

Chapter 3

Wage-setting Institutions and Outcomes

The OECD Jobs Strategy recommends policies to increase wage flexibility, including moves to decentralise wage bargaining. However, this is one of the policy areas where member governments have shown the greatest reluctance to implement the reforms proposed and disagreements among researchers have been most pronounced. Have wage-setting institutions become more supportive of high employment rates and broadly-shared prosperity? To what extent is the trend towards lower union density and more decentralised collective bargaining a factor behind wage moderation and greater earnings inequality recorded in some OECD countries? Does insufficient wage differentiation limit the employment prospects of youths, women or less educated workers?

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Introduction

Workers and economists agree on the importance of wages. Whereas most workers would emphasise the importance of their pay for their family's income, most economists would add that wages also function as price signals in a market economy, thereby affecting allocative efficiency in production. Both groups would agree, however, that the performance of the labour market – and the overall economy – is intimately linked to the good functioning of wage-setting institutions. Unfortunately, the complexity of the links between these institutions and the wage structures that they generate, on the one hand, and the resulting impacts on allocative efficiency and the distribution of income, on the other, make it difficult to identify the policy choices best suited to achieve good labour market performance. Furthermore, these policy choices tend to raise the difficult issue of trade-offs between efficiency and equity goals. Wage-setting institutions may also be embedded in bi- or tripartite systems of consultation and co-determination which have important social and economic functions beyond their influence on wage setting. Despite these complexities, policy choices must be made and they should be informed, as much as is possible, by historical experience and economic research. In that spirit, the OECD Jobs Strategy – which was formulated in light of the evidence that was available approximately a decade ago – recommends policies to increase wage flexibility and lower non-wage labour costs (OECD, 1994a).

The purpose of this chapter is to reassess some of the evidence underlying the Jobs Strategy recommendations concerning wage setting, albeit without providing a comprehensive reassessment of those recommendations. Emphasis is placed upon updating and extending the OECD's indicators of the organisation of collective bargaining, in light of the recent evolution of bargaining practices and advances in internationally comparative research (see, notably, Ebbinghaus and Visser, 2000; Golden et al. 2002; Iversen, 1998, 1999; Kenworthy, 2001a, b, 2003; Ochel, 2000a, b; Traxler et al. 2001). These indicators are then used to provide a *preliminary* reassessment of how wage bargaining institutions affect the overall wage level, the structure of relative wages and various non-wage outcomes. A key reason that this reassessment should be considered preliminary and incomplete is that interactions between collective bargaining and other policies affecting wages (e.g. tax and transfer policies that affect non-wage labour costs or the social benefits available to the unemployed, and statutory minimum wages) receive only cursory attention. Nor does the chapter provide a comprehensive analysis of the economic impact of unions, despite its emphasis on collective bargaining. For example, the “voice” role of unions (and allied institutions such as works councils) in representing workers' interests encompasses a broad range of concerns, in addition to wage bargaining, which are not considered here (Addison and Belfield, 2003).

The chapter is organised as follows. Section 1 sets the stage by surveying the most pertinent developments in policy making, the research literature and wage outcomes – including trends in average wages and wage differentials, and how both have co-varied with employment. On the basis of this survey, it is argued that a key question that must be

answered, in order to better assess the relative advantages and disadvantages of different national systems for determining wages, is whether certain organisational forms of collective bargaining undermine employment performance by tending to result in either: i) an average wage level that is too high relative to productivity; or ii) a compressed wage structure which does not adequately reflect differences in productivity between workers and regions. Section 2 then develops a detailed comparative analysis of the organisation of collective bargaining in OECD countries and how these systems have evolved since 1970. This section updates the OECD indicators for union density, collective bargaining coverage, and the centralisation and co-ordination of bargaining (OECD, 1994c, 1997a) and discusses closely related developments, including the use of administrative extension and opt-out clauses, experience with tripartite agreements/social compacts and bargaining “governability”. Finally, Section 3 uses the updated indicators to re-examine the impact of these wage-setting institutions on the functioning of the labour market, as reflected in both wage and non-wage outcomes. A wide selection of performance measures is considered in this largely descriptive analysis, which provides a check on the robustness of past research findings, while identifying the most promising avenues for further study.

Main findings

- *The evolution of aggregate wages suggests a trend towards wage moderation in the majority of OECD member countries since the end of the 1970s, as reflected in a deceleration of nominal wage inflation and declines in the wage share of total income generated in the business sector. However, it is unclear whether there has been a correspondingly broad trend towards reduced upward pressure on the level of real wages relative to productivity, at an unchanged rate of unemployment, which theoretical arguments identify as the most relevant measure of wage restraint.*
- *The evolution of earnings inequality and wage differentials since 1970 has varied considerably across OECD countries, but an overall tendency for wage dispersion to increase can be detected, particularly in countries where wages are more responsive to market forces. Employment and unemployment developments – in particular, the relative employment of youths and older persons of working age – tended to be less favourable in countries in which earnings inequality increased more slowly since 1970 (or fell), than in countries where the earnings inequality rose more rapidly. Furthermore, the apparent trade-off between a strong employment performance and a more equal distribution of earnings appears to have worsened, consistent with relative labour demand having shifted towards high-skilled workers.*
- *There has been a steady decline of trade union density in most OECD countries over the past few decades. Only four out of 20 countries, for which full data are available, increased their density since 1970: Belgium, Denmark, Finland and Sweden, i.e. the countries of the “Ghent” system, where unemployment benefit, as a rule, is administered by union-affiliated institutions. By contrast, density fell by over half in two countries (Portugal and New Zealand) and by over one-third in another seven countries.*
- *In comparison with trade union density, there has been more stability in the extent of bargaining coverage for the OECD area as a whole. In large part, this is due to there having been relatively little change in the extent to which employers apply the terms of contracts negotiated with unions to their non-union workforce, whether voluntarily or in response to administrative extension mechanisms. As concerns both union density and bargaining coverage, OECD countries have become more diverse in recent decades.*

- *The level where collective contracts are negotiated and formally set is one of the more obvious dimensions of bargaining structures.* The classification of countries on this indicator is complicated by the fact that in a number of countries bargaining may occur at multiple levels. The classification into five categories used in this chapter takes into account multi-level bargaining, while keeping the usual three-way classification by firm-, sectoral and national level. Importantly, when comparing the 1970s with the 1990s, not a single OECD country moved towards centralisation, whereas a considerable number moved toward greater decentralisation – which could theoretically result in greater inter-firm wage differentiation.
- *Conceptually different from the level where wages are formally set is the degree of co-ordination of bargaining.* This chapter distinguishes five levels of co-ordination. A substantial number of countries are given a higher score on the co-ordination than on the centralisation dimension, because of pattern bargaining modelled on pilot agreements, different forms of peak-level co-ordination, or government intervention in tripartite agreements or social compacts.
- *High union density and bargaining coverage, and the centralisation/co-ordination of wage bargaining tend to go hand-in-hand with lower overall wage inequality.* There is also some, albeit weaker, evidence that these facets of collective bargaining are positively associated with the relative wages of youths, older workers and women. On the other hand, the chapter does not find much evidence that employment of these groups is adversely affected.
- *No robust associations are evident between the indicators of wage bargaining developed in this chapter and either the growth rate of aggregate real wages or non-wage outcomes, including unemployment rates.* This is consistent with the results obtained using the previous version of the OECD indicators of the organisation of collective bargaining. This “negative finding” does not preclude that more sophisticated analyses might find such effects, for example, by identifying interaction effects between the organisation of wage bargaining and other policies (e.g. employment protection) or ways in which different forms of wage bargaining affect the dynamics of labour market adjustment to shocks. However, it could be an indication that quite different institutional arrangements are capable of obtaining similar levels of macroeconomic performance.

1. Setting the stage

A. The policy context

Did wage-setting institutions that leave too little scope for the operation of market forces bear a part of the responsibility for the deterioration of employment performance observed in many OECD countries following the first oil shock? This point of view was reflected in the OECD Jobs Strategy, as formulated in 1994, although insufficient wage flexibility was only one of a number of factors that were singled out as having caused the upward trend in unemployment rates. Consistent with this diagnosis, one of the ten broad policy guidelines of the Jobs Strategy recommended that governments enact reforms to restrain overall labour costs and allow relative wages to better reflect individual differences in productivity and local labour market conditions (see Box 3.1). With some differences in nuance, the European Commission, in its Economic Policy Guidelines, has also advocated reforms to enhance aggregate and relative wage flexibility (European Commission, 2003a). Similarly, a number of OECD countries have introduced reforms intended to render wages and labour costs more

Box 3.1. Wage setting in the original OECD Jobs Study

The original 1994 OECD Jobs Study recommended as one of its broad policy guidelines that policy makers make wage and labour costs more flexible by removing restrictions that prevent wages from reflecting local conditions and individual skill levels and/or reducing non-wage labour costs (OECD, 1994a). More particularly, the detailed recommendations underlying this guideline included to:

- Reassess the role of statutory minimum wages and either switch to different kinds of redistributive instruments or minimise their adverse employment effects by ensuring sufficient differentiation in minimum levels and/or indexing them to prices instead of average earnings.
- Refocus collective bargaining at sectoral level to framework agreements, in order to give firms more leeway to adjust wages to local conditions.
- Introduce opening clauses for local bargaining parties to re-negotiate sectoral agreements.
- Phase out administrative extension which was considered to rigidify wage-setting arrangements.
- Reduce non-wage labour costs that lead to increased unemployment unless they are offset by wage concessions; particularly in Europe, this should be done by reducing taxes on labour and/or shifting away from these towards other types of taxes.
- Reduce direct taxes and social security contributions on low-wage workers, in order to shift labour demand towards them.

The analytical study on “wage adjustments” underlying the recommendations presented a wealth of descriptive and analytical material on price adjustments in the labour market and the impact of industrial relations institutions (OECD, 1994b). In particular, it advocated market-clearing by appropriate wage adjustments to external shocks and warned against too much compression of the wage distribution as this led to the demand for low-skilled labour drying up. As to institutional behaviour, the study leaned towards the Calmfors/Driffill hypothesis about the perverse effects of sectoral bargaining (Calmfors and Driffill, 1988), but was also sceptical about the supposed advantages of centralised bargaining and tripartite agreements or social compacts.

flexible. For example, the 1991 Employment Contracts Act in New Zealand and a series of workplace reform acts in Australia (1988, 1993, 1996) decentralised wage bargaining in the pursuit of greater wage flexibility. Taking a somewhat different approach, national governments in a number of European countries have supported social pacts intended to encourage moderation in wage setting (Fajertag and Pochet, 2000) or introduced payroll tax exonerations for employers of low-wage or disadvantaged workers (OECD, 2003a).

The OECD’s assessment of the Jobs Strategy, five years after it was endorsed by member governments, concluded that reforms to wage-setting institutions was one of the policy areas in which member governments had shown the greatest reluctance to implement the OECD’s policy recommendations (OECD, 1999).¹ Concerns for equity and social cohesion appear to have been an important explanation for this reluctance (OECD, 1997b). Equity concerns merit attention. Across OECD countries, higher wage dispersion is associated with a higher incidence of low-paid employment and greater persistence in low pay (OECD, 1996, 2003a). Furthermore, there is a strong association between low-paid

employment and poverty incidence in the working-age population, although the link between joblessness and poverty is even stronger (OECD, 2001a). A second possible barrier to enacting these reforms may be that national industrial relations structures and practices are deeply embedded in the economic and social fabric and not easily changed.² A final possible explanation for a reluctance to implement reforms intended to increase wage flexibility may be doubts concerning the efficacy of these measures for expanding employment (Howell, 2004; Teulings and Hartog, 1998).

How strong is the case supporting reforms to enhance aggregate and relative wage flexibility? Economic theory provides strong grounds for believing that wage-setting institutions that attempt to set aggregate wages³ at a level that is too high relative to productivity will raise equilibrium unemployment.⁴ The theoretical framework proposed in the seminal work of Layard *et al.* (1991) relates equilibrium unemployment to structural characteristics of the labour market, which can be summarised by the interplay of two curves: i) a wage curve representing the extent to which the wage-setting institutions generate upward pressures on wages and render them more or less sensitive to market conditions; and ii) a U-V or “Beveridge” curve representing the efficiency with which unemployed workers are matched to vacant posts. Among the wide range of policies and institutions that have the potential to shift the wage curve upwards and generate high unemployment are collective bargaining arrangements that lead to high wage settlements and minimum wages that are high relative to the average wage (Nickell *et al.*, 2003). Since 1991, a vast theoretical and empirical literature has applied this basic framework in an attempt to explain international differences in aggregate labour market performance, as well as changes over time in performance within countries.⁵ Although this theoretical framework commands broad acceptance among researchers, opinions differ concerning which institutional configurations are most likely to result in excessive upward pressure on the aggregate wage and how important of a role excessive wage demands have played in undermining employment performance.

The verdict with respect to wage differentials and employment performance is similarly complex. There is broad agreement that relative wages provide important price “signals” to workers and employers concerning how to make allocative choices, such as how much time to devote to paid employment, which workers are best suited to perform which tasks (and in which firms), and whether potential investments in training should be pursued. It follows that inappropriately-set wages can result in inefficiencies. For example, the Jobs Study recommendations reflect a concern that union involvement in wage setting and/or public regulations have compressed wage differentials in the lower part of the earnings distribution to the point where significant numbers of low-skilled workers are excluded from employment. A difficulty in assessing whether these concerns are well founded is that economists disagree concerning whether the relative wage structure that would emerge from a competitive “spot” market provides the appropriate benchmark. Among the possible reasons for caution in adopting this benchmark are: i) employers may exercise monopsony power (Manning, 2003, 2004); ii) wages may have important effects on productivity, for example due to their impact on employee moral, turnover and effort (Akerlof and Yellen, 1986); iii) compression of skill differentials may facilitate employer investment in general skills in the context of incomplete contracts and credit market imperfections (Acemoglu and Pischke, 1998; Bassanini and Brunello, 2003); and iv) wage compression and wage stabilisation may provide important insurance functions (Agell, 1999; Bertola and Koeniger, 2004).⁶ Although the potential importance of these (and other)

departures from the assumptions of the competitive model has been demonstrated in theory, there is no consensus concerning the empirical import of these lines of reasoning and, hence, their salience for guiding policy choices.

The next two sub-sections survey first, recent research findings concerning the impact of the organisation of collective bargaining on macroeconomic performance and second, the evolution of wages in OECD countries since 1970. This material provides additional context for the chapter's core empirical analysis which then follows in Sections 2 and 3.

B. How does the organisation of collective bargaining affect wages and employment?

Collective bargaining and aggregate outcomes

A large body of empirical research characterises national systems of collective bargaining in terms of one or more indicators and investigates the associations between those indicators and macroeconomic performance. The World Bank recently sponsored a survey of this research literature which synthesises the findings from over 1 000 primary and secondary studies (Aidt and Tzannatos, 2002). Among the findings that emerge from this review are the following: i) higher union density and bargaining coverage appear to be associated with a number of negative effects that are predicted by monopoly models of unions (*e.g.* real wages, inflation and unemployment tend to be higher and employment lower), with the evidence for such effects being stronger for coverage than for density; however, ii) estimates of the magnitude of these effects differ greatly across studies and co-ordinated bargaining appears to neutralise many of them; furthermore, iii) a considerable number of studies have found evidence that co-ordinated bargaining was associated with superior macroeconomic performance in the 1970s and 1980s, although this appears not to have been the case during the 1990s; suggesting that iv) the impact of co-ordination (and the organisation of collective bargaining in general) is contingent upon a number of other factors, probably including the broader economic environment and interactions of bargaining institutions with each other, as well as with other economic and political institutions (*e.g.* the degree of independence exercised by monetary authorities – see Iversen, 1998, 1999).

The overall fragility of the evidence linking collective bargaining to macroeconomic performance suggest that great caution should be exercised when attempting to draw guidance for making policy choices from this research, as the authors of the World Bank study emphasise (Aidt and Tzannatos, 2002). Flanagan (1999) also highlights the non-robustness of the econometric evidence and argues that future research should focus on identifying the most important interaction effects underlying the contingent nature of the impact of wage bargaining on macroeconomic outcomes. Unfortunately, such attempts have had only limited success to date, which probably reflects the complexity of collective bargaining institutions and their interactions with the broader economic and political environment. A second promising research direction is to improve the measurement of collective bargaining institutions. Indeed, this has been a very active area of research recently and a number of important studies have enriched the descriptive information available for assessing international differences in the extent and organisation of collective bargaining (see, notably, Ebbinghaus and Visser, 2000; Golden *et al.*, 2002; Iversen, 1998, 1999; Kenworthy, 2001a, b, 2003; Ochel, 2000a, b; Traxler *et al.*, 2001) since the OECD last updated its indicators of the organisation of collective bargaining (OECD, 1997a). However, there does appear to have been comparable progress in clarifying conceptual issues concerning how best to characterise the effective degree of centralisation/co-ordination in bargaining and there has been a proliferation of different indicators of centralisation, co-ordination and corporatism.⁷

The well known study of Calmfors and Driffill (1988) and the considerable literature it has stimulated exemplifies the strengths of this area of research, but also some of its limitations. Since this study, it has been widely accepted that there need not be a monotonic relationship between increasing departures from an idealised competitive market and decreasing responsiveness of wages to supply and demand factors. Specifically, Calmfors and Driffill argued that centralised collective bargaining facilitates the responsiveness of the aggregate wage demands to macroeconomic conditions, especially as compared to bargaining at the industry or sectoral level, since union bargainers are more aware of the macro-level effects of wage settlements. Following more conventional reasoning, they also argued that decentralised bargaining could produce good employment performance, since unions would exercise relatively little monopoly power. This reasoning implies a “hump-shaped” relationship between the degree of centralisation and unemployment, with both decentralised and centralised systems outperforming intermediate systems. Some subsequent studies have reported evidence in support of the “hump-shaped” hypothesis (e.g. Elemeskov *et al.*, 1998), but most other studies have not found such a relationship (Aidt and Tzannatos, 2002; OECD, 1997a). Soskice (1990) challenged Calmfors and Driffill’s focus on the centralisation of collective bargaining to the exclusion of co-ordination mechanisms. He argued that a co-ordinated system of sectoral bargaining may be as effective as a centralised bargaining system at adapting to aggregate economic conditions, a point later argued in detail for the Dutch case by Teulings and Hartog (1998) and broadly adopted in the recent research literature. In sum, more than a decade of research has failed to provide decisive evidence either for or against the Calmfors and Driffill hypothesis, illustrating the difficulties researchers have encountered in obtaining robust results or even in agreeing how best to characterise the effective degree of co-ordination in bargaining.

