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### **The Cost and Benefits of Collective Bargaining: A Survey**

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## Abstract

Collective bargaining and dispute resolution mechanisms facilitate *coordination*. Coordination is increasingly seen as an influential determinant of labor market and macroeconomic performance. This paper provides a systematic review of the relevant literature with a specific focus on the role that collective bargaining plays in shaping macroeconomic performance. We focus on comparative studies of labor market institutions in the OECD area that try to disentangle the impact of different institutional approaches to collective bargaining from other determinants of macroeconomic performance.

*Keywords:* Collective bargaining, unions, and macroeconomic performance.

*JEL classification:* J5 and E24.

## The Cost and Benefits of Collective Bargaining: A Survey\*

### 1 INTRODUCTION

Collective bargaining and dispute resolution mechanisms facilitate *coordination*. Coordination is increasingly seen as an influential determinant of labor market and macroeconomic performance (see, e.g., World Bank, 1995), and can take many forms. For example, the Japanese system of wage setting is decentralized (firm based) but coordinated in the sense that it follows company rules based on seniority rather than individual contracting. The Netherlands and Germany also have coordinated systems through strong employer organizations, coordination between giant companies or across industries, and between unions. Coordination in France is through the government in the form of public services, utilities and large nationalized industries. In Italy, there is informal employer coordination (via the big firms and regional employers' associations) and between some union confederations. Finally, centralized employers' organizations as well as centralized union confederations have dominated Sweden and more generally Scandinavian labor markets. It is clear from these examples that the specific institutions and the extent to which pay and work conditions are determined by collective agreements as opposite to individual contracts differ quite a lot across the OECD. These differences combined with the observed differences in macroeconomic performance (primarily in terms of unemployment and inflation) between the OECD countries over the last 30 years has spurred a large literature that try to explain cross-country variation in economic performance by cross-country differences in labor market institutions.

The purpose of this paper is to provide a systematic review of this literature. We focus on comparative studies of labor market institutions in the OECD area that try to

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disentangle the impact of different institutional approaches to collective bargaining from other determinants of macroeconomic performance. A central theme is whether or not coordination of collective bargaining can enhance economic performance, in a *static* sense by internalising externalities and facilitating coordination and in *dynamic* sense by helping the economy to absorb shocks more effectively. The reality is complex but some general lessons can, nevertheless, be drawn. First, bargaining coordination and other aspects of collective bargaining matter most in times of rapid economic and social change, while in “normal times” the differences appear to contribute little to comparative economic performance. One interpretation of this is that bargaining coordination, not only through formal centralization of collective bargaining but also through more informal mechanisms, enables the labor market to coordinate its responds to shocks and to move the economy towards a new equilibrium relatively fast. Second, *complementarity* between different aspects of the institutions that define how collective bargaining is conducted is essential for our understanding of the macroeconomic impact. One example is that bargaining coordination can compensate for the negative impact of bargaining coverage on unemployment performance. Another is that informal coordination often develops in labor markets where formal coordination of bargaining is absent. This implies that it is the total “package” of (formal and informal) institutions that matters for economic performance. Third, systems of coordination are neither easily replicable nor necessarily a panacea. The degree and kind of coordination achieved in each case are country-specific in terms of economic conditions and institutional and cultural characteristics. In most countries, coordination evolves gradually through piecemeal legislation over the course of decades rather than as massive policy intervention at a specific point in time. Of course, labor regulation introduced at a point in time when particular circumstances prevailed needs to be reconsidered when economic conditions change. Most of the countries with coordinated systems, especially in Europe, are in a process of change. This is partly because of their failure to take account of the international trade performance of their countries and their exposure to external competition, and partly because of the declining trend in manufacturing where collective bargaining is more common than in white collar sectors.

The rest of the survey is organized as follows. In section 2, we provide a short survey of the relevant theoretical literature and identify a number of channels through which collective

bargaining can affect economic outcomes. In section 3, we review, in detail, the empirical evidence. To systematize the discussion, we undertake, for part of the material, a “meta-analysis” of the underlying studies. In section 4, we summarize the more specific findings of the survey.

## 2 THE THEORY OF COLLECTIVE BARGAINING

Unions and employers’ organizations arise from the asymmetry in contracting between individual workers and employers, the concern for basic labor rights, and different perceptions about the merits of employment relations governed by individual contracts and collective agreements. The desirability of collective bargaining depends on many factors, including

- What unions and employers do.
- The effectiveness of dispute resolution mechanisms.
- How collective bargaining is organized.

### 2.1 WHAT DO UNIONS DO?

#### 2.1.1 *The monopoly cost of unions*

Traditionally, economists have focused on the social costs of unions, arising when they secure favorable pay and work conditions for their members by sharing supernormal profits with firms (Booth, 1995). Supernormal profits are, typically, associated with product market distortions and/or government regulation and so labor market and product market distortions are often viewed as complements. Unions can force firms to give up some of their profits only if they can *monopolize* labor supply.<sup>1</sup> This is because of the strike threat: firms are willing to give up some of their profits to avoid industrial conflict. Competition from a large nonunionized labor market reduces the union’s monopoly command over labor supply and if nonunion workers can readily replace union workers, the union’s bargaining position is substantially weakened (Ulph and Ulph, 1990). When unions succeed, they impose, according to this view, a number of costs on society, which we may call the *monopoly costs* of unions:

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<sup>1</sup> Some rents are capitalized in the value of the firm and so, *not* available for sharing. This effect can be illustrated as follows. Assume as a result of an innovation a monopoly situation is established. If the prospect for high profits is real, a likely course of events is for the inventor to sell the right and make a large capital gain instantaneously. Thereafter sales grow and the firm reverts to a public company. The monopoly power of the company is now reflected in the value of its shares, not in the rate of operating profit. It is the rate of return to the shares (in the form of dividends and capital gains) that is relevant for collective bargaining and this is determined competitively in the stock market. Hence, the ability of the firm to hand out high wages to its labor force has gone (Sapsford and Tzannatos, 1993).

- Firms will try to pass on the wage demands to consumers as higher prices. This increases the consumer price index and reduces the real (consumption) wage of all workers. It also increases the real price of intermediate inputs harming other producers. These effects are comparatively small if firms operate in a highly competitive (product) market environment.
- The wage mark-up increases the relative price of labor in the union sector. This induces a reallocation of labor to the nonunion sector as firms decide to lay-off unionized workers (Rees, 1963). This tends to reduce the nonunion wage and the welfare of nonunion members and leads to an output loss because workers are now being employed where their marginal productivity is lower than before (see Sapsford and Tzannatos, 1993: 325-28). These effects are mitigated in the case where unions and firms bargain over wages *and* employment (McDonald and Solow, 1981), as employment *increases* rather than decreases in the unionized sector, thereby reducing the negative spill-over on non-unionized sectors.
- Unionized firms share their profits with the union. This creates a *hold up problem* that reduces investments in physical capital and R&D in unionized firms below the socially optimal level (Grout, 1984).
- The more senior members, who typically have a disproportional influence on the decisions of the union, may institutionalize a seniority principle in relation to layoffs and other aspects of deployment such as promotion, recall and training. This can create insider/outsider dynamics that can lead to persistently high levels of unemployment.

The discussion of the monopoly costs of unions is often based on the (implicit) assumption that the labor market in the absence of collective bargaining would be guided by Adam Smith's invisible hand. This assumption is overly optimistic as the "removal" of unions may reveal market imperfections on the labor demand side in the form of monopsony.<sup>2</sup> Under these circumstances, the presence of unions may offer a second-best alternative to free competition and the countervailing influence of unions can result in outcomes closer to the competitive equilibrium than is offered by competition on the supply side of the labor market and monopsony on the demand side.<sup>3</sup>

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<sup>2</sup>Employers derive monopsony power from the fact that it is costly for a worker to leave the firm (because of the firm-specific human capital he or she has accumulated) and move to another city to get a new similar job.

<sup>3</sup> Many more imperfections are likely to coexist with unionism some arising from motivational problems (efficiency wages) others from insider power (Lindbeck and Snower, 1989).

### 2.1.2 *Participatory benefit of unions*

The “organizational view” focuses on the economic benefits of unions (Freeman and Medoff, 1979; 1984; and Freeman, 1980a). Unions facilitate worker participation and worker-manager cooperation at the workplace. This can have efficiency-enhancing effects to the joint benefit of workers and management. More specifically, these *participatory benefits* can arise from many sources:

- Unions are institutions of collective voice operating within internal labor markets. One role of the union within this framework is to communicate the preferences of workers directly to the management, and to participate in the establishment of work rules and seniority provisions. This changes the *exit-voice-trade-off* of workers by providing a channel through which they can express their grievances without having to leave the firm. This reduces turnover (voting with the feet), increases the incentive of employers to provide firm-specific training and facilitates long-run working relationships to the benefit of all parties. In addition, unions can also help establish seniority provisions, one effect of which is to lessen rivalry between experienced and inexperienced workers. This can increase the amount of informal, on-the-job training that the former is willing to provide to the latter (Freeman and Medoff, 1979; 1984).
- Unions help enforce contracts between workers and management (Malcomson, 1983). For example, in the presence of uncertainty about product market demand, workers may be reluctant to acquire firm-specific skills unless the firm can promise not to fire them if demand turns out to be low. Without a credible enforcement mechanism, the firm cannot make such a promise and too few firm-specific skills are acquired. A union can, however, help to enforce the promise if the firm prefers to stick to the implicit agreement rather than getting involved in a strike.
- Unions can increase productivity by providing a channel through which labor can draw to management’s attention changes in working methods or production techniques that may be beneficial to both parties. In addition, this channel also offers a mechanism by which the union can “shock” the management into better practices (reduce X-inefficiency).

### 2.1.3 *Unions as political organizations*

Unions represent the special interests of their members in collective bargaining and in the political process. As pointed out by Pencavel (1995), unions generally promote rent-creating policies that reduce competition in labor and product markets. This includes support to minimum wage legislation, trade protection and so on. Unions support such policies because they increase the surplus available for sharing (the effect of less competitive product markets) or increase their

bargaining power (less competition from nonunion labor markets).<sup>4</sup> The social cost of such rent-seeking can be counteracted in situations where unions encompass a large fraction of society and play a (socially) beneficial role in a social partnership with government and business (see, e.g., Olson, 1982). It is clear from this that all forms of collective bargaining are not equally desirable and that different reactions to broader policy issues such as trade reforms arise from the way costs and benefits are generated and distributed in different institutional settings.

