

**The Centralization of Wage Bargaining Revisited.
What have we learned?**

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Introduction

In our 1988 paper, “Bargaining structure, corporatism, and macroeconomic performance”, Lars Calmfors and I argued that the relationship between wage bargaining and macroeconomic performance might not be monotonic but hump-shaped; that economies with highly centralized and highly de-centralized wage bargaining would perform well, and those in the middle, with only moderately centralized bargaining, would perform worse. We adduced a certain amount of empirical evidence in support of this claim, and also we set out a very simple theoretical model to demonstrate that the hump could emerge under fairly plausible and weak assumptions about the economy.

There was a great deal of interest in the 1980s in the effects of unions and bargaining on macroeconomic stability and inflation, particularly in the Nordic countries¹. Much of this research was stimulated by the differing responses among the OECD countries to the oil shocks and productivity slowdown of the 1970s. Amongst the centralized economies, unemployment rose by an average of 2.3 percentage points in the period 1974-1985 from its average in the period 1963-1973. Among the intermediate economies it rose by 4.8 percentage points; and among the decentralized economies it rose by 2.9 percentage points. Similar comparisons emerge when using the ‘misery index’ of Arthur Okun (the sum of the unemployment rate and the inflation rate), and when using an alternative measure which is the sum of the unemployment rate plus the current account deficit. (Calmfors and Driffill, 1988, Table 2).

The collaboration between Lars Calmfors and me developed from contacts that began when Lars invited me to present a paper on macroeconomic stability and trade unions at a conference that took place in September 1984, in a magnificent seaside hotel in Saltsjöbaden, just outside Stockholm. My paper at that conference (Driffill, 1985) drew on a growing interest in strategic interactions among large economic agents, and the role these played in macroeconomic developments. This interest had grown

¹ Representative of a very large amount of research taking place at the time on these issues in the Scandinavian countries are the papers presented at the conference in Saltsjöbaden, Sweden, in 1984, on Unions, Wage Formation, and Macroeconomic Stability, later published in Calmfors and Horn, 1985. A later volume was devoted to research on the Nordic economies (Calmfors, 1990).

through earlier work on unions and stability (Driffill, 1984), and work with David Backus on credibility in monetary policy (Backus and Driffill, 1985). After Saltsjöbaden, the Institute for International Economics (IIES) in Stockholm very generously invited me back to spend six months there from September 2005 to March 2006. The work that was eventually published in *Economic Policy* in April 1988 emerged from discussions during that stay and a number of shorter subsequent visits to Stockholm. The genesis of this paper owes much to the hospitality of Lars Calmfors and his colleagues at the IIES, and also to the editors of *Economic Policy* who invited us to submit a paper on this subject.

Since that time, there has been the most extraordinary amount of research into labour markets and macroeconomic performance, and more generally into corporatism. Some of this work followed up and scrutinised claims made in Calmfors and Driffill (1988); some of it followed up other lines of research. Our paper had simply taken up some of the ideas that were being considered in the 1980s, formalised them, and used them as the basis for some strong empirical predictions. Mancur Olsons's (1982) *The Rise and Decline of Nations* was very influential. Olson attempted to explain the sclerosis that seemed to be afflicting a number of European countries. He hypothesised that over the course of time, within economies, various interest groups were likely to be able to build up power with which to defend their interests. Where those groups were encompassing, in the sense that they took account of all their effects on society, they were likely to be beneficial. But where they were big enough to be powerful, but not big enough to be encompassing, and thus likely to ignore some of their effects on society, these interest groups could work to the detriment of society as a whole. Olson applied this theoretical model very widely to economic problems of European countries in the 1980s. Among the many issues he considered, the effects of powerful unions on macroeconomic performance were just one. Flanagan, Soskice, and Ulman's (1983) book, *Unionism, Economic Stabilization, and Incomes Policy: European Experience* was a very valuable source of information.

What have we learned about these issues since then?

A brief review of Calmfors and Driffill (1988)

(a) Theory

We based our analysis on a model economy in which all workers were assumed to be union members and there was a fixed capital stock. It was a closed economy, and the structure of production was very simple. All goods were produced for final use (consumption, investment, or government consumption). There were no intermediate goods. The model was completely static, and predicted a relationship between the real wage and employment, and bargaining structure. It did not directly make predictions about the effects of bargaining structure on inflation or on the flexibility of nominal and real wages in the face of shocks to the economy.

Bargaining structure was assumed to be an exogenous variable. All other things were held constant, such as the tax regime, social security benefits, education and training, the human capital structure of the workforce, industrial relations legislation, and employment-protection legislation. Workers were assumed to be hired and fired as needed; there was no long-term relationship between worker and firm, whether based on firm-specific human capital, insider-versus-outsider issues, or other factors.

An important assumption concerns the modelling of aggregate demand. We assumed that total nominal demand in the economy had been fixed in advance, through the operation of monetary policy, and would not respond to the wage and price decisions reached by unions and firms. The base-line case assumed monopoly unions; that is, unions were assumed to set a wage rate, and the firms then set a price for their products, and the market determined demand for the good and the numbers of workers employed. Each union (or group of unions) set a money wage rate, taking as given the money wage rates set by each other bargaining unit. The outcome for the economy as a whole was modelled as a Nash equilibrium among the wage-setting units. Given the decisions made by all the other decision-makers, no decision-maker wished to alter her or his decision. The implicit assumption about monetary policy is that it is non-accommodating. Fixing total nominal demand is equivalent, in a simple economy in which the quantity theory of the demand for money holds, to fixing the money supply.

The model showed that the non-monotonic relationship between centralization and wage-setting emerged as a theoretical possibility under assumptions that, we argued, were quite plausible. The key assumption was that at higher levels of aggregation,

goods became less and less good substitutes for each other. While individual firms may have faced elastic demand, industries faced less elastic demands for their products, and at the level of the whole economy, the demand for goods was less elastic yet. Thus more centralized unions enjoyed more monopoly power, and would raise wages further. Offsetting this was the factor that when unions raise wages for their members, they also raise the prices of some of the goods they consume. The bigger the union, the stronger this effect, and the less incentive they have therefore to raise wages. The interaction of these two effects may, depending on the elasticities of demand, lead to the non-monotonic relation between the centralization of bargaining on the one hand and real wages and employment on the other.

(b) Empirical Analysis

Our empirical analysis looked at the relationship between indices of centralization and/or coordination of bargaining, on the one hand, and unemployment or a misery index (a combination of unemployment and inflation) on the other. For the most part it was a simple bivariate relationship. Other factors that might have affected macroeconomic performance were not considered.

How should corporatism/centralization/coordination of bargaining be defined and measured? We took a narrowly defined measure, arguing that ‘corporatism’ had been defined in many and various different ways, and could be taken to include many different factors, some fairly objectively measurable, others more subjective, and that there was a danger of circularity. There has been much reconsideration of the definitions and the data since then.

We took an index based on “the extent of inter-union and inter-employer cooperation in wage bargaining with the other side” (Calmfors and Driffill, 1988, p17). The index was the sum of two elements: the level of coordination within national trade union confederations and within national employer organisations; and the number of existing central union federations and their cooperation, and the number of existing central employer federations and their cooperation. Each index was scored 1, 2, or 3. The ranking that emerged is described in table 5.

Empirical Critique and Developments

The rankings and scores were disputed from the outset, in some cases because they ignored coordination amongst players that was not represented in the visible structures, and in some because they took no account of the influences of other factors like minimum wages, as in France. Switzerland, it was argued, was in fact a neo-corporatist system with heavy involvement of employers' organizations in policy design and much more coordination than the centralization indices indicated. (These are comments that followed the presentation of the paper in 1988, published in *Economic Policy*, 1988.) David Soskice (1991) argued that Japan and Switzerland had not been treated properly, and that when they were treated properly, a linear relationship not a hump emerged. The thrust of his argument was that CD had paid too little attention to the role of coordination among employers organizations, and that too much attention had been paid to the level at which bargains were struck (firm/industry/economy) and too little to the extent of coordination among participants to wage setting across units (again, firms or industries as the case may be). Thus he also revised the relative positions of France, Italy, and the UK. Robert Flanagan (1999) writes that, after using a wide variety of indicators of economic performance and new data on the centralization and coordination of collective bargaining, a 1997 OECD study concluded that there was no evidence to support the Calmfors and Driffill hypothesis in the 1990s.

