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4 Unions, Pensions, and Union Pension Funds

Richard B. Freeman

Pension plans have long been a concern of organized labor. Some of the earliest pension plans for blue-collar workers were originated by unions.[1] Following the 1949 *Inland Steel* decision by the Supreme Court, pensions became a mandatory bargaining topic and the subject of nearly all collective negotiations.[2] Some 30 years later union concerns with pensions expanded from issues relating to worker benefits to the use of pension fund money in the capital market, raising new economic and legal questions relating to union economic power.

This paper examines what unions do to pensions and pension plans in the context of the "two faces" model of unionism, which treats unions as institutions of monopoly power and of collective voice. It argues that the effects of unionism on pensions are better understood by this model than by the simple monopoly perspective that permeates much economic thinking about unions. Section 4.1 sketches out the implications of union monopoly power and of union voice on pensions. Section 4.2 presents a detailed analysis of the impact of unionism on the provision of pension plans, using data from both establishment and worker surveys. It shows that, other factors held fixed, unionism has a significant and sizable effect on the probability that blue-collar workers are covered by pension plans and that unionization also alters the factors determining coverage. Section 4.3 contrasts the provisions of union and nonunion pension plans. Section 4.4 shows how union pension plans alter the age-earnings profile of union workers and thus estimates how unionism affects the earnings of workers of different ages. Section 4.5 explores the recent efforts of unions to direct pension fund investments away from nonunion firms into pro-

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jects beneficial to unionized workers. The paper concludes with a brief summary. The Appendix describes in detail the various data sets used in the analysis.

4.1 What Unions Should Do to Pensions

The potential impact of unionism on the provision of pensions can be decomposed into two separate effects: the effect of unionism on pension spending that results from union monopoly power raising costs of labor, and the effect of unionism on the pension share of a given compensation package. Formally, let p = expenditures on pensions per hour, c = total compensation per hour, x = diverse other factors that affect pensions, and u = unionism.

Then, using standard regression formulas, the impact of unionism is

$$(1) \qquad bpu \cdot x = bpu \cdot cx + bcu \cdot x \; bpc \cdot ux,$$

where $bpu \cdot x$ = total effect of unionism on pensions (holding fixed controls x), $bpu \cdot cx$ = effect of unionism on the pension share of labor cost (since c is fixed), $bcu \cdot x$ = effect of unionism on total compensation, and $bpc \cdot ux$ = effect of compensation on pensions, holding unionism fixed.

Differentiating between the union impact on the *share* of compensation going to pensions *(bpu·cx)* and the impact on the level of compensation *(bcu·x)* and through it on demand for pensions *(bpc·ux)* is important because the forces that determine the pension share are likely to differ from those determining total compensation and its associated pension spending. Whereas the impact of unionism on total compensation is readily analyzable in the context of the standard monopoly "face" of unionism in which union market power is used to raise pecuniary rewards to workers, the impact of unionism on the pension share is not so readily explicable. An increase in spending on pensions with total compensation fixed necessarily means a decrease in spending on wages or other fringes. A simple monopoly model does not tell us whether a union would prefer pensions to wages, or vice versa. To understand the preferences of unions for one or the other requires analysis of the "voice" face of the institution and the factors that might lead a collective democratic organization to be more (or less) willing than workers in a competitive setting to forgo dollars of wages for pension benefits.

4.1.1 The Voice Model

In a world in which some workers are more or less permanently attached to firms while others are movable, there are good reasons to expect the political nature of unions to lead to greater preferences for pensions than would be expressed by workers in a competitive market. The most important reason is that in general the union will give greater weight to the

preferences of the older, relatively permanent employee relative to those of younger, more mobile one than will a competitive market in which the desires of the marginal employee set the compensation package. In the context of a median voter model, the union would represent the tastes of the median worker as opposed to the marginal worker. If older, presumably less mobile workers have greater desires for pensions, the demand for pensions will then be greater under collective than individual bargaining. Hence, firms that engage in collective bargaining are likely to allot a greater share of compensation to pension benefits.

Formally, I represent the postulated differential attachment of workers to firms by an upward-sloping supply schedule dependent on wages and pensions:

$$L(W, P),\ L_W > 0,\ L_P > 0, \tag{2}$$

where L = the number of workers supplied to the firm. $L_W(L_P)$ is the partial derivative of L with respect to $W(P)$.

The inverse function of (2), relating wages to pensions and employment, defines the supply price of pensions:

$$W(P,L),\ W_P < 0,\ W_L < 0. \tag{3}$$

Cost minimization by the firm faced with this supply price requires, for any given L, an interior solution P^* such that a dollar of pensions reduces the marginal wage cost of labor by one dollar:[3]

$$W_P(P^*, L) = -1. \tag{4}$$

The firm will provide pensions when at the optimal value P^* the reduction in wages covers variable costs and the fixed cost (C) of instituting the program:

$$L[W(0, L) - W(P_i^*,L)] \geq P_i^*L + C, \tag{5}$$

where $W(0,L)$ is the wage paid in the absence of pension and $W(0,L) - W(P_i^*,L)$ is the savings of wages from introducing pensions. According to equation (4), expenditures on pensions in a nonunion setting depend on the marginal evaluation of pensions by the marginal (L^{th}) worker, $W_P(P, L)$. According to equation (5) initiation of a particular benefit depends on the change in wages $W(0, L) - W(P_i^*, L)$ exclusive of any potential inframarginal "worker surplus."

By contrast, the supply price set by the union will depend on the operation of the union as a political entity and the resultant union maximand. In this paper I consider two schematic models of union behavior: a median voter model and an optimizing cartel model. Under both models, and reasonable mixtures or variants thereof, it can be demonstrated that worker demand for pensions will be higher under unionism.

Consider first the case in which the union seeks to maximize the preference function of the median worker. If all workers are ordered from zero to L in terms of greatest to least attachment to the firm, the value of pensions to workers will be $W(P, L/2)$.[4] Cost minimization by the firm leads to the interior solution, P^m, that satisfies

$$W(P^m, L/2) = -1 \tag{6}$$

and to the condition for introducing the pension, P, of

$$L[W(0,L/2) - W(P, L/2)] > LP_i^m + C. \tag{7}$$

If, as assumed, marginal workers have less desire for pensions than inframarginal workers, $W_P(P, L/2) < W_P(P, L)$. As a consequence, $P^m > P^*$ and the union firm will be more likely to introduce pensions than the nonunion firm.

As an alternative, consider the behavior of a union that, for reasons of logrolling and internal redistribution of benefits among members, operates like an optimizing cartel.[5] Such a union will be assumed to maximize total worker surplus, defined as the area above the supply curve:

$$L_W(P, L) - \int_0^L W(P, X)dX. \tag{8}$$

Maximization requires an interior solution, P^C, that satisfies

$$W_P(P^C, L) - 1/L \int_0^L W_P(P^C, X)dX = 0, \tag{9}$$

where $1/L \int_0^L W_P(P^C, X)$ is the average value of the pension and the condition for providing it is

$$1/L \int_0^L W(P_i, X)dX > P_i^C + C/L. \tag{10}$$

When the average value is greater (in absolute value) than the marginal value, P^C will exceed P^*. When the "average surplus," $1/L \int_0^L W(P_i, X)dX$, exceeds the saving in wages $W(0, L) - W(P_i, L)$, the union firm will be more likely than the nonunion firm to initiate particular programs. Both of these conditions hold when $W_{PL} < 0$, that is, when, as postulated, marginal workers have less desire for pensions than inframarginal workers.

Although both the median voter and optimal cartel models represent polar cases, which ignore numerous complexities of union behavior, they shed light on the difference between the demand for pensions under collective and individual bargaining. The prediction of greater allocation of funds to pensions under unionism does not depend on the precise model of union behavior but rather on the broad principle that, as political institutions, unions are likely to weigh more heavily than will nonunion firms the preferences of inframarginal workers who tend to be especially desirous of pensions.

4.1.2 Additional Routes of the Union Effect

Trade unionism is likely to raise demand for pensions in several other ways as well. First, by increasing the length of the attachment between workers and firms (raising job tenure and lowering quit rates) unionism will increase the likelihood that workers will receive pensions. As a result, the value to workers will be greater under unionism, raising the willingness of workers to forgo wages to obtain these pensions (Freeman 1980).

