The Effect of Unions on Employee Benefits and Non-Wage Compensation: Monopoly Power, Collective Voice, and Facilitation

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I. *Introduction*

Non-wage forms of compensation are monetary and non-monetary items used to attract, retain, motivate, and reward employees above and beyond traditional wage and salary payments. Monetary, non-wage compensation includes profit-sharing payments, lump-sum bonuses, stock options, and other forms of contingent compensation. Non-monetary, non-wage forms of compensation are employee benefits—what used to be called fringe benefits, but as they now represent a substantial fraction of total compensation, "fringe" benefits has become a misnomer. New York City's pension funding crisis in the 1970s, the billions of dollars of unfunded pension liabilities faced by major U.S. airlines and other companies, and that nearly $2,000 from each vehicle sold by General Motors goes to retired employees in the form of health and pension benefits further underscore the obsolescence of the "fringe" descriptor. Major employee benefits include employer-provided health insurance and pension plans as well as vacation and sick days, life and disability insurance, supplemental unemployment benefits, paid holidays, dental insurance, educational and legal assistance, and myriad other items. With growing concern over work-family balance, recent attention has also focused on family-friendly benefits such as parental and family leave, flexible work hours, on-site child care, job-sharing, and work-at-home programs.

Issues surrounding non-wage forms of compensation are very important for practitioners, policymakers, and researchers (Butler, 1999). With a U.S. emphasis on private rather than public provision of employee benefits—including health insurance, retirement plans, and family-friendly policies—many employees rely on their employer for benefits, and uneven coverage leaves some individuals vulnerable. But escalating benefits costs are a major concern for employers and perhaps an impediment for improved competitiveness (Broderick and Gerhart,

1997). Conflicts over employee benefits are sharpened by the fact that social as well as economic issues are often central—health care, living standards for retirees, leisure time, child care, and other complex issues. To further address concerns with labor costs and to provide greater incentives for employees, contingent forms of monetary, non-wage compensation have also increased in importance in recent decades (Fossum and McCall, 1997). But this trend can conflict with employees' preferences for predictability and objectivity. Research on the determinants, effectiveness, and implications of non-wage forms of compensation, therefore, is an important component of analyses of work and the employment relationship.

As with many other aspects of the employment relationship, labor unions can affect non-wage forms of compensation in ways that have both positive and negative economic and social consequences. One of the many outstanding and enduring contributions of Richard Freeman and James Medoff's seminal 1984 book *What Do Unions Do?* is demonstrating both theoretically and empirically these positive and negative aspects of labor unions with regard to employee benefits and other forms of non-wage compensation. In fact, *What Do Unions Do?* has largely shaped the last generation of research on the effects of labor unions on individuals, organizations, and society, and this continues to be especially true for the area of non-wage forms of employee compensation.

Freeman and Medoff's (1979, 1984) two faces of unionism—the monopoly face and the collective voice/institutional response face—both predict that unionized employees will have more generous benefit packages than comparable nonunion workers. But the subject of benefits is an excellent illustration of the differences between the two faces, because the prediction of greater benefits for unionized employees stems from very different routes in each face. And this union-induced increase in benefits has very different implications for aggregate social welfare

depending on whether the increase is because of the monopoly or collective voice face. In contrast, to the extent that monetary forms of non-wage compensation are viewed by employees as attempts to replace predictable wage payments with uncertain, contingent compensation such as profit-sharing payments or bonuses, unions are predicted to be associated with a reduced incidence of these items. Union policies favoring objective, standard-rate wage policies over subjective policies with managerial discretion also suggest that profit-sharing payments and bonuses will be less likely in unionized situations (Slichter et al., 1960; Freeman, 1980, 1982; Freeman and Medoff, 1984). As with employee benefits, however, the differences between union and nonunion patterns of monetary forms of non-wage compensation can stem from both the monopoly and collective voice face of labor unions.

Union-nonunion differences in non-wage forms of compensation that can be explained by the monopoly face are called "monopoly effects" while differences that result from the collective voice/institutional response face are called "collective voice effects." A review of the research since the publication of *What Do Unions Do?* affirms the importance of this conceptual framework, but also reveals the need to add a third effect which I label the "facilitation effect." To fix ideas, consider a typical survey that asks individual employees whether they are covered by an employer-provided pension plan. Research on the monopoly and collective voice effects assumes that a positive response to this question indicates that the employee is covered by a pension plan whereas a negative response implies that they are not. In other words, these responses are assumed to indicate true availability of employee benefits.

But there is an alternative possibility: A negative response can result from an employee who is ignorant or unaware that he or she is covered by or eligible for a specific benefit. By increasing awareness of employee benefits programs and providing representation when

necessary, labor unions can facilitate receipt of employee benefits—holding actual availability constant. As such, if unionized workers report being covered by various benefit plans more frequently than nonunion workers, this difference may stem from a combination of the monopoly and collective voice effects in raising availability and of the facilitation effect in raising awareness. Freeman and Medoff's monopoly power and collective voice effects, along with the facilitation effect, provide the organizing framework for the remainder of this reassessment of the effects of labor unions on non-wage forms of compensation.[1]

II. *Monopoly Power, Collective Voice, and Union Facilitation*

In the neoclassical economics textbook model of the labor market, competition among individuals for jobs and competition among organizations for workers yields market-clearing compensation packages and employment levels in which individuals are rewarded with the value of their marginal contribution to the organization. Moreover, compensation packages (and working conditions) reflect the preferences of the marginal worker—individuals on the margin of accepting a job or quitting in response to small changes in the compensation package and/or working conditions. In the neoclassical model with labor market competition, the theoretical basis for differences in employee-benefit packages across firms is compensating differentials (Brown, 1980; Montgomery and Shaw, 1997; Rosen, 1974). Workers with stronger preferences for benefits will take jobs at firms that offer more benefits but to compensate for this richer package of benefits, they must accept a lower wage.

Now consider what happens if the employees at one organization are represented by a labor union. In the textbook model, a union is a monopolizing agent. Monopoly power, derived from the threat of imposing costs on the organization through a strike, can be used to increase the compensation package above the market-clearing, competitive level.[2] In fact, the average wage

premium for union relative to nonunion workers in the U.S. is typically thought to be around 15 percent, or perhaps even higher (Hirsch, 2004). The same bargaining power that underlies the union wage premium can be used to win more generous benefits packages. This is the monopoly component of Freeman and Medoff's (1979, 1984) two faces of unionism model. In the monopoly face, labor unions are predicted to increase the receipt of employee benefits, such as health insurance and pension plans, relative to nonunion situations because of monopoly power rooted in the strike threat. Actual increases in unionized benefits levels that stem from this monopoly power represent the "monopoly effect" of labor unions on benefits.