Nevertheless, Lars Calmfors (2001) reports a number of studies that have found a hump-shaped relationship between centralization or coordination and economic performance. He reports six studies that show a monotonic relationship, and five with a hump. The average unemployment rate for low and medium relative to high coordination economies is 6.8 and 3.2 percent among the monotonic studies and 4.9 and 6.8 percent among the non-monotonic studies. (The studies he reports are these. Monotonic: Layard et al, 1991; Zetterburg, 1995; Scarpetta, 1996; Bleaney, 1996; Elmeskov *et al*, 1996; Nickell and Layard, 1999. Non-monotonic: Zettterburg, 1995; Bleaney, 1996, Scarpetta, 1996; Elmeskov *et al*, 1996 (two entries)). However, all these studies appear to suggest that high coordination leads to lower unemployment than does low coordination.

The more important way in which empirical research in this area has developed is in the direction of considering bargaining structure as not the only but one of many

factors that might affect unemployment and other measures of economic performance, and also taking account of dynamics of effects, rather than simply looking at static models. Recent examples in this vein include Nickell, Nunziata and Ochel (2005) and Blanchard (2005). Nickell *et al* consider the evolution of unemployment in the OECD from the 1960s to the 1990s, and allow for the effects of the unemployment benefit system, systems of wage determination, employment protection legislation, labour taxes, and barriers to labour mobility. In addition to these structural variables, which evolve over time, they also allow for the effects of shocks to interact with the structural features. They find that a fall in union density causes a significant fall in unemployment; higher coordination in bargaining reduces unemployment, and the effect of coordination is greater when union density is greater; the effect of coordination is greater when the tax rate on employment is higher. Here then the effect of bargaining comes principally through coordination, and the effect is monotonic. However, they do not look for a non-monotonic effect, so this does not provide very strong evidence against such an effect. This study shows that there is an important effect of bargaining structures when controlling for other influences on unemployment. Bargaining is not the only or principal influence, but it has a clear effect. Employment protection legislation does not appear to raise unemployment. But the replacement ratio, and the duration of benefits have a clear effect. Employment taxes have a positive effect, while labour demand shocks and productivity (tfp) shocks reduce unemployment, and real import price shocks, money supply shocks, and real interest rates increase unemployment.

Blanchard's (2005) account puts rather more weight on real and nominal wage rigidity, on factors affecting flows in the labour market, and on the interaction of shocks and institutions. He in fact expresses a degree of doubt about the amount of information that can be extracted from an exercise like that of Nickell *et al*. ("It is clear however that the number of shocks, institutions, and interactions is sufficiently large that the ability of such panel data regressions to tell us what exact combination of shocks and institutions matter is limited. Such regressions allow us to check for simple and partial correlations; they are unlikely to tell us about which combination of shocks and institutions is responsible for unemployment." page 26.) He actually seems to place little importance on collective bargaining, density, coordination, and so on.

While the empirical status of the hump has been questioned by subsequent research, one of Calmfors and Driffill's theoretical predictions has been widely confirmed: highly coordinated or centralised bargaining is associated with lower unemployment and better economic performance. The many studies referred to in the previous paragraph confirm this. Baker *et al* (2005) in their cross country study, find that co-ordination of bargaining is among the variables that consistently has a significant negative effect on unemployment.

Theoretical developments

Theoretical modelling of the relationship between centralization and unemployment has developed in various directions. The issue of how labour markets would interact with monetary policy was obviously a key question that Calmfors and Driffill (1988) did not address. Its importance grew with the impending arrival of the European Central Bank in 1999 when Economic and Monetary Union was established in Europe. In the late 1980s and early 1990s monetary policy shifted towards what is now the dominant model, consisting of an independent central bank operating by means of setting short-term interest rates, with an inflation target. Torben Iversen and David Soskice (1998, 2000), and Alex Cukierman and his collaborators, have taken up this issue and modelled the interaction between union wage setting and monetary policy. Coricelli, Cukierman, and Dalmazzo (2005) refer to the very many papers on this and related topics and cite a good number of them.

Cukierman and Lippi (1999) consider the interaction of wage setting (centralization of wage bargaining, or CWB) and central bank independence (CBI). They take an economy with several unions, and a completely unionised labour market, in which unions face less elastic labour demands as they become more centralized. They set nominal wages in anticipation of the reaction of the central bank. The unions are assumed to like higher real wages and full employment of their members, but to dislike inflation. The Central Bank is assumed to have conventional objectives. It has a higher employment target than the unions, and a zero inflation target. The unions set wages before the central bank sets the price level. The central bank tends to

partially accommodate the wage increases set by the unions, and the CB may be more or less averse to inflation. Inflation is increasing in the excess of the union-set wage over the competitive real wage. When unions are more centralised they have greater market power, which they could use to raise real wages by more, but on the other hand they take more account of the effect they have on inflation, and thus moderate their wage demands. The interaction of the two forces can give rise to a hump-shaped relationship between centralization and real wages/unemployment for a given degree of central bank independence. A fully decentralized labour market may give lower wages and unemployment and lower inflation than a fully centralized one.

The key question they consider is: what happens if you make the central bank more independent (conservative) or inflation averse? Under certain circumstances it can lead to unions setting higher real wages and the outcome can be higher unemployment. It is possible that inflation is higher also. With a single union, the socially optimal outcome emerges when the central bank is ultra-liberal, which, as it were, scares the union into setting a wage consistent with zero inflation. Thus this model gives some unexpected and counter-intuitive results.

Compared with Calmfors and Driffill (1988), Cukierman and Lippi introduce an accommodating Central Bank. The Central Bank in their analysis is a short-term optimizer: it lacks commitment *ex ante* to an objective of policy. They also introduce another key ingredient into the analysis: the unions care about the rate of inflation. This feature explains why an ultra-liberal central bank can induce an inflation-averse centralised union to restrain wage increases. Calmfors and Driffill omitted both of these elements, whose inclusion greatly increases the range of outcomes the model can predict, depending on the strengths of the preferences of the unions and Central Bank regarding inflation.

While Cukierman and Lippi's result that, with highly centralized unions, a more conservative central bank may induce higher unemployment and inflation is striking, and suggests that the set-up of the European Central Bank with its hawkish stance on inflation may have undesirable and unintended consequences, one is bound to wonder about its empirical significance. Within the context of a single European market, unions within any individual European country cover only a small fraction of the

labour market within any particular industry, and certainly they cover at most only a small fraction of the Euro zone labour market as a whole. Jean-Pierre Danthine and Jennifer Hunt (1994) addressed the question of how international integration of economies would affect bargaining outcomes. They argued that openness of the economy would be likely to lower the hump. Greater international competition would reduce the ability of domestic industry unions to raise wages. At the same time the national price level would be less affected by the wage decisions of domestic unions. Their analysis suggests that the practical significance of strategic interactions between unions and the ECB might be very limited.

Posen and Gould (2006) provide valuable empirical evidence on this question. They explore recent data on wage restraint and its determinants for a panel of OECD economies. Their exhaustive attempts to find empirical support for the theoretical predictions of Iversen and Soskice (1998 and 2000), and Cukierman and Lippi (1999) find nothing. If anything, the evidence points in the opposite direction. Increased credibility of the monetary institutions has caused an increase in wage restraint, rather than the predicted fall.

The concept of corporatism has been discussed and analysed more broadly in books such as those of Matti Pohjola (1992), and Joop Hertog and Coen Teulings (1998). There are many ramifications of the concept. A topic that has been widely taken up in the literature is the implications of centralized bargaining for the distribution of earnings and relative pay of different groups of workers. The compression of differentials, leading to problems in recruiting higher skilled workers, was one of the factors that led the Swedish employers organization to withdraw from centralised bargaining.