## 2.2 WHAT DO EMPLOYERS' ORGANIZATIONS DO?

Employers' organizations organize firms, typically within a particular industry, and represent them in collective bargaining with unions. A firm may decide to join an employers' organization to improve its bargaining position with workers. Firms derive bargaining power from their ability to lock out workers. The cost of an industrial conflict from the point of view of an individual firm is larger than the cost to the industry as a whole. This is because an individual firm involved in a strike is likely to lose its market share to other firms in the industry that produce close substitutes. Accordingly, while each firm has an incentive to give in to wage demands (to avoid local conflicts), the industry as a whole has less incentive to do so, and by joining forces, it is easier for firms to resist wage demands from unions (see Dowrick, 1993).

In addition, employers' organizations can help firms to avoid leap frogging. Leap frogging arises when individual firms increase their wage rate in order to extract more effort from existing workers or to attract skilled workers from other firms (Layard et al, 1991). When all firms engage in this kind of behavior, the net result may well be that relative wages are unchanged, but the level of all wages has increased substantially. A strong employers' organization that coordinates the behavior of individual firms can be helpful in internalizing this "efficiency wage externality" and preventing wage drift.

Finally, employers' organizations play an important role in the provision of training (Soskice, 1990). Since general training is a public good, firms are unlikely to provide much of it unless they are subject to external pressure. A strong employers' organization provide facilities to

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<sup>4</sup> With regard to regulation of the product market, the union and the firm have a common interest, and they may form a very effective distributional coalition (Rama, 1997; Rama and Tabellini, 1997). On the other hand, with respect to labor market regulations such as job security legislation and minimum wages, they disagree.

firms for training their workers and can impose sanctions if a firm does not pay its share of the cost.

### 2.3 DISPUTE RESOLUTION

The breakdown of negotiations between individual workers and their employers can take various forms ranging from “poor” relations at the workplace (with potential costs including decreased levels of labor productivity through poor morale) to labor turnover (the “exit” option, with the potential loss to the employer of previously made investments in his workers' human capital). At the level of collective contracting, the stakes are arguably much higher for both workers (and their unions) and for employers, with the ultimate cost of a negotiation breakdown being lost incomes to the workers and lost profits to employers. Given the potentially high level of these costs to both of the contracting parties, it is likely that workers and employers have a strong incentive to achieve a solution in preference to conflict. Like all good threats, the employer's threat of a lock-out and the union's of a strike are best if they ensure that an agreement is reached while remaining unused.

In real life, collective bargaining sometimes breaks down, and production, labor earnings, and profits are lost. It is certainly not safe to assume that the total of such costs is greater under the collective bargaining system than under the individual contracting system. We simply do not know whether these costs to society are greater or less than those that would arise from a breakdown in individual employer-employee pay negotiations. Indeed, given economies of scale in the production and dissemination of information, there are grounds for believing that the collective system, through its ability to resolve disputes, may be a less costly option from a social point of view than individual contracting.

There is a strong presumption that when disputes do occur under collective bargaining, this is because of asymmetries in the information possessed by the involved parties (Hicks, 1932). A common example is when the trade union “misjudges” the maximum wage that the employer is willing or able to pay. Under such circumstances, the existence of regulation can prove decisive in resolving disputes through its information gathering and disseminating roles.

To understand the process, it is important to recognize the distinction between the union proper (sometimes called the official union) and its rank and file membership. Under this tripartite framework, the official union (often as a well-informed professional body) acts as an intermediary between the union membership and the employer. As such, its role is to reconcile the aspirations of the former against what it judges (on the basis of its more complete knowledge of the overall situation than that possessed by the union membership) that the employer would agree to pay. This reconciliation between worker aspirations and labor market “realities” may be achieved without either party having to resort to its “no-trade” sanction. However, should negotiations break down and a dispute occur, the role of the official union as a purveyor of information continues, with information being passed in both directions regarding concessions acceptable to each party and any new information that may materialize as the dispute progresses. This transmission of information continues until demands fall into balance with offers, at which time a settlement is achieved.

Viewing trade unions in this way, as an information gathering and disseminating body, suggests that governments might want to adopt policies that increase the efficacy with which unions fill this role. The introduction of so-called “cooling-off” periods, during which all parties take time to make a full assessment of the situation before implementing no-trade strategies, is one such example. Other such policies might require that the employer (generally seen as the party in possession of more complete information) divulges to the union and its members certain types of information, perhaps in a standard form, so as to minimize the possibility that disputes will arise because workers incorrectly estimate the employer’s ability to pay. Recognizing this, there are grounds for believing that a centralized, union-based system of wage bargaining may be less costly to society than an individually based negotiating system in terms of both total transactions costs and dispute costs. We have also seen that unions have a role in resolving disputes if they should occur.

#### 2.4 THE ORGANISATION OF COLLECTIVE BARGAINING

The cost and benefits of collective bargaining depend significantly on the organization of the labor market. Of particular interest here is the degree of bargaining coordination and the share

of the labor market covered by collective agreements as opposite to individual wage contracts. Many complementary aspects of the labor market, including those of bargaining centralization, corporatism and informal coordination determine the degree of bargaining coordination.

#### *2.4.1 Centralization of collective bargaining*

Collective bargaining is centralized when the national union confederation and the national employers' organization can influence and control wage levels and patterns across the economy. The capacity to do so depends on many factors, including i) the level at which bargaining primarily takes place (the plant, the industry or the national level) and ii) whether or not the national organization(s) can control the behavior of their constituent organizations and avoid wage drift. Table 1 summaries eight important aspects of bargaining centralization and evaluates the associated (static) costs and benefits.

**TABLE 1. THE ECONOMIC COSTS AND BENEFITS OF CENTRALIZATION OF COLLECTIVE BARGAINING**

Issue	Benefit	Cost
<p><u>1. Internalization of externalities:</u> Unions and firms acting independently of the rest of the market (decentralization) can have unintended negative effects (externalities) upon the rest of the economy (e.g. higher wages can be passed on to consumers in the form of higher prices; higher inflation; an increase in unemployment)</p>	<p>Centralization increases the size of the bargaining coalition, thereby internalizing negative externalities. This effect is larger, the more workers are unionized.</p>	
<p><u>2. Competitive pressure:</u> Competition in product markets disciplines unions and firms, and this effect is strongest at decentralized level (more competition reduces the ability to pass wage increases on to consumers as higher prices).</p>		<p>As bargaining becomes more centralized, competitive pressure is reduced because firms acting in unison are less likely to lose their market share (product demand is more inelastic at the industry level than at the firm level). This increases wage pressure and leads to higher unemployment. This effect is less important in an open economy.</p>
<p><u>3. Wage compression:</u> Under centralized collective bargaining, egalitarian wage goals are easier to achieve, and firm-specific conditions are less likely to enter the wage contracts. This tends to reduce wage dispersion.</p>	<p>Although wage compression can force less efficient firms out of the market (to the extent that low wages move upwards), it can encourage the entry of new/more efficient firms: the net effect can, under certain conditions, increase output. Again under certain assumptions, wage compression can act as a form of social insurance.</p>	<p>A reduction in wage dispersion leads to an economic misallocation of resources and lower output.</p>
<p><u>4. Areas of Bargaining:</u> Some issues can only be subject to collective bargaining at certain levels of centralization or above (training, health and safety, and so on).</p>	<p>For example, general training of workers is more likely to be part of centralized collective bargaining because it has the characteristics of a public good. Subsequently, training can lead to higher economy-wide labor productivity and overall economic growth.</p>	<p>Efficient bargaining (over employment and wages) is only feasible under decentralized bargaining. Work place co-operation and other participatory activities between unions and firms decreases under centralized bargaining.</p>
<p><u>5. Hold-up problems:</u> Firms undertake investment decisions today that affect future profits. If workers, via collective bargaining, can get a share of these profits without contributing to the costs, firms would under-invest.</p>	<p>The hold-up problem is reduced under centralized bargaining because an individual firm cannot affect the outcome of collective bargaining by its pre-bargaining investment decisions. This encourages firms to invest more.</p>	
<p><u>6. Insider-Induced Hysteresis:</u> Only the group of insiders (e.g. union members and employed workers) counts in wage bargaining. When the insiders are reduced in number (e.g., after layoffs in a recession), they can push for higher wages in the next bargaining round and cause unemployment to remain persistently high (insider-induced hysteresis).</p>	<p>Under centralized bargaining, more workers can be perceived to be insiders (including the unemployed) to the extent that unions are concerned about aggregate unemployment.</p>	
<p><u>7. Strikes:</u> Imperfect information can lead to more strikes.</p>	<p>Centralization increases the level of information about demand conditions, thereby reducing the likelihood of strikes, especially wild-cat strikes.</p>	<p>Centralization increases the risk of a general strike.</p>
<p><u>8. Bargaining power:</u> The relative bargaining power of workers and employers depends on the “fall-back” option of the two parties (what they will get if an agreement is not reached).</p>	<p>Centralization can reduce wage pressure by increasing employers’ bargaining power because workers’ alternative job options in case of an industrial conflict are substantially reduced if all firms “lock-out” workers.</p>	<p>Centralization can increase wage pressure if unions derive their bargaining power from the monopoly command over labor supply. It is easier for a single firm than it is for an entire industry or nation to replace workers in the event of a strike.</p>

Sources: Besides the surveys by Calmfors (1993), Moene and Wallerstein (1993a), Layard et al (1991: chapter 2) and Henley and Tsakalotos (1993), the following references are relevant: (1) and (2) Calmfors and Drifill (1988); (3) Agell and Lommerud (1992); Moene and Wallerstein (1992b, 1992c) and Agell (1998); (4) Seelies (1990); (5) Coart (1994); (6) Blackburn and

The idea that centralization of collective bargaining can facilitate internalization of externalities has received particular attention in the literature and warrants a more detailed discussion than the one given in the Table. To fix ideas, imagine a society in which all workers are organized in unions. Suppose that each firm negotiates with a company union. In this case, wage-setters only bear a (small) fraction of the total economic cost associated with a given increase in their real wage as they impose external costs on others. Table 2 defines, in more detail, six such externalities. Due to these externalities, the negotiated wage is “too” high and the result is, *ceteris paribus*, “too” little total employment. By centralizing the bargaining process to the industry or national level, wage-setters are forced to bear a larger share of the cost of their actions, as more (and ultimately all) workers become included in the bargaining coalition. This creates incentives in favor of wage restraint, which, *ceteris paribus*, leads to more total employment.