Collective bargaining, wage differentiation and relative employment rates

The evidence is quite strong that unions reduce wage inequality and that this compression effect is strongest in countries where union membership and bargaining coverage are high, and bargaining is centralised and/or co-ordinated (Aidt and Tzannatos, 2002; Blau and Kahn, 1999, 2002; OECD, 1997a). More “corporatist” wage-bargaining systems also appear to reduce the responsiveness of industry and firm-level wages to sectoral price and productivity developments (Holmlund and Zetterberg, 1991; Teulings and Hartog, 1998), and result in smaller wage premia for union workers (Blanchflower and Bryson, 2002; Hartog *et al.*, 2000). The higher skill premia and greater responsiveness of wages to local conditions, which are observed in national labour markets characterised by decentralised wage bargaining, suggest that the price mechanism is playing a more active role in guiding factor inputs to their highest value uses in these countries. However, some analysts have argued that this pattern reflects, instead, a greater scope for local rent-seeking when bargaining is decentralised, which does not contribute to allocative efficiency (Teulings, 1998).

The evidence is mixed concerning whether the wage compression associated with union involvement in wage setting affects the relative employment rates of workforce groups whose members tend to be over-represented in low-paid jobs, such as youths, women and less-skilled workers. Some of the strongest evidence supporting concerns that centralised wage setting systems reduce wage differentials to the point where low-skilled workers are pushed out of the labour market comes from case studies of historical episodes in Norway (Kahn, 1998) and Sweden (Edin and Topel, 1997), during which unions aggressively

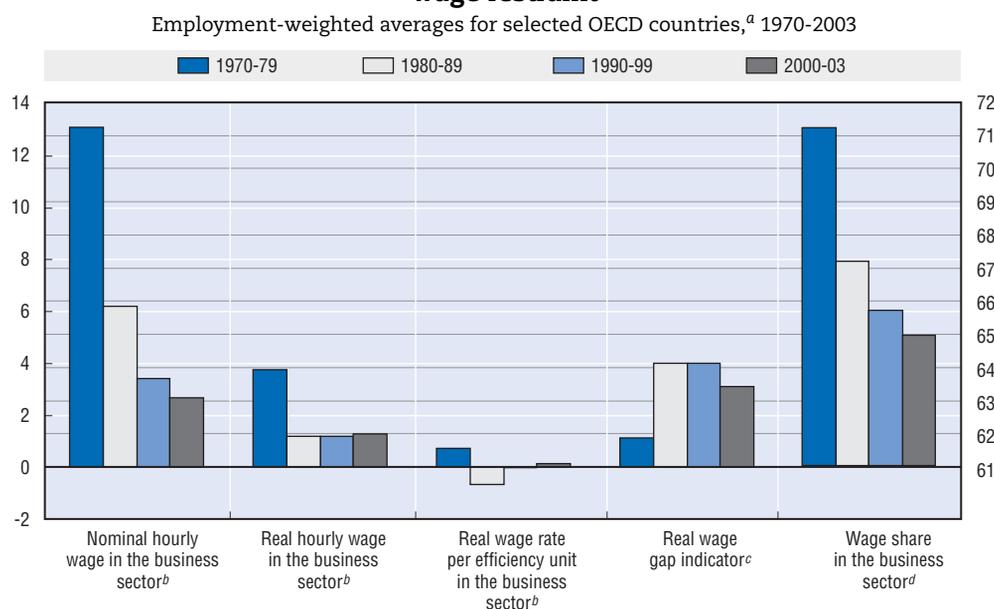
compressed wage differentials, particularly at the bottom of the earnings distribution. In both countries, low-education and low-skilled workers experienced sharp reductions in employment, especially in the private sector, as wage floors were pushed up. In Sweden, employment also contracted sharply in low-wage industries (Davis and Henrekson, 2000). Regressions based on panel data for OECD countries have also provided some evidence in support of the hypothesis that higher union density and centralisation/co-ordination have been associated with lower relative employment for low-skilled workers (Kahn, 2000; Bertola *et al.*, 2002b). However, these studies relied on indirect evidence (*i.e.* regressed employment outcomes directly on measures of collective bargaining), without verifying that relative wages were, in fact, compressed in a way that would explain the apparent link between the organisation of wage bargaining and employment outcomes.⁸

C. How have wages evolved and what were the implications for employment?

Aggregate wages and employment

The rate of increase in nominal compensation has progressively slowed since the mid-1970s, with the sharpest deceleration coming between the 1970s and the 1980s (Chart 3.1).⁹ Nominal compensation per hour worked in the business sector rose at an average annual rate of 13% during 1970-79, but slowed steadily to a little under 3% during 2000-03.¹⁰ Much of this deceleration reflected the successful disinflation policies implemented in many OECD countries, following a general worsening of inflationary pressures late in the 1960s and during the first half of the 1970s.¹¹ However, the rate of increase in real wages also slowed, both absolutely and – what is of greatest salience for this chapter’s analysis – relative to productivity

Chart 3.1. **Recent trends in aggregate earnings suggest considerable wage restraint**



a) Averages for Australia, Austria (wage share only), Belgium, Canada, Denmark, Finland (nominal hourly wage, real hourly wage and wage share only), France, Germany, Greece (wage share only), Iceland, Ireland, Italy, Japan, the Netherlands, Spain, Sweden, the United Kingdom and the United States.

b) Percentage annual growth rate (left-side scale).

c) Value of index normalised to zero in 1970 (left-side scale).

d) Percentage share of total business sector income (right-side scale).

Source: OECD (2004a).

Box 3.2. Measuring excess real wage pressure

In assessing whether real wage growth is excessive, it is desirable to take account of productivity growth and the level of unemployment:

The rate of *productivity growth* determines how rapidly real wages can rise without undermining employment performance. A commonly used yardstick for aggregate wage pressure is provided by the “distributive margin formula”, which identifies wage pressure with the excess of real wage growth compared to the growth rate of labour productivity (see e.g. European Commission, 2003b). There are many equivalent versions of this intuitive rule of thumb (e.g. whether the wage share rises or the growth rate of unit labour costs exceeds price inflation). However, all such criteria are vulnerable to the critique that changes in the aggregate real wage affect capital intensity and hence labour productivity, particularly as the time horizon considered is extended. Blanchard (1997) argues that a better indicator of whether the aggregate wage is rising more rapidly than is justified by productivity gains is provided by changes over time in the real wage per “efficiency unit” of labour (i.e. total compensation costs divided by hours worked “augmented” to account for the impact of technological progress on human productivity). Changes in the real wage rate per efficiency unit provide a conceptually appealing criterion for assessing real wage pressures, but its implementation raises both theoretical and empirical difficulties related to the construction of an appropriate index of productivity. Consequently, this chapter uses both the distributive margin and wage per efficiency unit criteria to assess how the productivity-adjusted aggregate wage has evolved since 1970.

A large body of empirical work has confirmed the theoretical prediction that the bargained wage tends to be lower the higher the *unemployment rate* (cf. the wage curve, see Blanchflower and Oswald, 1994; and Nickell *et al.*, 2003). It follows that the prevailing rate of unemployment should be taken into account when assessing whether excessive wage demands are undermining employment performance. In particular, *ex post* real wage growth low enough to be consistent with productivity gains would not imply that wage bargaining is functioning well, if a high rate of unemployment were required to achieve this “restraint”. A rigorous treatment of this issue is complex and beyond the scope of this chapter (see, e.g. Desplatz *et al.*, 2003; and Estavão and Nargis, 2002, for the case of France). However, the simple “real wage gap indicator” recently utilised by the European Commission (2002) provides a useful first-pass assessment. This indicator combines the productivity adjustment advocated by Blanchard (1997) with an approximate adjustment for the moderating effect of unemployment on wage setting and is defined as the sum of the logarithm of real wage rate per efficiency unit of labour and the unemployment rate. The (implicit) coefficient of 1.0 that is applied to the unemployment rate is based on the assumptions that the elasticity of the wage curve with respect to the unemployment rate is -0.1 , which is consistent with much of the empirical literature (Blanchflower and Oswald, 1994), and that the unemployment rate equals 10%, which is more or less accurate depending on the country and year considered. Although somewhat *ad hoc*, this index provides a useful check whether conclusions concerning trends in the level of wage pressure (or wage restraint) are altered after taking account of changes in the unemployment rate.

growth (see Box 3.2 for a discussion of measurement issues related to assessing whether real wage growth is excessive). Growth in real hourly compensation slowed from 4% during 1970-79 to just over 1% annually since 1990. Most suggestive of increasing wage restraint, the wage share in the business sector has trended downward since the early 1980s¹² and the growth rate

of the real wage per efficiency unit of labour was actually negative during the 1980s and has been approximately zero since. However, a simple real wage gap indicator suggests that wage pressure may not have slackened beyond what would have been expected given the generally higher unemployment rates in more recent decades. In sum, the period since the end of the 1970s appears to have been characterised by an overall trend toward wage moderation in the OECD area, by most measures, but it is unclear whether this represents a structural change in wage setting that has reduced upward wage pressure at a given level of unemployment.

There were important differences of timing and magnitude of these wage trends across different OECD countries (see OECD, 2004a). For example, the wage share in the business sector fell steadily in Ireland and the United States throughout the entire period considered (indeed, steeply in Ireland), while growth in the real wage per efficiency unit was moderate (indeed, often negative).¹³ Signs of wage restraint emerged later in most other countries, often after having seen an increase in the wage share during the 1970s or early 1980s. This pattern held for Belgium, France, Germany, Greece, Italy and the Netherlands, within the EU, as for Australia, Canada and Japan. Of these countries, the Netherlands experienced a notably sharp decline in the real wage per efficiency unit during the first half of the 1980s (a period marked by the Wassenaar agreement of 1982, which initiated a series of national social compacts to restrain wage growth).¹⁴ Upward pressures on wages and labour costs fell sharply in the 1990s in Finland, New Zealand and Norway. Trends in the degree of wage restraint are less clear in other countries, including Spain and the United Kingdom.¹⁵

It is not immediately evident whether these cross-country differences in the degree and timing of real wage restraint, as measured here, translated into differences in employment performance. Some of the countries experiencing strong employment performance in recent years also exhibited a high degree of apparent wage restraint (most notably, Ireland and the United States), but other countries with strong employment performance do not appear to fit this pattern (notably Spain). Juxtaposing historical data for aggregate wages and unemployment more systematically can help to clarify whether they have co-varied in a manner that is consistent with there having been a trade-off between high wages and low unemployment.¹⁶ No such trade-off is evident when real aggregate wages and unemployment data are plotted against each other for a panel of OECD member countries (chart not shown). However, this is no surprise. The real wage consistent with a given level of unemployment would be expected to be influenced by both country-specific factors (*e.g.* levels of frictional unemployment and productivity), and period-specific factors (*e.g.* general technological progress and oil price shocks). If these influences can be purged from the data, there is a better chance that the wage-unemployment trade-off will become evident, provided that these data points can be interpreted as tracing movements along a downward-sloping aggregate labour demand curve, which is by no means guaranteed.¹⁷

Table 3.1 investigates this possibility, presenting correlation coefficients between the residual real aggregate wage and the residual unemployment rate, where “residual” refers to the fact that country and period effects have been purged from both of these variables.¹⁸ A positive correlation between the aggregate wage and unemployment now emerges, but the correlation coefficient is rather small (0.20) and only marginally statistically significant (10%). In other words, this simple exercise provides only weak evidence that unemployment rose more since 1970 in countries where the real aggregate wage rose more, consistent with there being a trade-off between more rapid wage growth and lower unemployment.¹⁹ The second

Table 3.1. Correlations between wage and employment measures suggest possible trade-offs

Five-year-averaged data for 1970-2000 in selected OECD countries, after removing period and country effects^a

Wage measures	Employment measures				
	Aggregate		Relative employment rates ^b		
	Unemployment	Employment-population ratio	Young men (under 25 years)	Older men (55-64 years)	Prime-age women (25-54 years)
Log real hourly wage in the business sector (PPPs)	0.20*	-0.42***	-0.48***	-0.03	-0.23**
Log efficiency wage ^c in the business sector (PPPs)	0.12	-0.17	-0.12	-0.01	-0.60***
Earnings dispersion ^d	-0.44***	0.45***	0.57***	0.44***	0.25*

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

a) Data values are averaged for the five-year periods 1970-74 to 1990-94 and the six-year period 1995-2000 for the following countries: Australia, Belgium, Canada, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Sweden, Switzerland, the United Kingdom and the United States. Each variable was first regressed on a full set of period and country dummy variables using OLS (ordinary least squares). This table reports bivariate correlation coefficients between the residuals from these equations.

b) The logarithm of the ratio of the employment-population ratios for the indicated group and prime-age men.

c) Logarithm of the real wage rate per efficiency unit of labour input (see Box 3.2).

d) The logarithm of the 90-10 percentile ratio for the gross earnings of full-time men for the correlations with the aggregate unemployment and employment rates; the logarithm of the 50-10 percentile ratio for the gross earnings of full-time men for the correlations with relative employment rates.

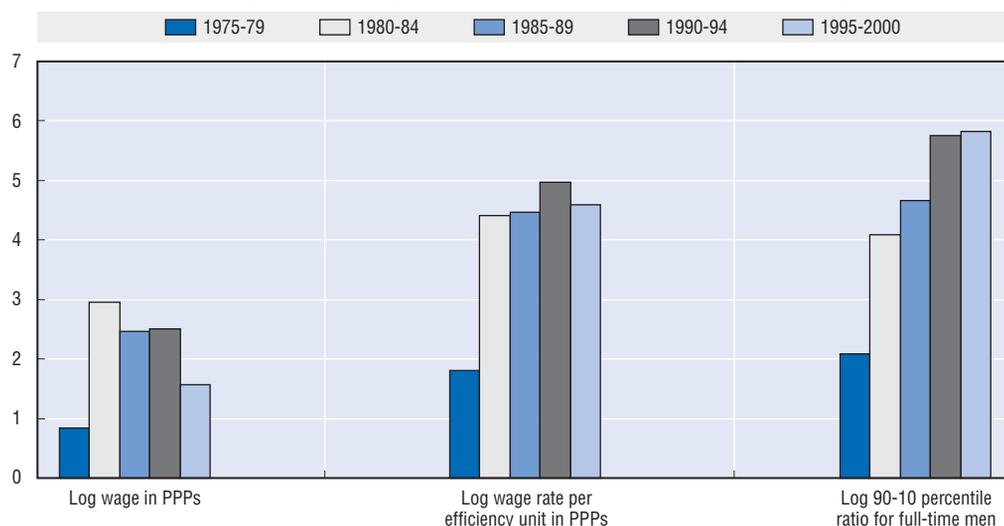
Source: OECD Economic Outlook database (total compensation per employee in the business sector); OECD Productivity database (average hours per worker); OECD Labour Force Statistics (employment and unemployment measures); OECD Earnings database (earnings dispersion); OECD Main Economic Indicators (PPPs).

column of Table 3.1 reports the correlation coefficient between the employment-population ratio and the aggregate wage. Stronger evidence for a dynamic trade-off between the aggregate wage and employment performance now emerges, namely, a highly statistically significant correlation of -0.42 , implying that countries experiencing above-average wage growth tended to experience below-average growth in the employment-population ratio. The second table row reports the analogous correlation coefficients calculated using an estimate of the real aggregate wage per efficiency unit of labour, instead of wages per hour worked. Again, the signs of the correlation coefficients are consistent with there having been a trade-off between aggregate wages and employment, but the correlations are smaller in absolute value and statistically insignificant.²⁰

Assuming provisionally that these correlations reflect an aggregate trade-off between wages and unemployment, it is interesting to explore whether the broad deterioration in unemployment performance between 1970 and the mid-1990s reflected movements along a stable trade-off line or a worsening of the trade-off, noting that both types of movements have their counterparts in different explanations which have been offered for the recent evolution of macroeconomic performance in OECD countries.²¹ Chart 3.2 presents estimates of the shift in the wage-unemployment regression line after the 1970-74 period which provide suggestive evidence that a worsening trade-off contributed to the upward trend in unemployment.²² Whether the hourly wage or the wage in efficiency units is used, it appears that the adverse shift in the trade-off – representing a 3 to 5 percentage-point increase in the unemployment rate at a given level of aggregate real wage pressure – occurred at the beginning of the 1980s, with the shift being somewhat larger for the wage in efficiency units. The results based on the hourly wage suggest that approximately one-half of the adverse shift has reversed since 1985, whereas the results based on the wage per efficiency unit indicate no such improvement.

Chart 3.2. **Shifts in the apparent “trade-off” between wages and unemployment, 1970-2000**

Estimated increase in unemployment at a given wage outcome between 1970-74 and the period indicated^a



a) Changes estimated as the coefficients of period dummies in an OLS regression of the unemployment rate on the indicated wage measure and a full set of period dummies. Prior to fitting the regression, both the unemployment and wage variables are converted to deviations from country mean values (see text for details). Data are five-year averages for the periods indicated.

Source: OECD Economic Outlook database for all variables except that average hours per worker are from the OECD Productivity database and 2002 PPPs are from the OECD Main Economic Indicators.

