RESEARCH REPORT

Eurofound

Mapping varieties of industrial relations: Eurofound's analytical framework applied



Mapping varieties of industrial relations: Eurofound's analytical framework applied

Eurofound

European Foundation for the Improvement of Living and Working Conditions

When citing this report, please use the following wording
Eurofound (2017), *Mapping varieties of industrial relations: Eurofound's analytical framework applied*, Publications Office of the European Union, Luxembourg.

Authors: Maria Caprile and Pablo Sanz (Notus, Barcelona), Irene Riobóo (Universidad Rey Juan Carlos, Madrid), and Christian Welz and Ricardo Rodríguez (Eurofound)

Research managers: Christian Welz and Ricardo Rodríguez

Eurofound project: Application of the conceptual framework on key dimensions in industrial relations to European social dialogue and national industrial relations

Luxembourg: Publications Office of the European Union

Print:	ISBN: 978-92-897-1624-6	doi:10.2806/817140	TJ-02-18-022-EN-C
PDF:	ISBN: 978-92-897-1625-3	doi:10.2806/366245	TJ-02-18-022-EN-N

© European Foundation for the Improvement of Living and Working Conditions, 2018

For rights of translation or reproduction, applications should be made to the Director, European Foundation for the Improvement of Living and Working Conditions, Wyattville Road, Loughlinstown, D18 KP65, Ireland.

The European Foundation for the Improvement of Living and Working Conditions (Eurofound) is a tripartite European Union Agency, whose role is to provide knowledge in the area of social, employment and work-related policies. Eurofound was established in 1975 by Council Regulation (EEC) No. 1365/75 to contribute to the planning and design of better living and working conditions in Europe.

European Foundation for the Improvement of Living and Working Conditions

Telephone: (+353 1) 204 31 00
Email: information@eurofound.europa.eu
Web: www.eurofound.europa.eu

Europe Direct is a service to help you find answers to your questions about the European Union.

Freephone number*: 00 800 6 7 8 9 10 11
*Certain mobile telephone operators do not allow access to 00 800 numbers or these calls may be billed.

Printed in Luxembourg
Cover image: © Oleksandr Osipov/Shutterstock

Contents

	Executive summary	**1**
	Introduction	**3**
	Background and objectives	3
	Report structure	3
1	**Concept and methodology**	**5**
	Dashboard approach	6
	Quality criteria	7
	Interpretation of indicators	8
	Testing indicators at national level	9
	Using aggregation as a tool for fine-tuning and testing	9
2	**Fine-tuning and testing the indicators**	**11**
	Selecting a preliminary set of indicators	11
	Findings from the national contributions	13
	Building the final list of indicators	19
3	**Results from the application of the conceptual framework**	**21**
	Mapping national industrial relations systems	21
	Lessons from a dynamic perspective	34
4	**Conclusions**	**39**
	Bibliography	**41**
	Annex	**45**

Country codes

AT	Austria	**FI**	Finland	**NL**	Netherlands
BE	Belgium	**FR**	France	**PL**	Poland
BG	Bulgaria	**HR**	Croatia	**PT**	Portugal
CY	Cyprus	**HU**	Hungary	**RO**	Romania
CZ	Czech Republic	**IE**	Ireland	**SE**	Sweden
DE	Germany	**IT**	Italy	**SI**	Slovenia
DK	Denmark	**LU**	Luxembourg	**SK**	Slovakia
EE	Estonia	**LT**	Lithuania	**UK**	United Kingdom
EL	Greece	**LV**	Latvia		
ES	Spain	**MT**	Malta		

Abbreviations used in the report

CSO	Central Statistics Office
ECS	European Company Survey
ESS	European Statistical System
EU-SILC	European Union Statistics on Income and Living Conditions
EWCS	European Working Conditions Survey
GCI	Global Competitiveness Index
GDP	gross domestic product
GNP	gross national product
ICTWSS	Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts database
NEET	not in education, employment or training
ILO	International Labour Organization
OECD	Organisation for Economic Co-operation and Development
R&D	research and development
SMEs	small and medium-sized enterprises
WEF	World Economic Forum

Executive summary

Introduction

The 2016 Eurofound report *Mapping key dimensions of industrial relations* defines industrial relations as the collective and individual governance of work and employment. It identifies four key dimensions.

- *Industrial democracy*, based on the direct and indirect participation rights of employers and employees in the governance of the employment relationship, the autonomy of both sides of industry as collective organisations and their collective capacity to influence decision-making.
- *Industrial competitiveness*, based on an economy with a consistently high rate of productivity growth and good performance of small and medium-sized enterprises (SMEs). To be competitive, it is essential to promote research and innovation, information and communication technologies, entrepreneurship, competition, and education and training.
- *Social justice*, based on the fair and non-discriminatory distribution of opportunities and outcomes within a society, in order to strengthen the 'capabilities' of each individual for self-determination and self-realisation.
- *Quality of work and employment*, based on career and employment security, health and well-being, the ability to reconcile working and non-working life, and the opportunity to develop skills over the life course.

However, the interpretation, application and implementation of these key dimensions depend on the stakeholders' affiliation and their national industrial relations system. Therefore, the report stresses the usefulness of further developing this conceptual framework, especially for cross-country comparisons and mutual learning processes. To this end, a first assessment of existing data sources and indicators was carried out.

The current study is a continuation of this work, with the aim of further fine-tuning the set of indicators. It also assesses how and to what extent the conceptual framework of the key dimensions of industrial relations can be applied to the national level.

Policy context

Throughout most of the 20th century, the role of industrial relations and its importance in the political, economic and societal context was not questioned. However, from the 1980s onwards, factors such as increased globalisation, technological progress, declines in trade union density and the decentralisation of collective bargaining started to exert a significant impact on industrial relations systems. In recent years, changes in some EU Member States, as a consequence of the economic and financial crisis, have accelerated some of these long-term trends and resulted in new developments: the decline of collective bargaining coverage; the destandardisation of employment relations; the reduction in the size of the public sector workforce; and changes in welfare systems in many countries.

Key findings

Dashboard to map industrial relations systems

To map the industrial relations systems in Europe, this study compiled a database of 45 indicators, using annual data for the period 2008–2015 from different European and international data sources. The selected indicators meet strict conceptual and statistical criteria, in line with both the quality assessment and assurance framework of the European Statistical System and other quality criteria commonly used in the literature. To enable comparisons, the study included only unambiguous indicators that have a practical and intuitively clear meaning, in the sense that it is obvious what is being measured with respect to the framework of the key dimensions of the industrial relations system. In fine-tuning the indicators, aggregation was used as an analytical tool to select and test the most relevant indicators. Standardised and aggregated values by dimension were calculated to provide an insight into how each national industrial relations system is performing.

The set of indicators was tested at national level through Eurofound's Network of European Correspondents. These experts were asked to analyse the data produced and assess the extent to which they provide an accurate picture of their national industrial relations system. The results were found to paint a reasonably accurate picture in all dimensions by a large majority of correspondents, with only two countries indicating inaccuracy in some dimensions or methodological problems. In this process, remarks about conceptual aspects, problematic indicators and suggestions for new indicators were collected.

The study has thus created a comprehensive dashboard of indicators that shows a reasonable accuracy in mapping the predominant features and trends of the national industrial relations systems in accordance with the conceptual framework developed by Eurofound. Nonetheless, this must be considered as a provisional exercise, one that needs further discussion and fine-tuning.

Mapping and analysing the national industrial relations systems

The application of this set of indicators to national industrial relations systems has shown, as expected, substantial differences across countries. The results are relatively consistent with the typology of industrial relations regimes developed by Jelle Visser for the European Commission: 'organised corporatism' in Denmark, Finland and Sweden; 'social partnership' in Austria, Belgium, Germany, Luxembourg, the Netherlands and Slovenia; a 'state-centred' model in France, Greece, Italy, Portugal and Spain; a 'liberal pluralism' model in Cyprus, Ireland, Malta and the UK; and 'transition economies' in Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia. The results also illustrate, despite some limitations, how the different national industrial systems are evolving, showing divergent trends across countries and, to some extent, within the different industrial relations clusters. In a context of growing debates on the impact of the crisis on industrial relations systems in Europe, further cross-country analysis is needed.

Analysis of the insights from the national correspondents suggests a relatively consistent agreement among them regarding the relevance of the conceptual framework based on the four dimensions. It also reveals some conceptual challenges, however, which should be considered. These are mostly associated with the difficulties involved in relating the industrial relations actors and processes to the outcomes of the dimensions, which, in the case of industrial competitiveness, social justice, and quality of work and employment, are also affected by other complex and varied factors.

Conclusions

The study has shown that a dashboard of accurate indicators able to measure and summarise the complex reality of industrial relations across the EU Member States is a valuable tool for comparative research and a useful instrument for supporting policymakers, social partners and stakeholders.

Additionally, the study has collected meaningful insights on how to move forward, in terms of further developing the conceptual approach, improving the set of indicators, and using the results in the most effective way to contribute to a better collective and individual governance of work and employment.

The first option would be to continue improving the current dashboard. This would entail a critical review of the indicators, as well as their interrelation with the four key dimensions, in order to strengthen the conceptual approach by trying to better relate indicators to industrial relations actors and processes.

The second option would be to explore replacing the indicators in some of the dimensions by another existing set of indicators. This option would be especially pertinent for dimensions such as industrial competitiveness, quality of work and employment, and social justice, where several research institutions have already developed consolidated indices in these fields.

The third option would be to develop a composite indicator for each key dimension to comprehensively measure country performance in the four dimensions. This scenario entails a revision of the set of indicators, as well as further conceptual and methodological work.

Introduction

Background and objectives

Eurofound's four-year work programme for 2013–2016 committed the Agency to examining the dynamics of industrial relations and to analysing, in a comparative way, how industrial relations systems are changing and adapting to new challenges. It aimed to facilitate this strand of research activity by developing an agreed comparative framework identifying the key dimensions of industrial relations, indicators and data sources that could be used to describe and assess developments across the Member States. Improving the tools for assisting comparative research in this field is likely to result in findings with higher policy relevance.

Accordingly, Eurofound launched the study 'Mapping key dimensions of industrial relations' (Eurofound, 2016a). Building on previous projects that explored the issue of 'quality' in industrial relations from 2002 to 2004 and a 2012 Eurofound project that examined what constitutes a meaningful social dialogue, the objective of the 2016 study was to map, analyse and discuss dimensions and indicators for building a comparative framework of industrial relations. The study defined industrial relations as the collective and individual governance of work and employment. Following an extensive literature review, it identified four key dimensions:

- industrial democracy;
- industrial competitiveness;
- social justice;
- quality of work and employment.

Eurofound's current multiannual work programme (2017–2020) gives continuity to this strand of research, stating,

> *At national level, Eurofound will map the situation of social dialogue and social partners in the framework of the key dimensions of industrial relations developed by the Agency. This will allow it to identify areas where mutual learning or support could be helpful.*
>
> (Eurofound, 2016b, p. 9).

As a follow-up to the 2016 report on mapping key dimensions of industrial relations, Eurofound carried out a first assessment of existing data sources and selected a draft list of indicators on the basis of four criteria: relevance, validity and embeddedness, availability and accessibility of data, and comparability.

The current study is a continuation of this work. Its aims are:

- to further fine-tune the set of indicators previously identified;
- to assess how and to what extent the conceptual framework of the key dimensions of industrial relations can be applied to industrial relations at national level.

The study has relied on a team of experts on industrial relations and statistics to apply additional conceptual and technical quality criteria to fine-tune the draft set of indicators, with a view to ensuring the highest degree of accuracy and reliability.

The set of indicators presented here has been tested in all EU Member States through Eurofound's Network of European Correspondents.[1] These national correspondents were asked to analyse the data produced by Eurofound and to assess the extent to which the indicators provide an accurate picture of the national industrial relations system in their country, on the basis of their expertise and relevant literature.

Report structure

The report is structured as follows.

Chapter 1 describes the methodology used to select a list of indicators to summarise the features of national industrial relations systems, explaining the choice of a dashboard approach and discussing the quality criteria applied in selecting the indicators. Chapter 2 explains how the list of indicators was refined and tested through feedback from the national correspondents. Chapter 3 presents the results of the mapping of the dashboard of indicators to national industrial relations systems, drawing from the analysis of the national

1 The national contribution from the Netherlands was not available. Instead, a short assessment was compiled by Eurofound, a process that involved consulting an expert.

correspondents, who assessed the results of the indicators finally selected. It also includes a radar chart for each Member State that shows the aggregated results obtained for each dimension. Finally, Chapter 4 summarises the objectives, approach and outcomes of the study.

1 Concept and methodology

The Eurofound's 2016 report *Mapping key dimensions of industrial relations* starts by acknowledging that 'scholars have attempted to define industrial relations ever since the 1920s' (Eurofound, 2016a, p. 4). The central concerns of industrial relations as a field of study have been the collective regulation (governance) of work and employment, as well as the actors, processes and outcomes of the industrial relations system. The study, however, highlights that the individual governance of work and employment has been neglected, excluding important forms of regulation that seek to balance the employment relationship that are individual in nature (such as minimum wage laws and unjust dismissal protections). On this basis, industrial relations are defined as the collective and individual governance of work and employment.

Based on an extensive literature review, the study identifies 4 key dimensions and 16 subdimensions in the system of industrial relations, as illustrated in Figure 1.

The four key dimensions can be summarised as follows.

- **Industrial democracy**, based on the direct and indirect participation rights of employers and employees in the governance of the employment relationship, the autonomy of both sides of industry as collective organisations and their collective capacity to influence decision-making. Industrial democracy relies on mutual trust between employers and employees in terms of representation, participation, influence and autonomy.
- **Industrial competitiveness**, based on an economy with a consistently high rate of productivity growth and good performance of small and medium-sized enterprises (SMEs). To be competitive, the promotion of research and innovation, information and communication technologies, entrepreneurship, competition, and education and training is essential.

Figure 1: Key dimensions and subdimensions of industrial relations

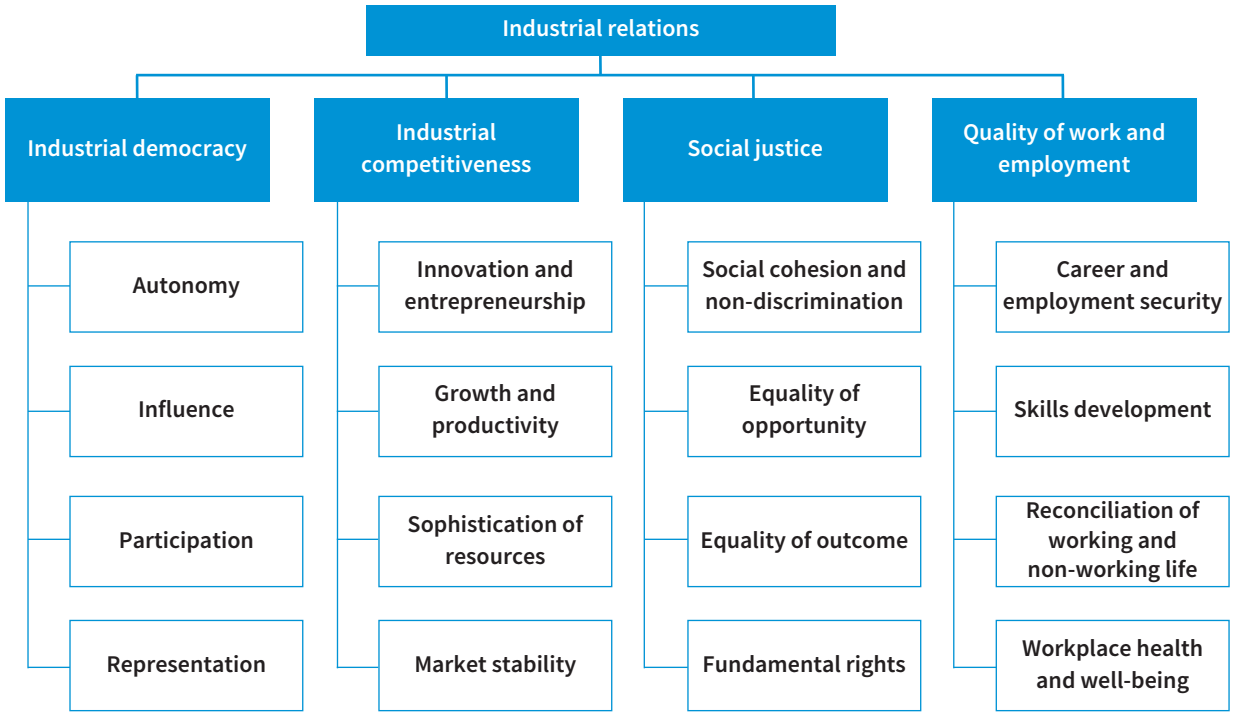


Figure 2: Eurofound's key dimensions of industrial relations



- **Social justice**, based on the fair and non-discriminatory distribution of opportunities and outcomes within a society. By defining it in terms of self-determination and self-realisation, social justice brings together four concepts: equality of opportunity, equality of outcome, non-discrimination and fundamental rights (the latter two concepts underpin the first two).
- **Quality of work and employment**, based on career and employment security, health and well-being, the ability to reconcile working and non-working life, and the opportunity to develop skills over the life course.

The study tested this conceptual framework in terms of its ability to map national industrial relations systems. Overall, the findings show the relevance of the key dimensions to European governments and social partners; they were found, to varying degrees, to be valid, relevant and regularly debated at national level.

The interconnectedness of the four dimensions is also highlighted. They are not compartmentalised or mutually exclusive; on the contrary, they work well together and are seen as key components of an industrial relations framework.

The study found, nevertheless, that the interpretation, application and implementation of the key dimensions depend on the stakeholders' affiliation (policymakers, employer organisations and trade unions) and their national industrial relations system. On this basis, the study stresses the usefulness of developing a harmonised conceptual framework, especially for cross-country comparisons and mutual learning. Applying the conceptual framework of the key dimensions should aid in:

- examining the dynamics of industrial relations and analysing how industrial relations systems are changing and adapting to new challenges;
- monitoring and assessing developments in principles and values and their operational application in the industrial relations systems in the EU;
- ensuring a sound balance between social justice (equity), industrial democracy and industrial competitiveness (efficiency).

This calls for the development of an appropriate set of indicators to describe the predominant features of the national industrial relations systems. Addressing this challenge is the objective of this current follow-up study.

Dashboard approach

This study adopts a 'dashboard' approach for applying the conceptual framework of the key dimensions. The aim of a dashboard is to provide a list of indicators to summarise a complex reality (industrial relations in this study).

It is extremely important to highlight that this kind of tool provides a summary, which is both an advantage

and a disadvantage. A dashboard is very useful in enabling understanding of an industrial relations system at a glance and allowing comparisons to be made among dimensions and countries. However, it should not be used to carry out an exhaustive analysis of industrial relations systems.

A considerable effort has to be made to select only the most relevant indicators needed to cover the essential aspects of industrial relations systems. Furthermore, the study aims to create a dashboard for all the EU Member States. Therefore, once the essential features (or indicators) at country level are identified, there is still a need to agree on the common essential feature. This requires finding a good balance between describing the internal reality of each country and making country-level comparisons feasible.

In selecting the indicators, it was also necessary to ensure a degree of balance in terms of the number of indicators across dimensions and subdimensions. This is in line with the framework of the key dimensions, where there is no internal hierarchy, and all the dimensions are expected to be interrelated and jointly contribute to the overall performance of the system.

Finally, the indicators to be included in the dashboard must meet strict quality criteria, in order to guarantee a robust analytical tool.

Quality criteria

Following the 2016 study, a preliminary set of indicators was selected on the basis of four criteria:

- relevance;
- validity and embeddedness;
- availability and accessibility of data;
- comparability.

To fine-tune this initial list of indicators, the quality assessment and assurance framework of the European Statistical System (ESS) (Eurostat, 2014, 2015) was applied. This framework evaluates the quality of existing statistical outputs based on Principles 11–15 of the European Statistics Code of Practice (Eurostat, 2011). The criteria for this assessment are as follows.