There has been a massive rise of research into the relationships between institutions and growth, which include labour market institutions among the many factors that have affected growth. Daveri and Tabellini (2000), for example, link the fall in growth rates and rise in unemployment among some European economies to the combination of rising taxes on labour and strong trade unions. Strong unions, they argue, enable workers to shift the burden of increasing labour taxes onto employers, who respond by substituting away from employment of labour to employment of

capital, lowering the return on new investment and discouraging saving and growth. They analyse only a short period of time, less than forty years, so it is unclear from their work whether the effects on growth rates are permanent or merely transitory. But their arguments illustrate a mechanism through which the interactions of labour market institutions and taxation might have a prolonged effect on growth rates.

Changes on the ground

How have labour markets, and economies more generally, changed since 1988? What has happened to institutions and to macroeconomic performance?

There has been a fall in inflation, and convergence at low inflation rates, as figure 2 shows. Inflation in OECD economies now lies in a range between zero and three percent, roughly speaking, and has done so for the past three or four years.

Unemployment has not converged, of course. It ranges between roughly four and eleven percent (see figure 1). The convergence in inflation results from the current implementation of monetary policy. Independent central banks (starting around 1988) use the short-term interest rate as the policy instrument. The adoption of inflation targeting, or something very close to it, with an inflation target around 2 percent is nearly universal.

The collapse of communism in 1989, and the subsequent opening up of Eastern Europe, has affected some economies greatly. Various Eastern European countries (Estonia, Latvia, Lithuania, Poland, Hungary, the Czech Republic, Slovakia, Slovenia) are now members of the EU. The collapse of the Russian economy hit Finland very hard. German unification had a potent effect on Germany. Very high unemployment persists in Eastern Germany. Driffill and Miller (2003) explain this by noting the effects of the extension of West German wage bargaining institutions to East Germany. The West German unions were very keen to achieve convergence of wages between East and West Germany as quickly as possible, and so pushed up eastern wages ahead of productivity growth. The relatively rapid real wage growth in the East may have helped to reduce the flow of Eastern workers to the west and limited Eastern competition for jobs held by West Germans. Meanwhile the effects of high unemployment in the East were mitigated by generous social security benefit payments and substantial budget transfers from West to East. The pressures of high

unemployment and low profitability in Eastern Germany have been among the factors leading to greater flexibility within German wage setting in recent years, which is discussed in more detail below.

Across the OECD countries as a whole, there has been a general downward drift in trade union membership, in coverage of collective bargains, and in the amount of coordination of bargaining among unions. Trade union density fell from 34 percent in 1970 to 21 percent in 2000 (over a weighted average of a constant sample of OECD countries). Coverage has fallen from 45 to 39 percent on the same basis. Centralization of bargaining, on the OECD's measure has fallen notably in Australia, Denmark, New Zealand, Spain, and Sweden, and slightly in one or two other countries. The 'Swedish model' of highly centralized and coordinated wage setting disintegrated during the 1980s. The Danish approach labelled 'flexicurity' by the OECD has been widely noted. Coordination of bargaining, again on the OECD's measure, has fallen in Australia, Austria (slightly), Denmark (slightly), New Zealand, Portugal (slightly), Spain, Sweden, and the UK (slightly), though there have been increases in Belgium, Italy, and the Netherlands. These changes have accompanied the continued downward drift in the share of employment in manufacturing and other industries in which unions were traditionally strong. Privatisation of public enterprises has weakened unions' grip, as have the growth of service industries, the rise in the employment of women and part-time workers, trends general throughout the OECD.

At the same time the monopoly powers of unions have been weakened by the onward march of globalisation, the continued fall in costs of transport and communication, the advance of IT, the growth of outsourcing of manufacturing and services to emerging markets. The rise of India and China and other emerging markets, all have made for greater competition and undermined the monopoly positions that unions might have exploited. Within the EU, the 'completion' of the Single Market and the introduction of the Euro in January 1999 were intended to increase competition. Openness of economies, as measured by imports and exports relative to GDP, has generally continued to increase.

Public policy has also changed in ways that have weakened union influence. A succession of changes to industrial relations laws in Britain in the 1980s weakened

union power. The changes included a ban on secondary picketing, a requirement to hold ballots before strikes, the removal of protection from unofficial strikers, and greater freedom for employers not to recognise unions for bargaining. In Britain and a number of other countries, the benefits system has been changed in the direction of lowering replacement rates, limiting the period of availability of benefits, and placing greater pressure on recipients to look for and take jobs. This policy has been pushed in Britain a great deal (harassment of the work-shy). In some countries employment protection legislation has been scaled back, to allow for more temporary employment (OECD Employment Outlook, 2004). Some countries have made more effective use of active labour market policies.

Germany: an example of increased labour market flexibility?

Germany provides an example of modest shifts towards a more flexible and decentralised system of wage determination, taking place through changes at a number of levels in a system that appears structurally unchanged.²

Industry-level wage bargaining has dominated in Germany for decades, and continues to do so. At the centre of the bargaining process is a system of industry-wide collective wage agreements (the “Flächentarifvertrag”). Recently, however, there have been moves towards more flexible lower-level bargaining procedures, and some authors argue that the erosion of the “German model” may have already started (see OECD, 2004). Many of the changes in the wage bargaining process have gone unnoticed partly because trade unions have been supportive and the collective agreements have been pragmatic (Streek and Rehder, 2003). Two manifestations of greater flexibility have been, firstly, the emergence of company-level alliances for employment and competitiveness (Betriebliche Bündnisse zur Sicherung von Beschäftigung und Wettbewerbsfähigkeit), and, secondly, the spread of contingent pay arrangements.

“Betriebliche Bündnisse” are company level pacts between the bargaining parties which deviate from the industry-wide collective wage agreements. Employees agree to lower pay, higher productivity, or reallocation of work, in exchange for security of

² This section draws heavily on work by Christian Spielmann (2006).

employment or company guarantees on investment. The legal status of company pacts that lead to poorer pay and conditions for workers than the industry agreement has gradually been strengthened. The majority of company pacts so far have been concerned with working hours, but increasingly they also deal with pay (OECD, 2004).

Trade unions have agreed to make remuneration of unionised labour more variable. Payments are increasingly linked to individual worker or company performance. A recent study (Kurdelbusch, 2003) shows that, of 90 major German enterprises, more than half had included such arrangements in their contracts. These concessions have reduced union power, but have also prevented a major flight out of the collective bargaining agreements.

A number of plant-level agreements, many in the motor industry, have provided striking examples of the gradual changes that appear to be under way. In 1993, with agreement of the union, IG Metall, Volkswagen AG deviated from the industry agreement and introduced a four-day-week without any pay compensation. In return VW promised that 30 000 jobs had been saved. Shortly afterwards, similar agreements were made for the mining sector. Volkswagen's project "5000*5000", settled in June 2001 after 2 years of negotiations, was intended initially to create 5000 jobs for three years at two production sites in Lower Saxony. Volkswagen proposed creating jobs with longer and more flexible hours and lower pay, in order to match costs in production sites outside Germany, to which it threatened to move production if the unions would not agree. Despite union opposition and accusations claims of VWs "social dumping", but with support from the public and politicians for the plans, a compromise was reached largely on the lines initially proposed. Similar agreements were reached between IG Metall and BMW in 2005 and Daimler-Chrysler in 2004.

Pressure due to increased international competition and the problems arising from unification, reinforced by pressure from the government, has led unions to be more flexible, and created a climate of give and take in German wage bargaining over the last decade. Opt-out clauses are used more often and unions seem to be increasingly cooperative. The German example suggests that changes in bargaining may occur

without any obvious structural changes to bargaining arrangements, and thus be difficult to observe and measure.

Survival of Corporatism

Meanwhile, corporatism is not dead. In Ireland, for example, there has been a succession of tripartite social pacts to limit inflation and promote high employment, sometimes involving the government in offering lower tax rates. The Netherlands' success in returning to lower unemployment has been characterised as partly a success of a corporatist model (Nickell and van Ours, 2000).