Second, in sectors of the economy in which workers are attached to occupations rather than employers (e.g., construction), or in which firms are relatively small (trucking), unions provide the type of large permanent market institution needed to operate most pension programs. Without unions (or some comparable structure) the probability that workers would receive deferred benefits would be too small and the employer's start-up costs too high for most benefits to be economically sensible. Multiemployer programs, of the type initiated by unions in the aforementioned industries, are needed, with portability across employers and the size to reduce average set-up costs.

Third, as argued by Freeman (1976), Hirschman (1976), and Nelson (1976), unions may elicit more accurate information about workers' preferences than can be gained from individual bargaining, which may also lead to greater provisions of pensions. Conceptually, the adversary relation between employers and employees—the fact that the level as well as allocation of the compensation package is at stake—argues for circumspection by workers in providing their employer with information about their preferences. If employers had complete knowledge of employee preference functions, they would seek to extract all of the worker surplus, striking a bargain that would leave workers at their minimum acceptance point. This provides a motivation for nonunion employees to withhold information about preferences. As the agent of workers, on the other hand, unions should obtain a more accurate revelation of preferences through their internal process of bargaining over the pay package that will be acceptable to the majority of members; in this way, unions may play an especially important role in eliciting employees' desire for pensions.

Fourth, the complexities involved in evaluating the costs and prospective benefits of pensions may make workers more willing to "buy" them when they have a specialized agent, like a union, evaluating and monitoring employer claims and programs. Significant investments in knowledge that lie beyond the purview of individual workers are needed to judge the true cost and future benefits of alternative compensation packages. Union lawyers, actuaries, and related experts are one institutional mechanism by which workers can obtain the expertise to bargain over these diverse benefits.

4.1.3 Effects on Provisions of Pension Plans

In addition to influencing whether or not a firm's workers have a pension plan, unionism is likely to affect the provisions of plans: the way workers receive pensions, the amount of vesting and eligibility requirements, the requirements on firms to fund plans. Potential differences in the provisions of union and nonunion pension plans provide important tests of the role of collective voice and monopoly factors in the impact of unions on pensions. In the framework of a simple monopoly model where unions try to obtain " more and more" of all benefits, one could expect the provisions of union pension plans to be more "liberal" than those of nonunion pension plans in such areas as eligibility, vesting, and related rules. In the framework of a more complex "voice" model under which older, more senior workers have a greater say in what unions do, one expects the opposite: benefit provisions tilted in favor of more senior employees. One further expects union pension plans to be more income redistributive than nonunion plans, making pensions less dependent on earnings and more on seniority. Indeed, one gets an entire set of testable predictions about pension provisions under unionism by comparing the provisions desired by the "median" worker with those desired by the marginal worker whose preferences determine competitive contracts (see sec. 2.4).

4.2 Empirical Analysis: Provisions of Pensions

The first and most fundamental question is whether unions do, indeed, increase firm expenditures on pensions: Is there a union pension effect, and if there is, how does it compare to the union impact on wages?

To answer these questions I have analyzed five surveys that contain information on unionism, pensions, and related other economic factors likely to influence pensions. One—the Expenditures for Employee Compensation survey of the Bureau of Labor Statistics—is an establishment survey that reports whether an establishment has a pension plan and the amount of employer contributions put into the plan. Three of the others surveyed individual workers to discover whether they are covered by pensions. The last survey, of pension plans, contains information on the years the plan has existed, providing a different picture of the union impact by dating the creation of the plan. While none of the surveys is perfect, with the establishment data lacking information on the personal characteristics of workers and the individual surveys lacking information on employer spending, together they present a fairly comprehensive and uniform picture of the union impact on pensions.

Table 4.1 presents the basic results of my analysis of these various surveys. Column 1 gives the mean value of the pension variable in each survey; column 2 gives the coefficient and standard error on unionism in the

pension equation; column 3 gives the coefficient and standard error on log wage in the same equation. The regressions examine four dependent variables: cents per hour spent on pensions; provision of a pension plan; cents per hour spent for those having a plan; and the number of years the plan has been in operation. All of the equations are estimated by ordinary least squares; experiments with more sophisticated techniques yield comparable findings. All of the calculations control for the wages paid workers, industry of employment, occupation, and size of establishment where available; the analyses of individual workers also control for the demographic features of the workers.

Table 4.1 **Estimates of the Effect of Collective Bargaining on Provision of Pensions and of Employee Contributions to Pension Funds and of the Age of Pension Plans**

Data, Years, Observations	Sample Mean	Coefficients and Standard Errors	
		Collective Bargaining	Log Wages
Establishment survey			
1. Expenditures for employee compensation, private industry, production workers 1973–77 (7316)			
Pension coverage	64%	.20 (.01)	.26 (.02)
Dollars per hour, all firms	.19	.08 (.01)	.32 (.01)
Dollars per hour, firms with pensions	.30	.002 (.007)	.08 (.002)[a]
2. Expenditures for employee compensation, private industry, production workers 1967–72 (10,888)			
Pension coverage	63%	.29 (.01)	[b]
Dollars per hour, all	.09	.04 (.04)	[b]
Dollars per hour, firms with pensions	.15	.003 (.005)	[b]
Person survey			
3. May Current Population Survey, 1979 (7964) blue-collar workers			
pension coverage	47%	.32 (.01)	.23 (.01)
4. National Longitudinal Survey of Older Men, 1976 (1438)			
pension coverage	68%	.26 (.02)	.14 (.02)
5. Quality of Employment Survey, 1977 (983)			
pension coverage	68%	.25 (.03)	.27 (.03)

Table 4.1 (continued)

Data, Years, Observations	Sample Mean	Coefficients and Standard Errors: Collective Bargaining	Coefficients and Standard Errors: Log Wages
Pension plans			
6. Employee Benefit Survey, 1977 (4878)			
Age of pension plan, single employer	10.4	6.3 (.4)	—
Age of pension plan, multiemployer	13.4	1.6 (1.1)	—

[a] Wages, not log wages.

[b] Included in regression but not reprinted in published article.

Sources: Calculated from various tapes by ordinary least squares with additional controls as follows:

1. EEC 1973–77, 63 industry controls, 3 region controls, year dummies, and log employment.
2. EEC 1967–72, as reported in Freeman (1981).
3. CPS, 4 firm size dummies, age, tenure, tenure^2, years of schooling, sex and race dummy variables, eight industry, three region, three marital status, and eight occupation controls.
4. NLS, 10 industry dummies, 9 occupation dummies, 7 experience, experience squared, race, and education.
5. QES, six industry controls, tenure, tenure squared, experience, race, education.
6. Department of Labor, EBS-1 files, no additional controls in regressions.

The figures tell a clear story about what unions do to pensions: they *increase* the probability that establishments or workers have a pension plan by sizable and statistically significant amounts and therefore raise the contribution of firms to pension plans. In the EEC data the union impact on the probability of a pension plan varies from .17 in the 1973–77 tapes to .29 in the 1967–72 tapes. In the surveys of individuals the union impact ranges from .24 to .32. Given the mean levels of the provision of pensions these are all very substantial impacts. The negligible union coefficient on pension contributions by firms with pension plans shows, moreover, that the union effect occurs largely on whether a firm has a plan, rather than on contributions to a plan. This suggests that the absence of data on contributions or levels of pensions is not a serious drawback: if virtually all of the union effect takes the form of increased coverage, the "are you covered by a pension plan?" questions capture everything of interest.

How does the union impact on pensions compare to the impact of wages on pensions? The final column in the table shows the estimated response of the pension variables to a change in wages. In the linear probability equations these coefficients range from 30% higher than the coefficient on unionism (line 1) to about half the estimated union coefficient

(line 4), depending on the survey. In the former case, the numbers suggest that for a nonunion worker to have as good a chance of having a pension as a union worker with the same characteristics his or her wage must be 116% higher than that of the union worker. In the latter case, the required difference is over 500%. The expenditures regressions tell a similar story, although here unionism has the same impact as a 28% wage increase. The reason for the smaller relative impact of unions on expenditures is that unions have very little effect on the pensions expenditures by firms that have plans. Even so, the estimated impact of unions is very large; taking the ratio of the coefficient on collective bargaining in the expenditure regression in line 1 to the mean expenditure yields .42, which is over twice the estimated impact of unionism on wages in these data (.18). I interpret the large impact of unions on pensions (with wages fixed) compared to wages as indicating that what unions do to pensions involves much more than a simple exercise of union monopoly power coupled with standard income elasticities of demand for pensions.