**Table 2. Five Important Externalities Associated with Decentralized Wage Setting.**

The input price externality	Decentralized wage gains are passed on as higher product prices, thus increasing the real cost of inputs for other firms.
The fiscal externality	Decentralized wage gains lead to unemployment. The cost in terms of unemployment benefits is born by all tax-payers, not only those involved in wage setting.
The unemployment externality	Decentralized wage gains increase overall unemployment, making it more difficult for all unemployed workers to find a new job.
The envy externality	Decentralized wage gains create envy among other workers.
The consumer price externality	Decentralized wage gains are passed on as higher product prices, thus lowering the real wage of all workers.
Efficiency wage externality	At the decentralized level, firms have an incentive to try to increase the relative wage of their workers to increase their motivation.

Note: See Calmfors (1993: 5-6).

As pointed out by Calmfors and Driffill (1988), this argument ignores the fact that the competitive pressure from product markets and the moderating effect it has on wage demands changes systematically with the level of centralization. To see this, consider what happens when a union demands (and gets) a high nominal wage. To avoid an increase in the product real wage, firms pass the cost on to consumers as higher prices. From the point of view of the union, this has an unpleasant side effect in addition to the reduction in the consumption real wage: it reduces the demand for the goods produced by the host firm, thereby endangering the jobs of the union

members. Anticipating this, the union moderates its wage demand. At the firm level, the competitive pressure from other firms in the same industry (producing close substitutes) provides strong incentives to moderate demands. At the national level, the federation of unions bear the full cost of its actions, social partnerships becomes possible and unions and employers' organizations are sufficiently encompassing to make rent-seeking unprofitable (Olson, 1982; and Heitger, 1987). At the industry level, neither of these effects produces much wage moderation. On the contrary, firms in an industry can pass on a substantial portion of the wage demands to consumers at a relatively low employment cost. In addition, industry-based unions often form effective lobby groups that seek distributive favors from the government at the expense of society at large.

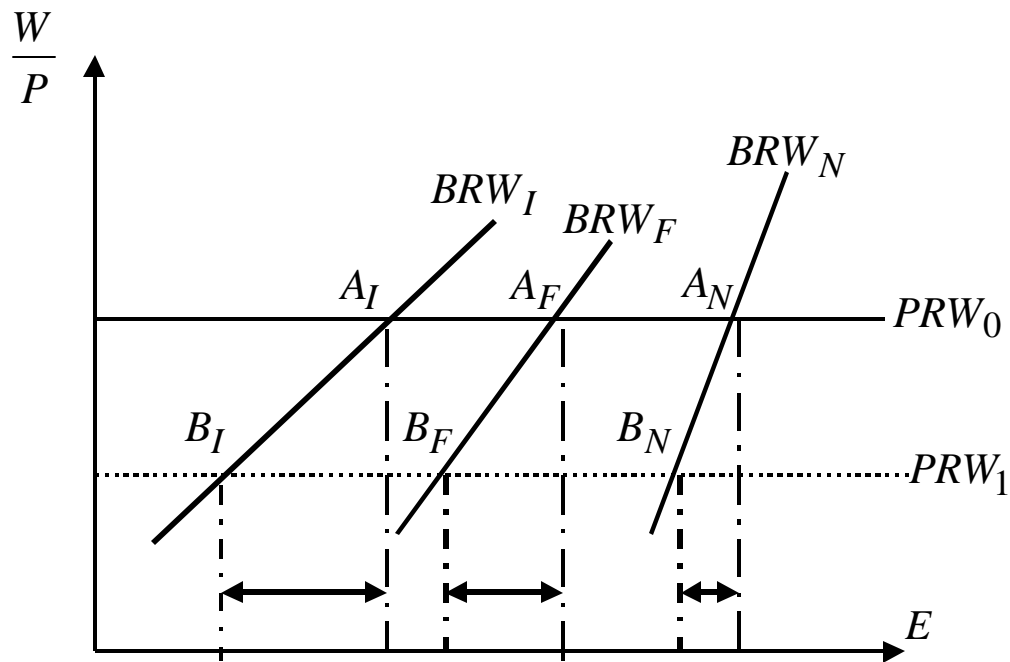
It follows from this discussion that the relationship between economic performance and centralization of collective bargaining can be non-linear (U- or Hump-shaped): relatively good performance for decentralized and centralized systems, but relatively poor performance for systems based on industry-level bargaining (Calmfors and Driffill, 1988). It should be noted, however, that this prediction is sensitive to many of the underlying assumptions. For example, Rama (1994) and Danthine and Hunt (1994) show that the non-linear relationship tends to disappear in an open economy as competitive pressure becomes more intense at all levels of bargaining. It is also clear that centralization will not help to internalize external costs unless most workers are union members or have their pay and work conditions determined by collective agreements. More critical, perhaps, is the fact that the analysis takes a static view on the economy. Arguably, one of the key advantages of a centralized bargaining system is that it enables a coordinated and fast response to *changing* economic conditions.

To see this important point more clearly, consider the following (simplistic) New Keynesian model of the labor market.<sup>5</sup> The product and the labor markets are imperfectly competitive. In the labor market, workers are organized in (firm-specific) unions that determine the nominal wage ( $W$ ), while firms determine the price ( $P$ ) of the (differentiated) good that produce as a mark-up on wages. Workers set the nominal wage based on expectations about the price level to achieve a particular real wage target. This is illustrated in Figure 1 by the BRW

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<sup>5</sup> See Carlin and Soskice (1990, chapter 16), Layard and Nickell (1986) and Rowthorn (1977).

(bargained real wage) line. It is upwards sloping in employment (E) real wage (W/P) space because unions hold more bargaining power in a tight labor market and thus adjust their aspirations accordingly. Firms, on the other hand, set prices to achieve a real profit target. This is shown in the Figure as the PRW (price real wage) line. For simplicity, we assume that the real profit target is constant over the cycle. A macroeconomic equilibrium arises when the aspirations of the two parties are consistent and that defines the equilibrium level of employment and as a residual, the equilibrium level of unemployment (the NAIRU). In the Figure, we have drawn three different BRW curves, reflecting the three levels of centralization of bargaining (the firm, the industry and the national level). The particular location of the three curves and so of the equilibrium level of employment captures the static gains of centralization and decentralization, as discussed in detail above. The subtle thing to notice is that wage setters are *more* responsive to *changes* in employment under decentralized and centralized bargaining (there is more real wage flexibility) than under industry-based bargaining. This makes the BRW curve steeper in the two former cases than in the latter. This has an important implication for the response of the labor market to a negative shock under the three regimes. Suppose, for example, that the economy is being hit by a negative (productivity) shock that shifts the PRW curve down. We see, from the Figure, that the employment loss is modest under centralized (and decentralized) bargaining compared to industry-level bargaining. In short, a centralized labor market insulates the economy from the impact of negative shocks. In addition, by facilitating coordination of expectation and by taking a broader view on those interest should be represented in the bargaining (being more encompassing in the sense of Olson, 1982), it can achieve a faster adjustment to the new equilibrium position and reduce hysteresis effects. This is particularly helpful when the shock reverses and the economy is to return to the initial equilibrium position.



#### 2.4.2 Corporatism

The idea that the labor market parties in a centralized bargaining system can coordinate their responses to economic shocks is one of the cornerstones of corporatism. The term corporatism often refers to situations in which the economic and political activities of unions and employers' organizations take place within a well-defined framework of *social partnership* between workers, capitalists, and government (see, e.g., Cameron, 1984; Tarantelli, 1986; Bruno and Sacks, 1985; Henley and Tsakalotos, 1993; and Lehbruch, 1984). Within this framework, labor market parties, in particular unions, expect the government to deliver certain welfare goods and policies in exchange for wage restraint (Lange and Garrett, 1985). In addition, social partnership can create social consensus and reduce the level of conflict at the labor market. It reduces the cost of implementing economic reforms when they are needed and helps mitigate coordination failures arising when, in the face of changing economic conditions, the economy needs to move from one equilibrium to another. It also facilitates income policy, economy-wide

agreements on wages and weekly hours, health and safety standards and so on. All of these aspects help to bring about “good” economic outcomes. It is, however, important to notice that social partnerships have a tendency to break apart. The point is simple: unions, employers’ organizations and individual firms have an incentive to free ride and break away from their respective confederations to act on their own. Accordingly, to sustain corporatism over longer periods of time, some glue is needed to keep the bargaining coalitions together.

#### 2.4.3 *Informal coordination*

While the glue that keeps bargaining coalitions together is predominately embodied in the formal institutions of collective bargaining, informal mechanisms sometimes develop to sustain cooperation among labor market parties. These mechanisms are much more fragile than those embodied in the formal institutions and so, more likely to break down, in times of rapid economic change or instability, when they are most needed. Informal coordination can take many forms. One form is *internal* coordination among employers and/or the employees made possible by repeated interaction and reputation effects. At the employer side this involves coordination between industry-based employers’ organizations or individual firms. This plays an important role in Japan, Austria, and Switzerland (Soskice, 1990; OECD, 1994). At the employee side, internal coordination, typically, involves coordination between company- and industry-based unions. Another form of informal coordination is pattern bargaining. Here, a dominant industry or company enters a collective agreement that is followed by other firms and industries. This has been important in, e.g., Germany, where the metal industry, traditionally, has acted as the leader.

### **3 COLLECTIVE BARGAINING AND ECONOMIC PERFORMANCE – THE EMPIRICAL EVIDENCE**

We now turn to the review of the available empirical evidence that in different ways throws light on the *macroeconomic* impact of *collective bargaining*. We focus exclusively on comparative evidence from the OECD area. The survey builds on Aidt and Tzannatos (1999), where we, in addition, discuss the (limited) evidence deriving from other countries and regions than the OECD area, and should be seen as a complement to Flanagan (1999).

### 3.1 INDICATORS

The institutions of collective bargaining shape economic outcomes by propagating shocks and by creating or eliminating distortions. To evaluate the impact of collective bargaining on macroeconomic performance, different aspects of the underlying institutions have to be defined and measured along with indicators of macroeconomic performance.

