Wage Growth, Recession, and Labor Decline in the Industrialized Democracies, 1965–1993

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The current unemployment crisis strikingly demonstrates that the European labor markets are failing to deliver rising living standards as they have for most of the postwar period. In addition to persistent high unemployment, real wage wage growth also stagnated across Europe. In the late 1960s and early 1970s, European wages rose by about 4 or 5 percent each year. In the decade from 1983, real wage growth throughout Europe averaged between 1 and 2 percent. Indeed, a general wage stagnation swept across the entire OECD area. Real U.S.wage growth had always been slower than in Europe and by the 1980s and 1990s, hourly wage rates in the United States were falling by almost one percent annually.

Its tempting to attribute the broad slowdown in wage growth to the power of market forces. In addition to the persistently high unemployment, wages were also buffeted by inflationary shocks and a sustained slowdown in productivity growth. The European wage stagnation thus seems the likely by-product of hostile market forces. The market explanation is further supported by the sheer breadth of the wage slowdown. In the United States, where wage-setting is significantly more decentralized than in Europe, we observe very similar economic trends. The appearance of common economic conditions despite substantial variation in wage-setting suggests that market forces have simply swamped the capacity of labor market institutions to protect wage standards.

We present an alternative account of the OECD wage slowdown that investigates the role of institutions and institutional change. In this account, distributional conflict in the labor market is significantly shaped by institutions that provide workers with control over the risks that arise in capitalist economies (e.g., Korpi 1983; Goldthorpe 1984; Esping-Andersen 1990). With corporatist institutions, extensive collective bargaining and supportive social democratic governments, workers and their unions were shielded from unemployment, inflation, and income insecurity through much of the postwar period. We find evidence that these institutions moderated union demands when unemployment threatened but otherwise facilitated claims on the dividends of economic growth. Labor market institutions allowed European wage growth to outpace American while protecting those at the margins. Data analysis shows that an historic turning point was reached in the mid-1970s when the institutional logic of postwar labor markets was fractured by widespread labor movement decline. This decline curtailed labor's influence and wages stagnated in the advanced capitalist countries as a result.

This analysis places the European experience in the broader context of OECD wage trends. We report on estimates from a model of real wage growth in 18 OECD countries between 1966 and 1993. A key feature of the analysis involves dividing the time series into two periods, distinguishing the golden age before the OPEC oil shocks from the current era of slow economic growth. This design offers broad variation in labor market institutions allowing a deeper understanding of institutional effects under conditions of protracted recession.

Wage Growth in 18 OECD Countries, 1965–1993

Table 1 summarizes trends in manufacturing sector wages that form the dependent variable for this paper. From the mid-1960s to the 1970s, pay rises accelerated in Europe. Fuelled by rapid inflation and the strike waves of 1968–1969, wages climbed by about 5 percent a year in nearly all the European countries. An unprecedented economic boom in Japan helped drive the fastest rate of wage growth in the OECD—an extraordinary rate of around 8 percent annually. Wages rose more slowly in the English-speaking

Table 1. Summary of annual percentage growth in real hourly manufacturing wage rates, 18 OECD countries.

	1965–1973	1974–1982	1983-1993
Australia	1.87	1.30	-0.95
Austria	5.18	2.61	1.88
Belgium	5.88	2.90	0.21
Canada	3.21	1.52	-0.08
Denmark	5.70	1.70	1.15
Finland	5.30	1.17	1.94
France	4.86	3.11	0.67
Germany	4.71	1.56	2.00
Italy	6.04	3.77	0.68
Ireland	4.93	2.41	2.05
Japan	8.28	1.38	1.26
Netherlands	3.63	0.94	0.70
New Zealand	2.69	-0.41	-1.85
Norway	3.90	2.00	1.61
Sweden	4.22	0.22	0.64
Switzerland	1.71	0.67	0.77
United Kingdom	3.03	1.01	2.77
United States	1.39	-0.49	-0.71
Average	4.25	1.52	0.82

Source: See Appendix.

countries. Real earnings grew by about 3 percent a year in Canada and Britain. U.S. wage growth was sluggish by comparison, averaging just under 1.5 percent a year.

The OPEC oil shock of 1973–1974 ushered in a new period of poor labor market performance across most OECD countries. Mounting unemployment undermined union power and rising inflation eroded real wages. In France, Germany, and Italy, the rate of real wage growth in the decade following the oil shock was halved. Where wage growth was slow—in North America—real wage declines replaced the small pay rises of the previous decade. In the United States, the real value of wages fell by more than 5 percent in the ten years after 1974. The stagnation and decline of wages in the late 1970s continued through the 1980s and into the 1990s. In Europe, the pace of wage growth slowed significantly. The turnaround in Italian wage trends is particularly striking. Italian wage indexation protected incomes from inflation in the 1970s but was significantly weakened in the 1980s and earnings grew slowly in response. In the United States, real wage decline accelerated despite strong economic performance in the late 1980s.

