

TRADE UNIONS AND WAGE DISPERSION WITHIN FIRMS

1. Introduction

Much of the empirical research regarding the impact of trade unions on relative wages suggest that unionism can notably modify the distribution of wages. One means through which labour unions can affect the wage distribution is by increasing pay levels of those workers covered by collective bargaining compared to non-covered ones. Another way in which unions may influence the overall distribution of earnings is to reduce inequality among individual workers by using “standard rate” wage policies.

Which of these effects dominates the other is an empirical matter: to the extent that unionism creates wage differentials between otherwise similar workers, unions will increase overall wage dispersion; but to the extent that unions standardize rates of pay, the equalizing effects will produce a less dispersed wage distribution.

2. Union effects on wage dispersion

Trade unionism can alter wage dispersion in several ways. Assuming that the primary effect of trade unions is to increase pay levels of workers covered by collective bargaining agreements, unionism will tend to decrease wage dispersion within establishments if covered workers have below-average wages, and increase dispersion if covered workers have above-average wages. Nevertheless, even abstracting from pay levels of organized workers, when unions policies introduce wage differences between otherwise comparable workers, the final effect on wage distribution will be an increase in dispersion (Freeman, 1980b, 1982; Lewis, 1986; Hirsch and Addison, 1986).

A further goal of trade union wage policies has been the pursuit of “equity criteria” in setting rates of pay, so as to reduce differentials based on specific characteristics of the individual (ability, merit, etc.) rather than on job tasks and responsibilities. Moreover, collective bargaining agreements act to limit the number of job (pay) categories, thus limiting the ability of the firm to remunerate individual workers differently: one pay level is established for all workers in a specified job category, rather than for individuals. Thus, in establishments covered by collective agreements

greater importance is generally assigned to factors such as seniority rather than to differentiated individual evaluations based on merit. As a result, union “rate standardization” policies reduce wage dispersion considerably both across and within establishments (Freeman, 1980b, 1982; Hirsch and Addison, 1986).

Some basic factors can be put forward to explain union preference for a less dispersed wage structure. First, workers solidarity requires a quite uniform wage distribution, since the perception of noticeable differences in pay may reduce consensus among workers and the force of the union’s “collective voice” (Freeman, 1980a). Second, unions are likely to favour single-rate policies because they replace managerial discretion and power at the workplace in evaluating individual productivity with more objective decision rules. In fact, risk adverse workers will, in general, prefer narrower wage distribution. Finally, considering the union as a political organization whose consensus depends on median preference, when the median wage is less than the mean wage, a majority of workers will support a wage policy directed toward the redistribution to the lower paid, thus further reducing dispersion (Freeman and Medoff, 1984; Hirsch and Addison, 1986)

3. Data and empirical analysis

The impact of trade unions on wage inequality is analysed in various studies for different countries (Freeman, 1980b, 1982; Gosling and Machin, 1994; Dell’Aringa and Lucifora, 1994a; Hibbs, 1990, 1991; Hibbs and Locking, 1996). By making a comparison, some interesting insights on the effects of unionisation on wage dispersion can be achieved. Even though some care is required when comparing results, because of differences in institutional arrangements, economic conditions and information contained in the data sets used, nevertheless the general findings are strikingly similar (Table 1).

TABLE 1

Studies of the impact of trade unions on wage dispersion.

STUDY	COUNTRY	DATA	MAIN CONCLUSIONS
Freeman (1980b)	U.S.A.	'May Current Population Survey' data on individuals and 'Expenditures for Employee Compensation' data for firms.	Significantly lower dispersion in log hourly earnings for unionised blue-collar workers, compared with non-unionized. Unionism reduces the white-collar/blue-collar wage gap, as well as wage dispersion within establishments.
Freeman (1982)	U.S.A.	BLS 'Industry Wage Survey' data on individuals working in nine industries.	The major finding is that within-establishment dispersion of wages is significantly narrower in unionized than in non-unionized establishments.
Dell'Aringa and Lucifora (1994)	Italy	Two different micro-data sets: establishment data and more disaggregated job category level data. Both surveys refer to the Italian metal -mechanical engineering industry.	A lower dispersion of wages across establishments, in the local wage bargaining regime, is found, even considering different establishments' characteristics. Within-establishment wage dispersion is lower where labour force is much more unionized.
Gosling and Machin (1994)	U. K.	Establishment level data from 'Workplace Industrial Relations Surveys,	The dispersion of wages "across" and "within" establishments is lower where unions are recognized for collective bargaining, as opposed to non-recognized establishments.

U.S.A.

Two papers by Richard Freeman (1980b, 1982) offer the most complete evidence to date on unions and the dispersion of wages in U.S.A. Both demonstrate persuasively that unionism is related with lower dispersion.

In the earlier paper, Freeman uses data from the May Current Population Surveys (CPS)¹ and the Expenditures for Employee Compensation (EEC)² surveys.

The May surveys of the CPS contain data on union membership, usual weekly earnings, usual hours worked, and other characteristics of workers. Using a standard regression approach in which separate union and non-union log earnings functions (with detailed control variables) are estimated, Freeman finds that differences in characteristics between union and non-union workers, in earnings function parameters between the union and non-union sectors and in the variation of the residual in the two sectors contribute to lower union wage dispersion.

