X. LABOR MARKET INSTITUTIONS AND ECONOMIC OUTCOMES

Collective Bargaining Institutions and Demographic Employment Patterns

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Abstract

We hypothesize that unions follow wage and employment policies that lead to the unemployment of groups with the best alternatives outside the market economy: youth (education), older individuals (retirement), and women (home production, under a traditional division of labor in the family). Using 1960–96 data from a number of Organization for Economic Cooperation and Development countries, we present descriptive data and preliminary regression results suggesting adverse union employment and/or unemployment effects on these groups relative to prime-age males.

In 1973, Organization for Economic Cooperation and Development (OECD)—standardized unemployment rates were between 2 percent and 3.2 percent for most European countries, and even lower in several. By 1995, unemployment had risen in all of these countries, averaging 10.7 percent in the European Union. The experience of the United States strongly contrasts with that of these other countries. In 1973, U.S. unemployment was 4.8 percent, or roughly double that of the European countries, but, by 1995, it was

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5.6 percent, or about half that of the European Union (Bertola et al. 2002a). This reversal of unemployment fortunes motivates a vast literature aimed at explaining these and other patterns of crossnational unemployment evolution. Some studies emphasize European labor-market institutions, such as high levels of union coverage and generous social insurance benefits, as reasons for high unemployment (Nickell and Layard 1999). Restrictive monetary policy in Europe (Ball 1997) and other macroeconomic and demographic shocks are found to explain a large portion of diverging unemployment experiences, especially when interacted with institutional wage rigidities (Ball 1997; Bertola et al. 2002a; Blanchard and Wolfers 2000). Public employment patterns have also been shown to play a potentially important role (Algan et al. 2002).

The perspective offered here is complementary to that of aggregate unemployment analyses. In particular, we focus on the impact of collective bargaining institutions on the relative employment of specific groups: youth, women, and older individuals. A focus on the labor-market outcomes of these groups is most readily justified by the fact that their unemployment and (especially) employment rates are much more variable than those of prime-age males (Bertola 1999). In addition, the labor-market position of demographic groups other than prime-age males has, not surprisingly, featured very prominently in the policy debates of industrialized countries. Considerable attention has been paid to youth employment problems in Europe (Blanchflower and Freeman 2000). The labor-market prospects of older workers significantly affect national policies to ensure the living standards of the elderly and the sustainability of pension systems in the face of an aging population, and the relative employment outcomes of women are closely scrutinized in most OECD countries.

Collective Bargaining and Relative Employment: Theoretical Expectations

A large body of empirical research finds that, both within and across countries, more extensive labor force coverage by highly coordinated collective bargaining institutions leads to compression of wages (for a review, see, for example, Blau and Kahn 2002). If unions allow employers to determine the level of employment, we expect that those groups whose wages are raised the most (low-wage workers) will see reductions in their relative employment. Elsewhere (Bertola et al. 2002b) we offer a simple and novel explanation of wage compression and unemployment of youth, women, and older workers—groups that are commonly termed "outsiders" in Europe. Specifically, we show that union wage policies meant to increase workers' surplus from employment imply larger union wage markups and hence larger falls in employment for groups with more elastic labor supply, other things equal. Intuitively, unions

choose to raise wages most for groups with the best alternatives to paid employment: youth (schooling), women (home production—given a traditional division of labor), and older individuals (retirement). Although evidence has been found that unions raise the relative wages of women and youth (Blau and Kahn 2002), they may not raise the relative wages of older workers. Unions can, however, achieve lower relative employment for older workers by using the retirement system and through early retirement initiatives (Casey 1992).

International Evidence on Collective Bargaining and Relative Employment

To study the effect of collective bargaining on the relative employment of population subgroups, we have assembled a database on 17 countries for the 1970–1996 period. Our crossnational time-series data set builds on that constructed and analyzed by Blanchard and Wolfers (2000), from which we draw variables pertaining to overall unemployment and some labor-market institutions. We have added data on employment, unemployment, and population by age and sex; additional labor-market-institution indicators; and changes in institutions over time (for details, see Bertola et al. 2002a and 2002b). The countries included are Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, New Zealand, Portugal, Spain, Sweden, the United Kingdom, and the United States. To smooth out short-run fluctuations, and in light of infrequent availability of institutional information, observations are arranged in 5–year intervals (1960–64 to 1990–94); the last observation refers to the shorter 1995–96 interval.

Because our primary interest concerns how particular subgroups fare relative to other groups in Europe and the United States, we must confront the issue of the appropriate measurement of employment or unemployment differentials. Simple labor-market demand models of substitution suggest that changes in relative wages of two groups will affect their relative employment (Katz and Murphy 1992). Thus, for example, if *i* refers to prime age men and *j* refers to young men, union compression of wages will lower $\ln(Wi/Wj)$ and thus raise $\ln(Ei/Ej)$, where *W* and *E* are wages and employment, respectively. That is, union wage compression is predicted to raise the employment gap between adults and youths. We focus on the employment-to-population ratio, as opposed to the overall level of employment, in order to at least partially control for supply factors. In contrast to the case for employment, Freeman and Schettkat (2000) show that, when the outcome of interest is unemployment rates, the appropriate comparison drawn from a demand model is absolute differences in the unemployment rates (*U*) of the two groups *i* and *j*—that is $Ui - Uj$, rather than $\ln(Ui/Uj)$.

