	65.2	64.8	65.5	66.2
10. Self-employed (% total employment)	13.7	13.5	13.3	12.4	12.4	12.2	11.9	11.8	11.8	11.8	11.7	11.9
11. Part-time employment (% total employment)	11.6	11.4	10.9	11.4	12.1	12.3	12.2	12.8	13.0	13.5	13.7	14.0
12. Fixed term contracts (% total employees)	:	:	18.1	17.4	16.8	16.3	16.4	16.0	16.3	16.1	16.5	16.4
13. Employment in Services (% total employment)	65.0	65.5	65.5	65.9	66.0	66.3	67.0	67.9	68.5	69.0	69.1	69.3
14. Employment in Industry (% total employment)	27.2	27.2	27.5	27.8	27.8	27.8	27.4	26.8	26.3	25.8	25.8	25.8
15. Employment in Agriculture (% total employment)	7.9	7.3	7.0	6.3	6.2	6.0	5.6	5.4	5.3	5.2	5.1	4.9
16. Activity rate (% population aged 15-64)	72.6	72.9	72.4	72.3	73.9	74.5	75.0	74.9	74.5	74.2	74.7	75.2
17. Activity rate (% of population aged 15-24)	42.1	42.2	45.6	45.1	50.9	52.3	52.1	51.5	50.7	49.7	50.7	51.8
18. Activity rate (% of population aged 25-54)	87.7	87.7	86.9	87.0	87.7	87.9	88.0	88.0	87.5	87.4	87.7	87.8
19. Activity rate (% of population aged 55-64)	42.9	44.8	41.8	41.8	43.2	45.9	50.3	52.1	53.7	54.9	56.6	58.5
20. Total unemployment (000)	382	363	314	285	261	253	238	237	235	229	220	204
21. Unemployment rate (% labour force 15+)	15.4	14.6	12.7	11.4	10.2	9.8	9.1	9.1	9.0	8.8	8.4	7.7
22. Youth unemployment rate (% labour force 15-24)	29.7	28.0	25.2	23.5	21.4	21.4	19.8	21.0	21.8	20.7	20.1	18.7
23. Long term unemployment rate (% labour force)	:	:	4.9	4.1	3.0	2.8	2.5	2.3	2.3	2.1	2.2	1.9
24. Youth unemployment ratio (% population aged 15-24)	12.3	11.6	11.4	10.8	10.9	11.2	10.3	10.8	11.0	10.3	10.2	9.7
Male												
1. Total population (000)	2466	2476	2484	2049	2111	2386	2512	2521	2529	2536	2547	2555
2. Population aged 15-64	1705	1709	1715	1714	1729	1734	1733	1738	1741	1742	1747	1750
3. Total employment (000)	1076	1097	1134	1161	1180	1207	1221	1218	1222	1229	1241	1260
4. Population in employment aged 15-64	1095	1118	1136	1168	1196	1216	1227	1216	1213	1214	1228	1249
5. Employment rate (% population aged 15-64)	64.2	65.4	66.2	67.8	69.2	70.1	70.8	70.0	69.7	69.7	70.3	71.4
6. Employment rate (% population aged 15-24)	31.7	32.3	36.1	38.3	41.7	42.2	42.9	41.1	40.1	39.4	40.4	42.6
7. Employment rate (% population aged 25-54)	79.0	80.2	80.6	82.4	83.5	84.3	84.7	83.8	83.3	83.8	84.4	85.2
8. Employment rate (% population aged 55-64)	35.6	37.8	38.1	38.4	40.1	42.9	46.6	48.5	51.0	51.4	52.8	54.8
9. FTE employment rate (% population aged 15-64)	59.1	60.5	63.5	64.8	68.4	69.3	69.8	69.3	68.4	68.3	68.7	69.5
10. Self-employed (% total employment)	17.7	17.3	16.9	15.6	15.9	15.8	15.4	15.3	15.2	15.3	15.3	15.7
11. Part-time employment (% total employment)	8.2	8.0	7.0	7.3	7.7	8.0	7.9	8.3	8.7	9.0	9.2	9.3
12. Fixed term contracts (% total employees)	:	:	15.3	14.3	13.8	12.9	12.9	12.5	12.6	12.6	12.9	12.6
13. Employment in Services (% total employment)	50.9	51.4	51.2	51.9	51.7	51.7	52.7	53.4	53.8	54.6	54.5	54.4
14. Employment in Industry (% total employment)	39.1	39.3	39.9	40.0	40.2	40.4	39.9	39.6	39.2	38.3	38.6	38.9
15. Employment in Agriculture (% total employment)	9.9	9.3	8.9	8.1	8.1	7.9	7.4	7.0	7.0	7.1	6.9	6.8
16. Activity rate (% population aged 15-64)	75.9	76.1	75.5	75.6	76.7	77.2	77.6	77.0	76.8	76.4	76.6	77.1
17. Activity rate (% of population aged 15-24)	45.3	45.3	48.1	47.9	52.8	53.6	53.3	52.1	51.4	50.5	50.9	52.6
18. Activity rate (% of population aged 25-54)	90.8	90.6	89.7	89.9	90.6	90.8	90.9	90.5	90.1	90.1	90.3	90.3
19. Activity rate (% of population aged 55-64)	44.6	47.1	44.4	44.8	44.7	47.3	51.3	53.0	55.3	55.6	56.9	58.9
20. Total unemployment (000)	204	186	160	143	130	122	117	123	124	118	111	101
21. Unemployment rate (% labour force 15+)	15.7	14.3	12.3	10.9	9.8	9.1	8.6	9.1	9.2	8.7	8.2	7.4
22. Youth unemployment rate (% labour force 15-24)	30.7	29.5	25.4	22.8	20.8	21.1	19.6	21.2	21.9	22.0	20.6	19.0
23. Long term unemployment rate (% labour force)	:	:	4.9	4.3	3.2	2.8	2.7	2.5	2.6	2.3	2.4	2.1
24. Youth unemployment ratio (% population aged 15-24)	13.5	13.0	12.0	11.1	11.0	11.3	10.4	11.0	11.3	11.1	10.5	10.0
Female												
1. Total population (000)	2622	2629	2635	2122	2241	2534	2654	2659	2664	2669	2678	2687
2. Population aged 15-64	1693	1695	1698	1702	1712	1718	1717	1720	1723	1725	1728	1734
3. Total employment (000)	977	985	1016	1032	1067	1089	1110	1134	1133	1136	1156	1172
4. Population in employment aged 15-64	999	1007	1024	1044	1086	1103	1123	1138	1132	1131	1150	1167
5. Employment rate (% population aged 15-64)	59.0	59.4	60.3	61.2	63.4	64.2	65.4	66.2	65.7	65.6	66.5	67.3
6. Employment rate (% population aged 15-24)	27.9	29.0	32.4	33.9	38.3	40.0	40.7	40.3	39.2	39.4	40.6	41.6
7. Employment rate (% population aged 25-54)	73.7	74.2	74.7	75.7	77.1	77.3	78.1	79.2	78.9	78.2	79.0	79.6
8. Employment rate (% population aged 55-64)	33.4	33.3	33.3	34.1	38.0	40.4	45.0	47.2	48.3	50.4	52.7	54.3
9. FTE employment rate (% population aged 15-64)	53.8	54.3	55.5	56.4	60.2	60.5	61.8	62.4	62.0	61.3	62.3	62.9
10. Self-employed (% total employment)	9.3	9.3	9.2	8.8	8.5	8.3	8.2	8.1	8.1	7.9	7.8	7.8
11. Part-time employment (% total employment)	15.4	15.2	15.3	15.9	16.9	17.0	16.8	17.5	17.7	18.4	18.6	19.2
12. Fixed term contracts (% total employees)	:	:	21.0	20.5	19.8	19.8	19.9	19.5	20.0	19.5	20.0	20.0
13. Employment in Services (% total employment)	80.4	81.1	81.4	81.5	81.7	82.3	82.6	83.2	84.2	84.6	84.8	85.3
14. Employment in Industry (% total employment)	14.0	13.7	13.8	14.1	14.2	13.8	13.7	13.1	12.4	12.3	12.2	11.8
15. Employment in Agriculture (% total employment)	5.6	5.2	4.8	4.4	4.1	3.8	3.7	3.6	3.4	3.1	3.1	3.0
16. Activity rate (% population aged 15-64)	69.3	69.7	69.3	69.1	71.1	71.9	72.4	72.8	72.2	72.0	72.8	73.3
17. Activity rate (% of population aged 15-24)	38.9	39.2	43.1	42.5	49.1	51.0	50.9	50.9	50.0	48.9	50.4	51.0
18. Activity rate (% of population aged 25-54)	84.4	84.7	83.9	84.0	84.8	84.9	85.0	85.5	84.8	84.5	85.1	85.3
19. Activity rate (% of population aged 55-64)	41.4	42.7	39.4	38.9	41.8	44.5	49.4	51.2	52.2	54.3	56.4	58.2
20. Total unemployment (000)	178	176	154	142	131	131	121	114	111	111	109	104
21. Unemployment rate (% labour force 15+)	15.1	14.9	13.0	12.0	10.7	10.6	9.7	9.1	8.9	8.9	8.6	8.1
22. Youth unemployment rate (% labour force 15-24)	28.6	26.3	25.0	24.3	22.1	21.6	20.0	20.9	21.6	19.4	19.5	18.4
23. Long term unemployment rate (% labour force)	:	:	5.0	3.9	2.8	2.7	2.3	2.0	2.0	2.0	1.9	1.8
24. Youth unemployment ratio (% population aged 15-24)	11.0	10.2	10.7	10.6	10.9	11.1	10.2	10.6	10.8	9.5	9.8	9.4