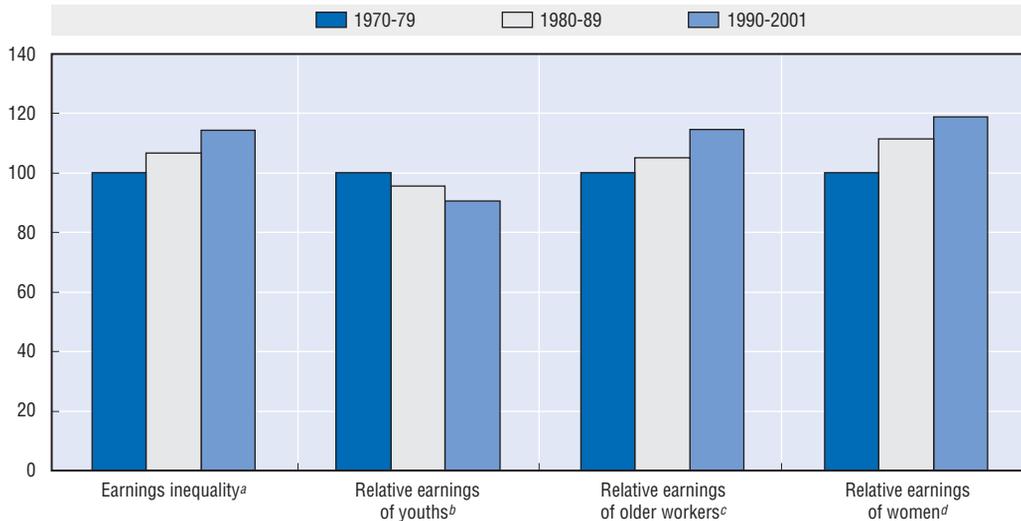
Wage differentials and employment

Chart 3.3 provides an overview of the recent evolution of earnings differentials in OECD countries. Earnings inequality – as measured by the 90-10 percentile ratio of earnings for male full-time workers – has tended to increase since the 1970s, rising on average about 15% in the 20 countries for which data are available. During this same period, the earnings of youths relative to prime-aged workers fell, suggestive of a trend increase in the wage differential for labour market experience. Consistent with this interpretation, the relative wage of older workers rose. The relative wage of women also rose, a development that tended to dampen the overall rise in earnings inequality and which might be due to continuing gains in the human capital attributes – including the accumulation of labour market experience – of women relative to their male counterparts, as well as to the impact of equal pay legislation (OECD, 2002).²³

National experiences with respect to recent trends in earnings inequality have been quite diverse (Table 3.2). As has been widely noted, earnings inequality has increased substantially during the past two decades in the United Kingdom and the United States, beginning from an already high level in the latter case. However, the rise in inequality stopped or even slightly reversed in the late 1990s in both countries. Wage dispersion also trended upwards in Australia, Italy, the Netherlands, New Zealand and Sweden. More recently, earnings inequality has risen sharply in several Central European countries, probably a reflection of the continuing transition from the compressed wage structures of the central planning era to a market-driven wage structure. In contrast, wage inequality remained roughly stable, and often quite low, in many EU countries and Japan, and fell quite sharply in Korea (OECD, 2000a).

Chart 3.3. An overall trend toward rising wage dispersion, but also gains for women

Employment-weighted averages for selected OECD countries, 1970-79 = 100



- a) 90-10 percentile ratio for full-time men, using data for Australia, Belgium, Canada, the Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Korea, Netherlands, New Zealand, Poland, Portugal, Sweden, Switzerland, the United Kingdom and the United States.
- b) Full-time earnings of men aged 15-24 years relative to men aged 25-54 years, using data for Australia, Canada, the Czech Republic, Finland, Germany, Hungary, Italy, Japan, Korea, the Netherlands, Norway, Sweden, the United Kingdom and the United States.
- c) Full-time earnings of men aged 55-64 years relative to men aged 25-54 years, using data for Australia, Canada, the Czech Republic, Finland, Germany, Hungary, Italy, Japan, the Netherlands, Sweden, the United Kingdom and the United States.
- d) Full-time earnings of women aged 25-54 years relative to men aged 25-54 years, using data for Australia, Canada, the Czech Republic, Finland, Germany, Hungary, Italy, Japan, Korea, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the United States.

Source: OECD Earnings database.

Due to the uncertainty concerning the appropriate benchmark, a direct assessment of whether the relative wage structure observed in a particular country is too compressed is inherently difficult.²⁴ However, the bottom row of Table 3.1 shows there has been quite a strong negative correlation between the unemployment residuals and the residuals for the log 90-10 percentile ratio for the earnings of full-time men, and an equally strong positive correlation between employment and this measure of wage dispersion. In other words, countries in which earnings inequality grew less than average (or fell) tended to experience a relative increase in unemployment and a relative decrease in employment. This pattern is consistent with the existence of a trade-off between wage compression and aggregate employment performance.

As was the case for the estimated trade-off between the aggregate wage and unemployment, it appears that the trade-off between earnings dispersion and unemployment has worsened since 1970-74 (Chart 3.2). Furthermore, there is no sign that this adverse shift has reversed in more recent years. An increase in the unemployment rate associated with unchanging wage differentials is consistent with the large body of research showing that the relative demand for low-skilled workers has fallen, creating market pressures for earnings inequality to rise (Katz and Autor, 1999). As was famously conjectured by Krugman (1994), rising unemployment in the more regulated European labour markets and rising earnings equality in the less regulated US labour market may be

Table 3.2. Trends in earnings dispersion,^a 1980-2001

	Annual average					10-year change
	1980-84	1985-89	1990-94	1995-99	2000-01	1985-89 to 1995-99
Australia	2.88	2.83	2.82	2.94	3.07	0.11
Austria	3.45	3.49	3.56	..	..	..
Belgium	..	2.40	2.28	..	..	..
Canada	..	..	..	3.65	3.71	..
Czech Republic	..	..	..	2.86	..	..
Denmark	2.17	2.18	2.16	..	..	..
Finland	2.49	2.50	2.39	2.36	2.41	-0.14
France	3.18	3.19	3.21	3.07	..	-0.12
Germany	2.88	2.86	2.79	2.87	..	0.01
Hungary	..	2.83	3.55	4.15	4.92	1.32
Ireland	..	..	4.06	3.97	..	..
Italy	..	2.29	2.35	2.40	..	0.12
Japan	3.08	3.15	3.07	2.99	..	-0.15
Korea	4.59	4.25	3.75	3.77	..	-0.48
Netherlands	2.47	2.55	2.60	2.85	..	0.30
New Zealand	2.89	2.90	3.06	3.28	..	0.38
Norway	..	..	..	1.96	2.03	..
Poland	2.59	2.65	3.03	3.50	..	0.85
Portugal	..	3.56	3.76	..	..	..
Sweden	2.01	2.09	2.11	2.23	2.30	0.14
Switzerland	..	..	2.71	2.69	..	..
United Kingdom	3.09	3.30	3.39	3.45	3.40	0.15
United States	3.91	4.23	4.39	4.59	4.64	0.36

.. Data not available.

a) 90-10 percentile ratios for the gross earnings of full-time employees.

Source: OECD Earnings database.

two sides of the same coin: as relative demand moved against less skilled workers, the unemployment price of continued wage compression in (much of) Europe mounted, as did the inequality price of a strong employment performance in the United States.²⁵

The final three columns of Table 3.1 provide an additional look at possible trade-offs between wage compression and employment performance, focussing on the relative employment rates of three population groups, whose members tend to be under-represented in employment: youths (defined as persons aged 15 to 24), older working-age persons (defined as persons aged 55-64) and women.²⁶ Youths and women often have relatively low levels of labour market experience and plausibly might be among the workforce groups most affected by any adverse consequences of wage compression for employment (Bertola *et al.*, 2002b). The residual relative employment rates for all three groups are significantly and positively correlated with residual wage dispersion, with the association being strongest for youths and weakest for women.²⁷ It also appears that employment of youths and women has grown less (or fallen more) in countries where aggregate wages rose most rapidly.

This descriptive analysis of recent wage trends tends to reinforce concerns that the OECD countries where wage-setting has tended to mute market pressures for a widening of wage differentials have paid a penalty in weaker employment performance. However, it

must be emphasised that the preceding argument has been illustrative, rather than rigorous. Among the reasons for caution are that:

- More rigorous attempts to verify Krugman's conjecture that a "unified theory" can account for the divergence of US and European labour market trends during the 1990s have been inconclusive (Blank, 1997). Indeed, it appears that the majority of international studies using micro data to test whether the relative employment performance of low-skilled workers was worse in countries where the wage premium for skill was more rigid have not verified this thesis (e.g. Card *et al.*, 1999; Freeman and Schettkat, 2000; Krueger and Pischke, 1997; Nickell and Bell, 1995).²⁸ However, Puhani (2003) finds some support for wage compression in Europe having increasingly excluded low-skilled workers from employment in a recent comparison of Germany and the United States. However, his comparison of the evolution of relative wages and employment in Germany and the United Kingdom conforms less well to this hypothesis.
- Allowing downward flexibility for the wages of low skilled workers could do very little to increase employment should labour supply elasticity be high for this workforce segment. In many OECD countries, the interaction of the tax system and income-tested benefits is such that the net income returns to working become very low (or even vanish) once wages fall below a certain level (Carone *et al.*, 2004). In such a context, the main impact of downward wage flexibility may be to worsen inactivity, unemployment and low-pay traps, and the most effective way to bring more low skill workers into employment might be targeted subsidies or tax exonerations for employers of these workers (OECD, 2003a).²⁹

D. Open questions

The argument up to now provides some theoretical and empirical support for the Jobs Study diagnosis that excessive aggregate wage growth and wage compression have been significant factors behind rising unemployment and unsatisfactory employment performance more generally, with the evidence appearing to be strongest for concerns that wage compression in the bottom half of the wage distribution has created barriers to employment for workforce groups whose members tend to be concentrated in low paying jobs. However, considerable uncertainty attends this diagnosis. A second source of uncertainty is that the impact of public policy on wage setting tends to be indirect (e.g. those resulting from policies that affect the organisation of collective bargaining or non-wage labour costs), since governments set wages directly only to a limited degree. Thus, an assessment of the continuing pertinence of the Jobs Study recommendations on wage setting must also consider whether the changes that are advocated in wage-setting institutions and practices (e.g. the decentralisation of collective bargaining), would have the desired effects on wages and employment. A related question is the extent to which national collective bargaining systems have already moved in the direction that was recommended. The quite broad trends toward aggregate wage restraint and rising wage dispersion, which was documented above, suggests that this may be the case or, alternatively, that quite different institutional set-ups have ultimately responded in qualitatively similar ways to the changing economic environment. The following two sections attempt to shed some light on these questions.

2. Wage-setting institutions: the structure of collective bargaining

A. Introduction

The evolution of wages needs to be seen against the background of the institutional set-up of the labour market, and the labour and industrial relations system in particular. Wage-setting institutions differ widely in the OECD area, and have been scrutinised by an increasing number of researchers in recent years as to their labour market and wider macroeconomic impacts (for recent studies, see Blanchard and Wolfers, 2000; Nickell *et al.*, 2003; Traxler *et al.*, 2001). Among the characteristics of wage-setting institutions analysed below are trade union density, coverage by collective agreements (sometimes also called *union coverage*), the centralisation and co-ordination of wage bargaining, and a number of labour law features that influence the market power of the players in the area.³⁰ This analysis follows in the footsteps of previous OECD work published in the 1994 and 1997 editions of the *Employment Outlook*.

Most OECD countries regulate their labour relations by means of one or several laws that determine the underlying conditions for employee representation, trade union formation, collective bargaining and industrial conflict, among others. Importantly, legislation typically exempts the “two sides of industry” from the prohibition of restrictive business practices and anti-competitive behaviour that governs product markets. Typically, these features reflect a concern for stable employment relationships, social peace and to some extent a concern to correct asymmetries in bargaining strength between workers and employers.

As pointed out, *inter alia*, in OECD (1994b), legislation influences potential market power of trade unions and employers by setting and modifying statutory provisions that may tip a precarious balance in favour of one or the other side. Among the relevant elements of regulation highlighted below are union recognition and union security provisions, and the administrative extension of collective contracts.

While most OECD countries have been characterised by relative legislative stability on these issues since the 1950s and 1960s, fundamental overhauls of respective labour law since 1980 have occurred in the United Kingdom, New Zealand and Australia. Much of the changes in all three countries have concerned union recognition and union security. In addition, reforms in the latter two countries abolished (New Zealand) or substantially transformed (Australia) their compulsory arbitration systems, leading to a shift of collective bargaining to the enterprise level.

Concerning trade union recognition procedures, the United Kingdom removed statutory requirements for recognition in the early 1980s, which is usually considered a major factor in the decline of both union density and bargaining coverage since then (Disney *et al.*, 1995). In New Zealand, the 1991 Employment Contracts Act (ECA) removed the employer’s “duty to bargain” with trade unions and gave equal weight to non-union bargaining agents, a step that was emulated by Australia in 1996 (Harbridge and Moulder, 1993; OECD, 2001b). However, both the United Kingdom and New Zealand partially reversed their stance under incoming Labour governments in the late 1990s. New Zealand, in its 2000 Employment Relations Act (ERA), (re)introduced a requirement for employers to bargain “in good faith”, and restored to unions their monopoly in collective bargaining (Harbridge *et al.*, 2003; OECD, 2000b). The United Kingdom reintroduced union recognition procedures in the 1999 Employment Relations Act (ERA), whereby a union can be granted recognition as bargaining agent by the Conciliation and Arbitration Committee upon request, with or without a ballot (Wood and Moore, 2003).³¹

Concerning union security provisions, labour law has been important to the extent that it allows or encourages closed-shop arrangements, historically characteristic of Anglo-Saxon countries. Here again, the United Kingdom, New Zealand and Australia have withdrawn legislative support for such arrangements since the 1980s, as the United States and Ireland had already done in previous decades. Pre-entry closed shops or “union shops” were never a relevant feature of labour relations in continental Europe. However, they have remained prominent in Mexico, while in Korea, still today almost one-third of enterprise unions and half of all union members fall under “union shop” arrangements, whereby a new employee has to join the local union within a certain period of time after hiring (OECD, 1997c; OECD, 2000a).³²

B. Trade union density and collective bargaining coverage

This section presents patterns in two key wage-setting institutions, trade union density and the coverage of workers by collective bargaining provisions. There is no doubt that both the extent of union membership and of bargaining coverage can be heavily influenced by the regulatory features noted above – together with, *inter alia*, the decline of manufacturing and shift towards services, the size and growth of the public sector, the spread of flexible contracts and extent of unemployment.³³ One other important institutional determinant of union membership is the so-called Ghent system, whereby unemployment benefit, as a rule, is administered by union-affiliated institutions (as in Belgium, Denmark, Finland and Sweden). Similarly, an important determinant of bargaining coverage is the practice (or not) of administrative extension of collective agreements (see Section C below).

Table 3.3 documents the evolution of trade union density and bargaining coverage rates in the OECD area since 1970. It also shows the extent to which the two indicators have historically differed – and continue to differ – in member countries. Chart 3.4 illustrates these differences in a nutshell for 2000, showing that the two values are at similar levels in only half a dozen OECD countries – mainly those where bargaining occurs predominantly in firms or establishments – and that the coverage rate often surpasses union density by a factor of 3 to 1, or even up to 9 to 1 (in the case of France, with 10% union density and over 90% bargaining coverage). Japan is the only country where union density is below the coverage rate, as Japanese unions have an important number of members outside of bargaining units.

Turning in more detail to the data presented on *trade union density*, Table 3.3 shows a steady decline of the weighted OECD average since 1970, and of the un-weighted average since 1980, as well as a steady increase in the coefficient of variation between OECD countries’ density rates. Notably, these data refer (wherever possible) to “net” membership and tend not to include non-active members (see Annex 3.A1). Only four out of 20 countries, for which full data are available, increased density since 1970: Belgium, Denmark, Finland and Sweden, i.e. the four countries of the “Ghent system” outlined above. Another Nordic country where density increased in recent decades is Iceland, while union density increased in Spain, but stayed at rather low levels. In Finland, Iceland and Sweden, over three out of four salaried workers are unionised today, while the figure is one in eight or less in France, Korea and the United States.

In 14 out of 24 countries for which data from 1980 onwards are available, density fell by at least one-quarter since then. Some even steeper declines are evident from the table: density more than halved in Portugal and New Zealand (where the 1991 Employment Contracts Act represented the end of a century of state protection of trade union organisation), while it fell by over one-third in seven countries (Australia, France, Ireland,

Table 3.3. Trade union density and collective bargaining coverage in OECD countries, 1970-2000

	1970 ^b			1980 ^c			1990 ^d			2000 ^e			Collective bargaining coverage ^a (CBC)		
	Trade union density (TUD)		Ranking	1980 ^c		Ranking	1990 ^d		Ranking	1980		Ranking	1990		Ranking
	%	Ranking		%	Ranking		%	Ranking		%	Ranking		%	Ranking	
Australia	44	10	48	14	40	15	25	18	80+	7	80+	5	80+	6	
Austria	63	2	57	9	47	12	37	8	95+	1	95+	1	95+	1	
Belgium	41	11	54	10	54	8	56	5	90+	2	90+	2	90+	2	
Canada	32	16	35	18	33	18	28	14	37	17	38	17	32	20	
Czech Republic	..	..	..	..	46	13	27	15	..	..	..	..	25+	21
Denmark	60	3	79	2	75	3	74	4	70+	9	70+	9	80+	6	
Finland	51	7	69	4	72	4	76	3	90+	2	90+	2	90+	2	
France	22	19	18	22	10	30	10	30	7	90+	7	90+	2	2	
Germany	32	15	35	17	31	22	25	17	80+	4	80+	5	68	13	
Greece	..	..	39	15	32	20	27	16	..	..	..	..	..	..
Hungary	..	..	..	..	63	5	20	23	..	..	..	..	30+	18
Iceland	..	..	75	3	88	1	84	1	..	..	..	..	..	..
Ireland	53	6	57	8	51	9	38	7	..	..	..	..	..	..
Italy	37	12	50	13	39	17	35	10	80+	4	80+	5	80+	6	
Japan	35	14	31	19	25	25	22	22	25+	18	20+	18	15+	23	
Korea	13	20	15	23	17	27	11	29	15+	20	20+	18	10+	25	
Luxembourg	47	8	52	11	50	11	34	11	..	..	..	..	60+	14
Mexico	..	..	..	..	43	14	18	24	..	..	..	..	..	..
Netherlands	37	13	35	16	25	24	23	20	70+	9	70+	9	80+	6	
New Zealand	56	5	69	5	51	10	23	21	60+	14	60+	14	25+	21	
Norway	57	4	58	7	59	6	54	6	70+	9	70+	9	70+	12	
Poland	..	..	..	..	33	19	15	27	..	..	..	..	40+	16
Portugal	..	..	61	6	32	21	24	19	70+	9	70+	9	80+	6
Slovak Republic	..	..	..	..	57	7	36	9	..	..	..	..	50+	15
Spain	..	..	7	24	11	29	15	26	60+	14	70+	9	80+	6
Sweden	68	1	80	1	80	2	79	2	80+	4	80+	5	90+	2	
Switzerland	29	17	31	20	24	26	18	25	50+	16	50+	15	40+	16	
Turkey	..	..	..	..	27	23	33	12	..	..	..	..	..	..
United Kingdom	45	9	51	12	39	16	31	13	70+	9	40+	16	30+	18	
United States	27	18	22	21	15	28	13	28	26	19	18	20	14	24	
OECD unweighted average^f	42	-	47 (47)	-	42 (42)	-	34 (36)	-	67	-	66 (66)	-	60 (64)	-	
Coefficient of variation^f	34	-	43 (40)	-	48 (48)	-	62 (61)	-	35	-	38 (38)	-	48 (47)	-	
OECD weighted average^f	34	-	32 (33)	-	27 (26)	-	21 (21)	-	45	-	38 (44)	-	35 (39)	-	

.. Data not available.

a) Figures with a + sign represent lower-bound estimates. For the purposes of calculating rankings and averages, the indicated value was increased by 2.5 percentage points.

b) 1971 for New Zealand.

c) 1981 for Luxembourg and Spain, 1982 for Australia and Portugal, 1983 for Iceland and 1984 for Canada.

d) 1987 for Luxembourg, 1991 for Mexico, 1993 for Iceland and 1995 for the Czech Republic, Hungary, Poland and the Slovak Republic.

