Adjusting to the euro - the contrast between Portugal and Spain

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Abstract:
Fagan and Gaspar (2007a, 2007b) show that the convergence in nominal interest rates among participating countries led to substantial differences in the behaviour in key macroeconomic variables between countries with low interest rates, already before the euro area ("core countries") and countries with historically high nominal interest rates ("converging countries"). But even inside the group of converging countries there are sharp differences in economic performance. In this paper, we compare the experience of Portugal and Spain during the process of adjustment to participation in the euro area. The comparison promised to be revealing because the two countries display many relevant similarities. Using a version of the model in Fagan and Gaspar (2007a) extended to consider budgetary policy, we show that the contrasting fiscal policies in the two countries explain only a little of the observed differences. In the model, adjustment is dominated by changes in the behaviour of the private sector. Furthermore, using a growth accounting framework, we show that the contrasting trends in supply in the two countries can be attributed to differences in the trends of capital and labour utilization.

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1. Introduction

Short and long term interest rate convergence across participating countries was the most important effect resulting from the launch of the euro. In general terms, Fagan and Gaspar (2007a, 2007b) consider that monetary unification led to interest rate and financial conditions convergence in two groups of countries. The first one, the core, had comparatively low interest rates before the euro, as was the case of Austria, Belgium, France, Germany and the Netherlands. In the other group, including Ireland, Italy, Spain and Portugal, relatively high rates prevailed. In this so called convergence group euro membership led to a significant fall in interest rates.

Financial convergence warrants special attention for at least three reasons. Firstly, financial conditions convergence may be rigorously documented in on the basis of available statistical information. Secondly, effects associated to this financial impulse are large, and even if they last for long, they show off in a clear and quick manner. Finally, it is possible to interpret the link between the impulse and its effects by resorting to existing intertemporal macroeconomic models (for example, Blanchard and Fisher, 1989, Frenkel and Razin, 1996, Osbstfeld and Rogoff, 1996, and Heijdra and van der Ploeg, 2002).

Fagan, Gaspar and Pereira (2004) analyzed the adjustment process for a converging economy by means of an intertemporal macroeconomic model. Reducing financing costs immediately increases investment and household consumption, while supply side effects are much more gradual. Aggregate spending dominates supply effects, and real appreciation, wage pressures and external deficits follow suit. After the initial expansion period, aggregate spending contracts in reaction to negative wealth effects, as external debt is accumulated. In these types of model, the adjustment process is sustainable and perfectly foresighted. Fagan and Gaspar (2007a, 2007b) show that an exogenous path for supply is a reasonable assumption when modelling distinct experiences of core and converging countries. We adopt this simplification here.

In this paper the contrasting experiences of euro adjustment in Portugal and Spain are analyzed. These are both convergence countries with similar paths till 2000. They both entered European Union in 1986 and the Exchange Rate Mechanism some years

later. They desinflated their economies at the same time, and were founding members of the euro. They both grew at comparable rates till 2000. After 2000, the two Iberian economies diverged. Spain continued to grow, while Portugal record was a disillusion (see Table 1).

Budgetary policy between 1995 and 2005 was expansionary in Portugal and much more prudent in Spain. In section 2, and by means of a simple pure exchange model, we show that, in spite of this policy differences, the adjustment pattern is dominated in both countries by the private sector reaction to the fall in interest rates. In a further analytical endeavour, we resort to growth accounting and show that a fall of capital and of total factor productivity contributions were of paramount importance in explaining declining growth in Portugal. In Spain, growth continued propped up by labour and capital contributions.

Our model is a version of the Blanchard (1985) and Yaari (1965) model. Agents optimize their consumption through time and face a constant mortality probability. There is no Ricardian equivalence except in limit situations. We consider a small open economy with exogenous interest rate and facing no restrictions in what concerns external debt. In our pure exchange economy, supply is exogenous and the government makes transfers to families, taxes income and may accumulate public debt. A budgetary rule ensures sustainability by raising taxes when debt increases. The advent of the euro meant an easing of financial conditions and this is modelled as a permanent one percent drop in interest rates.

A Portuguese stylized budgetary policy is modelled as a 3 percent of GDP increase in public consumption and a 4 percent of GDP increase in transfers. In a Spanish style policy, public consumption remains constant while transfers decrease by 2 percentage points of GDP. An invariant policy was also considered.

According to model simulations Portuguese budgetary policy amplified the deviation from the earlier steady state, associated with adjustment to the euro, by about 1/5 (19.6%). Over the same period a policy like that followed in Spain would have attenuated the adjustment by about 1/15 (5.8%). The same holds true for the longer run. The operation of the fiscal rule means that the final (negative) impact on

expenditure is magnified, in the case associated with initial expansion, by about 18%, while it is reduced in by about 8% (7.7%) in the alternative case. The main driver for the pattern of aggregate expenditure over time is the interest rate impulse. This is the case for all three alternative budgetary policies considered and both in the medium term and in the long run. Budgetary policy direct impact on aggregate spending explains a small part only of performance differences between Spain and Portugal.

Recent economic growth in Portugal and in Spain is decomposed assuming an aggregate production function with constant returns to scale on labour and capital in section 3. A comparison of the two Iberian countries shows that Spanish growth is essentially based on an extensive contribution of employment and capital with a very minor total factor productivity contribution. Growth in Portugal declined as investment rates decreased and total factor productivity declined. Spain maintained high investment rates and employment grew due to demographic factors (population growth, immigration) and to the fall in the unemployment rate.