- Criterion 1: Relevance, which measures whether an indicator meets the current and potential needs of users. Indicators must help guide decisions that key users will need to make.
- Criterion 2: Accuracy and reliability, which shows whether data are regularly assessed and validated. An indicator should be accurate and reliably measure the phenomenon it intends to measure and should not be confounded by other factors. Indicators should be sensitive to changes, and changes in their values should have a clear and unambiguous meaning.
- Criterion 3: Timeliness and punctuality, which assesses whether indicators are released in accordance with an agreed schedule and soon after the period to which they refer. There should be a minimal time lag between the collection and reporting of data to ensure that indicators are reporting current rather than historical information.
- Criterion 4: Coherence and comparability, which shows whether concepts, definitions, methodologies and actual data are consistent internally and across space and time.
- Criterion 5: Accessibility and clarity, which indicates whether data are available and accompanied by adequate explanatory information (metadata).

A further five quality criteria frequently used in the research literature on processes of selecting indicators were also applied.

- Criterion 6: Grounded in research, which is related to the awareness of the key influences and factors affecting outcomes.
- Criterion 7: Methodological soundness, which shows whether an indicator is defined precisely and whether the indicator measurement is statistically sound, reflecting international scientific standards and well-established literature, or at least broad consensus among main stakeholders.
- Criterion 8: Intelligibility and easy interpretation, which assesses whether an indicator is sufficiently simple to be interpreted unambiguously in practice and intuitive in the sense that it is obvious what it is measuring. Indicators should have a clear meaning with respect to industrial relations, either ‘positive’ or ‘negative’.
- Criterion 9: Link to policy or emerging issues, which assesses whether an indicator reflects important issues as closely as possible.
- Criterion 10: Ability to be disaggregated, which shows whether the indicator is broken down into population subgroups or areas of particular interest.

The selected indicators relate to either processes or outcomes. Both types of indicators were considered potentially relevant for mapping the system of industrial relations. In addition, it is worth noting that any refinement in this sense is constrained by the sources available, which provide harmonised information on relevant industrial relations processes.

No additional criteria were used as regards type of indicators (that is, categorical, ordinal or numerical). It is common practice to include different types of indicators within one dashboard.

Once the data for the 28 EU Member States were compiled, a further set of criteria were applied with the aim of analysing missing values and outliers, as well as interrelations among the indicators.

- Criterion 11: Presence of missing data, which shows whether an indicator presents less than 10% missing values, by Member State and time.
- Criterion 12: Identification and analysis of outliers in the case of quantitative indicators, which may indicate bad data quality or the need to use robust statistical techniques.
- Criterion 13: Identification of double counting, which assesses through correlation analysis whether two or more indicators are providing the same information. Additionally, the presence of statistically significant differences between indicators were analysed through tests of independence. No indicator should overlap with any of the other indicators. Each one should fill an essential gap in the theoretical framework or substantially increase the relevance of existing indicators.
- Criterion 14: Testing the conceptual structure, which identifies the set of indicators that, based on their internal relationship, work well together, verifying statistically the structure of four dimensions identified conceptually.

The database created for this exercise compiled annual data for the period 2008–2015 from different European and international data sources: Eurofound, Eurostat, the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), the World Economic Forum (WEF), the Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (ICTWSS) database and Transparency International. Nevertheless, due to the lack of data for several indicators and for several countries, it was decided to work with time intervals (2008–2011 and 2012–2015), rather than individual years. In order to compute the average values for each indicator in those two time intervals, the arithmetic or geometric mean of the values available was applied (geometric mean for index, rate and percentage; arithmetic mean for others). Growth in these two time intervals was calculated by the difference or the rate (difference for index, rate and percentage; arithmetic mean for others). Yet, data for these two different points are not always available for all the indicators or for all countries, which severely constrains a dynamic analysis.

Interpretation of indicators

In this study, the methodological decision was made to include only those indicators in the dashboard that can be interpreted unambiguously and that have a clear meaning with respect to the framework of the key dimensions of industrial relations, either 'positive' or 'negative' (Criterion 8). This was seen as the more effective approach, considering Eurofound's focus on allowing comparisons and supporting mutual learning processes for policymakers and social partners. Besides, indicators that provide contextual information to support the interpretation of data may be included at a later stage.

It should be stressed that this is by no means a straightforward exercise. Indicators may be considered relevant, coming from a reliable source and technically valid for the purposes of the study, and yet raise reasonable doubts over their interpretation as regards the framework of the key dimensions. To illustrate this point, it is worth discussing some examples of indicators belonging to the dimension of industrial democracy. For instance, the indicator 'employee representation in the workplace' clearly meets this criterion. The indicator is defined as the number of workplaces with some form of employee representation as a percentage of the total number of workplaces. It is a simple and unambiguous indicator: higher values are interpreted as positive for industrial democracy.

Other indicators may be fully relevant for providing contextual information but cannot be interpreted as positive or negative for industrial democracy. One example is collectively agreed pay changes.

Other indicators again may be controversial, such as the number of days lost to industrial action. This indicator tells something about conflict, but its meaning is not completely clear with respect to industrial democracy. Among other things, the absence of conflict may be the result of poor working conditions, lack of workers' capacity for collective organisation and increasing worker vulnerability.

Many indicators were discarded in the initial stage of the study because their meaning was not unambiguous. Yet, it seems pertinent to highlight that even well-grounded indicators may present unexpected problems due to recent developments or certain national contexts. This and other reasons point to the relevance of testing the set of indicators at national level.

Testing indicators at national level

Testing the set of selected indicators through the application of quality criteria was a central task of the study. The aim of this exercise was to respond to the following research question:

How and to what extent can the conceptual framework of the key dimensions of industrial relations (industrial democracy, industrial competitiveness, social justice, and quality of work and employment) be applied to the national level of industrial relations?

For this purpose, the dataset with the compiled data was distributed to the Network of European Correspondents, along with a questionnaire. The main task of the correspondents was to use the data provided to assess the application of the conceptual framework of the key dimensions to their national industrial relations system. This included mapping the most relevant features of the industrial relations system to the four key dimensions, describing the relevant changes that had occurred since 2008, and assessing the extent to which these trends are in line with the scientific literature, as well as relevant policy documents reflecting the views of the social partners.

In addition, the questionnaire was designed to gather additional insights in order to further refine the set of indicators. To this end, the correspondents were asked to identify specific features of their national industrial relations system that were not covered and to suggest additional indicators in order to properly map the national industrial relations system in question against the four key dimensions.

The methodology to be followed in order to respond to the questionnaire consisted of: desk research of any relevant scientific literature on the national industrial relations system and social partners' policy documents; and assessment of the data provided against the outcomes of the desk research.

Using aggregation as a tool for fine-tuning and testing

The main objective of this study was to create a tested dashboard of indicators that could enable the application of the conceptual framework of the key dimensions of industrial relations to national industrial relations systems. This means that the study did not aim to create a composite index on industrial relations that would provide aggregated values for measuring and comparing dimensions and countries – this would be a far more sensitive and ambitious approach, one that would require further discussion within Eurofound, as well as a different methodology to ensure robust results. However, aggregation has been used as an analytical tool to select and test the most relevant indicators for mapping and analysing the national industrial relations systems. This has been facilitated by the fact that all the selected indicators can be unambiguously interpreted regarding the framework of the key dimensions, because this is a precondition for aggregation.

Aggregated values by dimension have been calculated to provide an insight into how each national industrial relations system is performing. Aggregation has been done according to the following steps.

1. Imputation of missing values: Due to the need to work with a complete database, any missing values of a variable were replaced by the mean of the variable.
2. Reversion of the indicators, if needed: In order to aggregate the indicators into dimensions, the direction of all indicators needs to stay homogenous. In this exercise, the positive sign was chosen because the majority of the indicators in the dataset already had a positive interpretation, meaning that higher values are interpreted positively. Those indicators that originally had a negative sign had to be transformed and reversed into positive-sign indicators. A number of techniques can be used to reverse a variable, depending on the nature of the variable. Considering that in this exercise the indicators that needed to be reversed were percentages, they were reversed by calculating their complementary value.
3. Normalisation of the indicators: This eliminates the effect of different scales and measurement units and making them comparable. From the several existing methods of data normalisation, the one applied in this exercise was the 'min–max method'.
4. Weighting: All indicators were weighted with equal weights.
5. Aggregation: All indicators in each dimension were aggregated by applying the arithmetic mean, providing a score for each of the four dimensions identified conceptually. These four scores were then aggregated with an arithmetic mean, providing a global score for industrial relations.

These aggregated values were used to prepare a radar chart for each EU Member State. Each chart shows the results obtained for each dimension, including the EU average as a reference. The radar charts were distributed to the national correspondents, along with the database, as an additional input for responding to the questionnaire. They have proven to be a useful tool for detecting inconsistencies and testing the overall accuracy of the set of indicators at national level. They also provide a visual input for mapping a national industrial system against the four dimensions, illustrating the extent to which the industrial system encompasses the dimensions in a balanced way. For

this reason, they are included in this report (see Chapter 3).

Analysis of the correlations between the indicators and the scores of the subdimensions and dimensions, calculated with the Pearson's correlation coefficient, was a useful tool to fine-tune the dashboard. This analysis enabled identification of those indicators that were not significant in measuring the dimension to which they were assigned, as well as any two indicators with a very high correlation, providing almost the same information to the dataset. Those indicators could then be dropped from the list.

However, it is worth stressing that aggregation has been only a tool. The results obtained are far from final in the process of computing a composite indicator on industrial relations due to several reasons:

- only one imputation method, one aggregation method and one weighting method has been tested;
- working with a balanced number of indicators under each dimension is not taken into consideration;
- sensitivity and uncertainty analysis were not carried out.

2 Fine-tuning and testing the indicators

Selecting a preliminary set of indicators

The initial list of indicators selected for the key dimensions of industrial relations was thoroughly revised on the basis of the methodology explained in the previous chapter. The initial discussion around the set of quality criteria – relevance (1) and intelligibility and easy interpretation (8) – proved to be useful in reaching a more nuanced understanding of the four key dimensions and in extending the analysis to new indicators for the dashboard.

It is worth noting that different approaches were considered at this stage. Industrial democracy is at the core of Eurofound expertise, but there is little research on dashboards and composite indexes. In comparison, these tools seem to be quite well-researched in relation to social justice and quality of work and employment, with several institutions producing their own dashboards and indexes on these themes. In the case of industrial competitiveness, Eurofound's approach is innovative although still not fully developed, while several other institutions are working on competitiveness from different perspectives.

One option was to focus on selecting the indicators for industrial democracy and to use the best indicators and composite indexes available in the literature for the other three dimensions (for example, the Bertelsmann EU Social Justice Index). However, it was decided that it made more sense to select indicators for all the dimensions, trying to reflect as accurately as possible Eurofound's understanding of the 4 dimensions and 16 subdimensions of industrial relations. This option could provide more straightforward findings and contribute more effectively to the development of the framework approach. Table 1 shows the list of indicators tested by the national correspondents.

Table 1: List of indicators tested by the national correspondents

Dimension	Subdimension	Indicator	Source	Unit
Industrial democracy	Autonomy	Time resources for employee representatives	Eurofound, ECS	Hours
	Representation	Trade union density	ICTWSS, ILO	Percentage
		Employer organisation density	ICTWSS	Percentage
		Collective wage agreements	Eurofound, ECS	Percentage
		Collective bargaining coverage	ICTWSS, ILO	Percentage
	Participation	Employee representation in the workplace	Eurofound, ECS	Percentage
		Direct employee participation in the workplace (management evaluation)	Eurofound, ECS	Points
		Direct employee participation in the workplace (employee representative evaluation)	Eurofound, ECS	Points
		Participation of the employee representation body in the workplace (management evaluation)	Eurofound, ECS	Points
		Participation of the employee representation body in the workplace (employee representative evaluation)	Eurofound, ECS	Points
	Influence	Direct employee influence in decision-making in the workplace	Eurofound, ECS	Points
		Influence of the employee representation body in decision-making in the workplace	Eurofound, ECS	Points
	Trust	Trust in employee representation	Eurofound, ECS	Points
		Trust in management regarding the involvement of employees and of the employee representation body in decision-making	Eurofound, ECS	Points

Dimension	Subdimension	Indicator	Source	Unit
Industrial competitiveness	Productivity and growth	GDP growth per capita	Eurostat	Percentage
		Labour productivity	Eurostat	Points
		Employment rate	Eurostat	Percentage
	Market stability and efficiency	Incidence of corruption	Transparency International	Points
	Sophistication of resources	Infrastructure ranking	World Economic Forum	Points
		Percentage of individuals with high-level education	Eurostat	Percentage
		Percentage of individuals with at least medium-level computer skills	Eurostat	Percentage
		Percentage of individuals with at least medium-level internet skills	Eurostat	Percentage
	Innovation and entrepreneurship	Percentage of R&D personnel	Eurostat	Percentage
		R&D expenditure as a percentage of GDP	Eurostat	Percentage
		Percentage of enterprises newly born in t-2 having survived to t	Eurostat	Percentage
Social justice	Social cohesion and non-discrimination	At-risk-of-poverty or social exclusion rate	Eurostat	Percentage
		In-work poverty rate	Eurostat	Percentage
		Ratio of women to men employment rate	Eurostat	Percentage
		Gender pay gap	Eurostat	Percentage
		Ratio of older to non-older people employment rate	Eurostat	Percentage
		Ratio of young to non-young people employment rate	Eurostat	Percentage
		Ratio of foreign-born to native-born people employment rate	Eurostat	Percentage
		Employment rate of people with disabilities	Eurostat	Percentage
	Equality of opportunity	Early leavers from education and training	Eurostat	Percentage
		Old-age dependency ratio	Eurostat	Percentage
	Equality of outcome	Long-term unemployment rate	Eurostat	Percentage
		Youth unemployment ratio	Eurostat	Percentage
		Gini coefficient	Eurostat	Points
Quality of work and employment	Career and employment security	Minimum wage	ICTWSS	Points
		Unemployment protection coverage	Eurostat	Percentage
		Low-pay incidence	Eurostat	Percentage
		Involuntary temporary employment	Eurostat	Percentage
		Job security	Eurofound, EWCS	Percentage
		Income development	Eurofound, EWCS	Percentage
		Career prospects	Eurofound, EWCS	Percentage
	Health and well-being	Adverse social behaviour	Eurofound, EWCS	Percentage
		Subjective workplace well-being	Eurofound, EWCS	Percentage
		Depression or anxiety	Eurofound, EWCS	Percentage
		Musculoskeletal disorder	Eurofound, EWCS	Percentage
	Reconciliation of working and non-working life	Excessive working time	ILO	Percentage
		Unsocial working time	Eurostat	Percentage
		Ratio of women to men, usual working time	Eurostat	Percentage
		Ratio of women to men, hours spent on unpaid work	Eurofound, EWCS	Percentage
	Skills development	Life-long learning	Eurostat	Percentage
		Unemployed persons up-skilling	Eurostat	Percentage

Notes: *ECS = European Company Survey; EWCS = European Working Conditions Survey; ICTWSS = Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts database; ILO = International Labour Organization*

Findings from the national contributions

Table 2 describes the extent to which the national correspondents judged that the indicators depict a picture in line with the literature, following a static approach (without considering the extent to which they accurately depict changes and evolving trends).

As shown, there was an overall positive assessment in terms of accuracy. One group of four countries found the results in all the dimensions to be accurate. A second group, of 10 countries, found the results to be accurate in all the dimensions but suggested including additional indicators in order to obtain a more complete picture of the dimensions and to improve accuracy. Those suggestions include contextual indicators (the legal framework), as well as additional indicators considered important to properly grasp some dimensions, such as indicators on social dialogue for the industrial democracy dimension. The national correspondents for a group of 12 countries found the results to be accurate across all the dimensions but also pointed to the existence of problematic indicators, which they felt should be reconsidered. The UK, for instance, found the results to be inaccurate in relation to the quality of work and employment dimension and, to some extent, to the industrial democracy dimension. Finally, only one country disagreed with the methodology used to fine-tune the indicators.

The sections that follow provide further detail on suggestions and insights collected from the national correspondents for each key dimension.

Accuracy: An overview by dimension

Industrial democracy

The industrial democracy dimension attracted the most attention from the national correspondents when assessing the accuracy of the indicators. Some found the results accurate but proposed including additional indicators in order to fully grasp relevant or defining features of industrial democracy within their national context. Contributions from Finland, Luxembourg and Spain suggested including indicators aiming to measure the level of trade union influence in policymaking, with the intention of reflecting different outcomes in terms of industrial democracy as a result of divergent institutional settings and traditions. For instance, the national contribution from Finland points to the need to include indicators that can address the high level of social partner involvement and influence on legislation and other national decision-making processes in all social policy areas, as this is a relevant defining feature of the strength of its system within this dimension.

The Spanish contribution highlights that a defining feature of the Spanish system is the role played by the state in the governance and regulation of employment and industrial relations. Within this institutional context, tripartite social pacts are key mechanisms ensuring coordinated economic governance. The state carries out a prominent function in the design and implementation of welfare policies and the regulation of employment and working conditions. The state also plays a role in the promotion of collective bargaining through different provisions, such as extension mechanisms that ensure the general efficiency of collective agreements and provisions that ensure the continuation of collective agreements beyond their expiry date (the so-called 'ultra-activity principle', which has recently been modified). Some authors argue that those institutional features have made the social partners dependent on the willingness of the state, consolidating an episodic social dialogue (Molina, 2014). As a result, their actual autonomy is, to some extent, limited and their influence in relevant regulatory decisions on issues such as labour regulation or pensions is irregular and politicised, as Visser (2009) argues regarding the southern European industrial relations cluster. The importance of these features within the Spanish context is not properly captured, because the indicators provide information only on social partners or employee representatives at company

Table 2: National correspondents' assessment of accuracy of results

Assessment	Countries	Examples
Accurate results in all dimensions	Bulgaria, Croatia, Malta, Poland	
Accurate results in all dimensions; however, including additional indicators would improve accuracy	Belgium, Cyprus, France, Italy, Luxembourg, the Netherlands*, Romania, Slovakia, Slovenia, Spain	Indicators on social dialogue; indicator on the legal framework of industrial relations; indicators measuring social mobility
Accurate results in all dimensions; however, there are problematic indicators that should be reconsidered	Austria, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Lithuania, Portugal, Sweden	National minimum wage; GDP
Accurate results for some dimensions; inaccurate results for others	United Kingdom	Quality of work and employment dimension
Disagreement with the methodology	Latvia	

** The national contribution from the Netherlands was not available. A short assessment was compiled by Eurofound, involving consultation with an expert on industrial relations in the Netherlands.*

level and information on collective bargaining and do not address the role of the state at the macro level.

In countries where the representativeness of trade unions depends on electoral outcomes, it was suggested to include specific indicators used for measuring representativeness, such as the results of workplace elections (Spain) or the results of the elections for the Chamber of Employees (Luxembourg). It is worth noting that in these countries, trade union density is becoming less significant.

Furthermore, several national contributions pointed to the need to include contextual indicators describing aspects of the industrial relations legal framework that have implications for industrial democracy. For example, the national contribution from Germany suggests including indicators describing the regulation or legislation of worker participation. As noted, a fundamental feature of the German industrial relations system ensuring industrial democracy is a legal framework that enhances worker representation and participation rights in a firm's corporate governance through co-determination rights. Thus, from the German perspective, the industrial democracy dimension may need additional indicators with regard to the regulation of representation in order to properly reflect the strength of the system. The national contributions from Hungary and Spain note that the lack of contextual indicators on legislation hamper the observation of negative effects on industrial democracy stemming from their government's unilateral intervention in industrial relations in recent years. Interestingly, the national contribution from the Czech Republic suggests including contextual indicators aiming to describe the legal framework for industrial relations because, based on it, the social partners in the Czech Republic are widely autonomous, can participate in the governance of employment relationships and are able to influence decision-making. However, the extent of the use of such rights is low, which is reflected in the indicators included in industrial democracy. Thus, this contribution suggests that the indicators selected enable observation of actual results achieved, instead of the potential for democracy within the legal framework. Another suggested contextual indicator that can be related to the legal framework is the predominant level of bargaining (Portugal).