#### 3.1.1 *Macroeconomic performance indicators*

Ideally, we would like to measure the impact of collective bargaining on social welfare. Short of any good measure of social welfare, we can think of macroeconomic performance as a reasonable proxy. The prevalent approach in the literature is to assume that macroeconomic performance can be measured by individual sub-outcomes, such as the unemployment rate, the employment rate, inflation, wage dispersion, and GDP and productivity growth. Some studies have simultaneously tried to measure different aspects of economic performance by means of a *performance index*, such as *Okun's index* (the sum of the unemployment rate and inflation) or the *open economy index* (the sum of the unemployment rate and current account deficit as a percentage of GDP).<sup>6</sup> Others (e.g., Jackman et al, 1990; and Scarpetta, 1996) use indicators of the degree of labor market flexibility (such as real wage flexibility and search effectiveness).

#### 3.1.2 *Indicators of collective bargaining*

The empirical literature focuses on three measurable aspects of collective bargaining: Union density, bargaining coverage and bargaining coordination. Union density and bargaining coverage are relatively simple to define and measure (see Table 3) and go some way in measuring the “importance” of collective agreements as opposed to individual contracts, though they can hardly be seen as indicators of union power because spill-over effects are not accounted for.<sup>7</sup>

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<sup>6</sup> See Calmfors and Driffill (1988) for further discussion.

<sup>7</sup> For instance, firms in non-covered sectors may set wages at the collectively agreed level to avoid being subject to other effects of unionization or to motivate workers concerned about relative wages (Pancavel, 1991; and Mazumdar, 1993).

**Table 3. Definitions of Union Density and Bargaining Coverage**

Union density	The number of workers who are members of a union, as a percentage of all workers, unionized and non-unionized.
Bargaining coverage	The number of workers, unionized or not, which have their pay and employment conditions determined by a collective agreement, as a percentage of all workers, unionized and non-unionized.

Note: Depending on the study, “all workers” refers to all wage and salary workers (employees) or total labor force (employees plus self-employed, family workers, and so on).

Table 4 shows union density and bargaining coverage for 19 OECD countries in 1970, 1980, and 1994. Average union density increased from 43 percent to 47 percent during the 1970s but declined during the 1980s and 1990s to 40 percent. However, the average hides a lot of variation. Some countries, such as the US, the UK, Japan, and the Netherlands, have experienced a significant reduction in union density. Other countries, such as Finland and Sweden, have experienced a significant increase over the three decades. Also, the cross-country variation is significant. Countries such as France, the US, and Spain have very low union density rates (less than 30 percent). On the other hand, the Scandinavian countries have very high rates (all above 50 percent, some around 80 percent).

Bargaining coverage is on average much higher than union density and was relatively constant around 70 percent during the period. While high union density leads to high coverage of collective bargaining, Table 4 shows that the converse is not true. Countries such as Spain and France have very low union density, yet the coverage of collective agreements is very high. The difference between union density and the coverage of collective bargaining is largely attributed to mandatory extensions of collective agreements to non-unionized sectors (OECD, 1994).

**Table 4. Union Density and Bargaining Coverage in Selected OECD Countries**

<i>Country</i>	<i>Union density</i>			<i>Bargaining coverage</i>		
	<i>1970</i>	<i>1980</i>	<i>1994</i>	<i>1980</i>	<i>1990</i>	<i>1994</i>
Australia	50	48	41	88	80	80
Austria	62	56	42	98	98	98
Belgium	46	56	54	90	90	90
Canada	31	36	38	37	38	38
Denmark	60	76	76	69	69	69
Finland	51	70	81	95	95	95
France	22	18	9	85	92	95
Germany	33	36	29	91	90	92
Italy	36	49	39	85	83	82
Japan	35	31	24	28	23	21
Netherlands	38	35	26	76	71	81
New Zealand	n.a.	56	30	67	67	31
Norway	51	57	58	75	75	74
Portugal	61	61	32	70	79	71
Spain	27	19	19	76	76	78
Sweden	68	80	91	86	86	89
Switzerland	30	31	27	53	53	50
UK	45	50	34	70	47	47
US	23	22	16	26	18	18
Average	43	47	40	72	70	68

Source: Freeman (1988) and OECD (1997a, Table 3.3).

*Bargaining coordination* is much harder to measure empirically than union density and bargaining coverage. To obtain empirical measures, the literature has focused on six (related) aspects of bargaining coordination, which are summarized in Table 5. Based on one or more of these aspects, the degree of bargaining coordination in individual OECD countries is assessed and a ranking or classification is derived.

**Table 5. Aspects of Bargaining Coordination**

A. Unions centralization	The capacity of the national union confederation to influence wage levels/patterns across the economy.
B. Union concentration	Union concentration is high if “few” unions at the relevant level of bargaining are representing workers.
C. Employer centralization	The capacity of the national employers’ confederation to influence wage levels/patterns across the economy.
D. Level of Bargaining	Collective bargaining takes place at different levels: the firm level, the industry level, and the regional/national level.
E. Informal coordination	1) Informal consultations at the industry, regional, or national level among unions and firms. 2) Pattern bargaining (an agreement in a dominant sector is mimicked by others).
F. Corporatism	A combination of 1) High union density and bargaining coverage and high degree of union and employer centralization/concentration and 2) Social partnership between national workers’ and employers’ organizations and government.
G. Other aspects	This include different types of dispute resolution procedures, the proportion of unionized workers employed in sectors that are subject to international competition, and union density.

Table 6 characterizes the 28 indicators of bargaining coordination used in the studies surveyed here. Each row provides information on how a particular indicator has been constructed. The first column indicates the source of the study that constructed the indicator. The second column indicates which aspects of bargaining coordination the study emphasized.<sup>8</sup> Each of the indicators is then given a code name for mnemonic purposes (column 3). The subsequent columns are labeled A to G. They refer to the aspects of coordination, presented in Table 5, that were used to construct the indicators in each individual study. The last two columns refer respectively to the period for which the indicator applies (the reference period) and to whether the study developed its own indicator of bargaining coordination or utilized/updated an existing one (index used).

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<sup>8</sup> A detailed discussion of each of the indicators included in the survey can be found in Aidt and Tzannatos (1999, Appendix 1).

**Table 6. Characterization of 28 Indicators of Bargaining Coordination.**

Source/study	Indicator gives emphasis on:	Indicator Code	A	B	C	D	E	F	G	Reference period	Index used
Dowrick (1993)	Coordination	D1993-2	X	(X)	(X)	X	X			60s, 70s and 80s	C1990-1, CD1988, S1990
Layard et al (1991)	Employee coordination	LNJ1991-1	X	X		X	X			80s	Own
Layard et al (1991)	Employer coordination	LNJ1991-2			X	X	X			80s	Own
Layard et al (1991)	Employer and employee coordination	LNJ1991-1/2	X	X	X	X	X			80s	LNJ1991-1 LNJ1991-2
OECD (1997)	Coordination	OECD1997-2	X		X		X			1980, 1990 and 1994	Own
OECD (1997)	Centralization and informal coordination	OECD1991-3	X		X	X	X			1980, 1990 and 1994	OECD1997-1 and OECD1997-2
Soskice (1990)	Economy-wide coordination	S1990	X		X	X	X			1985-90	Own
Blau and Kahn (1996)	Centralization	BK1996	X	X	X	X			union density	70s 80s	BS1985 CD1988 C1984-1 Others
Bleaney (1996)	Corporatism and centralization	B1996	X	X	X					70s 80s	BS1985 CD1988
Heitger (1987)	Corporatism	H1987	X	X	X					70s	BS1985
Bruno and Sacks (1985)	Corporatism	BS1985	X	X	X					70s	Crouch (1985)
Calmfors and Driffill (1988)	Centralization	CD1988	X	X	X	X				80s	Own
Cameron (1984)	Organizational power of labor	C1984-1	X	X					union density	1965-80	Own
Cameron (1984)	Union centralization	C1984-2	X							1965-80	Own
Cameron (1984)	Union concentration	C1984-3		X						1965-80	Own
Crouch (1985)	Neo-corporatism	C1985	X							70s	Own
Crouch (1990)	Labor movement centralization	C1990	X			X				60s, 70s and 80s	Own
Dowrick (1993)	Centralization	D1993-1	X	(X)	(X)	X				60s, 70s and 80s	CD1988, C1990-1
Lange and Garrett (1985)	Organizational power of labor	GL1985	X	X						1965-80	C1984
McCallum (1986)	Corporatism	MC1986	X	X	X					70s	Crouch (1985)
Newell and Symons (1987)	Corporatism	NS1987	X	X	X					1955-83	Own
OECD (1997)	Bargaining centralization	OECD1997-1				X				1980, 1990 and 1994	OECD (1994)
Schmitter (1981)	Corporatism	S1981-1	X	X						60s 70s	Own
Schmitter (1981)	Union centralization	S1981-2	X							60s 70s	Own
Schmitter (1981)	Union concentration	S1981-3		X						60s 70s	Own
Soskice (1990)	Wage drift	S1990-2	X							1985-90	Own

Taranetelli (1986)	Neo-corporatism	T1986	X		X	X		X	dispute settlement	70s	Own
Crouch (1990)	Power of unions in trade-exposed sectors	C1990-2							foreign competition	60s, 70s and 80s	Own

Note: A=union centralization, B=union concentration, C=employer centralization, D=the level of bargaining, E=informal coordination among employees and employers, F=corporatism/social partnership, and G: other aspects.

We notice two things from Table 6. First, most of the indicators combine a cluster of different aspects of bargaining coordination and are, therefore, highly correlated.<sup>9</sup> This makes it difficult to isolate empirically the contribution of individual aspects of bargaining coordination to macroeconomic performance. Second, although researchers in the area are familiar with the details of bargaining systems in many different countries, the resulting rankings of countries involve a large element of subjectivity. Not surprisingly, researchers often strongly disagree on the ranking of particular countries (see, for example, Soskice, 1990).

Table 7 presents four indicators of bargaining coordination that are representative of those found in the literature. A detailed comparison of the four reveals a number of interesting similarities and differences. In particular, we notice that it makes a considerable difference whether *informal* coordination is accounted for or not. Comparing the two indicators (S1990-1 and OECD1997-2) that do take informal coordination into account with the two (CD1988 and OECD1997-1) that do not, we see that Japan switches from being among the *most* coordinated countries in the sample to being among the *least* coordinated ones. Other countries, such as Belgium, move in the opposite direction. It is also evident that the bargaining institutions in a few countries have changed significantly from 1980 to 1994. For instance, the UK, Australia and New Zealand have become less coordinated and less centralized, while the opposite is true for Italy and Portugal. However, for most other countries bargaining institutions have been fairly constant.