Our modelling exercise lead us to conclude that the intertemporal adjustment to the fall in interest rates after the launch of the euro was dominated by the private sector, albeit budgetary policy had a small smoothing effect in Spain and an amplifying one in Portugal. Recent economic growth in Iberia was essentially derived from the extensive contribution of capital and labour. However, this contribution was much higher in Spain than in Portugal. Our results suggest that in order to further explain performance differences between Iberian countries more research should be done in what concerns labour market and investment behaviour.

2. The budgetary policy role in adjusting to the euro in Portugal and Spain

In table 2 we present we summarize the nature of Spanish and Portuguese budgetary policies from 1995. Public consumption was about 16.5 percent in the two Iberian economies, while current transfers were slightly higher in Spain than in Portugal (14,6 and 12.5 percent, respectively).

Evolution from 1995 was quite different in the two countries. Spain followed a restrained budgetary policy, while Portugal chose expansion. Table 2 illustrates this

fact. Public consumption in Spain was kept essentially constant as a percentage of GDP, while current transfers decayed in relative terms. The budget turned into a surplus and public debt declined in almost 20 percentage points in 10 years, to 43.1 percent in 2005. In marked contrast, current transfers grew strongly in Portugal, from 12.5 to 16.6 percent in 10 years, while public consumption increased more than 3 percentage points. Budget deficits lead to a public debt increase, which attained 64 percent of GDP.

Contrast between Spanish and Portuguese budgetary policy from 1995 suggests some questioning about the effects of that difference. Recall that budgetary indicators were quite similar in both countries in 1995. Moreover, the two economies experienced a parallel evolution. In particular, short and long run interest rates, which we interpret as indicators of financing condition changes in the economy, are identical in the two countries. Fagan and Gaspar (2007a) model is therefore adequate to determine by how much the different budgetary path explains economic performance differences. In what follows the model is briefly described, and main results are exposed.

The model we adopt was originally formulated by Blanchard (1985) and Yaari (1965). Families optimize consumption intertemporally, taking into account a death probability that stays constant. This class of models is convenient to study budgetary policy medium to long term effects (Heijdra e van der Ploeg, 2002). There is no Ricardian equivalence. Public debt neutrality is a special case. Moreover, it is a tractable device to introduce heterogeneous agents, and at the same time it allows the introduction of some possibly interesting extensions, namely concerning labour supply or economic growth.

In our version, following Fagan e Gaspar (2007a), we consider a small open economy, such that imports, exports, and external debt occur without restrictions and the interest rate is exogenous. Supply effects derived from interest rate changes or from budgetary policy are inexistent by construction, as the economy is a pure exchange one (constant supply or endowment). This is a simplifying hypothesis that results from two reasons, one theoretical and the other empirical. On the one hand, predominance of demand effects in euro impact was demonstrated in more complex models, such as Fagan, Gaspar and Pereira (2004) e Fagan e Gaspar (2005). On the other hand, it is consistent

with the empirical fact mentioned by Fagan and Gaspar (2007a, 2007b), that the growth differential between convergence and core countries was not significantly affected by euro adoption.

In our case, it is crucial to specify a budgetary policy rule, once introducing government constitutes the main difference form Fagan and Gaspar (2007a) model. This rule is described in what follows. Assume a stationary state with a given goods and services spending level, G_0, households transfers Z_0, e and an initial taxation level consistent with a stationary state debt given by B_0^*. Initial values respect the following identity:

$$\mathrm{T}_0 = rB_0 + G_0 + Z_0 . \tag{1}$$

When this restriction is respected public dept remains constant. In general, public dept varies according to:

$$\frac{dB_t}{dt} = rB_t + G_t + Z_t - \mathrm{T}_t . \tag{2}$$

We consider the following budgetary rule that ensures sustainability, proposed by Detken, Gaspar e Winkler (2004):

$$\mathrm{T}_t = \overline{\mathrm{T}}_0 + \beta(B_t - B_0) \tag{3}$$

It is easy to verify that, according to the rule, $\mathrm{T}_0 = \overline{\mathrm{T}}_0$ in period 0, public dept remaining constant in that period. In that case, when G and Z change to G_1 and Z_1, the effect in stationary state public debt is given by:

$$B_1^* - B_0^* = \frac{(G_1 - G_0) + (Z_1 - Z_0)}{(\beta - r)} \tag{4}$$

It is clear that, accordingly the above specified rule, shocks to G or Z starting from an initial stationary state cause a budget adjustment leading to sustainability.

However, the process is associated to level changes, meaning that permanent shocks to public spending lead to an also permanent change in public debt. In general, if we consider that taxes are determined according to the above rule, their time path will only be affected by *G*, *Z* or *r* changes.

In our simulations we will consider a drop in financing costs for a converging economy that participates in the euro. In one of the scenarios, the baseline, we will let the rule to act freely, with *G* and *Z* constant. In an alternative scenario, a simplified representation of the Portuguese case, we let *G* and *Z* to increase. Finally, for the Spanish case we will consider that *Z* decreases, while *G* stays essentially constant.

The model includes forcing or exogenous variables. Some of them are related to budgetary policy, namely public consumption, and transfers, *G* and *Z*, *G* e *Z*, respectively, and the exogenous interest rate, *r*. Long run values for these three variables allow a stationary state computation where households' consumption external assets and public debt remain constant. Our simulations include both interest rate changes (the financial impulse associated to the euro) and changes in public consumption and transfers (budgetary policy changes). These exogenous shocks imply a different stationary state for the economy. We are particularly interested in how the economy adjusts to the steady state, with an emphasis on the short to the medium run.

