Unions In Decline? What Has Changed and Why

Michael Wallerstein

Department of Political Science, Northwestern University, Evanston, Illinois 60208-1006; e-mail: m-wallerstein@nwu.edu

Bruce Western

Department of Sociology, Princeton University, Princeton, New Jersey 08540; e-mail: western@princeton.edu

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■ **Abstract** Between 1950 and 1980, labor markets grew increasingly organized in advanced industrial societies. Union membership in most countries expanded more rapidly than the labor force, centralized wage setting became more common, and union members became increasingly concentrated in a small number of large unions. Between 1980 and 1992, however, union density fell on average, and centralized wage setting grew increasingly rare. Only union concentration continued to increase in the 1980s. Existing theories of union organization and collective bargaining institutions are largely successful in explaining both the trends over time and much of the cross-national variation from 1950 to 1980, but they fail to account for the dramatic declines in union strength that some (but not all) countries have experienced since 1980.

INTRODUCTION

Unions are in big trouble, as everyone knows. Under attack by conservative politicians, battered by overseas competition, threatened by capital flight, bewildered by changes in the nature of work, and shackled by an outmoded egalitarian ideology, unions increasingly appear like large but aging dinosaurs struggling to adapt as the climate changes. The proportion of workers who belong to unions is in decline. Centralized systems of wage-setting are breaking apart. Incentive pay schemes and profit-sharing arrangements subvert negotiated wage scales. Wage inequality is growing while the median wage stagnates. Past achievements are under attack as European governments blame "labor market rigidities," i.e. the legal and contractual protections that current workers enjoy, for persistently high unemployment. Even the unions' traditional political allies, the social democratic and labor parties, are keeping their distance, having discovered that being too closely tied to the unions is a political liability.

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As is usually the case, what everyone knows to be true is not completely wrong but not completely right either. In this paper, we aim to describe, as precisely as the data allow, what is and is not known about the changing terrain of industrial relations in advanced industrial societies in the postwar period. We survey the empirical research that seeks to explain cross-national and longitudinal variation in union organization and wage-setting procedures. We do not attempt to provide country-by-country descriptions.[1] Instead, we emphasize the patterns of change and stability in key aspects of labor organizations and wage-setting institutions across the major member countries of the Organisation for Economic Co-operation and Development (OECD). Although there is great interest in changes that have occurred in the recent past, the lags in data collection are such that we are forced to end our study in 1992.

Unions are heterogeneous institutions. The extent to which union-negotiated agreements determine the pay received by union members and by nonmembers, the participation of unions in aspects of the employment relation other than pay, and the involvement of unions in labor training and policy making vary across countries, across time, and frequently across industries within countries. Moreover, the sources of union power are equally heterogeneous across time and place. Unions, to varying degrees in different countries and different time periods, have become able to influence the terms of employment by threatening work stoppages, by participating in governmental bodies with statutory authority, by obtaining political support in parliament, and by offering employers services that employers value.

Within a short essay, we cannot hope to cover the full range of differences among unions as organizations. Instead, we concentrate on the core activity of unions in all advanced industrial societies, which is to represent workers in negotiations with employers concerning pay. We begin with a discussion of the share of the work force that belongs to unions and the share of the work force whose wages are covered by collective agreements. We discuss the extent to which wage setting is centralized through collective bargaining practices or through political intervention. We discuss the trend in union concentration. Each of these sections describes the fundamental facts concerning both cross-national variation and change over time. In addition, we summarize the evidence concerning the causal mechanisms that best explain the differences and changes that the data reveal. The essay concludes with a brief discussion of the impact of changes in union organization and wage-setting institutions on equality and economic performance.

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[1]Several edited collections provide complementary overviews of the literature. Golden & Pontusson (1992), Kitschelt et al (1999), and Iversen et al (1999) all contain a mixture of case studies and quantitative studies of unions and collective bargaining in advanced industrial societies. Ferner & Hyman (1998 [1992]) contains an excellent set of country-by-country descriptions of industrial relations in Western Europe.

UNION DENSITY AND COVERAGE

To analyze cross-national variation in union organization, we follow Bain & Price (1980:2), who define a union as "an organization of employees which seeks to represent the job interests of its members to employers and in some circumstances to the state, but which is not dominated by either of them." This definition conveys the main idea of a voluntary organization of employees whose chief purpose is collective bargaining over wages and working conditions. Unions can then be distinguished from professional associations, such as the American Medical Association. Professional associations, though they do represent members' "job interests," generally include significant numbers of self-employed professionals in private practice. The Bain & Price definition excludes professional associations from union membership counts but includes organizations of credentialed wage earners such as teachers, nurses, or social workers.

The extent of union organization is typically measured by union density. Union density expresses the number of union members as a percentage of the number of people who could potentially be union members. This potential constituency usually includes all wage and salary earners and sometimes the unemployed. A distinction can be drawn between gross density statistics that count unemployed and retired members, and net density statistics that include employed union members only. Union members are defined as persons whom the unions count as members. In the case of employed workers, this is equivalent to persons who pay union dues.

Table 1 summarizes trends in gross union density through the postwar period for a group of 18 OECD countries (see also Visser 1991). The table shows three distinct patterns of variation. First, three groups of countries differ in their general level of unionization. Belgium, Denmark, Finland, and Sweden share very high unionization rates. By 1992, the total number of union members in these four countries nearly equalled or exceeded the total number of wage and salary earners. A large, heterogeneous group of countries unionized between a third and two thirds of their national labor markets. At the bottom of the scale, a group of six low-density countries organized less than a third of the work force in 1992.

Second, unionization in the industrialized democracies steadily diverged over the three decades from 1950. This divergence is reflected in the increasing standard deviation reported in Table 1. At the beginning of the postwar period, union density varied in a small band between about 30% and 60%. Unions—and industrial relations institutions more generally—showed much greater variation 30 years later, when the gap between the most and least organized countries had increased to 70 percentage points.