Some countries provide a more nuanced interpretation of some indicators, which, since they are defined at national cross-sectoral level, may overshadow the wide range of situations existing in reality. In this sense, the national contribution from Cyprus notes that in sectors where the workforce is primarily composed of immigrants, employee representation bodies face more difficulties in becoming recognised and, as a result, employers' decisions tend to be taken unilaterally.

Some comments made by the national correspondents raised doubts about the accuracy of some results, due to the existence of problematic indicators. The Danish contribution noted that the indicator on time resources allocated to employee representatives, defined in Eurofound's European Company Survey (ECS) as the working time to which they are entitled to carry out their representation duties, may underestimate the actual strength of its system. According to the national correspondent's own assessment, Danish employee representatives spend more than one hour per week on their representation duties within their working time, as reflected in the ECS survey findings. Similarly, the national contribution from Greece notes that, although minimum leave for trade union purposes is set by law (Law 1264/82 and Law 2224/94), the time provided for trade union leave may be more than the minimum if a collective agreement is signed at company level, or sectoral level in the private sector.

Another indicator that was questioned is that relating to employer organisation density (raised in Bulgaria, Greece and Hungary). According to the national contribution from Greece, the value of this indicator is overestimated. Although there is no study on the subject, the national correspondent noted that recent legislative changes to the system of collective bargaining, which abolished the universally binding character of collective agreements, may disincentivise companies to affiliate. On the basis of the current legislation, sectoral collective agreements apply only to members of employer and employee organisations, with the result that companies do not join employer organisations, fearing the imposition of a collective agreement. The national contribution from Hungary also finds that the figure on density of employer organisations may be overestimated, bearing in mind that in this country, several organisations could be defined as trade associations rather than employer organisations interested in being involved in collective bargaining.

Finally, it is worth noting that several national contributions raise doubts about the accuracy of some of the indicators taken from the ECS to measure employee participation and influence in the workplace. The national contribution from the UK notes that the data presented point to perceptions that employee participation provides mechanisms for consultation rather than mere provision of information. Conversely, a wide range of academic studies have found that, within the UK, there has been an ongoing trend in the erosion of more collective forms of representation (often based on trade union representation and which provide for negotiation rights and/or meaningful consultation) and substitution of these with 'direct' and more individualised forms of involvement, such as management provision of information, direct task-based participation and a concomitant exposure of employees to a plethora of communication techniques (see Markey and Townsend, 2013; Wilkson et al, 2010; Wilkinson and Fay, 2011). This may have implications for

the level of decision-making that employees are actually involved in and the extent to which they can exert influence over organisational decision-making (Strauss, 2006). Direct forms of involvement, typically confined to the level of immediate tasks and the cascade of managerial information, tend to be weak on actual power-sharing and meaningful consultation, being aimed more at securing employee commitment to managerial decisions and organisational goals (Marchington and Wilkinson, 2010).

The national contribution from Lithuania finds the values for several indicators on participation to be overestimated. This may be explained by the fact that the occupational safety and health representative bodies, which according to national legislation should be elected in every company, have only a very formal position and may be understood in the context of the ECS as employee representative bodies. In the national contribution from Estonia, the correspondent assesses that figures on employee representation at the workplace may be overestimated. It is noted that such representation is not necessarily articulated through trade unions; Estonia has a dual-channel employee representation system in the workplace, so it can be exercised through a trade union or through an employee representative (elected from the company's employees). Moreover, both can be present at the same time. According to Statistics Estonia's Work Life Survey, in 2009, 10% of employees belonged to a trade union and 27.4% of employees self-reported the existence of an employee representative in their company (7.8% were not sure whether or not one existed). In 2015, 7.2% of employees were in a trade union and 20.1% reported the existence of an employee representative (34.8% were not sure). In terms of companies, around 6% have a trade union and 18% have an employee representative (13% in 2009).

Social justice

Several points of learning emerged from the national correspondents' assessment of the accuracy of the social justice indicators. Regarding comments and suggestions for new indicators, the national contribution from Finland draws attention to the lack of indicators reflecting equality of outcome based on intergenerational social mobility. In Finland, the barriers between socioeconomic classes have long been relatively low (Erola and Moisio, 2007), and opportunities for children whose parents do not have an academic background to complete an academic degree significantly increased between 1970 and 2010 (Osmo et al, 2012). The national contribution from Italy notes that the indicators on equality of outcome do not allow observation of the NEET phenomenon, which is more relevant in Italy than the youth unemployment rate to describe the social and labour market situation there.

Some countries provide a more nuanced interpretation of certain indicators that may hide relevant sectoral differences. This applies to the gender pay gap indicator in Ireland, which, according to the national correspondent there, masks considerable variation across sectors. Research undertaken by the Economic Social and Research Institute and the Equality Authority found that the gender pay gap ranged from 13.3% in the hotel sector to 45.8% in education (raw gender wage gap), and from 2.7% in the transport sector to 20.1% in the construction sector (McGuinness et al, 2009).

Some contributions raise doubts about the accuracy of their national data in relation to some of the indicators. The national contribution from Finland finds, for instance, different results from national sources in relation to the youth unemployment rate (20% and 10%–11%) and the gender pay gap (17% and 19%).

Some national contributions suggest that some indicators need to be reconsidered, or at least interpreted in conjunction with additional indicators, in order to obtain a more comprehensive picture. Regarding the indicator on risk of poverty or social exclusion, the national contribution from Greece notes that the increase in the cost of living, with additional fiscal costs (indirect and special taxes), has been unevenly distributed at the expense of those on lower incomes, while at the same time there has been a significant reduction in public spending on social protection, education and health (Yiannitsis and Zografakis, 2016). Moreover, the threshold for the poverty line was reduced during the crisis period (€6,897 in 2008; €5,708 in 2012; €5,023 in 2013; €4,512 in 2016). For that reason, the calculation of the poverty rate based on a threshold at a particular time (namely 2008) would be more representative of the changes regarding the poverty risk. At the same time, the level of unemployment protection coverage in Greece is arguably lower than that reflected by the unemployment protection coverage indicator, given the high level of self-employment in that country (34%), for which no unemployment benefit is paid, with the result that this is not included in unemployment protection coverage. In addition, the national contribution from Portugal notes that the indicator for in-work poverty underestimates the real number of working poor in the country (Rodrigues, 2016).

The national contributions for Germany and Luxembourg note that the social justice indicators are unrelated to social partner actors and processes. To illustrate this, the German contribution explains that collective bargaining may have contributed to the gender pay gap by settling high wages for male workers and low wages for female workers in female-dominated services (such as cleaning activities).

Finally, the German contribution raises doubts about the extent to which integration into the labour market in a context marked by the extension of atypical contracts can be considered indicative of a positive trend in social justice. However, this trend can be

grasped, at least to some extent, using the indicators selected. Thus, in Germany, the indicators show a decline in youth unemployment and long-term unemployment alongside an increase in in-work poverty.

Quality of work and employment

National correspondents assessing the accuracy of the dimension of quality of work and employment proposed new indicators. For example, the national contribution from Sweden proposes including involuntary part-time employment jointly with involuntary temporary employment to provide a broader picture of quality of employment. The national contribution from Austria suggests including contextual indicators related to institutional policies favouring reconciliation of working and non-working life (such as those relating to parental leave and compensation rates), an area where Austria fares comparatively well (with high compensation rates and relatively long parental leave). These indicators could affect the relatively low values recorded in the indicators on the reconciliation of working and non-working life.

The national contribution from Italy points out that the reconciliation of working and non-working life could be better explained by observing workers' desire to modify the ratio between time dedicated to work and the time dedicated to family. Along those lines, it notes that the National Institute of Statistics (Istituto Nazionale di Statistica, Istat) estimates that only 3 out of 10 people state they spend the desired amount of time with family members. It also notes that elements likely to capture the relationship between the number of children in a family and female participation in the labour market could provide a fuller picture of gender differences in the labour market.

The contribution from Slovenia proposes adding indicators to measure or describe the regulation of employment protection, drawing on OECD sources.

Some comments question the accuracy of particular indicators. The national contribution from the Czech Republic expresses concerns about the job security indicator. It notes that that indicator, as translated in the Czech version of the European Working Conditions Survey (EWCS) questionnaire, does not measure the probability or possibility of losing one's job. Based on this, it is argued that the data on this indicator overstate job security (according to which, 60% of people reported being secure in their jobs in 2014). On this point, it is relevant to note that a qualitative post-test analysis of this indicator conducted by Eurofound in 2006 found that respondents often agreed that they could lose their jobs since 'the unpredictable can always happen (you can never tell what tomorrow will bring)', but at the same time did not feel a sense of insecurity regarding their jobs (Eurofound, 2007).

The national contributions from Nordic countries question the relevance of the indicator on the national minimum wage. As argued in the national contributions from these countries, the fact that a legal and mandatory minimum wage does not exist does not necessarily mean that actual wages are lower. On the contrary, high and inclusive collective bargaining coverage can manage to set wages at high levels.

The national contributions from Denmark and Finland raise doubts about the indicator on the proportion of workers suffering musculoskeletal disorders, as values appear to be too high (60% and 73%, respectively).

Some national contributions question the validity of subjective indicators on income development in the context of a general deterioration of labour market prospects and earnings (such as Germany) or low wages (cheap labour force) and trade unions campaigns denouncing the situation (such as the Czech Republic). Nevertheless, it is worth noting that the database includes several indicators addressing objective working conditions and that the research literature supports combining objective indicators with subjective indicators (Muñoz de Bustillo et al, 2011).

Attention should be drawn to the concerns raised by the UK national correspondent regarding the picture depicted by indicators for quality of work and employment. That contribution highlights that relevant research suggests a worsening of employment quality and that it does so by paying attention to alternative indicators. Some studies, for instance, point to the fact that a large proportion of jobs created are low paid, insecure and casual work. Zero-hours contracts, for example, increased from 600,000 in 2014 to 700,000 in 2015. Moreover, 31% of the jobs created since 2010 have been in self-employment, where average earnings have fallen by 22% since 2008–2009 (D'Arcy and Gardiner, 2014). Over the same period, employee earnings fell by 6%. Furthermore, research by the Social Market Foundation in 2016 found that around one-half (49%) of the UK's self-employed are low paid, measured on an hourly basis, compared with around one-fifth of employees (22%) (Broughton and Richards, 2016).

Industrial competitiveness

The national contributions include proposals for new indicators regarding industrial competitiveness. Italy's contribution, for example, notes that the only factor not detected by the indicators is the administrative burden on companies, which is considered to hamper growth in competitiveness.

Some contributions question the accuracy of certain indicators. The national contribution from Austria notes that the increase in the percentage of individuals with higher-level (tertiary) education, of almost 10 percentage points between 2013 and 2014, must be attributed to a change in the data source or methodology used to measure this.

The national contribution from Ireland points out that the gross domestic product (GDP) indicator is of little relevance in measuring the levels of economic activity in the 'real economy'. Most economists have cited the growth in consumer spending as a better measure of underlying growth in the economy, which grew in Ireland by 4.5% in 2015, a figure that is considerably lower than that suggested by the GDP indicator. Moreover, it notes that different national sources provide different GDP values. In contrast with the GDP figures for 2015, the Central Statistics Office (CSO) reported that GDP actually contracted by 2.1% for the first quarter of 2016, while gross national product (GNP) rose by 1.3%. Bearing in mind this confusion and controversy over the reported data, the CSO has developed a new indicator – gross national income (GNI) – which, it is claimed, will better capture the true level of growth in the domestic economy by stripping out the profits associated with so-called 'redomiciled PLCs' (companies that establish a legal presence in Ireland while investing little in the country). This new indicator will be published annually alongside the standard, internationally agreed indicators of GDP and GNP. In addition, the Irish contribution considers the infrastructure ranking as being too generous. According to the correspondents' own assessment, the motorway network has improved significantly in recent years, yet the rail network is considerably behind that of other European countries, and there are also serious deficiencies in the provision of housing and healthcare.

The national contribution from Hungary expresses concerns about the employment rate indicator. It points out that this overestimates the employment rate, due to the existence of government-funded, large-scale public works programmes, which in most cases are highly inefficient, costly and which do not lead to jobs in the primary labour market. Moreover, attention is drawn to the massive outward migration of young, talented and skilled people (not reflected in domestic employment statistics). Both trends raise a question over the validity of the usual interpretation of employment figures; they also undermine the long-term sustainability of economic growth and the welfare system. The Finnish national contribution also raises doubts about the accuracy of this indicator. It notes that one of the main objectives of the current government (of Prime Minister Juha Sipilä) is to raise the general employment rate to 72%, from its current rate of approximately 69% (figures from national sources). Thus, from the Finnish perspective, the figure of 75% presented for 2015 is inaccurate.

Finally, the German contribution notes that most indicators within this dimension are not very clear or that they are too broad. It also stresses that indicators such as the employment rate, GDP growth ratio per capita, corruption, and research and development (R&D) personnel cannot be directly related to the industrial relations system.

Accuracy: An overview of dynamic trends

Analysis of the accuracy of the dynamic trends (how the values evolve in the period considered) presents some limitations related to the current availability of data. This applies especially to industrial democracy, for which only 5 of 14 indicators were available for analysis. Bearing this in mind, several national contributions express concern that existing data do not show the recent deterioration in some dimensions. The national contribution from Finland notes that quality of work and employment and social justice have been under significant strain due to austerity measures. This shift is not fully reflected in the data, at least partly because the most significant cuts were made only in 2015–2016. In addition, it notes that employers have attempted to introduce significant changes in the industrial democracy system, promoting local-level bargaining over centralised agreements and questioning the principle of general applicability of collective agreements. Trade unions largely believe that such developments would weaken industrial democracy. The Croatian national correspondent states that industrial democracy is the dimension that has recorded the most important changes since 2008, particularly in terms of collective bargaining coverage. However, these trends are not well reflected in the database due to the unavailability of data for most of the years concerned.

Spain and Hungary highlight changes affecting industrial democracy, some of which are assessed as being not properly reflected by the selected indicators. The contribution from Spain stresses how unilateral reforms have weakened collective bargaining and the capacity of the social partners to regulate employment and working conditions, thus negatively impacting on industrial democracy. According to some authors, this intervention has altered the balance of power between trade unions and employers, consolidating an 'authoritarian model of industrial relations, which exalts unilateral employer decisions in working regulation as a principle of new labour law, impacting information, consultation and negotiation rights' (Rocha, 2014, p. 205). Nevertheless, the indicators selected do not properly capture this trend. Similarly, the Hungarian contribution notes that the situation there in relation to industrial democracy has deteriorated considerably, although this trend is barely articulated through the set of indicators selected. This trend can be attributed, to a large extent, to the hostile policies and practices of the government regarding social dialogue and collective bargaining; all of this weakens the position of the trade unions.

The national contribution from Denmark refers to the recorded trend of decentralisation, especially since the 1990s. However, the assessment of those effects on industrial democracy cannot be interpreted as negatively affecting this dimension. As opposed to countries from the southern cluster, the

decentralisation process has been controlled and agreed to by the parties involved and is referred to as 'centralised decentralisation'.

The Estonian national contribution points out that additional indicators could enable the observation of a deterioration of social justice. Along these lines, it notes that the European Committee of Social Rights, which evaluates compliance with the European Social Charter, has repeatedly highlighted that the unemployment allowance and the minimum rate of the unemployment insurance benefit do not meet the minimum requirements of the Charter as they are below the minimum subsistence level. Hence, unemployment rates are considered a relevant indicator for Estonia within the social justice dimension.

The national contribution from Luxembourg notes how the lack of indicators on social dialogue hampers the observation of relevant changes that have occurred since 2010. These changes are related to the breach in tripartite social dialogue, which, within the Luxembourg system, could mean a deterioration of industrial democracy. Conversely, the national contribution from the Czech Republic notes that the lack of social dialogue indicators impedes the articulation of relevant and positive effects on industrial democracy related to the revitalisation of social dialogue and tripartite negotiations following the general elections held in autumn 2013.

The Slovenian correspondent notes that the deregulation of employment protection due to pressure from international institutions during the economic crisis, which has negatively affected quality of work and employment, is not captured by the indicators.

Some countries, notably the UK, provide a more nuanced interpretation of some trends by adding alternative indicators. The UK national contribution challenges the positive trend in the number of people with a higher education (up by 16.7% over the 2008–2015 period). According to the national correspondent, the UK has a highly bifurcated skill structure, with large numbers of people with no or low skills (Bosch, 2017). A focus on the number with a high level of education may overshadow this fact.

Some countries raise doubts about the accuracy of the values of some indicators for certain years. One indicator identified as particularly problematic in several national contributions is that of employee representation in the workplace. These contributions consider the sharp change in the value of this indicator from 2009 to 2013 to be inaccurate. For instance, the Austrian contribution compares data with other national sources and finds the 2009 figure to be inaccurate. The German contribution notes that the huge fall (from 84.3% to 33.8%) cannot be explained by any national data or evidence. The Swedish contribution also questions the sharp decrease recorded, as it is not shown in any other studies or in national data, raising the issue of whether the question was phrased differently in 2009 and 2013, which made the data unsuitable for comparison. Some concerns were also expressed regarding the results from the collective bargaining coverage indicator and, to a lesser extent, from the collective wage agreements indicator. The national contribution from the UK notes that collective agreement coverage has fallen further according to national sources, while the Austrian contribution notes that changes in the number of collective wage agreements cannot be explained on the basis of national data and literature.

Concerns are also expressed in relation to the trends recorded in subjective indicators measuring job security. The national contribution from Sweden states that an increase in job security has not been reflected in the labour policy debate over recent years. Moreover, alternative indicators showing an expansion of fixed-term contracts could mean an increase in job insecurity. One in five blue-collar workers is employed on a fixed-term basis (as is one in four female blue-collar workers), and most fixed-term contracts are 'on-call' jobs instead of the longer-term temporary jobs that used to be more common. The data also show how involuntary temporary employment (an indicator included in the database) increased from 54.3% in 2008 to 59% in 2015. In this regard, several unions report that employment conditions have deteriorated. The contribution from Poland notes that trends reflected in some subjective indicators on quality of work and employment are doubtful in light of cross-checks with other available data.

Finally, the UK national contribution states that existing indicators do not fit well with evidence in the literature that shows the expansion, in recent years, of insecure work, low-quality jobs and growing wealth inequality.

Improving the set of indicators: From conceptual to specific remarks

The indicator accuracy assessments conducted by the national correspondents call for:

1. strengthening the conceptual approach by improving the relevance of the indicators to industrial relations actors and processes;
2. expanding the set of indicators to cover relevant gaps highlighted in some national contributions;
3. including contextual indicators describing factors that can contribute to a better understanding of outcomes recorded in the dimensions – for instance, related to the legal framework of industrial relations;
4. discarding some conceptually problematic indicators;
5. checking the reliability of some indicators against other sources;
6. improving statistical methods.

Building the final list of indicators

The final list of indicators selected was built on the basis of the findings from the national contributions, consultation with other Eurofound experts and further statistical analysis. In this process, several indicators were discarded, some indicators were replaced or modified, and new indicators were tested.

Some indicators, such as trust in employee representation, trust in management, labour productivity and ratio of foreign-born to native-born people employment rate, were discarded because of negative correlations, while indicators such as number of unemployed people upskilling were omitted due to double counting. Some of the indicators that were discarded or discarded for particular years following the national correspondents' assessment were: participation of the employee representation body in the workplace; musculoskeletal disorder; and employee representation in the workplace (data from 2009). Regarding the last indicator, several national contributions considered the sharp change in the value of this indicator (2009 to 2013) to be inaccurate. Those comments made it necessary to check the ECS questionnaire, observing a change in the wording of the questionnaire ('formal' in 2009 versus 'official' in 2013), which may explain the changes recorded and make the data across these two years non-comparable. In spite of these changes, the final results did not differ significantly from the results tested at national level.