Source: Eurostat

Key employment indicators: Sweden

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	8765	8789	8804	8818	8834	8857	8889	8930	8969	9006	9039	9084
2. Population aged 15-64	5638	5649	5658	5670	5686	5708	5739	5776	5821	5855	5896	5951
3. Total employment (000)	4103	4068	4015	4078	4163	4264	4345	4352	4337	4311	4327	4404
4. Population in employment aged 15-64	3997	3973	3930	3988	4078	4168	4249	4252	4242	4220	4272	4352
5. Employment rate (% population aged 15-64)	70.9	70.3	69.5	70.3	71.7	73.0	74.0	73.6	72.9	72.1	72.5	73.1
6. Employment rate (% population aged 15-24)	37.6	35.9	35.6	37.7	39.9	42.2	44.2	42.8	41.2	39.2	38.7	40.3
7. Employment rate (% population aged 25-54)	82.9	82.0	80.9	81.4	82.7	83.9	84.6	84.1	83.5	82.9	83.9	84.7
8. Employment rate (% population aged 55-64)	62.0	63.4	62.6	63.0	63.9	64.9	66.7	68.0	68.6	69.1	69.4	69.6
9. FTE employment rate (% population aged 15-64)	63.9	62.8	61.9	62.4	63.8	65.1	68.4	68.1	67.6	66.2	66.0	66.6
10. Self-employed (% total employment)	5.6	5.5	5.6	5.5	5.5	5.4	5.1	4.9	4.7	4.7	4.7	4.7
11. Part-time employment (% total employment)	20.5	20.2	20.2	19.8	19.7	19.5	21.1	21.5	22.9	23.6	24.7	25.1
12. Fixed term contracts (% total employees)	14.7	14.4	15.1	16.1	16.5	15.8	15.3	15.2	15.1	15.5	16.0	17.3
13. Employment in Services (% total employment)	72.4	72.6	72.8	72.9	73.3	73.7	73.9	74.4	74.8	75.2	75.4	75.7
14. Employment in Industry (% total employment)	24.4	24.4	24.3	24.4	24.0	23.6	23.6	23.2	22.8	22.6	22.4	22.3
15. Employment in Agriculture (% total employment)	3.2	3.1	2.9	2.8	2.7	2.7	2.5	2.4	2.3	2.2	2.2	2.1
16. Activity rate (% population aged 15-64)	77.0	77.1	76.5	76.2	76.8	77.3	77.9	77.6	77.3	77.2	78.7	78.8
17. Activity rate (% of population aged 15-24)	47.4	46.1	45.5	45.7	46.8	48.1	50.0	49.1	47.7	47.2	50.2	51.3
18. Activity rate (% of population aged 25-54)	88.7	88.5	87.8	87.3	87.6	87.9	88.0	87.7	87.7	87.7	89.5	89.4
19. Activity rate (% of population aged 55-64)	65.1	67.0	66.4	66.4	67.6	68.6	70.0	71.2	71.9	72.7	72.6	72.8
20. Total unemployment (000)	391	426	437	362	300	253	224	229	260	296	343	326
21. Unemployment rate (% labour force 15+)	8.8	9.6	9.9	8.2	6.7	5.6	4.9	4.9	5.6	6.3	7.4	7.0
22. Youth unemployment rate (% labour force 15-24)	19.1	20.5	20.6	16.1	12.3	10.5	10.9	11.9	13.4	16.3	21.2	20.8
23. Long term unemployment rate (% labour force)	2.3	2.7	3.1	2.6	1.9	1.4	1.0	1.0	1.0	1.2	1.2	1.1
24. Youth unemployment ratio (% population aged 15-24)	9.9	10.2	10.0	8.0	6.9	5.9	5.9	6.3	6.5	8.0	11.5	11.0
Male												
1. Total population (000)	4298	4315	4327	4340	4353	4371	4393	4421	4443	4463	4479	4504
2. Population aged 15-64	2862	2868	2873	2879	2887	2899	2916	2935	2957	2974	2993	3020
3. Total employment (000)	2139	2130	2106	2145	2186	2237	2269	2264	2256	2245	2270	2318
4. Population in employment aged 15-64	2092	2082	2061	2096	2137	2179	2208	2200	2195	2189	2228	2280
5. Employment rate (% population aged 15-64)	73.1	72.6	71.7	72.8	74.0	75.1	75.7	74.9	74.2	73.6	74.4	75.5
6. Employment rate (% population aged 15-24)	42.1	40.3	39.3	41.2	43.0	44.2	43.7	41.8	40.4	38.6	37.7	40.2
7. Employment rate (% population aged 25-54)	84.0	83.3	82.5	83.4	84.4	85.8	86.6	85.9	85.3	85.0	86.6	87.8
8. Employment rate (% population aged 55-64)	65.2	66.7	65.1	66.1	67.3	67.8	69.4	70.4	70.8	71.2	72.0	72.3
9. FTE employment rate (% population aged 15-64)	69.5	67.9	67.3	68.5	69.3	70.0	73.6	72.9	72.3	70.9	71.4	72.4
10. Self-employed (% total employment)	8.1	8.1	8.1	7.8	7.7	7.7	7.2	7.1	6.7	6.8	6.7	6.7
11. Part-time employment (% total employment)	7.3	7.4	7.5	7.4	8.0	8.2	10.8	11.1	11.2	12.0	11.5	11.8
12. Fixed term contracts (% total employees)	13.6	13.0	13.3	13.9	14.2	13.8	12.9	12.8	12.8	13.5	14.2	15.4