Freeman (1980b) provides a similar analysis using establishment data from the EEC, matched with some grouped data from CPS which provide control variables³. This analysis uses total compensation rather than wages, and measures union coverage rather than union membership, obtaining similar findings.

Freeman also examines the effects of unionism on the relative wage differential between white-collar and blue-collar workers, , by estimating the following equation:

$$\ln(W_W/W_B)_i = a_0 + a_1 X_{Wi} + a_2 X_{Bi} + a_3 U_i + e_i$$

where $(W_W/W_B)_i$ is the ratio of white-collar to blue-collar wages within establishment i , U_i is a dummy variable equal to 1 if a majority of blue-collar workers are covered by collective bargaining, X_{Wi} and X_{Bi} are vectors of characteristics in establishment i for white-collar and blue-collar workers respectively. It results that unions significantly decrease the white collar/blue collar differential within establishments.

¹ For May 1973, May 1974 and May 1975.

² To obtain as large a sample as possible, the EEC surveys for 1967-68, 1969-70, and 1971-72 were amalgamated into a single sample.

³ In fact, one disadvantage of the EEC tape is that the data do not contain information on worker characteristics.

Freeman (1982), in another work, using data from the BLS Industry Wage Surveys⁴, including nearly 3,000 establishments (approximately half of which are organized) and about 500,000 individuals, examines union wage practises and wage dispersion within establishments. The main dependent variable in this study is the dispersion of wages within establishments⁵. Freeman finds that organized establishments have lower dispersion in wages than otherwise comparable establishments in the same industry, before and after controlling for establishment size, region and detailed occupational structure. Much of the lower dispersion appears to result from explicit wage practices in organized establishments (single rate or automatic progression modes of payment) that lessen dispersion.

U.K.

Gosling and Machin (1994) use establishment level data from the 1980, 1984 and 1990 Workplace Industrial Relation Surveys to examine the relationship between unions and earnings dispersion in British establishments.

The Workplace Industrial Relation Survey is a nationally representative survey of 2,061 establishments in Britain that employ 25 or more employees. It is mostly relevant for industrial relations issues, but there is a little more economic information in the 1990 survey.

Using Stewart's Maximum Likelihood estimates of unconditional and conditional standard deviation of $\ln(\text{earnings})$ for union and non-union sector, in which the controls included were establishments-level characteristics such as size, ownership and workforce composition, Gosling and Machin find that earnings dispersion of skilled and semi-skilled workers is lower across unionised establishments than across non-union establishments.

Secondly, because of the censored nature of the data, Gosling and Machin use a Tobit estimator, finding that within-establishment earnings dispersion is lower in plants which recognise trade unions for collective bargaining purpose than in those that do not.

⁴ Industry Wage Surveys supply information on wages of workers within establishments, establishment wage practices and the union status of the establishments.

⁵ Dispersion is measured by the variation and standard deviation of the natural log (\ln) of wages.

Italy

Dell'Aringa and Lucifora (1994) use two different data sets:

- Establishment-level data are used to investigate inter-establishment wage dispersion and the white collar/blue collar wage gap
- More disaggregated job category-level data are used to examine within establishments wage dispersion

Both surveys refer to the Italian metal-mechanical engineering industry for the year 1990 and contain information on wages, plant characteristics and industrial relations practices.

Dell'Aringa e Lucifora compute several estimates of standard deviation of log wages. They first estimate separate wage determination functions for the bargaining and no-bargaining regimes, and then use parameter estimates to simulate the difference in standard deviations after correcting for differences in the distribution of characteristics. Alternatively, for a given variance in characteristics, they estimate the impact on standard deviations owing to the differences in parameter estimates across the two wage determination regimes. The routes through which local wage bargaining reduces significantly wage dispersion across establishment have been identified as follows: first, establishments where local wage bargaining occurs have, on average, more homogeneous characteristics; second, union pay policies have the effect of reducing wage differentials for both measured and unmeasured average establishment characteristics.

Using separate wage equations for white-collar and blue-collar workers with log average wages for each job category as the dependent variable and a set of control variables as regressors and also estimating the role played by union density on dispersion separately for the bargaining and no-bargaining wage determination regimes, Dell'Aringa e Lucifora find that within-establishment wage dispersion is lower where labour force is much more unionised.

Sweden

Compression of the distribution of relative wages was an important goal of Sweden's central confederation of blue-collar trade unions (LO) from the mid-1960s up to the breakdown of effective central wage formation in the early 1980s.

Using the 1968, 1974 and 1981 LNU surveys and the 1984 and 1986 HUS surveys, Hibbs (1990, 1991) analyses LO's success in achieving its ideology of wage equality in the market by comparing observed wage dispersion trends to:

- the time path of human capital dispersion
- the time path of wage dispersion built into the central framework wage agreements.

Hibbs interprets the results of the comparisons as yielding strong evidence that egalitarian trade union ideology exercised powerful influence on the path of Swedish wage distribution.

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