Third, the pattern of divergence in unionization that describes most of the postwar period was replaced by a convergent pattern of union decline during the 1980s. Although the average level of unionization dropped just three points between 1980 and 1992, some countries suffered spectacular declines. Falling unionization was especially severe in the English-speaking countries. Union density fell by 20 points in New Zealand, by 15 points in the United Kingdom, by

TABLE 1   Union density and labor market institutions[a]

	Density 1950	**Density 1980**	**Density 1992**	**Level[b] 1965– 1992**	**Left[c] 1965– 1992**	**Ghent[d]**	**Coverage[e] 1990**
High-density countries							
Belgium	36.9	76.6	80.5	0.50	0.23	Yes	90
Denmark	58.2	86.2	91.6	0.78	0.43	Yes	74
Finland	33.1	85.8	111.4	0.63	0.48	Yes	95
Sweden	62.1	89.5	111.3	0.85	0.73	Yes	83
Middle-density countries							
Australia	56.0	52.4	39.6	0.68	0.40	No	80
Austria	62.2	65.3	53.2	0.33	0.72	No	71
Canada	26.3	36.1	37.0	0.11	0.67	No	38
Germany	36.2	41.3	41.2	0.33	0.40	No	76
Ireland	38.6	63.4	53.5	0.54	0.15	No	
Italy	47.4	60.5	68.0	0.77	0.18	No	83
New Zealand	49.4	46.0	25.9	0.62	0.34	No	
Norway	53.8	65.3	67.7	0.91	0.56	No	75
UK	45.1	56.3	41.3	0.33	0.35	No	47
Low-density countries							
France	30.9	19.7	9.4	0.33	0.31	No	92
Japan	46.2	31.2	24.5	0.33	0.00	No	21
Netherlands	36.2	39.9	31.0	0.63	0.18	No	60
Switzerland	40.1	34.5	30.0	0.33	0.29	No	43
US	28.4	24.9	15.3	0.07	0.26	No	18
Mean	43.7	54.2	51.8	0.51	0.37		65.4
S.D.	11.4	21.5	30.7	0.25	0.20		24.7

[a]Union density taken from Visser's [1992 (unpublished), 1996] gross density series. Figures sometimes exceed 100 in 1992 because gross density here is defined on all wage and salary earners whereas union membership data include the retired and unemployed.

[b]Level is the 1965–1992 average level of collective bargaining, rescaled to vary from zero to one, measured by the scale of Golden et al (1999).

[c]Left is the 1965–1992 average of the proportion of cabinet seats held by left parties (see Western & Healy 1999).

[d]Ghent indicates countries with Ghent systems of unemployment insurance.

[e]Coverage refers to the share of workers covered by a collective bargaining agreement in 1990, taken from Traxler's (1994) unadjusted series.

12 points in Australia, and by 10 points in Ireland and the United States. Among non–English-speaking countries, Austria, France, and the Netherlands also suffered large declines in unionization. Out of all the industrialized democracies surveyed, only Finland and Sweden enjoyed strong union density growth through the 1980s.

Explanations of unionization should be able to account for these three patterns of union density variation. The dominant account of cross-sectional variation

has emphasized the impact of labor market and state institutions (e.g. Visser & Ebbinghaus 1999, Western 1997, Rothstein 1989). The effects of leftist parties in government, collective bargaining centralization, and union-controlled unemployment insurance have received detailed empirical treatment. Labor and social democratic parties have been instrumental in expanding union rights and lowering the cost of unionization. In particular, leftist governments significantly facilitated public sector unionization in the 1950s and 1960s. In contrast, conservative parties have actively resisted unions through labor legislation and in industrial relations. Centralized collective bargaining is claimed to raise unionization by extending union agreements to nonunion workplaces, thereby defusing employer opposition to the expansion of union membership. Centralized union confederations also restrict interunion competition and coordinate organizing efforts among union affiliates. Finally, unions play a significant role in the distribution of unemployment benefits in the four high-density countries. The Ghent system, in which unemployment insurance is administered by the unions, enables union officials to protect union rates from competition from the unemployed through their discretion in the determination of the conditions under which unemployment becomes "involuntary" (Rothstein 1989). In addition, the Ghent system keeps workers in contact with their union during spells of joblessness.

Measures of leftist government, bargaining centralization, and the Ghent system are reported in Table 1. Bargaining level represents an index (described in more detail in the next section) of the extent to which wages are set at the level of the plant, the industry, or the economy as a whole. Leftist parties include socialist, social democratic, and labor parties, as well as the Liberal and New Democratic Parties in Canada and the Democratic party in the United States. Regressing 1992 union density on these two institutional variables and a dummy variable for the presence of a Ghent system yields the following estimates:

$$\text{Density} = 7.58 + 43.1 \text{ Level} + 31.9 \text{ Left} + 45.8 \text{ Ghent},$$
$$\quad\quad (0.8) \quad (3.1) \quad\quad\quad (2.0) \quad\quad\quad (5.5)$$

where t statistics are in parentheses, and $R^2 = 0.85$. This simple cross-sectional regression shows a close association between union organization and labor market and state institutions. The estimates indicate that a difference of about 40 points in union density is explained by the difference between national and local-level collective bargaining. About a quarter of the 85-point difference in union density between Sweden in Japan is attributed to variation in the electoral success of social democratic and socialist parties. In addition, Ghent system countries enjoy, on average, close to a 50-point advantage in unionization.

Although institutional conditions can explain cross-sectional variation in unionization, time-series variables are needed to explain divergence in union growth and union decline in the 1980s. The leading longitudinal explanation claims that workers convert market power into collective action in response to fluctuating economic conditions. In this business cycle account, poor economic conditions weaken

labor's market power and increase employer resistance to unions. A strong economy improves labor's hand by increasing the benefits of collective action and lowering employer opposition. Operationally, the business cycle theory has taken many different forms, but the impact of two variables stands out. Union membership is positively related to inflation but negatively associated with unemployment. Relatively strong inflation and unemployment effects were reported in a large econometric literature that covered union membership trends in Australia, Canada, Sweden, the United Kingdom, and the United States (Hines 1964, Ashenfelter & Pencavel 1969, Sharpe 1971, Swindinsky 1974; also see the reviews of Bain & Elsheikh 1976:26–57 and Hirsch & Addison 1986:52–56).