13. Employment in Services (% total employment)	57.8	58.2	58.7	59.1	59.7	60.3	60.6	61.0	61.4	61.7	62.4	62.8
14. Employment in Industry (% total employment)	37.1	36.8	36.7	36.6	36.2	35.5	35.6	35.3	35.0	34.8	34.3	34.1
15. Employment in Agriculture (% total employment)	5.1	5.0	4.6	4.2	4.1	4.2	3.8	3.7	3.6	3.5	3.3	3.2
16. Activity rate (% population aged 15-64)	79.6	79.6	79.0	79.0	79.4	79.8	79.9	79.4	79.2	79.1	80.9	81.2
17. Activity rate (% of population aged 15-24)	51.3	49.8	48.9	49.1	49.9	50.2	50.0	48.5	47.3	47.1	49.1	50.8
18. Activity rate (% of population aged 25-54)	90.4	90.2	89.7	89.6	89.7	90.2	90.4	89.8	89.9	90.0	92.4	92.5
19. Activity rate (% of population aged 55-64)	68.6	70.8	69.7	70.3	71.5	72.1	73.1	74.2	74.9	75.6	76.2	76.0
20. Total unemployment (000)	225	236	238	194	155	139	124	127	145	160	181	168
21. Unemployment rate (% labour force 15+)	9.7	10.1	10.2	8.4	6.6	5.9	5.2	5.3	6.0	6.5	7.4	6.9
22. Youth unemployment rate (% labour force 15-24)	20.4	21.3	21.1	16.4	12.2	11.0	11.9	12.0	13.0	15.7	21.0	20.6
23. Long term unemployment rate (% labour force)	3.5	3.8	4.0	3.2	2.2	1.7	1.2	1.2	1.2	1.4	1.4	1.2
24. Youth unemployment ratio (% population aged 15-24)	9.2	9.5	9.6	7.9	7.0	6.0	6.3	6.7	6.9	8.4	11.4	10.7
Female												
1. Total population (000)	4464	4472	4474	4477	4480	4486	4496	4510	4527	4543	4559	4580
2. Population aged 15-64	2773	2779	2783	2789	2797	2809	2823	2841	2864	2881	2903	2931
3. Total employment (000)	1964	1939	1909	1932	1977	2028	2076	2087	2081	2066	2057	2087
4. Population in employment aged 15-64	1907	1892	1871	1894	1942	1990	2041	2053	2047	2031	2044	2072
5. Employment rate (% population aged 15-64)	68.8	68.1	67.2	67.9	69.4	70.9	72.3	72.2	71.5	70.5	70.4	70.7
6. Employment rate (% population aged 15-24)	33.2	31.8	31.9	34.3	36.9	40.1	44.7	43.8	42.1	39.7	39.8	40.4
7. Employment rate (% population aged 25-54)	81.8	80.7	79.1	79.5	80.9	81.9	82.5	82.4	81.7	80.9	81.1	81.5
8. Employment rate (% population aged 55-64)	59.2	60.5	60.4	60.0	60.7	62.1	64.0	65.6	66.3	67.0	66.7	66.9
9. FTE employment rate (% population aged 15-64)	58.5	57.8	56.7	56.4	58.5	60.2	63.3	63.4	63.0	61.6	60.8	61.0
10. Self-employed (% total employment)	2.8	2.7	2.8	2.9	3.0	2.9	2.8	2.6	2.4	2.5	2.5	2.5
11. Part-time employment (% total employment)	35.8	34.9	34.7	34.3	33.3	32.3	33.0	33.1	35.5	36.3	39.6	40.2
12. Fixed term contracts (% total employees)	15.8	15.8	16.9	18.3	18.7	17.8	17.6	17.6	17.4	17.5	17.7	19.1
13. Employment in Services (% total employment)	87.4	87.4	87.3	87.3	87.6	87.9	88.0	88.6	89.1	89.3	89.5	89.6
14. Employment in Industry (% total employment)	11.4	11.5	11.5	11.5	11.2	10.9	10.9	10.3	9.9	9.8	9.5	9.5
15. Employment in Agriculture (% total employment)	1.2	1.1	1.2	1.2	1.2	1.2	1.1	1.1	1.0	0.9	1.0	0.9
16. Activity rate (% population aged 15-64)	74.6	74.7	74.0	73.5	74.2	74.8	75.7	75.8	75.4	75.2	76.3	76.3
17. Activity rate (% of population aged 15-24)	44.6	43.4	42.9	42.8	44.0	46.1	50.1	49.7	48.3	47.3	51.3	51.9
18. Activity rate (% of population aged 25-54)	86.8	86.7	85.6	85.0	85.4	85.5	85.5	85.5	85.4	85.3	86.5	86.3
19. Activity rate (% of population aged 55-64)	61.9	63.5	63.4	62.6	63.8	65.2	66.9	68.2	68.9	69.7	69.0	69.6
20. Total unemployment (000)	166	190	199	168	145	114	100	101	115	136	162	158
21. Unemployment rate (% labour force 15+)	7.8	9.0	9.5	8.0	6.8	5.3	4.5	4.6	5.2	6.1	7.3	7.1
22. Youth unemployment rate (% labour force 15-24)	17.7	19.8	20.1	15.8	12.4	9.9	9.9	11.8	13.7	16.9	21.5	21.0
23. Long term unemployment rate (% labour force)	1.0	1.5	2.0	1.8	1.4	1.0	0.8	0.8	0.8	1.0	1.0	0.9
24. Youth unemployment ratio (% population aged 15-24)	11.4	11.7	11.0	8.5	7.1	6.0	5.4	5.9	6.2	7.6	11.5	11.4