The regression models used to generate the union impacts in table 4.1 seek, as far as is possible, to compare workers with similar characteristics. They answer the question, What does unionism do to the pensions of otherwise comparable workers? Related but somewhat different questions are, What do unions do to the determinants of pensions? and Does unionism have a differential impact on the pensions of different types of worker? On the basis of the first section, one could expect differences in both respects: the impact of unionism ought to be larger among smaller firms, and it ought to reduce the effects of personal characteristics on pension coverage, as the desires of "marginal" workers are dominated by the preferences of "average" workers. To examine these possible relationships I have estimated pension equations separately for union and nonunion workers in the CPS (both blue- and white-collar workers included), compared the relevant coefficients, and estimated the union impact on workers with the average characteristics of union members and of union nonmembers from the separate equations. The results, given in table 4.2, show the expected differences. The most striking difference in the impact of variables on pensions is size of establishment, which is a key determinant of whether a nonunion worker has a pension but a modest factor in whether or not a union worker has a pension. Panels A and B of figure 4.1 highlight this important result by showing the differential union impact on small as opposed to large firms. In the CPS file unions raise the probability that a worker in a firm of less than 100 persons has a pension by 46 percentage points compared to a bare 8 points in a firm with 1000+ workers. In the EEC file unions raise expenditures on pensions by 60% in firms with less than 500 workers compared to an increase of 6% in firms with more than 500 workers. This is consistent with the notion that where firms are small, viable pension programs require a large permanent market in-

Table 4.2 **Determinants of Pension Coverage, Union versus Nonunion Workers or Establishments (Current Population Survey)**

Variable	Mean Values		Estimated Impacts and Standard Errors	
	Union	Nonunion	Union	Nonunion
Pension	.83	.39		
Firm size				
≤25	.16	.45	−.04 (.02)	−.26 (.02)
25-99	.21	.21	.02 (.02)	−.15 (.01)
99-599	.11	.06	.04 (.02)	.09 (.02)
1000+	.24	.10	.07 (.02)	.10 (.01)
Sex (female = 1)	.23	.48	.00 (.02)	−.06 (.01)
Education	11.64	12.4	.009 (.003)	.011 (.002)
Log wage	1.93	1.62	.21 (.02)	.12 (.01)
Nonwhite	.11	.08	−.02 (.02)	−.01 (.01)
Other controls (dummy variables)				
Industry			41	41
Region			3	3
Marital status			3	3
Occupation			8	8
Age			3	3
Tenure			3	3
R^2			.22	.38
			Predicted Pension Probabilities	
Worker with union characteristics			.82	.60
Worker with nonunion characteristics			.65	.39

Source: Calculated from May 1979 CPS separately for union and nonunion workers, with 3249 union and 11,884 nonunion workers.

stitution such as unions to provide deferred compensation. Other factors whose impact on pension coverage between union and nonunion workers differs noticeably are sex, with being female having a smaller impact on pension coverage in the union sector, and occupation and industry, which tend to have a smaller impact on pension coverage under unionism. The smaller role of industry factors under unionism, measured by variation in coverage rates by detailed industries in figure 4.2, represents the general "standardization" effect of unionism on personal differentials, which is also found in studies of union wage effects (see Freeman 1976; Hirschman 1976; Nelson 1976).

The only variable that has a greater effect under unionism is wages: in the Current Population Survey wages have a higher elasticity on coverage among unionists; however, in the EEC data, they have the same elasticity, while in my analysis of earlier EEC data (1967-72), I found a lower elas-

ticity of wages for unionists, leading to no clear conclusion about its effects (see Freeman 1981). Even with the ambiguous wage coefficients, however, the overall pattern of differences in pension determination in union and nonunion settings is clear: standard personal and job factors matter less under unionism.

Finally, the summary differences at the bottom of table 4.2 record the results of applying the estimated coefficients from the equation for one group to the mean values of characteristics of the other groups to determine predicted coverage for workers of different characteristics under the two regimes. They show that unionism raises the coverage of workers with the characteristics of union workers by 22 points and raises the coverage of workers with the characteristics of nonunion workers by 26 points.

From the calculations in tables 4.1 and 4.2 I conclude that unionism has a positive effect on pensions that is greater for workers with the characteristics of union workers but that is still sizable for workers with the characteristics of nonunion workers. Moreover, in pension coverage, as in wages, unionism reduces the effect of personal and sectoral characteristics on the determination of the outcome.

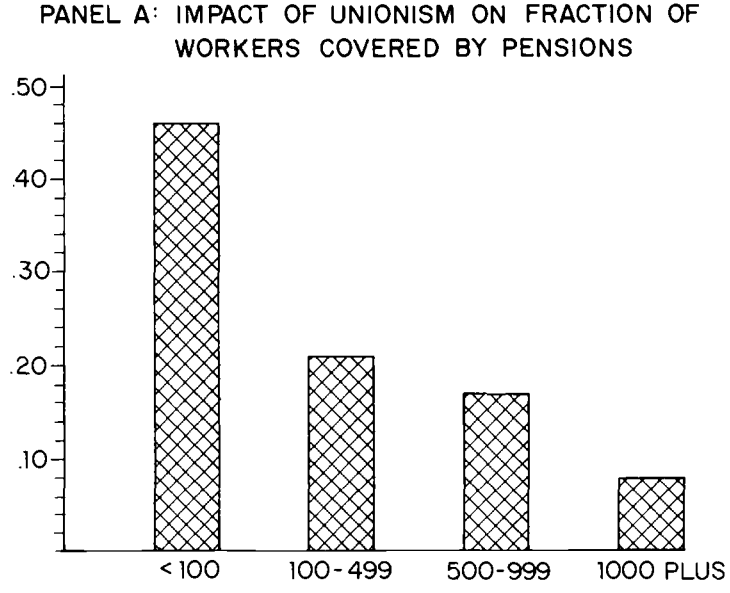

Fig. 4.1 Differential effects of unionism on pensions of different-sized establishments or firms. *A*, Firm size (Number of workers); calculated from the surveys using the same model as in table 4.2, Current Population Survey.

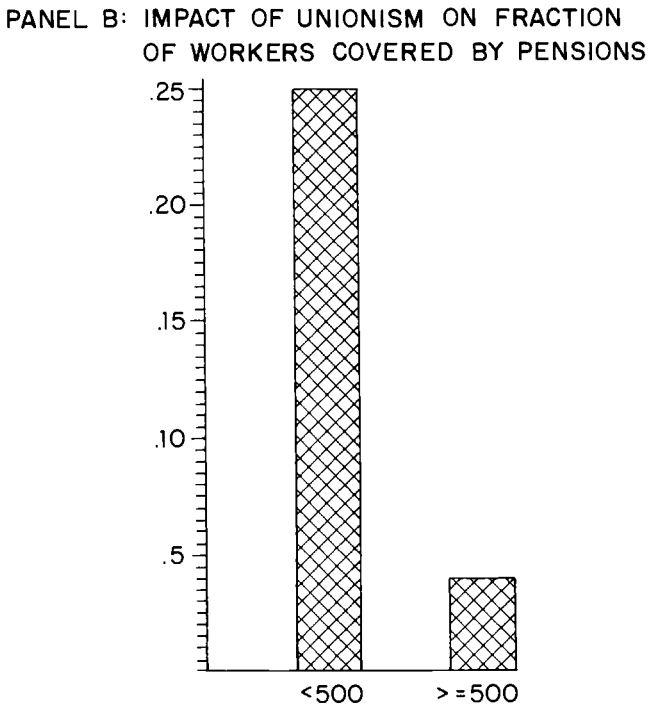

Fig. 4.1 (cont.) *B,* Establishment size; calculated from the surveys using the same model as in table 4.2, Expenditures for Employee Compensation.

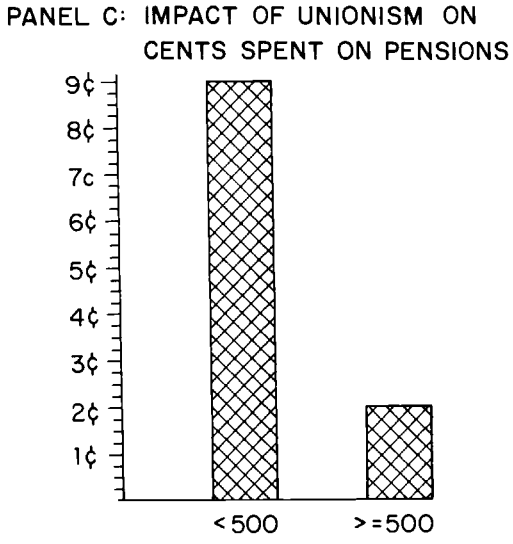

Fig. 4.1 (cont.) *C,* Establishment size; calculated from the surveys using the same model as in table 4.2, Expenditures for Employee Compensation.