The inclusion of indicators on social dialogue was found to be problematic. Two indicators of this subdimension were tested as it was considered relevant to explore this angle of industrial democracy. One concerned the number of social pacts between the government and trade unions, and the other concerned the existence of a nationwide agreement between the social partners. Including these indicators produced results that were clearly contrary to those found in the scientific literature. This suggests that traditions of social dialogue vary widely across different clusters of countries; this does not necessarily mean that a higher number of pacts is related to higher levels of industrial democracy. As reported in some countries during the crisis, under certain circumstances and contexts, social pacts provide only an 'expressive' function, acting as a symbolic legitimation of government-led reform, instead of a real democratic function (Regan, 2013).

Table 3 shows the changes made in the list of indicators following the assessment of the original list carried out by the national correspondents.

Table 3: Changes to the list of indicators following national correspondent assessment

Dimension	Subdimension	Indicator	Source	Changes
Industrial democracy	Autonomy	Time resources for employee representatives	Eurofound, ECS	Refined – more accurate definition
	Participation	Employee representation in the workplace	Eurofound, ECS	Refined – 2009 and 2013 data are not comparable; only 2013 data included
		Participation of the employee representation body in the workplace (employee representative evaluation)	Eurofound, ECS	Discarded – inconsistent results
	Trust	Trust in employee representation	Eurofound, ECS	Discarded – negative correlations
		Trust in management regarding the involvement of employees and of the employee representation body in decision-making	Eurofound, ECS	Discarded – not statistically significant
	Social dialogue	Existence of social pacts between the government and the unions (with or without the employers)	ICTWSS, ILO	New indicator tested and discarded – inconsistent results
		Existence of agreements between the central organisations of the trade unions and the employers	ICTWSS, ILO	New indicator tested and discarded – inconsistent results
Industrial competitiveness	Productivity and growth	Labour productivity	Eurostat	Discarded – negative correlations
Social justice	Social cohesion and non-discrimination	Ratio of foreign-born to native-born people, employment rate	Eurostat	Discarded – negative correlations

Dimension	Subdimension	Indicator	Source	Changes
Quality of work and employment	Career and employment security	Minimum wage	ICTWSS	Discarded – negative correlations
	Health and well-being	Adverse social behaviour	Eurofound, EWCS	Discarded – negative correlations
		Musculoskeletal disorder	Eurofound, EWCS	Discarded – not statistically significant
	Reconciliation of working and non-working life	Ratio of women to men, usual working time	Eurostat	Discarded – negative correlations
	Skills development	Unemployed persons up-skilling	Eurostat	Discarded – double counting

3 Results from the application of the conceptual framework

Mapping national industrial relations systems

The final dashboard includes 45 indicators that were selected at the end of the process described in Chapters 1 and 2, using a combination of different methods and approaches. The complete list of indicators, including definitions and sources, is provided in the Annex. This chapter aims to map the national industrial relations systems based on the findings obtained with this final list of indicators. It also draws from the analysis of the national contributions, which compared the results of most of the indicators finally selected with the national correspondents' expert assessment, alongside findings from relevant research and literature on industrial relations.

In mapping national industrial relations systems, this chapter follows the classification of industrial relations regimes prepared by Visser for the European Commission in 2009, which was also used in the previous Eurofound report (2016a) that mapped and tested the four key dimensions (see Table 4). Although the homogeneity of these ideal typologies has been seriously challenged due to the impact of the Great Recession in some of the countries (Eurofound, 2014), and although its simplification of national contexts can be problematic, it allows national industrial relations systems to be mapped within the framework of a cluster of industrial relations systems, which, despite recent changes, remains relevant. This typology identifies five different models of industrial relations, each with a clear geographic concentration:

- 'organised corporatism' in the Nordic cluster (Denmark, Finland and Sweden);
- 'social partnership' in the Centre-west cluster (Austria, Belgium, Germany, Luxembourg, the Netherlands and Slovenia);
- 'state-centred' in the South cluster (Greece, France, Italy, Portugal and Spain);
- 'liberal pluralism' in the West cluster (Cyprus, Ireland, Malta and the UK)
- 'transition economies' ('mixed model') in the Centre-east cluster (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia).

Nordic cluster

The Nordic countries (Denmark, Finland and Sweden) show a high degree of internal homogeneity in relation to the four dimensions. This is even more pronounced in terms of industrial competitiveness and quality of work and employment. Overall, they record higher values than the EU averages in all the dimensions.

Table 4: Industrial relations clusters

	Nordic	Centre-west	South	West	Centre-east
Industrial relations regime	Organised corporatism	Social partnership	State-centred	Liberal pluralism	Transition economies
Role of social partners in public policy	Institutionalised		Irregular/politicised	Rare/event-driven	Irregular/politicised
Role of state	Limited	'Shadow' of hierarchy	Frequent intervention	Non-intervention	Organiser of transition
Balance of power	Labour-oriented	Balanced	Alternating	Employer-oriented	State
Bargaining style	Integrative		Distributive/conflict-oriented		Acquiescent
Employee representation	Union-based/high coverage	Dual-channel/high coverage	Variable/mixed	Union-based/small coverage	
Predominant level of collective bargaining	Sector		Sector/company	Company	

Sources: *Visser (2009), Eurofound (2016a)*

Regarding industrial democracy, the Nordic countries, especially Finland and Sweden, record values much higher than the EU average. In all three countries, indicators such as collective bargaining coverage (83% for Denmark, 87.3% for Finland and 88.5% for Sweden) and trade union density (66.9% for Denmark, 69.3% for Finland and 68.6% for Sweden) reflect the strength of this dimension. The same applies when analysing indicators measuring employee participation and influence at company level. In Denmark, 80% of workplaces have some form of official employee representation body, compared to 70% in Finland and 54% in Sweden (against the EU average of 32%). Moreover, in all three, employee participation provides mechanisms for consultation rather than mere provision of information.

Regarding social justice, values for the Nordic countries reflect a better situation than the EU averages in most of the indicators (such as the at-risk-of-poverty rate, in-work poverty rate, ratio of women to men in employment and Gini coefficient). This situation is confirmed by the EU Social Justice Index developed by Bertelsmann Stiftung (2016): Sweden, Finland and Denmark occupy the three first positions. These countries are embedded in a traditional social–democratic welfare state, with universal rights and welfare provisions in several fields, favouring a high rate of social mobility in comparative terms. A common feature of these countries is therefore related to the active and principal role that the government plays in striving for social justice. The Swedish contribution notes how affordable childcare and an extensive parental leave scheme have been effective in decreasing the gender pay gap (from 17% in 2008 to 14% in 2014). However, the gender pay gap in Sweden (mean 2008–2015), as well as in Denmark and Finland, remains above the EU average as a result of the high female employment rates, combined with intense and marked gender segregation in the labour market. The Swedish contribution also notes that, as reflected in the indicators, the system has been less successful when it comes to fostering the labour market integration of young people (the youth unemployment rate is 12.2%, compared to an EU average of 8%).

Sweden records lower scores than Denmark and Finland in some of the quality of work and employment indicators. Indeed, this is the dimension where many of the indicators for Sweden record values that are very close to the EU averages (examples include involuntary temporary employment and excessive working time), findings that are assessed to be accurate. The Finnish contribution stresses the high rates of involuntary temporary employment there (66.9%, as compared to 59% in the EU). According to the national correspondent, the figure in Finland is higher than that in France, the Netherlands and Sweden, all of which have a higher share of temporary contracts, according to Eurostat. This disparity is probably explained by permanent full-time employment being the standard in the Finnish labour market, and social security being to some extent tied to this standard (Hiilamo et al, 2012). As far as Denmark is concerned, the indicators reflect

Box 1: Eurofound dashboard versus EU Social Justice Index

The EU Social Justice Index developed by Bertelsmann Stiftung (2016) understands social justice to be a guiding principle for a participatory society. This definition presupposes that the state must take an active role, with a view to promoting a sustainable social market economy, able to combine the principles of market efficiency with those of social justice. Bearing this in mind, the index addresses those areas of policy that are particularly important for developing individual capabilities and opportunities for participation in society: poverty prevention; access to education; labour market inclusion; social cohesion and non-discrimination; health; and intergenerational justice. It comprises 28 quantitative and 8 qualitative indicators. The quantitative indicators are based on data collected primarily by Eurostat and the European Union Statistics on Income and Living Conditions (EU-SILC). The qualitative indicators reflect the evaluations provided by more than 100 experts responding to the Social Justice Index survey of the state of affairs in various policy areas throughout the OECD and the EU. Indicators are aggregated for use in the index following different statistical and technical methods. The index enables EU Member States to be ranked.

The Social Justice Index cannot be compared directly with the Eurofound dashboard; this is due to obvious methodological differences and the fact that the Social Justice Index takes into consideration dimensions and indicators that are not covered by the Eurofound dashboard (such as intergenerational justice). Nonetheless, it can be useful to assess the reliability of outcomes obtained by the Eurofound dashboard by looking at how Members States generally fare on the Social Justice Index. A comparison between index values and the standardised and aggregated values of the social justice indicators included in the Eurofound dashboard reveals that scores compare well in most of the Member States. Indeed, in only seven Member States are relatively strong deviations between the Eurofound dashboard and the Social Justice Index found. These are Cyprus (highest deviation), the Czech Republic, Germany, Estonia, Ireland, Slovenia and Slovakia.

good overall quality of work and employment, with most of the indicators recording values above the EU averages (for example, in relation to low pay incidence, involuntary temporary employment, job security and lifelong learning); this is in line with comparative research findings (Muñoz de Bustillo et al, 2011).

Regarding industrial competitiveness, the high performance of the Nordic countries, as reflected by the selected indicators, is in line with findings from the relevant literature. In the World Economic Forum's annual country competitiveness list (2016), only Germany and the Netherlands, among the EU countries, rank better than the three Nordic countries. Finland's strengths are explained, among other aspects, by its long-term investment in infrastructure, higher education, computer literacy and anti-corruption. By contrast, productivity, growth, innovation and entrepreneurship deteriorated distinctly in Finland in 2008–2015. Since 2015, economic policy has focused strongly on improving these indicators, though this has yet to show an effect through the indicators. High scores for Sweden are related to the low impact of the economic crisis there, which started in 2008. Although the recession did affect Swedish exports, the labour market recovered fairly quickly compared to many other Member States. In addition, its historically high employment rate, with one of the highest female labour force participation rates in the world, alongside relatively low corruption levels and a universal and good-quality education system, contribute to this picture.

Figure 3 presents the radar charts for the Nordic countries. As explained in Chapter 1, aggregated values by dimension were calculated as an additional tool to select and test the indicators. The radar chart shows the results obtained for each dimension, including the EU average as a reference. Each chart provides a visual input for mapping the national industrial systems against the four dimensions regarding the extent to which the industrial system encompasses the four dimensions in a balanced way. Although these charts have proven useful in analysing results, it should be stressed that they have to be taken with a degree of caution. In this study, aggregation has been an analytical tool. Creating a composite index with aggregated values to measure and compare dimensions and countries requires further conceptual discussion and additional statistical techniques.

Centre-west cluster

The Centre-west countries (Austria, Belgium, Germany, Luxembourg, the Netherlands and Slovenia) are more heterogeneous than the Nordic countries. Regarding industrial democracy, a consolidated social partnership in these countries leads to relatively high scores, above the EU averages. Performance in industrial competitiveness is also higher than the EU average in

Figure 3: Radar charts for Nordic industrial relations regimes



most of the countries concerned, and better outcomes in terms of social justice and quality of work and employment are achieved. A hallmark of most of these countries is a capacity to combine a high level economic competitiveness with good levels of social justice and quality of work and employment.

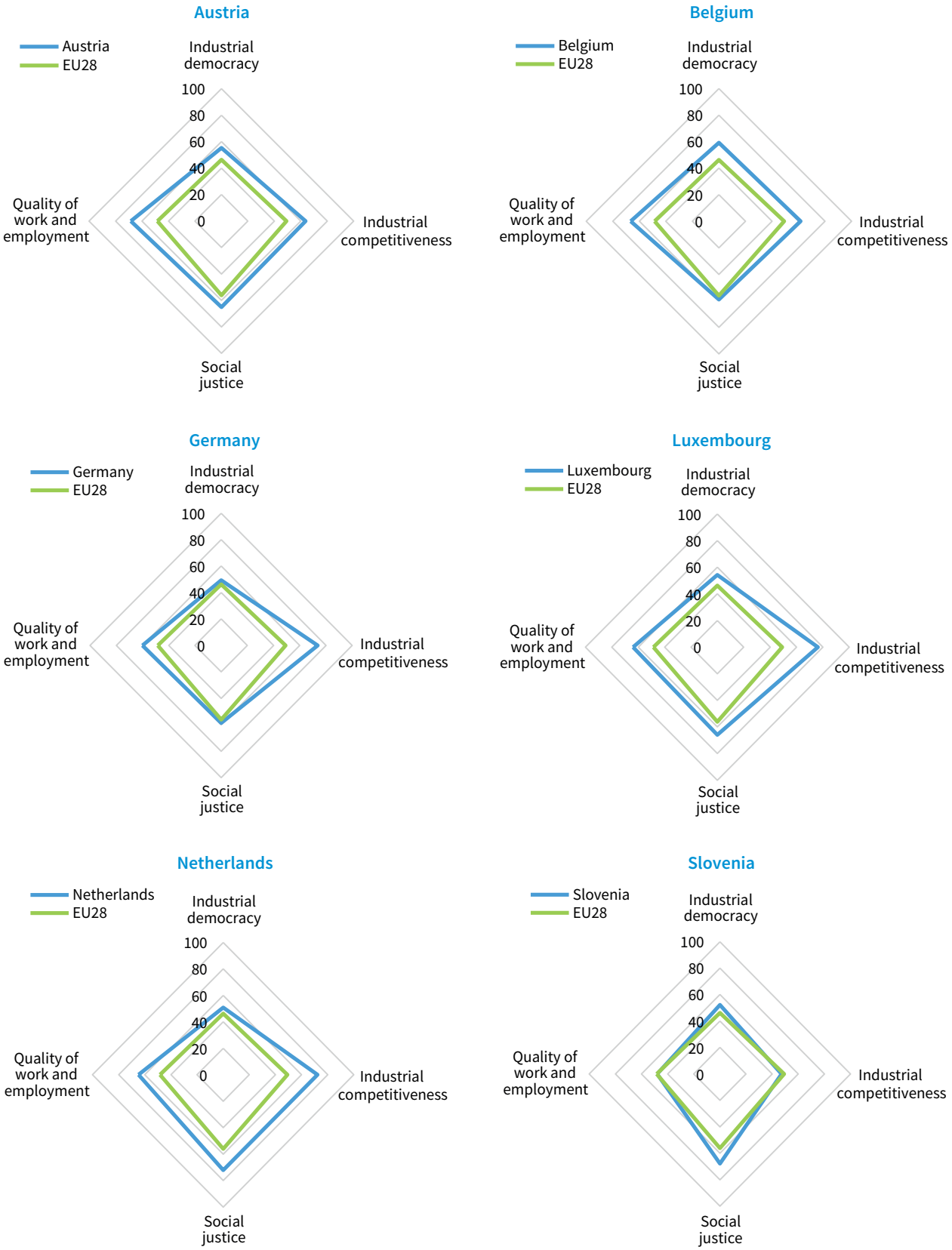
Industrial democracy is well developed in most of the Centre-west countries. In Austria, upward deviation in the values of most of the indicators for industrial democracy compared to the EU averages is explained by the country's well-developed system of social partnership, with strong corporatism (Eurofound, 2000; Pernicka and Hefler, 2014), high bargaining coverage (Bönisch, 2008) and a high degree of trust in employee representation bodies (Stadler, 2017). In Belgium, the indicators for industrial democracy show, in line with national literature and research, high and above-average figures on the collective bargaining and organisational dimensions. But compared to the co-determination systems of countries such as Germany, the participation of the employee representation body in the workplace is somewhat lower (Van Gyes and De Spiegelaere, 2015). In Slovenia, the indicators show that, despite some changes (see the section 'Findings from the national contributions' in Chapter 2), unions are still quite influential, recording a trade union density close to the EU average and embedded in an inclusive collective bargaining system that records a coverage rate above the EU average (73.8% compared to 51%), thereby being a crucial instrument within the regulation of the neo-corporatist institutional arrangement present in this country (Stanojević and Kanjuo Mrčela, 2014). Germany and Luxembourg also show values above the EU averages in most of the industrial democracy indicators.

As far as social justice is concerned, the Austrian contribution points out that the relatively positive outcomes recorded in most of the indicators are in line with findings of comparative studies (Bertelsmann Stiftung, 2016). The national correspondents for Belgium assess that most indicators (such as the in-work-poverty rate, Gini coefficient and gender pay gap) reflect better outcomes in terms of social cohesion and equality than the EU averages, offering a picture in line with the relevant research findings. In this regard, they note that Belgium has survived the recent financial and economic crisis rather well. The fall in economic growth was limited, with the welfare state and other automatic stabilisers acting as important buffers. Belgium is among the few OECD countries that have not seen growing income inequalities. Moreover, Belgium maintains just about the most compressed wage distribution in the capitalist world – including one of the smallest gender pay gaps – and there is also little evidence of increasing precariousness in the world of work (Marx and Van Cant, 2017). Interestingly, Marx and Van Cant (2017) find that this positive picture is related to the strongly developed and organised system of social concertation. The same applies to Slovenia, where the comparatively better scores recorded for several indicators is explained as the result of the 'competitive corporatism' or 'competitive solidarity' (Rhodes, 1998) in the past (as well as socialism in the more remote past).

Regarding quality of work and employment, the Austrian contribution notes that the situation portrayed is consistent with other studies (Eichmann, 2011), as well as OECD data (2014), reflecting an overall positive performance, with the exception of indicators related to the reconciliation of working and non-working life. The picture for Belgium also reflects good overall quality of work and employment (higher unemployment protection coverage, lower incidence of low pay and less unsocial working time compared to the EU averages), and this is also assessed as being in line with relevant research findings on the topic (Szekér et al, 2017). The national contributions from Luxembourg and Germany also express overall agreement with the picture reflected by the quality of work and employment indicators, although the German contribution stresses some problematic aspects, such as a high incidence of low pay, which is related to concerns about atypical employment forms. Slovenia records values lower than the EU averages in several indicators (excessive working time and unsocial working time), as highlighted in the national contribution. These outcomes are explained by pressures on labour, which are correlated with the constant growth of labour productivity despite the great drop in GDP recently recorded.

In relation to industrial competitiveness, the contribution from Austria highlights differences between outcomes for this country and the EU averages in several indicators, though this is not as pronounced as it is in other dimensions, which relates to the country's poorer economic performance in recent years (European Commission, 2014; BMVFW, 2016). The contribution from Belgium notes that this country occupies a middle-rank position in Europe and has in recent years obtained stable, though moderate, improvements in this regard, as the selected indicators illustrate. This is also confirmed by the ranking of Belgium in the World Economic Forum's annual country competitiveness list (2016). Finally, the national contribution from Luxembourg notes that it records better values than the EU averages in most of the indicators within this dimension, which is partly explained by a culture of consensus aiming to combine competitiveness with quality of work and employment through strong collective bargaining institutions and tools (both formal and informal) (Vassil and Patrick, 2016).

Figure 4: Radar charts for the Centre-west industrial relations regimes



South cluster

The selected indicators show some diversity across the five countries included in the South cluster (France, Greece, Italy, Portugal and Spain). Overall, in these countries, performance across the four dimensions tends to be worse than the EU averages; this difference appears to be more pronounced in the industrial competitiveness and quality of work and employment dimensions. Some differences are found, however, across dimensions and between countries.