Blanchard and Philippon (2004) examine whether the quality of relations between unions and firms affects unemployment. Their enquiry is stimulated by the Dutch experience following the Wassenaar accord of 1982, but it takes in most OECD countries. They find that it lowers unemployment significantly, even when other institutions and shocks are allowed for. Their results point up the limited scope of economic models which focus on impersonal market interactions or strategic interactions between players in a game (very often a non-cooperative game) and pay no attention to the quality of dialogue or degree of trust between them. Blanchard and Pilippon's result shows that there is more to cooperation between players in a game than a choice of strategy, and in fact echoes an often-made criticism of much game theory, that it strips out much that is important in interactions among economic agents. Their findings show that a broader analysis is needed. They concede that the next step is to understand how good industrial relations and trust are established, and in what conditions it is likely to be maintained. Their findings point to an important line of research.

All the theory and recent experience reinforces the view that many factors affect macroeconomic performance, not just measures of bargaining structure. Many other aspects of labour markets influence unemployment rates. Nevertheless, it may be informative to look at the scatter diagrams of unemployment plotted against coordination and centralization for the OECD countries, as is done in figures 3 and 4. The data are unemployment rates averaged over the period 2000-2003 (four annual observations) and the coordination and centralization figures for 2000 (OECD data). There are observations for twenty countries. What do we find? There are only a few

observations with coordination equal to one, two, or three. Most have a value of four, and there is wide variation among them in unemployment rates, from the Netherlands (3%) to Italy (9.4%), though one has to keep in mind that Italy combines the low-unemployment north with the high-unemployment south. The only more coordinated countries are Belgium and Norway on 4.5 and Finland on 5, with very high unemployment, and rather spoiling any hump-shaped pattern.

For all these countries, other factors also affect unemployment. In Finland's case, it may be argued that the country has not fully recovered from the collapse of its markets in the Soviet Union in 1990. Among the 4s, the Netherlands benefits from its cooperative unions and relatively flexible labour markets. Germany's social security system still provides high replacement rates and relatively poor incentives to work. Overall, there is very weak evidence of a non-monotonic relationship between coordination and unemployment. An ordinary least squares regression of unemployment on coordination and coordination squared finds almost no relationship. In this regression, the data consists of a cross section of 20 countries; the data on unemployment are an average of the four years 2000-2003, and the coordination data refer to the years 1995 to 2000 (data in Table 4).

$$\hat{u}_i = 5.95 + \underset{(s.e.=3.04)}{0.34} (coord) - \underset{(s.e.=0.58)}{0.08} (coord)^2$$

$$R^2 = 0.005$$

However, it may be argued that a simple regression gives excessive weight to small countries. It may be that a weighted least regression would give a more appropriate picture. One can justify using weighted least squares, using the square root of population as the weight on each country's observation, if the variance of the error associated with that observation is inversely proportional to the size of the country's population. This might come about if each large country was, in terms of its measure of coordination or centralization of bargaining, and its unemployment rate, effectively the average of several smaller countries. Thus, a 'large' country, with a population and labour force n times that of a 'standard-sized' country, might be regarded as the average of n standard countries. If all such 'standard-sized' economies had the same

error variance σ^2 , the ‘large’ country would have error variance equal to σ^2 / n . If weighted least squares³, with population weights gives

$$\hat{u}_i = 0.18 + \underset{(s.e.=2.47)}{6.33} (coord) - \underset{(s.e.=0.48)}{1.16} (coord)^2$$

$$R^2 = 0.84$$

Here the predicted unemployment rates at these levels of coordination indeed are non-monotonic. The predicted unemployment rates at each level of centralization are shown in Figure 3. They form a u-shaped curve, much along the lines hypothesised by Calmfors and Driffill (1988). The predicted unemployment rates are 5.34% for the least coordinated countries (with a score of 1), rising to a peak of 8.70% for moderately coordinated countries (those with a score of 3), and then falling to 2.76% for the most coordinated economies (with a score of 5). The move from un-weighted to weighted-least-squares gives greater weight to the observations on large economies than to small ones in the regression. Thus the low unemployment economies with low co-ordination (like the United States and United Kingdom) receive higher weight, as do the larger high unemployment countries with moderate degrees of coordination, including Spain, France, Germany, and Italy. On this evidence, high coordination in bargaining has a marked effect in bringing down unemployment.

The picture is at first sight less promising looking at unemployment versus centralization, where most countries are given an index of either 2 or 3, and within each category there is a very wide range of variation. The 2s run from Switzerland (3.2% unemployment) to Italy, and the 3s from the Netherlands to Spain (11.1%). Within each of these centralization categories there are good explanations for the variety of unemployment figures. Here again, a standard ordinary least squares regression of unemployment of a constant, centralization, and centralization squared shows no significant relationship. However, running the same weighted regression as above, weighting observations by the square root of the population⁴, gives

³ The weighted least squares regression is valid if the errors in the weighted regression are homoskedastic. This was tested using the Breusch-Pagan test. In carrying out this test, the standardised weighted errors were regressed on a constant, the square root of population, population, coordination, and coordination squared, and, separately, on sub-sets of these variables. No evidence against the null hypothesis of homoskedasticity was found. In addition the null hypothesis of normality of the weighted residuals is not rejected on a Jarque-Bera test with a p-value of 0.62.

⁴ The weighted residuals from the weighted regression showed no evidence against the null hypothesis of homoskedasticity on a Breusch-Pagan test. In doing this test, weighted residuals were regressed on a constant, the square root of population, population, centralization and centralization squared, and

$$\hat{u} = 0.97 + \underset{(s.e.=1.9)}{5.3} (\text{centralization}) - \underset{(s.e.=0.42)}{0.95} (\text{centralization})^2$$

$$R^2 = 0.87$$

This regression also predicts a u-shaped relationship, with predicted unemployment for the most centralized at 5.32%, the peak for moderately centralized countries (those with a score of 3) at 8.33%, and the most centralized (with a score of 5) at 3.79%. Here again, high centralization strongly reduces predicted unemployment. While highly suggestive, these regressions omit large numbers of relevant variables, and so the results cannot be taken as conclusive. Though with twenty observations only a few regressors could be added before running out of degrees of freedom. These results suggest that, despite the changes that have occurred since the 1980s, there remains empirical support for the hump-shaped hypothesis. The data suggest that high centralization and high coordination produce more favourable outcomes than extremely low values of each indicator.

The stability of inflation rates in the last few years (figure 1) may suggest that the unemployment rates averaged over 2000-2003 might be taken as equilibrium rates, reflecting long-run forces, such as the effects of labour market institutions. However, the scatter diagrams of inflation against unemployment show that relative to the past, we have seen in the last five years or so large movements of unemployment against relatively small changes in inflation, as Charles Bean's slides from his comments on Blanchard (2005), reproduced below, show. This may be showing up the effects of favourable supply conditions, which have progressively pushed the equilibrium unemployment rate downwards over the period. Or it may indicate that, with inflation expectations firmly anchored at low levels by credible monetary institutions, it is possible now to have large swings of unemployment around the NAIRU or equilibrium rate without rapid changes in the inflation rate. Either way it weakens the force of the equilibrium unemployment rate, and suggests that there might be further large changes in unemployment without inflation rising. So the status of recent unemployment rates as indicating equilibrium rates is questionable.

separately sub-sets of these variables. In addition the null hypothesis that the weighted residuals are normally distributed is not rejected on a Jarque-Bera test (p-value = 0.83)

Recent experience of inflation and unemployment suggests the possibility that, as a low inflation world becomes firmly established, the responses of the economy to demand and supply shocks changes, and wage bargaining changes. Are the economies of the Euro Zone moving back into a world that has many features in common with the world of the 1950s and 60s? The common features are low inflation, fixed exchange rates, and individual economies left without an independent monetary policy. In this world, employment in each country is affected by the real exchange rate, which can no longer be changed through nominal exchange rate movements. One country's competitiveness relative to the rest of the Zone can be increased only by its having lower nominal wage increases, other things being equal. This places a large burden of adjustment on wage moderation as a route to low unemployment. The experience of Italy in the last five years (2001-2006) illustrates that worsening relative labour costs are associated with low growth. At the same time wage moderation in the Netherlands and Ireland achieved through coordinated wage bargaining, and indeed through corporatist tripartite agreements, have contributed to high employment and high growth rates.⁵ This fact, combined with evidence of growing inertia in the rate of wage increases may revive the attractiveness of incomes policies as a tool of macroeconomic management, as they were in the 1960s.