In sum, two types of variation characterize wage movements in the advanced capitalist countries between the mid-1960s and the mid-1990s. First, wage growth was generally slow in the United States compared to Europe. Second, wage growth declined sharply in all countries in the late 1970s. This general wage stagnation persisted into the 1980s. We now turn to explanations that try to account for this variation.

Market Explanations

Conventional market explanations appear to provide a convincing and general account of wage trends in the industrialized democracies. These explanations focus on the forces of supply and demand in the labor market. Labor demand is reflected in the unemployment rate. On the supply side, productivity growth and inflation are the key variables.

When labor demand is weak and unemployment is high, wage growth slows. In theories of competitive labor markets, unemployment restrains wage rises by raising competition among workers for scarce jobs. In unionized labor markets workers are prevented from under-bidding wages. In this situation, unemployment increases the threat of lay-offs or business failures and unions bargain less aggressively as a result. The negative relationship between real wage growth and unemployment has thus been observed in both unorganized and highly unionized labor markets (OECD 1994, 3–4; Layard, Nickell, and Jackman 1991, ch. 9; Carlin and Soskice 1990, 139). The European unemployment is clearly a key suspect in explaining the wage slowdown. High unemployment created constant pressure for wage restraint among many continental unions. For example, German unemployment averaged 1.2 percent between 1965 and 1975, but exceeded 10 percent for most of the 1990s. Similar patterns are found in France and Italy. Such increases in unemployment place a sizable economic constraint on wage growth.

The quality of the labor supply also influences wage growth. For neoclassical theories, competitive markets help ensure that workers are paid their marginal product. Productivity growth is thus the engine of wage growth (Hicks 1963, 8). The assumption of competitive markets is not vital however. In unionized labor markets, employers finance wage rises out of productivity gains, and productivity increases are written into union contracts. In the U.S. auto industry, for example, a wage increase of 3 percent was built into the collective bargaining formula in recognition of "technical progress, better tools, methods, processes and equipment…" (Katz 1985, 200). Under very different institutional conditions in Norway and Sweden, productivity trends in the export sector have also established the context for centralized wage negotiations through the postwar period (Flanagan et al. 1983).

The labor supply is also influenced by inflation. In one approach, workers supply a given quantity of labor in return for a certain real wage. In this view, unexpected inflation causes workers to overestimate the value of their wages and oversupply their labor (Friedman 1968, 7–11). The excess labor supply then drives down wages. In more concrete terms, inflation can reduce real wages because employment contracts specify nominal rather than real pay rates. Often inflationary expectations are built into union contracts in the form of cost of living adjustments. Even in these cases, though, inflation in excess of expectations can still reduce wages. Termed "nominal wage rigidity," the insensitivity of money wages to prices increasingly devalues real wages as inflation rises (Mitchell 1993).

Institutional Explanations

Market forces are only a starting point for analysis because labor movements have acquired a measure of collective control over the risks of unemployment, inflation, and income insecurity in capitalist economies. Corporatist bargaining, sometimes in combination with social democratic governments, has played a key role in controlling the risk of unemployment. Extensive collective bargaining reduces the risks of inflation and income insecurity for workers. Taken together, corporatism, social democratic government, and extensive collective bargaining have substantially altered the influence of market forces on wage growth.

Theories of corporatism argue that the effect of unions on wages depends on the centralization of interest representation. In some countries, notably the Scandinavian countries and Austria, labor and business representatives negotiate wage contracts at the national or sectoral level. In corporatist bargaining systems like these, unions negotiate for all workers in the labor market. The impact of wage increases on unemployment affect the central unions' constituency, so labor leaders weigh heavily the employment effects of their wage demands. Wage moderation is thus a feature of collective bargaining in corporatist countries (Olson 1982; Crouch 1985; Calmfors and Driffill 1988). With decentralized wage talks, unions take a narrower view of their interests and the employment effects of wage demands are discounted. Instead of protecting jobs at the margins of the labor market, unions in decentralized contexts focus more narrowly on maximizing the wages of union members, whose employment is secure. This argument suggests that the effect of unemployment on wage growth depends on the presence of corporatist institutions. In corporatist countries, wages will be extremely sensitive to unemployment. A small rise in unemployment should cause a large decline in wage growth. In more decentralized labor markets, unions pursue their sectional interests and wage demands are less responsive to prevailing labor market conditions. Unemployment will have a weaker negative effect on wages in these settings.

Research on corporatism also suggests that political parties are important for securing wage moderation for employment goals (Crouch 1985; Headey 1970). Labor and social democratic governments facilitate wage moderation by centralized unions by offering tax and social welfare guarantees. These incentives help maintain living standards while unions restrain their bargaining power. Conservative governments cooperate less with unions, obstructing a coordinated approach to macroeconomic policy. Conservative governments may also be less inclined to reflationary measures like social welfare spending. Previous research thus associates the combined impact of social democratic parties and centralized unions with low unemployment and strong economic growth (Scharpf 1987; Alvarez, Garrett, and Lange 1992; Hicks 1994).