Source: Eurostat
Notes: EU LFS indicators: break in 2005; Indicator 23: 2005 provisional.

Key employment indicators: United Kingdom

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	57491	57686	57891	58117	58373	57623	57820	57964	58135	58285	58421	58588
2. Population aged 15-64	37407	37592	37768	37965	38226	37550	37786	37991	38177	38364	38529	38777
3. Total employment (000)	25811	26056	26523	26796	27160	27477	27706	27919	28185	28467	28732	28961
4. Population in employment aged 15-64	25609	25955	26415	26773	27139	26731	26982	27097	27277	27485	27610	27711
5. Employment rate (% population aged 15-64)	68.5	69.0	69.9	70.5	71.0	71.2	71.4	71.3	71.5	71.6	71.7	71.5
6. Employment rate (% population aged 15-24)	55.2	55.7	56.5	56.7	56.6	56.6	56.6	56.1	55.3	55.4	54.0	53.2
7. Employment rate (% population aged 25-54)	77.2	77.7	78.6	79.3	79.9	80.2	80.4	80.4	80.6	80.8	81.2	81.1
8. Employment rate (% population aged 55-64)	47.5	47.7	48.3	49.0	49.6	50.7	52.2	53.4	55.4	56.2	56.9	57.4
9. FTE employment rate (% population aged 15-64)	59.2	59.4	60.2	60.7	60.9	61.3	61.7	61.6	61.5	61.6	61.9	61.9
10. Self-employed (% total employment)	13.8	13.5	13.0	12.5	12.2	11.9	11.9	12.0	12.7	12.8	12.7	13.0
11. Part-time employment (% total employment)	24.1	24.6	24.6	24.5	24.6	25.2	25.1	25.4	25.8	25.8	25.4	25.5
12. Fixed term contracts (% total employees)	7.2	7.3	7.6	7.3	7.0	6.9	6.7	6.4	6.1	6.0	5.7	5.8
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	75.2	75.3	75.4	75.4	75.7	75.4	75.2	75.2	75.2	75.2	75.3	75.5
17. Activity rate (% of population aged 15-24)	65.8	66.1	66.1	65.8	65.3	64.8	64.1	63.7	63.0	62.9	61.9	61.9
18. Activity rate (% of population aged 25-54)	83.5	83.5	83.5	83.5	84.0	83.9	83.6	83.7	83.7	83.7	84.1	84.5
19. Activity rate (% of population aged 55-64)	51.3	51.4	51.5	51.5	52.1	52.9	54.1	55.3	57.2	57.9	58.5	59.1
20. Total unemployment (000)	2383	2228	1927	1740	1686	1538	1436	1485	1445	1372	1409	1596
21. Unemployment rate (% labour force 15+)	8.5	7.9	6.8	6.1	5.9	5.3	5.0	5.1	4.9	4.7	4.8	5.3
22. Youth unemployment rate (% labour force 15-24)	15.3	14.9	13.7	13.1	12.7	12.1	11.7	12.0	12.2	12.1	12.9	14.1
23. Long term unemployment rate (% labour force)	3.5	3.1	2.5	1.9	1.7	1.4	1.3	1.1	1.1	1.0	1.0	1.2
24. Youth unemployment ratio (% population aged 15-24)	10.6	10.3	9.6	9.1	8.7	8.2	7.6	7.7	7.7	7.6	7.9	8.7
Male												
1. Total population (000)	28240	28368	28499	28638	28800	28029	28149	28230	28328	28405	28476	28562
2. Population aged 15-64	18807	18915	19004	19118	19264	18527	18635	18744	18833	18917	18983	19087
3. Total employment (000)	14278	14375	14661	14828	15011	14853	14961	15025	15179	15297	15389	15488
4. Population in employment aged 15-64	14126	14283	14565	14785	14965	14414	14532	14543	14640	14720	14737	14762
5. Employment rate (% population aged 15-64)	75.1	75.5	76.6	77.3	77.7	77.8	78.0	77.6	77.7	77.8	77.6	77.3
6. Employment rate (% population aged 15-24)	57.3	57.5	58.4	58.7	58.7	58.6	58.9	57.6	56.9	56.6	55.3	54.1
7. Employment rate (% population aged 25-54)	84.7	84.8	85.8	86.6	87.0	87.5	87.5	87.4	87.6	87.7	87.8	87.9
8. Employment rate (% population aged 55-64)	56.2	57.1	58.4	59.1	59.7	60.1	61.7	62.6	64.8	65.7	66.0	66.0
9. FTE employment rate (% population aged 15-64)	72.2	72.2	73.2	73.8	73.7	74.2	74.5	73.6	73.5	73.6	73.3	73.0
10. Self-employed (% total employment)	18.4	18.0	17.2	16.3	16.0	15.6	15.9	16.0	16.9	17.2	17.1	17.3