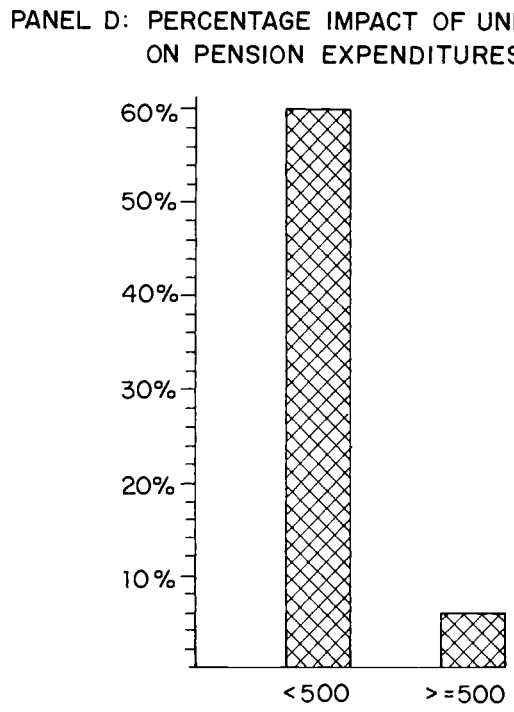

Fig. 4.1 (cont.) *D,* Establishment size; calculated from the surveys using the same model as in table 4.2, Expenditures for Employee Compensation.

4.2.1 Additional Evidence

Cross-section comparisons like those in tables 4.1 and 4.2 show that union workers or establishments are more likely to be covered by pensions than nonunion workers or establishments, but do they in fact show that unionism *causes* the observed differences? Maybe unions just happened to organize firms with pension plans and have no real impact on pension coverage. In recent years, objections of this form have often been raised about the diverse nonwage effect of unionism as well as about cross-sectional union/nonunion wage differences. The force of the objections depends on the extent to which analyses control for the independent impact of variables related to unionism and the likelihood that omitted "unobservables" that determine the outcome are correlated with unionism. If one controls for numerous other factors and if omitted factors either have a random effect on the outcome or are uncorrelated with unionism, the

cross-section estimates are valid. If these assumptions are not met, the estimates will be biased.

One way of checking the unions-cause-pension interpretation of the cross-section differences is to examine longitudinal or before/after data. While like all nonexperimental data these data have their own problems (for a discussion, see Freeman, in progress), it is important to confirm our union effect on them.

Do firms or workers who change union status also experience a change in pension coverage?

To answer this question I have tabulated the proportion of workers gaining/losing pension coverage as their union status changes in the 1973–77 Quality of Employment panel survey. The results of the analysis, given in table 4.3, reveals a union impact on coverage of a magnitude similar to that found in the cross-section analysis, with workers who go from nonunion to union status experiencing a 34 percentage point net increase in the probability of pension coverage compared with essentially no change for other groups in the sample. While one might have expected an analogous decline in the pension coverage of workers who went from union to nonunion status, the evidence here shows that those workers experienced

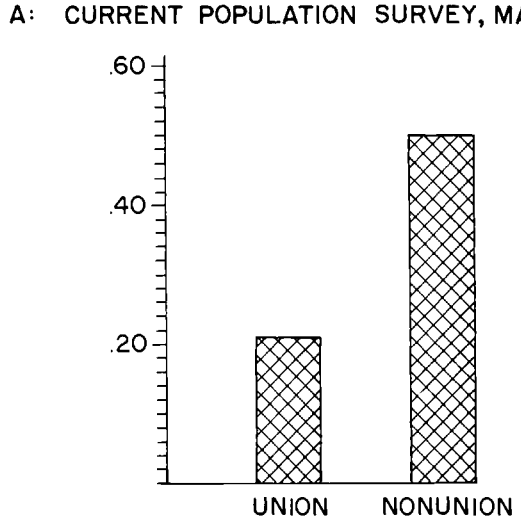

Fig. 4.2 Coefficients of variation for industry differences on pension coverage, union versus nonunion status. *A*, CPS, based on 44-industry coverage figures as reported in Kotlikoff and Smith (1983), table 3.2.9. The average coverage in the union sector was .74, the standard deviation was .15. The rate of coverage in the nonunion sector was .46, the standard deviation was .23.

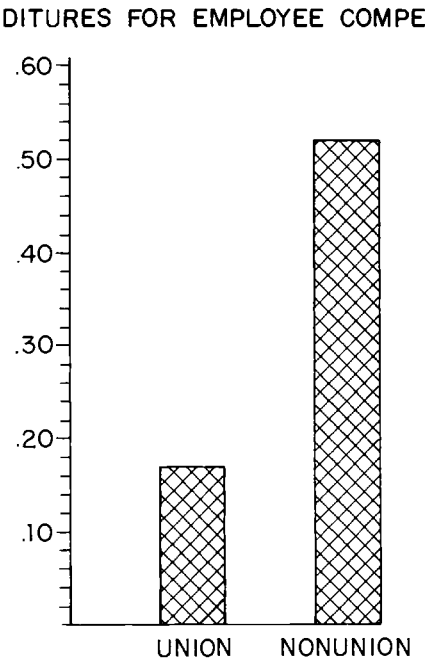

Fig. 4.2 (cont.) *B,* EEC, based on 63 industries for nonunion and 61 industries for union, with industries having less than 5 firms deleted. The rate of coverage in the union sector was .89, the standard deviation was .15. The rate of coverage in the nonunion sector was .47, the standard deviation was .24.

Table 4.3 **Changes in Whether a Worker Has a Pension Plan, by Changes in Union Status, 1973–77**

Status of Worker (Number of Workers)	Workers Gaining Pension (%)	Workers Losing Pension (%)	Net Change (%)
Union 1973, union 1977 (182)	3	3	0
Union 1973, nonunion 1977 (64)	11	13	−2
Nonunion 1973, nonunion 1977 (407)	15	10	5
Nonunion 1973, union 1977 (44)	41	7	34

Source: Tabulated from Panel data, 1973–77 Quality of Employment Survey. Based on 687 workers.

only a slight change. The reason: workers who give up a union job move to jobs with higher coverage than the typical nonunion job. In the sample covered, 77% of union leavers went to jobs with pensions compared to 70% pension coverage among workers who were always nonunion.

Information on pension coverage in newly organized firms supports the finding that unionism raises coverage in longitudinal as well as cross-section data. In a study of recently unionized white-collar workers, the Conference Board reported that immediately after organization 35% of the firms improved their pension programs. (Curtin 1970, p. 63).

A related way of testing the union impact of pensions is to compare the likelihood that blue-collar workers have pensions in establishments where white-collar workers do or do not have pensions. If one believes that, rather than inducing firms to set up pension programs, unions organize "good employers" who offer such plans for their entire work force, nonunion and union blue-collar workers should be equally likely to have pension plans when the white-collar workers in their establishment have a plan and equally (un)likely to have a plan when the white-collar workers do not have a plan. The tabulations in table 4.4 dispel this possibility and show that much of the union impact takes the form of unions' establishing pension plans in companies that do not have plans for their white-collar workers. Regressions of the difference between the likelihood of a company's having a plan for blue-collar as for white-collar workers yields a positive significant union coefficient of .12, which is only .05 points lower than the union coefficient estimated in table 4.1.[6] While there may be something to the company employment policy argument, it is not the dominant factor behind the estimated union impact.

We conclude that unions do indeed increase pension coverage. The increase is *not* due to the union wage effect and the normal effect of higher wages on the purchase of pensions, or to unions' organizing firms that happen to have pensions before organization.

4.3 Pension Provisions

Because unions are collective organizations whose goals are influenced by majority rule, it is reasonable to expect not only the existence (level) of

Table 4.4 **An "Establishment Brothers" Test of the Union Impact on Pensions**

White-Collar Workers Have a Pension Plan	Union Blue-Collar Workers Have a Pension Plan (%)	Nonunion Blue-Collar Workers Have a Pension Plan (%)
Yes (4435)	97	91
No (2120)	62	2

Source: Tabulated from Expenditures for Employee Compensation Surveys with 2594 blue-collar union establishments and 3961 blue-collar nonunion establishments.

pensions to differ between union and nonunion settings but also the provisions of plans. Broadly, unionized plans should reflect the preferences of "inframarginal," older or senior workers to a greater extent than should nonunion plans and should also reflect other union policies, such as standardization of rates of pay, use of arbitration to decide disputes, and so forth.