Whether corporatist incorporation of social democratic government effected wage moderation is an open question however because social democrats have also actively supported their working class electorates by maintaining wage standards. In a twist on the corporatist theory, the OECD's McCracken Report thus apportions some blame to European labor governments for the 1974–1975 recession. For McCracken's analysis, the full employment guarantees of social democratic corporatism removed the market discipline that controlled unions' wage militancy (McCracken et al. 1977, 50-51, 104). Although perverse from the corporatist perspective, the McCracken analysis does point to social democratic support for union bargaining in the late 1960s and 1970s. During this time, left governments in the corporatist countries backed central union wage policies for low-pay workers. Social democrats also intervened less in industrial relations compared to conservatives who more commonly pre-empted collective bargaining with wage freezes (Flanagan et al. 1983 provide evidence for the Netherlands and Denmark). In addition, social democrats allowed large public sector wage increases which spilled over into the economy as a whole. In contrast to the logic of corporatism, these examples suggest social democrats backed unions in their efforts to raise wage standards. Whether social democrats under corporatism facilitate or suppress wage growth is left as an empirical question for the data analysis.

This argument for the positive impact of Left governments also suggests the importance of unions for raising wages. Although comparative research typically emphasizes corporatist wage moderation, effective incomes policies that restrict wage growth have been extremely difficult to sustain (Swenson 1989; Flanagan et al. 1983; Scharpf 1987). On the other hand, unions in their traditional role as wage-bargaining agents have widely raised earnings in corporatist and noncorporatist countries. The positive impact of unions on wages takes different forms in different institutional contexts. In many corporatist countries, unions pursued solidaristic wage policies that raised the pay of women and workers in low-wage sectors (Rosenfeld and Kalleberg 1991; Swenson 1989; Flanagan et al. 1983). Corporatist wage agreements were also supplemented by wage drift generated by a second round of local wage talks. In decentralized labor markets where institutional pressures for wage moderation were weak, unions raised earnings significantly above the competitive level. Thus analyses of social survey data find that unionized workers earn more than nonunion workers throughout North America and Europe, but the wage advantage of unionized workers is largest in the United States (Blanchflower and Freeman 1993; Colbjørnsen and Kalleberg 1988).

The positive effects of unions on wage growth is captured by the coverage of collective bargaining. Where union contracts extend to only a small minority of workers in the labor force, as in the United States, the influence of unions on aggregate wage movements will be small. The positive impact of unions on average wage growth will be large where union coverage is extensive. The coverage of collective bargaining is not co-extensive with union membership. In many countries, collective bargaining agreements are extended beyond the unionized workforce. In Germany, for example, the terms of collective agreements are imposed on nonunion employers by the central employer association. France provides the extreme case where only about 10 percent of the labor force are unionized, but nearly all workers are covered by union rules (Traxler 1996). These extension procedures transmit the gains of union bargaining to the entire labor market and significantly raise the wages of low-pay workers (Freeman and Katz 1995).

In contrast to unionization trends which show significant longitudinal variation, the coverage of collective bargaining is relatively stable over time. Thus Traxler (1996) finds that unionization has generally declined in the OECD countries through the 1980s, but bargaining coverage fell in only a few countries without contract extension procedures. The extent of collective bargaining coverage thus offers a good indication of the enduring—institutionalized—wage-bargaining influence of unions.

As well as raising wages, bargaining coverage should also shape the effects of unemployment and inflation. Because it transmits union wage increases, we would expect bargaining coverage to reduce the negative influence of unemployment on wage growth. Extensive bargaining coverage maintains wage standards across the labor market and prevents wages from falling in response to rising joblessness. Furthermore, collective bargaining coverage typically protects the value of wages from inflation. In countries with biennial or triennial bargaining rounds, union contracts usually provide for some type of indexing that raises wages in response to price movements (EIRR 1985; Mitchell 1993). Such terms became extremely common in OECD countries during the period of rising inflation in the mid-1970s. Italy offers a clear example. The Italian system of wage indexation provided quarterly flat-rate adjustments in wages (Erickson and Ichino 1995, 277–81). At the height of the wage spurt in the mid-1970s, the nominal earnings of Italian workers grew by more than 20 percent a year. In countries with annual bargaining rounds, the timely renegotiation of union contracts allows unions to regularly update wage levels. We therefore expect that collective bargaining coverage reduces the sensitivity of wage growth to unemployment but protects real wages from the negative effects of rising inflation.