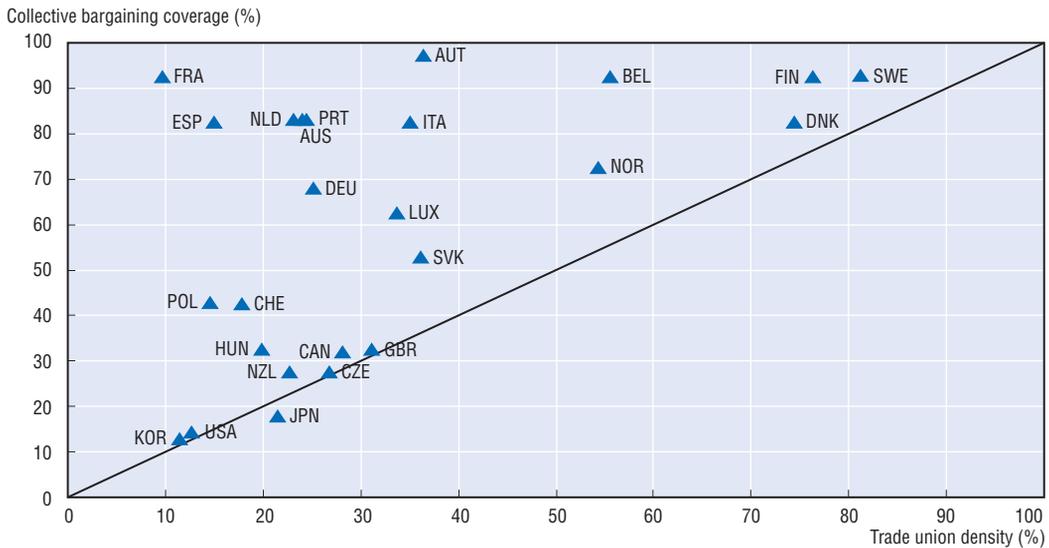
e) 1997 for Mexico and Portugal, 1998 for Greece and Spain, 2001 for the Czech Republic, Hungary, Luxembourg, Poland and Switzerland and 2002 for the Slovak Republic.

f) Figures in parenthesis correspond to averages calculated for the unchanging samples of countries for which data are reported in the initial year (1970 for TUD and 1980 for CBC).

Source: See Annex 3.A1.

Chart 3.4. **Union density and coverage, 2000**

Percentage of wage and salary earners



Source: See Annex 3.A1.

the Netherlands, Switzerland, the United Kingdom and the United States). In absolute numbers, density fell by 46 percentage points in New Zealand, by 37 points in Portugal and by 23 points in Australia. In most countries where rates have fallen, membership levels fell as well, despite expanding employment. Finally, the data presented allow the generalisation that density rates in European countries are, as a rule, above those from OECD countries in North America, Oceania and Asia (although, importantly, this is not the case today in the formerly socialist central and eastern European OECD countries, where membership had previously been quasi-compulsory).

While union density represents one measure of potential union bargaining clout, *collective bargaining coverage* measures the real extent to which salaried workers are subject to union-negotiated terms and conditions of employment. It is thus a complementary indicator of union presence (as are, for example, union representation in works councils or in consultative tripartite committees – see Visser, 2003). The bargaining coverage data presented in Table 3.3 can be summarised as follows. First, in contrast to previous listings of coverage rates in the *Employment Outlook* editions of 1994 and 1997, it was decided to show only approximate rates (more precisely, lower-bound estimates followed by a + sign) for those countries where either available sources differ or somewhat uncertain estimates and adjustments need to be made to the data. Point estimates are provided for Canada, Germany and the United States, countries for which survey data are available from nationally representative samples.³⁴

Next, the data allow at least four major generalisations: i) in comparison with union density, there is much more stability in the extent of coverage. Since 1980, of 20 countries where full data are available, coverage was stable in six, rose in another six and declined in eight; ii) the average level of bargaining coverage is almost twice as high as the average density level (60 vs. 34%); iii) in continental Europe, most countries are characterised by stable or increasing coverage rates, and generally at least two out of three workers tend to be covered by bargained wage setting, the exceptions being Switzerland and the central

and eastern European OECD countries; and iv) where important declines in coverage occurred since 1980, they occurred in countries with predominantly company-level bargaining, where they were usually quite low to begin with.

On average, there was a 3 percentage-point fall in the un-weighted coverage level (from 67 to 64%), and a 6 percentage-point fall in the weighted value (from 45 to 39%). The largest percentage decreases occurred in New Zealand and the United Kingdom (by over half), followed by the United States and Japan. Korea currently ranks lowest on this indicator, followed by the United States and Japan. In all of these countries, coverage has declined alongside the fall in union density. By contrast, the country that ranks lowest on union density (France) has increased coverage levels after the introduction of legislation promoting collective bargaining (the 1982 Auroux laws) and is now among the countries with the highest coverage rates of 90% and above, together with Austria, Belgium, Finland and Sweden. Also, the large rise in the coefficient of variation is mainly explained by the declining countries, since the group with coverage between 80 and 95% has remained rather stable over time. In other words, there has been a tendency for bargaining coverage rates to diverge between low- and high-coverage countries.³⁵

C. The importance of extension mechanisms

Furthermore, legal regulations and institutional practices explain again to a large extent the relative stability of, particularly European, coverage rates, and the sometimes extremely large differences between density and coverage. Union coverage should not be considered a natural extension of union membership – as noted above, only in half a dozen OECD countries with predominantly company bargaining do the two go closely together. By contrast, in sectoral bargaining systems employer behaviour combined with administrative governance of collective contracts may be more of a determinant of coverage rates than union membership. First, an important factor is the share of employers belonging to the particular employer association(s) signatory to a collective agreement, and therefore bound by it. Next, it has become common practice for the large majority of employers to apply the terms and conditions of collective contracts to their total workforce, whether unionised or not.

This, mostly “voluntary”, extension of agreements by employers (in some countries, such as Belgium, the Netherlands, Poland and Spain, it is legally required) to their non-unionised workforce seems, in most cases, to explain the bulk of the variance between union density and union coverage. Voluntary extension was in fact already called for in ILO Recommendation 91 of 1951, and most employers in OECD economies seem to accept this easily, not the least since they realise that if they were to limit the application of an agreement to union members, they would be discriminating between their employees or might even be indirectly promoting unionisation (Bamber and Sheldon, 2004).

However, in a number of countries an important additional explanatory variable is the legal or administrative extension of agreements. Extension makes a collective agreement generally binding within an industrial sector, covering all employers who are not members of its signatory parties. In several countries, “enlargement” beyond an agreement’s initial domain is also possible. Details on OECD countries’ administrative extension practices can be found in Table 3.4. Out of 25 countries where information was available, ten are characterised by the absence or relative irrelevance of administrative extension mechanisms. In two countries, a kind of functional equivalent to administrative extension is important. In Austria, high coverage is ensured by the obligatory membership of companies in the Economic Chamber, and there is little room for additional extension orders, although these are legally possible. In

Table 3.4. **Extension and enlargement of collective agreements**

Canada (outside of Quebec)	No (or negligible) practice of administrative extension or enlargement of private-sector wage agreements.
Denmark	In Denmark, extension refers mainly to the transposition of EU directives. In Ireland, extensions of minimum wage provisions by Joint Labour Committees have become rare after the adoption of the Minimum Wage Act in 2000. In Norway, provisions that aim to give foreign employees equal wages and working conditions have been little used. In the UK, all existing extension provisions were abolished during the early 1980s.
Ireland	This group of countries contains both countries with firm-level bargaining and low coverage (<i>e.g.</i> United States, New Zealand), and countries with relatively centralised bargaining and high coverage and union density (<i>e.g.</i> Norway, Sweden).
New Zealand	
Norway	Administrative extensions over a particular locality are legally possible, where a majority of the workforce falls under the same agreement. However, due to enterprise bargaining, this is extremely rare. By contrast, the law provides for employers to extend agreements over a whole firm or workplace where half (Korea) or two-thirds (Japan) of the workforce is covered by an agreement due to their membership in a signatory trade union.
Sweden	
United Kingdom	Extension is (in the case of New Zealand was up to 1991) linked to arbitration. Federal or State awards can (could) be made binding on all employers in an industry, beyond the initial parties to a particular dispute.
United States	
Japan	Extension orders can be issued by the Federal Arbitration Board on application of one or both of the bargaining parties. In practice, the provision is of little importance because of obligatory membership of the large majority of employers in the Austrian Economic Chamber, which guarantees a bargaining coverage of beyond 95%.
Korea	
Australia (New Zealand)	The Labour Code guarantees the extension of collective agreements to all employees at a firm that has concluded an agreement. Multi-employer agreements may be extended by the Ministry of Labour to cover unaffiliated employers in a particular sector, once requested to do so by one of the signatory parties. This is usually done by means of Royal Decree.
Austria	
Belgium	Collective agreements are considered as automatically binding for all firms and workers in their domain if they are considered representative or "generally valid". Representativity is determined by a special government body whose decision can be appealed in the Labour Court.
Finland	
France	Since 1936, collective agreements can be extended at the discretion of the Ministry of Labour, usually – but not necessarily – upon a request of one or more of the bargaining parties addressed to the National Commission on Collective Bargaining. The Ministry's executive order can take the form of an "extension" to the initial domain of the agreement, or an "enlargement" beyond its domain, <i>i.e.</i> to other industries or geographic areas.
Germany	The Ministry of Economics and Labour can declare an agreement generally binding if: <i>i)</i> one of the parties to the agreement files for extension; <i>ii)</i> a special bipartite "bargaining committee" approves the application; <i>iii)</i> and 50% or more of the workforce in the agreement's domain are already covered. Since 1998, the Ministry can extend minimum wage provisions in the construction industry on its own discretion.
Greece	An agreement can be extended by the Ministry of Labour at its own discretion, provided that over 50% of employees in a sector or occupation are already covered by it.
Hungary	The Minister of Employment and Labour may extend collective agreements to a whole sector upon application by the contracting parties and after consultation with the appropriate sub-committee in the National Interest Reconciliation Council. The applicants must give proof of their representativity in the given sector.
Italy	The Constitution (Art. 39) declares collective agreements signed by trade unions generally binding on all employee categories covered by the agreement. On this basis, the minimum wage level set by collective bargaining in a particular sector is often taken as a reference by courts when determining whether specific wages conform to constitutional requirements.
Netherlands	Since 1937, the Minister of Social Affairs and Employment may extend collective agreements to a whole sector upon application by one or more of the contracting parties. Extension is usually granted when the applicants give proof of the representativity of the agreement in the given sector.
Poland	The Labour Code guarantees the extension of collective agreements to all employees at a firm that has concluded an agreement. Multi-employer agreements may be extended by the Ministry of Economics and Labour to cover unaffiliated employers in a particular sector, if such extension is considered "a vital social interest".
Portugal	The Minister of Labour, usually at his own initiative, can broaden the scope of application of a collective agreement by means of extension throughout the respective economic sector or geographical area, or enlargement to different geographical areas. All interested parties must be given an opportunity to object to the extension.
Slovak Republic	The Ministry of Labour, upon application of the bargaining parties and recommendation by a special tripartite "agreement extension" committee, can extend collective agreements by decree to employers with similar business activities and economic and social conditions.
Spain	Extension throughout the agreement's domain is automatic if signed by the majority of the representatives of each party. Special extension by the Ministry of Labour upon request by an employer or trade union association in cases where no appropriate bargaining parties exist.
Switzerland	Federal or cantonal authorities can declare an agreement legally binding provided that all parties to an agreement request such extension. As a general rule, recourse to extension requires that an agreement already covers 50% of employees within its scope.

Source: EIRO (2002); European Commission (2003); Blanpain (2004).

Italy, it is a clause in the Constitution which guarantees the binding character of collective contracts – a clause that seems to be relevant in legal practice, where wage rates in firms that are not bound by collective agreements are being challenged in court.

This leaves 13 further OECD countries with legal or administrative extension mechanisms. In Australia, extension has been a (now diminishing) feature of the arbitration system where wage rulings by the federal and state industrial relations commission can be applied throughout an industry (see Box 3.4).³⁶ The rest of the countries are in Continental Europe, and it is interesting to see that the central and eastern European EU accession countries have adopted similar legislation to their western counterparts, even if extension can be hypothesised to have comparatively less impact due to the predominantly company-level bargaining in these countries (particularly in the Czech Republic, Hungary and Poland). In a few countries, Ministries may act upon their own initiative (France, Portugal, since recently also Germany), but in most cases extension will be granted upon the application of one or both bargaining parties. At this occasion, the applicants will usually need to give proof of the representativeness of the contracts that they have concluded. While in Finland, among other countries, there have been recent debates about an appropriate definition of such “representativeness”, Germany, Greece and Switzerland simply require that an agreement covers 50% or more of employees working in the particular sector.

Figures about the numerical impact, i.e. numbers or shares of workers *additionally* covered through extension, are usually hard to come by. Survey data from the Australian Bureau of Statistics show that 21% of Australian employees (25% in the private sector) are exclusively covered by arbitration awards – a large decline from the two-thirds covered this way before the most recent wave of industrial relations reform and its focus on agreement-making outside the arbitration system (ABS, 2002; OECD, 2001b). In Europe, reasonably reliable data are available only from Finland, Germany, the Netherlands and Switzerland. According to these data, at the beginning of the decade the shares of workers additionally covered through administrative extension were about 23% in Switzerland (OFS, 2002); 19% in Finland (submission by the Finnish authorities); 7% in the Netherlands (van het Kaar, 2002) and about 1% in Germany (BMW, 2004). These figures are not very different from those reported in the 1994 *Employment Outlook* for the early 1990s (although somewhat higher in Switzerland and lower in the Netherlands and Germany).³⁷

To quote one recent study of extension mechanisms in Europe, there is “a high stability of extension provisions... the continuity is striking” (EIRO, 2002). Only the United Kingdom (in 1980) and New Zealand (in 1990) effectively abolished their extension arrangements; when there were changes in other countries, they were rather minor (e.g. definition of representativeness) or procedural. This stability is somewhat surprising in view of growing employer hostility to extension in some countries (Finland and Germany, in particular) and of arguments by economists (including the 1994 *OECD Jobs Study*) to the effect that administrative extensions are a potent device to stifle competition in labour and product markets.³⁸

D. Centralisation and co-ordination

Apart from trade union density and coverage, bargaining centralisation and co-ordination have played an important role over the past decade or two in studies on the relationship between wage-setting characteristics on the one hand, and economic and labour market performance measures, on the other. To take one example, Nickell and Layard (1999) have calculated that, as the extent of union coverage increases from below

one-quarter to over 70%, unemployment more than doubles; however, increases in bargaining co-ordination tend to offset this impact. The theoretical debate between “monotonic” and “hump-shaped” or “U-shaped” hypotheses has been summarised many times in the literature and briefly outlined in Section 1 (see, for example, Cameron, 1984; Tarantelli, 1986; Calmfors and Driffill, 1988; Soskice, 1990; and Calmfors, 1993). Concerning the centralisation dimension, Aidt and Tzannatos (2002) have recently tried to structure the debate by summarising its economic costs and benefits on a number of indicators, such as competition, wage compression, strike propensity and hold-up problems. Other researchers have argued that the degree of co-ordination of wage bargaining across the economy is at least as important for characterising bargaining or labour relations systems as is centralisation (for summaries of the debate, see, *inter alia*, OECD, 1997a; Flanagan, 1999; Wallerstein and Western, 2000; and Traxler *et al.*, 2001).

Following the model used in the 1997 *Employment Outlook*, both the centralisation and co-ordination indicators are included in Table 3.5, presented for five-year intervals (and one six-year interval) between 1970 and 2000. A supplementary indicator of vertical co-ordination, which presents a measure of the extent to which collective contracts are effectively followed at lower levels, is bargaining governability (see Box 3.3). Regression analysis further below is based on a composite index using both the centralisation and co-ordination indicators. A previous analysis based on the same type of composite index in the 1997 *Employment Outlook* had, in most respects, not found statistically significant relationships with measures of economic or labour market performance. One exception to this was a fairly robust relationship with cross-country differences in earnings inequality, in the sense that the highest degree of earnings inequality was found in the group of the more decentralised/unco-ordinated countries.