To analyze differences between the provisions of union and of nonunion pension plans, I have pulled a random sample of nearly 5000 plans from the ESB-1 file of the U.S. Department of Labor and estimated the impact of unionism on 12 important provisions, with other potential determinants of provisions (size of plan, industry, occupation of workers) held fixed.[7] In the sample are 4666 single-employer plans, of which 12% are union plans; and 212 multiemployer plans, of which 61% are union plans. Because choice of whether a plan is of the defined benefit type (where workers are promised a given amount at retirement) or of the defined contribution type (where a given amount is put into the plan for each worker, who then obtains an amount dependent on the return) often dictates other provisions, I report estimates of the union impact for all plans and then for all plans with a dummy variable controlling for type of plan. In the single-employer sample 41% of the plans are defined benefits plans; in the multiemployer sample 71% are defined benefits plans, but not of the standard form since employers' obligations are limited to contributing to the fund.[8] In addition to analyzing the full set of plans, I have also examined separately the multiemployer, single-employer, and defined benefit and defined contribution plans and will report differences among them that are lost in the regressions for all plans.

Table 4.5 summarizes the results of analysis of the impact of unionism on four basic aspects of pension plans: the type of plan and method of payment; eligibility requirements; dispute resolution; and the nature of contributions. The analysis shows sizable differences between the provisions of union and of nonunion plans, with the bulk of the differences consistent with the "collective voice" interpretation of what unions do.

4.3.1 Rules of Pension Plans

1. Benefit type and payments. Union pension plans are much more likely to be defined benefit than defined contribution plans. There are two "voice" reasons for this: first, defined benefit plans permit redistribution of benefits from workers who leave the company to those who stay and from the young to the old, particularly when plans are first established; second, defining benefits rather than contributions puts the risk of fluctuations in the market value of pension fund assets onto employers rather than workers.

Union pension plans are more likely to pay benefits on a flat rate, dependent on years of service rather than on earnings. Paying flat-rate bene-

Table 4.5 **Estimates of the Impact of Unionism on Provisions of Single-Employer Pension Plans**

	Mean Values		Estimated Union Effect, Standard Error	Holding Fixed Type of Plan
	Union	Nonunion		
Benefit type and payments				
1. Defined benefit	.89	.35	.33 (.03)	—
2. Flat rate	.50	.03	.31 (.01)	.29 (.01)
3. Integrated with social security plan	.07	.09	−.01 (.02)	−.08 (.01)
Eligibility requirements				
4. Vesting more liberal than required by law	.08	.47	−.12 (.03)	.00 (.03)
a. in defined benefit				−.04 (.03)
b. in defined contribution				.23 (.09)
5. Age and service requirements for receipt of pension	.56	.21	.27 (.02)	.21 (.02)
6. Age and service requirements for receipt of desirability insurance	.19	.04	.11 (.01)	.08 (.01)
7. Hours worked required				
a. For vesting of full benefits	690	565	70 (30)	40 (41)
b. For receipt of full benefits	790	510	178 (34)	113 (34)
Dispute resolution				
8. Use arbitration	.24	.08	.14 (.02)	.14 (.01)
Nature of contributions				
9. Employer contribution related to profits	.37	.03	−.26 (.03)	−.08 (.02)
10. Employer contribution related to actuarial	.31	.67	.22 (.03)	−.04 (.02)
11. Voluntary employee contributions	.46	.06	−.21 (.03)	−.10 (.03)
12. Employer contributions	.22	.08	.08 (.02)	.09 (.02)
Other characteristics				
13. Plan size	2865	295	—	—

Source: Tabulated from EBS-1 forms of Department of Labor with regressions including eight industry dummies, plan size, whether plan for salaried or hourly workers (as opposed to both), age of plan, and ratio of beneficiaries to workers, and a dummy for multiemployer plans.

fits is the pension equivalent of standard rate policies in wages and reflects the redistributive goal of unions as a political organization.

Controlling for type of plan, union pension plans are less likely to take advantage of "social security integration" possibilities than nonunion plans. Since integrating a plan with social security allows an employee to tilt defined benefits in favor of higher-paid workers by deducting from the employer's obligation social security benefits, one could expect unions to oppose such schemes. The data show they do. Consistent with our results, Kotlikoff and Smith (1983) find that only 11% of union defined benefit plans compared to 60% of nonunion defined benefit plans use social security integration formulas.

2. Eligibility requirements. The findings with respect to eligibility are especially interesting because here a simple monopoly perspective leads to quite different predictions than does the collective voice analysis. As noted in section 4.1, a simple monopoly model leads one to expect union plans to have more liberal vesting and eligibility requirements than nonunion plans. In fact, the opposite is true: union plans have vesting provisions that tend to be only as liberal as required by law, have both age and service requirements (as opposed to separate age or service requirements) not found in nonunion plans both for normal retirement and for disability, and require more rather than fewer hours worked for workers to be eligible for vesting or for receipt of full benefits. Of these findings, the frailest appears to be that pertaining to liberal vesting, which is significant only if one does not control for type of plan. When I examined the defined benefit and defined contribution plans separately, however, I found that unionism reduced liberal vesting in the defined benefit plans but raised it in defined contribution plans, as can be seen in the final column of table 4.5.[9] What explains the general increased eligibility requirements under unionism and the divergent effect on vesting in defined benefit and defined contribution plans? Why do unions not use their monopoly power to extract better eligibility provisions in all cases? The voice explanation is that the eligibility rules are set to benefit the "average" union member at the expense of the benefits. The increased liberality in union defined contribution plans can be explained by the fact that, there, the absence of any such transfer among workers means that all will favor more liberal vesting.

Finally, I have also examined the portability provisions of plans—that is, the rules governing when employees carry their service credits to a new employer—and found differences between multiemployer and single-employer defined benefit plans. Unionism increases all forms of portability in multiemployer plans by significant amounts, while among single-employer plans, unionism reduces portability by significant amounts (see unnumbered table on p. 108).

	Multiemployer		Single Employer	
	Mean	Estimated Impact of Unionism	Mean	Estimated Impact of Unionism
Portable among employers in plan	.77	.16 (.09)	.24	−.11 (.03)
Portable within other employers	.37	.21 (.11)	.10	−.02 (.03)
Portable with both participating and nonparticipating employers	.78	.17 (.09)	.28	−.10 (.03)

Here again we can gain insight into the causes of differences from comparing what an "average" worker would want with what a marginal worker would want. An average employee in an industry with high mobility such as construction, where union multiemployer plans predominate, would want portability. An average employee in a factory, where mobility is modest and single-employer plans are found, would by contrast have no concern for portability. Hence the divergent results. As for the rigid eligibility rules under unionism, exclusion of marginal workers will lower the actuarial cost of pensions to the firm, permitting the senior union workers who are eligible to obtain large defined benefits.

4. Dispute resolution. While neither union nor nonunion pension plans make extensive use of arbitration to resolve disputes about claimed pension benefits, union plans are far more likely to rely on arbitration than are nonunion plans.

5. Nature of contributions. Union pension plans also differ significantly in the nature of employer's and employee's contributions to the pension fund. Union plans are much less likely to relate contributions to profits than are nonunion plans and are much more likely to make employer contributions a fixed bargained amount or determined by the actuarial rate for the plan. (The effect on actuarial contributions is due to the choice of a defined benefit plan.) On the worker side, union plans are less likely to involve voluntary worker contributions, largely though not exclusively by having fixed benefit plans in which worker contributions do not affect benefits.

In sum, union pension plans differ greatly from nonunion plans in ways that are, in general, explicable by the "collective voice" face of the institution.

4.3.2 Levels of Benefits

Thus far I have discussed various aspects of pension plan provisions but not actual pension benefits received. Do union pensioners get more? This is a difficult question to answer because surveys of retirees rarely ask about the prior union status of the retirees. In the one survey that does contain such information, the Department of Labor's 1979 Survey of Private Pension Benefit Amounts, Kotlikoff and Smith (1983, table 3.8.1) find that union pensioners do about as well as nonunion pensioners. Among male workers, the ratio of pension benefits to preretirement earnings is .194 for union workers compared to .180 for nonunion workers and among women, .198 (union) and .170 (nonunion). This is consistent with the table 4.1 finding that union employers contribute to pension plans an amount (wages fixed) similar to that contributed by nonunion employers who have pension plans.