Wage Growth and the End of the Golden Age

The performance of the advanced capitalist labor markets deteriorated dramatically in the 1970s. As we have already seen, not one of the OECD countries escaped the wage stagnation of the 1980s and 1990s. Some countries, such as the United States, suffered large and extended declines in real wages. The golden age of rising prosperity in the 1950s and 1960s was thus replaced by an era of falling living standards with few prospects for improvement.

The generality of the market explanations adapt easily to the wage stagnation of the last two decades. Following the first oil shock, a severe slowdown in productivity growth constricted pay rises. A massive increase in unemployment, particularly persistent in Europe, shifted the balance of power in the marketplace from workers to employers. Finally, the purchasing power of pay packets was dissolved by inflationary shocks in 1973–1974 and 1979.

In contrast to this emphasis on market conditions, we argue that the wage slowdown of the 1980s and 1990s can be traced to labor's declining institutional position in the advanced capitalist labor markets. Three developments are important in this argument. First, many of the corporatist bargaining forums of the 1960s and 1970s have been displaced by local bargaining. As a result, centrally-orchestrated wage restraint has become uncommon. Second, the bargaining power of unions has diminished. Third, social democratic parties moved away from their traditional support of unions and their working class constituencies.

The extent of corporatist decline is disputed by comparative researchers. The comprehensive study of Lange, Wallerstein and Golden (1995; Golden, Lange, and Wallerstein 1993) finds significant continuity in collective bargaining through the 1970s and 1980s in a sample of 16 OECD countries. While the demise of national bargaining in Sweden is often taken as evidence of corporatist decline (Lash 1985), the Swedish case is exceptional. Formal bargaining institutions in Europe were largely unchanged through the 1980s. Thus measures of corporatism generally show little change over time, and patterns of cross-national variation are enduring. Even in clear-cut cases of institutional change, cross-national variation is large compared to change over time. Despite the emergence of industry-bargaining in Sweden, for example, the labor market there still retains many features of corporatism that distinguish it from Britain or the United States.

Although formal institutions may show continuity, unions in corporatist countries function differently in the 1980s and 1990s compared to the 1960s (Streeck 1993). Significantly, local bargaining within firms increasingly determines wages and conditions in Europe. For example, industrial relations in Germany still begin with regional bargaining by industry unions but these have been accompanied by substantial growth in local bargaining through firm-level works councils (Thelen 1993). In Belgium, a ten-year period of decentralized bargaining was replaced by national negotiations in 1986, while enterprise bargaining thrived in the interim (EIRR 1989a, 1989b). Similarly national bargaining continued in Norway through the 1980s but centrally-negotiated wage restraint was circumvented by local wage drift. By the mid-1980s, wage drift accounted for more 80 percent of all wage increases (Moene and Wallerstein 1993, 393; for further evidence of bargaining decentralization, see also Katz 1993; Baglioni and Crouch 1993).

Under these conditions, the corporatist compromises that characterized European wage bargaining in the 1960s and 1970s were undermined by local industrial relations and few central unions could deliver wage restraint in return for full employment. Because the institutional conditions for corporatist wage moderation unravelled, we can expect the steep trade-off between unemployment and wages to have also eroded. Without centralized interest representation in industrial relations, union leaders were less able to dampen wage claims in response to slack labor market conditions in the 1980s and 1990s. The negative impact of unemployment on wages should thus diminish in the corporatist countries in the recent period.

The demise of corporatist wage moderation is related to the widespread decline of union bargaining power. Union power sagged under the weight of organizational losses and the growth of the global economy. Unionization rates have fallen in nearly all OECD countries in the 1980s (Western 1995).

As a result, the power of the strike is severely weakened, and labor militancy has fallen precipitously (Shalev 1992). The market position of unions has also been threatened by economic competition from low-wage countries (Tilly 1995). Increasing capital mobility raises the threat of employer exit for militant unions. The growth of foreign trade places unionized labor in the North in competition with low-wage exporters of the South (Wood 1994). Although, the institutional mechanism for raising wages—collective bargaining coverage—remained stable, the capacity of unions to activate this mechanism has thus declined.

Because of declining union power, the effects of collective bargaining coverage that were hypothesized for the golden age should be reversed in the 1980s. Collective bargaining coverage should be associated with slower wage growth in recent times. The positive impact of bargaining coverage on unemployment effects should also diminish as unions succumb to market signals. In addition, indexation mechanisms that widely sheltered wages from inflation in the early 1970s were increasingly viewed as inflationary by employers and governments in the 1980s. Wage indexation was largely abandoned and the risk of inflation was transferred from employers to workers (Mitchell 1993; Western 1996a). Collective bargaining coverage thus affords much weaker protection from inflation in the 1980s and 1990s than in the earlier period. With this reasoning, the negative impact of inflation on wage growth will increase in countries with extensive bargaining coverage.