Table 1 shows information on employment, unemployment, and unioniza-

tion for the United States and a group of European countries for which data were available for 1970 (i.e., 1970–74) and 1995 (i.e., 1995–96). Looking first at unemployment, we see that, although overall unemployment was virtually constant in the United States, it rose substantially—10.4 percentage points—in the European countries. Disparities were particularly large for youth. In the United States, youth unemployment rose only 2.2 percentage points for men and actually fell slightly for women, but it increased in Europe by fully 19.2 (males) to 24.5 (females) percentage points. Unemployment for prime-age men and women also rose in Europe relative to the United States, but by much less than youth unemployment did. Unemployment of older workers rose by more in Europe than in the United States (in fact, it remained virtually constant in the United States), but less so than for the prime aged. Finally, prime-age female unemployment rose by 3.3 percentage points more than prime-age male unemployment in Europe, while in the United States, prime-age men's unemployment rose by 1.7 percentage points more than women's. Overall, then, rising European unemployment relative to the United States seems to be disproportionately concentrated among youth and women.

Although unemployment is an extremely important labor-market indicator, it does not take into account those who are out of the labor force. As noted earlier, women, youth and older individuals all spend considerable time out of the paid labor force in home production, school, and retirement. To take account of these additional possible manifestations of joblessness, Table 1 also presents information on employment-to-population ratios. We first focus on raw changes in the ratio. The table shows that while prime-age women's employment-to-population ratio rose and prime-age men's employment-to-population ratio fell both in Europe and the United States, the female rise was more dramatic in the United States and the male reduction was larger in Europe. As a result, the employment gap between men and women fell in the United States relative to Europe. And youth employment-to-population ratios plummeted in Europe both absolutely and relative to the United States. Finally, employment-to-population ratios fell for older individuals both in Europe and the United States, with larger absolute reductions (by 0.8 to 3.8 percentage points) in Europe. We note that the relative fall in the U.S. gender employment gap is sensitive to time period and comparison group but that the youth and older individual patterns are robust. In light of the theoretical framework discussed above, we assess the magnitudes of these employment changes by referring to changes in the log of the ratio of employment-to-population ratios for the demographic groups of interest. Using this metric, Table 1 shows that the male-female, prime age-youth, and prime age-older individual employment gaps all grew in Europe relative to the United States, particularly the prime age-youth gaps. Thus, for both unemployment and

TABLE 1

Employment, Unemployment, and Wage-Setting Institutions Indicators, United States and Selected European Countries, 1970–74 and 1995–96

	1970		1995		Change, 1970–1995		Difference in Changes
	Europe	United States	Europe	United States	Europe	United States	Europe/ United States
Unemployment Rate							
Overall	0.028	0.054	0.132	0.055	0.104	0.001	0.103
Men 15–24 years of age	0.055	0.100	0.247	0.122	0.192	0.022	0.170
Men 25–54 years of age	0.017	0.029	0.100	0.041	0.083	0.012	0.072
Men 55+ years of age	0.024	0.029	0.092	0.034	0.067	0.005	0.063
Women 15–24 years of age	0.055	0.118	0.300	0.111	0.245	–0.007	0.253
Women 25–54 years of age	0.016	0.048	0.131	0.044	0.116	–0.005	0.121
Women 55+ years of age	0.014	0.033	0.082	0.033	0.068	0.000	0.068
Employment-to-Population Ratios							
Men 15–24 years of age	0.683	0.585	0.423	0.536	–0.261	–0.049	–0.211
Men 25–54 years of age	0.941	0.931	0.846	0.883	–0.095	–0.048	–0.047
Men 55+ years of age	0.467	0.530	0.254	0.355	–0.212	–0.175	–0.038
Women 15–24 years of age	0.479	0.400	0.356	0.496	–0.123	0.096	–0.219
Women 25–54 years of age	0.469	0.474	0.639	0.734	0.170	0.260	–0.091
Women 55+ years of age	0.162	0.236	0.125	0.208	–0.037	–0.028	–0.008

	1970		1995		Change, 1970–1995		Difference in Changes
	Europe	United States	Europe	United States	Europe	United States	Europe/ United States
Log Difference in Employment-to-Population Ratios							
Men 25–54 vs. Women 25–54	0.697	0.675	0.281	0.184	–0.416	–0.491	0.075
Men (25–54 vs. 15–24)	0.320	0.464	0.693	0.499	0.374	0.035	0.339
Men (25–54 vs. 55+ years of age)	0.702	0.564	1.202	0.910	0.500	0.346	0.154
Women (25–54 vs. 15–24)	–0.021	0.171	0.585	0.393	0.606	0.222	0.384
Women (25–54 vs. 55+ years of age)	1.063	0.696	1.629	1.261	0.566	0.565	0.001
Collective Bargaining Indicators							
Union density	39.26	27.24	45.51	14.90	6.25	–12.34	18.59
Collective bargaining coverage	81.67	27.00	79.67	16.50	–2.00	–10.50	8.50
Coordination indicator	1.92	1.00	1.96	1.00	0.04	0.00	0.04