In inflationary times a key aspect of pension plans is the extent to which benefits of retired workers are adjusted for inflation. While few private plans in the United States contain formal provisions for cost-of-living adjustment (COLA), it is common to grant such adjustments.

For example, the 1980 Bankers' Trust study of pension plans showed that 69% of the plans surveyed offered some cost-of-living adjustment to retirees between 1975 and 1980. For workers who retired in 1965, the adjustment was 20% of their promised pension. For workers who retired in 1970 (and whose pay and therefore pensions were higher) the average gain was 17% whereas for workers who retired in 1975 it was 8% (Bankers' Trust 1980, pp. 53, 55). As inflation in the period was 63%, however, even the oldest group suffered serious loss in the value of their retirement pay.

Whether union plans are more or less likely to adjust upward the benefits of retired workers is unclear: on the one hand, the current workers who generally ratify contracts will prefer a dollar of wage today to a dollar of retirement benefit for retirees; on the other hand, current workers will also prefer to have *their* retirement pay indexed in some fashion. In some unions, moreover, retired workers vote for union leadership, while in at least one (the United Mine Workers) they vote on contract acceptance as well.

Evidence on the adjustment of pensions to inflation by union status of the pension plan has been provided to me by Steven Allen, Robert Clarke, and Daniel Summer of North Carolina State University. Table 4.6 shows that, in their data, unionized workers were given better inflation protection after they are retired than nonunion workers, implying that the desire of current workers to index retirement pay dominates their desire to spend more on themselves and less on retirees.

Table 4.6 **Number of Increases for 1973 Beneficiaries, 1973–78, and Percentage Increase in Value of Pensions, by Union Status**

Number of Increases	Union	Nonunion
Zero	19.4	32.0
One	8.9	19.1
Two	17.9	21.0
Three	4.8	17.5
Four	4.8	8.3
Five	10.3	0.9
Six	33.9	1.3
	Value of Pension, 1973–78 (%)	
All	27.1	18.1
Only those with increases	33.6	26.6
Rate of inflation of CPI	63.3	63.3

Source: Steven Allen, Robert Clark, and Daniel Sumner, "Pension Benefits and Inflation," work in progress, North Carolina State University.

4.4 Implication for Earnings Profiles

One of the most puzzling results of union wage studies is the finding that the shape of age-earnings profiles rises less rapidly for union than for nonunion workers, despite the presumed greater influence of older (more senior) workers in union settings. To what extent does this puzzle reflect the failure of the wage studies to take account of the greater pension coverage under unionism and the greater value of defined benefit pensions to older workers?

To answer this question I estimate the present value of expected pension benefits for workers of different ages and then add the *increment* in the present value in a year to their income in that year. If the increment in present value divided by the wage is greater for older workers than for younger workers, the result will be a tilt favorable to older workers, and contrarily if the increment in present value over wages is greater for younger workers. The simplest formula for estimating the present value of pension wealth (PW) is

$$PW = \lambda_t WR_t/(1 + r + m)^{65-t} \tag{11}$$

where λ = ratio of present value of pension earnings received as retiree at time of retirement (lump sum equivalent of pension receipts) to final year earnings; WR_t = real earnings at year of retirement for workers t years before retirement; m = probability of *not* receiving pension due to mortality or mobility; and t = years before receipt of pension. Assuming that λ is fixed and that the wage at retirement rises with the growth of real earnings, we obtain

$$PW \approx \lambda W_t/(1 + r - g + m)^{65-t}, \tag{12}$$

where W_t is the worker's current wage.

Then, for ease of analysis let W be the same for workers of different ages—a reasonable assumption for blue-collar labor—and take the first difference of (12) to obtain the annual increment in PW:

$$\Delta PW \approx \lambda W[1/(1 + r + m - g)^{65-t-1} - 1/(1 + r - g + m)^{65-t}], \tag{13}$$

which yields

$$\Delta PW/W \approx \lambda[1/(1 + r + m - g)]^{65-t}(r + m - g). \tag{14}$$

As long as $r + m - g > 0$, the increment in present value is positive (that is, as long as growth of real wages does not exceed the discount and mobility factors). Regardless of the sign of $r + m - g$, the change in present value is greater for older workers since $[1/(1 + r + m - g)]^{65-t}$ is greater for them when $r + m - g$ is positive and smaller when $r + m - g$ is negative. Hence, in this model, unions tilt the profile toward older workers, with the tilt rising exponentially.

To provide order of magnitude estimates of the tilt, assume that $\lambda = 2$, so that the lump sum value of pensions is twice a year's final pay in that year, and let $r + m - g$ take values ranging from .03 to .10. Table 4.7 presents the resultant estimates of the impact of the changes in discounted value of pensions on the earnings of workers at different ages. At low values of $r + m - g$, the differences in the changes by age are smaller (they are zero when $r + m - g$ is zero); at higher values, the gains to older workers are substantial.

What happens if older workers have, as seems plausible, lower mobility rates or are vested and thus do not lose their pension rights when mobile? We can read the answers to these questions in the table by applying different values of $r + m - g$ to the different age groups. When older workers are less mobile, the value of m for them will be smaller than for younger workers, reducing the relevant increase in pension wealth for the older workers. When a worker is vested and leaves, m is zero but so too is g, so

Table 4.7 Changes in Earnings Due to Increments in Pension Wealth

		Values of $r + m - g$			
Age	Earnings	.03	.05	.07	.10
25	1.00	1.9%	1.4%	.9%	.0%
35	1.00	2.5%	2.3%	1.8%	1.1%
45	1.00	3.3%	3.8%	3.6%	3.0%
55	1.00	4.4%	6.1%	7.1%	7.7%
65	1.00	6.0%	10.0%	14.0%	20.0%

Source: Based on formula $\Delta PW/W = \lambda(1 + r + m - g)^{t-65}(r + m - g)$.

that the value of his pension wealth will depend solely on the discount factor. Depending on the assumptions one makes, one will obtain different magnitudes for the increment in pension wealth by age, with, however, a general pattern of greater increases for older workers, as can be seen by comparing the maximum increase for the youngest group (1.9% in the column under .03) with the minimum increase for the oldest group (6.0% in the same column).

Finally, is the change in earnings at different ages due to increments in pension wealth enough to overturn the puzzling greater impact of unionism on the wages of young as opposed to older workers?

To answer this question I have estimated the effect of unions on log wages for blue-collar workers in four different age groups, using the Current Population Survey, and then adjusted the union coefficients for the omission of pensions by multiplying the estimated impact of unionism on

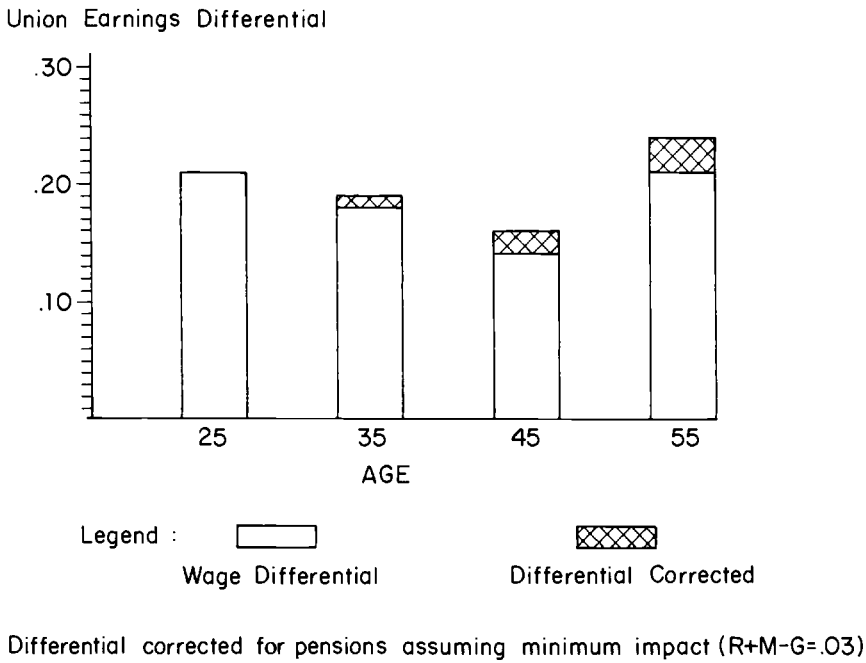

Fig. 4.3 Estimates of the union wage differential and the differential corrected for the increased income worth of pensions, by age. *Source:* Estimates of the union wage advantage from May Current Population Survey 1979, with control variables for demographic and industry characteristics, as reported in Freeman and Medoff (1984). Estimates of union impact on pension value obtained by multiplying values in table 4.7 by .30, where .30 is an aproximate estimate of the impact of unions on the provision of pensions from table 4.1.

pension coverage by the minimum table 4.7 estimates of the income value of the pensions by age. The results, shown in figure 4.3, suggest that in these data at least the union pension impact does not quite reverse the finding of a flatter age-earnings profile for union than for nonunion workers, though it has a noticeable effect on the estimated union advantage among the oldest group of workers. While the greater provision of pensions under unionism does not completely reverse the flatter age-wages profile under unionism, analyses of the impact of the full spectrum of union seniority advantages (including health, vacation, job security) may overturn this result. Pensions are part of the union seniority package but not the whole.