As in Fagan and Gaspar (2007a), we model the impulse associated to participation in the euro as an interest rate fall from 5 to 4 percent. Households adapt to this change in line with modelling hypothesis presented above. In this section we consider this adjustment effect, jointly with three alternative hypotheses to budgetary policy. In all cases we assume the same initial steady state, with transfers *Z*, equal to 13,5% of GDP, public consumption *G*, to 16,5%, public debt, *B*, 60% and taxes, T, 33%. These values imply an unchanged public debt. Table 2 shows that these values are close to the ones observed in Portugal and Spain in 1995[3]. As transfers are less close when the two countries are compared, we took the average to calibrate the model.

[3] That the euro participation history starts around 1995 seems to be consensual. For example, Constâncio (2005) writes: "the drop in interest rates was significant after 1995 – and by then

In our baseline there is only one effect on budgetary policy arising from reduced interest rates. In the other scenarios we assumed that all the change in public consumption and current transfers in 1995-2005 occurred immediately in 2005. This is an assumption we took with a simplifying intention[4]. More precisely, we consider a simplified representation of the Portuguese budgetary policy where public consumption and current transfers increase 3 and 4 percentage points relative to the endowment. We call these changes "Portuguese policy". In the Spanish simplified case, public consumption remains constant, while transfers decrease by one percentage point. The main characteristics of the adjustment mechanism may be grasped by observing the spending time path in the three scenarios.

The first comparison to be made is with another simulation. In all scenarios qualitative features are similar to the ones obtained by Fagan and Gaspar (2007a) for an economy without government. Therefore, and given the chosen set of parameters, adjustment dynamics is dominated by private sector (households) adjustment. It is a simple mechanism. In the initial stationary state each household presents a slightly increasing in time consumption profile. When the interest rate falls, this profile changes and becomes decreasing. Without habit formation consumption would jump. When habit formation is considered, increase in consumption and debt accumulation is more gradual, but the main mechanism remains the same.

Secondly, we note that the Spanish economy adjustment is closer to our baseline. Decreasing transfers helps to smooth adjustment, the initial increase in spending becoming smaller, the same happening to the ensuing reduction. However, this effect's magnitudes are negligible.

Thirdly, the Portuguese policy implies more significant deviations from unchanged policy following the simple budgetary policy, That is, Portuguese budgetary policy exacerbates initial expansion in the medium term. In our simulations the subsequent

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membership in the Monetary union seemed more assured. As a consequence we experienced a credit explosion."

[4] Any persistent deviation to the budgetary policy rule leads to conceptual problems in what concerns its impact on perceptions and expectations. By assuming a policy impulse in a well specified moment in time we ensure that perfect foresight is not verified in one moment only. In principle this could be applied to a time path. However, dynamics associated to an assumption of this nature would be complex and we chose to avoid them.

adjustment resulting from the budgetary rule operation is very slow. This implies that the budget deficit becomes very persistent, and public debt accumulation is significant. As private and public savings decline we observe a very persistent current account deficit. Consequently, there is a substantial increase in external debt. From that point of view, it is reasonable to interpret our simulations as providing an upper limit to sustainable policies in the Portuguese case. Qualitative results are robust to small changes in the assumptions. Portuguese policy has a significant quantitative impact. It reinforces initial aggregate spending expansion and the subsequent correction.

Our simulations only allow the characterization the main adjustment process features. They do not include enough detail to permit a useful interpretation of year on year values. It is then wiser to report averages across time only. According to our simulations, Portuguese budgetary policy amplified the initial deviation from the steady state associated to euro adjustment by about 1/5 (19.6 %). In the same period a policy like the one followed by Spain would have smoothed adjustment by about 1/15 (5.8 percent). The same applies to the long run. The budgetary rule operation implies that the final (negative) impact from spending is amplified, in the case associated to an initial expansion, by about 18%, while in the alternative case it is reduced by about 8 %. The opposite signs in the short and medium run and in the long run effects resulting from budgetary expansions (contractions) are a general property of intertemporal models that incorporate the government budget constraint. It is worth to recall that it is the interest rate impulse that determines the aggregate spending pattern across time. This is verified for any of the three alternative budgetary policies considered and for the medium and the long run. To conclude, the direct impact on aggregate demand resulting from budgetary policy allows to explain a small part only of the performance differences between Portugal and Spain in the period under consideration.

3. Recent economic growth in Portugal and Spain - a quantified comparison

In Portuguese economic growth was relatively high relatively high until the end of the nineties. Namely, potential GDP change, as estimated by the European Commission

series, was slightly higher than the Spanish one[5]. The two Iberian countries displayed a similar growth pattern, and both grew at a systematically higher rate than the future euro zone average, ensuring real convergence.

Visual inspection of figure 1 shows that this pattern stops in 1998. Two opposite phenomena make Portugal to lag behind Spain - Portuguese growth declines markedly, from 3.2 to 1.3 in 2006, while potential growth increases in Spain. In the latter country, potential growth jumps from 2.9 percent in 1998 to values around 4 percent in 2006. Performance differences between Portugal and Spain occur within a relatively stable growth in the euro area as a whole. In what follows we resort to growth accounting to better characterize growth in Iberian countries and their marked contrasts.

Let aggregate production be given by:

$$Y_t = A_t F(K_t, L_t), \tag{5}$$

where Y_t, A_t, K_t e L_t denote, respectively, GDP, technology level or total factor productivity, the capital stock and working hours. Considering that F(.) displays constant returns to scale, it gives:

$$g_Y = \frac{\dot{A}}{A} + \alpha \frac{\dot{K}}{K} + (1-\alpha)\frac{\dot{L}}{L}, \tag{6}$$

where $g_Y = \frac{\dot{Y}}{Y}$ is the GDP growth rate, α is the capital share and e $1-\alpha$ the labour income share.