While labor's position on the industrial front appears weakened, comparative researchers also point to the "decline of social democracy." Many governing parties of the left in the 1970s were in opposition through the 1980s (Pontusson 1995; Piven 1991). Those that retained power were unable to support their traditional working class constituencies through social welfare and full employment policy. In the corporatist countries, Swedish and Norwegian social democrats are seen to be "rapidly abandoning social democracy and embracing market liberalism" (Moene and Wallerstein 1993, 385). Between 1983 and 1989, social democrats in Sweden cut subsidies to industry, partially privatized state firms, deregulated financial markets, and—following Ronald Reagan's 1986 tax reform—implemented a large and regressive tax cut. With these policy shifts, employers increasingly targeted labor costs in market competition (Pontusson 1994, 35–38). In Norway, social democratic government between 1986 and 1993 followed a similar line, deregulating housing and financial markets, and generally focusing on price stability over full employment in economic policy. Austerity policies in the late 1980s raised Norwegian unemployment and eroded real incomes (Mjøset, Cappelen, Fagerberg, and Tranøy 1994, 67–70). Outside of the corporatist sphere, left parties in France, Australia, and New Zealand also turned to policies of deregulation, decentralization, and privatization in the 1980s relinquishing their historic protection of wage standards (Ross and Jenson 1994; Stilwell 1993; Massey 1995, ch. 3). The neo-liberal turn of social democracy through the 1980s damaged support for unions in collective bargaining and subverted the political exchange of public policy for wage moderation. Thus we expect the effects of social democratic government on wage growth will be relatively small in the most recent period.

These institutional developments mark the emergence of a new political economy of the advanced capitalist labor markets some time in the mid-1970s. As labor lost its institutional hold over the employment relationship, much of the risk in capitalist economies was transferred from employers and the state to unions and workers. With the decline of social democratic corporatism, workers increasingly confronted the threat of unemployment. The erosion of union bargaining power raised the risks of inflation and income insecurity.

The empirical implication of this account is fundamentally different from that of the market explanation of the end of the golden age. In the market explanation, we observe a change the values of key variables—productivity growth, unemployment, and inflation—but the effects of these variables remain the same. If labor movement decline has depressed wage trends, we would expect a basic shift in the effects of economic and institutional variables. The story of labor decline thus implies a structural break in the process of wage determination.

A Model of Real Wage Growth and Labor Decline

The market explanation suggests that real wage growth depends negatively on unemployment and inflation, but positively on productivity. The institutional explanation says corporatism generates wage moderation, perhaps in combination with social democratic governments. Collective bargaining coverage raises wages by expanding the range of union wage-setting. Corporatism and bargaining coverage also help explain variation in economic effects across countries. Wage growth will be more constrained by the unemployment rate in corporatist countries, but this effect will be offset to some degree by a high level of collective bargaining coverage. Because of wage indexing in collective agreements, extensive bargaining coverage will also insulate wages from rising inflation. These ideas can be formalized with a regression where interaction terms are used to capture the institutionally-conditional effects. The variables used for the regression analysis are listed in Table 2. In line with theories of institutional effects, the corporatist dummy variable is interacted with the unemployment and left government variables; bargaining coverage is interacted with unmployment and inflation growth.

Table 2. Description of variables used in the regression analysis of real wage growth.

Variable Name	Description
Dependent Variable	
Wage Growth	Annual percentage change in real hourly wage rates in manufacturing.
Independent Variables	
Unemployment	The number of unemployed as a percentage of the civlian labor force.
Productivity Growth	Annual percentage change in real GDP per person.
Inflation growth	Annual percentage point change in the inflation rate, defined as the annual percentage change in the consumer price index.
Left government	The percentage of cabinet seats held by left parties.
Corporatism	A time-invariant dummy variable indicating corporatist countries according to the classification of Crouch (1985).
Bargaining coverage	A time-invariant measure of the proportion of the workforce covered by collective agreements.

Note: Data sources are listed in the appendix.

Data for the analysis are summarized in Table 3. Eighteen countries, each with annual time series of length 29 years yields 522 observations for analysis. Collective bargaining coverage is measured by Traxler's (1996) 1990 series, and corporatism was measured by a modified version of Crouch's (1985) classification. In his original formulation, Crouch (1985, 119) observes that the coding of Belgium as noncorporatist and Switzerland as corporatist may be arguable. Belgian unions are centralized compared to the Swiss, and unlike the Swiss, Belgian unions attempted wage moderation to control inflation through the 1960s and 1970s (Katzenstein 1985; Molitor 1978). Because this analysis focuses on the centralized organization of labor, Belgium has been reclassified as corporatist and Switzerland is treated as noncorporatist. (The Appendix provides further details.)