11. Part-time employment (% total employment)	7.8	8.4	8.5	8.5	8.8	8.9	9.1	9.6	10.2	10.3	10.4	10.6
12. Fixed term contracts (% total employees)	6.3	6.4	6.6	6.4	6.3	6.1	6.0	5.6	5.4	5.5	5.2	5.1
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	83.8	83.7	83.4	83.2	83.4	82.8	82.6	82.3	82.3	82.0	81.9	82.1
17. Activity rate (% of population aged 15-24)	70.1	70.4	69.8	69.3	69.0	67.9	67.9	66.7	66.0	65.4	64.7	64.3
18. Activity rate (% of population aged 25-54)	92.7	92.2	91.7	91.6	91.9	91.8	91.3	91.3	91.3	91.0	91.1	91.6
19. Activity rate (% of population aged 55-64)	62.4	62.8	63.3	63.1	63.2	63.3	64.6	65.3	67.4	68.1	68.3	68.4
20. Total unemployment (000)	1537	1437	1187	1058	1013	912	861	885	869	800	820	915
21. Unemployment rate (% labour force 15+)	9.9	9.2	7.6	6.8	6.5	5.8	5.5	5.6	5.5	5.0	5.1	5.7
22. Youth unemployment rate (% labour force 15-24)	17.5	17.5	15.4	14.8	14.1	13.2	13.2	13.7	13.8	13.4	14.5	15.9
23. Long term unemployment rate (% labour force)	4.7	4.2	3.3	2.4	2.2	1.9	1.7	1.4	1.4	1.2	1.3	1.5
24. Youth unemployment ratio (% population aged 15-24)	12.9	12.8	11.4	10.7	10.2	9.3	9.0	9.1	9.2	8.7	9.4	10.2
Female												
1. Total population (000)	29251	29318	29391	29479	29573	29594	29672	29735	29807	29880	29945	30026
2. Population aged 15-64	18600	18678	18764	18847	18963	19023	19150	19247	19343	19447	19546	19690
3. Total employment (000)	11534	11681	11862	11967	12149	12624	12745	12894	13006	13169	13343	13473
4. Population in employment aged 15-64	11483	11672	11850	11988	12174	12317	12450	12553	12637	12764	12873	12948
5. Employment rate (% population aged 15-64)	61.7	62.5	63.1	63.6	64.2	64.7	65.0	65.2	65.3	65.6	65.9	65.8
6. Employment rate (% population aged 15-24)	53.1	53.9	54.5	54.6	54.4	54.6	54.2	54.5	53.7	54.1	52.5	52.2
7. Employment rate (% population aged 25-54)	69.7	70.5	71.3	71.8	72.7	73.2	73.5	73.7	73.8	74.2	74.8	74.6
8. Employment rate (% population aged 55-64)	39.0	38.7	38.5	39.2	39.9	41.7	43.0	44.5	46.3	47.0	48.1	49.1
9. FTE employment rate (% population aged 15-64)	47.0	47.4	48.1	48.3	49.2	49.7	50.2	50.7	50.7	50.8	51.5	51.7
10. Self-employed (% total employment)	8.0	7.9	7.9	7.8	7.4	7.5	7.2	7.3	7.7	7.6	7.7	8.0
11. Part-time employment (% total employment)	44.4	44.6	44.6	44.4	44.0	44.3	43.9	43.8	44.0	43.9	42.7	42.6
12. Fixed term contracts (% total employees)	8.2	8.4	8.6	8.4	7.8	7.9	7.5	7.2	6.8	6.5	6.2	6.4
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	66.5	66.9	67.3	67.4	67.9	68.2	68.0	68.3	68.3	68.6	68.8	69.2
17. Activity rate (% of population aged 15-24)	61.3	61.6	62.2	62.0	61.5	61.7	60.4	60.7	60.0	60.5	59.1	59.4
18. Activity rate (% of population aged 25-54)	74.1	74.6	75.0	75.2	76.0	76.2	76.2	76.4	76.4	76.7	77.4	77.6
19. Activity rate (% of population aged 55-64)	40.7	40.3	40.0	40.4	41.2	42.8	43.9	45.6	47.3	47.9	49.0	50.2
20. Total unemployment (000)	846	791	740	682	673	626	575	600	576	572	589	681
21. Unemployment rate (% labour force 15+)	6.8	6.3	5.8	5.3	5.2	4.8	4.4	4.5	4.3	4.2	4.3	4.9
22. Youth unemployment rate (% labour force 15-24)	12.8	12.0	11.7	11.3	11.1	10.9	10.1	10.2	10.5	10.7	11.1	12.1
23. Long term unemployment rate (% labour force)	2.0	1.7	1.5	1.2	1.0	0.9	0.8	0.7	0.7	0.6	0.7	0.8
24. Youth unemployment ratio (% population aged 15-24)	8.2	7.7	7.7	7.4	7.1	7.1	6.2	6.2	6.3	6.4	6.5	7.2

Source: Eurostat
Notes: EU LFS indicators: break in 2000.