This same monopoly power can be used to win additional monetary forms of non-wage compensation, or to resist the imposition of forms perceived as unfavorable to workers. In particular, to the extent that workers prefer predictable, noncontingent compensation payments, the monopoly effect predicts that unionized workplaces will be less likely to have contingent compensation schemes such as profit-sharing or bonus systems. The monopoly effect of labor unions on non-wage forms of compensation—whether in increasing benefits or decreasing contingent compensation—has negative consequences for economic efficiency and aggregate welfare—if labor markets and the employment relationship work according to the textbook neoclassical model.

By definition, the monopoly effect stems from monopoly power which distorts competitive outcomes. Since competitive outcomes maximize efficiency and aggregate social welfare in standard neoclassical economic theory, any deviations—whether caused by a union's strike threat or the monopoly power of a company or the imposition of regulations by a government—are harmful. Increased levels of employee benefits or resistance to contingent compensation both make unionized labor more expensive than the market-clearing, efficiency-

maximizing compensation package. Unionized companies will then employ less-than-optimal amounts of labor which causes unemployment or excess supply in the nonunion sector and also raises prices for unionized products. Unionized workers in the standard neoclassical economics theory, therefore, benefit at the expense of investors, nonunion labor, and consumers. Freeman and Medoff (1979, 1984) refer to this as the monopoly face of unionism.

In contrast, consider what might happen if the assumptions of the neoclassical economic model are not fulfilled. Suppose externalities create workplace public goods—such as safety provisions, heating, lighting, grievance procedures, or pensions (Freeman, 1976; Freeman and Medoff, 1984). With self-interested agents, there is a free-rider problem and too little of these beneficial public goods will be provided. Or suppose that asymmetric information, mobility costs, or other complications make labor markets imperfectly competitive, as emphasized by John R. Commons and other early institutional labor economists (Kaufman, 1993, 1997), and more recently by Manning (2003). Under these conditions, employees might not be willing to express their true preferences for various forms of compensation (Freeman, 1981, 1985). With collective voice in the form of a labor union, the free-rider problem can be overcome, and better information about individual worker preferences can be collected (Freeman, 1976; Freeman and Medoff, 1984). And as unions are political institutions with contract ratification and leadership selection done by majority voting, a median voter model implies that unions will negotiate compensation packages to reflect the preferences of the average worker, not the marginal worker as in the nonunion case.[3]

As the average worker is generally older and less mobile than the worker on the margin of joining or quitting the firm, they are more likely to prefer benefits (Freeman, 1981, 1985; Freeman and Medoff, 1984). As such, Freeman and Medoff's (1979, 1984) collective voice face

of unionism predicts that unionized workplaces will have higher levels of employee benefits than nonunion workplaces.[4] Actual increases in unionized benefits levels that stem from this collective voice mechanism represent the "collective voice effect" of labor unions on benefits. Note carefully that while both the monopoly and collective voice effects predict that unions increase benefits levels, these effects are very different from each other. The monopoly effect increases total compensation while the collective voice effect re-arranges the total compensation package to reflect the preferences of the average worker for more benefits and lower wages. In the collective voice effect, total compensation is held constant. Consequently, the collective voice effect is not necessarily harmful to efficiency and, by countering market imperfections, can potentially increase aggregate economic welfare.

Freeman and Medoff's (1984) seminal research focuses on the possibilities of unions winning additional benefits by using monopoly-based bargaining power or by using collective voice to promote average rather than marginal worker preferences. But there is a third dimension: Labor unions can facilitate workers' knowledge and use of existing benefit packages. For example, unions can provide information to employees about benefit plans through union newsletters and other communication channels. Workshops and training sessions can further help employees learn about various benefits programs. Representation by shop stewards in a union-negotiated grievance procedure can help ensure that employees are able to use the benefits to which they are entitled. In the case of mandated benefits such as workers' compensation and unemployment insurance, unions can also facilitate benefits receipt through assistance with employer challenges to employee claims and through protection against unjust dismissal in retaliation for filing a valid claim. In this "facilitation effect," labor unions do not increase the actual incidence or availability of employee benefits plans, but increase the effective coverage by

increasing employee awareness and utilization. Survey results in which unionized individuals are more likely than nonunion workers to respond that they have health insurance or a pension plan are assumed by the monopoly and collective voice effects to mean increased actual availability while the facilitation effect highlights the possibility that these survey responses reflect differential *awareness* rather than *availability*.

In theory, then, a balanced scorecard of the effects of labor unions on non-wage forms of compensation is mixed. The monopoly effect in which unions increase employee benefits and decrease contingent compensation distorts optimal competitive outcomes and is therefore economically and socially harmful if labor markets are competitive. The collective voice effect—in which unions also increase benefits and perhaps decrease contingent compensation—occurs in the context of market imperfections and can therefore be economically and socially beneficial. The facilitation effect allowing employees to utilize their legitimate benefits programs is also economically and socially beneficial. But what happens in practice is an empirical question.

III. *Results from* What Do Unions Do?

It is a testament to the enduring quality of *What Do Unions Do?* that the pioneering empirical analyses in chapter 4 ("Fringe Determination Under Trade Unionism") and in the underlying articles by Freeman (1981, 1984, 1985) continue to be among the most thorough and significant empirical contributions on unions and non-wage forms of compensation.[5] A wide range of questions using a variety of individual and establishment-level data sources and standard econometric methods are addressed in these works. The one theme that is repeatedly revealed in these analyses—across various questions and data sets—is that observed patterns of benefits can

only be partially explained by the monopoly face of unions; the collective voice effect of labor unions on employee benefits is significant and must not be overlooked.

The results clearly show that unionized workers and workplaces are significantly more likely than comparable nonunion workers and workplaces to have (or express awareness of) major benefit items. In establishment-level data of employer expenditures on compensation, workplaces with at least 50 percent union members have total expenditures on nonmandatory benefit items 25 to 35 percent higher than similar nonunion workplaces (Freeman, 1981). Holding total compensation constant, the union effect is still significant, but smaller, ranging between 15 and 20 percent. As such, the union effect on employee benefits appears roughly equally split between a monopoly and a collective voice effect.[6] The union effect is particularly large for lower paid establishments and for small establishments. For specific items, the union effect is also particularly strong for health insurance, pension plans, and vacation and holiday pay, and is negative for bonuses. This pattern is consistent with the collective voice orientation to the preferences of the marginal worker as they presumably desire health insurance, pensions, and vacations as a function of being older and having greater seniority. These results are also robust to instrumenting for total compensation and for using a paired analysis of blue-collar and white-collar workers in the same establishments to control for an establishment-level fixed effect (Freeman, 1981).