4.5 Union Use of Employee Pension Funds: New Tool in Labor's Arsenal?

> The assets of our pension fund represent the deferred wages of our members, and we believe that the union should have an equal voice in managing those assets. [A UNION LOCAL PRESIDENT][10]

Goals for Union Participation in Pension Fund Management Established by AFL-CIO Executive Council (AFL-CIO 1981)

> To increase employment through reindustrialization including manufacturing, construction, transportation, maritime and other sectors necessary to revitalize the economy.
>
> To advance social purposes such as workers' housing and health centers.
>
> To improve the ability of workers to exercise their rights as shareholders in a coordinated fashion.
>
> To exclude from union pension plan investment portfolios companies whose policies are hostile to workers' rights.

Proposed use of union pension funds to "advance social purposes" and to strengthen unionism represents the major innovation in the union pension area in the 1980s, with potentially important consequences for the economy and unionism. Because private pension funds are major factors in capital markets, owning upward of 12% of corporate equities and 27% of corporate and foreign bonds in 1980 and increasing their share over time, and because union pension funds constitute perhaps one-half of the total, many analysts and unionists have viewed them as a potentially important weapon in the union's arsenal (Kotlikoff and Smith 1983, table 5.5.7). The press, including business publications, have called for greater innovation in traditionally conservative pension fund investments. In 1978 Randy Barber and Jeremy Rifkind wrote an important book advocating that union pension fund moneys be invested in unionized parts of the economy, rather than in nonunion sectors, endangering jobs of members. Indicative of the importance unions now attach to pension fund in-

vestments, in 1980 the AFL-CIO's Industrial Union Department began publishing a bimonthly journal, *Labor and Investment,* dealing with issues of pension fund investments. In Fall 1981, the *Journal of Labor Research* published a symposium on "Union Use of Employee Pension Funds," one indication of growing academic interest.

There are two important questions regarding union pension fund investments: (1) Does investment in "socially desirable" areas or exclusion "from union pension plan investment portfolios of companies . . . hostile to worker rights" require union pension funds to take lower returns than they otherwise could earn? (2) Are some investments in lower return projects desirable to unionized workers and, if so, are these investments legal?

Because of the newness of the issues and the consequent paucity of data, I can offer only tentative answers to these questions, with far less documentation than in the other parts of this study.

4.5.1 Returns from Union Pension Fund Investments

Both theory and empirical evidence suggest that union pension funds can shun the stocks of anti-union firms without lowering returns to portfolios. In theory, if the stock exchange is an efficient market union pension funds should be able to earn normal returns, with normal risk, by excluding a moderate number of companies from their portfolio. If it is widely recognized in the market that certain nonunion firms offer, for whatever reason, better profit prospects, their stock prices will reflect this, so that a fund will not lose by shunning them. In a "thick" market with the equity of thousands of companies for sale, one ought to be able to obtain the same valued portfolio by choosing the stock of predominantly union firms rather than those of comparable nonunion firms.

Limited empirical evidence on the returns from investments of pension funds that do or do not shun major nonunion companies provides support for this argument. In 1978 the Corporate Data Exchange analyzed the portfolios of 75 union-related pension plans and 20 employer-controlled plans and found that the former held half as much of their portfolio in the stocks of 15 major predominantly nonunion companies such as McDonald's, Sears, and Texas Instruments.[11] How did the stocks of these companies fare in the market? From 1977 to 1982, a weighted average of those stocks *did worse* than the market averages: excluding Sears Roebuck, which performed especially poorly, and which is bought in large amounts by the Sears Pension Fund, the nonunion companies earned a 36% return compared to a 45% gain in the Standard and Poor's 500; including Sears, the return on the nonunion firms' stock was 19% (Dreben 1983). Over this five-year period, the union-related plans did well to shun the stocks of these firms. More generally, comparison of median rates of return for some union plans (Taft-Hartley multiemployer plans)

and nonunion plans by A. G. Becker Company of Chicago show rough similarities in returns on equity for the two, with union plans earning slightly more in half the years and slightly less in half the years (see table 4.8).

The evidence thus supports the "efficient market" argument that unions can direct investment funds away from certain stocks without sacrificing returns. By the same token, however, one expects such a policy to have essentially no real economic impact. In a market with millions of investors, the decision to shun certain companies is unlikely to have any permanent effect on their stock prices. In short, excuding from union pension plan portfolios nonunion companies will harm neither the pension fund nor those firms. Its only impact will be psychic.

Does this mean that union influence on pension fund stock market investments is a mere chimera?

Not necessarily. If union pension fund ownership of the shares of a company were used to pressure management through the board of directors, ownership could prove to be a tool in labor's arsenal. However, to do this the unions would have to invest in, rather than shun, the stocks of major nonunion firms. Barber and Rifkind (1978, pp. 156–57) report the results of just such an effort in 1954 when the Teamsters used their Montgomery Ward stock in the midst of a proxy fight to convince management to agree to collective bargaining. Similarly, James Bennett and Manuel Johnson (1982, p. 187) point out union use of pension funds to pressure the bankers, insurance company executives, and boards of organization that held much of the debt of the J. P. Stevens Company to get the company to stop blatant, illegal efforts to prevent unionization. In both of these situations, it was pension fund ownership (or influence on the owners) of company equity or debt that allowed the unions to influence com-

Table 4.8 **Median Rates of Return on Equity Portion of Pension Plan Portfolio, 1973–82**

Year	Taft-Hartley (Union)	Corporate Plans
1973	−21.7	−22.2
1974	−31.0	−31.6
1975	33.0	33.1
1976	20.3	19.1
1977	7.1	−7.8
1978	7.4	7.1
1979	18.9	21.2
1980	30.9	32.7
1981	−3.1	−5.0
1982	25.3	21.9

Source: A. G. Becker Co., telephone interview, March 3, 1983.

pany behavior. If union pension funds follow the suggestion of the AFL-CIO Executive Council they will reduce, not enhance, the impact of unions on management.

4.5.2 Actual Investment Projects

It is in the area of specific investment projects, such as investments in unionized construction designed to "create" jobs, where union pension plans might accept, for good reason, lower returns. This is because such investments will increase employment of organized labor only if the pension fund offers the firm more attractive loan terms than can be gotten elsewhere. Under some circumstances union investments in projects that earn a lower return than could otherwise be gotten but that create jobs for union workers *may* benefit union members.

First, some of the wage bill of unionized firms will go into the pension fund, which may offset lower returns and enhance the financial position of the fund. Because the greater employment may also create added obligations for the plan, however, one cannot in general conclude that this will be the case. In the case of construction industry pension funds, the issue depends on eligibility rules (How much of the increased work force will stay in the sector long enough to be vested?) and on benefit rules (How many hours per year earn workers credits for pensions?) and on the rates of contribution and the benefits paid out, as well as on the difference between rate of return from the investment and the best alternative. Some pension plans may likely to do better as a result of the greater contribution while others will not. Those that do can justify taking lower returns.

The second and more important reason for unions to take lower returns is to "create" or "save" union jobs. If a union takes a slightly lower return on a pension fund investment that employs workers at union rates, the *total* return to members, consisting of the lower return in the capital market and the higher return on the labor market (the union wage effect), could exceed the higher return the fund could earn with its moneys. If the goal of the union investment is to maximize the wealth of members, taking a lower return on the caital side can be justified. The criterion for the investment should not be the return on capital with labor valued at the union wage but rather the return on capital with labor valued at the non-union wage rate. In project analysis terms, this is the "shadow cost" of labor.

The strategy may be justifiable, but is it optimal? Should not the union reduce wages to create jobs rather than offer investment funds at an attractive rate?