In relation to industrial democracy, several of these countries record values lower than the EU averages across most of the indicators (notably Portugal, but also Greece and Italy). At the same time, Spain and France record positive values in some indicators, clearly above the EU averages (such as collective bargaining coverage), and values below the EU averages in others (such as trade union density). The Spanish contribution points out that high collective bargaining coverage, which coexists with relatively low trade union density, is explained by the state's role in the governance and regulation of employment and industrial relations. In Spain, the state has a prominent function in the promotion of collective bargaining through different provisions such as extension mechanisms and the ultra-activity principle, which, until a recent reform, guaranteed the continuation of collective agreements beyond their expiry date. Moreover, state coordination and intervention is perceived by the social partners, especially the trade unions, as a precondition for effective and democratic industrial relations (Martínez Lucio, 2016). The set of indicators gives a reasonably reliable picture of industrial democracy in Greece, according to the national contribution. The country records a bargaining coverage above the EU average (62% compared to 51%) in a context characterised by comparatively weaker trade unions. As with Spain, this has been ensured by the state's strongly interventionist role in industrial relations, aiming, at least in the past, to foster and support collective bargaining (Molina, 2014). The situation in Italy depicted by the indicators, especially with regard to employee representation in the workplace, where the country comes below the EU average, is fully representative of the actual industrial relations system, according to the national contribution. It notes that in this country, employee representation in the workplace is not widespread: research by Istat shows that these bodies are present in 12.1% of companies, while the National Economic and Labour Council (Consiglio Nazionale dell'Economia e del Lavoro, CNEL) found them in 11.8% of companies. The presence of employee representation increases with company size. In Portugal, comparatively low values recorded on most of the industrial democracy indicators reflect structural conditions in some cases – specifically, low trade union density and an extremely low proportion of workplaces with employee representative structures. Others – lower collective bargaining coverage than the EU average – are explained by reforms to the legal framework of collective bargaining put in place with the Memorandum of Understanding (since 2012), which, in conjunction with the economic crisis, has provoked the erosion of sectoral collective bargaining (Campos Lima, 2016).

With regard to the other three dimensions (social justice, industrial competitiveness, and quality of work and employment), the Spanish contribution finds that the indicators provide an approximate picture of the industrial relations system, roughly in line with relevant academic literature that has analysed the Spanish system through similar concepts, such as the employment model or social employment regime (Lope et al, 2010; Prieto, 2014). Both the indicators and findings of academic literature suggest that the Spanish system is not managing to achieve a reasonable level of competitiveness, one that is close to the most competitive European economies; for several indicators it falls below the EU averages. In particular, it is failing to achieve acceptable levels of social justice and good overall quality of work and employment, as shown by indicators such as the at-risk-of-poverty rate, the in-work poverty rate, the gender pay gap and the rate of involuntary temporary employment.

The assessment for Greece with regard to industrial competitiveness is that the data and indicators largely reflect the current picture, characterised by very poor competitive performance, as confirmed by the World Economic Forum's annual Global Competitiveness Index (GCI) (2016), which ranks Greece at 86 out of 138 countries. Values are also much worse than the EU averages regarding most of the social justice indicators (such as in-work poverty and the Gini coefficient); this is in line with the EU Social Justice Index (2016), in which Greece ranks last among all the EU countries. The same applies to the quality of work and employment indicators of involuntary temporary employment and unsocial working time.

Box 2: Eurofound dashboard versus the World Economic Forum's Global Competitiveness Index

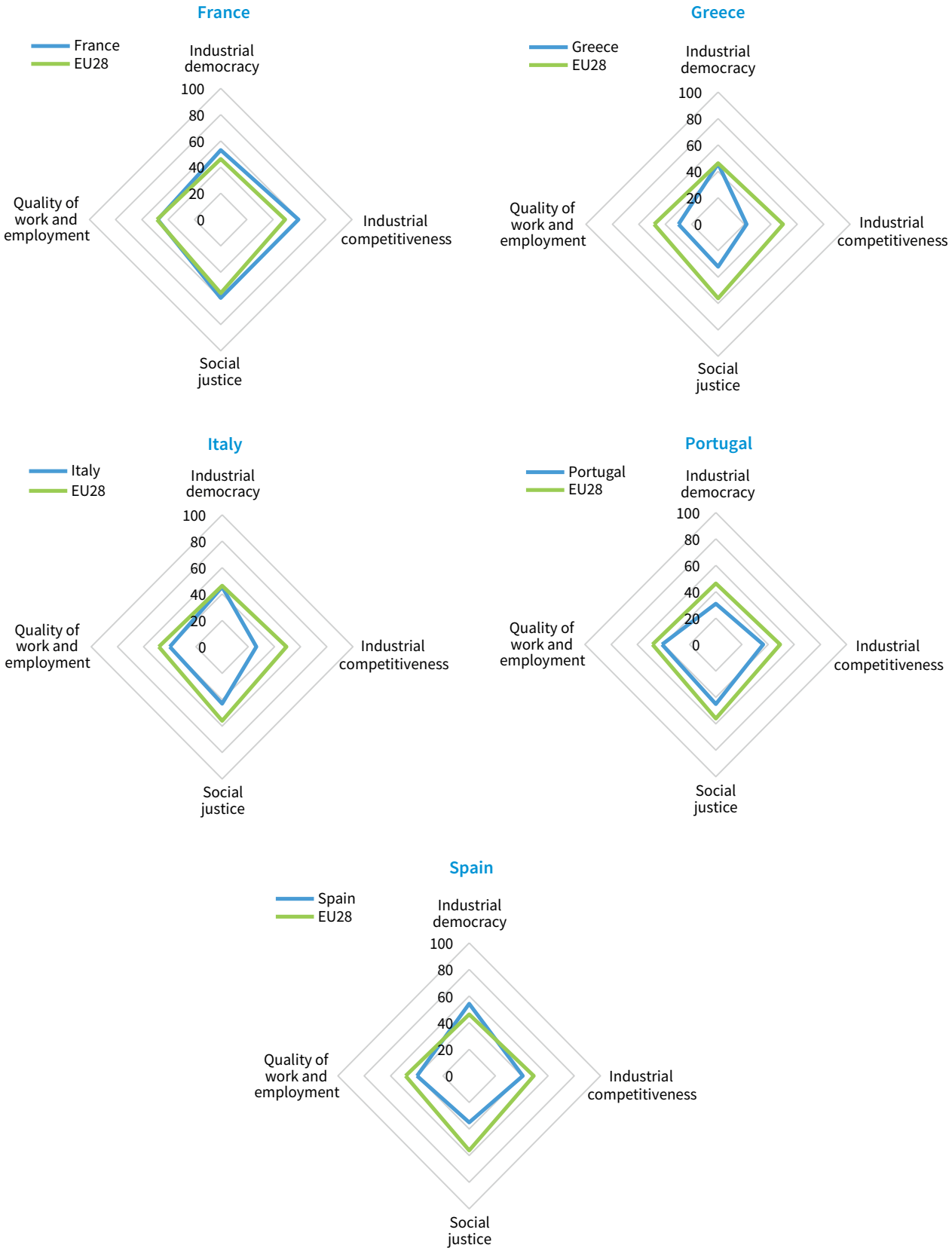
The World Economic Forum defines competitiveness as 'the set of institutions, policies, and factors that determine the level of productivity of an economy, which in turn sets the level of prosperity that the country can achieve' (World Economic Forum, 2016, p. 4). Based on this definition, since 2005 the World Economic Forum has published the annual Global Competitiveness Index (GCI). The GCI combines 114 indicators, which are grouped into 12 pillars: institutions; infrastructure; macroeconomic environment; health and primary education; higher education and training; goods market efficiency; labour market efficiency; financial market development; technological readiness; market size; business sophistication; and innovation. These pillars are organised into three sub-indexes: basic requirements; efficiency enhancers; and innovation and sophistication factors. The three sub-indexes are given different weights in the calculation of the overall index, depending on each economy's stage of development, as proxied by its GDP per capita and the share of exports represented by raw materials.

The GCI cannot be compared directly with the Eurofound dashboard due to obvious methodological differences between the two, and also because the GCI takes into consideration many more dimensions and indicators than the Eurofound dashboard. Nonetheless, it can be useful to assess the reliability of outcomes obtained by the Eurofound dashboard by looking at how Members States generally fare on the GCI. A comparison of GCI values and the standardised and aggregated values of industrial competitiveness indicators included in the Eurofound dashboard reveals that scores compare well in most EU Member States. There are nine EU Member States where relatively strong deviations are found: Luxembourg, the Netherlands, Slovenia, Latvia, Slovakia, Cyprus, Malta, Poland and Italy.

The national contribution for Italy highlights that this country, as shown by data provided on industrial competitiveness and confirmed by the relevant literature, is much less competitive than the EU average and grows at a slower pace. It also highlights the low level of investment in R&D, which is exacerbated by the negative dynamics of the economic cycle. The indicators are judged to grasp the social justice dimension adequately, highlighting problems in terms of achieving social cohesion and equality (with a higher in-work poverty rate and Gini coefficient, for example). The situation regarding quality of work and employment is also considered to be well represented by the indicators, which show low unemployment protection coverage, a relatively high incidence of low pay, a high rate of involuntary temporary employment and a high degree of unsocial working time, compared to the EU averages.

The Portuguese contribution notes that the data provided reflects, in line with the relevant literature, that country's low performance in industrial competitiveness, social justice, and quality of work and employment. In terms of industrial competitiveness, low values on several indicators (such as GDP growth per capita and percentage of individuals with a high level of education) are the result of complex and diverse factors, including long-term developments, patterns of competitiveness and productive specialisation in labour-intensive industries in traditional sectors, and a long-standing deficit in education provision. Regarding social justice and quality of work and employment, attention is drawn to an austerity policy and a correlated approach of internal devaluation of competitiveness. According to the national contribution and the literature, this approach subordinated social justice and quality of work and employment to fiscal consolidation, public deficit reduction, downwards wage flexibility and unit labour cost reduction (Hespanha and Caleira, 2017). As a result, several social justice and quality of work and employment indicators show a worse performance than the EU averages; these include the in-work poverty rate, the youth unemployment ratio, and the rate of involuntary temporary employment.

Figure 5: Radar charts for the South regimes



West cluster

Overall, countries within the West cluster (Cyprus, Ireland, Malta and the UK) record values close to the EU average in terms of industrial democracy, below the EU average regarding industrial competitiveness and above the EU average in relation to quality of work and employment and social justice. However, differences across countries are observed.

With regards to industrial democracy, Cyprus records values above the EU averages (in relation to trade union density, employer organisation density and employee representation in the workplace) or slightly below the EU averages in several indicators (collective bargaining coverage and participation of the employee representation body in the workplace). This reflects an industrial relations system with a relatively well-consolidated industrial democracy, although indicators may not capture the wide variety of situations that occur across sectors, a point stressed in the national contribution. In Ireland, too, several indicators record values that are above the EU averages (trade union density and employer organisation density) or close to the EU average (participation of an employee representation body at the workplace), while others, notably collective bargaining coverage, fall below it. In Malta, several indicators record high and above-average figures compared to the EU averages (trade union density and collective bargaining coverage). According to the national correspondent's assessment, lower values recorded in indicators measuring industrial democracy at the workplace level (such as employee representation in the workplace) reflect the legacy of the Anglo-Saxon model of British law in Malta. In line with this model, the shop steward, appointed or nominated by the union, acts as the sole employee representative in the workplace, as there are no statutory institutions for worker participation at this level. In the UK, performance regarding industrial democracy is below the EU average, as reflected in most of the indicators (for example, trade union density, collective bargaining coverage and employee representation in the workplace). This reflects, to some extent, a divergence regarding the countries included in this cluster. However, it is worth noting that in the UK, some indicators measuring employee participation in the workplace are close to or slightly below the EU average (such as direct employee influence in decision-making in the workplace). This last aspect was questioned by the national correspondent arising from to conflicting findings in the relevant literature, as discussed in the section 'Findings from the national contributions' in Chapter 2.

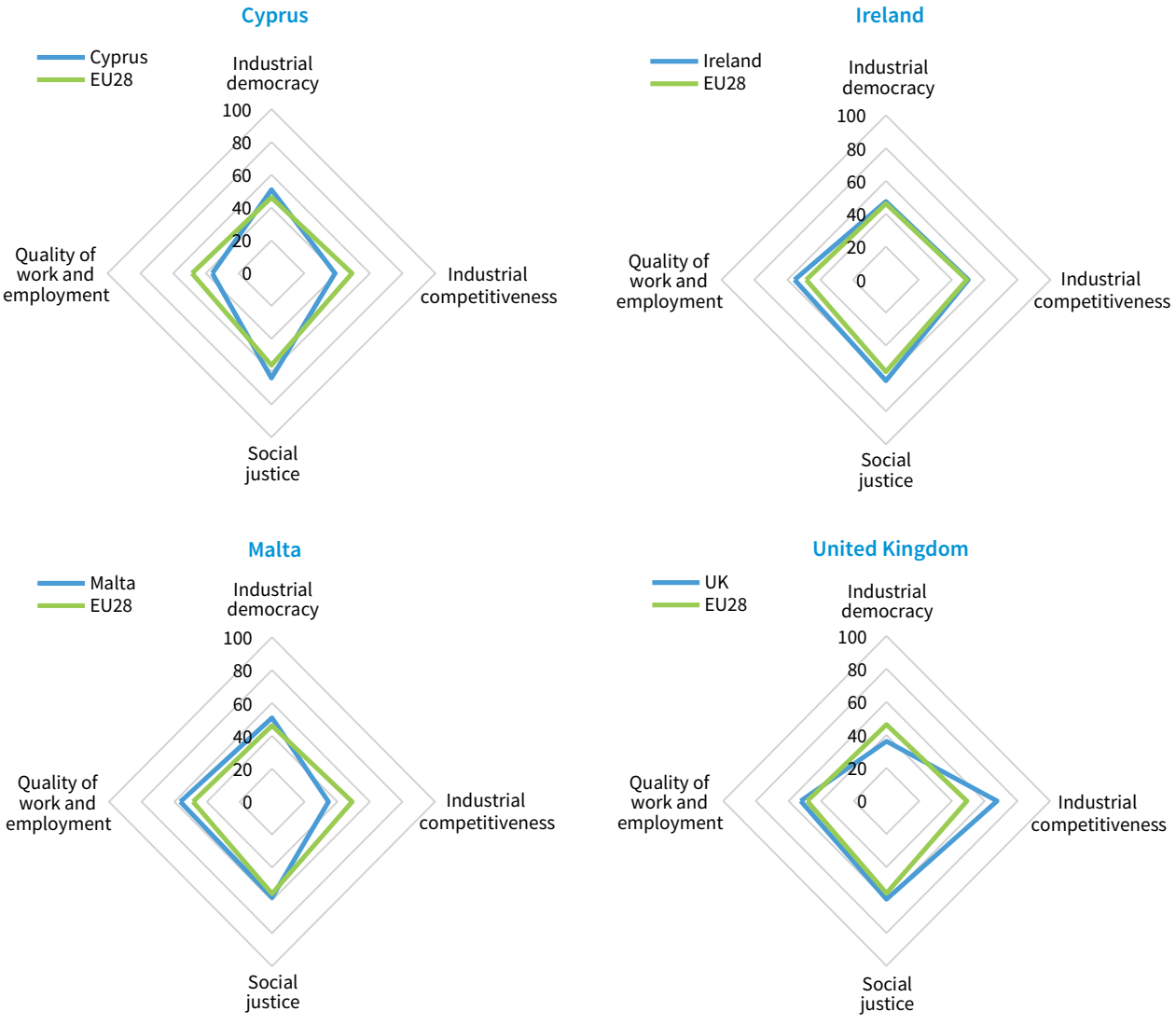
With regards to the remaining three dimensions (industrial competitiveness, social justice, and quality of work and employment), the national contribution from Cyprus explains that this country scores lower than the EU averages in most of the industrial competitiveness indicators, reflecting that country's relatively low employment rate, relatively medium–low performance in corruption and infrastructure, and very low performance in terms of R&D personnel and funding. Regarding social justice, a mixed picture appears, showing negative elements associated with equality of outcomes, as reflected in the high percentage of people at risk of poverty and social exclusion, the high gender pay gap and the high youth unemployment rate (Ioannou and Sonan, 2016), combined with some positive outcomes in terms of equality of opportunities (the relatively low rate of early school-leavers). With respect to the quality of work and employment dimension, Cyprus ranks slightly below the EU averages on several indicators. The indicators with the most negative values are the high incidence of low pay and the very high rate of involuntary temporary employment. These outcomes are explained by the broader deterioration of labour market conditions, which was exacerbated during the economic crisis (Ioannou, 2014). In addition, Cyprus's scores are significantly below the EU averages in relation to reconciliation of working and non-working time, particularly as regards excessive working time and the female-to-male ratio of time devoted to unpaid work.

In Ireland, several indicators reflect an industrial competitiveness performance that is better than the EU averages; this relates to factors such as GDP growth, employment rate, percentage of individuals with a high level of education, and R&D expenditure as a percentage of GDP. This positive picture (even if the national correspondent qualifies it regarding particular indicators, see the section 'Findings from the national contributions' in Chapter 2) is to some extent in line with that presented by the World Economic Forum's annual country competitiveness list (2016), which placed Ireland in a high-ranking position (11th among the EU countries). Regarding social justice, a mixed picture emerges. For instance, in terms of social cohesion, Ireland shows a high poverty rate but a comparatively low in-work poverty rate, while in terms of equality of outcomes, it performs above the EU average for the Gini coefficient but below it for the long-term unemployment rate and the youth unemployment ratio. This is to some extent in line with the EU Social Justice Index (2016), in which Ireland ranks slightly below the EU average (at 18th out of 28 EU countries). Regarding quality of work and employment, Ireland records negative values in indicators such as incidence of low pay, which, as noted by the national correspondent, may indicate, when compared with better Gini coefficient outcomes, that Ireland has a highly unequal distribution of income from the market (for example, wages, salaries and profits), which is masked by social transfers.

The contribution from Malta provides an overall positive assessment of industrial competitiveness, quality of work and employment, and social justice. In terms of quality of work and employment, it scores lower than the EU average for incidence of low pay, while at the same time, scores are better for career prospects. Regarding social justice, the national contribution explains that overall positive outcomes on several indicators compared to the EU averages are a result of policy measures. For instance, following initiatives taken by Jobsplus, the national employment service agency, the rate of early school-leavers dropped to 19.8%; over the previous four years (2012–2016), there was of drop of 2.9% overall. There is also a persistent low rate of long-term unemployment, which reached a record low of 2.4% in 2015.

The UK performs slightly more positively than the EU averages on several indicators for industrial competitiveness (such as employment rate, percentage of individuals with a high level of education, percentage of R&D personnel, and R&D expenditure as a percentage of GDP). It is worth noting that the World Economic Forum's annual country competitiveness list (2016) ranks the UK as the fourth most competitive country in the world. A slightly better performance is also recorded on several quality of work and employment indicators, based on workers' subjective perceptions (job security and income development, for example). However, the UK records values lower than the EU averages on several of the remaining quality of work and employment indicators (low pay incidence, excessive working time and unsocial working time). Regarding social justice, a mixed picture appears, with some indicators showing good performance (such as the female-to-male employment ratio and the long-term unemployment rate), while others record values lower than the EU averages, notably those measuring equality of opportunities (early leavers from education and training) and outcomes (the Gini coefficient and the youth unemployment ratio).

Figure 6: Radar charts for the West regimes



Centre-east cluster

In the Centre-east countries (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia), most of the indicators for the four dimensions record values below the EU averages, although some differences occur across these countries.

With regard to industrial democracy, most show low performance. The national contribution from Bulgaria finds that results showing values below the EU averages for trade union density, collective bargaining coverage and employee representation at the workplace are in line with academic literature, revealing that industrial democracy in Bulgaria is behind European standards (Delteil and Kirov, 2016). In terms of employer organisation density and some indicators measuring industrial democracy at workplace level, it records values close to the EU averages.