Conclusions

Calmfors and Driffill (1988), in their empirical work, did not take account of other factors than simply centralization of bargaining, such as informal coordination of bargaining across groups, and the density of unions. The simple bivariate relationship was too simple minded. Other factors are important in determining the equilibrium unemployment rate, particularly the benefit and social security system, and active labour market policies. A multivariate analysis is needed, and indeed several have been provided, such as Nickell *et al* (2005). Theoretically, we omitted factors that have subsequently proved to be important, such as openness, and the effects of the

⁵ It is interesting to note that, as a referee for the Journal has pointed out to me, despite the success of corporatist policies in Ireland and the Netherlands, and highly coordinated bargaining arrangements in other countries, the official international commentators like the OECD and the IMF have been cautious about recommending more coordination as a route to lower unemployment. They have grudgingly accepted the success of these pacts, while they continue to advocate cuts in benefit, employment protection laws, and so on.

macroeconomic policy context on wage setting. There are other factors, which may be important, such as the role of intermediate goods.

Nevertheless, both as a theoretical and an empirical proposition, the non-monotonic relationship between a measure of unions' coordination and unemployment has not entirely been overturned. While some empirical studies do not find evidence of it, and quite a few do not look for it, a good number continue to find empirical evidence for it. Theoretically, the proposition remains intact, although the empirical relevance for the model on which it is based is questionable. Whatever the fortunes of the hump, the prediction that highly coordinated or centralized bargaining would lead to wage restraint and low unemployment has survived scrutiny.

Over the last seventeen years, unions have lost membership, power and influence. The general direction of change has been towards less centralised and slightly less coordinated bargaining. Higher competition in product markets has reduced monopoly power that unions can exploit. Public policies on job protection legislation, on unemployment benefits, and training have been very important in bringing down average unemployment rates in a number of countries. Nevertheless, the situation of many Euro Zone economies, with limited tools available for macroeconomic management, and with strong incentives to reduce production costs relative to their competitors as a route to low unemployment, may lead to a revival of incomes policies and other corporatist measures to improve performance.

Much of the academic literature has taken labour market institutions separately, but in view of the vast amount of recent work on institutions on growth and macroeconomic performance, including political institutions and financial markets, perhaps collective bargaining and related matters should be seen as part of broader research on institutions and macroeconomic performance in the medium term and long-term growth. While these institutions have generally been taken as the exogenous variables, they should perhaps also been seen as endogenous.

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Tables

Table 1

Trade Union Density in %				
	1970	1980	1990	2000
Australia	44	48	40	25
Austria	63	57	47	37
Belgium	41	54	54	56
Canada	32	35	33	28
Denmark	60	79	75	74
Finland	51	69	72	76
France	22	18	10	10
Germany	32	35	31	25
Greece		39	32	27
Iceland		75	88	84
Ireland	53	57	51	38
Italy	37	50	39	35
Japan	35	31	25	22
Luxembourg	47	52	50	34
Netherlands	37	35	25	23
New Zealand	56	69	51	23
Norway	57	58	59	54
Portugal		61	32	24
Spain		7	11	15
Sweden	68	80	80	79
Switzerland	29	31	24	18
UK	45	51	39	31
United States	27	22	15	13
OECD	42	47	42	34 unweighted average
OECD	42	47	42	36 unweighted average (unchanged sample)
OECD	34	32	27	21 weighted average
OECD	34	33	26	21 weighted average (unchanged sample)

Source: OECD Employment Outlook, 2004, chapter 3, table 3.5.

Table 2

Collective Bargaining Coverage in %			
	1980	1990	2000
Australia	80	80	80
Austria	95	95	95
Belgium	90	90	90
Canada	37	38	32
Denmark	70	70	90
Finland	90	90	80
France	80	90	90
Germany	80	80	90
Greece			
Iceland			
Ireland			
Italy	80	80	80
Japan	25	20	15
Luxembourg			60
Netherlands	70	70	80
New Zealand	60	60	25
Norway	70	70	70
Portugal	70	70	80
Spain	60	70	80
Sweden	80	80	90
Switzerland	50	50	40
United Kingdom	70	40	30
United States	26	18	14
OECD unweighted average	67	66	60
OECD unweighted average (unch. sample)	67	66	64
OECD weighted average	45	38	35
OECD weighted average (unch sample)	45	44	39

Source: OECD

Table 3 Centralization of Bargaining

	1970-74	1975-79	1980-84	1985-89	1990-94	95-2000
Australia	4	4	4	4	2	2
Austria	3	3	3	3	3	3
Belgium	4	3.5	3	3	3	3
Canada	1	1	1	1	1	1
Denmark	5	5	3	3	3	2
Finland	5	5	4	5	5	5
France	2	2	2	2	2	2
Germany	3	3	3	3	3	3
Greece						
Iceland						
Ireland	4	4	1	2.5	4	4
Italy	2	2	3.5	2	2	2
Japan	1	1	1	1	1	1
Luxembourg						
Netherlands	3	3	3	3	3	3
New Zealand	3	3	3	3	1	1
Norway	4.5	4.5	3.5	4.5	4.5	4.5
Portugal	5	4	3	3	4	4
Spain	5	4	4	3.5	3	3
Sweden	5	5	4.5	3	3	3
Switzerland	3	3	3	3	2	2
United Kingdom	2	2	1	1	1	1
United States	1	1	1	1	1	1

Source: OECD

Table 4 Coordination Index

	1970-74	1975-79	1980-84	1985-1989	1990-94	95-2000
Australia	4	4	4.5	4	2	2
Austria	5	5	4.5	4	4	4
Belgium	4	3.5	4	4	4	4.5
Canada	1	3	1	1	1	1
Denmark	5	5	3	4	3	4
Finland	5	5	4	5	5	5
France	2	2	2	2	2	2
Germany	4	4	4	4	4	4
Greece						
Iceland						
Ireland	4	4	1	2.5	4	4
Italy	2	2	3.5	2	3	4
Japan	4	4	4	4	4	4
Luxembourg						
Netherlands	3	4	4.5	4	4	4
New Zealand	4	4	4	4	1	1
Norway	4.5	4.5	3.5	4.5	4.5	4.5
Portugal	5	4	3	3	4	4
Spain	5	4	4	3.5	3	3
Sweden	4	4	3.5	3	3	3
Switzerland	4	4	4	4	4	4
United Kingdom	3	4	1	1	1	1
United States	1	1	1	1	1	1

Source of data: OECD

Table 5 Calmfors and Driffill (1988) scoring of countries for centralization of bargaining

		Coordination level within central organizations	Existence of central organizations and their cooperation	Total Score
1	Austria	3	3	6
2	Norway	3	2	5
3	Sweden	3	2	5
4	Denmark	3-	2	5-
5	Finland	3-	2	5-
6	Germany	2-	3-	5--
7	Netherlands	2	2+	4+
8	Belgium	2	2	4
9	New Zealand	1	3	4
10	Australia	1	3	4
11	France	1+	2	3+
12	UK	0+	3	3+
13	Italy	1+	2	3+
14	Japan	1	2	3
15	Switzerland	1	2	3
16	US	1	1	2
17	Canada	1	1	2

Source: table A1 from Calmfors and Driffill, 1988. The rankings of countries with equal scores are explained in the appendix of the paper.