To allow for a structural break in the wage-setting regime, the data are

Table 3. Means of time series variables and institutional variables used in analysis of real wage growth in 18 OECD countries, 1965–1993.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Australia	0.62	5.52	-.02	1.72	.47	0	.80
Austria	3.13	2.49	-.01	3.05	.70	1	.71
Belgium	2.80	6.81	-.05	2.68	.25	1	.90
Canada	1.44	7.59	.00	1.32	.66	0	.38
Denmark	2.73	5.64	-.08	1.56	.46	1	.74
Finland	2.74	4.76	-.27	3.22	.44	1	.95
France	2.73	6.16	-.04	2.69	.29	0	.92
Germany	2.70	3.71	.06	2.58	.37	1	.76
Italy	3.30	7.78	-.06	3.18	.15	0	.53
Ireland	3.06	10.23	-.18	3.70	.18	0	.46
Japan	3.48	1.95	-.09	4.16	.01	0	.21
Netherlands	1.68	5.69	-.10	2.13	.20	1	.60
New Zealand	0.00	3.12	-.07	1.04	.32	0	.67
Norway	2.44	2.62	-.12	2.69	.59	1	.75
Sweden	1.62	2.65	.04	1.76	.72	1	.83
Switzerland	1.03	0.61	.01	1.51	.29	0	.43
United Kingdom	2.31	6.65	-.06	2.07	.36	0	.47
United States	0.01	6.14	.06	0.92	.31	0	.18

Note: Column headings are as follows: (1) percentage real wage growth; (2) unemployment rate; (3) annual change in the inflation rate of consumer prices; (4) real percentage growth in Gross Domestic Product (GDP) per employed person; (5) cabinet representation of left parties; (6) corporatism; (7) coverage of collective bargaining.

split into two periods. The first extends through the first oil shock, from 1965 to 1974. The second covers the current period of slow growth, from 1975 to 1993. Because of institutional changes in wage setting, we expect that institutional effects should generally be smaller in the more recent period, and the influence of institutions on economic effects should also decline.

Results

Table 4 reports the regression results. The first column of the table describes wage growth between 1965 and 1974. The market effects must be interpreted in light of the interactions with the institutional variables. In the liberal market economies of the noncorporatist countries, market forces are heavily imprinted on the process of wage determination. A three-point rise in unemployment is estimated to lower wage growth by about one point, while the same rise in productivity growth has a positive effect of about the same magnitude. There is also support for nominal wage rigidity in the weakly unionized labor markets. A five-point rise in inflation is associated with a one-point fall in real wage growth.

The story becomes more complicated once institutions are taken into account. Consistent with the influence of employment goals in corporatist bargaining, the negative interaction effect for corporatism and unemployment indicates that unemployment heavily constrains wage growth in the corporatist countries. Indeed, corporatist institutions more than double the negative impact of unemployment on wages. However, corporatist wage moderation is offset by left governments and collective bargaining coverage. In contrast to the partisan-politics version of corporatist theory, the interaction effect implies that real wage growth was raised by nearly a full percentage point when social democrats were in power. Bargaining coverage usefully

Table 4. Regression results in a model of real wage growth in 18 OECD countries, 1965–1993. (Absolute t-statistics in parentheses.)

	Main Effects 1965–1974 (1)	*Interaction Effects* (2)	*Net Effects 1975–1993* (1) + (2)
Period Effect	1.00	1.00	-1.47
	(1.85)	(1.85)	(2.20)
Unemployment (U)	-.31	.48	.16
	(2.74)	(4.14)	(1.74)
Productivity Growth	.30	-.13	.16
	(6.54)	(2.94)	(2.47)
Inflation Growth (I)	-.20	-.12	-.32
	(2.14)	(1.25)	(2.31)
Left Government (L)	-.71	-.04	-.76
	(2.39)	(.15)	(2.09)
Corporatism (C)	.76	-1.02	-.26
	(1.48)	(1.98)	(.34)
Bargaining Coverage (B)	.11	4.91	5.01
	(.11)	(4.88)	(3.77)
$C \times U$	-.41	.36	-.05
	(2.79)	(2.46)	(.55)
$C \times L$	1.53	-1.02	.51
	(3.16)	(2.11)	(.79)
$B \times U$	1.08	-1.50	-.42
	(4.13)	(5.75)	(2.45)
$B \times I$	.21	-.03	.18
	(1.46)	(.22)	(.82)

Note: The second column reports interactions with the period dummy variable indicating observations from 1974 to 1993. The period effect is the intercept term in column one and the coefficient for the period dummy variable in column two. The net effect reported in the third column is the sum of coefficients in columns one and two.