Key employment indicators: Croatia

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	:	:	:	:	4206	4218	4215	4217	:
2. Population aged 15-64	:	:	:	:	:	:	:	2773	2778	2751	2746	:
3. Total employment (000)	:	1539	1588	1541	1490	1549	1465	1526	1535	1561	1573	1597
4. Population in employment aged 15-64	:	:	:	:	:	:	:	1482	1482	1505	1512	:
5. Employment rate (% population aged 15-64)	:	:	:	:	:	:	:	53.4	53.4	54.7	55.0	:
6. Employment rate (% population aged 15-24)	:	:	:	:	:	:	:	26.2	24.9	26.5	25.8	:
7. Employment rate (% population aged 25-54)	:	:	:	:	:	:	:	70.2	70.1	70.9	71.8	:
8. Employment rate (% population aged 55-64)	:	:	:	:	:	:	:	24.8	28.4	30.1	32.6	:
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	51.9	52.2	53.8	53.5	53.3
10. Self-employed (% total employment)	:	28.5	25.9	24.7	24.8	23.8	24.3	23.5	24.2	23.4	23.8	:
11. Part-time employment (% total employment)	:	:	:	:	:	:	:	8.3	8.5	8.5	10.1	:
12. Fixed term contracts (% total employees)	:	:	:	:	:	:	:	10.9	11.3	12.2	12.4	:
13. Employment in Services (% total employment)	:	50.9	52.5	53.5	52.8	56.6	54.3	55.0	53.4	53.7	:	:
14. Employment in Industry (% total employment)	:	29.2	29.7	29.8	30.7	28.9	30.1	29.7	29.8	29.9	:	:
15. Employment in Agriculture (% total employment)	:	19.9	17.8	16.7	16.5	14.5	15.6	15.3	16.9	16.5	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	:	:	62.9	62.4	63.7	63.3	:
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	:	:	40.6	38.7	39.6	38.1	:
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	:	:	80.3	79.8	80.7	80.6	:
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	:	:	26.8	30.4	32.3	35.1	:
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	14.7	14.1	13.6	12.6	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	:	:	:	:	:	:	:	8.9	8.4	7.3	7.4	:
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	:	:	14.4	13.9	13.1	12.3	:
Male												
1. Total population (000)	:	:	:	:	:	:	:	1999	2000	2012	2006	:
2. Population aged 15-64	:	:	:	:	:	:	:	1352	1361	1357	1354	:
3. Total employment (000)	:	:	:	:	:	:	:	:	850	865	867	:
4. Population in employment aged 15-64	:	:	:	:	:	:	:	818	821	838	835	:
5. Employment rate (% population aged 15-64)	:	:	:	:	:	:	:	60.5	60.3	61.8	61.7	:
6. Employment rate (% population aged 15-24)	:	:	:	:	:	:	:	29.2	28.6	30.9	30.0	:
7. Employment rate (% population aged 25-54)	:	:	:	:	:	:	:	77.6	77.2	77.7	77.9	:
8. Employment rate (% population aged 55-64)	:	:	:	:	:	:	:	34.2	38.1	40.9	43.0	:
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	59.5	60.1	61.6	60.2	60.4
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	25.2	24.2	24.2	:
11. Part-time employment (% total employment)	:	:	:	:	:	:	:	6.6	6.3	6.3	7.3	:
12. Fixed term contracts (% total employees)	:	:	:	:	:	:	:	11.3	11.8	12.1	12.4	:
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	45.2	45.5	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	38.5	38.9	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	16.2	15.6	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	:	:	69.9	69.5	70.5	70.0	:
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	:	:	44.8	43.4	43.8	43.0	:
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	:	:	86.7	86.2	86.6	85.9	:
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	:	:	37.4	41.1	44.0	47.2	:
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	13.2	12.8	12.0	11.6	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	:	:	:	:	:	:	:	7.4	7.4	6.0	6.5	:
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	:	:	15.5	14.8	12.9	13.0	:
Female												
1. Total population (000)	:	:	:	:	:	:	:	2207	2218	2203	2211	:
2. Population aged 15-64	:	:	:	:	:	:	:	1421	1417	1394	1392	:
3. Total employment (000)	:	:	:	:	:	:	:	:	685	696	706	:
4. Population in employment aged 15-64	:	:	:	:	:	:	:	664	661	667	676	:
5. Employment rate (% population aged 15-64)	:	:	:	:	:	:	:	46.7	46.7	47.8	48.6	:
6. Employment rate (% population aged 15-24)	:	:	:	:	:	:	:	23.2	21.0	21.7	21.3	:
7. Employment rate (% population aged 25-54)	:	:	:	:	:	:	:	63.1	63.2	64.3	65.7	:
8. Employment rate (% population aged 55-64)	:	:	:	:	:	:	:	16.9	20.3	21.0	23.8	:
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	44.6	44.5	46.2	47.1	46.4
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	23.0	22.5	23.2	:
11. Part-time employment (% total employment)	:	:	:	:	:	:	:	10.5	11.2	11.2	13.4	:
12. Fixed term contracts (% total employees)	:	:	:	:	:	:	:	10.4	10.7	12.4	12.3	:
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	63.4	63.9	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	18.9	18.6	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	17.7	17.5	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	:	:	56.2	55.6	57.1	56.7	:
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	:	:	36.3	33.9	35.1	32.9	:
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	:	:	74.0	73.5	74.9	75.3	:
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	:	:	17.9	21.3	22.3	24.9	:
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	16.5	15.6	15.6	13.8	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	:	:	:	:	:	:	:	10.7	9.5	8.9	8.4	:
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	:	:	13.2	12.9	13.4	11.6	:

Source: Eurostat

Key employment indicators: Turkey

All	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Total population (000)	:	:	:	:	:	66183	67294	68390	69478	70551	71606	72604
2. Population aged 15-64	:	:	:	:	:	42601	43446	44224	44980	45624	46610	47395
3. Total employment (000)	21104	21539	21007	21594	22051	21970	21744	21357	21150	21794	22103	22460
4. Population in employment aged 15-64	:	:	:	:	:	20789	20778	20755	20593	21014	21444	21769
5. Employment rate (% population aged 15-64)	:	:	:	:	:	48.8	47.8	46.9	45.8	46.1	46.0	45.9
6. Employment rate (% population aged 15-24)	:	:	:	:	:	37.0	35.3	33.3	30.6	31.6	31.3	30.9
7. Employment rate (% population aged 25-54)	:	:	:	:	:	56.5	55.6	54.8	54.2	54.1	54.2	54.2
8. Employment rate (% population aged 55-64)	:	:	:	:	:	36.3	35.8	35.7	33.5	33.2	31.0	30.1
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	:	:	:	9.2	6.2	6.9	6.3	6.9	5.9	7.9
12. Fixed term contracts (% total employees)	:	:	:	:	:	:	:	:	:	:	:	:
13. Employment in Services (% total employment)	31.6	32.5	34.3	34.3	33.7	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	20.8	21.7	23.3	22.7	20.5	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	47.6	45.8	42.4	43.0	45.8	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	52.3	52.3	52.3	51.3	51.5	51.4	51.1
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	42.6	42.1	41.1	38.6	39.3	38.7	38.0
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	59.4	59.5	59.7	59.3	59.2	59.4	59.2
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	37.1	36.6	37.0	34.8	34.3	32.1	31.3
20. Total unemployment (000)	:	:	:	:	:	1496	1958	2473	2496	2479	2509	2443
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	6.5	8.3	10.3	10.5	10.3	10.2	9.9
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	13.0	16.1	19.1	20.5	19.6	19.2	18.7
23. Long term unemployment rate (% labour force)	:	:	:	:	:	1.4	1.8	3.1	2.5	4.0	4.0	3.5
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	5.6	6.8	7.9	7.9	7.7	7.4	7.1
Male												
1. Total population (000)	:	:	:	:	:	33049	33609	34152	34692	35224	35743	36213
2. Population aged 15-64	:	:	:	:	:	21274	21708	22099	22479	22799	23296	23666
3. Total employment (000)	:	:	:	:	:	:	15715	15164	15178	16026	16371	16615
4. Population in employment aged 15-64	:	:	:	:	:	15284	15059	14778	14820	15469	15895	16109
5. Employment rate (% population aged 15-64)	:	:	:	:	:	71.8	69.4	66.9	65.9	67.8	68.2	68.1
6. Employment rate (% population aged 15-24)	:	:	:	:	:	50.2	46.8	42.4	39.6	42.5	42.8	42.6
7. Employment rate (% population aged 25-54)	:	:	:	:	:	85.0	82.4	80.2	79.9	81.2	81.5	81.1
8. Employment rate (% population aged 55-64)	:	:	:	:	:	52.4	51.0	48.7	45.4	46.9	45.4	44.1
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	:	:	:	5.5	3.2	4.0	3.7	3.9	3.3	4.4
12. Fixed term contracts (% total employees)	:	:	:	:	:	:	:	:	:	:	:	:
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	77.0	76.1	75.1	74.0	76.0	76.2	75.5
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	58.1	56.4	53.3	50.5	53.2	53.0	52.1
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	89.5	88.6	88.2	87.7	89.2	89.4	88.6
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	53.9	52.6	51.0	47.7	49.0	47.5	46.3
20. Total unemployment (000)	:	:	:	:	:	1110	1478	1829	1822	1864	1862	1773
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	6.6	8.7	10.7	10.7	10.5	10.2	9.7
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	13.6	17.1	20.4	21.5	20.0	19.3	18.1
23. Long term unemployment rate (% labour force)	:	:	:	:	:	1.2	1.6	2.9	2.3	3.9	3.8	3.2
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	7.9	9.6	10.8	10.8	10.6	10.2	9.5
Female												
1. Total population (000)	:	:	:	:	:	33134	33685	34238	34786	35328	35863	36391
2. Population aged 15-64	:	:	:	:	:	21327	21738	22125	22500	22825	23314	23729
3. Total employment (000)	:	:	:	:	:	:	6029	6193	5972	5768	5732	5845
4. Population in employment aged 15-64	:	:	:	:	:	5505	5720	5976	5774	5544	5551	5661
5. Employment rate (% population aged 15-64)	:	:	:	:	:	25.8	26.3	27.0	25.7	24.3	23.8	23.9
6. Employment rate (% population aged 15-24)	:	:	:	:	:	24.5	24.4	24.5	22.1	21.1	20.3	19.8
7. Employment rate (% population aged 25-54)	:	:	:	:	:	27.3	28.1	28.8	27.8	26.3	26.3	26.6
8. Employment rate (% population aged 55-64)	:	:	:	:	:	20.8	21.2	23.3	22.1	20.0	17.1	16.7
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	:	:	:	19.6	14.0	13.7	12.8	15.3	13.5	17.7
12. Fixed term contracts (% total employees)	:	:	:	:	:	:	:	:	:	:	:	:
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	27.6	28.5	29.9	28.7	26.9	26.6	26.7
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	27.8	28.4	29.5	27.2	26.0	25.1	24.7
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	28.6	29.7	31.1	30.3	28.4	28.6	29.0
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	20.9	21.4	23.6	22.4	20.1	17.3	16.8
20. Total unemployment (000)	:	:	:	:	:	386	480	644	674	615	647	670
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	6.3	7.4	9.4	10.1	9.7	10.2	10.3
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	12.0	14.3	17.0	18.8	18.9	19.2	19.7
23. Long term unemployment rate (% labour force)	:	:	:	:	:	1.9	2.3	3.5	3.0	4.5	4.8	4.6
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	3.3	4.1	5.0	5.1	4.9	4.8	4.9

Source: Eurostat
Notes: Indicator 3: 2000-2006 forecast; 2000-2005 National LFS (except Indicators 3, 10, 13-15).

Data sources and definitions

DATA SOURCES

Most of the data used in this report originates from Eurostat, the Statistical Office of the European Communities. The main data sources used are:

- European Union Labour Force Survey
- Eurostat Annual Averages of Labour Force Data series
- Eurostat Harmonised Series on Unemployment
- Labour Market Policy Database
- Annual Macro-economic Database
- EU KLEMS Growth and Productivity Accounts
- European Working Conditions Survey
- Establishment Survey on Working Time

The **European Union Labour Force Survey** (LFS) is the EU's harmonised survey on labour market developments. The survey has been carried out since 1983 in the EU Members States, with some states providing quarterly results from a continuous labour force survey, and others conducting a single annual survey in the spring. From 2005, all EU Member States have conducted a quarterly survey. If not mentioned otherwise, the results based on the LFS refer to surveys conducted in the spring ('second quarter' in all countries except for France and Austria, which is 'first quarter') of each year. It also provides data for Bulgaria, Croatia and Romania.

The **Annual Averages of Labour Force Data** series is a harmonised, consistent series of annual averages of quarterly results on employment statistics based on the LFS, completed through estimates when quarterly data are not available. It covers all the EU-15 (for the period from 1991 to present) and all new Member States and Candidate Countries (since 1996 or later, depending on data availability) except the Former Yugoslav Republic of Macedonia. The Annual Averages of Labour Force Data consist of two series: 1) population, employment and unemployment, and 2) employment by economic activity and employment status. The first series is based mainly on the EU LFS. Data covers the population living in private households only (collective households are excluded) and refers to the place of residence (household residence concept). They are broken down by gender and aggregate age group (15–24, 25–54, 55–64 and 15–64). Unemployment data is also broken down by job search duration (less than 6 months, 6–11, 12–23, 24 months or more). The second series is based on the ESA 1995 national accounts employment data. Data covers all people employed in resident producer units (domestic concept), including people living in collective households. They are broken down by sex, working-time status (full-time/part-time) and contract status (permanent/temporary) using LFS distributions. All key employment indicators - with the exception of the full-time equivalent employment rate and the unemployment rates - are based on the Annual Averages of Labour Force Data series. They represent yearly averages unless stated otherwise. Where the Annual Averages of Labour Force Data series does not provide the relevant breakdowns, the original LFS data has been used for this report.