Despite reasonable empirical results, the business cycle approach takes a thin view of labor movements. The key agents—workers and employers—respond to exogenously shifting market conditions. This approach discounts active efforts by workers to construct shared interests through mobilization. The strategic role of unions is also bracketed from analysis. In contrast to the business cycle approach, other researchers have focused on the mobilizing efforts of militant workers and unions. The role of worker militancy as a source of union growth was developed and largely abandoned by economists but rehabilitated by political sociologists. Dunlop's (1949) work on the early development of US unions associated spurts in labor movement growth with periods of intense strike activity. According to this analysis, the strike waves of the 1890s and the 1930s were critical moments. Comparative researchers observed that unions grew rapidly in the wake of strike waves, not only in the United States of the 1930s, but also in Sweden in the 1910s, in Italy after 1969, and in France for most of the twentieth century (Korpi 1978:211–12, Regalia et al 1978, Tilly 1986:369). In this political theory, strike activity raises unionization by mobilizing workers around a collective project. In some cases, strikes are explicitly intended to obtain union recognition and rights to collective bargaining (Griffin et al 1990:179).

The organizing problem of the union has been studied by examining effects of labor-force size and growth (Wallerstein 1989, 1991). In this perspective, the benefits of unionization depend on the proportion of the work force organized, but the cost of organization to the union depends on the absolute number of new union members recruited. As a result, the optimal level of unionization for the union falls as the size of the labor force increases. Although this idea was originally examined in a cross-sectional sample of 20 industrialized democracies, strong results were also found in time-series analysis (Western 1997:119). Estimates indicate that the union organizing task is more difficult when the labor force is growing quickly (Western 1997:119).

Longitudinal and institutional explanations can be combined in models that treat time-series effects as conditional on time-invariant institutional conditions. In this approach, institutions not only raise or retard unionization but also affect the strategic calculations of unions and the impact of labor market competition. Western (1997) followed a hierarchical approach in which he estimated

TABLE 2 Effects of labor market institutions on times series coefficients[*]

Time series coefficients	Intercept	Level	Ghent
Unemployment	−0.17	0.16	0.04
	(−0.21, −0.13)	(0.08, 0.24)	(−0.05, 0.12)
Strike volume	0.19	−0.12	−0.02
	(0.11, 0.27)	(−0.24, 0.00)	(−0.13, 0.09)
Leftist government	0.33	−0.28	−0.17
	(0.10, 0.56)	(−0.64, 0.16)	(−0.75, 0.39)

[*]The parentheses contain the 80% confidence intervals. The first row in the table gives the estimates obtained from the regression $b_{ui} = \gamma_{u0} + \gamma_{u1}\text{level}_i + \gamma_{u2}\text{Ghent}_i + \text{error}_{ui}$, where b_{ui} is the estimated coefficient for unemployment in country i derived from the regression of the change in union density on a constant, inflation, unemployment, strike volume, labor force growth, and leftist government. A similar procedure was followed for the coefficient on strike volume and leftist government. See Western (1997:109–21) for additional details. The coefficients for *level* differ from Table 7.3 in Western (1997:116) due to a rescaling of *level* so that it varies between zero and one as in Table 1.

country-specific coefficients in a time-series model of annual change in density for the period 1950–1985. Longitudinal predictors in this model included inflation, unemployment, strike activity, the growth of the dependent labor force, and leftist-party participation in government. The country-specific, time-series coefficients were assumed to depend on a measure of centralized bargaining and a dummy variable for the Ghent system of unemployment insurance. Table 2 reports Western's results, describing how the level of bargaining and the Ghent system affect the impact of unemployment, strikes, and leftist government on density.

Data from only 18 countries in a highly parameterized model with error at both the micro and macro levels yield only modest statistical precision. Nevertheless, the point estimates indicate that the effects of labor market institutions on the relationship between union growth and the economic environment may be substantial. Consider first the impact of unemployment on union density. According to the estimates in Table 2, the impact of unemployment on the annual change in union density is strongly negative in a country, such as the United States, that has decentralized bargaining (level ≈ 0) and a government-run system of unemployment insurance (Ghent = 0). In contrast, in such countries as Sweden or Denmark, with centralized bargaining (level ≈ 0.8) and a union-run system of unemployment (Ghent = 1), the rate of unemployment has almost no impact on the growth of union density [−0.17 + (0.16)(0.8) + 0.04 ≈ 0]. The key intuition of business cycle explanations ties the fortunes of labor movements to the fortunes of the economy, with unions growing when labor markets are tight and declining when labor markets are slack. The estimates reported in Table 2 (as well as in Pedersen 1982 and Freeman 1989) suggest that unions can maintain their memberships and even grow during periods of high unemployment when

bargaining is centralized and unions administer the system of unemployment insurance.

Table 2 shows important institutional effects on the impact of industrial conflict and the partisan composition of government as well. In decentralized countries without the Ghent system, union growth is substantially higher when the volume of strikes is high. In countries with centralized bargaining, the volume of strikes is much less important for union growth. When bargaining is centralized, strikes frequently represent protests against wage restraint imposed by centralized agreements negotiated by the top union leadership. Finally, the partisan composition of government can have a large impact on union growth in countries with decentralized bargaining, where employers have a strong incentive to resist unions. With centralized bargaining, employers have less reason to resist unions, since the wages of union members and nonmembers are the same (Freeman 1989) and election results have little impact on union growth or decline. In sum, the vulnerability of unions to periods of high unemployment or government by parties with ties to business depends on the set of labor market institutions that unions and employers have established to regulate and moderate their conflicts.