Equation (6) allows the decomposition of output change into three components or "contributions":

[5] There are many conceptual and statistical difficulties surrounding potential output and output gap computations (see, for example, Orphanides and van Norden, 2002). However, arguments presented here remain valid when alternative estimation approaches are considered for the latent variables or even when non-filtered National Accounts series are used. Results with alternative series provide similar results and are available from the authors on request.

i) the contribution from total factor productivity percentage change, given by $\frac{\dot{A}}{A}$;

ii) the contribution of the capital stock percentage change, given by $\alpha\frac{\dot{K}}{K}$;

iii) and the contribution of worked hours percentage change, given by $(1-\alpha)\frac{\dot{L}}{L}$.

This is probably the most common decomposition in the "growth accounting" literature, and we present here some results based on it[6]. Writing growth rates as $g_X = \frac{\dot{X}}{X}$, equation (6) may be presented in a more compact form:

$$g_Y = g_A + \alpha g_K + (1-\alpha) g_L \tag{7}$$

Working hours may be further decomposed in a set of interesting factors:

$$L_t = (1-u_t) h_t . a_t . V_t , \tag{8}$$

where u_t is the unemployment rate, h_t the average number of worked hours by employed person, a_t is the participation rate and V_t the working age population.

From equation (7), it is possible to write that:

$$g_Y = g_A + \alpha(g_K - g_L) + g_L , \tag{9}$$

where $g_K - g_L$ is the capital per worked hour rate of growth, or "capital deepening". On its turn, and taking into account equation (7), the quantity of labour growth rate is given by:

$$g_L = g_{(1-u)} + g_h + g_a + g_V \tag{10}$$

[6] See on this subject Barro and Sala-i-Martin (2003), chapter 10.

Replacing in equation (9), it gives:

$$g_Y = g_A + \alpha(g_K - g_L) + g_{1-u} + g_h + g_a + g_V\,, \tag{11}$$

and we decompose GDP change into a total factor productivity component, into another component related to the change in capital per unit of labour, and into a set of four terms that results from quantity of labour changes (employment rate, average worked hours, participation rate and working age population changes).

In general one is interested no only in GDP but also in GDP per head of population growth. We will consider the following "per head" decomposition:

$$g_Y - g_N = g_A + \alpha(g_K - g_N) + (1-\alpha)(g_L - g_N)\,. \tag{12}$$

In this last equation N stands for total country population. GDP per head is decomposed into total factor productivity, capital per head and quantity of worked hours per head contributions.

We have used two datasets: observed series, from the AMECO database, maintained by DG-ECFIN, European Commission, updated in May 2007. Filtered series for potential GDP were also obtained from a DG-ECFIN database.[7].

The filtering process is described in detail by Denis, Grenouilleau, McMorrow e Röger (2006). A series for potential GDP is obtained by resorting to the "production function approach". The parameter α is calibrated by the average capital share in the EU from 1960 to 2003 and it assumes value 0.37 in all countries.

Growth accounting for Portugal and Spain and in the euro area are compared in table 3 in 1998 and 2006. In 1998 potential growth was slightly higher in Portugal (3.2 percent) than in Spain (2.9 percent). In Portugal growth resulted basically from total factor productivity (1.1 percent) and increased capital per worker (1.4 percent). In

[7] Data are available from http://circa.europa.eu/Public/irc/ecfin/outgaps/library (Archives: 2007-I Spring forecast).

Spain, total factor productivity grew at very low rates (0.2 percent) and capital per worker contribution was also lower than in Portugal (0.5 percent). Labour contribution was high, namely through an increase in the working age population (0.4 percent), decreasing unemployment (0.6 percent), and increasing participation rate (1.2 percent).

The Portuguese growth rate declined markedly between 1998 and 2006, by 1.9 percentage points. This is essentially due to a smaller capital per worker contribution (-0.9 percentage points), a smaller total factor productivity (-0,6 percentage points), and to an increase in unemployment (-0,4 percentage points).

On the other hand, potential growth rate increase in Spain of around 0.8 percentage points results essentially from demographic and labour market factors (Table 3, Figure 2). The increase in working age population was of particular importance[8].

Note that the important variations in Iberian countries are not shared by the euro zone as a whole, where potential GDP growth was almost constant.

One important difference between Spain and Portugal in recent years is related to population growth, which was 10.5 percent in Spain and 4.5 percent only in Portugal, from 1998 to 2006 (Table 4). If the population is growing, potential GDP per head grows less than potential GDP. Potential GDP decomposition according to equation (12) is presented in table 5. The capital per head column was further decomposed into a part related to capital and a part related to population growth.

In what concerns Portugal, we confirm the important break in capital contribution. This break explains more than half of the growth decline. Figure 3 illustrates this effect. This results from weak investment, as showed in figure 5. Investment rate decayed from 27.9 in 2000 to 21.9 in 2006 (referred to potential GDP).

In Spain, potential GDP per head grew at the same rate in 1998 and 2006. Spanish growth was extensive, and explained in this accounting by capital deepening and more

[8] See also Torres (2007).

worked hours, with a very minor role for total factor productivity. Figure 4 illustrates and shows an unchanged pattern which contrasts with the Portuguese evolution. Investment behaviour in Spain also contrasts to the Portuguese performance - investment rates increase steadily and attain a historically high level in 2006, 28.7 percent.