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<sup>9</sup> See Table 16.

**Table 7. Country Rankings Based on Alternative Indicators of Bargaining Coordination**

Country	<i>S</i> 1990-	<i>CD</i> 1988	<i>OECD</i> 1997-			<i>OECD</i> 1997-2 <sup>3</sup>		
	<i>I</i> <sup>1</sup>	<sup>2</sup>	<i>I</i> <sup>3</sup>	1990	1994	1980	1990	1994
	1980s	mid-80s	1980	1990	1994	1980	1990	1994
Australia	..	10	3	1	14	7	5	15
Austria	2	1	3	1	1	1	1	1
Belgium	..	8	3	1	1	10	10	9
Canada	..	17	17	17	16	18	17	16
Denmark	..	4	3	8	5	4	5	6
Finland	..	5	2	4	4	7	5	6
France	9	11	8	8	5	13	10	9
Germany	6	6	8	8	5	1	1	1
Italy	8	13	15	14	5	15	15	4
Japan	<b>1</b>	<b>14</b>	<b>17</b>	<b>17</b>	<b>16</b>	<b>1</b>	<b>1</b>	<b>1</b>
Netherlands	7	7	8	8	5	10	10	9
New Zealand	..	9	8	16	16	15	17	16
Norway	4	2	8	1	1	4	4	4
Portugal	..	..	15	1	5	13	10	9
Spain	..	..	3	8	5	10	10	9
Sweden	5	3	1	1	5	4	5	9
Switzerland	<b>3</b>	<b>15</b>	8	8	5	7	5	6
UK	10	12	8	14	14	15	16	16
US	11	16	17	17	16	18	17	16

Note: The codes refer to Table 6. A *low* rank is an indication of a *high* degree of bargaining coordination. (1) See Soskice (1990); (2) see Calmfors and Driffill (1988); (3) see OECD (1997).

### 3.2 METHODOLOGY

Armed with indicators of collective bargaining and macroeconomic performance, the relationship between the two can be represented by the following set of equations:

$$(1) \quad y_{i,t} = g_{i,t}(\mathbf{z}_{i,t}, \mathbf{x}_{i,t}, \mathbf{e}_{i,t}),$$

where subscript *i* refers to a particular country and subscript *t* refers to a particular point in time.  $y_{i,t}$  is a vector of (observed) performance indicators (such as the unemployment rate or inflation),  $\mathbf{z}_i$  is a vector of institutional indicators (such as union density, bargaining coverage or bargaining coordination),  $\mathbf{x}_{i,t}$  is a vector of economic, political, and socioeconomic control variables and  $\mathbf{e}_{i,t}$  is a disturbance term. The function  $g_{i,t}$  is in principle unrestricted, i.e., it may be non-linear and non-monotonic.

Broadly speaking, equation (1) has been estimated in three different ways in the literature. The simplest approach is the *correlation approach*,<sup>10</sup> which estimates the relationship between two particular indicators as a simple correlation using cross-country data. This is obviously a very crude approach. The *regression approach*<sup>11</sup> uses multiple regression analysis to estimate equation (1), thereby attempting to isolate the impact of a particular institutional indicator from that of other determinants. The *two-step regression approach*<sup>12</sup> is a more sophisticated version of the regression approach. In the first step, an economic model (such as a system of wage and price equations) is econometrically estimated for each country using time series data. The results are used to obtain *estimated indicators* of labor market flexibility (such as real wage flexibility and search effectiveness). In the second step, the relationship (if any) between the estimated indicators and bargaining coordination, union density and bargaining coverage is analyzed.

Irrespective of estimation approach, drawing inference about the relationship between collective bargaining and macroeconomic performance is a challenge. First, the data material is limited and a few outliers can significantly bias the results. Most studies are based on a sample of 10-20 observations from OECD countries at a given point in time. Only a few (OECD, 1997; Heitger, 1987; Dowrick 1993) constructs pooled time-series/cross-country data. This increases the number of observations to about 60 and makes it possible to take unobserved country effects into account. Second, industrial relations *do* change over time but only slowly in response to political and economic conditions.<sup>13</sup> This raising the question of simultaneity biases as, in the long run, the pressure from emerging economic conditions can call for a reconsideration of the

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<sup>10</sup>See, e.g., Calmfors and Driffill (1988) and Bruno and Sacks (1985).

<sup>11</sup> See, e.g., Dowrick (1993) and Nickell and Layard (1999).

<sup>12</sup>See e.g., Layard et al (1991) and Scarpetta (1996).

<sup>13</sup>It is obvious from the experience of New Zealand and the UK that labor reforms can change the institutional framework of collective bargaining significantly. However, changing economic condition may have the same effect. For instance, centralized collective bargaining or even social partnership may, in some countries, have been a reasonable way to deal with the major supply side shocks of the 1970s, while more decentralized bargaining structures are better able to accommodate the challenge of globalization in the 1990s. Therefore, the tendency to decentralize collective bargaining in some OECD countries (such as Sweden and Denmark) can be seen as an endogenous response to changing economic conditions.

institutional framework. The literature, on the whole, ignores this feedback and assumes that it is institutional factors that affect economic indicators and not vice versa.<sup>14</sup>

It is, therefore, clear that one should be careful not to read too much into the empirical results. To reflect this, we focus on the *qualitative* impact (i.e. positive or negative), if any, of collective bargaining on economic performance<sup>15</sup> and stress that cross-country analysis can tell us little about the underlying causal relationship. At best, the analysis can identify empirical regularities that could be made subject to further theoretical or empirical research. With this in mind, we now turn to the evidence.

### 3.3 UNION DENSITY AND BARGAINING COVERAGE

The relationship between union density and bargaining coverage and a variety of economic performance indicators has been examined extensively. Table 8 summarizes the findings of the relevant studies with respect to union density. For each study, the Table contains information about the time period for which the study is relevant (column one); the economic performance indicator(s) under investigation (column two); the control variables, if any, used (column three); the estimation approach (column four). In column five, we summarize the main results of the study.

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<sup>14</sup> An exception is OECD (1997). They report that the “causality” runs from bargaining institutions to economic performance.

<sup>15</sup> We use the 10 percent level to judge the statistical significance of the estimated effects.

**Table 8. Union Density and Economic Performance in the OECD Countries: A Summary of Relevant Studies**

Study and years	Performance indicator	Control variables	Estimation approach	Result
OECD (1997) 1980-94	Unemployment rate Inflation Employment rate Real earnings growth Earnings inequality	Bargaining coverage OECD1997-3	Regression approach with pooled cross-country data set.	Union density increases the employment rate but has no effect on the unemployment rate, inflation, and real earnings growth. Union density reduces earnings inequality.
OECD (1997) 1980-94	Unemployment rate Inflation Employment rate Real earnings growth Earnings inequality	Non	Correlation approach; three points in time: 1980, 1990 and 1994.	Union density reduces earnings inequality in 1990 and 1994. Weak indication of a positive relationship between union density and the employment rate and a negative relationship between union density and real earnings growth in 1980 but not in other years.
Freeman (1988) 1979-85	Unemployment rate Employment rate Compensation	C1985 Wage dispersion Others	Regression approach with cross-country data	Union density has no effect on the unemployment rate, the employment rate, and compensation.
Scarpetta (1996) 1983-93	Unemployment rate	CD1988 LNJ1991-1 LNJ1991-2	Regression approach with cross country data	Union density increases unemployment, in particular youth and long-term unemployment but no control for bargaining coverage is made.
Nickell and Layard (1999) and Nickell (1997), 1983-88, 1989-94	Unemployment Labor supply Productivity growth	LNJ1991-1 LNJ1991-2 Bargaining coverage Others	Regression approach with (pooled) cross country data	Union density increases total unemployment but has no separate effect on short- and long-term unemployment. Union density has no effect on labor supply, and productivity growth.
Bean et al (1986) 1956-85	Adjustment speed Real wage flexibility	BS1985	Two-step regression approach	Union density has no effect on adjustment speed (to wage shocks) and real wage flexibility.
Layard et al (1991) 1980-94	Real wage flexibility	CD1988 LNJ1991-1 LNJ1991-2 T1986 Others	Two-step regression approach	Union density has no effect on real wage flexibility.
Scarpetta (1996) 1970-93	Hysteresis in unemployment	CD1988 LNJ1991-1 LNJ1991-2	Two-step regression approach	Union density increases unemployment persistence but no control for bargaining coverage is made.

Note: Union density = the number of workers who are members of a union, as a percentage of all workers, unionized and non-unionized. For more information on the indicators of bargaining coordination in column three, see Table 6. "Adjustment speed" is the mean adjustment speed of employment to a real wage shock.

Union density appears to have little or no impact on comparative labor market performance, once bargaining coverage and bargaining coordination have been controlled for<sup>16</sup> with one significant exception: Union density *is* associated with a compression of the wage distribution and a reduction in earnings inequality. This tendency is also found in microeconomic studies (see, e.g., Freeman, 1980b; and Gosling and Machin, 1993).

It is evident from Table 9 that the picture looks different for bargaining coverage.<sup>17</sup> After controlling for union density and bargaining coordination, countries with high bargaining coverage (such as Austria, France and Finland), *ceteris paribus*, experience higher unemployment rates, lower employment rates, and more inflation than countries with low bargaining coverage (such as the US, Japan and Canada). Moreover, high bargaining coverage seems to increase the supply of labor but has no effect on productivity (Nickell and Layard, 1999). Finally, as for union density, high bargaining coverage is associated a reduction in earnings inequality.

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<sup>16</sup> Blanchflower (1996), who uses country-specific microeconomic data to analyze OECD countries, find similar results.

<sup>17</sup> The layout of the Table is similar to Table 8.

**Table 9. Bargaining Coverage and Economic Performance: A Summary of Relevant Studies**

Study and years	Performance indicator	Control variables	Estimation approach	Result
OECD (1997) 1980-94	Unemployment rate Inflation Employment rate Real earnings growth Earnings inequality	Union density OECD1997-3	Regression approach with pooled cross-country data set.	Bargaining coverage increases unemployment, inflation and real earnings growth, and reduces the employment rate and earnings inequality.
OECD (1997) 1980-94	Unemployment rate Inflation Employment rate Real earnings growth Earnings inequality	Non	Correlation approach at three points in time: 1980, 1990 and 1994.	Bargaining coverage increases unemployment only in 1994, reduces the employment rate in only 1990 and 1994, and earnings inequality 1994. Otherwise it has no impact on economic performance.
Jackman (1993) 1983-88	Unemployment rate	LNJ1991-1 LNJ1991-2 Others	Regression approach with cross country data	Bargaining coverage increases unemployment
Nickell and Layard (1999), Nickell (1997) 1989-94	Unemployment rate Labor supply Productivity growth	LNJ1991-1 LNJ1991-2 Union density Others	Regression approach with cross-country data	Bargaining coverage increases because of short- and long-term unemployment and labor supply but has no effect on productivity growth.