To study the decline of union density in the 1980s, Western (1997:ch. 9) used the hierarchical model of union growth to form forecasts for the period 1974–1989. Where union density decline was modest—as in Canada, Norway, or Sweden—trends in unionization in the 1970s and 1980s were predicted accurately. The performance of the model for the healthier labor movements suggested a continuity in the statistical regime of union growth from the 1960s to the post–oil shock period. However, using information from the 1950s and 1960s provided little leverage on the major falls in union density of the 1980s. Where declining unionization was dramatic (as in the Netherlands, France, the United Kingdom, or Ireland), the model fared poorly. The declines in unionization are much larger than we would predict given the historical pattern of union growth in the 1950s and 1960s.

The failure of standard models to predict the large declines of union organization that occurred in a significant number of countries in the 1980s suggests that a new causal process may be driving the disorganization of labor markets in the industrialized democracies. Two explanations have been studied in some detail. First, a number of researchers have related union decline to declining employment in manufacturing industries (Bell 1973:137–42, Troy 1990, Visser 1991). However, the changing occupational structure does not fare well as an explanation of union decline. First, the timing is wrong. The employment share of secondary industries in OECD countries fell at about the same rate in the 1970s as in the 1980s, but unions generally grew in the 1970s and declined only in the later decade. Second, industry-level membership figures reveal large declines of union density within manufacturing in countries with large declines of union density overall (Western 1997:154). A successful account of contemporary deunionization must explain falling union density within industries where unions have traditionally been strong.

The second approach to union density decline has emphasized changes in the political and institutional environment. Howell (1995) emphasizes the importance

of the Thatcher governments' labor law reforms in explaining the sharp decline of union membership in the United Kingdom between 1980 and 1992. Western (1997:ch. 11) examined the year with the greatest acceleration of decline in union density since the mid-1970s. Western found that the acceleration of decline was more likely to occur when the left had suffered an electoral defeat and when bargaining was decentralized. Such studies are suggestive, but we are still some distance from having an empirical model that can adequately account for the cross-national and longitudinal variation in union density since the mid-1970s.

A decline in the proportion of workers who belong to unions is not the same thing as a decline in the proportion of workers covered by union contracts. The last column of Table 1 displays the share of the work force who were covered by union contracts in 1990. In such countries as the United States, Canada, Japan, and the United Kingdom, the coverage of union contracts is roughly equivalent to the share of the work force who belong to unions. In English-speaking countries, apart from Australia, and in Japan, coverage has declined as density has fallen. In Australia and on the European continent, however, union contracts frequently cover far more workers than belong to unions. If countries are weighted by the size of their labor forces, the average density in Australia and continental Europe was 46.4 in 1990. The weighted average coverage rate for the same set of countries in the same year was 79.9. Outside of the United States, Japan, Canada, and the United Kingdom, four out of five workers are covered by a union contract, although less than half of the work force belongs to unions. Moreover, the share of workers covered by collective agreements remained roughly constant in continental Europe between 1980 and 1990 (Traxler 1994), even in countries where union density declined significantly.

The reasons for the difference between coverage and density are varied. In all countries, union and nonunion members who work side by side in the same plant receive the same wage. (Closed and union shops are rare in Europe. Thus, most plants have less than 100% union membership.) In Germany, the majority of workers are employed by members of an employers' confederation. In Austria, membership of employers in the relevant employers' confederation is mandated by law. In both Germany and Austria, the terms of wage agreements negotiated between a union and an industry-level employers' association are binding on all firms that belong to the employers' association, whether or not their workers belong to the union.[2] In France, Belgium and, to a lesser extent, the Netherlands, union-negotiated contracts are regularly extended by government act to cover all workers in the industry.

Falling union density is a major problem for unions, even when coverage remains high. A high level of coverage says little about the unions' financial health

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[2]The dependence of coverage on employers' membership in the employers' association gives unions an important stake in the organizational health of employers' associations. See Thelen (1999) for a discussion of the depth of union concern in Germany with the declining organizational strength of German employers.

or ability to mobilize supporters in a conflict with employers. Yet, the high levels of coverage in Europe, outside of the United Kingdom, indicate that collective bargaining has declined much less than union membership has. In spite of the significant decline in union membership in some countries, the large majority of workers in Western Europe continue to work under conditions governed by a collective bargaining agreement.

THE CENTRALIZATION OF WAGE SETTING

Collective bargaining always entails a centralization of wage setting relative to a purely competitive labor market. At the very least, workers' pay and other aspects of employment are decided at the level of the plant or company when pay is covered by a collective agreement. However, pay may be decided at much higher levels. In most advanced industrial societies (albeit not in the United States, Canada, and the United Kingdom), a majority of workers are covered by multi-employer agreements negotiated at the level of the industry. In a few countries, multi-industry agreements covering the entire private sector have been the norm for substantial periods of time.

Why is the level of centralization important? The dominant understanding of the impact of the level of bargaining is as follows.[3] If wages are set at the plant or company level, unionization enables workers to obtain a share of the extra profit, or rents, that some firms enjoy by having lower costs than their competitors. If the product market is competitive, however, workers' possible wage gains are limited by the firm's inability to cover higher labor costs with higher prices. With purely local bargaining, collective bargaining changes the distribution of the firm-specific rents between workers on the one hand and management and shareholders on the other, but otherwise it has a limited impact on economic performance.

If unions set wages at the industry level, however, workers can raise wages throughout the industry. (The presence of foreign competition changes the argument, as discussed below.) If all firms in the industry face higher wage costs, the price of output is forced up. In effect, industry-level wage setters can exert monopoly power in the product market in a closed economy, with union members receiving monopoly profits in the form of higher wages. Employers may also benefit from industry-level bargaining, relative to local bargaining, since their ability to partially cover the higher wages with price increases lessens the negative impact of wage gains on profits. But now, there may be significant losses for groups who are not represented at the bargaining table. Wage increases that lead to price increases reduce the real income of workers in other industries. In addition, since higher prices imply lower sales and less employment, wage increases hurt workers who

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[3]See Moene et al (1993) and Calmfors (1993) for surveys of the theoretical literature on the impact of centralized wage setting on economic performance. See Flanagan (1999) for a survey of the empirical literature.

are priced out of a job and hurt taxpayers who pay for the unemployment benefits received by workers who have been laid off. In sum, industry-level wage setting stands accused of allowing the externalization of the costs of higher wages and of generating an inefficient allocation of resources.