Figure 1. (a) change in the unemployment effect in noncoorporatist countries with low bargaining coverage; (b) Change in the unemployment effect due to the impact of corporatism; (c) change in the unemployment effect due to impact of bargaining coverage; (d) change in the left government effect due to the impact of corporatism.

captures the power of unions in their role as wage bargaining agents. The bargaining coverage interaction shows that extensive collective agreements allowed real wages to grow, even when unemployment was high. In countries like Sweden and Germany, where collective bargaining covered about four-fifths of the workforce, the large negative effects of unemployment resulting from corporatist wage moderation is nullified. Bargaining coverage also protected wages from increasing inflation. Estimates show that rising inflation fuelled real wage growth in the 1960s where bargaining coverage was extensive. In general, unemployment was low and productivity growth was strong in OECD countries between 1964 and 1975. In light of these conditions, the estimates indicate social democratic corporatism effectively redistributed the gains of strong economic performance to workers in the form of real wage growth.

The process of wage determination changed dramatically in the mid-1970s. These changes are reported in the second column of Table 4. Net effects for the post-oil shock period are reported in the third column. In countries like the United States, with weak industrial relations institutions and labor marginalized in national politics through the 1980s, the impact of market forces reflects the political weakness of organized labor. First, the large positive interaction for unemployment (Table 4, column 2) indicates that the negative unemployment-wage slope of the golden age was largely eliminated after 1975. The unemployment-wage growth curve in countries with weak labor market institutions is illustrated in Figure 1a. The downward sloping unemployment effect of the pre-oil shock period is replaced by an upward sloping unemployment-wage relationship after 1975. Under these conditions in the United States, falling unemployment after recessions in 1983 and 1991 has been insufficient for raising living standards. Second, the positive impact of productivity growth on wages is halved. Workers decreasingly have access to the gains from technological improvements compared to the 1960s. Third, there is also some evidence that workers are more exposed to the risk of inflation after 1975 than before. The estimate for inflation growth indicates the negative influence of price rises on real wage growth has increased by about half. The net effect for the post-oil shock period is statistically significant, indicating that a one-point rise in the inflation rate, lowered real wage growth by about one-third of a point.

Wage growth in the institutionalized settings also changed significantly after 1975. Estimates show that the entire logic of labor market regulation was essentially reversed. Figure 1b illustrates the changing unemployment effect in corporatist countries. As corporatist bargaining forums were overtaken by local bargaining arrangements, the steep trade-off between wages and unemployment flattened in the corporatist countries, as hypothesized. The weakening influence of unemployment on wages in corporatist countries offers evidence for the eroding influence of corporatist institutions on the earnings process in the post-1975 period. The power of labor movements to protect living standards through left governments and bargaining coverage also diminishes. While extensive bargaining coverage allowed wages to rise in spite of increasing unemployment in the 1960s, the interaction between bargaining coverage and unemployment shows that joblessness disciplined wage growth in unionized labor markets after 1975. In this case, the unemployment-wage relationship tilts downwards in countries with high bargaining coverage, after 1975 (Figure 1c). Finally, the capacity of left governments in corporatist countries to maintain wage growth appears greatly diminished after 1975 (Figure 1d). This evidence suggests corporatist public policy measures to protect wage standards were widely undermined in the 1980s and 1990s. To summarize, these results are strongly consistent with the labor decline theory of the wage slowdown. The formal institutions of social democratic corporatism were unable to maintain rising living standards in the 1980s and 1990s in the way that they had in the 1960s and early 1970s.

Discussion

This analysis offers two main findings. First the earnings process in the industrialized democracies is strongly marked by institutions. Before the mid-1970s, central union representatives dampened wage demands when unemployment was threatening. While this supports earlier research on corporatist wage restraint, (Korpi 1983; Crouch 1985), the analysis also shows that extensive unions with supportive social democratic governments raised wages rapidly. With weak and decentralized unions, however, wage growth was slower, the trade-off between wage growth and unemployment was flatter, and living standards were closely tied to the inflation rate. In general, the data analysis thus indicates that wages rose more quickly, and with less cost to the disadvantaged, in countries with strong centralized labor movements.

Second, the process of wage determination changed fundamentally in the mid-1970s. Although the end of the golden age is often associated with the rise of European unemployment in the 1980s and 1990s, there is evidence in this analysis for an even more fundamental shift in the European labor markets. To be sure, high unemployment and other recessionary conditions were a significant drag on wage growth in the 1980s and 1990s. Not only did the values of key variables change in a way that hurt wages in the mid-1970s; the causal process of wage determination also shifted. The erosion of corporatism and the decline of union bargaining power loosened labor's institutional grip on incomes in Europe. Earnings received little institutional protection from the effects of unemployment and inflation and European workers increasingly bore the risk of market fluctuations.

These findings can also be placed in the broader context of European integration. Some researchers argue that expansionary policy was a cornerstone of corporatist wage restraint, but Keynesian expansions are increasingly infeasible in Europe. National policy autonomy has been restricted because capital is more mobile across national borders and monetary policy, under the growing influence of the Bundesbank, is becoming more inflation-averse. Mitterand's relationary experiment of 1982 is often taken as an important watershed in the turn away from an activist role for government in macroeconomic management (Hall 1986). The ensuring capital flight in France demonstrated the risks of countercyclical policy. Deflationary pressure is compounded by the European Monetary System and the move for monetary union. By effectively pegging European currencies to the Deutschemark, the monetary system has diffused low German inflation and the deflationary policies that sustain it (Gomes 1993). Because monetary union membership depended on low budget deficits, spending cuts and the abandonment of traditional demand managment has accompanied the process of monetrary integration (see Cameron this volume). In short European governments are now highly constrained in the tax and spending policies that formerly underwrote the corporatist wage bargain.