In individual-level data, the standard question is whether the individual respondent has a specific benefit. Freeman and Medoff (1984) show that in the Current Population Survey (CPS), the National Longitudinal Survey of Older Men, the Panel Study of Income Dynamics, and the Quality of Employment Survey (QES), unionized workers are 24 to 32 percentage points more likely than similar nonunion workers to report having a pension plan. The CPS and QES also ask

about health insurance and the estimated union effect is 14 to 18 percentage points. Finally, the QES also asks about a wide range of plans, and unionized workers are less likely to report contingent forms of non-wage compensation such as profit sharing and stock options. As a check against unobserved selectivity bias, the analysis of longitudinal data reveals that employees who move into unionized jobs significantly gain employee benefits compared to those who stay in nonunion jobs or move out of union jobs (Freeman, 1984, 1985).

An additional dimension to these pioneering results that further reinforces the importance of the collective voice aspect is the effect of unions on the nature of employee-benefits programs. The strongest evidence pertains to pension plans (Freeman, 1985). Relative to nonunion plans, pension plans for unionized employees are significantly more likely to be defined-benefit rather than defined-contribution plans. This favors workers who stay at the firm longer—the average rather than marginal worker. Eligibility requirements further favor average employees as predicted by the collective voice face of unionism. Freeman and Medoff (1984) also note that a much higher fraction of union than nonunion disability-insurance plans include age and years of service eligibility requirements which again reflects greater attention to older, less mobile workers.

In sum, the seminal work of Freeman and Medoff (1984), and the more detailed supporting analyses of Freeman (1981, 1984, 1985), support the two faces of unionism model. In the standard neoclassical economics framework, the monopoly effect on employee benefits is a social cost. But the collective voice aspect—which in this early work was revealed to be roughly half of the overall union effect on non-wage forms of compensation—brings social benefits because a more preferable package of benefits is provided at no extra cost. These results provide

the context for much of the subsequent research on unions and non-wage forms of compensation.[7]

IV. *Health Insurance and Pension Plans*

Since the publication of *What Do Unions Do?*, two benefit items have received the bulk of the attention in the research literature: employer-provided health insurance and pension plans. Given the importance of these two items—for both the social welfare of individuals and retirees as well as the large fraction of employers' benefits costs accounted for by these plans—this importance in the research literature is not inappropriate, even if it has been driven by data availability.[8] And in a variety of data sets, the research continues to find that labor unions are associated with greater levels of health insurance and pension benefits.

Using the National Longitudinal Survey of Youth (NLSY), Wunnava and Ewing (1999) find that union representation increases the probability of medical insurance and retirement plans. As in Freeman (1981) and Freeman and Medoff (1984), the union effects in the NLSY are also largest for smaller firms. Unions are also associated with greater pension benefits in the Survey of Consumer Finances (Montgomery and Shaw, 1997). In a focused study of local government employment, Zax (1988) finds support for the monopoly and collective voice effects: Municipal employees represented by a union have increased benefits (the monopoly effect) and a greater weighting of the entire compensation package towards benefits (the collective voice effect). Also in the public sector, in a national sample of U.S. cities, police receive higher employee benefits payments when covered by a collective bargaining agreement (Feuille et al., 1985). As in Freeman (1981) and in support of a combination of monopoly and collective voice effects, there is still a positive union effect after controlling for total compensation.

These results are also reinforced by empirical studies of workers in other countries. Using Canadian data on wages and total compensation, Renaud (1998) estimates a union-nonunion wage gap that is smaller than the total compensation gap, which implies a significant union effect on benefits packages. In a different Canadian data set, unionized workers are around 20 percent more likely to have a pension plan than nonunion workers, even after controlling for unobservable personal characteristics using longitudinal analyses similar to Freeman (1984) (Swidinsky and Kupferschmidt, 1991). In Australian longitudinal data, Kornfeld (1993) also finds that unions positively effect the probability of a pension plan. Lastly, in an analysis that closely parallels that of Freeman (1981) and Freeman and Medoff (1984), Miller and Mulvey (1992) find both monopoly and collective voice effects of Australian unions on total benefit expenditures.

Freeman's (1981) analyses have not been without criticism, however. Belman and Heywood (1991) assert that researchers should distinguish between direct and indirect effects of unions on employee benefits where the indirect effect is the increase in benefits that comes through an income effect. It's not clear, however, how this differs from the monopoly power and collective voice framework. Increased union member income stems from monopoly power, so this indirect effect is simply capturing the extent to which unions channel their monopoly power into benefits rather than wage and salary payments. Belman and Heywood (1991) estimate the direct effect by holding compensation constant—but this is the collective voice effect. By instrumenting for the hourly wage and using predicted values to distinguish direct from indirect effects, they find significant magnitudes for both union effects on the incidence of health insurance and pensions. This reinforces, not undermines, the two faces of unionism model of *What Do Unions Do?*

By focusing on the role of fixed costs for benefits (such as administration costs) in generating union-nonunion differences in benefits, Fosu (1993) tries to distinguish a model distinct from the collective voice model of *What Do Unions Do?* However, this distinction seems artificial as union-nonunion differences in Fosu's (1993) framework stem from differences in preferences between average and marginal workers, from public goods aspects of benefits, and from the possibility that unions are more efficient at reducing average fixed costs—all of these elements are consistent with Freeman's (1981) and Freeman and Medoff's (1984) collective voice model.

Methodologically, Belman and Heywood (1991) and Fosu (1993) emphasize the need to use econometric methods appropriate for distinguishing between union effects on the likelihood that a benefits plan exists and on the level of expenditure or type of plan conditional upon its existence. Using probit and tobit models on the same employee expenditure data used by Freeman (1981), Fosu (1993) finds positive union effects on both health insurance plans and pension benefits, but stronger results for pensions compared to health insurance. Fosu (1993) also finds an interesting dichotomy: The union effect for health insurance appears to be related to improving the nature of the plan whereas for pension plans the union effect appears to be focused on increasing the chance that a plan exists. Note, however, that these conclusions come from analyses of employer expenditures, not from information about the nature of specific plans. Lastly, Fosu (1993) claims that this dichotomy undermines the collective voice model, but this overreaches because the validity of the collective voice model does not require *equal* differences in marginal versus average worker preferences across all types of benefits.