If, however, unions and employers centralize wage setting so that wages throughout the economy are set simultaneously, the wage agreement will be neutral with regard to relative prices. Workers' ability to exert monopoly power disappears. In other words, national wage setters internalize many of the externalities of industry-level wage setting, and thus, the theory goes, they would choose outcomes as efficient as decentralized bargaining (Calmfors & Driffill 1988). Moreover, if the central wage agreement contains an industrial peace obligation, i.e. a prohibition on strikes once the central agreement is signed and ratified, workers in low-cost firms are unable to obtain a share of firm-specific rents, as they could with local bargaining. Thus, fully centralized bargaining with an industrial peace obligation may result in the best possible outcome for employers, short of having no unions at all. However, since the determination of the wage distribution becomes an explicitly political decision with highly centralized wage setting, centralization may unleash forces that employers cannot control.

Whether or not centralized bargaining has a desirable impact on profits, wages, and aggregate economic performance is a subject of continuing controversy that we return to in the conclusion. In this section, our primary concern is to describe how centralization has changed during the postwar period. Table 3 presents data on the centralization of private-sector wage setting in 16 countries during 1950–1992. The main variable in the table is the country's score on a four-category scale of the level of wage setting. The four categories are (*a*) predominantly local or company-level wage bargaining, (*b*) predominantly industry-level wage bargaining, (*c*) national-level wage bargaining without an industrial peace obligation, and (*d*) national-level wage setting with an industrial peace obligation.

Wages can be centralized in two basic ways. The first is via direct negotiations between peak associations of unions and employers. The second is via government intervention. The scale of the level of wage setting combines both, but confederal involvement and government intervention can be examined separately. At the bottom of the table, we list the average scores on an 11-category scale of confederal involvement and a 15-category scale of government intervention.[4] The 16 countries have been coded on all three scales on an annual basis. The table reports the average scores during various time periods.

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[4]Descriptions of the categories can be found in Wallerstein (1999) or in Golden et al (1999). Two limitations of the data should be noted. The first is that the data cover changes in wage-setting institutions in the private sector only. Wage setting in the public sector is usually organized differently. The other limitation is that the data refer only to wage setting, which may be centralized while other aspects of the employment relation that are covered by collective agreements are decided at the level of the firm or plant.

TABLE 3   The centralization of wage setting*

	1950–1959	1960–1972	1973–1981	1982–1992
Australia	0.67	0.67	0.67	0.70
Austria	0.47	0.33	0.33	0.33
Belgium	0.33	0.33	0.50	0.64
Canada	0.00	0.00	0.38	0.00
Denmark	1.00	1.00	0.92	0.52
Finland	0.73	0.74	0.63	0.58
France	0.33	0.36	0.33	0.33
Germany	0.33	0.33	0.33	0.33
Italy	0.67	0.67	0.67	0.88
Japan	0.00	0.24	0.33	0.33
Netherlands	1.00	0.81	0.79	0.48
Norway	0.87	0.95	0.96	0.82
Sweden	0.73	1.00	1.00	0.64
Switzerland	0.33	0.33	0.33	0.33
UK	0.00	0.40	0.50	0.00
US	0.00	0.14	0.00	0.00
Mean	0.47	0.52	0.54	0.43
S.D.	0.36	0.32	0.28	0.28
Confederal involvement				
Mean	0.30	0.35	0.32	0.26
S.D.	0.31	0.32	0.30	0.26
Government involvement				
Mean	0.30	0.33	0.39	0.31
S.D.	0.28	0.21	0.24	0.20

*The country data represent the scores on a four-category scale of the level or bargaining, described in the text. The confederal involvement and government involvement data represent the average scores on scales of confederal participation in wage setting and parliamentary participation in (private-sector) wage setting, respectively. All data have been scaled to vary between zero and one. The raw values for the three scales are taken from Golden et al (1999).

On average, the level of wage setting increased from the 1950s to the 1960s and increased again from the 1960s to the 1970s. After 1981, however, the average level of centralization has declined. Particularly sharp declines in centralization occurred in four of the 16 countries: Denmark, the Netherlands, Sweden, and the United Kingdom. However, not all countries moved in the same direction. In Belgium and in Italy, for example, the average level of wage setting was higher between 1982 and 1992 than at any earlier time in the postwar period. Overall, the estimated change in centralization from the 1970s to the 1980s is only −0.11 on

the four-point scale—a marginally significant difference. Thus, without further analysis, the data provide some support for the argument that wage setting has become increasingly decentralized since the early 1980s (Lash & Urry 1987, Katz 1993, Katz & Darbishire 1999), and those who emphasize, instead, the continuing diversity of national experiences (Hyman 1994, Traxler 1995, Wallerstein et al 1997, Wallerstein & Golden 1997).

There is an interesting distinction between centralization via confederal involvement and centralization via parliamentary act. Whereas the average level of confederal involvement in wage setting was highest in the "Golden Age" from 1960 through 1973, government involvement increased sharply in the period between the two oil shocks. The initial response of many governments to the first appearance of rising unemployment and rising inflation was to seek greater control over the rate of wage increases. After 1982, however, both confederal and government involvement in wage setting declined significantly.

There are three approaches to explaining both the pattern of cross-national variation and change over time. The first approach might be labeled micro-Marxism. In the micro-Marxist approach, scholars have sought to explain the rise and decline of centralized bargaining institutions as the results of changes in technology and the organization of production. Ingham (1974) argued that centralized bargaining institutions arose in countries, such as Sweden, where industrialization was late and rapid. The consequence of rapid industrialization, according to Ingham, was a relative similarity of production methods and working conditions across factories and industries that made centralized bargaining feasible. Piore & Sabel (1984) and Pontusson (1991) emphasize the association of the establishment of centralized wage setting with the growth of "Fordist" methods of production, in which large numbers of workers are doing similar tasks.