The construction of the centralisation and co-ordination indicators has profited from other work scoring or ranking wage-setting arrangements which have appeared after the 1997 *Employment Outlook*. These are, in particular, the centralisation scores of Golden *et al.* (2002), Iversen (1999) and Traxler *et al.* (2001), the co-ordination scores of Kenworthy (2001a); and both the centralisation and co-ordination scores of Ochel (2000b). These studies have greatly improved on the descriptive information available for scoring countries in a more rigorous and transparent manner, and have also extended the historical reach of the indicators, so that comparative work can take better account of major changes in individual countries' bargaining modes. Nevertheless, as pointed out by Kenworthy (2001b), uncertainties and disagreements in the evaluation of country practices persist: a graphical comparison by Kenworthy of the country classifications by the various authors cited above demonstrates sometimes important variations.³⁹

The level where collective contracts are negotiated and formally set is one of the more obvious dimensions of bargaining structures. Three levels are usually distinguished: first, firms and workers may negotiate over terms and conditions of employment at the level of the individual enterprise or establishment. Canada, Japan, Korea and the United States have historically bargained at this level; the United Kingdom, New Zealand and some central and eastern European countries have joined this group more recently. At the other extreme, national unions and employer associations engage in inter-industry bargaining at national level, covering the entire economy or most parts of it – a feature historically characteristic of the Nordic countries, but also, from a different angle, of the arbitration system in Australia.⁴⁰ Most continental European countries have traditionally favoured “intermediate” forms of wage negotiation, mainly at branch or sectoral level.

Table 3.5. **Wage-setting institutions in OECD countries, 1970-2000^{a, b}**

	Centralisation ^c						Co-ordination ^d					
	1970-74	1975-79	1980-84	1985-89	1990-94	1995-2000	1970-74	1975-79	1980-84	1985-89	1990-94	1995-2000
Australia	4	4	4	4	2	2	4	4	(4.5)	4	2	2
Austria	3	3	3	3	3	3	5	5	(4.5)	4	4	4
Belgium	4	(3.5)	3	3	3	3	4	(3.5)	(4)	(4)	(4)	(4.5)
Canada	1	1	1	1	1	1	1	(3)	1	1	1	1
Czech Republic	..	..	..	..	1	1	..	..	..	..	1	1
Denmark	5	5	3	3	3	2	5	5	3	(4)	3	(4)
Finland	5	5	(4)	5	5	5	5	5	(4)	5	5	5
France	2	2	2	2	2	2	2	2	2	2	2	2
Germany	3	3	3	3	3	3	4	4	4	4	4	4
Hungary	..	..	..	..	1	1	..	..	..	..	1	1
Ireland	4	4	1	(2.5)	4	4	4	4	1	(2.5)	4	4
Italy	2	2	(3.5)	2	2	2	2	2	(3.5)	2	(3)	4
Japan	1	1	1	1	1	1	4	4	4	4	4	4
Korea	1	1	1	1	1	1	1	1	1	1	1	1
Netherlands	3	3	3	3	3	3	3	(4)	(4.5)	4	4	4
New Zealand	3	3	3	3	1	1	4	4	4	4	1	1
Norway	(4.5)	(4.5)	(3.5)	(4.5)	(4.5)	(4.5)	(4.5)	(4.5)	(3.5)	(4.5)	(4.5)	(4.5)
Poland	..	..	..	..	1	1	..	..	..	..	1	1
Portugal	5	4	3	3	4	4	5	4	3	3	4	4
Slovak Republic	..	..	..	..	2	2	..	..	..	..	2	2
Spain	5	4	4	(3.5)	3	3	5	4	4	(3.5)	3	3
Sweden	5	5	(4.5)	3	3	3	4	4	(3.5)	3	3	3
Switzerland	3	3	3	3	2	2	4	4	4	4	4	4
United Kingdom	2	2	1	1	1	1	(3)	4	1	1	1	1
United States	1	1	1	1	1	1	1	1	1	1	1	1

.. Data not available.

a) Figures in brackets are period averages in cases where at least two years differ from the period's modal value.

b) No scores for 1970-89 were attributed to the central and eastern European OECD countries (formerly "central command" economies).

c) Centralisation:

1 = Company and plant level predominant.

2 = Combination of industry and company/plant level, with an important share of employees covered by company bargains.

3 = Industry-level predominant.

4 = Predominantly industrial bargaining, but also recurrent central-level agreements.

5 = Central-level agreements of overriding importance.

d) Co-ordination:

1 = Fragmented company/plant bargaining, little or no co-ordination by upper-level associations.

2 = Fragmented industry and company-level bargaining, with little or no pattern-setting.

3 = Industry-level bargaining with irregular pattern-setting and moderate co-ordination among major bargaining actors.

4 = a) informal co-ordination of industry and firm-level bargaining by (multiple) peak associations;

b) co-ordinated bargaining by peak confederations, including government-sponsored negotiations (tripartite agreements, social pacts), or government imposition of wage schedules;

c) regular pattern-setting coupled with high union concentration and/or bargaining co-ordination by large firms;

d) government wage arbitration.

5 = a) informal co-ordination of industry-level bargaining by an encompassing union confederation;

b) co-ordinated bargaining by peak confederations or government imposition of a wage schedule/freeze, with a peace obligation.

Source: Secretariat assessments based on national and comparative industrial relations research literature, including the recent classifications and scores of wage-setting arrangements by authors cited in the text.

The classification of countries by bargaining level is complicated by the fact that in many countries bargaining occurs at *multiple* levels. In a number of countries, such as Belgium, it is extremely difficult to localise for every single year or period "the" predominant bargaining level. Ideally, this level would need to be determined by taking into account what

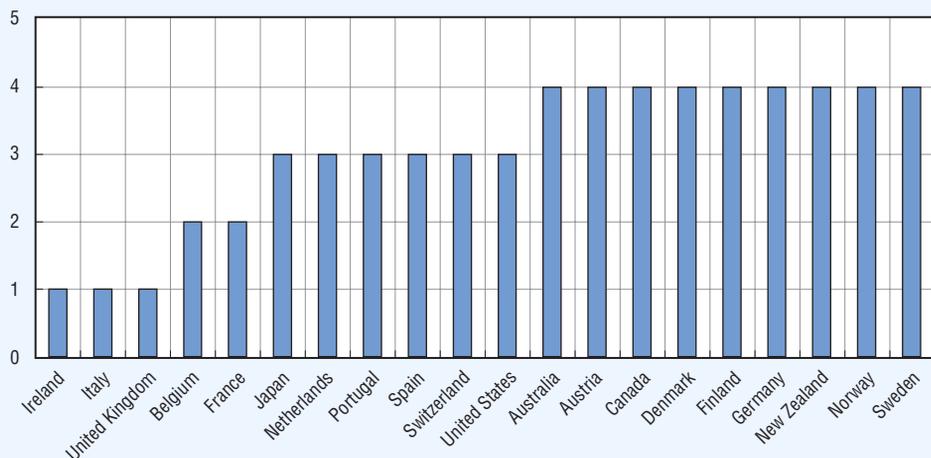
Box 3.3. Bargaining governability: a supplementary indicator of co-ordination

The dimension of bargaining governability in the chart below is mainly based on information in Traxler *et al.* (2001) and scored on a scale from 1 to 4. This dimension addresses the governance capacity of the bargaining system, *i.e.* the ability of the employer and trade union associations to control the behaviour of their constituency or “rank and file”. Arguably centralisation and co-ordination bring about their often presumed beneficial effects only when backed by high bargaining governability, which could counteract the “potential fragility” of upper-level co-ordination noted by Nickell and Layard (1999). For example, increasing centralisation of bargaining may have countervailing effects in the sense that the rank and file (employees and employers) may have a higher propensity to defect from the results of distant decision-making processes. Both centralisation and horizontal co-ordination can be hypothesised as producing contrasting performance effects, depending on their capacity for vertical co-ordination and control (Traxler, 2003).

Government regulation can help strengthen this vertical control dimension by attributing legal enforceability to collective contracts (which it does not do in Italy, Ireland and the United Kingdom). Of similar importance is whether a peace obligation prohibits industrial action as long as a collective agreement is in force, which is rarely the case in Belgium and France, partly on the grounds that a peace obligation would interfere with the right to strike. Nevertheless, nine out of 20 countries ranked on this indicator are characterised by “high bargaining governability”, *i.e.* by both legal enforceability and an automatic peace obligation during the validity of an agreement.

For future work on a centralisation/co-ordination indicator, it might be important to include this indicator of vertical co-ordination in an enlarged composite index. This would require research into its variance over time, although it can probably be safely assumed that most OECD countries have not changed their corresponding practices in recent decades.

Bargaining governability^a in OECD countries, 2000



a) Bargaining governability:

4 = when collective agreements are legally enforceable and there is an automatic peace obligation during validity of the agreement.

3 = when collective agreements are legally enforceable and there are widespread (but optional) peace obligation clauses in agreements.

2 = where there is legal enforceability, but no effective tradition or practice of peace obligation clauses.

1 = where neither of the above conditions are effectively present.

Source: Traxler *et al.* (2001) and submissions by national authorities.

Box 3.4. Reform of wage setting in Australia

Australia is exceptional among OECD member countries in that most workers are covered by awards set through a quasi-judicial system of conciliation and arbitration operating through industrial tribunals. In the past, the arbitration system has allowed for widespread “extension” of terms and condition of employment to all firms in an industry, beyond the employers originally signatory to an award.

However, institutional wage-setting arrangements have changed markedly over the past two decades, with a downward shift in the level where real wages are actually determined and the gradual superposition of enterprise bargaining over a scaled-back federal and state arbitration system. Reform was initially set in motion under a series of Accords between the trade unions and the Labour government after 1983. The emphasis subsequently shifted from centralised incomes policy arrangements towards decentralisation of wage-setting and the encouragement of enterprise bargaining focused on productivity. This process was enhanced under the Workplace Relations Act (WRA) adopted in 1996.

While, in today’s mixed system, arbitration still provides a framework for enterprise-level negotiations, and “safety-net awards” continue to restrict employer discretion at the bottom of the wage scale, less than a quarter of current employees still have their actual pay determined by awards; in 1990, this share was over two-thirds. Accompanying the scaling back of the arbitration system was a substantial decrease in trade union membership and density (previously “protected” by arbitration and legislative arrangements) and an increase in wage dispersion (to a level higher than most EU countries, but less than, for example, Canada, the United Kingdom and the United States) (see Table 3.3). Evidence from certain industries, in particular low-productivity workplaces, also points to beneficial effects of workplace reforms on labour productivity growth, which improved considerably *vis-à-vis* previous sluggish performance in the 1970s and 1980s.

The OECD has welcomed the move away from highly centralised wage setting via arbitration. However, it has proposed a further tilting of the balance in favour of bargaining and restricting tribunal powers. Although awards have become less prescriptive, enterprises are still bound by arbitration decisions from multiple (federal and state) jurisdictions. The OECD has also proposed to reflect whether the current “minimum safety-net” approach – where minima are not only set for low-paid workers, but there is a whole ladder of minima, including for higher-paid employees – should not be replaced by a minimum wage which would, *inter alia*, have the effect of protecting those 15% of employees currently covered neither by awards nor collective contracts.

Source: ABS (2002); OECD (2001b); Wooden (2000).

shares of employees are subject to wage bargaining at what level, and even more importantly, at which level most of the change in wage rates is being determined. For example, a moderate wage increase negotiated at sectoral level may be largely surpassed by subsequent wage bargaining at local levels (so-called “wage drift”). As pointed out by Traxler *et al.* (2001), in these cases the company or establishment level would need to be considered more important to wage fixing. However, information on these bargaining dimensions is patchy.⁴¹ The classification in Table 3.5 has taken into account the possibility of multiple-level negotiations by allowing for five, instead of three categories.⁴²

Box 3.5. **Germany: co-ordinated decentralisation or model change?**

Although the branch is still the predominant level of agreement-making in Germany, there is a trend towards more flexibility in the collective bargaining landscape. There is increasing political pressure towards shifting the locus of bargaining to lower levels, and a number of observers have started asking whether an “erosion” of the German model is already underway.

Results from establishment surveys by the research institute of the German public employment service (IAB) show that bargaining coverage in 2002 was at 71% in western and 56% in eastern Germany (altogether 68%) – a significant decline, estimated at 15 percentage points or more, when compared with western Germany during the 1980s. At the same time, the number of company agreements has increased considerably from low levels, so that currently 8% of employees (12% in the eastern *Länder*) are covered at that level.

The current debate is whether the existing instruments provided in sectoral contracts are sufficient to accommodate the needs of individual enterprises. One answer is given by those firms that prefer to switch to company agreements. Another answer, particularly in eastern Germany, is given by firms exiting the branch agreements by leaving, or not joining, employer associations. However, the bargaining parties at branch level have reacted to this trend, and to changing economic circumstances, by allowing a wider use of so-called “opening” or “opt-out” clauses in recent years. Such opt-out clauses allow firms to deviate from branch agreements to the disadvantage of employees under certain conditions – according to German legislation, normally deviations are only allowed *in favour* of employees (favourability principle).

According to recent surveys of firms with 20 or more employees that have works councils, between one-fifth and one-third have made use of opt-out clauses. These have been applied mainly with respect to working-hour regulation – *e.g.* hours averaging periods, “time banks” or extension of maximum weekly hours for certain categories of employees – but in recent years an increasing proportion (about 16% in the most recent survey) is dealing with remuneration issues as well – *e.g.* two-tier wage regimes with reduced wages for job starters or cuts in holiday bonuses. A variant of opening clauses are the so-called “company employment pacts” where pay cuts are exchanged for employment guarantees.

In many cases, the use of opening clauses requires the consent of both bargaining parties at sectoral level, and there have been some well-publicised cases where consent was denied. This has led to calls by some commentators to replace this approach by a statutory opt-out clause which would abandon completely the favourability principle. The Federal Chancellor Schröder, in a major policy statement in 2003 around his reform Agenda 2010, has issued a warning to the bargaining parties that if more generous use of opt-out clauses was not forthcoming voluntarily, the government might make use of such statutory modifications.

Abandoning the favourability principle and allowing actors at company level, such as works councils, to generally reopen and deviate from branch agreements, would revolutionise the German bargaining arena – although it needs to be added that such legislation would no doubt be challenged on the basis of constitutional law. Such decentralisation would make competition more intense and wage determination more flexible, but it would also undermine the typical German co-ordination mode of pattern bargaining which has historically served as a guarantee of social peace. Further, whether company wage bargaining in the German context of still relatively strong trade unions would result in wage moderation, is open to debate: so far, empirical studies comparing

Box 3.5. Germany: co-ordinated decentralisation or model change? (cont.)

wage settlements in company agreements with those in branch agreements have not shown this result. Finally, a number of German employers are uncomfortable with the idea to be suddenly confronted with local actors endowed with the authority to negotiate wages relying on the strike weapon as *ultima ratio* – in contrast to the current peace obligation once a branch-level contract is in place.

Source: Bosch (2003); OECD (2003c); Kohaut and Schnabel (2003); Bispinck and Schulten (2003).

The table also gives an impression of how countries have moved between the 1970s and 1990s on the centralisation dimension. Importantly, no country has moved in the direction of centralisation between these two decades, while several countries became more decentralised, by one, two or more levels. For example, New Zealand, Switzerland, Australia and Denmark joined the relatively decentralised group of countries, while the gravity centre in Belgium, Spain and Sweden moved from relatively centralised to intermediate. Countries that are judged to have maintained a relatively high degree of centralisation in bargaining are Ireland, Portugal, Norway and Finland. Of these, Ireland decentralised in the 1980s, but centralised again at the end of the decade, as a new pattern of national-level tripartite agreements set in that included general limits on wage increases.

One particular feature of decentralisation in countries characterised by sectoral bargaining is the use of “opening” or “opt-out” clauses which allow firms under certain circumstances to negotiate with their workforce a payment level underneath the wage floor set at branch level. Such opt-out clauses have become more prominent in recent years, *inter alia*, in Germany, the Netherlands and, to some extent, Spain (see Box 3.5 on Germany). However, reliable information on the spread of these “opt-outs” is rare, and they do not seem to carry enough weight overall to warrant a reclassification of these countries, at least within the present, five-level classification scheme. Particularly in Spain, agreements at higher level to encourage the use of opening clauses have difficulties being implemented at company level (OECD, 2003b).⁴³

Conceptually different from the level where wages are formally set is the degree of co-ordination of bargaining. This degree is determined by the extent to which pay negotiations are co-ordinated across the economy and are thus able to take into account any consequences of settlements on the full economy. A high degree of co-ordination is not guaranteed by centralisation, for example when several rival unions bargain at peak level, or when peak-level contracts are undermined by conflictual behaviour at lower levels. Neither is centralisation a necessary precondition for co-ordination, since the latter can be achieved through the presence of co-ordinating institutions which assist bargainers at lower levels to act in concert.⁴⁴

Table 3.5 distinguishes five levels of co-ordination. The two upper levels (4 and 5) integrate various possible features of economy-wide co-ordination, such as pattern-setting by key industries, as well as different forms of government involvement in wage setting, *inter alia* through tripartite agreements or wage schedules. Decentralised countries are usually characterised by fragmented bargaining with little or no co-ordination, with the important exception of Japan, where wage-setting is highly co-ordinated (particularly on the employers’ side) in the so-called annual spring offensive or *Shunto*. Germany, where

Box 3.6. Centralised bargaining and social compacts: the example of Ireland

Table 3.5 classifies central agreement-making as particularly important in Finland, Ireland, Norway and Portugal, among others. In most of these cases, the government is a partner in tripartite agreements or social compacts. Often, national governments commit themselves in these agreements to some action – for example, on taxes or social welfare – in exchange for issuing wage guidelines or pressing for wage moderation in the framework of inflation targets. Some governments pursue a policy of continuous involvement in tripartite agreements, (for example 3-year agreements in Ireland and, since recently, annual agreements in Spain), while others have joined such accords more sporadically, for example in response to economic shocks. In some cases, governments do not actually sign such agreements, but may influence national pay accords with the threat of imposing a pay freeze.