Better analyses of the value of pension plans are Freeman (1985), discussed above, and Allen and Clark (1986) who use U.S. Department of Labor data on employer-provided pension

plans to calculate the actual value of pension benefits at retirement. In these data, unionized workers receive significantly higher pension benefits at retirement and also retire a year earlier, on average, than nonunion workers. Moreover, unionized retirees were more likely to receive a post-retirement increase in their pension benefits, especially for individuals who had been retired longer. When these three effects—higher annual benefits, earlier retirement ages, and greater post-retirement increases—are put together, Allen and Clark (1986) estimate that total pension wealth is 50 to 100 percent higher for unionized individuals than for nonunion individuals.

Buchmueller et al. (2002) similarly analyze differences between union and nonunion health insurance plans in greater detail than most studies that either analyze only whether health insurance is offered or the total employer monetary contribution. In Current Population Survey data from five years between 1983 and 1997, union representation is significantly related to increased coverage by employer-provided health insurance benefits, and this increase is larger in smaller firms. Retired workers who were covered by a union contract are also significantly more likely to be covered by an employer-provided health care plan for retirees. Using firm-level survey data, Buchmueller et al. (2002) also find that unionization increases the average amount of the health insurance premiums that are paid by the employer and increases the probability that the employer fully pays the premiums. Among indemnity plans, deductibles for unionized employees are significantly lower than for nonunion employees.

V. *CPS Results, 2004*

This section presents the union-nonunion coverage rate differentials for the most recently available survey of the Current Population Survey (CPS) with two goals in mind. One, these results document the most up-to-date union and nonunion coverage rates in the U.S. for health

insurance and pension benefits. Two, among those covered by union contracts, the differences between union members and nonmembers will be revealed.

The CPS is a monthly survey of approximately 60,000 households that includes labor market information representative of the U.S. noninstitutional population aged 16 and older and is probably the most widely-used U.S. data set in labor economics. The March 2004 survey includes demographic information as well as questions on union status, employer-provided health insurance, and pension plans. Construction of a sample of private and public sector employed individuals with complete information on the questions of interest yields 16,244 individuals. Of these, 14.5 percent are covered by a union contract. Table 1 shows that these union workers are significantly more likely than nonunion workers to report that they are in their employer's health insurance plan (80.6 percent versus 56.6 percent for nonunion) and pension plan (77.2 percent versus 45.1 percent).

As shown in Table 2, these union-nonunion differences are statistically significant when controlling for the standard demographic and job-attribute control variables in a probit model. These models do not control for total compensation so these estimates should be considered as the total union effect, not as the monopoly, collective voice, or facilitation effect singly. The results confirm that the earlier findings of Freeman (1981, 1985) and Freeman and Medoff (1984) are still important in the U.S. labor market of the early 21st century. Controlling for demographic and job-attribute differences, workers covered by collective bargaining agreements are predicted to be 14.7 percentage points more likely than nonunion workers to be covered by their employer's health insurance plan, and are 21.2 percentage points more likely to be included in their employer's pension plan. Relative to the sample means, these translate into union effects of 25 percent and 43 percent for health insurance and pension plans, respectively. Tables 3 and 4

document that the significant union effects are present within a wide range of demographic groups, industries, and occupations. Nontrivial union-nonunion differences are documented for both health insurance and pensions for both men and women, white and nonwhite, all age categories, nearly all educational categories, and many industries and occupations. For health insurance, the union-nonunion differential is slightly greater among smaller firms, but there is no obvious pattern for pensions.

That the importance of unions for the provision of employee benefits is not limited to the U.S. merits reinforcing. Table 5 therefore presents unadjusted and adjusted differences between unionized and nonunion workplaces for four types of employee benefits in a sample of 1,987 workplaces from the British Workplace Employee Relations Survey 1998 (WERS98) (Department of Trade and Industry, 1999).[9] The WERS98 allows one to identify whether the largest occupational group in the workplace has private health insurance benefits, an employer-provided pension plan, sick pay in excess of the legally-mandated minimum, and at least four weeks of paid vacation per year. Workplaces in which pay for the largest occupational group is determined by collective bargaining are less likely to provide private health insurance. This underscores the importance of the institutional environment: Britain has a vast public health care system and less than 20 percent of workplaces report having private health insurance in the WERS98. In contrast, unionized workplaces are 16.2 percentage points more likely to have an employer-provided pension, 9.2 percentage points more likely to have excess sick pay, and 17.6 percentage points more likely to have at least four weeks of paid leave. These are workplace-level responses provided by a manager, so they do not reflect a facilitation effect. Based on the research reviewed above, these affects are likely to reflect a combination of monopoly power and collective voice, though a more detailed analysis is warranted. But more significantly, the

important effects of unions on the provision of employee benefits highlighted by Freeman (1981) and Freeman and Medoff (1984) are not limited to the U.S.

VI. *Employer Expenditures Results, 2004*[10]

While the CPS is a rich source for documenting coverage rates for health insurance and pension plans and for estimating the total effect of unionism on employee benefits, the CPS lacks a good measure of total compensation which is critical for empirically distinguishing the monopoly effect from the collective voice effect. Freeman (1981) and Freeman and Medoff (1984) therefore also analyzed 1970s data from the establishment-level Expenditures for Employee Compensation survey and found three key results. First, total expenditures on non-mandatory benefit items are 25 to 35 percent higher in unionized workplaces (those with at least 50 percent union members) than in nonunion workplaces. Second, the union effect on benefits is particularly large for lower-paid establishments and for small establishments. Third, the union effect on employee benefits is roughly equally split between the monopoly and collective voice effects.

To investigate the extent to which their results still hold true thirty years later, this section presents up-to-date results from the Employer Costs for Employee Compensation (ECEC) data based on the National Compensation Survey conducted by U.S. Department of Labor's Bureau of Labor Statistics.[11] The ECEC is the successor to the survey analyzed by Freeman (1981) and Freeman and Medoff (1984) and has the advantage over its predecessor of specifically identifying each job as covered by a union contract or not. The analyses reported here are from the March 2004 survey and are based on 33,776 private sector jobs from 7,863 establishments. For each establishment there is information on industry, total number of employees, and state; for each job there is information on occupational classification, if the job is covered by a

collective bargaining agreement, and employer expenditures on hourly wages and 20 categories of employee benefits.