The recent decline in centralized bargaining, according to the micro-Marxist approach, stems from the changes in technology and the organization of production that require greater flexibility and/or differentiation of work and terms of employment. Katz (1993), Streeck (1993), Pontusson & Swenson (1996), and Iversen (1996) argue that the rise of "diversified quality production" and "flexible specialization" necessitates greater differentiation of pay and a stronger connection between individual or team performance and rewards than centralized wage setting allows. A related explanation spotlights changes in the occupational structure. Hernes (1991) and Moene & Wallerstein (1993), for example, argue that the proliferation of small and highly specialized groups of workers with extraordinary market power had a destabilizing impact on the centralized bargaining systems in the Nordic countries.

The second broad approach to explaining the rise and decline of centralization focuses on the impact of international trade. Our discussion of the impact of centralization on collective bargaining outcomes rested on the assumption of a closed economy. In a small open economy, however, the prices of traded goods are independent of domestic wage costs. Thus, industry-level bargaining advantages workers in the sheltered sector relative to workers in the

traded-goods sector. As a consequence, workers and employers in the traded-goods sector may form an alliance to centralize bargaining in order to restrain wage increases in sectors that do not face international competition. This, in brief, is Swenson's (1989, 1991) explanation of the establishment of centralized wage-setting institutions in Sweden and Denmark. Katzenstein's (1983, 1985) argument that centralized wage-setting institutions arise in small open economies as an adaptation to the risks associated with international openness has a similar flavor.

If the Nordic countries and the Low Countries adopted centralized bargaining institutions because of their high levels of trade dependence, it appears paradoxical that centralization is declining as economic openness increases. Wood (1994), Leamer (1993), Rodrik (1996), and McKeown (1999) offer a resolution of the paradox by arguing that increased international competition from rapidly industrializing developing countries, a new phenomenon, has reduced the demand for unskilled and semiskilled workers in advanced industrial societies while increasing the demand for their more skilled counterparts. To the extent that centralized wage setting prevents wages from falling at the bottom of the labor market, the argument goes, employers and governments increasingly seek decentralized alternatives. Although most observers argue that trade with the Third World has weakened unions relative to employers in recent years, Thelen (1999) makes the interesting argument that increasing international competition has weakened employers' associations most of all. As Thelen points out, centralized wage setting requires that both sides of the employment relationship are sufficiently organized to bargain collectively. If employers' associations collapse, so will centralized bargaining.

In yet another twist on the argument that globalization leads to decentralization, Lange et al (1995), Garrett & Way (1995), and Iversen (1996) point out that the unionized work force may be less dependent on trade today than in the early postwar period. Because productivity gains in the traded-goods sector outrun productivity gains in the sheltered sector, the share of workers who face international competition has declined even as the value of trade as a share of gross domestic product has increased. In particular, the share of union members who work in the public sector has grown in almost all countries. According to this line of argument, centralized institutions received widespread support among both unions and employers in the Nordic countries when the union movement was dominated by workers in the traded-goods sector. As sheltered-sector unions grew in size and influence in Northern Europe, the ability of employers in the traded-goods sector to restrain the wages of sheltered-sector workers through centralized bargaining declined. Whereas centralized wage setting functioned to restrain wages of sheltered-sector workers in the early postwar period, now employers seek to achieve the same goal of wage restraint through decentralization.

A third approach views centralization as a response to macroeconomic difficulties. In this argument, countries centralize wage setting to restrain wage growth in pursuit of greater price stability or lower unemployment (Headey 1970, Flanagan et al 1983, Martin 1984, Streeck & Schmitter 1991). The argument is transparent

TABLE 4   Ordered probit analysis of the level of wage setting[a]

Independent variable	Estimated coefficient	t-statistic	Mean of independent variable
Lagged dependent variable	1.29	14.1	0.688
Industry[b]	0.599	3.08	0.792
Authority[c]	0.424	6.79	0.794
Concentration[d]	−4.70	3.00	0.088
1982–1992[e]	−0.524	3.04	0.256
Lagged unemployment[f]	7.28	2.71	0.039
Lagged inflation[g]	2.43	1.70	0.052
First cut	1.752		
Second cut	3.010		
Log-likelihood index[h]	0.53		

[a]Dependent variable is a three-category scale of the level of wage setting as described in the text, with assigned values of one, two, and three. There are 630 observations (15 countries, 1950–1992). The countries are the same as in Table 3.

[b]Industry is a dummy variable equal to one if industry-level bargaining predominates in the absence of centralization.

[c]Authority is an index of the statutory authority of the employers' confederation.

[d]Concentration is the Herfindahl index described in Table 5.

[e]1982–1992 is a dummy variable equal to one for 1982–1992.

[f]Unemployment from the OECD. All other variables are from the Golden et al (1999) data set.

[g]Inflation data indicate the proportional change in the CPI from the Summers & Heston (1991) data set.

[h]Log-likelihood index is $1-(LL/LL_0)$, where LL is the log likelihood of the model and LL_0 is the log likelihood when the only independent variable is a constant.

when wage setting is centralized through the adoption of incomes policies. Even in the absence of incomes policies, unions and employers may adopt centralized negotiations in order to collectively reduce wage growth in the face of high unemployment.

The view of centralization as a solution to macroeconomic problems receives support from the ordered probit regression reported in Table 4. Since we lack systematic data on the shift from industry-level bargaining to plant-level bargaining in the United States and United Kingdom, the dependent variable in Table 4 is a tripartite scale where the lowest level of centralization is either plant- or industry-level bargaining, the middle level represents national wage setting without an industrial peace obligation, and the highest level represents national wage setting with an industrial peace obligation. The independent variables are (*a*) the lagged dependent variable, (*b*) a dummy variable indicating whether industry-level or plant-level wage setting predominates when wage setting is not centralized at the national level, (*c*) an index of the statutory authority of the peak association for employers (described below), (*d*) the Herfindahl index of union concentration

(described below), (*e*) a dummy variable for the period 1982–1992, (*f*) the rate of inflation from year *t*-1 to year *t*, and (*g*) the rate of unemployment in year *t*-1.