Malo de Molina (2007) enumerates a number of factors that support the Spanish expansion. On the one hand, one should consider the new macroeconomic regime resulting from euro adoption, with falling interest rates, macroeconomic stability, and lower inflation expectations and wage moderation. These developments were accompanied by important demographic changes, namely immigration flows, with more employment and an increased output potential and leading to more labour market flexibility. Structural changes in the Spanish economy may have eased or motivated this expansion, namely: a more open economy, a more efficient and competitive financial sector, and supply side reforms, including privatization, labour and product market reforms. To this, one could add a more qualified working force, even taking into account immigration (Torres, 2007). Some authors point to some weaknesses in this Spanish expansion, namely the excessive importance of the building sector associated to a house market boom (Igal, 2006) and the loss of external competitiveness (Aysuso, Castro and Gómez, 2004).

The observed pattern of declining total factor productivity complements results attained by other authors to earlier periods. Namely, Lains (2003) points towards e declining total productivity from 1973, explained by the growing importance of industrial sectors with low productivity. In the same vein, Barros (2003), studying industrial productivity between 1978 and 1996 questioned the possibility of a quick convergence process, given the fact that industries with low intensity of research were growing more. Finally, Freitas (2007) also concludes by a slow down in total factor productivity in more recent years.

4. Conclusion

Fagan e Gaspar (2007a, 2007b) consider two groups of countries in what concerns the euro effects. The first one is the core and had already low interest rates. It includes

Germany, the Netherlands, Austria, Belgium and France. A second group of countries, where interest rates decreased markedly, includes Spain, Ireland, Italy and Portugal. This is the group of converging countries. This group experienced an acceleration of domestic spending, external deficits and real appreciation. This adjustment mechanism may be interpreted by means of a common macroeconomic intertemporal model, where the private spending profile changes across time.

We centred ourselves on two converging countries: Spain and Portugal. Between 1995 and 2000 they had a comparable performance, with economic growth and higher spending household and foreign indebtment and higher inflation than other euro members. However, and from 2001, they had highly contrasted experiences. Portugal stagnated while Spain continued in acceleration.

In this paper we tried to determine the budgetary policy contribution to observed differences in the two countries. The Spanish policy of reducing transfers smoothed aggregate spending, while the Portuguese policy of increased public spending exacerbated the adjustment process. However, the quantitative contribution of budgetary policy for verified differences seems to be small. Intertemporal adjustment is dominated by the private sector.

We also tried to identify some supply side factors. We can, for example, compare 1998 with 2006. In 1998, Portuguese potential growth was 3.2 percent (2.8 per head). In what Spain is concerned, results were, respectively, 2.9 and 2.6 percent. Iberian countries seemed similar. In 2006 they were markedly different. 1.3 and 0.9 percent for Portugal compared to 3.8 and 2.6 percent for Spain. Intriguingly, total factor productivity growth was lower in Spain for the whole period. The difference between the two countries resulted from the factor utilization evolution: capital and labour. Namely, in 2006 the whole difference in output per head derives from lower capital accumulation and lower growth in worked hours in Portugal.

In this way the observed difference happened in the extensive growth margin. To understand differences in growth in Spain and Portugal one would have to understand differentiated behaviour of both investment and labour market. These are questions we reserve for future work.

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Tables

Table 1: Economic indicators for Portugal and Spain

	1995	2000	2005	average 1995-2000	average 2001-2005
Portugal					
GDP per head in PPP (EU 27=100)	76.5 (in 1997)	78.3	75.4	77.4	76.5
real GDP growth rate	4.3	3.9	0.5	4.1	0.7
potential GDP growth rate	2.7	2.8	1.3	2.9	1.8
Inflation (harmonised CPI)	4.0	2.9	2.1	2.7	3.2
Unemployment rate (Eurostat)	7.3	4.0	7.6	5.8	5.9
Final private consumption (% of GDP)	65.2	63.9	65.5	64.3	64.1
Gross fixed capital formation (% of GDP)	22.5	27.1	21.6	25.2	23.6
of which, dwellings	5.6	6.5	4.8 (in 2004)	6.0	5.5 (2001-2004)
Exports (% of GDP)	30.8	29.8	27.9	30.3	25.8
Imports(% of GDP)	34.3	40.6	37.4	36.9	36.8
Final public consumprion (% of GDP)	17.9	19.3	21.1	18.4	20.3
Current account (% of GDP)	-3.0	-10.7	-9.6	-6.8	-8.5
Budget surplus (% of GDP)	-5.2	-2.9	-6.1	-3.6	-3.9
Public debt (% of GDP))	61.0	50.4	63.7	54.7	57.7
Households debt (% disposable income)	54.0	106.0	124.0 (em 2003)	nd	nd
Nominal short run interest rate	9.8	4.4	2.2	6.5	2.8
Nominal long run interest rate	11.5	5.6	3.4	7.5	4.4
Net external position (% of GDP)	14.6	44.8	69.7 (em 2004)	25.5	60.3 (2000-2004)
Spain					
GDP per head in PPP (EU 27=100)	93.7 (in 1997)	98.5	102.5	95.4 (1997-2000)	100.8
real GDP growth rate	2.8	5.1	3.5	3.9	3.2
potential GDP growth rate	2.7	3.5	4.2	2.9	3.9
Inflation (harmonised CPI)	4.6	3.5	3.4	2.9	3.2
Unemployment rate (Eurostat)	18.4	11.1	9.2	15.3	10.5
Final private consumption (% of GDP)	60.0	59.7	57.9	59.7	58.1
Gross fixed capital formation (% of GDP)	21.5	25.8	29.3	23.0	27.4
of which, dwellings	4.4	6.1	8.9	5.1	7.7
Exports (% of GDP)	24.7	29.0	23.5	27.5	25.8
Imports(% of GDP)	21.9	32.2	30.9	26.2	30.0
Final public consumprion (% of GDP)	18.1	17.2	18.0	17.5	17.5
Current account (% of GDP)	-0.2	-4.0	-7.5	-1.3	-5.1
Budget surplus (% of GDP)	-6.5	-0.9	1.1	-3.3	0.0
Public debt (% of GDP))	62.7	59.3	43.0	62.6	49.2
Households debt (% disposable income)	61.0	86.0	105.0 (in 2003)	nd	nd
Nominal short run interest rate	9.4	4.4	2.2	6.0	2.8
Nominal long run interest rate	11.3	5.5	3.4	7.4	4.3
Net external position (% of GDP)	22.5	26.7	49.1 (in 2004)	25.5	39.5 (2000-2004)