Table 6 presents share of each benefit in the total compensation package for union and nonunion jobs. Perhaps the most striking result is that voluntary benefits account for 26.5 percent of total compensation for private sector jobs covered by a union contract compared to only 16 percent for nonunion jobs.[12] Or in dollar terms, these shares imply that unionized jobs include $8.51 per hour in voluntary benefits compared to $3.52 per hour for nonunion jobs. While all of the individual differences between unionized and nonunion jobs are statistically significant at conventional levels, the differences are particularly notable for health insurance, defined benefit retirement, vacation, and overtime. The only categories for which nonunion jobs have a higher share than unionized jobs are defined contribution retirement and nonproduction bonuses—the two benefit items that unions have traditionally resisted. The probability that unionized jobs have each benefit is greater than for nonunion jobs for all of the benefits except for these same two categories.

The pattern of results in Table 6 is similar to those for 1974-77 reported in Freeman and Medoff (1984, Table 4.1). In fact, in many cases the union-nonunion differences have widened in the 2004 data. In the earlier results, the relative shares of voluntary benefits were 18 and 12 percent for unionized and nonunion jobs, respectively. Similar to 2004, the biggest individual differences were for retirement, health, life, and disability insurance, and shift premiums in the early data.[13]

The results in Table 6 are unadjusted and do not control for other characteristics. Table 7 therefore reports the results of regressing the logarithm of voluntary benefits expenditures (columns 1, 3, and 5) and the logarithm of total compensation (columns 2, 4, and 6) on a dummy

variable for whether the job was covered by a union contract, two establishment size dummy variables, region effects, and 3-digit industry and occupation effects. One drawback of these establishment-level data is that there isn't any information on the characteristics of the job holders so detailed industry and occupation effects are instead relied on to control for differences across jobs. Table 7 reports the results for three private sector samples: all establishments, establishments with less than 50 employees, and jobs with total compensation less than the 25th percentile. These last two specifications are important because Freeman (1981) found that the union effect on voluntary benefits expenditures was particularly strong in small and low-paid establishments—comparing the union coefficient in columns 3 and 5 with column 1 shows that the same conclusion is still true thirty years later.

Recall that one of the main advantages of the ECEC data over individual-level data such as the CPS is that the ECEC contains a measure of total compensation. This is important because the collective voice effect implies that unions will increase benefit expenditures holding compensation constant. In columns 1, 3, and 5, the union effect—holding total compensation constant—is positive and statistically significant. In short, the earlier result that the total effect of unions on employee benefits is a mixture of a monopoly effect and a collective voice effect remains true.

To estimate the relative magnitude of these two effects, Freeman (1981, equation 1) decomposes the total union effect into 1) the effect holding compensation constant (the collective voice effect) and 2) the effect of compensation on benefits holding unionism constant multiplied by the effect of unions on compensation. This second effect captures the extent to which unionized benefits are higher because unions raise total compensation—in other words, the monopoly effect. Applying this decomposition to all private sector establishments, the results in

column 1 of Table 7 show that the point estimate for the effect of compensation on benefits holding unionism constant is 1.795 while the effect of unionism holding compensation constant is 0.191. To complete the decomposition, we need the effect of unions on total compensation—this point estimate of 0.289 is reported in column 2. The total union effect on benefits is therefore 0.191 + 1.795 * 0.289 = 0.710. This implies that the collective voice effect is 26.93 percent of the total (0.191 ÷ 0.710).[14] The collective voice effect is slightly larger in small establishments, and is over 50 percent of the total effect in low-paid jobs.

In alternative specifications, a similar qualitative pattern of results is apparent, but with differing magnitudes for the collective voice effect. For example, using regressions that include both fixed establishment effects and 2-digit occupation effects, the estimated union effect on voluntary benefits expenditures is 0.156 with a *t*-statistic in excess of four and an implied collective voice effect of nearly 70 percent. Using levels instead of logarithms also yields the conclusion that the overall effect of unions on benefits is a combination of monopoly and collective voice effects.[15]

In sum, the broad pattern of results reported by Freeman (1981) and Freeman and Medoff (1984) remain true thirty years later. Jobs that are represented by a union have total expenditures on voluntary benefit items significantly higher than similar nonunion jobs—between 15 and 40 percent higher with total compensation held constant, and perhaps as much as 70 percent higher overall.[16] The union effect on benefits is also more pronounced for lower-paid establishments and for small establishments. And the union effect on employee benefits continues to include a mixture of monopoly and collective voice effects. However, depending on the specification, the relative importance of these two effects varies considerably—the collective

voice effect might account for as little as 25 percent or as high as 75 percent of the total union effect on employee benefits expenditures.

VII. *The Facilitation Effect*

With the literature's focus on monopoly and collective voice effects, an issue that has not received as much attention as it should is awareness versus availability. Nearly all analyses of individual-level survey data on whether or not a worker has employer-provided health insurance or pension benefits assume that workers have perfect information about their benefit plans (e.g., Belman and Heywood, 1991; Buchmueller et al., 2002; Freeman and Medoff, 1984, Table 4-3; Miller and Mulvey, 1992; Swidinsky and Kupferschmidt, 1991; Wunnava and Ewing, 1999). A worker who indicates that he or she is not covered is assumed to be truly uncovered rather than covered but ignorant. But in individual survey data, differing response patterns between union and nonunion individuals regarding employee benefits might reflect differential awareness rather than differential availability. To wit, Leigh (1976) reports that unionized employees were more knowledgeable about their pension plans than nonunion employees whereas Luchak and Gunderson (2000) find that even among union workers, workers' knowledge about their pensions is low on average.

These findings suggest that in addition to a monopoly effect and a collective voice effect, labor unions might also have a facilitation effect that boosts awareness and use of existing benefit plans. Three sets of findings further suggest the presence of a facilitation effect. First, union members are more likely than covered nonmembers to indicate that they have health insurance and pension plans, even though by law they should be equally covered by existing collective bargaining agreements. Returning to Table 1, note that of the 2,349 workers covered by union contracts, 2,119 (90 percent) are union members whereas 10 percent are covered

nonmembers. By law, unions and employers cannot discriminate against covered nonmembers so they are equally entitled to all of the contract's wage, benefit, work rule, and administrative policies and protections (Budd and Na, 2000). But consistent with Budd's (1998) findings using the April 1983 CPS, Table 1 shows that covered nonmembers are less likely than union members to report that they have employer-provided health insurance and pension plans. When controlling for demographic and job-attribute characteristics (Table 2), there is a significant difference between the two groups of workers for pensions.[17] This might reflect differences in awareness rather than actual availability since nonmembers might not receive union publications or help from a union representative.[18] Admittedly, covered nonmembers are a small fraction of the U.S. workforce (less than two percent), but further research might reveal additional insights into what unions do.