Countries are more likely to centralize wage setting when wage setting was centralized in the previous year. Countries in which industry-level bargaining predominates when not centralized are more likely to centralize wage setting than countries in which plant-level bargaining predominates. It is also not surprising that centralized wage setting is more likely to be adopted in countries in which the employer's peak association has substantial statutory authority over affiliated firms. The index of statutory authority is a threefold scale based on (*a*) whether the employers' confederation has veto power over wage contracts signed by members, (*b*) whether the employers' confederation can veto lockouts by members, and (*c*) whether the employers' confederation has its own conflict funds. It is interesting to note that the parallel index for the union confederation did not fit the data as well. The authority of the employers' confederation over its members appears to be more important for the success of centralized wage setting than the authority of the union confederation over its members. This could indicate that the employers are usually the driving force behind centralization, as Swenson (1991) argues, or that employers face a more severe collective action problem than unions do, as Thelen (1999) argues. The Herfindahl index is a measure of the extent to which the union movement is dominated by a small number of large unions, described below. The negative coefficient on union concentration may imply that centralization and concentration are substitutes. Countries with high levels of concentration, such as Germany and Switzerland, have less need for centralized procedures to coordinate wage setting.

The negative coefficient for the dummy variable for the period 1982–1992 implies a substantial decline in the likelihood of centralization after 1982. Before 1982, the probability of adopting centralized wage setting, with or without an industrial peace obligation, for a country at the mean of all of the other independent variables was estimated to be 0.48.[5] After 1982, the probability of adopting a centralized wage-setting procedure dropped to 0.28 (holding the other independent variables constant at their mean). The estimated impact of an increase in the unemployment rate of one percentage point, when all other variables are at their mean, is to increase the probability of centralization by three percentage points.

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[5]The likelihood that a country adopts a decentralized system of wage setting in year *t* is $\Pr(\beta'x + u < \mu_1) = \Pr(u < \mu_1 - \beta'x) = \Phi(\mu_1 - \beta'x)$, where β is the vector of coefficients, x is the vector of independent variables for country *i* in year *t*, μ_1 is the first cut point, and $\Phi(\cdot)$ is the cumulative density function for the standard normal distribution. Thus, if all independent variables other than the dummy for 1982–1992 take their mean values, $\bar{x}$, we have $\Phi(\mu_1 - \beta'\bar{x}) \approx \Phi(0.055) \approx 0.52$ before 1982 and $\Phi(\mu_1 - \beta'\bar{x}) \approx \Phi(0.579) \approx 0.72$ after 1982. To calculate the impact of a marginal change in a variable x_i, we use $\partial\Phi(\mu_1 - \beta'\bar{x})/\partial x = -\beta\phi(\mu_1 - \beta'\bar{x})$. For unemployment, assuming all other independent variables take their mean values, we have $\beta\phi(\mu_1 - \beta'\bar{x}) \approx -(7.28)(0.398)$ before 1982 and $-\beta\phi(\mu_1 - \beta'\bar{x}) \approx -(7.28)(0.337)$ after 1982. In either case, the marginal impact of an increase in unemployment of 0.01 is to reduce the likelihood of decentralized wage setting by 0.03. The marginal impact of a change in inflation is calculated in a similar fashion.

Thus, if unemployment increased from 4% to 5% before 1982, and all other independent variables are at their mean, the probability that a country will adopt a moderately or highly centralized system of wage setting is estimated to increase from 0.48 to 0.51. An increase in inflation is estimated to have about one third the impact of an increase in unemployment. In other words, a three-percentage-point increase in the rate of inflation is estimated to have the same impact as a one-percentage-point increase in the rate of unemployment. Supplementary regression (not shown) revealed that measures of trade openness (imports plus exports over gross domestic product), size (the number of wage and salary earners), and the partisan composition of government (leftist-party participation in government) do not have significant effects on the likelihood of centralized wage setting after controlling for the variables in Table 4.

In sum, macroeconomic difficulties, in particular rising unemployment and rising inflation, are important determinants of the adoption of centralized systems of wage setting. Other explanations, however, are not necessarily wrong. There has been a significant decline in the reliance on systems of centralized wage setting to reduce unemployment since 1981. Whether that change is a consequence of changes in the organization of production, of increased international competition, or of a political shift to the right by social democratic as well as conservative parties is anybody's guess.

UNION CONCENTRATION

Even in the absence of centralized bargaining, industry-level unions may coordinate their demands and employers' associations may coordinate their responses. Alternatively, a union, such as the German metal workers, may act as the wage leader and negotiate a contract that is then copied in the other industries. If the German metal workers and metal-working employers understand that their contract will be copied by all, the result may be similar to what would be achieved by fully centralized bargaining [though Wallerstein's (1990) model demonstrates that the result with a wage leader may be very different from fully centralized bargaining]. Thus, Golden (1993) argues that centralization may be less important than concentration, where concentration refers to the extent to which union members are concentrated in a few large unions, as opposed to being divided into a large number of smaller organizations. If the number of actors is small enough, coordination of wage setting is likely whether or not wages are explicitly set in a centralized manner.[6] More recently, increasing concentration among unions in the English-speaking countries may capture an alternative dynamic in which unions

[6]Concentration might be measured between confederations (the degree to which union members belong to a single confederation) or within confederations (the degree to which union members belong to the same unions within the confederation). Since concentration between confederations is uncorrelated with all other measures of concentration and centralization (Golden & Londregan 1998), we focus on concentration within confederations.