Unless the union sets employment as well as wages, it may be better to offer capital funds at a lower return. This is because by controlling the amount of the investment, as well as the return, the union can manipulate the employer to the "optimal" discriminating monopolist point, which it cannot do by determining wages. In the simplest situation, where capital-

labor ratios are fixed, the union can invest enough capital in a project to hire the same number of workers the firm would hire in a competitive market and can extract all of the "quasi rent" from the firm via higher wages. From this perspective, use of pension fund capital can augment union power in the labor market.

Whether investment strategies for the purpose of raising employment are legal under the Employment Retirement Income Security Act of 1974 (ERISA) is, however, unclear. Plan fiduciaries are obligated to act "solely in the interest of participants and beneficiaries" for the "exclusive purpose of providing benefits" to them.[12] If the workers who obtain the high-wage union jobs were identical with the beneficiaries, perhaps such an investment strategy would be legal. But in general the workers will be younger employees and the beneficiaries older employees, and it may be that a strategy that benefits employed union members but is possibly harmful to pension beneficiaries is illegal. On the other hand, the enhanced monopoly power due to strategic use of pension fund investments could be used to benefit beneficiaries as well, even when the pension fund return is lower. It could do this by bargaining for higher defined benefits at the expense of the union wage differential.

Have union pension plans sacrificed returns to enhance employment prospects?

The limited data I have seen suggests that they have not, at least noticeably. AETNA Insurance, which manages a large Union Separate Account for investment in union construction, reports earning returns above those that could be obtained in the bond market.[13] My discussions in Southern California with pension fund officials suggest similar good returns, thus far, with concern over fiduciary impossibilities making officials wary of taking lower returns for the sake of union jobs.

4.6 Conclusion

This paper has examined the role of trade unions in pension coverage, expenditures by firms for pensions, the provisions of pension plans, the impact of pensions on age-earnings profiles, and pension fund investments. It has four basic findings:

1. Unions greatly increase pension coverage and alter the determinants of coverage in ways that go beyond the monopoly wage effects of unionism.

2. Unions alter the provisions of pension plans in ways that benefit senior workers and that equalize pensions among workers.

3. Estimates of the age-earnings profile of union members are flawed by failure to take account of the union impact on pensions, which enhances the earnings of the oldest groups.

4. Union pension funds can and do shun the stocks of nonunion firms without lowering the value of the portfolio. Investments in actual projects

that take lower returns are, up to a point, justifiable in terms of the full economic benefits accruing to workers.

Notes

1. The first union retirement plan was established in 1905 by the Granite Cutters' International Association of America, according to American Council of Life Insurance, *Pension Facts, 1978–1979*, p. 37, as cited by Munnell (1982).

2. In the *Inland Steel Company* case (1948), a National Labor Relations Board ruling that pensions were a mandatory subject was upheld by the Seventh Circuit. Inland Steel Co. v. NLRB, 170F 2d 247, 22 LRRM 2505 (CA 7, 1948), *cert. denied,* 336 U.S. 960, 24 LRRM 2019 (1949).

3. If C is the fixed cost in instituting the program, the total cost function $TC = C + WL + PL$. Differentiation with respect to P yields $W_P L + L = 0$. This model assumes that the firm is indifferent between paying pensions or paying hourly rates.

4. The assumption that ordering workers by attachment to the firm also orders them by preferences for pensions is the key assumption in the analysis. In the model all workers of the same tenure with a firm are treated as if they had the same preference for pensions, making the difference in tenure the sole cause of different desires. When worker preferences for pensions differ for reasons unrelated to attachment to the firm, the competitive market will produce different sets of compensation packages, with more pensions in some establishments than in others to attract those preferring pensions. Variation of this type is ignored to concentrate on the situation in which preferences differ by potential mobility or tenure in the firm.

5. For a detailed discussion of this maximal in the context of work quality, see Viscusi (1980).

6. This regression was performed for all of the 4668 establishments with the same controls as those used in table 4.1, line 1.

7. This work builds on the earlier analysis of Engberg, (1980).

8. These so-called Taft-Hartley plans are defined benefit plans from the perspective of the worker who is promised a fixed pension, but not from the point of view of the firm.

9. In the Kotlikoff-Smith examination of the EBS-1 file (which did not control for other factors, but which includes the full sample) they found union plans to be less generous with vesting. Fifteen percent of nonunion plans in their sample have full and immediate vesting compared to a bare 3% among union plans; 52% of nonunion plans have partial or complete vesting after three years of service compared to a bare 7% of union plans (Kotlikoff and Smith 1983, table 3.8.1).

10. Labor and Investments citation by local president of International Association of Machinists.

11. Corporate Data Exchange, stock held by 101 selected pension funds in 32 companies identified as "socially controversial," as reported in Barth and Cordes (1981).

12. 29 U.S.C. 1104 (a) (1). For a discussion of legal issues see Bredloff (1982).

13. See AETNA Life Insurance, first Annual Report on Union Separate Account (1983).

Comment Albert Rees

This paper consists of three parts of unequal length: a short first part discusses why unionism might increase the probability of pension coverage, a much longer second part presents evidence that it does, and a short

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third part deals with the investment policies of union pension funds. The principal argument of the first part is that unions are more likely than employers to give heavy weight to the views of older workers in dividing compensation between wages and pensions. Employers are most interested in recruiting and retaining young workers, who may place a relatively low value on pensions because they discount the distant future heavily. Older workers are easier to retain than young workers because their natural mobility is lower and they have other benefits related to seniority. The median voter in a democratic union will be closer to retirement age than the new recruit and will therefore place a higher value on pension benefits. If the union is autocratic, the controlling group is probably even older, and more concerned with pensions, than the median voter. I find this argument novel and convincing, although as Freeman states it is not the only explanation of the positive association between unions and pension coverage.

The second part of the paper demonstrates by analyzing a variety of data sets that unions do indeed increase pension coverage by large amounts. The principal way in which they do so is by increasing the pension coverage of small firms. The creation of collectively bargained multiemployer pension funds creates a convenient mechanism through which the small employer can offer pension coverage at low administrative cost. Given that a firm has a pension plan, Freeman finds that unions do not have a substantial effect on the cost of the plan. The use of data from a variety of sources and of different types makes this part of the paper highly convincing.

The principal point of the third part of the paper is that union pension funds avoid investing in the securities of leading nonunion employers and that this restriction has not lowered their mean return on investment. This argument is sound as far as it goes but is subject to serious limitations. The restriction on investments in union pension plans may have maintained mean yields only at the cost of higher variance in returns, a possibility that is not considered. More important, the avoidance of nonunion firms is only one possible union objective in setting investment policy. Others include promoting the employment of union members, avoiding firms with operations in the Union of South Africa, and promoting socially desirable investments such as low-cost housing. Pursuing several of these goals at once could have a pronounced effect in lowering rates of return or raising risks.

In the multiemployer plans set up under the Taft-Hartley Act with both union and management trustees, the obligations of the individual employer are fulfilled by making the required contributions. The investment performance of the fund over a long period will determine the size of the pensions that can ultimately be paid. If the trustees sacrifice only a little yield, the working of compound interest over a worker's life will transform this into a large difference in outcome.

The paper does not discuss the cases in which the trustees of Taft-Hartley pension plans have conspicuously departed from sound investment practices. Although these may be few, they are not unimportant.

The most conspicuous case is that of the Teamsters Central States, Southeast, and Southwest Area Pension Fund.[1] As of the mid-1970s, this fund covered 400,000 working teamsters and 70,000 retirees and had large unfunded liabilities. The District Director of the Internal Revenue Service in Chicago found "trust funds invested for a return not commensurate with prevailing rates" and "trust funds invested against the advice of professional advisers retained by the trust." As of 1975, when its total assets were $1,363 million, the fund had nine "questionable" loans totaling $332 million in hotels, casinos, and undeveloped land. In 1983 a former trustee of the fund, Roy L. Williams (also president of the International Brotherhood of Teamsters), was found guilty by a federal jury of defrauding the fund.

In passing the Taft-Hartley Act, Congress no doubt thought that the presence of both union and management trustees of multiemployer funds would serve as protection against this kind of abuse. In the Central States Teamsters fund, management trustees appear to have played a passive role because they feared retaliation in collective bargaining if they insisted on orthodox investment policies.

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1. For a thorough discussion of the investment policies of the Central States fund, see James and James (1965). A more recent if less scholarly discussion may be found in Teamsters for a Democratic Union (1977). The data cited above are from this source.

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