A second finding that is suggestive of a facilitation effect is that in linked manager-employee data from Britain, individual employees are significantly less likely than managers to indicate that certain family-friendly policies are available (Budd and Mumford, 2004). Lastly, research on mandated social insurance benefits, such as workers' compensation and unemployment insurance, finds that unionized workers take-up these benefits more readily than comparable nonunion workers (Budd and McCall, 1997; Hirsch et al., 1997). These two issues are discussed in the next two sections.

VIII. *Family-Friendly Policies*

A category of employee benefits that has received substantially greater public attention since the publication of *What Do Unions Do?* is family-friendly policies that aim to help employees strike a balance between work and family responsibilities (Bailyn et al., 2001; Williams, 2000). Examples include paid parental leave, on-site or subsidized child care, job-sharing arrangements,

and flexible work schedules. As these benefits increase in importance, a new question for what unions do to non-wage forms of compensation is whether labor unions increase or decrease the provision of family-friendly benefits. Budd and Mumford (2004) is the most explicit analysis of this question to-date.[19]

Using the British WERS98 data set, Budd and Mumford (2004) find that British workplaces with at least one recognized union are more likely to have parental leave, special paid leave for short-term family issues, job sharing options, and to a lesser extent, subsidized child care. Of additional interest for this review, Budd and Mumford further try to distinguish between monopoly and collective voice effects in the provision of family-friendly policies. Lacking good measures of total compensation (the usual method for isolating the collective voice effect), this study instead analyzes whether family-friendly policies in unionized workplaces are related to measures of monopoly power (such as workplace union density) and collective voice (such as regular union meetings or workplace demographics). The two benefits that involve paid leave time (parental leave and special-paid leave) appear driven to be by monopoly power. In contrast, child care, job-sharing arrangements, and work-at-home options—issues with potentially greater integrative rather than distributive aspects—are more strongly associated with measures of collective voice. While this is only one study, these first results support the extension of Freeman and Medoff's (1979, 1984) two faces of unionism beyond the more traditional benefits emphasized in the bulk of the literature to newer family-friendly policies.

In addition to the workplace-level data, the WERS98 data set used by Budd and Mumford (2004) also includes a rich linked component—25 employees from many of the establishments were also randomly surveyed so the WERS98 data include both establishment and employee-level measures. As such, for several family-friendly policies there is information

on both whether a manager indicates the policy is available in the workplace and whether an individual employee thinks it is available to him or her. In addition to the monopoly and collective voice effects, therefore, the facilitation effect can also be analyzed in these data. Among workplaces with a family-friendly policy (according to the manager), large fractions of employees do not indicate that this policy is personally available to them. In other words, there appears to be a significant discrepancy between availability and awareness. Budd and Mumford (2004) find that this discrepancy decreases in the presence of a labor union for both parental-leave and job-sharing programs. This is consistent with the facilitation effect, such as through union-provided information so that unionized employees have a greater awareness of their benefits programs.[20]

IX. *Mandated Social Insurance Benefits*

An aspect of employee benefits that does not receive much attention in *What Do Unions Do?* is required benefits—mandated social insurance programs such as social security, unemployment insurance (UI), and workers' compensation. But an analysis of this area is important because it reveals another aspect of what unions do in terms of benefits, and also provides additional evidence for the facilitation effect. As noted by Freeman (1981) and Freeman and Medoff (1984), expenditures on legally required benefits are not significantly different between union and nonunion employers. But instead of employer expenditures, consider the extent to which *comparable* union and nonunion employees—who are therefore equally entitled to the social insurance benefits—are able to use the social insurance programs in practice. Empirical analyses of a variety of U.S. mandated benefits programs consistently show that labor unions increase the effective implementation of these programs and help workers access their benefits (Weil, 1996).

There are several important reasons why unions might facilitate benefits receipt (Budd and McCall, 1997; Weil, 1996). The complexity of UI, workers' compensation, and the Family and Medical Leave Act (FMLA) can create ignorance and uncertainty among workers—raising such questions as: Am I eligible? what are the benefits? what do I have to do?—and therefore create a barrier to employees exercising their rights. To the extent that these programs are costly to employers, they have a disincentive to provide information and assistance to employees. But a union can internalize the costs and provide information through union newsletters, stewards, and training sessions. Because of the costs involved, employers might also object to requests to take family leaves under the FMLA or to the filing of UI or workers' compensation claims. Or an employer might (unlawfully) retaliate against individuals who try to exercise such rights. Unions can provide contractual protections—such as just-cause discipline and discharge requirements backed by a grievance procedure—as well as technical assistance and representation through administrative dispute resolution procedures—such as occurs for challenged workers' compensation and UI claims.

The empirical research is consistent with this union facilitation effect. Budd and Brey (2003) find that among hourly employees, unionized individuals are significantly more likely than nonunion employees to have heard about the Family and Medical Leave Act. Hirsch et al. (1997) attribute greater levels of workers' compensation receipt among unionized workers, compared to similar nonunion individuals, at least partially to union-provided information on workers' compensation systems and to union-provided help in pursuing workers' compensation claims. Similarly, hourly unionized workers are more likely to receive UI benefits than are comparable nonunion individuals (Budd and McCall, 1997, 2004).

The research on workers' compensation and UI benefits does not directly observe the facilitating behavior—though the anecdotal evidence is quite strong—but the research is careful to control for numerous factors in an attempt to make union and nonunion workers as comparable as possible in the statistical analyses. Moreover, Budd and McCall (1997) explicitly distinguish between incentive effects (which are ultimately rooted in monopoly power) and rights-facilitating effects (which can be socially beneficial like the collective voice effect) of labor unions in increasing UI benefits receipt. In particular, union-negotiated supplemental unemployment benefit (SUB) plans provide an additional incentive for workers to apply for UI benefits, so in this way unions are not facilitating UI benefits receipt via socially-beneficial information provision and representation. But the union effect on UI benefits receipt is just as strong in industries without SUB plans. Rather, the empirical results are consistent with a union facilitation effect. Facilitation of mandated social insurance benefits receipt should be added to the list of what unions do.

X. *Monetary Forms of Non-Wage Compensation*

Most of the research on unions and non-wage forms of compensation pertains to employee benefits, but Freeman and Medoff's (1984) two faces framework can also be (cautiously) applied to monetary forms of non-wage compensation such as lump-sum bonuses, profit-sharing plans, or stock options. As in the provision of benefits, union monopoly power can be used to win additional monetary forms of non-wage compensation as part of an increased total compensation package. In contrast, if there is a choice between a package of straight-time wages and lower employment on the one hand, and contingent compensation and higher employment on the other, the median worker who is likely not in jeopardy of losing his or her job is more likely to favor

wages over contingent compensation (Kaufman, 2002).[21] As such, the collective voice aspect of unionism predicts that unions will decrease the presence of contingent compensation.