The indicators for industrial democracy from the Czech Republic, Estonia, Latvia, Lithuania, Poland and Slovakia show values below the EU averages, except in some that measure industrial democracy at workplace level, which are at the EU average (such as direct employee participation in the workplace in the Czech Republic) or above the EU average (such as employee representation in the workplace in Estonia and Lithuania). The contribution from the Czech Republic notes that, within a national legal framework where social partners are widely autonomous, they can participate in the governance of employment relationships and are able to influence decision-making, indicators show that such rights are used to a limited extent (with collective bargaining coverage, collective wage agreements and employee representation in the workplace all coming in lower than the EU averages). The national contribution from Lithuania stresses that all indicators included in the area of representation (trade union and employer organisation density, collective wage agreements and collective bargaining coverage) are as much as five times lower in Lithuania than the EU averages. Industrial democracy in Lithuania clearly falls below EU standards.

In Hungary, all the indicators for industrial democracy record values below the EU averages, showing low performance in this dimension. They reflect the weakness of social partner organisations (especially trade unions), very low collective bargaining coverage and ineffective worker participation at the workplace level. This reveals, as noted by the national correspondent, dissatisfaction among worker representatives regarding the lack of meaningful consultation; in reality, 'consultation' often means only the provision of information.

By contrast, Croatia and Romania show values close to or above the EU averages for several indicators. For Croatia, several indicators measuring representation (trade union density, employer organisation density and collective bargaining coverage) and participation at the workplace level (direct employee participation in the workplace and participation of the employee representation body at the workplace) are slightly above the EU averages. The national contribution from Romania points out that, as indicators for industrial democracy in that country are not available beyond 2013, the available data cannot show relevant changes associated with the effects of social dialogue and labour legislation reform enacted in 2011 (Guga, 2016; Trif, 2015). Bearing this in mind, existing data show that this country records values above the EU averages in terms of trade union density and collective bargaining coverage. With regards to the indicators on participation at the workplace level, they show that Romania performs well due to a legislative framework that sets a legal obligation on employers in companies with fewer than 20 employees to consult and inform employees, and on those with more than 20 employees to have an employee representative, although in practice the exercise of these rights may be more formal than substantive.

Regarding industrial competitiveness, social justice, and quality of work and employment, the Bulgarian national contribution highlights that the results show low performance in industrial competitiveness; increasing inequality alongside reduced risk of poverty and in-work poverty (social justice); and alarming results in terms of job security (quality of work and employment).

The contribution from the Czech Republic finds that the indicators for social justice and industrial competitiveness capture that country's situation well. The country's performance on several social justice indicators is significantly better than the EU averages. This is confirmed, for instance, by the EU Social Justice Index, where the Czech Republic occupies the fourth highest position among EU countries. According to the national correspondent, a relatively small share of low wages and few low-wage traps combined with an effective system of social transfers (benefits and taxation) are the main reasons for the country's low in-work poverty rate. In addition, the Czech Republic has always ranked among the EU countries with the lowest early-school-leaver rates and is well below the 10% target set in the Europe 2020 strategy. The national target has been set at a maximum 5.5% of young people leaving the education system early, which means maintaining the current situation. Conversely, the Czech Republic performs below the averages in several indicators for industrial competitiveness, reflecting a comparatively worse situation in some crucial fields such as investment in R&D, although the World Economic Forum's annual country competitiveness list (2016) ranks the Czech Republic 13th among EU countries.

The contribution from Estonia notes higher scores than neighbouring countries in several indicators for industrial competitiveness, for example employment rate (which is above the EU average), high level of education (also above the EU average) and survival of new enterprises. The indicators mentioned are important in national policy and reflect comparatively good industrial competitiveness performance. This is in line with the World Economic Forum's annual country competitiveness list (2016), where Estonia is ranked 12th among EU countries. Regarding quality of work and employment, few indicators show a lower performance than the EU averages. The main negative features, compared to the EU averages, relate to incidence of low pay, income development, career prospects, and the proportion of employees suffering from depression or anxiety. These problems have been acknowledged at national policy level, and some measures have been launched to tackle them: promoting upskilling among employees and unemployed people; promoting lifelong learning; income tax reform to increase the incomes of low-earners; and discussions on the system of occupational health and safety.

The Croatian contribution mostly notes that industrial competitiveness, social justice, and quality of work and employment indicators offer an accurate picture of the national situation. Overall, this country performs below the EU averages in several indicators of the three dimensions.

In Hungary, most of the indicators suggest lower performance than the EU averages on industrial competitiveness, social justice, and quality of work and employment. The social justice indicators where Hungary performs at the level of the EU averages are: in-work poverty, gender pay gap, and early school-leaving. In relation to quality of work and employment, the country achieves the EU averages for the involuntary temporary employment and working time indicators.

The national contribution from Lithuania finds that the social justice indicators reflect a poorer situation compared to the EU as a whole in relation to the risk of poverty or social exclusion, in-work poverty, long-term unemployment and the Gini coefficient. Regarding quality of work and employment, most of the indicators record values lower than the EU averages (unemployment protection coverage, low-pay incidence, job security, income development, career prospects, depression or anxiety, and lifelong learning). By contrast, several industrial competitiveness indicators show a performance close to or above the EU averages, including GDP growth per capita, employment rate, incidence of corruption and percentage of individuals with a high level of education. This is, to some extent, in line with the World Economic Forum's annual country competitiveness list (2016), where Lithuania is placed in a middle-ranking position (14th within the EU countries).

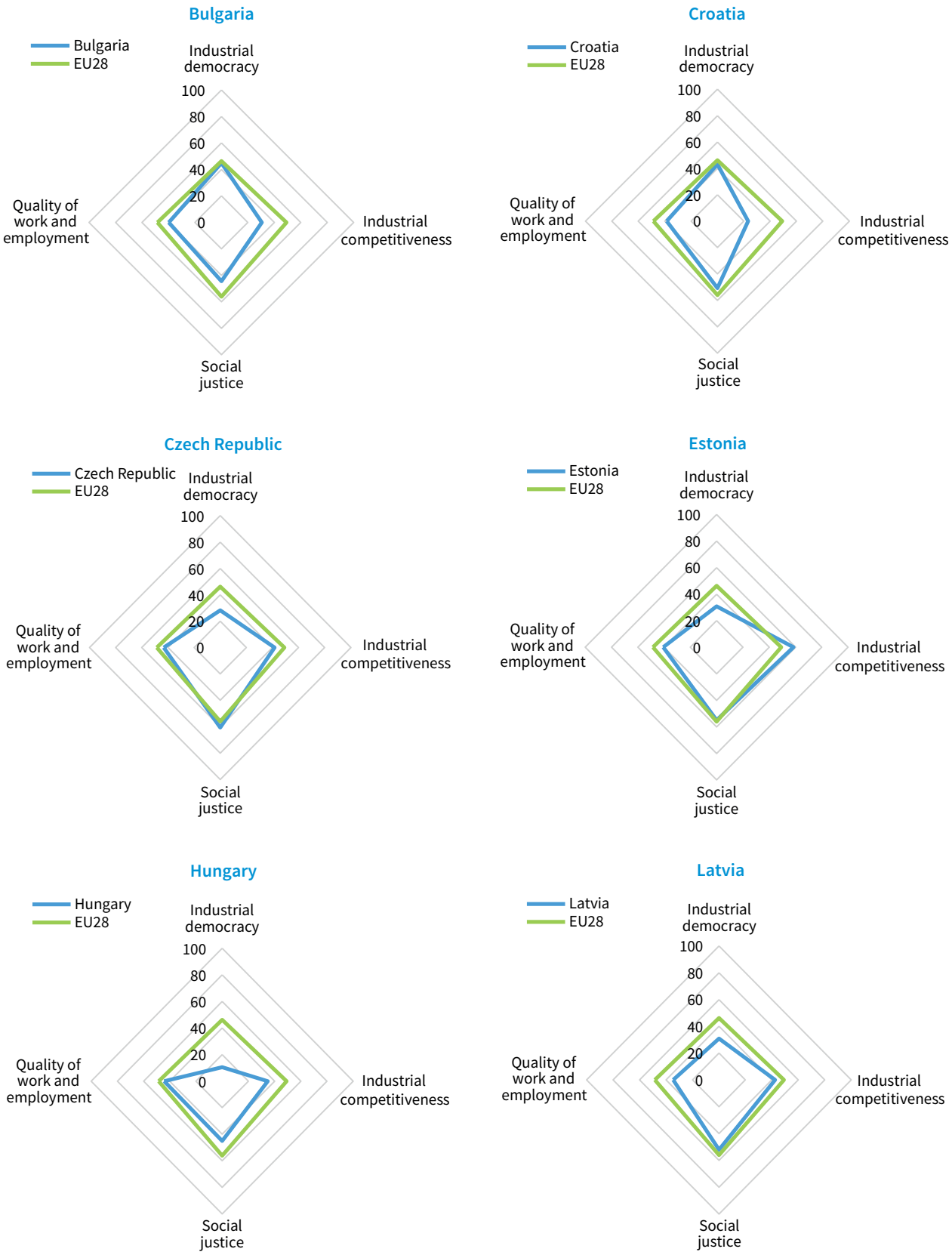
For Slovakia, most of the indicators for industrial competitiveness, social justice, and, in particular, quality of work and employment record values lower than the EU averages.

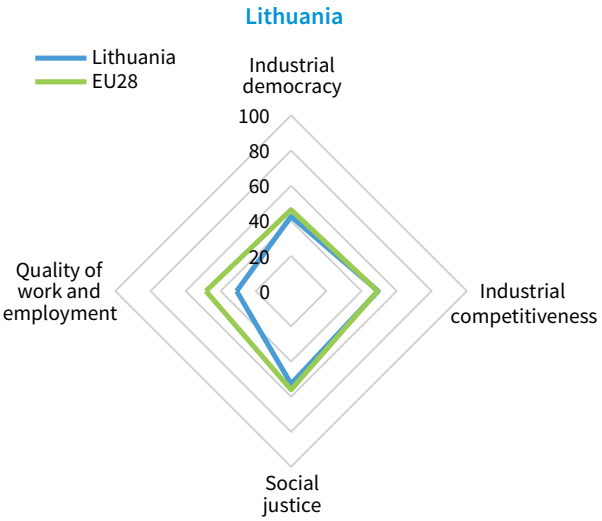
The Polish national contribution states that the indicators for industrial competitiveness, social justice, and quality of work and employment provide an accurate picture. Overall, this country shows values indicating a poorer performance in industrial competitiveness and quality of work and employment than in social justice, where several indicators reflect positive outcomes compared to the EU averages. These include the female-to-male employment ratio, the gender pay gap, the ratio of older to non-older people employment rate, the rate of early leavers from education and training, and the long-term unemployment rate. This is consistent with the EU Social Justice Index (2016), where Poland is ranked 14th.

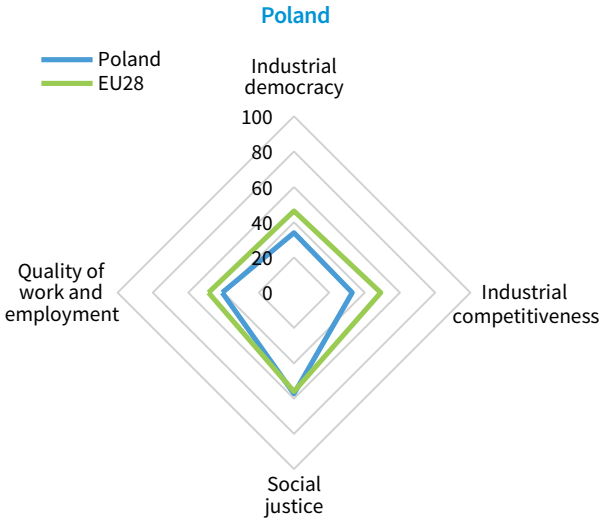
The national contribution from Romania points out that the industrial competitiveness indicators and values correctly reflect the competitiveness approach followed in the last 25 years; this consists of a mix of policies aiming to attract foreign investors and combining the policy of a low-wage labour force with fiscal incentives to attract foreign investments (ICCV, 2017). Other components, such as investments in education, R&D and infrastructure were largely neglected, leading to this country's very low ranking of 22nd within the EU countries in the World Economic Forum's annual country competitiveness list (2016). In terms of quality of work and employment and social justice, most indicators reflect poor performance compared to the EU averages.

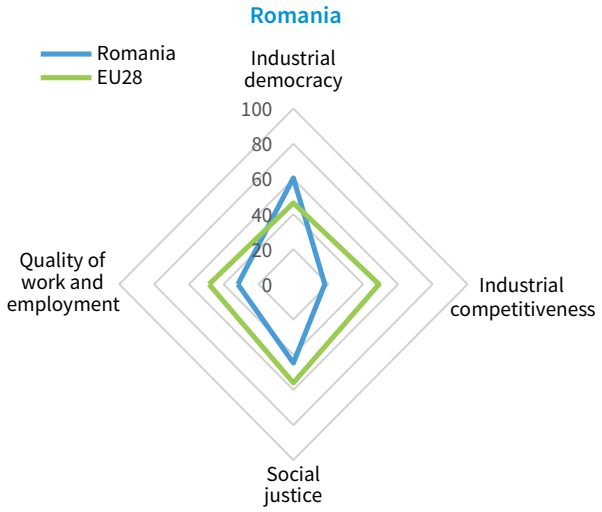
For Slovakia, most of the industrial competitiveness, social justice, and quality of work and employment indicators record values lower than the EU averages.

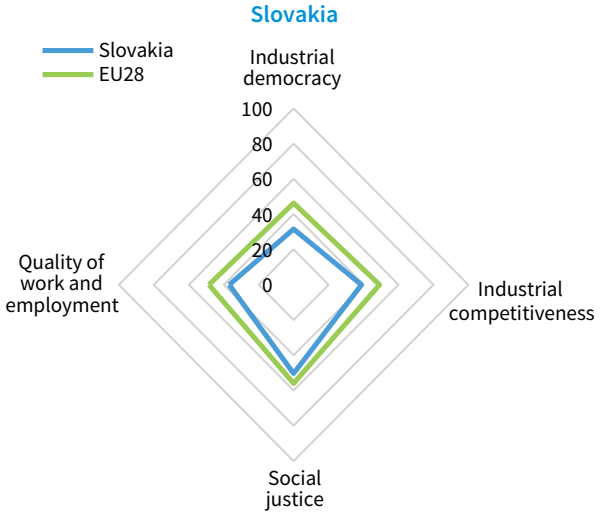
Figure 7: Radar charts for Centre-east regimes











Lessons from a dynamic perspective

Application of a dynamic perspective (how the values evolve in the period considered) had limitations, as several indicators were not available for the time series. This is especially the case for industrial democracy, where only 4 out of the 11 indicators are available: those pertaining to the subdimension of representation (trade union density, employer organisation density, collective wage agreements and collective bargaining coverage). Notwithstanding these limitations, some interesting trends are discussed and contrasted with the relevant literature.

Dynamic perspective on the Nordic cluster

Analysis of the indicators (mostly by the national correspondents) shows that in the Nordic countries, industrial democracy has remained stable in recent years, with even a slight improvement in some indicators, such as collective bargaining coverage, which is relatively pronounced in Finland (rising by 8% between 2008 and 2015).

Some indicators of quality of work and employment and social justice capture the changes. In Sweden, the data show a substantial increase in job security, which may reflect the gradual recovery from the recession, but is to some extent contradictory in light of the evolution in alternative indicators such as involuntary temporary employment, which rose from 2011 to 2014. In addition, a decrease in unemployment protection coverage is recorded in Sweden. This last indicator shows a sharp drop in Denmark, where it fell from 63% in 2008 to 40% in 2015. This trend is highlighted by Knudsen and Lind (2014), who note that it can be attributed to a weakening of trade unions, given the close connection between trade unions and unemployment benefit funds under the Danish system, governed according to the so-called 'Ghent system'. Regarding social justice in Demark, there was a relatively significant decrease in the ratio of young to non-young people employment rate, alongside a rise in the ratio of older to non-older people employment rate.

In Finland, quality of work and employment and social justice have been under significant strain due to austerity measures. This shift is not fully reflected by the

data, because the most significant cutbacks were made in 2015–2016. As a result, the indicators from 2008 to 2015 reflect stability.

Overall, the analysis of the Nordic countries from a dynamic perspective suggests that some dimensions such as industrial democracy are likely to be more static than others. It seems that industrial democracy in these countries, where the social partners have a high level of autonomy, is more path-dependent and less subject to change than social justice and quality of work and employment, which may be modified to a greater extent by policy reforms that can be more easily implemented unilaterally. However, the results also call for further exploration of the relationship between the deterioration recorded in some social justice indicators and trends in industrial democracy, as shown in the Danish case regarding unemployment protection coverage.

Dynamic perspective on the Centre-west cluster

As with the Nordic countries, the industrial democracy key dimension in the Centre-west regimes stayed much more stable than the other dimensions in most of these countries. Only Slovenia reported long-term trends that can have an effect on industrial democracy, related, to some extent, to the decline of the 'competitive corporatism' system (Stanojević and Kanjuo Mrčela, 2014). This is reflected in a fall in trade union density (from 26% in 2008 to 21% in 2013) and, especially, employer organisation density and collective bargaining coverage (from 92% in 2008 to 65% in 2013). The drop in collective bargaining coverage is explained by the fact that collective agreements are now concluded for fixed terms, while in the past they were in force for an indefinite period. Regarding employer organisation density, the drop is a result of deregulation. In 2006, a new law transformed the Chamber of Commerce and Industry from a compulsory organisation into a voluntary interest organisation. In 2013, the Chamber of Craft and Small Business was also transformed into a voluntary organisation. These changes resulted in the creation of many new employer organisations and in a decline in membership, as explained by the national correspondent. In other countries, such as Luxembourg, tripartite social dialogue collapsed after 2010, which can have direct negative effects on industrial democracy, although this is not articulated due to the lack of indicators on this issue.

In terms of social justice, some countries report that the indicators enable the observation of a deterioration. This is especially the case for Germany, where the biggest changes took place in this dimension. Positive trends, such as a decline in youth unemployment and, in particular, a rise in the ratio of older to non-older people employment rate, occurred alongside negative trends, mainly associated with an increase in in-work poverty. Such trends are, according to the national correspondent, accurately captured by these indicators. Slovenia has performed better on the social justice indicators than the EU averages, though its performance deteriorated during the economic crisis, and, as other researchers have pointed out, economic recovery did not bring expected improvements (Dragoš and Leskošek, 2016). Perturbingly, research findings draw attention to rising rates of in-work poverty and long-term unemployment (Dragoš and Leskošek, 2016). The most pronounced negative change, however, is recorded in the young to non-young people employment ratio, which shows a significant decrease. In Austria, performance has improved regarding several indicators (such as ratio of women to men employment rate and the gender pay gap), partly as a result of measures that have been implemented in recent years, while it has worsened regarding others (for example, long-term and youth unemployment).

Regarding quality of work and employment, the Austrian contribution notes that a mixed picture emerges from the data, with performance improving for some indicators (such as involuntary temporary employment, income development, career prospects, excessive working hours, unsocial working time and upskilling) and deteriorating for others (such as unemployment protection coverage and depression or anxiety). The contribution for Belgium points out that, based on the data, limited changes occurred over time in relation to job quality. Exceptions were some negative trends regarding unemployment protection coverage and the percentage of employees suffering from depression or anxiety, and positive trends for workers' perception of income development.

Some national contributions (Austria, Belgium and Slovenia) stress that, based on the indicators provided, some positive developments occurred regarding industrial competitiveness, in line with the national analysis. In particular, substantial improvements were recorded regarding the percentage of individuals with a high level of education in Luxembourg and the percentage of individuals with at least a medium level of internet skills in Belgium.

Dynamic perspective on the South cluster

In contrast to the Centre-west and Nordic countries, Member States in the South cluster highlight changes related to industrial democracy, some of which are considered to be insufficiently captured by the indicators (see the section 'Findings from the national contributions' in Chapter 2). In Greece, the main developments in industrial democracy have been a significant reduction in the number of collective agreements and a decrease in the collective bargaining coverage rate (which fell by 25% between 2008 and

2015). In Portugal, industrial democracy was also negatively affected in terms of collective bargaining coverage and trade union density. By contrast, the indicators in this dimension for Spain, France and Italy show a greater level of stability.