Note: Bargaining coverage = The number of workers, unionized or not, which have their pay and employment conditions determined by a collective agreement, as a percentage of all workers, unionized and non-unionized. For more information on the indicators of bargaining coordination in column three, see Table 6.

One interpretation of these findings is that when collective agreements are extended to non-unionized sectors, worker/management cooperation and other productivity-enhancing “voice” factors do not compensate the economic costs associated with the wage mark-up and other aspects of the contracts. If this interpretation is correct, the negative correlation between coverage and (some measures of) economic performance cannot be taken as evidence of harmful and distorting union activities. On the contrary, it indicates that unions can serve a useful and productive purpose where they are allowed to develop.

### 3.4 BARGAINING COORDINATION AND COMPARATIVE ECONOMIC PERFORMANCE: THE BIG PICTURE

We have surveyed 26 studies that examine the relationship between bargaining coordination and economic performance.<sup>18</sup> The literature focuses on two main hypotheses:

**Hypothesis 1.** Coordinated collective bargaining leads to better economic outcomes than semi-coordinated collective bargaining, which, in turn, performs better than uncoordinated collective bargaining.

**Hypothesis 2.** (The hump hypothesis) Semi-coordinated collective bargaining leads to worse economic outcomes than both coordinated and uncoordinated collective bargaining (Calmfors and Driffill, 1988).

To structure the discussion and to synthesize the evidence in a systematic way, we undertake a “meta-analysis” of the knowledge embodied in these studies.<sup>19</sup> To this end, we divide the 26 studies into 125 *sub-studies*. The unit of analysis (a sub-study) then is a relationship between a specific indicator of bargaining coordination (defined in Table 6) *vis-à-vis* a specific economic indicator.<sup>20</sup> Although this approach is associated with multiple problems, it has the advantage over a more traditional survey that it allows for a systematic evaluation of the evidence.<sup>21</sup>

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<sup>18</sup>See Cameron (1984), OECD (1988, 1997), Rowthorn (1992a; 1992b), Freeman (1988), Tarantelli (1986), Bruno and Sachs (1985), Crouch (1985, 1990), Bleaney (1996), Heitger (1987), Jackman (1993), Golden (1993), McCallum (1983, 1986), Dowrick (1993), Calmfors and Driffill (1988), Soskice (1990), Scarpetta (1996), Cameron (1984), Bean (1994), Blau and Kahn (1996), Zweimuller and Barth (1994), Nickell and Layard (1999), and Nickell (1997).

<sup>19</sup> See, e.g., van den Bergh et al (1997, chapter 3) for an introduction to meta-analysis.

<sup>20</sup> Each sub-study is characterized in terms of the econometric methodology (estimation approach) and the type of data set (cross-country or pooled cross country data set) used to estimate it, the time period considered, the type of test, if any, used to test the hump hypothesis, and the type of control variables used. Doing this makes it possible to analyze if the underlying attributes of the studies (such as the econometric methodology, the data material, and the time period) have any systematic influence on the pattern of results. The full data set (of sub-studies) can be found in Aidt and Tzannatos (1999, Appendix 3).

<sup>21</sup>Aidt and Tzannatos (1999, Appendix 2) contains a detailed summary of each of the 26 studies.

### 3.4.1 Does bargaining coordination matter for economic outcomes?

The indicators of bargaining coordination focus on multiple aspects of collective bargaining (see section 3.1.2). It is, therefore, a reasonable starting point to ask what we learn from the 26 studies about the *combined* impact of centralization, concentration, informal coordination, and corporatism on different dimensions of economic performance. We summarize the findings of the 125 sub-studies in Table 10 as a rough “vote count.” Column one lists the relevant macroeconomic performance indicators. Column two lists the hypothesized relationship between the relevant performance indicator and bargaining coordination: positive (+), negative (-), U-shaped (U), Hump-shaped (H), and no relationship (N). The columns headed “rate 1”, “rate 2” and “evaluation of evidence” summarize the empirical findings. “Rate 1” is the proportion of sub-studies that find evidence in support of the hypothesized relationship, and “rate 2” is the proportion of sub-studies that test for and find evidence of a hump- or U-shaped relationship.

In the aggregate, about 60% of the sub-studies support the view that bargaining coordination affects economic outcomes in the predicted way.<sup>22</sup> However, as is evident from Table 10, there is significant variation in the level of confidence that we can place upon the relationship between individual macroeconomic performance indicators and bargaining coordination.<sup>23</sup> Countries with coordinated collective bargaining tend, *ceteris paribus*, to have lower unemployment rates than other countries. Studies that use composite measures of unemployment (such as Okun’s index and the open economy index) confirm this tendency. The confidence in this finding is somewhat mitigated by the fact that very few (about one-third) of the relevant sub-studies find a positive relationship between the employment rate and bargaining

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<sup>22</sup>Only two of the 125 sub-studies find results that are at variance with the predictions of economic theory. The first of these is obtained by OECD (1997) and suggests that the employment rate is low in countries with high levels of bargaining coordination. The result is based on a simple correlation between the employment rate and OECD1997-3. The Spearman correlation is significant at the 10% level but only for 1994. For the years 1980 and 1990, the relationship is insignificant. Hence, the result is not very robust. The second result, obtained by Bean (1994), suggests that a high level of employee coordination (measured by LNJ1991-1) is associated with high unemployment. However, if the combined effect of employer and employee coordination is taken into account, the correlation is negative.

<sup>23</sup>Clearly, if there is a tendency not to report insignificant results, then the evidence overstates the true significance of the relationship.

coordination. We would expect the reduction in the unemployment rate to have shown up as a higher employment rate. This seem, however, not to be the case. The most robust result is that countries with a high level of bargaining coordination tend to have a more compressed wage distribution. This finding can be attributed to a number of causes, including egalitarian bargaining; the fact that centralized bargaining reduces the scope for firm- and/or industry-specific factors to enter wage contracts; or to insurance motives (Agell and Lommerud, 1992). Furthermore, Rowthorn (1992a; 1992b) argues that wage dispersion is a proxy for job quality. He provides evidence that both the quantity of jobs (a high employment rate) and the quality of jobs (low wage dispersion) is higher in countries with coordinated collective bargaining.

**Table 10. Bargaining Coordination and Economic Outcomes: A Summary and Evaluation of Results**

Performance indicator <sup>1</sup>	Hypothesis <sup>4</sup>	Rate 1 <sup>2</sup>		Rate 2 <sup>3</sup>		Evaluation of evidence
		%	n <sub>1</sub>	%	n <sub>2</sub>	
The unemployment rate	- / H	70	40	44	16	Evidence of a negative relationship. Little evidence of a hump-shaped relationship.
Inflation	- / H	30	20	9	11	Little evidence of any relationship.
The employment rate	+ / U	42	12	36	11	Weak evidence of a U-shaped relationship.
Okun's index	- / H	75	12	100	2	Some evidence of a hump-shaped relationship but most of the evidence suggests that the relationship is negative .
Real compensation growth	- / H	56	9	20	5	Evidence of a negative relationship. Almost no evidence of a hump-shaped relationship.
Productivity growth	+ / U	38	9	50	6	Weak evidence of a U-shaped relationship.
Open economy index	- / H	50	8	100	2	Some evidence of a hump-shaped relationship but most of the evidence suggests that the relationship is negative .
Wage dispersion	+	100	7	n.a.	n.a.	Strong evidence of a positive relationship.
Earnings inequality	+	80	5	20	5	Strong evidence of a positive relationship.
Index of job quality <sup>6</sup>	+	100	2	n.a.	n.a.	Some evidence of a positive relationship.
Labor supply	+	100	1	n.a.	n.a.	Some evidence of a positive relationship.

Source: constructed from Appendix 2 and 3 in Aidt and Tzannatos (1999).

Notes:

All relationships are reported with reference to an *increase* in bargaining coordination. For example, a positive relationship means that the economic indicator increases as bargaining coordination increases, and a U-shaped relationship means that the economic indicator decreases at first and then starts rising at higher levels of coordination.

- (1) The performance indicators are either in levels (typically decade averages) or in first differences.
- (2) Rate 1 = the proportion of sub-studies that find evidence of the expected relationship, and n<sub>1</sub> is the total number of sub-studies that investigate the relevant relationship.
- (3) Rate 2 = the proportion of sub-studies that test for and find evidence of a hump- or U-shaped relationship, and n<sub>2</sub> is total number of sub-studies that perform a test for a hump- or U-shaped relationship.
- (4) In column 2, we indicate for each of the 11 economic outcomes what economic theory predicts about the relationship between the particular economic performance indicator and bargaining coordination.
- (5) n<sub>1</sub> is the total number of sub-studies that investigate the relevant relationship, and n<sub>2</sub> is the total number of sub-studies that perform a test of the hump hypothesis.
- (6) "Index of job quality" is the difference between the employment rate and wage dispersion (coefficient of variation) (see Rowthorn, 1992a; 1992b).

In Table 10, we attribute equal weight to all sub-studies irrespectively of the estimation approach and data material used. To judge the robustness of the results reported in the Table, we pool all sub-studies irrespectively of macroeconomic indicator and divide them into three groups. In

the first group, we include studies that use the correlation approach. In the second group, we include those studies that use the regression approach to analyze cross-country data. The third group contains those studies that apply the regression approach to analyze pooled cross-country data. Table 11 summarizes the results for each group as percentages of the sub-studies that do (and do not) find evidence of the predicted relationship between economic performance (in general) and bargaining coordination.

**Table 11. Percentage of Sub-studies that Find a Relationship between Bargaining Coordination and Economic Outcomes, Disaggregated according to the Estimation Approach and Data Material Used**

	Correlation approach	Regression approach with cross country data	Regression approach with pooled cross country data	Regression approach, total
Relationship	73%	53%	67%	57%
No relationship	27%	47%	33%	43%
Number of sub-studies	53	50	22	72

Note: We construct the table by pooling the results for the economic indicators and calculate the percentage of sub-studies that finds a relationship (or no relationship) for each of the three groups. We construct the information in the last column (“regression approach, total”) from data on all sub-studies using the regression approach irrespective of the data used.