Sources: AMECO, except:
GDP per capita in PPP (EU 27=100), Eurostat.
Potencial GDP, see footnote 7.
GFCF in dwellings and households' debt for Portugal: Cardoso and Cunha (2005).
Net external position: Lane and Milesi-Ferretti (2006)

Table 2: Budgetary policy indicators for Portugal and Spain

	1995	2000	2005	change 1995-2000	change 2000-2005
Portugal					
Current transfers	12,5%	12,9%	16,6%	0,4%	3,6%
Public consumption	16,5%	17,7%	19,8%	1,2%	2,1%
Budget surplus (+) or deficit (-)	-5,2%	-2,9%	-6,1%	2,2%	-3,2%
Public debt	61.0%	50,4%	63,7%	-10,6%	13,3%
Spain					
Current transfers	14,6%	13,1%	12,6%	-1,5%	-0,5%
Public consumption	16,5%	15,6%	16,3%	-0,9%	0,7%
Budget surplus (+) or deficit (-)	-6,5%	-0,9%	1,1%	5,6%	2,0%
Public debt	62,7%	59,3%	43,0%	-3,4%	-16,3%

Source: Banco of Portugal and AMECO (European Commission)

Table 3: Growth accounting, Portugal, Spain and Euro Area, 1998 and 2006

		Potential GDP	PTF	Capital per unit of labour	Average worked hours per worker	Working age population	participation	unemployment
PT	**1998**	3.2	1.1	1.4	-0.4	0.5	0.5	0.1
	2006	1.3	0.5	0.5	-0.2	0.3	0.5	-0.3
	difference	-1.9	-0.6	-0.9	0.2	-0.2	0.0	-0.4
ES	**1998**	2.9	0.3	0.5	-0.1	0.4	1.2	0.6
	2006	3.8	0.2	0.5	-0.5	1.2	1.4	0.8
	difference	0.8	0.0	0.0	-0.4	0.8	0.1	0.2
Euro area	**1998**	2.2	1.0	0.6	-0.4	0.2	0.6	0.1
	2006	2.1	0.9	0.5	-0.4	0.1	0.6	0.3
	difference	-0.1	-0.2	-0.1	0.0	-0.1	0.0	0.2

Table 4: Population in Portugal and Spain

thousands of individuals

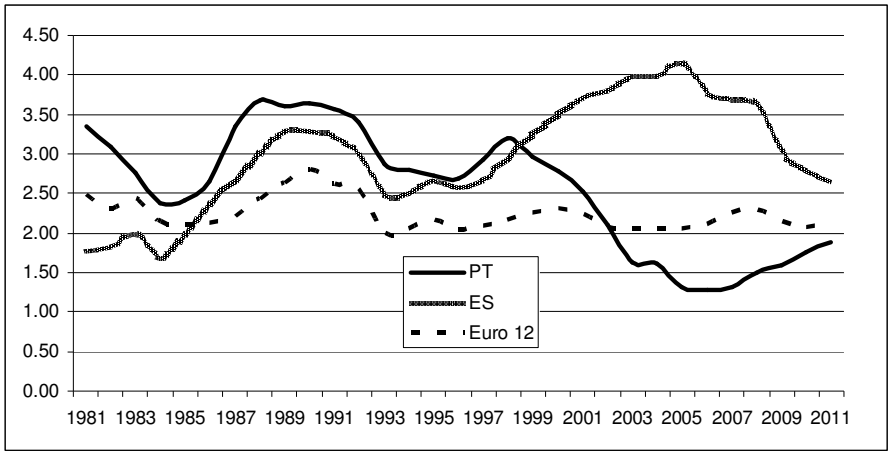
	Portugal	Spain
1996	10057.9	39478.2
1997	10091.1	39582.4
1998	10129.3	39721.1
1999	10171.9	39926.3
2000	10225.8	40263.2
2001	10293.0	40720.5
2002	10368.4	41314.0
2003	10441.1	42004.5
2004	10502.0	42691.7
2005	10549.4	43398.1
2006	10589.0	43911.0
difference [2006] - [1998]	459.7 (+4.5%)	4 189.9 (+10.5%)