TABLE 5 Herfindahl index of union concentration[*]

	1950–1959	1960–1972	1973–1981	1982–1992
Australia	0.014	0.018	0.019	0.017
Austria	0.088	0.099	0.103	0.105
Belgium	0.101	0.098	0.104	0.095
Canada	0.041	0.024	0.030	0.047
Denmark	0.148	0.130	0.123	0.118
Finland	0.062	0.088	0.068	0.076
Germany	0.120	0.144	0.159	0.158
Italy	0.097	0.075	0.073	0.073
Japan	0.111	0.089	0.097	0.078
Netherlands	0.108	0.115	0.181	0.157
Norway	0.045	0.055	0.079	0.114
Sweden	0.056	0.081	0.114	0.136
Switzerland	0.156	0.169	0.177	0.180
UK	0.046	0.050	0.053	0.046
US	0.025	0.018	0.019	0.025
Mean	0.081	0.084	0.093	0.095
S.D.	0.044	0.045	0.052	0.050

[*]Entries represent the average Herfindahl index for within-confederal concentration during the time period at the head of the column. The approximation formula is described in the text. In countries with more than one major blue-collar confederation, the data refer to the average weighted by each confederation's membership. Data are from the Golden et al (1999) data set. The raw data are available at five-year intervals. Missing values were added by linear interpolation.

merge to expand membership in a context where new organization has stalled (Chaison 1996).

To see how concentration has changed over time, we use the Herfindahl concentration index, defined as $H = \sum_{i=1}^{n} S_i^2$, where S_i is the share of confederal membership in the ith largest affiliate and n is the total number of affiliates in the confederation. The Herfindahl index represents the probability that two confederation members who are selected at random would belong to the same affiliate. Since we have membership data only for the three largest affiliates and for the total number of affiliates, we approximated the Herfindahl index using the formula $H^* = S_1^2 + S_2^2 + S_3^2 + (n-3)S_4^2$, where $S_4 = (1-S_1-S_2-S_3)/(n-3)$. Table 5 presents the approximate Herfindahl indices for the main blue-collar confederations of 15 countries during the postwar period. In countries with more than one blue-collar confederation, we used a weighted average of the Herfindahl indices for each confederation, weighting each confederation by its relative size in terms of membership.

Within confederations, there is a trend toward greater concentration over time, as Windmuller (1981) observed almost 20 years ago. The mean Herfindahl index has

increased steadily since 1950, although the change over time is small relative to the cross-national differences. Norway, Sweden, and the Netherlands show the largest increase in the Herfindahl index. If we measured concentration by the number of affiliates of the blue-collar confederations, Britain and the United States would show the largest increases in concentration (Golden et al 1999). For example, the British Trades Union Congress had 186 affiliates in 1950 and only 76 affiliates in 1990. In fact, the only countries whose number of affiliates has not declined over the postwar period are those whose number of affiliates was already small in 1950.

CONCLUSION

From 1950 to the 1970s, the average levels of union density, union concentration, and the centralization of wage setting were all increasing among advanced industrial societies. In spite of the diversity of national experiences, the general pattern is one in which the labor market was becoming increasingly organized and regulated. Since the early 1980s, however, most indicators of union strength and centralized wage setting have declined on average. Average density has declined since 1980 to a limited extent if each country is weighted equally. If countries are weighted in proportion to the size of their labor force, however, the fall in density is large. The decline in centralization, if judged from the raw figures, is not large. Controlling for macroeconomic conditions and the partisan composition of government, however, the likelihood of centralized wage setting declined sharply in the 1980s. The main exception to the trend toward greater decentralization is the steady but small increase in union concentration. Increased concentration, however, may reflect pressures to merge operations in the face of declining membership.

Does it matter whether union membership is falling and wage setting is becoming less centralized? The effect on equality is large. The more decentralized the system of wage setting, the more unequal the distribution of wages and salaries (Freeman 1988; Blau & Kahn 1996; D Rueda, J Pontusson, unpublished manuscript; Wallerstein 1999). Wallerstein (1999), for example, finds that the index of the centralization of wage setting, the Herfindahl index of concentration and union density, explains most of the cross-national and longitudinal variance in wage inequality among advanced industrial societies since 1980. But whether high levels of union density and centralized wage-setting institutions are associated with high or low unemployment is no clearer today than when Bruno & Sachs published the first systematic study of the question in 1985 [see, for example, the recent exchange between Siebert (1997) and Nickell (1997) on the causes of unemployment in Europe]. Part of the difficulty is that wage-setting institutions are only part of the institutional environment that may be relevant for macroeconomic performance. Lange and Garrett argued that what matters is not the centralization of wage setting but the interaction between the centralization of wage setting and the partisan composition of government (Lange & Garrett 1985, Garrett & Lange 1986, Garrett 1998). Hall (1994), Hall & Franzese (1998), Iversen (1998), and Soskice & Iversen (2000) argue that what matters is the interaction of the

centralization of wage setting and the independence of the central bank. The number of countries is small enough that the number of interaction terms soon overwhelms the data. (Combining longitudinal and cross-national variation in pooled time series analyses does not help as much as might be expected, since there is strong dependence over time in the unemployment rate.)

Table 4 points to a different difficulty. If systems of centralized wage-setting are adopted, in part, as a response to macroeconomic difficulties, the system of wage setting is endogenous (as argued by Flanagan 1999). In order to estimate the impact of wage-setting institutions on macroeconomic performance, we need to simultaneously estimate the impact of macroeconomic performance on the choice of wage-setting institutions. Clearly, to jointly estimate the choice of wage-setting institutions and the impact of wage-setting institutions is a difficult task given the limited data available. But empirical studies of the impact of wage-setting institutions on macroeconomic performance that treat wage-setting institutions as exogenous, i.e. virtually all existing studies, are attempting to draw inferences from biased estimates. In spite of the large literature on economic performance and labor market institutions, we still know little about the magnitude of the tradeoff between equality and economic performance, or even whether a tradeoff exists.

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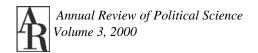Griffin LJ, McCammon HJ, Botsko C. 1990. The "unmaking" of a movement? The crisis

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