It is clear from the Table that the studies based on the correlation approach find statistically significant relationships more often than those that use more advanced statistical techniques. Unsurprisingly, this suggests that the more and better we control for cross-country differences in economic policy, in the institutional environment, and in economic conditions, the harder it is to detect a relationship between bargaining coordination and economic performance. This tendency, however, becomes less apparent when the quality of the underlying data material is taken into account. Overall, we conclude that there are good reasons to believe that the simple “vote count” of Table 10 *exaggerates* the importance of bargaining coordination in shaping economic outcomes.

### 3.4.2 *Testing the hump hypothesis*

The hump hypothesis has been explicitly tested in a number of studies (Calmfors and Driffill, 1988; Freeman, 1988; OECD, 1988, 1997; Dowrick, 1993) accounting for 58 of the 125 sub-studies. Overall, the evidence in favor of the hypothesis is weak: only 21 out of the 58 sub-studies can statistically “confirm” it. The evidence for individual performance indicators is summarized in Table 10 by “rate 2” and is, at best, mixed. The view that semi-coordinated bargaining systems are associated with a relatively high unemployment rate is supported by fewer than half the relevant sub-studies, while the evidence of a U-shaped relationship between bargaining coordination and the employment rate is much weaker. Half of sub-studies concerned with productivity growth find evidence of a U-shaped relationship between bargaining coordination and productivity growth, but is based on an uncomfortably small number of sub-studies.<sup>24</sup>

To investigate the robustness of the results, we pool the 58 relevant sub-studies and divide them into three groups according to the test procedure used to test for the hump. A similar decomposition is done with respect to estimation approach. The results are summarized in Table 12.

Three test procedures have been used to test the hump hypothesis. In *the ranking test*, countries are ranked such that those that have coordinated bargaining systems and those that have uncoordinated systems are ranked above those with semi-coordinated bargaining systems (Calmfors and Driffill, 1988: 22-23). This (new) ranking is then examined against the relevant macroeconomic performance indicator. In *the quadratic test*, the institutional indicator (of interest) and its square are included in a regression model and their significance tested. This test is more flexible than the ranking test in the sense that it does not assume symmetry, and it does not rely on a somewhat arbitrary reordering of countries, but, as in the ranking test, the relevant

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<sup>24</sup> Dowrick (1993) explains the U-shaped relationship between productivity growth and bargaining coordination as follows. Whether or not unions welcome or fight productivity-enhancing changes (new machinery or new working practices) depends on the elasticity of labor demand. If labor demand is inelastic, then unions are likely to fight productivity-enhancing changes because they would lead to lay-offs. Hence, institutional changes that reduce the elasticity of labor demand, such as a move from firm-level bargaining to industry-level bargaining, mobilize unions to oppose technological progress and, ultimately, productivity growth may be relatively low in a semi-centralized bargaining system.

institutional indicator is (mistakenly) used as a cardinal variable. *The dummy variable test* is performed by dividing the countries into three groups (coordinated, semi-coordinated, and uncoordinated countries) and including a dummy variable for two of the groups in the relevant regression model. As with the ranking test, the main problem with this test is the arbitrariness of the classification. The virtue is that it avoids using bargaining coordination as a cardinal variable (OECD, 1997).

From Table 12, we see that the main conclusion remains; irrespective of which test procedure is used, the evidence in favor of the hump hypothesis is weak.<sup>25</sup> In addition, the underlying estimation approach does not have any systematic influence on the results.

**Table 12. Percentage of Sub-studies Testing the Hump Hypothesis that Find a Relationship between Bargaining Coordination and Economic Outcomes, Disaggregated According Test Procedure and Estimation Approach Used**

	Different test specification <sup>1</sup>			Different estimation approaches <sup>2</sup>	
	Dummy variable test	Quadratic test	Ranking Test	Correlation	Regression
Hump/U-shaped relationship	11%	40%	41%	35%	38%
No relationship	44%	60%	45%	46%	53%
Monotonic relationship	44%	0%	14%	19%	9%
Number of sub-studies	9	20	29	26	32

Note: (1) For each of the tests, the null hypothesis is that there is no hump/U-shaped relationship. The alternative hypothesis is that the relationship is hump/U-shaped. (2) We construct the frequency distribution by pooling the results for the macroeconomic indicators and calculate the percentage of “hump/U-shaped relationships,” “no relationships,” and “monotonic relationships” respectively, for each of the groups of sub-studies.

<sup>25</sup> The dummy variable test detects less “humps” and “Us” than the ranking and the quadratic test, however. This supports the view that the “true relationship” is more likely to be monotone (if not constant) than hump- or U-shaped. The dummy variable test basically compares the average performance of the three groups of countries using the group of countries with uncoordinated bargaining systems as the baseline. If the true relationship between, say, unemployment and bargaining coordination is only slightly hump-shaped, then the difference between the average performance of countries with uncoordinated and semi-coordinated bargaining systems is rather small. Accordingly, the dummy variable test has a hard time detecting a “hump.” The quadratic test and the ranking test, on the other hand, are more likely to detect it. Moreover, the evidence in Table 12 suggests that the latter two may be equally effective in doing so.

An interesting pattern emerges when studies that focus on the 1970s and 1980s are compared with more recent studies that focus on the 1990s. While the studies that analyze the 1970s and the 1980s (Cameron, 1984; Calmfors and Driffill, 1988; Tarantelli, 1986) tend to support the view that bargaining coordination affects macroeconomic conditions, the support is much weaker for the 1990s (OECD, 1997).<sup>26</sup> This suggests that the relationship between bargaining coordination and macroeconomic performance has been less pronounced in the 1990s. This is not entirely surprising. In fact, the observed differences between different labor market systems in the 1970s and 1980s may simply reflect differences in their capacities to adopt to the supply shocks of 1970s and the disinflationary policies of the 1980s. In the more stable environment of the 1990s, bargaining coordination has become less important relative to other determinants of macroeconomic performance. This suggests that the *static* benefits of bargaining coordination might not be that large, while the *dynamic* benefits show up more clearly in the evidence. This observation is supported by the fact that, in the relatively stable environment of the 1960s, countries with widely different bargaining systems were performing equally well. The reduction of the importance of bargaining coordination, as a determinant of economic performance, in recent times, is also related to changes in the economic environment. For example, globalization has exposed many industries to significant international competition and changes in industry structure and the legislative framework in which collective bargaining takes place have increased the importance of nonunionized labor markets in many OECD countries (most notably in the UK and New Zealand). Both of these tendencies can help explain why bargaining coordination has become less important.<sup>27</sup>

### 3.5 BARGAINING COORDINATION AND THE FLEXIBILITY OF THE LABOR MARKET

The evidence discussed so far focuses on the link between cross-country differences in economic *outcomes* and bargaining coordination. The studies reviewed in this section ask a

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<sup>26</sup> Dowrick (1993) can only find a U-shaped relationship between total factor productivity and bargaining coordination in the 1960s and 1970s. In the 1980s, he can not identify any statistically significant relationship. It would be interesting to extend this study to the 1990s.

<sup>27</sup> Empirically, OECD (1997) and Crouch (1990) find evidence that supports the view that exposure to international competition disciplines unions and reduces the performance differences between different bargaining systems.

different question: how is bargaining coordination related to labor market flexibility? Labor market flexibility is a fuzzy concept but can be measured by indicators such as real wage flexibility, adjustment speed to wage shocks, unemployment persistence, and search effectiveness of unemployed workers. Seven studies have used the two-step regression approach to estimate these indicators and have investigated their relationship with bargaining coordination. Table 13 summarizes the results.

**Table 13. Labor Market Flexibility: Four Measures and their Relationship to Bargaining Coordination**

Measure	Predicted relationship	Summary of evidence
Real wage flexibility	+	Most evidence indicates that real wages are more flexible (i.e. respond more to changes in employment) where bargaining coordination is high.
Hysteresis	H	The evidence suggests that hysteresis is associated with employee coordination in semi-coordinated wage bargaining systems.
Adjustment speed	+	The adjustment speed of employment to a wage shock is higher where bargaining coordination is high.
Search effectiveness	+	The level of unemployment consistent with a given vacancy level is lower where bargaining coordination is high, i.e., search effectiveness is higher.

Note: See Layard et al (1991); McCallum (1986); Newell and Symons (1987); Bean et al (1986); Scarpetta (1996); Alogoskoufis and Manning (1988); and Jackman et al (1990).

The two most interesting results related to (real) wage flexibility and to unemployment persistency (hysteresis). First, hysteresis can arise because of membership effects (Blanchard and Summers, 1986), because of loss of skills and discouraged-worker effects, and because of depreciation of capital during recession that does not fully recover subsequently or takes a long time doing so (Rowthorn, 1995). Layard et al (1991) find that *employer* coordination reduces persistence while *employee* coordination increases it. Subsequent research by Scarpetta (1996) suggests that the employer effect is, on average, greater and that unemployment in countries with semi-coordinated bargaining systems shows a relatively high degree of persistence. In addition, Jackman et al (1990) provide evidence that the search effectiveness of unemployed workers is higher in countries with highly coordinated collective bargaining, suggesting that high bargaining coordination is associated with smaller discouraged-worker effects. Second, the evidence suggests that the (bargained) real wage is more responsive to employment conditions where bargaining coordination is high (Layard et al, 1991; and Bean et al, 1986). This combined with the faster adjustment to shocks bring support to the notion that bargaining coordination helps the

labor market absorb shocks fast and at a low employment cost. This conclusion is further supported by a recent study by Blanchard and Wolfers (2000). They show that it is the interaction between shocks and institutions that is crucial for the observed cross-country and time series variation in unemployment in the OECD over the last 40 years.

### 3.6 DISSECTING BARGAINING COORDINATION

Disentangling the macroeconomic impact of different aspects of bargaining coordination is statistically hard and, in the presence of strong complementarities, it may even be misleading to attempt to do so. With this in mind, we review what can be learned from the literature about individual aspects of bargaining coordination.

#### 3.6.1 *Formal and informal bargaining coordination*

Informal bargaining coordination is an important phenomenon in countries such as Japan, Germany, and, to some extent, Switzerland. To investigate the importance of informal coordination as opposite to formal coordination, we divide the sub-studies into two groups. In the first group, we include those sub-studies that use an indicator of bargaining coordination that focuses exclusively on *formal* aspects of bargaining coordination (such as centralization and union concentration) and in the second group, we include those that use an indicator that also take into account informal coordination.<sup>28</sup> Table 14 summarizes the results.