There is an important dichotomy between this situation and employee benefits, however. In the benefits case, the collective voice effect can be welfare-enhancing—total compensation is held constant so the employer is indifferent while workers can be better off with benefits. In the contingent compensation case, an employer is unlikely to be indifferent between contingent and noncontingent compensation. As such, the union might be using its monopoly power to satisfy the preferences of the median worker for wages rather than contingent compensation. In terms of its effect on aggregate welfare, this should be considered as a monopoly effect rather than a collective voice effect.[22]

Turning to the empirical record, Freeman and Kleiner (1990) compare establishments that undergo a union organizing drive to a nonunion control group that doesn't experience any union activity during the sampling time frame. On average, among the locations that are newly unionized with a first contract successfully negotiated, the incidence of profit-sharing plans falls by 12 percentage points whereas over the same period of time, the control group incidence increased by 8 percentage points. Ng and Maki (1994) also find a negative effect of unions on the incidence of profit-sharing plans. A survey of Michigan manufacturing firms similarly reveals that unionized operations are less likely to have profit-sharing or gainsharing plans than nonunion facilities (Cooke, 1994). Within a sample of worker incentive plans, Ittner and Larcker (2002) find that union representation increases the frequency of worker-related measures of performance, such as productivity or safety, relative to nonworker measures, such as financial performance metrics.

The literature on lump-sum bonuses highlights some of the union resistance to contingent compensation, but estimates of union-nonunion differences in the relative frequencies of these plans are difficult to find. Within the U.S. unionized sector, lump-sum bonuses were rare before the concession bargaining period in the 1980s, but then increased in frequency as business sought to relieve labor cost pressures (Bell and Neumark, 1993; Erickson and Ichino, 1994). Martin and Heetderks (1994) further document negative employee attitudes towards lump-sum payments. Using 2001 data on employer compensation expenditures from the Employer Costs for Employee Compensation survey, Barkume (2004) finds that unionized jobs are in fact less likely to have bonuses. These patterns are consistent with monopoly union power being insufficiently strong to resist the substitution of lump-sum payments for wages in a concessionary environment.

XI. *Conclusions*

In the twenty years since the publication of *What Do Unions Do?*, employee benefits and contingent forms of non-wage compensation have increased in importance and scope in human resources and industrial relations practice and policy. Nevertheless, Freeman and Medoff's (1984) seminal work, and the associated research in Freeman (1981, 1985), has stood the test of time. The theoretical and empirical agenda for research on unions and non-wage forms of compensation established in those works continues to be the leading framework for conceptualizing and analyzing this important issue.

Freeman and Medoff's two faces of unionism is clear and extremely insightful. The textbook neoclassical economics model considers labor unions as labor market monopolies. The monopoly effect of labor unions on employee benefits predicts that unions increase benefits because unions can use their monopoly power to extract greater compensation, including

benefits, from employers. Breaking out of the textbook neoclassical economics model, unions are institutions of collective employee voice. The collective voice effect of unions on employee benefits predicts that unions increase benefits because as a democratic, collective institution, unions will promote the preferences of average rather than marginal workers. As average workers have greater seniority and less mobility, they are widely assumed to desire more benefits and less monetary compensation. The key insight is that while the monopoly and collective voice effects both predict that unions increase benefit levels, the aggregate welfare effects are very different. In a textbook model, the monopoly effect distorts the optimal competitive allocation of workers and resources and is therefore economically and socially harmful (to all but the unionized employees). But if the world is more complex than the textbook model, the collective voice effect—which does not increase total compensation—can be economically and socially beneficial.

The contributions of Freeman (1981, 1984, 1985) and Freeman and Medoff (1984) to the understanding of unions and non-wage forms of compensation are magnified by the fact that these works are still among the most careful empirical analyses of this topic.[23] Using a variety of data sources, these works found that unions do in fact increase benefit levels. Moreover, contrary to the conventional view in the monopoly tradition, Freeman (1981, 1984, 1985) and Freeman and Medoff (1984) document that empirically, the monopoly effect is only half of the story. While more recent data yield widely-varying estimates of the relative importance of the monopoly and collective voice effects, the evidence continues to strongly support the earlier finding that the overall union effect on employee benefits in the U.S. is partly a monopoly effect and partly a collective voice effect.

Subsequent research—in Australia, Canada, and Great Britain as well as the U.S.—has consistently found that unions increase employee benefit levels, especially for employer-provided health insurance benefits and pension plans. Both the monopoly and collective voice effects also continue to be supported by the data. And new research implies that this framework also applies to the emerging area of family-friendly benefits. To this catalog of what unions do, however, should also be added the facilitation of awareness and use of existing benefits, including mandated social insurance benefits.

The social importance of the interlinkages between labor unions and employee benefits is underscored by the declining trends in the fraction of workers who have health insurance and pensions—which has coincided with a decline in U.S. union density. In fact, Buchmueller et al. (2002) find that the union density decline can explain approximately 25 percent of the decline in aggregate health insurance between 1983 and 1997. Similarly, Bloom and Freeman (1992) estimate that 20-25 percent of the decline in pension coverage in the 1980s can be linked to the decline in union density. The social importance of the nexus between unions and benefits is also apparent in the problem of unfunded pension liabilities—pension plans at General Motors, for example, were under-funded by $20 billion in 2002 and by over $8 billion at United Airlines in 2004. The immediate cause of this problem was the extended bear market for stocks, but one underlying issue is the generous defined-benefit pension plans negotiated by unions in autos, steel, airlines, and elsewhere. At the extreme, the quasi-governmental Pension Benefit Guaranty Corporation steps in and covers pension liabilities when companies file for bankruptcy—to a certain extent, then, the costs of labor unions' monopoly face pension gains, and of companies' funding strategies, are shifted to the public at large.

What Do Unions Do? has perhaps had such a great impact on shaping the economic analysis of labor unions because it embraces mainstream economic principles. Freeman and Medoff (1984) concede the core economic belief that labor unions are distortionary monopolizing agents, but go on to show that unions can also have positive welfare effects if there are issues with public goods and externalities. These positive welfare effects are the basis of the collective voice face, but the underlying market imperfections are never used to question the unquestionable—the validity of the negative monopoly face. In neoclassical economic analysis, the balanced scorecard for labor unions is therefore a mixture of the negative monopoly face and the positive collective voice face. However, scholars have long questioned whether labor markets are competitive (Kaufman, 1988; Manning, 2003). With respect to employee benefits, the empirical evidence generally fails to find that benefit levels can be completely explained by compensating differentials that result from competitive market pressures (Montgomery and Shaw, 1997). If labor markets are not perfectly competitive, even the monopoly face of labor unions might be economically and socially beneficial.