In Ireland, the series of tripartite national wage agreements since 1987 is held by many commentators to have been an important factor in the remarkable growth of the economy during the 1990s, with the highest GDP and employment growth rates among OECD countries. Up to the 1980s, Ireland had been plagued by poor industrial relations and high strike rates. After several attempts to conclude social compacts in the 1970s which failed to yield good inflation outcomes, the first half of the 1980s was characterised by a period of “free-for-all” decentralised bargaining. This period ended in 1987 with the *Programme for National Recovery* that imposed wage guidelines on the parties to collective bargaining; this has been followed by five further tripartite agreements up to 2003, each lasting for periods of three to four years. As argued by several authors, the agreements represented a joint effort to maintain competitiveness and improve employment prospects by ensuring that the rapid growth of labour productivity since the late 1980s was not translated into too high growth of real wages. Crucial to the moderation of nominal wage claims were government commitments to respond to wage restraint with cuts in taxes and improved social benefits.

As in all such wage compacts that are not completely binding on lower levels, there have been some defections from the wage rates or guidelines agreed at upper levels, especially as the economy approached full employment in the late 1990s and into the 21st century. The latest agreement concluded in 2003 (*Sustaining Progress*) has responded to such defections by including measures to ensure compliance, with an enhanced role given to a new tripartite implementation body and to the Labour Courts. Importantly, the agreement contains an opt-out clause (the “inability-to-pay” provision) whereby employers in financial difficulties can negotiate with local employee representatives to pay wage rates below the national bargain. Where local agreements cannot be reached, cases can be referred to the Labour Relations Commission and ultimately to the Labour Court for a binding decision. In the first year of the agreement, over 60 “inability to pay” cases were notified to the Labour Relations Commission.

Sources: Glyn (2004); Honohan and Walsh (2002); EIRR (2003); EIRO (2003).

negotiations are usually at the combined regional and sectoral levels, is characterised by pilot agreements in one key industry, usually the metal sector, which serve as a pattern for other bargaining agents. Belgium, Denmark, Italy and the Netherlands are among other countries that tend to get higher scores on the co-ordination than the centralisation dimension, because of different forms of peak-level co-ordination of sectoral bargaining or government intervention in tripartite agreements or social pacts.

3. Wage-setting institutions and economic performance

A. A first look

This section uses the updated bargaining indicators just presented to re-assess whether different characteristics of national collective bargaining systems appear to have had a systematic effect on macroeconomic performance in OECD countries since 1970. The bargaining characteristics examined here are a subset of the indicators presented in the previous section, namely, union density, collective bargaining coverage and centralisation/co-ordination (*i.e.* the average of the centralisation and co-ordination indicators presented in Table 3.5, which will be referred to as “CC” in the sequel).⁴⁵ It must be emphasised, however, that this analysis represents only a “first pass” assessment. In particular, the simple associations between the indicators of the organisation of collective bargaining and economic performance examined here may not provide reliable estimates of the causal impact of different organisational forms of wage bargaining, because only limited attempts are made to control for other institutions and policies that affect performance.⁴⁶ The intent here is to help orient future investigation by providing an initial indication of which types of wage and non-wage effects appear likely to have been the most important, as well as to assess whether the updated indicators are sufficiently different from their precursors to call into question any of the main results reported in OECD (1997a).

What might we expect to find? As was discussed in Section 1, economic theory suggests that increases in union density and bargaining coverage enhance union bargaining power and hence tend to increase upward pressure on aggregate wages and – to the extent that unions pursue an egalitarian agenda – compress earnings differentials. The effect of increases in centralisation/co-ordination on wage outcomes is more difficult to predict, since the potential enhancement of union bargaining power may be accompanied by greater internalisation of the full costs implied by high wage demands. Economic theory also implies that any increase in overall wage demands or compression of wage differentials that result from union involvement in wage setting are likely to adversely affect employment, although the literature review in Section 1 suggests that these impacts may be contingent on a large number of factors and hence difficult to isolate.

In Table 3.6, four common measures of macroeconomic performance (unemployment, employment, inflation and real earnings growth), are juxtaposed with the CC indicator. In the spirit of Calmfors and Driffill (1988) and many subsequent studies, OECD countries are classified into low, intermediate or high groups according to their CC scores, with this classification being made separately for three periods: the 1970s, the 1980s and 1990-2002. Comparing average unemployment rates across the three CC levels suggests that this facet of wage bargaining has not been a predominant determinant of unemployment performance. Unemployment was substantially lower for the intermediate CC countries in the 1970s, than for countries with higher or lower CC, precisely the reverse of the hump-shaped relationship proposed in Calmfors and Driffill (1988). By contrast, the high CC countries performed best according to this criterion during the 1980s and there has been next to no relation between unemployment rates and CC since 1990.⁴⁷

The relationship between the degree of bargaining centralisation/co-ordination and the employment rate also shows considerable instability over time: intermediate CC countries being the best performers during the 1970s, but the worst thereafter (Table 3.6).⁴⁸ There is slightly more consistency over time for the final two performance measures: price inflation is lowest for the intermediate CC countries in all three periods, while real

Table 3.6. The degree of bargaining centralisation/co-ordination (CC) and macroeconomic performance since 1970^{a, b}

	1970-79				1980-89				1990-2002			
	Unemployment rate	Employment rate	Inflation rate	Real earnings growth	Unemployment rate	Employment rate	Inflation rate	Real earnings growth	Unemployment rate	Employment rate	Inflation rate	Real earnings growth
High CC												
Average ^c	4.2	63.3	12.2	4.3	6.0	67.9	7.2	1.3	7.4	66.7	3.9	2.3
Minimum	1.8	55.2	6.4	1.9	2.8	64.4	6.0	0.3	4.6	56.8	2.0	0.6
Maximum	8.2	75.5	16.1	5.8	7.4	74.5	7.6	3.8	11.4	75.0	5.5	3.1
Intermediate CC												
Average ^c	2.0	65.7	8.5	4.2	6.5	62.1	4.9	1.7	7.1	64.7	1.5	1.2
Minimum	1.7	54.8	5.1	1.7	2.6	49.1	1.9	-0.6	3.2	52.4	-0.2	0.1
Maximum	3.2	66.9	13.9	6.1	17.7	80.4	17.3	2.3	17.9	77.7	4.2	1.9
Low CC												
Average ^c	5.7	62.8	9.6	2.5	7.9	66.6	5.1	1.3	7.2	68.4	3.9	1.6
Minimum	3.5	52.0	7.0	1.3	4.0	50.7	4.3	0.5	3.5	54.8	1.6	-0.1
Maximum	7.8	64.8	21.1	4.7	15.7	68.8	7.5	6.5	15.1	72.5	20.5	5.0

.. Data not available.

a) The centralisation/co-ordination (CC) indicator is an average of the centralisation and co-ordination scores presented in Table 3.5. High CC corresponds to an indicator value of at least 4 and low CC to an indicator value of at most 2.

b) Average values for the periods indicated.

c) Employment-weighted average.

Source: OECD Labour Force Statistics database (unemployment rate and employment rate), OECD Economic Outlook database (inflation rate and real compensation per worker in the business sector), and OECD Productivity database (average hours per worker).

earnings growth tends to be relatively low for the low CC countries. Nonetheless, the overall impression that emerges from these comparisons is that partitioning countries according to centralisation/co-ordination, on its own, is not very informative for predicting aggregate economic performance. This impression is reinforced by the observation that there is a lot of variation in aggregate outcomes within each of the three CC groupings in all three periods. A closely related implication is that little support emerges for intermediate CC countries generally having the worst performance, consistent with Aidt and Tzannatos' assessment (2002) of prior research.

B. Wage-setting institutions and wage outcomes

The most direct impact of wage-setting institutions should be on wage outcomes and Table 3.7 provides a first look – in the form of bivariate correlation coefficients – at the associations between union density, bargaining coverage, and centralisation/

Table 3.7. **Correlation coefficients between collective bargaining and wage outcomes, 1975-2000^a**

	1975-79	1980-84	1985-89	1990-94	1995-2000
Panel A. Trade union density					
Real hourly earnings growth ^b	-0.09	-0.59***	0.20	0.09	0.36*
Efficiency wage growth ^{b, c}	-0.13	-0.20	0.48**	-0.50**	0.01
Wage share ^b	-0.01	-0.23	0.11	-0.14	0.00
Earnings inequality	-0.87***	-0.78***	-0.60**	-0.44*	-0.31
Relative earnings of youths	0.77	0.80**	0.76**	0.83**	0.78***
Relative earnings of older workers	0.44	0.44	0.21	0.19	0.04
Relative earnings of women	0.72	0.60	0.39	0.31	0.43
Panel B. Collective bargaining coverage					
Real hourly earnings growth ^b	-	-0.31	-0.17	-0.18	0.08
Efficiency wage growth ^{b, c}	-	0.04	-0.09	-0.19	0.00
Wage share ^b	-	-0.23	-0.22	-0.30	-0.27
Earnings inequality	-	-0.58*	-0.69***	-0.51**	-0.60**
Relative earnings of youths	-	0.67	0.79**	0.94***	0.68**
Relative earnings of older workers	-	0.46	0.33	0.22	0.32
Relative earnings of women	-	0.75*	0.73**	0.66*	0.76***
Panel C. Centralisation/co-ordination					
Real hourly earnings growth ^b	0.13	-0.32	-0.05	0.03	0.24
Efficiency wage growth ^{b, c}	0.05	0.06	0.08	-0.23	-0.38
Wage share ^b	-0.14	-0.37	-0.23	0.19	0.02
Earnings inequality	-0.83**	-0.77***	-0.67***	-0.40*	-0.51**
Relative earnings of youths	0.69	0.48	0.30	0.48	0.30
Relative earnings of older workers	0.20	0.36	0.35	0.08	0.36
Relative earnings of women	0.74	0.57	0.25	-0.24	0.39

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

a) Calculations use five-year average values for the measures of collective bargaining and wage outcomes.

b) Total compensation in the business sector.

c) Growth rate of the real wage rate per efficiency unit which is estimated by real hourly compensation growth in excess of total factor productivity growth (i.e. the Solow residual divided by the wage share).

Source: OECD Economic Outlook database except hours per worker from OECD Productivity database; earnings inequality and relative earnings measure from the OECD Earnings database.

co-ordination, on the one hand, and the average level of compensation and the structure of relative wages, on the other. The three measures of the aggregate wage include the rate of growth of real earnings and two measures of the extent to which wage growth tends to outrun productivity gains: growth of the real wage per efficiency unit (defined as the excess of real wage growth over the growth in total factor productivity) and the wage share. Four measures of relative wages are examined: an index of overall earnings inequality (the 90-10 percentile ratio for male full-time earnings), and relative wage indices for three groups potentially at the margins of the workforce (*i.e.* youths, older workers and women).⁴⁹ Correlations are calculated for the five five-year periods indicated, where the data values used are period means (*i.e.* five-year average values).

There does not appear to be any robust bivariate relationships between the three indicators for the organisation of collective bargaining and the three measures of the overall level of earnings. Several of the correlation coefficients between union density and growth rates for both real hourly earnings and the real wage per efficiency unit are quite large and statistically significant, but in every case these correlations evolve in an unstable way between the different periods shown. For example, higher union density is strongly positively correlated with the growth rate of the real wage per efficiency unit of labour during 1985-89 and then strongly negatively correlated during 1990-94.⁵⁰ Bargaining coverage is always negatively correlated with the wage share, but this correlation is generally not statistically significant and has the opposite sign to that suggested by economic theory.

There is consistent evidence in Table 3.7 that overall earnings dispersion is lower where union membership is higher and collective bargaining more encompassing and/or more centralised/co-ordinated.⁵¹ This finding accords with a considerable number of earlier studies (Blau and Kahn, 1999; OECD, 1997a) and can be considered to be quite well established. There is also some, albeit weaker, evidence that collective bargaining tends to increase the relative wages of youths and women. The evidence for such an effect is strongest for higher union membership and bargaining coverage resulting in higher relative wages for workers under the age of 25 years. All of the correlations between coverage and the relative wage of women are quite large (0.66 or higher) and statistically significant at the 10% level or better.

The OLS panel regressions reported in Table 3.8 provide a description of the multivariate associations between the three characteristics of wage bargaining and wage outcomes.⁵² Three different specifications are estimated for each of the seven wage outcomes, which are treated here as dependent variables. Model 1 regresses wage outcomes on union density, bargaining coverage and centralisation/co-ordination, as well as period effects. Due to limitations in the availability of historical data for the coverage variable, this model is estimated using data for 1980-2000 (*i.e.* averages for the four 5-year sub-periods). Models 2 and 3 drop the coverage variable, which allows the historical series to be extended backwards to 1970, modestly increasing the still small sample sizes. Since there are now up to six periods of data for each country, fixed country effects are added to Model 3, meaning that only within-country variation in density and centralisation/co-ordination are reflected in the estimated coefficients.

Overall, the regression results are quite similar to those obtained from the bivariate correlations. There is no evidence that overall earnings are systematically related to density, coverage or centralisation/co-ordination.⁵³ Collective bargaining, especially higher union density, is associated with lower overall earnings inequality and higher relative wages

Table 3.8. Descriptive regressions relating characteristics of the collective bargaining system to wage outcomes, 1970-2000

	Real hourly earnings growth ^a	Efficiency wage growth ^{a, b}	Wage share ^a	Earnings inequality	Relative earnings of youths	Relative earnings of older workers	Relative earnings of women
Model 1							
Trade union density	-0.0069 (0.0091)	-0.0061 (0.0079)	-0.0002 (0.0004)	-0.0088** (0.0039)	0.0018*** (0.0004)	-0.0007 (0.0009)	-0.0004 (0.0006)
Collective bargaining coverage	-0.0105 (0.0095)	-0.0041 (0.0085)	-0.0007 (0.0004)	-0.0052 (0.0033)	0.0012*** (0.0004)	0.0003 (0.0008)	0.0027*** (0.0005)
Centralisation/co-ordination	0.1661 (0.1968)	-0.0349 (0.1749)	0.0030 (0.0083)	-0.1747** (0.0759)	-0.0120* (0.007)	0.0324* (0.0161)	-0.0178* (0.0098)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	No	No	No	No
Number of observations	75	66	80	55	35	33	37
R-squared	0.12	0.09	0.16	0.51	0.77	0.35	0.62
F-Statistic	1.61	0.96	2.35**	8.49***	15.44***	2.37*	8.08***
Model 2							
Trade union density	0.0011 (0.0097)	-0.0099 (0.0091)	-0.0006 (0.0004)	-0.0096** (0.0041)	0.0027*** (0.0004)	-0.0001 (0.0008)	0.0013* (0.0006)
Centralisation/co-ordination	-0.0376 (0.1619)	-0.0831 (0.1560)	-0.0023 (0.0059)	-0.2040*** (0.0644)	-0.0058 (0.0067)	0.0228* (0.0125)	0.0092 (0.0101)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	No	No	No	No
Number of observations	112	97	121	70	44	42	46
R-squared	0.37	0.25	0.21	0.40	0.62	0.40	0.43
F-Statistic	8.71***	4.20***	4.41***	5.89***	8.49***	3.28***	4.03***
Model 3							
Trade union density	-0.0016 (0.0274)	0.0138 (0.0268)	0.0011 (0.0006)	-0.0143** (0.0066)	0.0024** (0.001)	-0.0008 (0.0015)	-0.0012 (0.0009)
Centralisation/co-ordination	-0.2523 (0.2626)	-0.1790 (0.2360)	-0.0096 (0.006)	-0.0014 (0.0651)	-0.0020 (0.0079)	0.0349*** (0.0121)	0.0174** (0.0068)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	112	97	121	70	44	42	46
R-squared	0.35	0.19	0.08	0.29	0.59	0.34	0.10
F-Statistic	13.29***	5.22***	10.3***	3.6***	6.13***	6.65***	10.69***

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

() corresponds to standard error.

a) Total compensation in the business sector.

b) Growth of the real wage rate per efficiency unit which is estimated by real hourly compensation growth in excess of total factor productivity growth (i.e. the Solow residual divided by the wage share).

Source: See Table 3.7.

for youths. Adding fixed effects to the model suggests that the countries in which centralisation/co-ordination fell during the past three decades also experienced relative increases in the earnings of older workers and women, while the countries where density fell experienced increases in overall wage dispersion and a relative decline in youth wages.⁵⁴

C. Wage-setting institutions and non-wage outcomes

Tables 3.9 and 3.10 present an analysis for seven non-wage outcomes that is parallel to that just discussed for wage outcomes. Whether considering bivariate correlations or the descriptive regressions based on panel data, very little evidence emerges for a systematic impact of these three facets of the organisation of collective bargaining on any of these outcomes. Where large and statistically significant associations are observed, they typically are not robust, either over time or across the different regression models, and are often discordant with theoretical predictions or past studies. However, the absence of robust associations between indicators of the organisation of collective bargaining and non-wage outcomes accords with the results obtained using the previous version of the OECD indicators (OECD, 1997a) and the overall literature (Aidt and Tzannatos, 2002; Flanagan, 1999).

The bivariate correlations provide some evidence that an increase in union density is associated with a higher overall employment-population ratio and higher relative employment for women, neither of which is consistent with theoretical predictions that increased union bargaining power tends to reduce employment, particularly for workforce

Table 3.9. **Correlation coefficients between collective bargaining and non-wage outcomes, 1975-2000^a**

	1975-79	1980-84	1985-89	1990-94	1995-2000
Panel A. Trade union density					
Unemployment rate	-0.08	-0.21	-0.35	-0.09	0.00
Employment rate	0.32	0.51**	0.56***	0.41**	0.31*
Inflation (GDP deflator)	0.09	0.30	0.05	-0.10	-0.07
Growth in real GDP per hour worked ^b	-0.15	-0.44**	-0.16	-0.05	0.19
Relative employment of youths	0.32	0.42*	0.42*	0.13	0.07
Relative employment of older workers	0.09	-0.11	-0.01	0.10	-0.01
Relative employment of women	0.30	0.51**	0.56***	0.54***	0.51***
Panel B. Collective bargaining coverage					
Unemployment rate	-	0.13	0.24	0.42*	0.45*
Employment rate	-	-0.02	-0.12	-0.31	-0.34
Inflation (GDP deflator)	-	0.19	0.07	-0.07	0.21
Growth in real GDP per hour worked ^b	-	-0.28	-0.24	-0.01	-0.15
Relative employment of youths	-	0.07	0.02	-0.19	-0.16
Relative employment of older workers	-	-0.63***	-0.66***	-0.65***	-0.68***
Relative employment of women	-	0.13	0.08	0.12	0.16
Panel C. Centralisation/co-ordination					
Unemployment rate	-0.30	-0.18	-0.10	0.00	0.04
Employment rate	0.25	0.06	0.14	0.00	0.03
Inflation (GDP deflator)	-0.15	0.05	0.00	-0.41**	-0.30
Growth in real GDP per hour worked ^b	0.10	-0.29	-0.21	0.07	0.11
Relative employment of youths	0.27	-0.06	0.14	-0.04	-0.01
Relative employment of older workers	0.27	-0.38	-0.22	0.06	-0.06
Relative employment of women	0.20	0.08	0.20	-0.05	0.00

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

a) Calculations use five-year average values for the measures of collective bargaining and non-wage outcomes.

b) In the business sector.