With regard to social justice, all the South cluster countries agree with the picture painted by the indicators, which shows a deterioration in this dimension. The Spanish contribution observes, based on the indicators, a deterioration of social cohesion and non-discrimination, alongside an increase in the risk of poverty and social exclusion, in-work poverty and the gender pay gap. In terms of labour market inclusion, the indicators suggest a slight improvement for women and older people and a worsening situation for non-natives and, especially, young people. As far as equality is concerned, the indicators portray a relative improvement in terms of opportunities, with a decrease in the proportion of early leavers from education and training (-23%), but a clear decline in terms of outcomes (increases in unemployment and the Gini coefficient). In Greece, there has been a significant increase in the risk of poverty and social exclusion, as well as a large increase in youth unemployment and long-term unemployment. In Portugal, the worst developments are recorded in the social justice dimension, with an increase in the risk of poverty and social exclusion, in-work poverty, the gender pay gap, long-term unemployment and youth unemployment. Italy also has negative developments on this dimension; the national contribution finds that the data paint an alarming picture regarding poverty and social exclusion, though slight improvements are recorded in 2015 in terms of the youth unemployment ratio and the long-term unemployment rate.

With regard to quality of work and employment, the data suggest an overall negative evolution, which is in line with the national analyses. In Spain, in relation to career and employment security, the data indicate that unemployment benefit coverage has decreased and job security has weakened (with an increase in both involuntary temporary employment and the percentage of people who think they might lose their job in the next six months). A negative evolution is also suggested regarding health and well-being, as well as with skills developments and, to a lesser extent, reconciliation of working and non-working life. The contribution from Greece highlights that the most important issue there concerns decreasing unemployment protection coverage. In Portugal, conditions regarding employment security and career deteriorated in terms of unemployment protection coverage, involuntary temporary employment (which reached 85.1%), and excessive and unsocial working time.

A mixed picture emerges regarding industrial competitiveness. The national contributions from Italy, Portugal and Spain explain that the data show a positive evolution since 2012–2013 in relation to several indicators. Nevertheless, from 2008 to 2015, all the South cluster countries except France recorded negative GDP growth per capita. Moreover, employment rates decreased in this period in all these countries. In Portugal and Spain, there was also a decrease in R&D expenditure as a percentage of GDP. Greece highlights a very significant decrease in GDP growth per capita and the employment rate, despite policies being implemented that aimed to improve competitiveness and foster employment through reducing labour costs and making the labour market more flexible.

Dynamic perspective on the West cluster

Different trends are observed across the countries in the West cluster. A negative evolution in industrial democracy is found in Cyprus and the UK in terms of collective bargaining coverage and trade union density. The UK national contribution notes that collective wage agreements have fallen even further, according to national sources. In Ireland, a substantial reduction was also recorded in the percentage of workplaces with collective wage agreements, though the data also show a slight increase in trade union density. Malta records positive trends in industrial democracy with regards to trade union density and collective bargaining coverage. The Maltese national contribution notes that this trend has been confirmed by empirical national studies (Centre for Labour Studies, 2015).

With regard to social justice, the most negative changes recorded in Cyprus are: an increasing proportion of people at risk of poverty and social exclusion and in-work poverty; an expansion of long-term unemployment; and an increase in the Gini coefficient. These trends are directly attributed to the economic depression and the austerity policies that were implemented. The national contribution from Ireland highlights negative trends in relation to the at-risk-of-poverty indicator, a problem that was discussed extensively in national debates. Figures provided show a consistent deterioration up to 2012, followed by a gradual, if uneven, improvement. Malta's national contribution notes that the repercussions of the 2008 financial and economic crisis were mild there in comparison to other European countries. Nevertheless, negative outcomes are observed in several indicators, such as the increasing proportion of people at risk of poverty and the decrease in the ratio of young to non-young people employment rates. In the UK, negative trends include an increase in the at-risk-of-poverty and the in-work poverty rates, a decrease in the ratio of young to non-young people employment rate, an increase in the old-age dependency ratio, and an increase in the Gini coefficient.

Cyprus experienced some negative developments regarding quality of work and employment, specifically, decreases in unemployment protection coverage, job security and income development. These changes are attributed to the deterioration of labour market

conditions during the crisis and the austerity measures that followed. In Ireland, many of the indicators show an improvement on the values recorded in previous years; according to the national correspondent, they point to an improving economy. In Malta, the overall positive trend is attributed to the more productive and higher-skilled jobs created in the service sector.
By contrast, the national contribution from the UK notes that the relatively good picture that emerges regarding the quality of work and employment indicators (the decrease in low pay incidence, the improved assessment of income developments and career prospects, and the decrease in unsocial working time) does not correspond well with evidence in the literature of an expansion of insecure work, low-quality jobs and growing wealth inequality (see the section 'Selecting a preliminary set of indicators' in Chapter 2).

In relation to industrial competitiveness, the national contribution from Cyprus identifies a drop in the employment rate as the most important change to have occurred in this dimension. It is also worth noting the sharp overall decrease in the GDP growth per capita in the period analysed. Moreover, it points out that the austerity framework has resulted in a freeze in infrastructural improvements, resulting in the declining competitiveness of Cyprus's infrastructure. In Malta, there has been a noticeable improvement in many indicators, such as GDP growth per capita, the employment rate and the proportion of those with a higher level of education. The employment rate, in spite of consistent increases, has still not reached the EU average. In the UK, the positive trend associated with the increase in the numbers of people with a higher level of education (up by 16.7% over 2008–2015) is nuanced. According to the national correspondent, the UK has a highly bifurcated skill structure, where a substantial number of people have no or low-level skills (Bosch, 2017). Focusing on the numbers with a high level of education overshadows this.

Dynamic perspective on the Centre-east cluster

Converging and diverging trends are observed across Member States in the Centre-east cluster. All of these countries record trends that negatively affect industrial democracy. With the exception of the Czech Republic, all record a drop in collective bargaining coverage, all but Bulgaria record a decrease in trade union density, and all but Poland record a drop in the percentage of workplaces with collective wage agreements. Finally, three countries (Bulgaria, Croatia and Slovakia) record a decrease in the employer organisation density. Some countries (notably Hungary) report that the actual level of deterioration may have been more pronounced than suggested by the indicators (see the section 'Findings from the national contributions' in Chapter 2).

With regard to social justice, the national contribution from Estonia stresses that there have been no real developments here; for some indicators (like the gender pay gap), the lack of improvement is an issue of real social concern, as has been acknowledged, to some extent, in national policy debates.

In Croatia, the data show both positive trends in social justice (regarding the at-risk-of-poverty and the in-work poverty rates), as well as negative trends (regarding the long-term unemployment rate and the youth unemployment ratio). In Lithuania, the indicators give a mixed account of changes in social justice. However, all developments related to the labour market were positive when comparing the crisis period with the post-crisis period. Relevant indicators here are: the youth unemployment ratio, ratio of young to non-young people employment rate, the in-work poverty rate, the gender pay gap, and rate of early leavers from education and training. These positive developments, however, related more to positive economic developments than to developments in the industrial relations field. In Poland, positive developments in some of the social justice indicators (a shrinking of the at-risk-of-poverty rate and an improvement in the employment rate among older people) occurred alongside a rise in long-term and youth unemployment, an issue often addressed in national policy debates.

The national contribution from Lithuania notes that the most significant changes during the period of observation were recorded in the quality of work and employment dimension. Positive changes were recorded across the majority of indicators: unemployment protection coverage, low-pay incidence, involuntary temporary employment, job security and excessive working time. This trend is explained as a result of improvements in the labour market and its recovery from the economic crisis.

In Poland, the quality of work and employment dimension captures an improvement in indicators related to workers' subjective perceptions: perceived 'good pay' and prospects for career advancement. Data on the more objective indicators, however, suggest the situation is deteriorating (apart from the share of employees who usually work more than 48 hours per week).

Finally, several countries assess changes in industrial competitiveness. According to the national contribution for the Czech Republic, the most significant changes occurred in this dimension. In 2014, there was a return to economic growth, which led to an increase in employment, new support for SMEs, increased spending on R&D, and increases in the number of newly-established firms and overall investment activity. Estonia has also seen significant changes in this dimension, associated with developments related to

economic cycles during the period; for example, GDP reached pre-crisis levels. The national contributions from Hungary, Lithuania and Poland acknowledge an overall improvement in industrial competitiveness in line with the picture depicted by the indicators.
The national contribution for Romania also recorded positive developments here. In Slovakia, the most important development concerned the resumption of GDP growth following the crisis (since 2010); the increase in R&D expenditure as a percentage of GDP is also significant. These represent, according to the national correspondent, positive developments which improve the country's competitiveness.

4 Conclusions

This study has shown that a dashboard with indicators that can accurately measure and summarise the complex reality of industrial relations across the EU Member States is a valuable tool for comparative research and a useful instrument for supporting policymakers and social partners.

The study has provided a fine-tuned set of 45 indicators for the four key dimensions of industrial relations within the conceptual framework developed by Eurofound: industrial democracy, industrial competitiveness, social justice, and quality of work and employment. The indicators have been tested at national level and show reasonable accuracy when used to map the predominant features and trends of the national industrial relations systems. The database created for this exercise compiles annual data for the period 2008–2015 from different European and international data sources (Eurofound, Eurostat, the ILO, the OECD, the WEF, the ETUI, the ICTWSS and Transparency International).

This set of indicators and its application to the Member States has revealed substantial cross-country differences – an issue of great interest for mutual learning and comparison. The results are relatively consistent with the typology of industrial relations regimes developed by Visser (2009): 'organised corporatism' in the Nordic countries; 'social partnership' in the Centre-west cluster; 'state-centred' in the South cluster; a 'liberal pluralism' model in the West cluster; and 'transition economies' (a 'mixed model') in the Centre-east cluster. As Visser (2009) recognises and the application of the set of indicators shows, the typology, as well as all the classifications, is only an approximation to the reality of the countries that share common features. For instance, the UK does not share the same features in terms of industrial democracy as the other countries in the West cluster (Cyprus, Ireland and Malta); as reflected in most of the indicators of this dimension (including trade union density, collective bargaining coverage and employee representation at the workplace), the UK's performance is below the EU averages. In the South cluster, Italy's higher trade union density rate distinguishes it from France and Spain. And in the Centre-east cluster, Croatia and Romania differ from their neighbours insofar as their trade union density rates and collective bargaining coverage rates are above the EU averages.

The results illustrate how different Member States are evolving, highlighting important divergences across countries and, to some extent, within the different industrial relations regimes. (This is despite some limitations to the data; for instance, in terms of industrial democracy, only 4 of 14 indicators are available for analysis over time.) In a context of growing debate on the impact of the crisis on the industrial relations systems of Europe, the consolidation of this tool could shed some light on such developments. It can be used to systematically monitor and analyse the evolution of industrial relations systems in the years ahead, helping to further explore how these systems adapt to post-crisis times, as well as refreshing and improving existing industrial relations typologies on the basis of the Eurofound conceptual framework.

The study findings also provide a more nuanced understanding of the conceptual framework and its dimensions. In the initial study, the framework was tested conceptually and politically among relevant stakeholders (Eurofound, 2016a). In the current exercise, its application to analysis has been tested. Insights from Eurofound's Network of European Correspondents prove the consistency of and the relatively common agreement among experts on the validity of the conceptual framework based on the four dimensions. It also reveals conceptual challenges that should be considered. These challenges are mostly associated with the complexity of constructing a comprehensive representation of an industrial relations system through the four dimensions. This partly relates to the difficulties involved in relating the industrial relations actors and processes to the outcomes of the dimensions, which, as in the case of industrial competitiveness, social justice, and quality of work and employment, are also affected by other complex and varied factors.

On a more specific level, the exercise has gathered useful insights for improving the set of indicators, checking its accuracy and reliability, and considering potential alternative indicators. Regarding the last issue, the study tested some alternative indicators, which, although grounded in research and considered relevant to understanding features of national industrial relations systems, were found to generate results that clearly conflicted with those from the scientific literature and were therefore discarded. These findings confirm, to some extent, the soundness of the dashboard approach in applying the conceptual framework – the focus on selecting relevant indicators that can depict the essential aspects of the industrial relations systems, rather than collecting a great range of indicators able to measure and articulate particularities of each system.

Additionally, the exercise has collected meaningful insights on how to move forward, in terms of further developing the conceptual approach, improving the set of indicators, and using the results in the most effective way to contribute to a better collective and individual

governance of work and employment. Based on the findings of this study, several potential options to improve the analysis and application of the Eurofound conceptual framework based on the four dimensions can be explored.

The first option would be to continue improving the current dashboard. This would entail a critical review of the set of indicators, as well as their interrelation with the four key dimensions, in order to strengthen the conceptual approach by trying to better relate indicators to industrial relations actors and processes. This further fine-tuning process should consider new indicators to cover gaps and discard conceptually problematic indicators, which appear to contradict some national analyses and research findings. Additionally, contextual indicators could be included, aimed at describing aspects that can contribute to the better understanding of the outcomes recorded in the dimensions – for instance, indicators relating to the legal framework of industrial relations. Finally, the reliability of some indicators should be checked against other sources.

The second option would be to explore replacing the indicators in some of the dimensions or subdimensions with another set of indicators or index already built. This option would be especially pertinent for the industrial competitiveness, quality of work and employment, and social justice dimensions, where several research institutions have already developed consolidated indices in these fields. This would entail testing the application of the conceptual framework to the national industrial relations systems in European countries using a set of indicators or indexes from another institution. The test should be aimed at assessing the consistency of the comparative results obtained and the coherence of the conceptual framework.

The third option would be to develop a composite indicator for each key dimension to comprehensively measure country performance across the four dimensions. This would entail a revision of the set of indicators as outlined above, as well as further conceptual and methodological work to ensure conceptual coherence and statistical consistency of the comparative results.

Bibliography

All Eurofound publications are available at www.eurofound.europa.eu

Bertelsmann Stiftung (2016), *Social justice in the EU – Index report 2016*, Social Inclusion Monitor Europe, Bertelsmann Stiftung, Gütersloh, Germany.

BMWFW (Bundesministerium für Wissenschaft, Forschung und Wirtschaft) (2016), *Wirtschaftsbericht Österreich 2016*, BMWFW, Vienna.

Boliver, V. and Byrne, D. (2013), 'Social mobility: The politics, the reality, the alternative', *Soundings: A Journal of Politics and Culture*, Vol. 55, Winter 2013, pp. 50–59.

Bönisch, M. (2008), 'Kollektivvertragliche Abdeckung in Österreich', *Statistische Nachrichten*, No. 3, pp. 207–228.

Bosch, G. (2017), 'Different national skills systems', in Warhurst, C., Mayhew, K., Finegold, D. and Buchanan, J. (eds.), *The Oxford handbook of skills and training*, Oxford University Press, Oxford.

Broughton, N. and Richards, B. (2016), *Tough gig: Tackling low paid self-employment in London and the UK*, Social Market Foundation, London.

Brown, P. and Hesketh, A. (2004), *The mismanagement of talent: Employability and jobs in the knowledge-based economy*, Oxford University Press, Oxford.

Brynin, M. (2002), 'Overqualification in employment', *Work, Employment and Society*, Vol. 16, No. 4, pp. 637–654.

Campos Lima, M. da Paz (2016), 'The influence of the Troika on the erosion of collective bargaining in Portugal: Changing rules and outcomes', in European Parliament, *Evolution of collective bargaining in Troika programme and post-programme Member States*, Directorate-General for Internal Policies, Brussels.

Centre for Labour Studies (2015), *Biennial report 2013–2014*, University of Malta, Malta.

D'Arcy, C. and Gardiner, L. (2014), *Just the job – or a working compromise? The changing nature of self-employment in the UK*, Resolution Foundation, London.

Delteil, V. and Kirov, V. (2016), *Labour and social transformations in central and eastern Europe: Europeanization and beyond*, Routledge, Abingdon, UK.

Dragoš, S. and Leskošek, V. S. (2016), *Slovenska smer*, Založba, Ljubljana, Slovenia.

Eichmann, H. (2011), *Befunde zur Qualität der Arbeit: Österreich im EU-Vergleich*, WISO 3/2011, pp. 103–117.

Erola, J. and Moisio, P. (2007), 'Social mobility over three generations in Finland, 1950–2000', *European Sociological Review*, Vol. 23, No. 2, pp. 169–183.

Eurofound (2000), *Social partnership*, European employment and industrial relations glossary: Austria, Dublin.

Eurofound (2007), *Fourth European Working Conditions Survey: Qualitative post-test analysis*, Dublin, available at https://www.eurofound.europa.eu/publications/report/2007/fourth-european-working-conditions-survey-qualitative-post-test-analysis.

Eurofound (2014), *The impact of the crisis on industrial relations and working conditions*, Dublin.

Eurofound (2016a), *Mapping key dimensions of industrial relations*, Publications Office of the European Union, Luxembourg.

Eurofound (2016b), *Programming document 2017–2020*, Eurofound, Dublin.

European Commission (2014), *Reindustrialising Europe, Member States' competitiveness report 2014*, SWD(2014) 278, Publications Office of the European Union, Luxembourg.

Eurostat (2011), *European Statistics Code of Practice*, Publications Office of the European Union, Luxembourg.

Eurostat (2014), *ESS handbook for quality reports*, 2014 edition, Publications Office of the European Union, Luxembourg.

Eurostat (2015), *Quality Assurance Framework of the European Statistical System*, Version 1.2, European Commission, Brussels.

Goos, M. and Manning, A. (2007), 'Lousy and lovely jobs: The rising polarization of work in Britain', *Review of Economics and Statistics*, Vol. 89, No. 1, pp. 118–133.

Guga, S. (2016), *Munca atipica in Romania de la izbucnirea crizei. O perspectiva de ansamblu*, Next Publishing, Bucharest.

Guga, S. and Constantin, C. (2015), *Analiza impactului noii legislatii a dialogului social adoptate in 2011*, Asociatia Connect, Bucharest.

Hespanha, P. and Caleira, J. (2017), *O labirinto das politicas de emprego*, Cadernos do Observatório, No. 10, Centro de Estudos Sociais, Coimbra, Portugal.

Hiilamo, H., Niemelä, H., Pykälä, P., Riihelä, M. and Vanne, R. (2012), *Sosiaaliturva ja elämänvaiheet. Suomen sosiaaliturvan kehitys esimerkkien ja tilastojen valossa*, University of Helsinki, Helsinki.

Holman, D. (2013), 'Job types and job quality in Europe', *Human Relations*, Vol. 66, No. 4, pp. 475–502.

ICCV (Institutul de Cercetare a Calității Vieții) (2017), *Starea sociala a Romaniei. Calitatea vietii: Situatia actuala si perspective pentru 2038*, Bucharest.

Ioannou, G. (2014), 'Employment in crisis: Cyprus 2010–2013', *Cyprus Review*, Vol. 26, No. 1, pp. 107–126.

Ioannou, G. and Sonan, S. (2016), *Youth unemployment in Cyprus: An examination of the 'lost generation'*, Friedrich Ebert Stiftung, Berlin.

Keep, E. and Mayhew, K. (2010), 'Moving beyond skills as a social and economic panacea', *Work, Employment and Society*, Vol. 24, No. 3, pp. 565–577.

Knudsen, H. and Lind, A. (2014), 'The decline of the Danish models of labour market regulation', conference paper, 2014 Industrial Relations in Europe Conference (IREC), 10–12 September 2014, Dublin.

Littler, J. (2013), 'Meritocracy as plutocracy: The marketising of "equality" within neoliberalism', *New Formations: A journal of culture/theory/politics*, Vol. 80–81, pp. 52–72.

Lope, A., Carrasquer, P., Miguélez, F., Castelló, L. and Rodríguez, J. (2010), 'El modelo de empleo como instrumento explicativo de las características del empleo', conference presentation, X Congreso Español de Sociología, 1–3 July 2010, Pamplona, Spain.

Marchington, M. and Wilkinson, A. (2010), *Human resource management at work*, Chartered Institute of Personnel and Development, London.