Table 5: Growth accounting per head of population, Portugal and Spain, 1996-2006

		Potential GDP per head	TFP	capital per head	*of which: capital*	*Of which: Population*	Worked hours per head
PT	**1996**	2.4	1.3	1.0	1.1	-0.1	0.1
	1997	2.6	1.2	1.3	1.4	-0.1	0.0
	1998	2.8	1.1	1.5	1.7	-0.1	0.2
	1999	2.5	0.9	1.6	1.7	-0.2	0.0
	2000	2.3	0.7	1.5	1.7	-0.2	0.0
	2001	1.9	0.6	1.3	1.5	-0.2	0.0
	2002	1.4	0.4	1.0	1.3	-0.3	-0.1
	2003	0.9	0.4	0.6	0.9	-0.3	-0.1
	2004	1.0	0.3	0.7	0.9	-0.2	0.0
	2005	0.9	0.4	0.6	0.8	-0.2	-0.1
	2006	0.9	0.5	0.5	0.6	-0.1	-0.1
	difference [2006] - [1998]	-1.9	-0.6	-1.1	-1.1	0.0	-0.2
ES	**1996**	2.4	0.4	1.0	1.1	-0.1	1.0
	1997	2.4	0.3	1.0	1.1	-0.1	1.1
	1998	2.6	0.3	1.2	1.3	-0.1	1.1
	1999	2.7	0.2	1.3	1.5	-0.2	1.2
	2000	2.6	0.2	1.2	1.5	-0.3	1.2
	2001	2.6	0.1	1.1	1.5	-0.4	1.3
	2002	2.3	0.1	0.9	1.5	-0.5	1.2
	2003	2.3	0.1	0.9	1.5	-0.6	1.3
	2004	2.3	0.1	0.9	1.5	-0.6	1.2
	2005	2.5	0.2	1.0	1.6	-0.6	1.3
	2006	2.6	0.2	1.2	1.6	-0.4	1.1
	difference [2006] - [1998]	0.0	0.0	0.0	0.3	-0.3	0.0

Figures

Figure 1
Crescimento do PIB potencial
Portugal, Espanha e Área do Euro



Source: Ecofin, European Commission.