Source: OECD Economic Outlook database except hours per worker from OECD Productivity database; and relative employment rates from the OECD Labour Force Statistics.

Table 3.10. **Descriptive regressions relating characteristics of the collective bargaining system to non-wage outcomes, 1970-2000**

	Unemployment rate	Employment rate	Inflation (GDP deflator)	Growth in real GDP per hour worked ^a	Relative employment of youths	Relative employment of older workers	Relative employment of women
Model 1							
Trade union density	-0.0611*** (0.0212)	0.2611*** (0.0384)	0.0124 (0.0183)	-0.0053 (0.0083)	0.0028*** (0.0009)	0.0018*** (0.0006)	0.0052*** (0.0007)
Collective bargaining coverage	0.1073*** (0.022)	-0.1820*** (0.0398)	0.0082 (0.0185)	-0.0088 (0.0087)	-0.0012 (0.0009)	-0.0052*** (0.0006)	-0.0009 (0.0007)
Centralisation/co-ordination	-1.0079** (0.4633)	0.3403 (0.8378)	-0.0721 (0.3956)	0.0829 (0.1794)	-0.0132 (0.0195)	0.0284** (0.0132)	-0.0190 (0.0142)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	No	No	No	No
Number of observations	74	74	80	75	74	74	74
R-squared	0.29	0.47	0.41	0.06	0.14	0.56	0.56
F-Statistic	4.52***	9.76***	8.35***	0.76	1.87*	14.42***	14.5***
Model 2							
Trade union density	-0.0195 (0.0206)	0.1583*** (0.0412)	0.0527*** (0.0198)	-0.0046 (0.0073)	0.0019*** (0.0007)	-0.0001 (0.0008)	0.0042*** (0.0007)
Centralisation/co-ordination	0.0529 (0.3382)	-0.6771 (0.6767)	-0.9492*** (0.3231)	-0.0017 (0.1214)	-0.0125 (0.0118)	-0.0073 (0.0125)	-0.0149 (0.0117)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	No	No	No	No
Number of observations	105	105	125	114	105	105	105
R-squared	0.20	0.15	0.44	0.14	0.11	0.16	0.48
F-Statistic	3.51	2.46**	12.89***	2.52**	1.68	2.62**	12.93***
Model 3							
Trade union density	0.0570 (0.037)	-0.0359 (0.0552)	0.1160*** (0.0383)	-0.0069 (0.0162)	0.0009 (0.0011)	-0.0009 (0.0008)	-0.0017** (0.0008)
Centralisation/co-ordination	-0.5050 (0.3844)	0.4164 (0.5728)	0.2912 (0.4018)	-0.1815 (0.155)	0.0001 (0.0111)	-0.0129 (0.0088)	0.0065 (0.0081)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	105	105	125	114	105	105	105
R-squared	0.11	0.01	0.30	0.12	0.08	0.14	0.13
F-Statistic	9.05***	1.65	37.34***	6.99***	5.03***	20.31***	65.52***

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

() corresponds to standard error.

a) In the business sector.

Source: See Table 3.9.

groups other than prime-age men (Bertola *et al.*, 2002b). On the other hand, the negative correlation between bargaining coverage and the relative employment rate of older workers is consistent with this theory. The regression results confirm the three associations visible in the correlations, although the coefficient for union density is not statistically significant in the Model 3 estimates for either total employment or the relative employment of women, meaning that these associations do not appear to be present in the within-country variation. The estimation results for Model 1 confirm that higher bargaining coverage is associated with lower relative employment for older workers.⁵⁵

Finally, the regression results provide some evidence that higher density has been associated with higher inflation rates (but not in Model 1, i.e. when bargaining coverage is included among the regressors) and higher youth relative employment (but only in Model 1, i.e. when bargaining coverage is included among the regressors). Both the non-robustness of many of the estimated effects across regression models and the fact that many of the statistically significant effects have the opposite sign from that predicted by the usual theoretical models suggest extreme caution in treating any of these estimates as being even qualitatively informative regarding the causal impact of these facets of collective bargaining on non-wage outcomes.

Finally, Table 3.11 reports regression estimates for the impact of the three indicators of collective bargaining on the relative employment rates of four workforce groups when controlling for a range of other institutional and policy variables likely to affect employment patterns.⁵⁶ The groups considered are the three already considered above (i.e. youths, older working-age persons and women) plus the low skilled, defined as persons

Table 3.11. Collective bargaining and the relative employment of youths, older persons of working age, women and the low skilled

Random effects, GLS (generalised least squares) coefficients for annual data, 1985-2002^a

	Relative employment of youths ^b	Relative employment of older workers ^b	Relative employment of women ^b	Relative employment of low-skilled workers ^b
Union density	0.004*** 0.001	0.001 0.001	0.004*** 0.001	0.001 0.001
Bargaining coverage	-0.002* 0.001	-0.003*** 0.001	0.002*** 0.001	0.002*** 0.001
Centralisation/co-ordination index	-0.063*** 0.016	0.008 0.011	-0.025*** 0.008	-0.027 0.017
F-test ^c	99.7***	85.8***	195.7***	65.4***
B-P LM test ^d	683.0***	364.8***	178.9***	532.2***
Hausman test ^e	2 652.0***	13.3	9.3	25.1***
Simulated effect of a 1-standard deviation increase in the 3 collective bargaining variables ^f	-0.043	-0.055	0.118	0.027
No. of observations	276	184	135	211
No. of countries	19	18	15	19
No. of control variables ^g	7	7	10	7

***, **, * means statistically significant at 10%, 5% and 1% levels, respectively. All regressions include a constant term; standard errors in italics.

- a) As the explanatory variables are not able to fully account for the rapid increase in Finnish and Swedish unemployment rates in the early 1990s (13 and 7.4 percentage points between 1990 and 1993 for Finland and Sweden respectively), data for Finland and Sweden in 1991 and 1992 are not included in the regression. Germany is only included for the post-unification period (1991 onwards). The sign and significance of the coefficients do not change when the output gap is replaced with time dummies, in the RE specification.
- b) The relative employment rate of the indicated group is measured as the logarithm of the ratio of the employment-population ratio for that group to the employment-population ratio of prime-age men.
- c) F-test for the joint significance of country fixed effects.
- d) Breusch and Pagan LM test for the joint significance of the random country-specific effects (i.e. that their variance is strictly positive). The statistic is distributed as a $\chi^2(1)$.
- e) Hausman (1978) specification test, distributed as a $\chi^2(k)$, where k is the number of regressors.
- f) Difference in log-points between the fitted relative employment rates at the data means and after increasing union density, bargaining coverage and centralisation/coordination index by one-standard deviation.
- g) In addition to the three collective bargaining variables, all models contain control variables for EPL (employment protection legislation), ALMP (active labour market policies), the tax wedge, unemployment benefits and the output gap. The regressions for youths and low-skilled workers also contain a linear trend and the minimum wage (relative to the median wage). The regression for older workers also contains the standard retirement age and the implicit tax rate on delayed retirement. The regression for women also contains a linear trend, the relative tax rate on second earners, paid parental leave entitlement and indices for child benefits and public spending on child care.

Source and definitions: See Annex Table 2.A.2.1 of Chapter 2.

not having completed upper secondary schooling. The regression results for union density, bargaining coverage and CC are qualitatively similar to those previously obtained in terms of the signs and statistical significance of the estimated coefficients.⁵⁷ Since the three collective bargaining variables might be thought of as jointly defining the bargaining context (and sometimes have off-setting effects on employment), Table 3.11 also presents the simulated effect on the relative employment of the different groups of simultaneous, one-standard-deviation increases in all three collective bargaining variables. Such a change is predicted to decrease employment for older and younger men relative to prime-age men – consistent with insufficient wage differentiation having a disproportionately adverse effect on groups other than prime-age men (Bertola *et al.*, 2002b; Blau and Kahn, 1999). By contrast, increased (and increasingly centralised/co-ordinated) union involvement in wage setting is predicted to increase relative employment for less-skilled workers and, especially, women.⁵⁸

Conclusions

This chapter's analysis is too limited in scope for it to provide direct guidance to making policy choices, including whether the guidelines related to wage setting in the OECD Jobs Strategy should be revised. Nonetheless, it contributes several essential building blocks to the more comprehensive analysis that will be required in order to reach such conclusions:

- The material surveyed in Section 1 confirms the plausibility of the Jobs Strategy diagnosis that excessively high aggregate wages and/or wage compression have been impediments to realising satisfactory employment performance in a considerable number of OECD countries during the past three decades. However, this evidence is somewhat fragile overall and highlights the complexity of wage-setting institutions in OECD countries and their implications for economic performance. The organisation of collective bargaining is an important part of the institutional environment affecting the functioning of the labour market and the updated indicators of the organisation of collective bargaining presented in this chapter should make an important contribution to the knowledge base that will be required for the comprehensive analysis of the institutional and policy determinants of good labour market performance that will be undertaken by the OECD Secretariat over the coming year.
- A satisfactory explanation of the determinants of recent labour market performance will need to take into account the sometimes substantial changes in wage-setting institutions (*e.g.* the significant declines in the share of the workforce whose conditions of employment are set by collective bargaining which have occurred in a number of OECD countries), as well as the complex dynamics between changes in these institutions and changes in performance. In this regard, several promising avenues for additional research can be identified. In particular, the impact of the organisation of collective bargaining on labour market performance appears to be contingent upon other institutional or policy factors and these interactions need to be clarified in order to provide robust policy advice. Another aspect that requires further analysis concerns the way in which the different aspects of bargaining – particularly the different aspects of centralisation and co-ordination – interact with each other to affect bargaining outcomes. For example, the use made in this chapter's analysis of a simple average of the centralisation and co-ordination indicators is *ad hoc* rather than grounded in a precise theoretical argument concerning the mechanisms involved.

- It is unclear how much emphasis should be placed on ranking organisational structures of collective bargaining in terms of their implications for macroeconomic performance. That structural orientation has informed a rich body of research, as exemplified by the influential study of Calmfors and Driffill (1988) and the literature it stimulated. However, the great difficulty encountered by researchers attempting to identify robust associations between differences in bargaining organisation and differences in macroeconomic performance suggest that quite different organisational forms may be capable of similar performance. For example, wage flexibility coupled with in-work benefits for low wage workers may be approximately equivalent to a more compressed wage structure combined with fiscal incentives to employers of low-skilled workers.
- The chapter's analysis confirms one robust relationship between the organisation of collective bargaining and labour market outcomes, namely, that overall earnings dispersion tends to fall as union density and bargaining coverage and centralisation/co-ordination increase. It follows that equity effects need to be considered carefully when assessing policy guidelines related to wage-setting institutions.

Notes

1. This evaluation came to the conclusion that, for example, in the area of minimum wages “reforms have largely not been implemented” (OECD, 1999). In other areas, the number of countries that took satisfactory action in the eyes of the Secretariat was very small, and the number of countries that took at least some, but limited action along the lines of the recommendations was not very encouraging, either: they were five out of ten where country-specific recommendations had been issued concerning “decentralisation of bargaining”; one out of eight concerning “wider wage distribution”; one out of six concerning “extension of agreements”; and three out of six in the “use of opt-out clauses”.
2. Reluctance to introduce greater decentralisation in wage bargaining may reflect the broader roles that collective bargaining and unions play in economic and social life, and which could be disrupted by such changes. The opposition of beneficiaries of the status quo (“insiders”) to efficiency enhancing reforms may also be a factor (Saint-Paul, 2004).
3. Many of the theoretical arguments made in this and the following sections should be understood as applying to total labour costs, including non-wage labour costs, even though the term “wage” is used for expositional convenience.
4. The equilibrium unemployment rate, which is sometimes referred to as the structural rate of unemployment or the non accelerating inflation rate of unemployment (NAIRU), refers to the unemployment rate that is consistent with stable inflation and a balance-of-payments equilibrium.
5. See Blau and Kahn (1999) and Nickell and Layard (1999) for excellent, but somewhat dated, surveys of this literature. Less exhaustive, but more recent surveys are provided by Blau and Kahn (2002), Nickell *et al.* (2003) and, more critically, Baker *et al.* (2004).
6. Bertola and Koeniger show that financial market imperfections can rationalize institutional interference with laissez-faire labour market outcomes, including competitive wage structures. They emphasise, however, that improving the efficiency of credit markets is the first-best policy response, albeit a solution that may be difficult and slow to implement. By contrast, Agell argues that the benefits of certain labour market “rigidities” are more or less inherent to the incompleteness of employment contracts and the social norms that impinge upon implementing certain forms of wage flexibility.
7. Kenworthy (2001b) provides a useful assessment of 15 such measures, showing that they embody different – but often only implicit – assumptions about the process of wage bargaining and that standard regression estimates of the impact of centralisation/coordination on macroeconomic performance is quite sensitive to the choice of indicator. In their review of past studies, Aidt and Tzannatos (2002) differentiate between six basic types of measures of bargaining coordination.
8. The limited availability of comparable cross-country/time-series data on relative wages means that it often is not possible to incorporate the intervening role of wages in such studies.

9. The “wage” data reported in this section are estimates of the total labour costs to employers (including employers’ mandatory social security contributions and the costs of providing fringe benefits). These data are primarily drawn from the OECD Economic Outlook (EO) database and represent a partial harmonisation of NIPA (National Income and Product Account) and other macroeconomic data from OECD countries (see OECD, 2004b). The primary underlying source for the EO data are the national income and product accounts of the member governments. Since there are substantial differences between OECD countries in average hours worked (see Chapter 1), data on average annual hours worked per employed person from the OECD Productivity database are used to convert the estimates of compensation per worker, which are available in the EO database, to an hourly basis. It should be understood that cross-country comparisons of compensation levels are affected by some differences of coverage and definition. Comparisons of within-country changes in compensation over time, including growth rates, should be less affected by these discrepancies.
10. All of the averages shown in Chart 3.1 refer to the sub-set of OECD countries for which data are available for the entire period considered.
11. Data for the 1960s are not shown in Chart 3.1, because they generally are not available for the measures displayed. However, the OECD unit labour costs series extends back to the 1960s for a sub-set of countries. The rate of increase of unit labour costs accelerated sharply between 1965-69 and 1970-74 in all twelve countries for which this comparison can be made (OECD, 2004a).
12. Note, however, that factors other than wage restraint can cause the wage share to fall, such as a change in the sectoral composition of employment towards industries with a lower wage share (de Serres et al., 2002). Typically, wage shares calculated from NIPA (National Income and Product Account) are affected by the share of self-employment in total employment, because all self-employment income is assimilated to capital income. That is not the case for the wage shares reported here. The NIPA data have been adjusted to attribute a portion of the income accruing to self-employment to labour compensation.
13. For the latter, Blanchard’s (1997) proposed estimator is adopted: the growth rate of the real wage per efficiency unit of labour is estimated as the difference between the growth rate of real compensation per hour worked and the Solow residual estimate of total factor productivity (TFP) growth in labour-augmenting form (i.e. the Solow residual divided by the labour share of total income in the business sector). This approach is only strictly appropriate under the maintained hypotheses of Harrod-neutral technological progress and factor prices that reflect marginal cost. Harrod-neutral technological progress provides a natural benchmark for such an analysis since it is a necessary condition for balanced growth.
14. In many countries, the growth rate of the real wage per efficiency unit is quite erratic (OECD, 2004a). This suggests that TFP growth over five-year intervals (or, at least, its estimate based on the Solow residual) provides a rather noisy benchmark for the sustainable rate of real wage growth.
15. Korea provides a notable example of real wage flexibility in response to changing macroeconomic conditions: real compensation per employee fell quite sharply in 1998, in response to the financial crisis that struck in 1997 (OECD, 2000a). However, this probably was not indicative of a longer-term trend towards increased wage restraint, since wages resumed growing as the economy quickly recovered.
16. Detailed national case studies provide a complementary methodology for investigating this question. Several recent studies have concluded that aggregate wage restraint – sometimes, as proxied by reductions in union density and bargaining coverage, or increases in bargaining co-ordination – played an important role in explaining the sharp improvements in employment performance observed during the 1990s in Ireland, the Netherlands and the United Kingdom, while the slower emergence of wage moderation in France has delayed and limited employment gains (Blanchard and Philippon, 2003; Nickell and van Ours, 2000; and Visser and Hemerijck, 1997).
17. If the economy could be thought of as moving along a negatively sloped aggregate labour demand curve, as wage bargaining changed the level of the aggregate wage, then a straightforward trade-off between wages and employment would be implied. However, the theories of equilibrium unemployment described above emphasise that the unemployment rate tends to adjust so as reconcile wage demands with employers’ willingness to pay. That is, the equilibrium wage and unemployment levels are both endogenous variables and they need not be positively correlated across long-run equilibriums. Nonetheless, such a trade-off might be observed, at least for some considerable period of time. For example, some models of “real wage resistance” and “medium-run” macro-dynamics imply that an increase in real wages relative to productivity may provide a useful indication that upward pressure on wages has increased and is in the process of undermining employment performance, even though rising unemployment eventually tends to halt or even reverse the initial increase in productivity-adjusted wages (Blanchard, 1997; Blanchard and Philippon, 2003; Caballero and Hammour, 1998a,b; Grubb et al., 1982; Nickell et al., 2003).