**Table 14. Percentage of All Sub-studies that Find a Relationship between Bargaining Coordination and Economic Outcomes, Disaggregated According to Formal and Informal Bargaining Coordination**

	Formal bargaining coordination only	Formal and informal bargaining coordination
Relationship	70%	51%
No relationship	30%	49%
Number of sub-studies	84	41

Note: We construct the Table by pooling the results from all 125 sub-studies and calculate the percentage of relationships (or no relationships) for each of the two groups.

<sup>28</sup> The indicators that take into account both formal *and* informal coordination are the seven indicators listed at the top of **Table 6**.

We see that the linkage between bargaining coordination and economic performance is more discernible when the focus is on formal coordination only. When informal aspects of bargaining coordination are taken into account, fewer sub-studies find statistically significant relationships. This pattern becomes even clearer when we restrict attention to those sub-studies that test the hump hypothesis, as is evident from Table 15. This implies that, unless one controls for the degree of informal coordination, the *observed* difference in performance between countries with different *formal* bargaining systems looks larger than it really is (see also Soskice, 1990).

**Table 15. Percentage of Sub-studies Testing the Hump Hypothesis that Find a Relationship between Bargaining Coordination and Economic Outcomes, Disaggregated According to Formal and Informal Bargaining Coordination**

	Formal bargaining coordination only	Formal and informal bargaining coordination
Hump/U-shaped relationship	58%	11%
No relationship	39%	63%
Monotonic relationship	3%	26%
Number of sub-studies	31	27

Note: We construct the table by pooling the results from the 58 relevant sub-studies and calculate the percentage of “hump/U-shaped relationship,” “no relationships,” and “monotonic relationships” for each of the two groups of sub-studies.

These findings suggest that informal coordination can help remove the disadvantage associated with formal, semi-coordinated bargaining. However, since informal coordination by its very nature is not embodied in institutions or laws, instability is an important issue and informal coordination has a strong tendency to break down in times of rapid economic and social change. Although it is useful to think of informal coordination as a *substitute* for formal coordination, the two aspects of bargaining coordination are certainly not perfect substitutes.

### 3.6.2 Employer versus employee coordination

Jackman (1993), Bean (1994), and Scarpetta (1996) analyze the relative importance of employee and employer coordination.<sup>29</sup> Using different control variables and time periods, all

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<sup>29</sup> Employee coordination is measured by index LNJ1991-1 and employer coordination by LNJ1991-2. The correlation between the two is 0.65, which suggests that multicollinearity may be a problem.

three studies strongly indicate that *employer* coordination is more important than employee coordination in accounting for comparative unemployment performance. In other words, while more employer coordination always leads to lower unemployment, more employee coordination has a much smaller effect (Jackman, 1993), no effect (Scarpetta, 1996), or can even lead to higher unemployment (Bean, 1994). This finding may be related to the fact that employers' organizations, at successively higher bargaining levels, are more effective than unions in controlling wage drift. If so, wage competition among firms and the pressure on individual firms to give in to unions' wage demands are both reduced.

### 3.7 THE INTERACTION BETWEEN UNION DENSITY, BARGAINING COVERAGE AND COORDINATION

The interaction between bargaining coordination, density and coverage is important for the understanding of the relationship between collective bargaining and economic performance, and that they are highly correlated is clear from Table 16. The Table shows the rank correlation between selected indicators of bargaining coordination, and union density and bargaining coverage, respectively.

**Table 16. The Rank Correlation between Selected Indicators of Bargaining Coordination, Union Density, and Bargaining Coverage**

	Bargaining centralization				Corporatism		Employee or employer coordination		Informal and formal coordination	
	CD1988	OECD1997-1	C1984-1	S1981-1	BS1985	T1986	LNJ1991-1	LNJ1991-2	OECD1997-2	S1990-1
Union density	0.71***	0.44***	0.88***	0.65**	0.34	0.25	0.65***	0.43**	0.23	0.32
Bargaining coverage	0.70***	0.75***	0.57**	0.46*	0.46*	0.24	0.56**	0.43**	0.42**	0.17

Source: OECD (1997: Table 3.4; Table 3.3) and own calculations.

Notes: (1) See Table 6, for a more precise definition of the 10 indicators of bargaining coordination.

(2) Significance levels: \*\*\*=1%; \*\*= 5%; and \*= 10%.

Overall, countries with highly coordinated collective bargaining tend to have high union density and high bargaining coverage.<sup>30</sup> This pattern is particularly clear for the group of indicators

<sup>30</sup> A few outliers should be pointed out. France has a relatively coordinated bargaining system, yet union density (but not coverage) is very low. Likewise, Japan combines a relatively coordinated bargaining system with low union density and coverage (see Table 4 and Table 7).

that focuses on bargaining centralization and employee and employer coordination. Those indicators that focus on *informal* coordination are, with one exception, not strongly correlated with union density and bargaining coverage. This shows that *centralization* of collective bargaining requires high union density or, at least, high bargaining coverage. *Informal* coordination (e.g., between employers as in Japan), on the other hand, can develop and play an important role in an environment where a small proportion of the workforce is unionized and where formal collective agreements only cover a minority of workers.

Jackman (1993), Nickell and Layard (1999), and Nickell (1997) analyze the interaction between the three aspects of collective bargaining and economic performance. They confirm the finding that bargaining coverage (and, to a lesser extent, union density) has a *negative* effect on unemployment at a given level of bargaining coordination and that bargaining coordination has a *positive* impact on unemployment for given bargaining coverage.<sup>31</sup> More interestingly, as bargaining coverage and bargaining coordination (tend to) increase together (Table 16), the increase in coordination counteracts the adverse impact on economic performance of increasing bargaining coverage (and union density). Moreover, Layard et al (1991: 137) argue that it is the failure of studies such as Calmfors and Driffill (1988) to take into account the impact of bargaining coverage on economic performance that gives the (misleading) impression that semi-coordinated collective bargaining is “bad.” More generally, these results underscore the danger of focusing on individual aspects of labor market institutions when it is the interaction between many different aspects that determines outcomes. Labor market institutions *complement* each other and a comparison between different “packages of institutions” may be the most sensible way to assess the macroeconomic performance of labor market institutions.

### 3.8 SOCIAL COHERENCE AND ECONOMIC PERFORMANCE

In a corporatist society, the political activities of unions and employers’ organizations take place within a well-defined framework of social partnership between workers, capitalists, and the government. Within this framework, labor market parties, particularly unions, expect the government to deliver certain welfare goods and policies in exchange for wage moderation and

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<sup>31</sup> Union density is typically insignificant.

peace in the labor market. Lange and Garrett distinguish among four scenarios, which are summarized in Table 17.<sup>32</sup>

In scenario (1), unions are powerful, in the sense that the majority of workers are

**Table 17. The Garrett and Lange Hypothesis of Coherence**

	Left-wing government	Right-wing government
Unions powerful	(1) Good economic performance	(3) Bad economic performance
Unions weak	(4) Bad economic performance	(2) Good economic performance

unionized and bargaining is controlled by national organizations, and the government is left-wing. Under these circumstances, it is predicted that economic performance will be “good”. This is because the pursuit of welfare policies by left-wing parties is likely to lead to voluntary wage moderation. Moreover, as pointed out by Olson (1982), if unions organize the majority of workers, they are less likely to engage in wasteful rent-seeking. This is because unionized workers are going to bear most of the costs associated with these activities themselves. In scenario (2), unions are politically weak, in the sense that union density is low and bargaining is decentralized, and the government is rightwing. Under these circumstances, it is also predicted that economic performance will be “good”. This is because unions are restricted in their wage demands by competitive pressure from product markets which are left unregulated by the right-wing government. In scenario (3) and (4), economic performance is expected to be “bad,” because there is a mismatch between the power of the labor movement and the political orientation of the government. If, for instance, a right-wing government coexisting with powerful unions, unions are unlikely to restrict their wage demands voluntarily, as they cannot expect the government to deliver any welfare goods in return. Likewise, a left-wing government coexisting with weak unions cannot count on any voluntary wage moderation because individual unions are likely to pursue their own interests (wage pressure) without taking into account the economy-wide consequences of their actions.

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<sup>32</sup>See Lange and Garrett (1985); Garrett and Lange (1986); and Alvarez et al (1991).

To test “the Garret and Lange hypothesis of coherence,” indicators of the political orientation of the government and indicators of the organizational power of unions are interacted in a multiple regression model. Using economic growth as the economic performance indicator, the hypothesis finds some support in a sample of OECD countries (Garrett and Lange, 1986; Lange and Garrett, 1985; and Alvarez et al, 1991).

#### 4 CONCLUSION

The evidence on the macroeconomic impact of collective bargaining in OECD countries is too weak and fragile to warrant generalizations. The interaction cannot be analyzed in isolation from the general economic and political environment in which bargaining takes place, as industrial relations develop endogenously in response to country-specific economic, legal, and political conditions. It is therefore dangerous to extrapolate results derived from average cross-country performance to specific countries. Nevertheless, a number of results do emerge. These are broadly in line with the findings of Flanagan (1999) in his recent survey of the literature. The results are:

- The hump hypothesis receives no support, except for selected indicators such as unemployment and productivity, and in these cases the evidence is not very robust. The view that that countries with coordinated bargaining systems, on average, performed better than countries with less coordinated system in the 1970s and 1980s receives some support but the differences seem to have disappeared in the 1990s. This suggests that the static benefits of bargaining coordination might not be that great, while the dynamic benefits seem to be larger.
- The most robust result relates to wage dispersion and earnings inequality: Countries with coordinated collective bargaining tend to have less wage dispersion than other countries.
- Cross-country variation in union density has little impact on economic performance. High bargaining coverage, on the other hand, tends to be associated with relatively poor economic performance.
- In countries with high bargaining coverage, the adverse impact on unemployment can be counteracted if bargaining takes place in a coordinated fashion. This suggests that one aspect of collective bargaining cannot be analyzed in isolation from other aspects. In other words, it seems to be the *interaction* between various aspects of collective bargaining that determines the macroeconomic impact.

- In countries that lack formal bargaining coordination (in the form of centralized bargaining between national organizations), informal bargaining coordination can arise as a substitute. Instability of informal coordination makes it less than a perfect substitute, though.

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