Figures

Figure 1 Unemployment Rates

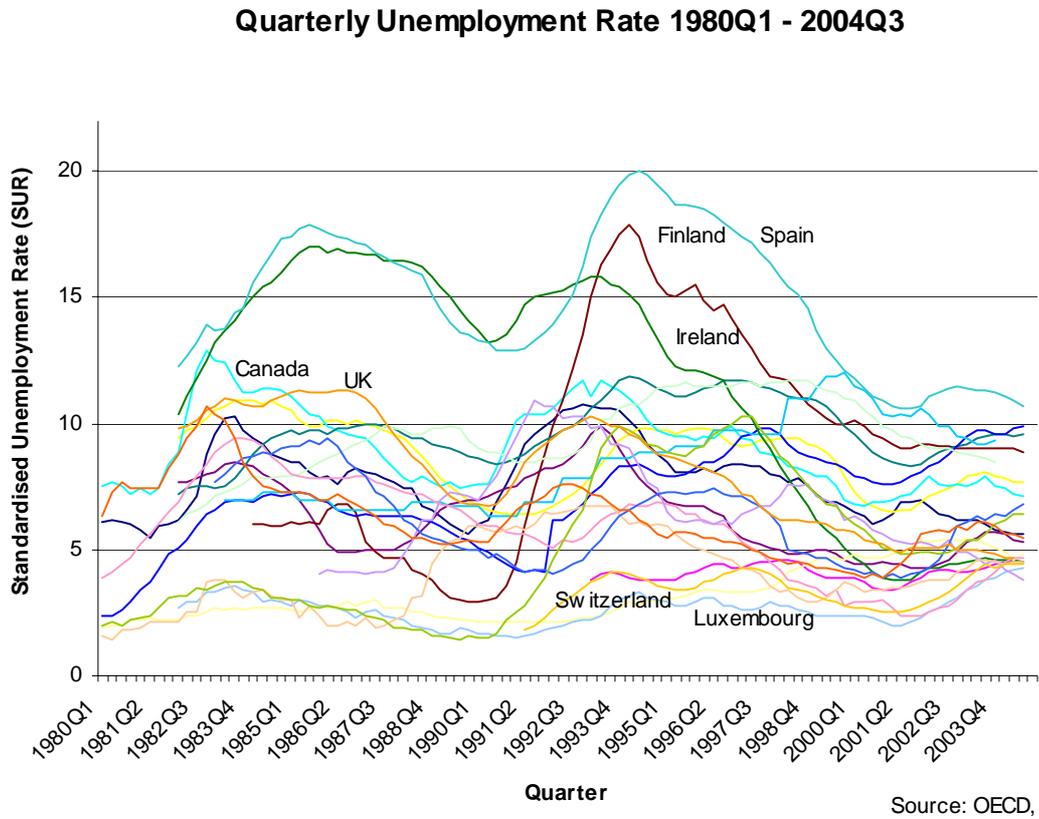


Figure 2 Inflation Rates

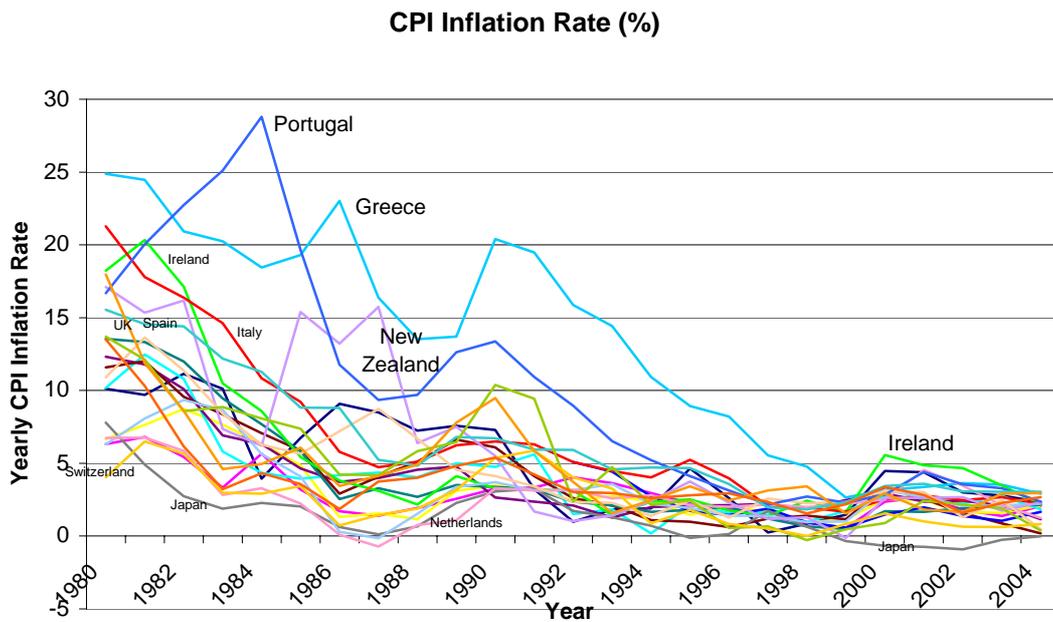


Figure 3 Coordination and Unemployment

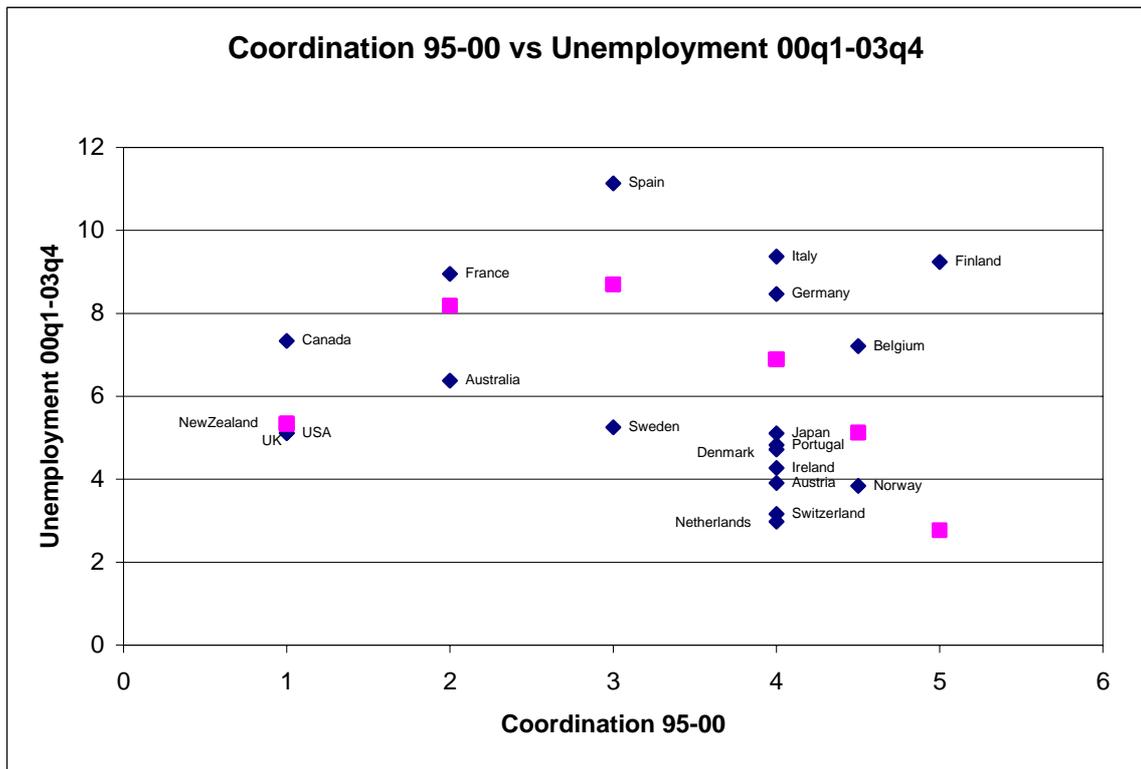


Figure 4 Centralization and Unemployment

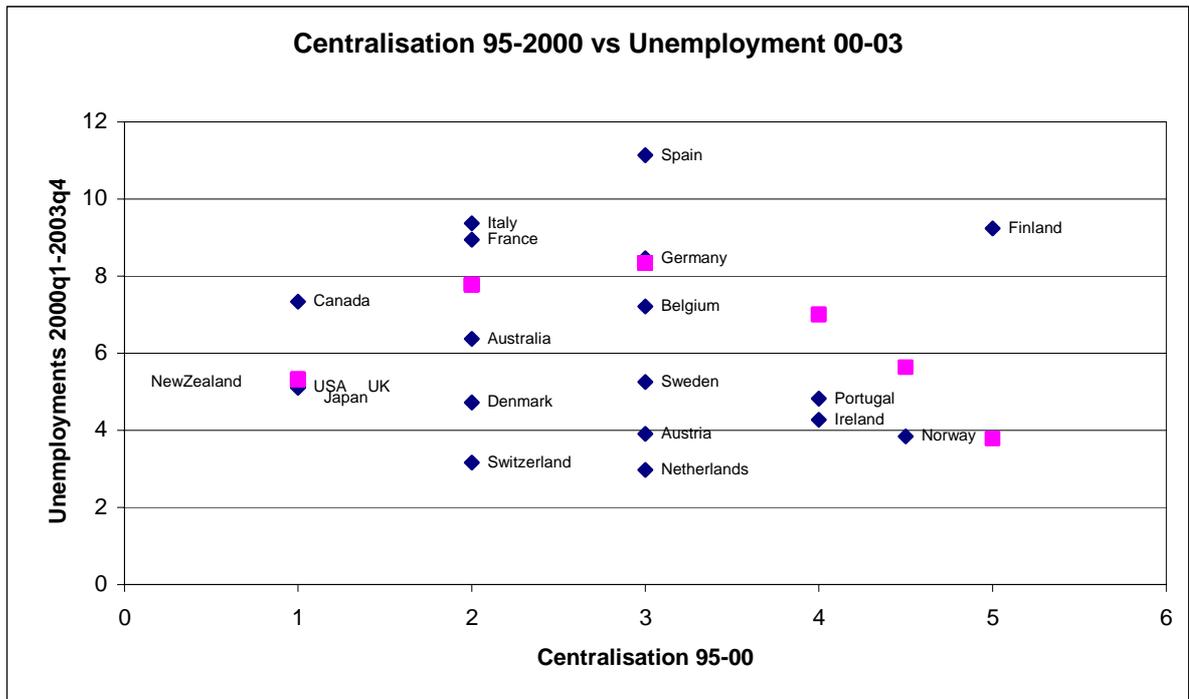