18. The procedure – adopted from Bertola *et al.* 2002a) – is as follows. First, a cross-country panel of data on real aggregate wages and unemployment is assembled, where the data are average values for five five-year periods (1970-74 through 1990-94) and one six-year period (1995-2000). Second, both the log aggregate wage and the unemployment rate are regressed on a full set of dummy variables for countries and periods. The correlation coefficients between the residuals from these regressions are reported in the first entry of the first column of Table 3.1.
19. When the individual data points are charted, certain countries do not conform well to the interpretation of shifting along a negatively sloped labour demand curve. For example, the United States begins with large positive residuals for both wages and unemployment in 1970-74 and then moves progressively downwards and to the left, ending up with a large negative unemployment residual and a modestly negative wage residual in 1995-2000. However, other countries conform less well, or not at all. For example, the wage residuals for Japan rose during most of the period while the unemployment residual tended to fall.
20. Also suggestive that a trade-off has been operative towards the end of this period, the correlation coefficient between the 1991-2002 change in the OECD estimate of the NAIRU for 22 (20) countries and the contemporaneous change in the wage share (the real wage rate per efficiency unit) in the business sector was 0.49 (0.58) and statistically significant at the 5% (1%) level.
21. A shift along a stable trade-off line could have been due to increased upward pressure on wages as unions attempted to capture a larger share of the quasi-rents associated with fixed investments (as hypothesised by Caballero and Hammour, 1998a, b), whereas a shift in the trade-off line could have occurred due to increased competition in international capital markets having raised the equilibrium unemployment rate associated with any given level of wage pressure (as analysed by Blanchard and Philippon, 2003).
22. Following Bertola *et al.* (2002a), the values shown in Chart 3.2 are the changes, between 1970-74 and the period indicated, in the estimated coefficients on period dummies in an OLS regression of unemployment net of country effects on the log aggregate wage net of country effects.
23. These relative earnings gains apply to women who are employed full time and, hence, do not necessarily imply gender convergence in weekly or monthly pay for all workers.
24. In certain cases, direct inspection of the data is highly suggestive of such a link. For example, the persistence of very high unemployment in Southern Italy is almost certainly due, to an important degree, to the fact that wage-setting institutions prevent the wage differential between the North and the South from being nearly as large as is the productivity differential (Bertola and Garibaldi, 2003).
25. More precisely, the level of *earnings* inequality necessary to achieve a strong employment performance is argued to have increased. It is unclear whether *income* inequality would be higher or lower under a high earnings inequality/high employment policy as compared to a low earnings inequality/low employment policy.
26. The relative employment rate for these groups is defined as the ratio of each group's employment-population ratio to the employment-population ratio of prime-aged men, who serve as the reference group. The relative employment rates for youths and older working-age persons are calculated using employment data for men, whereas the relative employment rate by gender is calculated using employment data for prime-aged persons. Analysing relative employment rates by demographic groups has the advantage that this indicator automatically controls for many country-specific factors that affect employment (Blau and Kahn, 1999).
27. The 50-10 percentile ratio for full-time men is used as the indicator of wage dispersion when calculating these correlations, since the employment prospects of low-skilled workers appear to be most affected by wage compression in the lower half of the earnings distribution (Bertola *et al.*, 2002b; Blau and Kahn, 2002).
28. Acemoglu (2002) argues that such a relationship need not hold, because greater wage compression in Europe appears to have stimulated greater investment in technologies increasing the productivity of less-skilled workers, implying less strongly skill-biased technical change than in the United States.
29. Such measures break the link between downwardly rigid wages and downward rigidity of unit labour costs. They have been used with some success in Belgium, France and the Netherlands (OECD, 2003a). Flexible wages topped-up by in-work benefits represents an alternative strategy for raising the incomes of low-skilled workers relative to the unit labour costs born by employers (cf. the United Kingdom and the United States). However, both types of measures represent a potentially large drain on the public purse, which must be taken into account when assessing policy choices.

30. The latter three of these four indicators imply collective action by both trade unions and employers; however, no separate measure of “employer density” or employers’ product market power was included in this analysis. The organisation rate of employers is notoriously difficult to assess. See EIRO (2004) for some rough recent estimates.
31. The government proposal “Fairness at Work” aimed to guarantee union representation “where the majority of the relevant workforce wants it” (Department of Trade and Industry, 1998).
32. In Canada, while closed shops are prohibited, non-unionised workers may be obliged to pay fees to the union for its bargaining service (“agency shop”). Swiss workers pay similar contributions to a joint bargaining fund.
33. On the relative importance of institutions for union decline, in comparison with other factors, see also Checchi and Lucifora (2002); Visser (2003); and Wallerstein and Western (2000).
34. The main reason for showing approximate figures is that various researchers in recent years have tried to determine coverage rates, particularly in Europe, but tend to come to slightly different results (see for example Ochel, 2000a; Traxler *et al.*, 2001; EIRO, 2002; and European Commission, 2003b). Where possible, coverage rates are adjusted for those employees in OECD countries that do not have the right to engage in collective bargaining (such as many civil servants, or sometimes supervisory personnel). Coverage rates for 1960 and 1970 presented by Ochel (2000a) and Nickell *et al.* (2003) are not used here, as there seemed to be too few reliable entries. See also Annex 3.A1 for definitions and methods used to arrive at the coverage rates shown in the table.
35. As is easily seen in Chart 3.4, OECD countries in 2002 were clustered at coverage rates above 70% (12 countries) or below 35% (eight countries), with just five countries in the range 35-70%.
36. Due to Australia’s unique industrial relations system, comparability of its “extension” arrangements with those of European countries is limited. Arguably, the extension of individual arbitrated changes to awards toward other employers in the industry has become much less important under today’s system of minimum safety-net awards (see OECD, 2001b).
37. The Spanish Ministry of Labour has also estimated for the OECD the share of workers covered through extension at below 1%. Unfortunately, no such data are available from Belgium, France and Portugal, which are usually classified as “high-extension” countries – Traxler *et al.* (2001) estimate their respective shares at over 25%. In France, in 2002 553 sectoral agreements were extended by the Labour Ministry, roughly two-thirds of all agreements signed (the government surveys the number of extended agreements, but not the number of workers additionally covered). More than half of these dealt with wage rates, the remainder primarily with working-time reduction and vocational training (Ministère des Affaires Sociales, 2002). By contrast, in Germany only 0.8% of all wage agreements valid at 31/12/03 had been extended (BMW, 2004).
38. The original OECD Jobs Study had argued that when unions can count on their wage rates to be imposed on non-union workers, “... an important restraint on wage demands, namely the need to avoid pricing their members out of work, is removed. Moreover, incumbent firms may be more willing to yield to high wage demands if they are sheltered from competition from firms engaging lower-wage workers”. It also stressed the indirect effect of extension arrangements on bargaining coverage and bargaining centralisation, since the very existence of such provisions is likely to encourage membership in employer associations and thus, by definition, employee coverage (OECD, 1994b, p. 16).
39. This is partly, but not entirely, due to the fact that Kenworthy’s comparisons of and correlations between indices mix individual authors’ centralisation and co-ordination scores.
40. This is no longer true today of Sweden, where sectoral bargaining is now predominant, and Australia, which has moved towards enterprise bargaining, with only a “safety-net” guaranteed at national level.
41. For example, Schnabel (2003), based on an establishment survey, estimates that in 2000 effective wages in German companies bound by collective agreements were 11% above contractual wages. See also the discussion of wage drift in France, Germany, Italy and Spain in Yakubovich (2002).
42. The most elaborate classification of bargaining centralisation so far is based on 12 levels (Traxler *et al.*, 2001). Previous OECD analyses (1994c, 1997a) had proceeded from the usual three-level classification, but had already tried to take into account multi-level bargaining by adding fractional values.
43. In France, a recent change in legislation allowed more “opt-outs” on non-wage issues, while keeping the “favourability” principle whereby lower level agreements cannot undercut sectoral wage rates.
44. Soskice (1990) made the point in his critique of Calmfors and Driffill that countries like Japan and Switzerland are less centralised, but at the same time highly co-ordinated.

45. As was mentioned in Section 1 above, there is no consensus among researchers about which aspects of bargaining centralisation and co-ordination most influence macroeconomic performance. All of the analysis presented in this section that uses the composite CC indicator was also conducted using instead the centralisation and co-ordination indicators, both individually and jointly. These alternate results are very similar to those presented here, particularly, those based on the co-ordination indicator. The governability indicator introduced in Box 3.3 was also analysed in a manner analogous to that used here for density, coverage and CC. No economically meaningful associations emerged between this indicator and any of the performance indicators (perhaps, due to the absence of any historic variation in this index) and these results are not presented.
46. The regression results reported in Table 3.11 are the only exception. A comprehensive analysis of the combined impact of policy and institutional variables on labour market performance is currently being prepared as part of a multi-year re-assessment of the OECD Jobs Strategy.
47. This finding is not an artefact of how the sample of countries is being partitioned into the low, intermediate and high groupings, although any such grouping is inherently somewhat arbitrary.
48. This is one of many instances in which certain national institutional configurations show above-average performance in one period, but below-average performance in another. These reversals of ranking have motivated the widespread adoption of the “shocks and institutions” framework by internationally comparative analyses of the institutional determinants of aggregate performance (Belot and van Ours, 2000; Blanchard and Wolfers, 2000).
49. In order to isolate, as much as is possible, the effect of age, wages for youths and older workers are calculated for men aged 15-24 and 55-64, respectively, relative to those for prime-aged men (25-54). For analogous reasons, the relative wage for women is calculated for prime-aged workers. The same approach is taken to calculating relative employment rates by age and gender in the next sub-section.
50. That greater union influence in wage setting should have been associated first with greater wage pressure and later with wage restraint is qualitatively consistent with a number of accounts of labour market developments since 1970. For example, it is argued that unions initially resisted pressures to moderate real wage growth in response to the slowing of productivity growth, and/or increased competition in capital markets, but eventually moderated their wage demands as they came to understand the cost in lost employment of maintaining an aggressive bargaining position on wages (Blanchard and Philippon, 2003). However, the timing implied by the coefficients in Table 3.7 does not concord well with these accounts, since union density is negatively correlated with upward wage pressures during 1975-79 and 1980-84, precisely when real wage resistance is often supposed to have been most pronounced.
51. The correlation coefficient between union density and earnings dispersion is not statistically significant for the period 1995-2000, but this appears to be a consequence of the fact that up-to-date data on earnings dispersion are not available for a third of the sample. (The correlation coefficient for 1999-94 is based on 27 countries, that for 1995-2000 on 18.)
52. Since these regressions do not include controls for other factors affecting the wage structure (e.g. trends in aggregate labour supply or the relative supply of different skill groups), omitted variable bias may be a serious problem. Consequently, the estimated coefficients may not provide reliable estimates of the causal impact of collective bargaining on wage outcomes. Multicollinearity is also moderately high between the three indicators of the organisation of collective bargaining (correlation coefficients ranging from 0.49 to 0.68), making it more difficult to isolate the distinct association of each characteristic of wage bargaining with the outcome variables.
53. Results are similar for regression models in which the CC indicator is replaced by dummy variables for intermediate and high CC. In particular, they provide no support for Calmfors and Driffill's hypothesis that intermediate bargaining leads to the worst outcomes (results not shown).
54. More precisely, the wage changes mentioned are relative to the average trend in all countries, rather than to no change.
55. The Model 1 results also indicate a curious pattern in which higher coverage has adverse impacts on overall unemployment and the employment-population ratio, but the opposite is true for union density. Multicollinearity between union density and bargaining coverage may account for this rather curious result.
56. These more structural estimates use the same independent variables and model specification as was introduced for the analysis of the employment effects of EPL in Chapter 2 (see Table 2.4 and the accompanying text). The motivation for confining the more structural modelling to investigating the impact of collective bargaining on relative employment rates for selected workforce groups is

threefold: i) the specification developed in Chapter 2 is especially well suited for such an application; ii) there is quite a strong theoretical presumption that adverse employment impacts will be concentrated on low wage workers; and iii) relative employment effects may be easier to isolate than absolute effects because many cross-country differences in the determinants of employment are effectively controlled for in the construction of the dependent variable (see Bertola *et al.*, 2002b, on the last two points).

57. These are random effects models and in the case of youths and the low skilled the Hausman specification test indicates that misspecification bias may be a problem. However, fixed-effects estimates are very similar.
58. The estimated coefficients of many of the additional model regressors (*i.e.* control variables) are statistically significant and imply substantial effects on the relative employment of these workforce groups. In particular, the coefficients for the tax wedge on labour earnings and the level of the minimum wage relative to the median wage – both of which can be considered as components of the wage-setting institutions broadly conceived – indicate significant and negative effects on the relative employment of youths and low-skilled workers.

ANNEX 3.A1

Sources of Data on Trade Union Density and Collective Bargaining Coverage

General

Trade union density rates (TUD) are based on surveys, wherever possible. Where such data were not available, union membership in European Union countries, Norway and Switzerland was calculated using administrative data adjusted for non-active and self-employed members by Prof. Jelle Visser, University of Amsterdam, along the model used in Ebbinghaus and Visser (2000) and divided by the corresponding total number of wage and salary earners taken from OECD *Labour Force Statistics*.

Collective bargaining coverage rates (CBC) were taken or estimated from several sources: where possible from labour force surveys, but also from EIRO (2002), European Commission (2003b) and direct submissions by OECD governments. Wherever possible, coverage rates were adjusted for employees (particularly in the public sector) who do not have the right to bargain.

For more detailed information on the sources of coverage rates in the 1980s and 1990s, see the 1994 and 1997 editions of the *OECD Employment Outlook*.

Australia

TUD: Data from 1976 onwards are based on labour force statistics in ABS, *Employee Earnings, Benefits and Trade Union Membership* and ABS, *Trade Union Members, Australia* (ABS Cat. No. 6310.0 and 6325.0, respectively). The figure for 1970 is from administrative data reported in ABS, *Trade Union Statistics* (ABS Cat. No. 6323.0).

CBC: ABS, *Employee Earnings and Hours, Australia* (ABS Cat. No. 6306.0), March 2001, and previous submissions by the Australian government.

Austria

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous submissions by the Austrian government.

Belgium

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous submissions by the Belgian government.

Canada

TUD: Data were supplied by Statistics Canada, on the basis of the *Labour Force Survey* (from 1984 onwards) and previous administrative series.

CBC: Data supplied by Statistics Canada.

Czech Republic

TUD: Estimated administrative data based on *Representativity Survey of Unions and Employers Associations* conducted by the Institut des Sciences du Travail of the Catholic University of Louvain on behalf of the European Commission; and ILO (1997).

CBC: European Commission (2003b).

Denmark

TUD: Adjusted administrative data series.

CBC: EIRO (2002). (On this basis, previous estimates contained in the 1997 *Employment Outlook* were revised upwards.)

Finland

TUD: Adjusted administrative data series.

CBC: submissions by the Finnish authorities.

France

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous estimates based on data supplied by the French authorities.

Germany

TUD: Adjusted administrative data series.

CBC: Annual establishment survey by the research institute of the German public employment service (IAB). (On this basis, previous estimates contained in the 1997 *Employment Outlook* were revised downwards.)

Greece

TUD: Adjusted and estimated administrative data series.

Hungary

TUD: Estimated administrative data based on *Representativity Survey of Unions and Employers Associations* conducted by the Institut des Sciences du Travail of the Catholic University of Louvain on behalf of the European Commission; and ILO (1997).

CBC: EIRO (2002).

Iceland

TUD: Labour Force Survey (from 1993 onwards) and adjusted administrative data series based on *Statistical Yearbook*.

Ireland

TUD: Adjusted administrative data series.

Italy

TUD: Adjusted administrative data series.

CBC: EIRO (2002). See also the 1997 *Employment Outlook*.

Japan

TUD: Data series from *Japanese Yearbook of Labour Statistics*.

CBC: Estimates based on the assumption that about 30% of trade union members are not covered by bargaining units and that about 10% of workers in bargaining units are not union members.

Korea

TUD: Data series from *Korean Yearbook of Labour Statistics*.

CBC: Estimates based on the assumption that about 20% of workers in bargaining units are not union members (see OECD, 2000a).

Luxembourg

TUD: Adjusted administrative data series, based on various trade union sources.

CBC: EIRO (2002).

Mexico

TUD: Adjusted administrative data series

Netherlands

TUD: Labour force survey (from 1992 onwards) and adjusted administrative data series.

CBC: EIRO (2002) and previous publications and submissions by the Dutch government.

New Zealand

TUD: Data from Robyn *et al.* (2002).

CBC: Data from Harbridge *et al.* (2003) and previous information supplied directly by R. Harbridge.

Norway

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous information published by T.S. Olsen (see the 1997 *Employment Outlook*).

Poland

TUD: Estimated administrative data based on *Representativity Survey of Unions and Employers Associations* conducted by the Institut des Sciences du Travail of the Catholic University of Louvain on behalf of the European Commission; and ILO (1997).

CBC: European Commission (2003b).

Portugal

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous estimates supplied by the Portuguese authorities.

Slovak Republic

TUD: Estimated administrative data based on *Representativity Survey of Unions and Employers Associations* conducted by the Institut des Sciences du Travail of the Catholic University of Louvain on behalf of the European Commission and ILO (1997).

CBC: EIRO (2002).

Spain

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous estimates supplied by the Spanish authorities.

Sweden

TUD: Labour Force Survey (from 1987 onwards) and adjusted administrative data series.

CBC: EIRO (2002) and previous data compiled by Christian Nilsson of Uppsala University.

Switzerland

TUD: Adjusted administrative data series.

CBC: Office Fédéral de la Statistique, OFS (2002) and previous publications in *La Vie Économique*.

Turkey

TUD: Administrative data from the *Turkish Statistical Yearbook*.

United Kingdom

TUD: Labour Force Survey (from 1995 onwards) and adjusted administrative data series.

CBC: EIRO (2002) and previous data based on New Earnings Survey and Workplace Industrial Relations Survey.

United States

TUD: Data from 1973 onwards based on the Current Population Survey (CPS).
1970 figure from administrative data based on union returns.

CBC: Current Population Survey (CPS).

For recent data on both indicators, see www.bls.gov/news.release/union2.t01.htm.

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