The data analysis offers some support for these ideas. Because unemployment and wage growth are largely unrelated in the corporatist countries through the 1980s and 1990s, there is evidence that centrally-organized wage restraint is currently more difficult to achieve. In addition, other research reports that high European unemployment is partly attributable to a non-accommodating monetary policy (see Hall this volume). In addition, if the forces of European integration have disarmed social democratic governments, we would expect to see little difference in the effects of left and bourgeois government on real wage trends. Indeed, the data analysis also shows this to be the case. Thus the analysis supports the idea of a distinctively European path to wage stagnation. In this scenario, the single market movement has created significant economic and political obstacles to strong wage growth. The European path is institutionally circumscribed, but this time at the regional, not the national, level.

From a more theoretical perspective, this analysis also presents paradoxes to neoclassical accounts of the labor market. After a prolonged program of de-regulation in the United States, the analysis shows that the forces of supply and demand—productivity growth and unemployment—are largely unrelated to aggregate movements in the price of labor. Deregulation failed to convey the benefits of good economic times to the average worker. By contrast, European wage-setting now strongly bears the imprint of market forces. Here, where unions representation remains extensive and wages are set administratively rather than by the market, wages are now highly responsive to labor demand. Although these results are inexplicable from a purely economic perspective, they can be understood with a richer conception of economic power. The evidence here suggests that power in the labor market reflects not just the conditions of supply and demand. Instead, the capacity of labor market actors to obtain rewards depends on their institutionalized control over economic uncertainties. Institutional influence is pervasive. Institutions not only shape labor's overall allocation; they also affect the impact of economic forces on the labor market. Institutional control though corporatist bargaining, extensive union regulation, and social democratic government successfully raised workers' living standards through the 1960s until the mid-1970s. From this point, labor movements were weakened, and wages stagnated or fell in the following decades.

Appendix. Data Sources

Real Wage Growth Annual percentage changes in real hourly earnings in manufacturing are mostly taken from OECD (1996), but national sources have been used in some cases, owing to missing data. Australian data have been supplemented by the weekly award average weekly earnings series for male wage and salary earners (Australian Bureau of Statistics 1988, 294; 1989, 190; 1992, 203). Austrian data are from the monthly earnings in mining and manufacturing series of OECD (1993). Danish and Swedish wage data have been compiled from tables of wages in mining and manufacturing published by the Nordic Council of Ministers and the Nordic Statistical Secretariat (1974, 185; 1983, 239; 1991, 253; 1994, p. 238). (Swedish data were adjusted to account for the inclusion of overtime and holiday pay in the earliest table.) Finally, the Dutch series was completed with data for the average hourly earnings of male manufacturing sector workers in tables published by the Netherlands Central Bureau of Statistics (1970, 371; 1971, 313; 1975, 305; 1978, 324; 1980, 344). Where national sources were used to complete OECD series, data were smoothed to eliminate discontinuities and overlapping national and OECD series were compared to ensure comparability.

Unemployment Standardized unemployment rates have been used where available. Unstandardized figures based on the number of unemployed as a percentage of the civilian labor force have been used for Austria, Denmark, Ireland, and Switzerland. All data come from OECD (1996), except for New Zealand and Switzerland which also use data from Layard et al. (1991, 526–29).

Productivity Growth Annual percentage changes in real GDP per person employed are taken from (OECD 1996).

Inflation Annual percentage changes in the consumer price index are taken from (OECD 1996).

Left Government To obtain the percentage of cabinet seats held by left parties, cabinet representation was coded for every quarter. Where there was a change in cabinet representation, the longest-serving cabinet in the quarter was coded. Annual averages were then take from the quarterly series. Information about the party composition of cabinets is taken from Woldendorp, Keman, and Budge (1993). These data were updated with tables reported in Koole and Mair (1994).

Corporatism A time invariant, cross-nationally varying dummy variable that indicates corporatist countries, according to the classification of Crouch (1985). Belgium has been recoded as corporatist, and Switzerland recoded as noncorporatist as discussed in the text.

Collective Bargaining Coverage A time invariant, cross-nationally varying measure of the proportion of the workforce covered by collective agreements in 1990 (Traxler 1996). No data are available for Denmark in 1990, so the 1985 figures is used. Traxler does not report data for either Ireland or Italy, so average union density over the time series (calculated from Visser 1992) has been used for these countries.

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