Figure 5 Trade Union Density and Coverage 2000

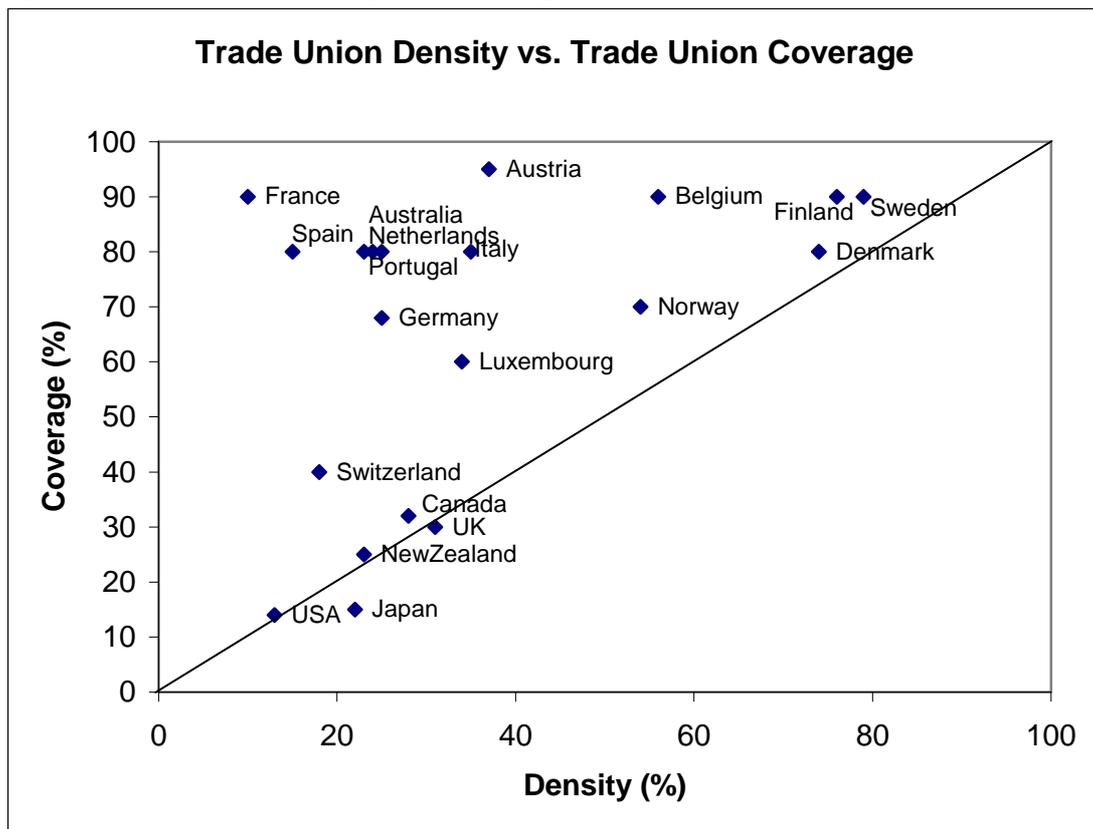


Figure 6. Unemployment and inflation in various countries
 Figures reproduced from Charles Bean's comments on Blanchard at the October 2005 Economic Policy Panel meeting

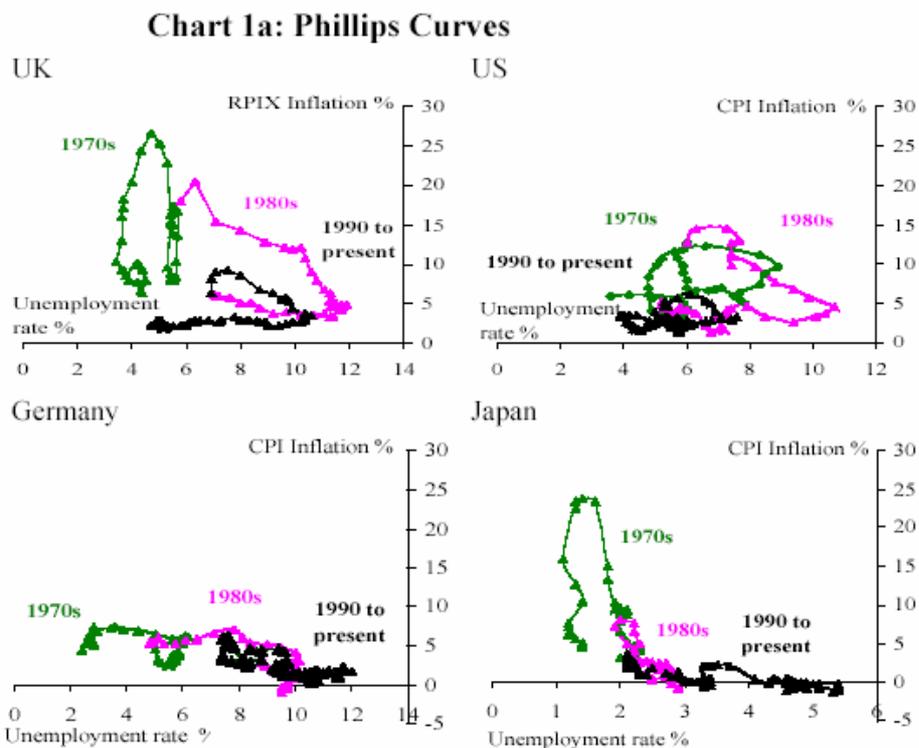
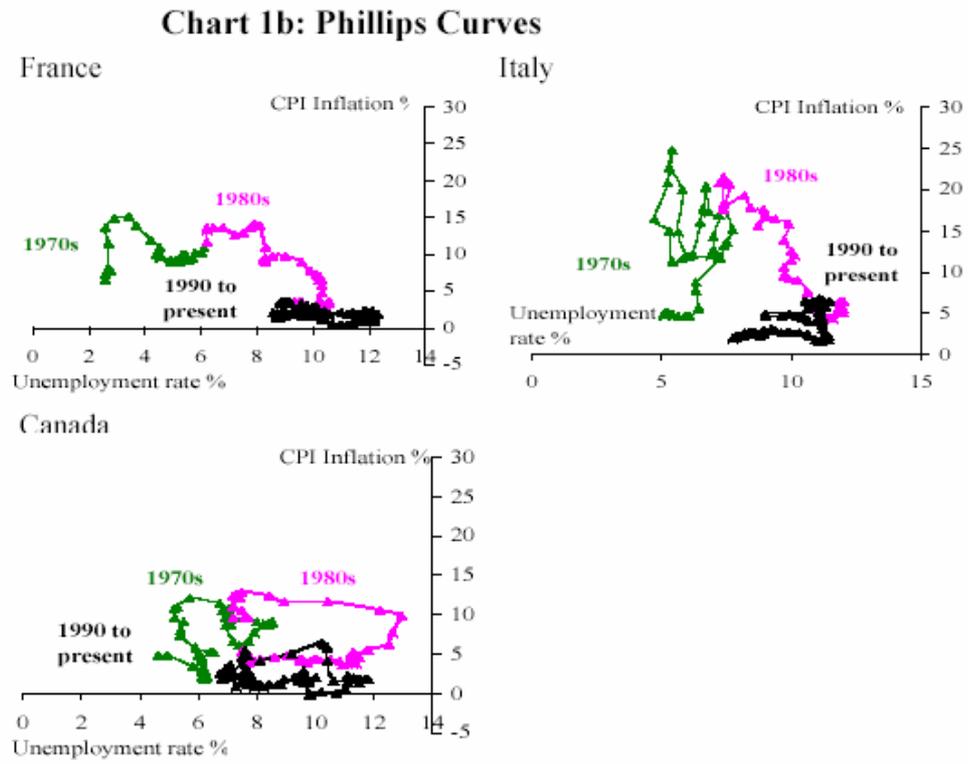