For the unemployment-related indicators, the main source is the Eurostat **Harmonised series on unemployment**. This is a dataset on unemployment collected by Eurostat and comprising of yearly averages, quarterly and monthly data. It is based on the LFS and register data on unemployment from national sources. Monthly data from national surveys or from registers of the public employment services is used to extrapolate the LFS data and to compile monthly unemployment estimates. However, this data set does not cover skills and long-term unemployment, so the LFS is used for this analysis instead.

The **Labour Market Policy (LMP)** database aims to collect detailed information on labour market policy actions undertaken by the Member States in a way that is consistent and comparable to different types of measures and between countries. It includes all labour market measures that can be ascribed as public interventions in the labour market aimed at reaching its efficient functioning and correcting disequilibria, and which can be distinguished from other general

public employment policy measures because they act selectively on favouring particular groups in the labour market. The database aims to cover information on the whole territory of each country within the European Economic Area. LMPs are generally grouped into either active or passive measures. Active labour market policies aim to increase the likelihood of employment or improve earning prospects for the unemployed persons/groups who find it difficult to enter the labour market. The main aim of passive labour market policies is to provide income support to unemployed people or early retirees, without, *a priori*, attempting to directly improve their labour market performance.

Macro-economic indicators are obtained from the DG Economic and Financial Affairs' **Annual Macro-economic Database (AMECO)** and are based on ESA 95 national accounts. The database comprises, among other things, information on GDP, productivity, real unit labour costs and employment growth. The data is collected by Eurostat from the Member States' National Statistical Offices. Besides regular weekly updates, this database is revised twice a year in the framework of the Commission's Spring and Autumn Economic Forecasts.

The **EU KLEMS Growth and Productivity Accounts** (EU KLEMS) provides the individual EU Member States with measures of output growth, employment and skill creation, capital formation and multi-factor productivity at the industry level as of 1970. The input measures include various categories of capital (K), labour (L), energy (E), material (M) and service inputs (S).

The **European Working Conditions Survey (EWCS)**, carried out by the European Foundation for the Improvement of Living and Working Conditions, asks more than 100 questions, including questions on household characteristics, time use, work organisation, perceived health hazards and access to training.

The **Establishment Survey on Working Time (ESWT**), carried out by the European Foundation for the Improvement of Living and Working Conditions, was conducted in over 21 000 establishments, covering both the private and public sectors. Personnel managers and, where available, employee representatives were interviewed about working time arrangements and work-life balance in their workplaces.

Other data sources:

Furthermore, data from other international organisations were used where appropriate, in particular the OECD (Organisation for Economic Cooperation and Development) Labour Market Statistics Database, the OECD Main Industrial Indicators and the OECD Social Expenditures Database.

Definitions and data sources of macro-economic indicators

Source: AMECO and national accounts (ESA 95)

1. Real GDP: gross domestic product (GDP) at 2000 market prices, annual change
2. Occupied population: occupied population, total economy, annual change
3. Labour productivity: GDP at 2000 market prices per person employed, annual change
4. Annual average hours worked, annual change
5. Productivity per hours worked: GDP per hours worked, annual change
6. Harmonised CPI: harmonised consumer price index, annual change
7. Price deflator GDP: price deflator GDP at market prices, annual change
8. Nominal compensation per employee, total economy, annual change
9. Real compensation per employee: deflator GDP, total economy, annual change
10. Real compensation per employee total economy (private consumption deflator), annual change
11. NULC: nominal unit labour costs, total economy, annual change
12. RULC: real unit labour costs, total economy, annual change

DEFINITIONS AND DATA SOURCES OF KEY EMPLOYMENT INDICATORS

Source: Annual Averages of Labour Force Data, spring LFS, Eurostat harmonised series on unemployment

1. Total population in 000s (Source: Eurostat Annual Averages of Labour Force Data)
2. Total population aged 15–64 (the 'working age population') in 000s (Source: Eurostat Annual Averages of Labour Force Data)
3. Total employment in 000s (Source: Eurostat Annual Averages of Labour Force Data)
4. Population in employment aged 15-64 in 000s (Source: Eurostat Annual Averages of Labour Force Data)
5-8. Employment rate, which is calculated by the number of employed divided by the population in the corresponding age bracket (Source: Eurostat Annual Averages of Labour Force Data)
9. Full-time equivalent employment rates: the full-time equivalent employment rate is calculated by dividing the full-time equivalent employment by the total population in the 15–64 age group. Full-time equivalent employment is defined as total hours worked on both main and second job divided by the average annual number of hours worked in full-time jobs (Source: spring LFS).
10. Self-employed in total employment: number of self-employed as the share of total employment (Source: Eurostat Annual Averages of Labour Force Data)
11. Part-time employment in total employment: number of part-time employed as a share of total employment (Source: Eurostat Annual Averages of Labour Force Data)
12. Fixed-term contracts in total employment (total employees): number of employees with contracts of limited duration as a share of total employees (Source: Eurostat Annual Averages of Labour Force Data)
13. Employment in services: employed in services as a share of total employment (Source: Eurostat Annual Averages of Labour Force Data)
14. Employment in industry: employed in industry as a share of total employment (Source: Eurostat Annual Averages of Labour Force Data)
15. Employment in agriculture: employed in agriculture as a share of total employment (Source: Eurostat Annual Averages of Labour Force Data)
16-19. Activity rate: labour force (employed and unemployed) as a share of total population in the corresponding age bracket (Source: Eurostat Annual Averages of labour Force Data)
20. Total unemployment in 000s (Source: Eurostat harmonised series on unemployment)
21-22. Unemployment rates: unemployed as a share of the labour force (employed and unemployed) in the corresponding age bracket (Source: Eurostat harmonised series on unemployment)
23. Long-term unemployment rate: those unemployed for a duration of 12 months of more as a share of the labour force (Source: Eurostat harmonised series on unemployment)
24. Youth unemployment ratio: young unemployed (aged 15–24) as a share of the total population in the same age bracket (Source: Eurostat Annual Averages of Labour Force Data).

European Commission

Employment in Europe 2007

Luxembourg: Office for Official Publications of the European Communities

2007 — 318 pp. — 21 x 29.7 cm

ISBN 978-92-79-06669-6

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KE-AH-07-001-EN-C

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ISBN 978-92-79-06669-6