Figure 2
Decomposition of potential growth change
1998-2006

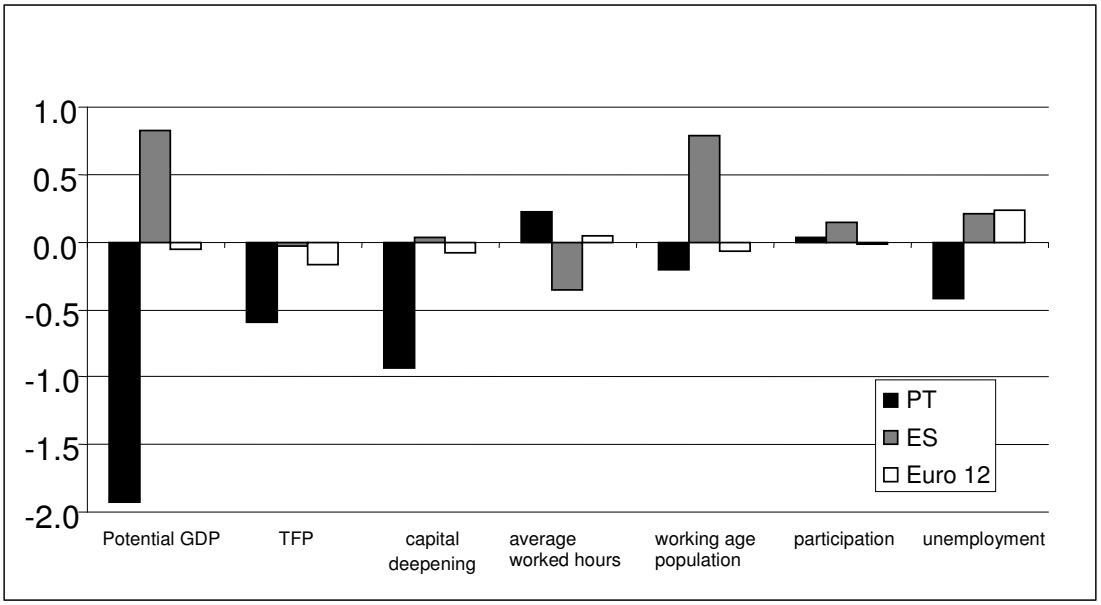


Figure 3
Decomposition of potential growth per head
Portugal

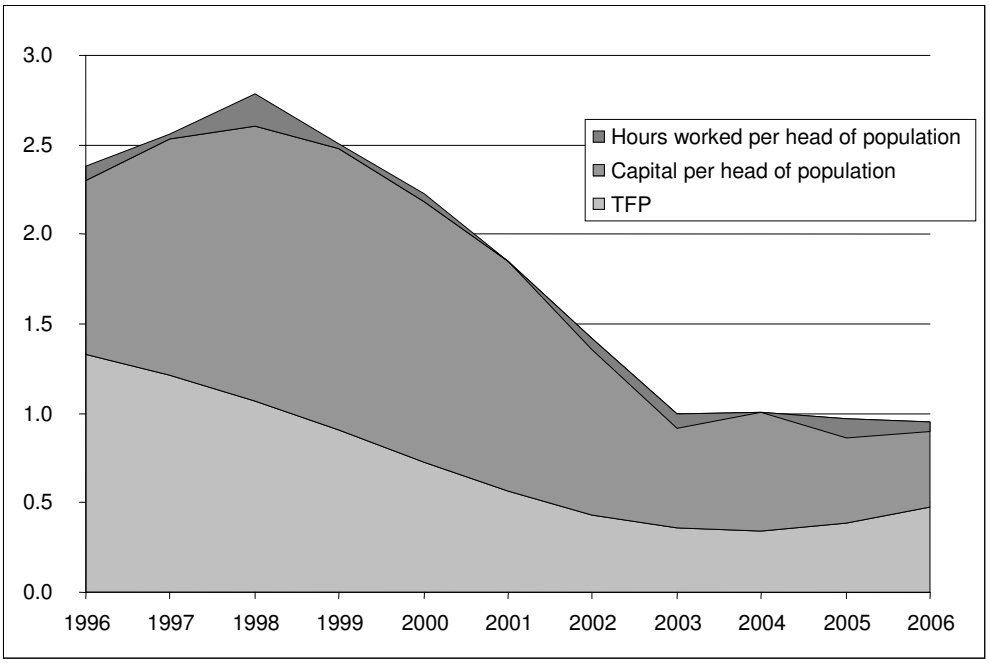


Figure 4
Decomposition of potential growth per head
Spain

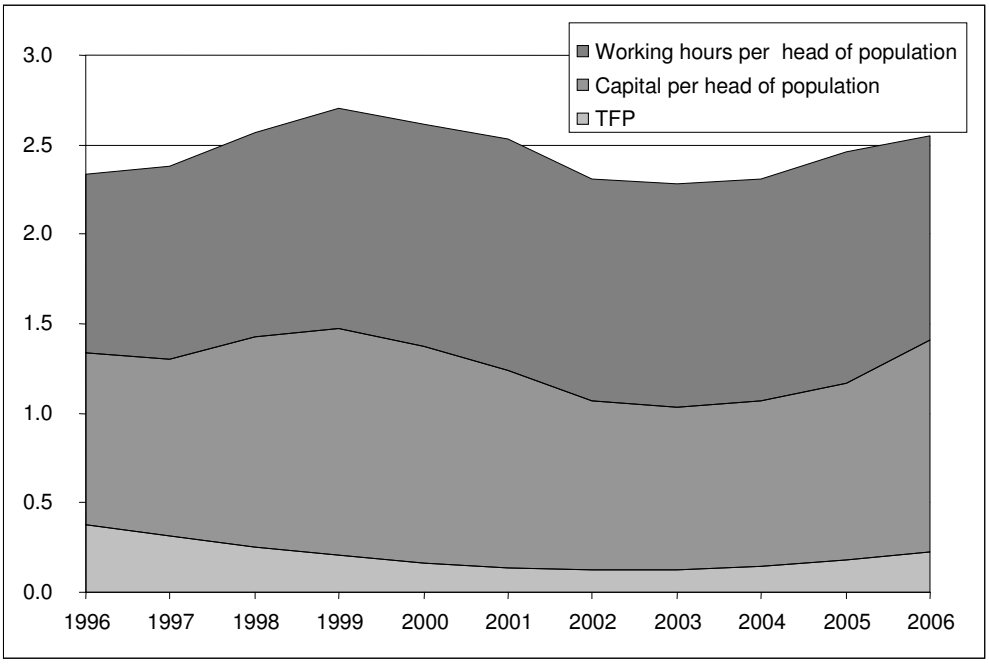
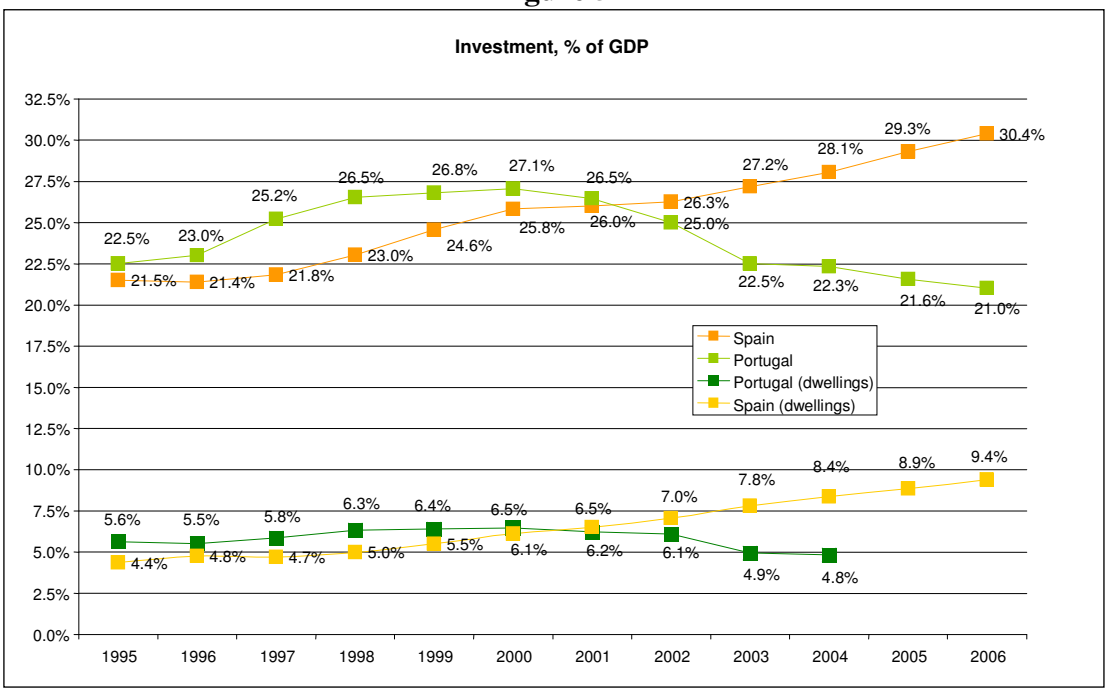


Figure 5


Investment, % of GDP
32.5%
30.0%
27.5%
25.0%
22.5%
20.0%
17.5%
15.0%
12.5%
10.0%
7.5%
5.0%
2.5%
0.0%
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
Spain
Portugal
Portugal (dwellings)
Spain (dwellings)
22.5%
23.0%
25.2%
26.5%
26.8%
27.1%
26.5%
26.0%
25.0%
22.5%
22.3%
21.6%
21.0%
21.5%
21.4%
21.8%
23.0%
24.6%
25.8%
26.3%
27.2%
28.1%
29.3%
30.4%
5.6%
5.5%
5.8%
6.3%
6.4%
6.5%
6.5%
6.1%
4.9%
4.8%
4.4%
4.8%
4.7%
5.0%
5.5%
6.1%
6.2%
7.0%
7.8%
8.4%
8.9%
9.4%