Figure 7. More Phillips curves (from Charles Bean's comments on Blanchard, 2005)



Report: Recent Changes in the German Wage Bargaining Process

Christian Spielmann

Draft: 28.02.05

For decades, wage bargaining in Germany has been at branch/industry level. At the centre of the German bargaining process is the “Flaechentarifvertrag” (system of industry-wide collective wage agreements) which regulates the working arrangements for unionised members of certain industry sectors and regions. Recently, there has been a trend towards more flexible lower-level bargaining procedures and some authors argue that the “erosion of the German model¹” may have already started (see OECD, 2004).

Many of the changes in the wage bargaining process have gone unnoticed partly because trade unions have been supportive and the collective agreements have been pragmatic (Streek and Rehder, 2003).

Both trade union density and coverage have decreased from the 1990s onwards when economic performance was declining. The coverage rate in 2002 was 71% in Western Germany and 56% in the East - around 15% lower than in 1980. This is still very high in comparison with the rest of the world (OECD, 2004). In both, the West and the East, around 40% of the companies which are not tied to the collective wage agreements base their wage decision upon the collective bargaining outcomes.

In Germany the legal framework in which wage decisions are made has remained fairly stable compared to other OECD countries. Coordination and centralisation indicators show the same values over the past 30 years. The “Flaechentarifvertrag” is still at the centre of the bargaining process and institutional change in Germany was rather an extension of the existing framework and not a modification (Streek and Rehder, 2003).

These extensions are manifested in two developments. Firstly, company-level alliances for employment and competitiveness (Betriebliche Buendnisse zur Sicherung von Beschaeftigung und Wettbewerbsfaehigkeit) have emerged. Secondly, contingent pay arrangements have been widely extended.

Trade unions have agreed to make remuneration of unionised labour more variable. In particular, payments are increasingly linked to performance of the individual worker or to the company performance. In addition, employees share the firm’s economic risk by holding capital shares. Remuneration arrangements of this kind have become common. A recent study (Kurdelbusch, 2003) shows that out of 90 major German enterprises, more than half of them had included arrangements like the ones mentioned above in their contracts. Such concessions have reduced the union power but have also prevented a major flight out of the collective bargaining agreements. Hence, trade unions now accept variable pay arrangements but try to regulate their design (Streek and Rehder, 2003).

¹ Carlin, Wendy / Wikipedia: used in economics to describe post-World War II West Germany's means of using innovative industrial relations, vocational training, and closer relationships between the financial and industrial sectors to cultivate economic prosperity.

“Betriebliche Buendnisse” are company level pacts between the bargaining parties (employer/management and employee/work council) which deviate from the industry wide collective wage agreement. Such pacts can be made in the presence or absence of the affected trade union, which often results in disputes. However, strikes or lock-outs are not permitted. It is usually not possible to take legal actions with respect to the content of such arrangements. However, the code of practice is to treat such arrangements as binding.

Within a company level pact, employees agree to less pay, higher productivity or reallocation of work in exchange of employment securities or if the company binds itself to specific investments.

The law from the mid 1990s regulating the remuneration of unionised workers (Tarifrecht) consists of a ‘favourability principle’. This states that deviations from the “Flaechentarifvertrag” were only allowed if they were in favour of the employee. Hence, most company level pacts were basically a breach of the collective bargaining agreement. However, so-called opening or opt-out clauses (Oeffnungsklausel) were increasingly introduced into the “Flaechentarifvertrag” which legalised the formation of company pacts.

In certain circumstances opt-out rules allow companies to deviate from the “Flaechentarifvertrag” to the detriment of employees. The use and the applicability of such rules have been widened extensively in the past. Recently, about a quarter of the companies with work councils and more than 20 employees have deviated from the collective bargaining arrangements. The majority of such agreements have been concerned with working hour arrangements - but increasingly, remuneration issues are also subject to such agreements (OECD, 2004).

The measures described above can be seen as “conserving” measures. Reforms were made by retaining the predominant role of unions. One can argue that the way, wage bargaining has taken, has even stabilised the system by giving unions new functions. (Streeck and Rehder, 2003). However some tendency of erosion has been seen particularly in East Germany. For example, some firms left or did not join the collective bargaining arrangements (OECD, 2004). Yet, these examples are relatively rare compared to the existence of more flexible bargaining arrangements.

Plant level arrangements in particular have become very common, and many examples can be found.

In 1993, The Volkswagen AG deviated from the collective bargaining agreement and introduced the “4-day-week” without any pay compensation. In return they assured that 30 000 work places had been secured. This pact was agreed by the VW management and the regional leadership of the IG Metall (metal workers trade union). This was particularly striking as the agreement was made in a time where employers demanded longer working hours. Shortly after, similar agreements were made for the mining sector.

Another famous company agreement is VW’s project “5000*5000” which was settled in 2001 after 2 years of dragging proceedings.

Initially the idea was to create 5000 jobs for three years in two production sites in Lower Saxony (Wolfsburg and Hanover) to build the new VW Van. The contracts should have had fixed remuneration of 5000 DEM. Working hours should have been flexible depending on demand with an upper limit of 48 hours per week and Saturdays would be a normal working day. From the cost side, this would mirror production possibilities VW would have had in other locations such as Portugal. VW threatened to build the production plant in a less cost-intensive environment outside Germany.

The negotiations were carried out between the IG Metall and VW. The union fought heavily against VW's plans accusing them of pay and social dumping which could have serious consequences for collective bargaining standards in Germany. In addition, work councils and union organisations at other automobile producers in Germany feared the erosion of a level playing field within the industry. Politicians and the German public, however, seemed to be highly in favour of VW's plans and hoped for a compromise between IG Metall and the car producer. In June 2001 the negotiators did not reach an agreement. But 10000 unemployed people had already applied for the 5000 jobs under the given conditions, according to VW.

Under the existing political and public pressure, the parties resumed talks soon after and came to an agreement where in a first instance 3500 new jobs were created.

In 2005 a new BMW plant in Leipzig, East Germany, was opened under a company agreement between BMW and the IG Metall. This agreement allows for more flexible working hours depending on the number of orders. The outcome of the negotiations, has in part led to the decision to build the new production site at that particular location, according to BMW. The negotiations have been praised by politicians.

Where trade unions and companies increasingly seem to agree upon the design of company contracts, conflicts at a company level between employees and employers seem to increase.

In 2004, DaimlerChrysler and the IG Metall agreed upon a company contract to save 500 Million Euro but assured certain investments and employment guarantees. Negotiations were highly controversial and even though an agreement was finally reached, the works council did not accept the pact.

Overall, pressure from the government on the trade unions has led to more flexibility and a climate of give-and-take in the German wage bargaining process over the last decade. Opt-out clauses are used more often and unions seem to be increasingly cooperative.

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