Markey, R. and Townsend, K. (2013), 'Contemporary trends in employee involvement and participation', *Journal of Industrial Relations*, Vol. 55, No. 4, pp. 475–487.

Martínez Lucio, M. (2016), 'Incertidumbre, indecisión y neoliberalismo emergente: El papel dual y complejo del Estado español en las relaciones laborales y de empleo', *Sociología del Trabajo*, No. 87, pp. 68–88.

Marx, I. and Van Cant, L. (2017), 'Belgium: Robust social concertation providing a buffer against growing inequality?', in Vaughn-Whitehead, D. (ed.), *Inequalities and the world of work: What role for industrial relations and social dialogue?*, International Labour Office, Geneva, pp. 73–114.

McGuinness, S., Kelly, E., Callan, T. and O'Connell, P. J. (2009), *The gender wage gap in Ireland: Evidence from the National Employment Survey 2003*, Economic Social and Research Institute and the Equality Authority, Dublin.

Molina, O. (2014), 'Self-regulation and the state in industrial relations in Southern Europe: Back to the future?', *European Journal of Industrial Relations*, Vol. 20, No. 1, pp. 21–36.

Muñoz de Bustillo, R., Fernández-Macías, E., Antón, J. I. and Esteve, F. (2011), *Measuring more than money. The social economy of job quality*, Edward Elgar, Cheltenham, England.

OECD (2014), *Employment outlook 2014*, OECD Publishing, Paris.

Osmo, K., Hedman, J. and Päivi, K. (2012), 'Koulutusmahdollisuuksien yhdenvertaisuus Suomessa Eriarvoisuuden uudet ja vanhat muodot', *Yhteiskuntapolitiikka*, Vol. 77, pp. 559–566.

Pernicka, S. and Hefler, G. (2014), *Austrian corporatism – Erosion or resilience?*, Working Paper 01/2014, University of Linz, Austria.

Prieto, C. (2014), 'From flexicurity to social employment regimes', in Keune, M. and Serrano, A. (eds.), *Deconstructing flexicurity and developing alternative approaches*, Routledge, London, pp. 47–67.

Regan, A. (2013), *The impact of the eurozone crisis on Irish social partnership: A political economy analysis*, Working Paper No. 49, International Labour Organization, Geneva.

Rhodes, M. (1998), 'Globalization, labor markets and welfare states: A future of "competitive corporatism"?', in Rhodes, M. and Meny, Y. (eds.), *The future of European welfare: A new social contract*, Palgrave MacMillan, London.

Rocha, F. (2014), 'Crisis and austerity policies in Spain: Towards an authoritarian model of industrial relations', in Rocha, F. (ed.), *The new EU economic governance and its impact on the national collective bargaining systems*, CCOO, Madrid, pp. 175–204.

Rodrigues, C. F. (2016), *Desigualdade do rendimento e pobreza em Portugal: As consequências sociais do programa de ajustamento*, Fundação Franscisco Manuel dos Santos, Lisbon.

Stadler, B. (2017), *Mitbestimmung im Betrieb. Ergebnisse des European Company Survey für Österreich*, Bericht im Auftrag der Arbeiterkammer Wien, 2/2017, FORBA-Forschungsbericht, Vienna.

Stanojević, M. and Kanjuo Mrčela, A. (2014), *Social dialogue during the economic crisis: The impact of industrial relations reforms on collective bargaining in the manufacturing sector: Slovenia*, European Commission and the University of Ljubljana, Slovenia.

Strauss, G. (2006), 'Worker participation – Some under-considered issues', *Industrial Relations: A Journal of Economy and Society*, Vol. 45, No. 4, pp. 778–803.

Szekér, L., Smits, I. and Van Gyes, G. (2017), *It takes more than one measure. Capturing the multidimenstionality of job quality with job types and multiple job quality outcomes*, Working Paper 21.12, InGRID, Leuven, Belgium.

Trif, A. (2015), 'Social dialogue during the economic crisis: The survival of collective bargaining in the manufacturing sector in Romania', in Koukiadaki, A., Távora, I. and Martínez Lucio, M. (eds.), *Joint regulation in labour market policy in Europe during the crisis*, European Trade Union Institute, Brussels, pp. 395–440.

Van Gyes, G. and De Spiegelaere, S. (2015), *L'entreprise de nous tous: Innover la participation des travailleurs en Belgique*, Acco, the Hague.

Vassil, K. and Patrick, T. (2016), 'Employment relations and restructuring management in the banking sector in Luxembourg', *Warsaw Forum of Economic Sociology*, Vol. 6, No. 1, pp. 75–100.

Visser, J. (2009), 'The quality of industrial relations and the Lisbon Strategy', in European Commission, *Industrial relations in Europe 2008*, Publications Office of the European Union, Luxembourg, pp 45–73.

Wilkinson, A. and Fay, C. (2011), 'New times for employee voice?' *Human Resource Management*, Vol. 50, No. 1, pp. 65–74.

Wilkinson, A., Gollan, P. and Marchington, M. (2010), 'Conceptualizing employee participation in organizations', in Wilkinson, A., Gollan, P. and Marchington, M. (eds.), *The Oxford handbook of participation in organizations*, Oxford University Press, Oxford, pp. 3–28.

Wilton, N. (2011), 'Do employability skills really matter in the graduate labour market? The case of business and management graduates', *Work, Employment and Society*, Vol. 25, No. 1, pp. 85–100.

World Economic Forum (2016), *The global competitiveness report 2016–2017*, World Economic Forum, Geneva.

Yiannitsis, Z. and Zografakis,S. (2016), *Ανισότητες, φτώχεια, οικονομικές ανατροπές σταχρόνια της κρίσης*, Polis editions, Athens.

Annex

The final list of indicators for the four key dimensions of industrial relations is presented in Tables A1–A4. Within each table, the indicators are grouped by dimension and subdimension.

Sources are:

- ECS (European Company Survey), Eurofound (https://www.eurofound.europa.eu/surveys/european-company-surveys)
- EWCS (European Working Conditions Survey), Eurofound (https://www.eurofound.europa.eu/surveys/european-working-conditions-surveys)
- Global Competitiveness Report (http://reports.weforum.org/global-competitiveness-report-2015-2016/)
- ICTWSS (Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, 1960–2014) (http://uva-aias.net/en/ictwss)
- Transparency International (https://www.transparency.org)
- Eurostat and OECD: various surveys and sources.

Table A1: Industrial democracy indicators

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Autonomy	Time resources for employee representatives	TIMERES2	Eurofound, ECS (ECS-ER-2103 Q11, Q12)	Working time spent on duties of employee representative. 0 = I am not entitled to use my working time. 1 = I am entitled to use a designated number of hours/as much of my working time as is necessary. 3 = I am a full-time employee representative.	Points
Representation	Trade union density	ud	ICTWSS, ILO (ICTWSS-ud)	Union density rate: net union membership as a proportion of wage earners in employment (Num*100/WSEE). WSEE: employed wage and salary workers.	Percentage
	Employer organisation density	ud	ICTWSS (ICTWSS-ed)	Employer organisation density, as proportion of wage earners in employment (Num*100/WSEE). WSEE: employed wage and salary workers.	Percentage
	Collective wage agreements	COLLCOV	Eurofound, ECS (ECS-MGT 2013 ER12) (ECS-MGT-2009 MM450)	Percentage of workplaces with collective wage agreements.	Percentage
	Collective bargaining coverage	Adjcov	ICTWSS, ILO (ICTWSS-adjcov)	Adjusted bargaining coverage rate: proportion of all wage earners with right to bargaining, WCB*100/(WSEE-WSTAT), 0–100. WCB: employees covered by collective bargaining. WSEE: employed wage and salary workers. WSTAT: employees excluded from collective bargaining.	Percentage

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Participation	Employee representation at the workplace	EMPREPR	Eurofound, ECS (ECS-MGT-2013 ERTYPE /ER1)	Percentage of workplaces with any form of official employee representation body.	Percentage
	Direct employee participation at the workplace	EMPPART_MM	Eurofound, ECS (ECS-MGT-2013 EOc)	Evaluation done by management. Mean level: No participation = 0 Information = 1 Consultation = 2 Co-determination = 3	Points
	Direct employee participation at the workplace	EMPPART_ER	Eurofound, ECS (ECS-ER-2013 Q34)	Evaluation done by employee representative. Mean level: No participation = 0 Information = 1 Consultation = 2 Co-determination = 3	Points
	Participation of the employee representation body at the workplace	ERPART_MM	Eurofound, ECS (ECS-MGT-2013 EOe)	Evaluation done by management. Mean level: No participation = 0 Information = 1 Consultation = 2 Co-determination = 3	Points
Influence	Direct employee influence in decision-making at the workplace	EMPINFLU	Eurofound, ECS (ECS-ER-2013 Q39)	Mean influence: No influence = 1 Some influence = 2 Strong influence = 3	Points
	Influence of the employee representation in decision-making at the workplace	ERINFLU	Eurofound, ECS (ECS-ER-2013 Q38)	Mean influence: No influence = 1 Some influence = 2 Strong influence = 3	Points

Table A2: Industrial competitiveness indicators

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Productivity and growth	GDP growth per capita	nama_10_pc	Eurostat nama_10_pc	Real GDP per capita, growth rate. Percentage change on previous year, € per inhabitant.	Percentage
	Employment rate	lfsa_ergan	Eurostat lfsa_ergan	Ratio of 25–64-year-olds employed to the 25–64-year-old population.	Percentage
Market stability and efficiency	Incidence of corruption	CorruptionIndex	Transparency International	Corruption Perceptions Index. A country's score indicates the perceived level of public sector corruption on a scale of 0 (highly corrupt) to 100 (very clean).	Points
Sophistication of resources	Infrastructure ranking	InfrastructureRank	World Economic Forum (Global Competitiveness Report)	Measures the competitiveness in infrastructures from 1 (lowest) to 7 (highest).	Points
	Percentage of individuals with a high level of education	edat_lfse_03	Eurostat edat_lfse_03	Population aged 25–64 years with tertiary education (levels 5–8) attained as a percentage of population aged 25–64 years.	Percentage

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Sophistication of resources (cont'd)	Percentage of individuals with at least a medium level of computer skills	isoc_sk_cskl_i	Eurostat isoc_sk_cskl_i	Level of basic computer skills is measured using a self-assessment approach, where the respondent indicates whether they have carried out specific tasks related to computer use, without these skills being assessed, tested or actually observed. Six computer-related items were used to group the respondents according to level of computer skills in 2006, 2007, 2009, 2011 and 2012: copy or move a file or folder; use copy and paste tools to duplicate or move information within a document; use a basic arithmetic formula (add, subtract, multiply or divide) in a spreadsheet; compress files; connect and install new devices, e.g. a printer or a modem; write a computer programme using a specialised programming language. Instead of the item on having connected and installed new devices, the 2005 survey included an item on the use of a mouse to launch programmes such as an internet browser or word processor. Medium level of basic computer skills: individuals who have carried out three or four of the six computer-related items. Population considered: 25–64 years.	Percentage
	Percentage of individuals with at least medium level of internet skills	isoc_sk_iskl_i	Eurostat isoc_sk_iskl_i	Level of internet skills are measured using a self-assessment approach, where the respondent indicates whether they have carried out specific tasks related to internet use, without these skills being assessed, tested or actually observed. Six internet-related items were used to group the respondents into levels of internet skills in 2005, 2006, 2007 and 2011: use a search engine to find information; send an email with attached files; post messages to chatrooms, newsgroups or any online discussion forum; use the internet to make telephone calls; use peer-to-peer file sharing for exchanging movies, music, etc.; create a web page. Medium level of basic internet skills: individuals who have carried out three or four of the six internet-related items. Population considered: 25–64 years.	Percentage

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Innovation and entrepreneurship	Percentage of R&D personnel	rd_p_perslf	Eurostat rd_p_perslf	Total R&D personnel as % of total active population.	Percentage
	R&D expenditure as a percentage of GDP	rd_e_gerdtot	Eurostat rd_e_gerdtot	Total intramural R&D expenditure (GERD) as a % of GDP.	Percentage
	Percentage of enterprises newly born in t-2 having survived to t	bd_9bd_sz_cl_r2	Eurostat bd_9bd_sz_cl_r2	Survival rate 2: number of enterprises in the reference period (t) newly born in t-2 having survived to t divided by the number of enterprise birth in t-2. In the business demography context, survival occurs if an enterprise is active in terms of employment and/or turnover in the year of birth and the following year(s). Two types of survival can be distinguished: 1. An enterprise born in year xx is considered to have survived in year xx+1 if it is active in terms of turnover and/or employment in any part of year xx+1 (= survival without changes). 2. An enterprise is also considered to have survived if the linked legal unit(s) have ceased to be active, but their activity has been taken over by a new legal unit set up specifically to take over the factors of production of that enterprise (= survival by takeover). Taken for: business economy except activities of holding companies.	Percentage

Table A3: Social justice indicators

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Social cohesion and non-discrimination	At risk of poverty or social exclusion rate	ilc_peps01	Eurostat ilc_peps01	People at risk of poverty or social exclusion as % of the total population.	Percentage
	In-work poverty rate	ilc_li04	Eurostat ilc_li04	The share of employed persons aged 18 years or over with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers). The share of employed persons aged 18 years or over with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers).	Percentage
	Ratio of women to men employment rate	lfsa_ergan_geg	Eurostat lfsa_ergan	Employment rate of women as a percentage of employment rate of men (20–64 years).	Percentage

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Social cohesion and non-discrimination (cont'd)	Gender pay gap	earn_gr_gpgr2	Eurostat earn_gr_gpgr2	The unadjusted gender pay gap (GPG) represents the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees. The population consists of all paid employees in enterprises with 10 employees or more in NACE Rev. 2 aggregate B to S (excluding O) – before reference year 2008: NACE Rev. 1.1 aggregate C to O (excluding L). The GPG indicator is calculated within the framework of the data collected according to the methodology of the Structure of Earnings Survey (EC Regulation: 530/1999). It replaces data which were based on non-harmonised sources.	Percentage
	Older to non-older people employment ratio	lfsa_ergan_older	Eurostat lfsa_ergan	Employment rate of older people (60–64 years) as a percentage of employment rate of non-older people (15–59 years).	Percentage
	Young to non-young people employment ratio	lfsa_ergan_young	Eurostat lfsa_ergan	Employment rate of young people (15–24 years) as a percentage of employment rate of non-young people (25–64 years).	Percentage
	Employment rate of people with disabilities	hlth_dlm010	Eurostat hlth_dlm010	It considers people with limitation in work caused by a health condition or difficulty in a basic activity. Age: 15–64 years.	Percentage
Equality of opportunity	Early leavers from education and training	edat_lfse_14	Eurostat edat_lfse_14	Percentage of the population aged 18–24 years with at most lower secondary education (ISCED 0, 1, 2 or 3c short) and who were not in further education or training during the four weeks preceding the survey.	Percentage
	Old-age dependency ratio	demo_pjanind	Eurostat demo_pjanind	Ratio between the number of persons aged 65 and over (age when they are generally economically inactive) and the number of persons aged between 15 and 64. The value is expressed per 100 persons of working age (15–64).	Percentage

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Equality of outcome	Long-term unemployment rate	une_ltu_a	Eurostat une_ltu_a	Number of long-term unemployed aged 15–74 years as a percentage of the active population of the same age. Long-term unemployed (12 months and more) comprise persons aged at least 15 years, who are not living in collective households, who will be without work during the next two weeks, who would be available to start work within the next two weeks and who are seeking work (have actively sought employment at some time during the previous four weeks or are not seeking a job because they have already found a job to start later). The total active population (labour force) is the total number of the employed and unemployed population. The duration of unemployment is defined as the duration of a search for a job or as the period of time since the last job was held (if this period is shorter than the duration of the search for a job). The annual average is taken.	Percentage
	Youth unemployment ratio	yth_empl_140	Eurostat yth_empl_140	It includes all young people (between the ages of 15 and 24 years, inclusive) who are unemployed. The youth unemployment ratio is the percentage of unemployed young people compared to the total population of that age group (not only the active, but also the inactive such as students).	Percentage
	Gini coefficient	ilc_di12	Eurostat ilc_di12	It is defined as the relationship of cumulative shares of the population arranged according to the level of equivalised disposable income, to the cumulative share of the equivalised total disposable income received by them. Scale from 0 to 100.	Points

Table A4: Quality of work and employment indicators

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Career and employment security	Unemployment protection coverage	lfsa_ugadra	Eurostat lfsa_ugadra	Percentage of unemployed (registered) from 6 to 11 months (20–64 years) receiving unemployment benefits/assistance.	Percentage
	Low pay incidence	earn_ses_pub1s	Eurostat earn_ses_pub1s	Low-wage earners as a proportion of all employees (excluding apprentices). Low-wage earners are defined as those employees (excluding apprentices) earning two-thirds or less of the national median gross hourly earnings in that particular country.	Percentage
	Involuntary temporary employment	lfsa_etgar	Eurostat lfsa_etgar	Percentage of employees aged 15–64 years who report as main reason for being in temporary employment that they could not find permanent job, as a percentage of total employment. The indicator is based on the EU Labour Force Survey.	Percentage
	Job security	JOBSEC	Eurofound, EWCS 2015_q89g 2010_Q77A	Percentage of employees who think they might lose their job in the next six months.	Percentage
	Income development	WELLPAID	EWCS 2015_q89a 2010_Q77B	Percentage of employees who think they are well paid for the job they do.	Percentage
	Career prospects	CAREERPROSP	Eurofound, EWCS 2015_q89b 2010_Q77C	Percentage of employees who think their job does offer good prospects for career advancement.	Percentage
Health and well-being	Subjective workplace well-being	SWB	Eurofound, ECWS 2015_q88 2010_Q76	Percentage of employees who are satisfied or very satisfied with their working conditions.	Percentage
	Depression or anxiety	ANXIETY	Eurofound, ECWS 2015_q78h (modified trend) 2010_Q69K (modified trend)	Percentage of employees suffering from depression or anxiety.	Percentage
Reconciliation of working and non-working life	Excessive working time	More48h	ILO	Percentage of employees who usually work more than 48 hours per week.	Percentage
	Unsocial working time	lfsa_esegatyp	Eurostat lfsa_esegatyp	Employment at atypical working time (such as nights, weekends) as a percentage of the total employment.	Percentage
	Ratio of women to men hours spent on unpaid work	UNPAIDWORK	Eurofound, EWCS 2015_Q96C,D,E	Time (minutes) per day that women (15–64 years) spend on unpaid work (care and cooking activities) as a percentage of time spent by men.	Percentage

Subdimension	Indicator	Code	Source (code in source)	Definition	Unit of measurement
Skills development	Skills development	trng_lfse_01	Eurostat trng_lfse_01	Lifelong learning refers to persons aged 25–64 years who stated that they received education or training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding those who did not answer to the question on participation.	Percentage

TJ-02-18-022-EN-N

Eurofound's 2016 report *Mapping key dimensions of industrial relations* identified four key dimensions of industrial relations: industrial democracy, industrial competitiveness, social justice, and quality of work and employment. This report builds upon that earlier study, developing a dashboard of 45 indicators to assess how and to what extent the conceptual framework of these key dimensions can be applied at national level. The indicators were tested across the Member States by Eurofound's Network of European Correspondents and show reasonable accuracy when used to map the predominant features and trends of the national industrial relations systems. The study confirms that a dashboard of indicators that can accurately measure and summarise the complex reality of industrial relations across the EU is a valuable tool for comparative research and a useful instrument for supporting policymakers, social partners and stakeholders. The report sets out a range of options for further developing this conceptual approach.

The European Foundation for the Improvement of Living and Working Conditions (Eurofound) is a tripartite European Union Agency, whose role is to provide knowledge in the area of social, employment and work-related policies. Eurofound was established in 1975 by Council Regulation (EEC) No. 1365/75, to contribute to the planning and design of better living and working conditions in Europe.

Publications Office

ISBN: 978-92-897-1625-3
doi:10.2806/366245