Notes: European countries include Finland, France, Italy, Spain, Sweden, and the United Kingdom. Log difference in employment-to-population ratios is Ln(*E*pop*i*/*E*pop*j*), where *E*pop is the employment-to-population ratio. These data are computed from country-specific labor-market indicators and interpolated ILO population series (for details see Bertola et al. 2002a).

employment, outsiders tended to fare relatively worse in Europe than in the United States over the 1970–1995 period.

Do collective bargaining institutions contribute to these unemployment and employment trends? Table 1 provides some data on the institutions that bear on this question by showing European and U.S. values for union density, collective bargaining coverage, and an indicator of coordination of union wage setting (on a 1–3 scale, with larger numbers meaning more coordination). In both 1970 and 1995, the European countries had considerably higher union density and collective bargaining coverage, as well as more highly centralized wage setting, than the United States, as is well known. Moreover, whereas coverage and density both fell sharply in the United States from 1970 to 1995, in the European countries density actually rose and coverage fell very slightly over this time period. And coordination rose slightly in Europe, and was constant at the minimum value of 1.0 in the United States. Moreover, it is likely that the raw degree of coordination in U.S. collective bargaining units fell over this period (Katz 1993), accentuating the differences between the United States and Europe over the 1970–1995 period.

The patterns in Table 1 suggest that changes in collective bargaining institutions and relative employment or unemployment are consistent with the framework we introduced earlier in which unions had their largest unemployment effects on outsiders. Specifically, over the 1970–1995 period, collective bargaining and union membership declined in the United States relative to Europe, and coordination fell slightly in the United States relative to Europe as well. At the same time the relative employment of outsiders fell and their relative unemployment rates rose in Europe compared to the United States, as predicted.

Although the data in Table 1 are consistent with a role for collective bargaining institutions, other factors may be responsible for the apparent association between changes in these institutions and employment outcomes. To provide a sharper test of the impact of institutions on relative employment, in results reported in Bertola et al. (2002b) and in subsequent analyses of the data, we estimated regression models, controlling for other influences and exploiting all available time-series and cross-section information. Specifically, we regressed the log employment-population ratios for each group or the log group employment-population ratio differentials on a vector of explanatory variables, including the overall unemployment rate, an indicator related to the youth population share, collective bargaining coverage, coordination of wage setting, union density, additional institutional variables characterizing the unemployment insurance system, employment protection, the retirement system, and labor taxes, as well as country and period effects. We also estimated

models with each group's unemployment rate or group differences in unemployment rates as dependent variables.

To the extent that the aggregate unemployment rate effectively controls for macroeconomic factors, this specification provides a sharp test of the relative employment hypotheses discussed earlier. We expect higher overall unemployment to lower the relative employment of other groups, particularly youth, relative to prime-aged males, even in the absence of an effect of collective bargaining institutions; however, because more extensive collective bargaining institutions are also likely to raise the overall unemployment rate (Bertola et al. 2002a), we also estimated models with the unemployment rate excluded, with similar results. The other institutions are included because they are likely to affect relative employment or unemployment and again to provide a sharp test of the collective bargaining variables. We include country dummies to control for omitted country-specific fixed factors; this in effect transforms our analysis into one examining changes over time. We also allowed for country-specific autocorrelation of the errors over time, as well as country-based heteroskedasticity.

Because coverage, density, and coordination are positively correlated (at the .2–.4 level), we assessed the effects of unionization by using the regression coefficients on these three variables to simulate what would happen to relative employment or unemployment if all three indicators changed from low values to high values. For example, one simulation involved increasing the value of each variable by 1 standard deviation. We found that greater unionization raised prime age-youth and prime age-older employment gaps for both men and women, usually significantly. These effects were usually quantitatively large as well. In some specifications, unions also raised young men's relative unemployment. Moreover, in some cases, greater unionization raised male-female employment gaps and in every instance substantially raised the female relative to the male unemployment rate. Earlier research shows that unions raise the relative wages of young people and women (Blau and Kahn 2002). Our results suggest that in many cases, these workers are priced out of employment. Moreover, greater unionization may directly lead to lower employment for older individuals through reductions in force (Casey 1992).

Conclusion

A considerable literature suggests that unions reduce wage inequality in general and raise the relative wages of youth and women. The effects of unions on wage differentials may be accompanied by adverse effects on the employment of particular labor-market groups. We have suggested that the effects of institutions on different groups' employment may be taken into account by

unions and policymakers and fine-tuned so as to concentrate reduced employment opportunities on individuals who can find good uses of their time outside of employment.

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