In particular, the industrial relations model of the employment relationship is premised on an inherent conflict of interest between employers and employees interacting in imperfect labor markets. The employment relationship is modeled as a bargaining problem between stakeholders with competing interests such that employment outcomes depend on each stakeholder's relative bargaining power (Budd, 2004a; Budd et al. 2004). As such, when bargaining power between corporate employers and individual workers is significantly unequal, substantial social and economic ills can result: wages insufficient for a decent life and for sufficient purchasing power to support economic activity; dangerous working conditions that people should not have to tolerate and that impose significant costs on local communities through medical costs, disability

payments, and lost productivity; autocratic methods of supervision that violate standards of human dignity and de-motivate workers (Kaufman, 1997).

In the industrial relations model, therefore, the monopoly face of labor unions can be socially beneficial as it offsets corporate monopoly power and other labor market imperfections. In fact, the National Labor Relations Act of 1935 seeks to protect the formation of labor unions at least partly to promote the monopoly face: Labor union power that offsets corporate power and raises wages will boost consumer purchasing and therefore stimulate aggregate demand (Kaufman, 1996). Additionally, if firms have monopoly power in product markets and therefore earn above-normal profits, the monopoly wage gains of labor unions look less like a misallocation of resources (which is unambiguously negative with respect to economic welfare) and more like a redistribution of rents from capital to labor (which has ambiguous effects on economic welfare). Again, the monopoly face of labor unions is not necessarily harmful to aggregate welfare, and might be socially beneficial, if the assumptions of the textbook economic model are not fulfilled.

In conclusion, the effect of labor unions on non-wage forms of compensation is a microcosm of greater debates over the roles of unions in the economy and society. *What Do Unions Do?* demonstrates that unions might benefit some at the expense of others, but also that unions might serve the greater good, both economically and socially. The evidence twenty years later continues to support both faces, as well as the socially-beneficial contribution of facilitating the receipt of existing benefits and mandated social insurance programs. Ultimately, therefore, the evaluation of the balanced scorecard of the effect of unions on non-wage forms of compensation depends more on personal, subjective beliefs about the appropriate balance

between efficiency, equity, and employee voice. The continuing power of *What Do Unions Do?* is in providing the framework for approaching this evaluation from an informed perspective.

NOTES

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[1] For a review of the research on employee benefits or contingent compensation more generally, see Broderick and Gerhart (1997) and Fossum and McCall (1997).

[2] For a more careful discussion of various models of union objectives, including the traditional monopoly model, see Kaufman (2002) and the references therein.

[3] See Kaufman (2002) and the references therein for a discussion of the median voter model and its applications to union objectives. Freeman (1981, 1985) further shows that in addition to the median voter model, if a union acts as an optimizing cartel to maximize total worker surplus, unionized workplaces will be more likely to have employee benefits if average workers have a greater preference for benefits than marginal workers.

[4] If the median worker prefers predictable, noncontingent compensation rather than contingent compensation and higher employment, the logic of the median voter model also suggests that collective voice will lower the incidence of contingent compensation (Kaufman, 2002).

[5] Other early examinations of unions and employee benefits include Duncan (1976), Solnick (1978), Leigh (1981), and Feldman and Scheffler (1982).

[6] The magnitudes of the various effects reported in Freeman and Medoff (1984) are significantly higher than reported in Freeman (1981), presumably because of differences in the control variables, but the resulting conclusion that the monopoly and collective voice effects are roughly equally important holds true.

[7] Freeman and Medoff (1984) and Freeman (1985) also raise the issue of the investment behavior of union pension funds. Dorsey and Turner (1990) subsequently found no differences in investments and rates of return between single-employer union and nonunion funds, but found that collectively-bargained multi-employer funds had less risky investments and lower returns. No evidence of social investing by union pension funds was uncovered.

[8] The studies that have data on other employee benefits often also find a positive union effect on their provision, such as for employer-provided life insurance (Wunnava and Ewing, 1999). Sheets and Yuan (1988) find that U.S. firms with a higher fraction of unionized employees are more likely to provide employee termination benefits—employee transition assistance, severance pay, and advance notification of upcoming layoffs. Green and Potepan (1988) find that unions increase paid vacation time among U.S. workers, and Green (1997) finds a similar result for British workplaces. Family-friendly benefits are discussed separately in a subsequent section.

[9] WERS98 is the fourth in an on-going series of surveys and follows the 1980, 1984, and 1990 Workplace Industrial Relations Surveys. WERS98 is a nationally representative survey of workplaces with 10 or more employees containing a vast amount of information on diverse aspects of human resources and industrial relations. Face-to-face interviews for WERS98 were conducted with a manager (with day-to-day responsibility for employee relations) at 2,191

workplaces between October 1997 and June 1998. WERS98 is a stratified random sample and larger workplaces and some industries are over-represented; the results in Table 5 therefore use workplace sampling weights. For additional details on WERS98, see Cully et al. (1999) and Forth and Kirby (2000).

[10] Technically, the data used here measure employers' costs of benefits rather than expenditures, but the narrow distinction is not important for the topic at hand. "Expenditure" is used in this chapter for convenience and to be consistent with Freeman (1981) and Freeman and Medoff (1984).

[11] This survey underlies the BLS employment cost index series. Barkume (2004) is another research application of these expenditure data.

[12] For public sector jobs, the voluntary benefits share for union jobs is 26.4 percent—almost identical to the private sector share—while the nonunion share is 23.5 percent—much higher than in the private sector.

[13] The comparisons are not perfect because Freeman and Medoff (1984) report their results for production workers and also because the categories of benefits are not identical between the earlier and later surveys.

[14] For the public sector, the overall union effect is smaller, but the amount attributable to the collective voice effect is 42.86 percent of the total effect.

[15] Freeman (1981, equation 13) also develops a structural model to account for possible simultaneity bias in the levels specifications. This does not change the conclusions presented here. For example, in a levels regression of voluntary benefits expenditure with three-digit industry and occupation effects, the OLS estimate for unionism, holding compensation constant,

is 2.175 and the corrected coefficient is not statistically different (2.215). Instrumenting for total compensation also does not change the results.

[16] The overall union effect is lowest for the fixed effects specifications—in the neighborhood of 20-25 percent.

[17] The difference between health insurance coverage rates between covered nonmembers and nonunion workers is close to statistical significance with a p-value of 0.057. This difference is statistically significant in identical analyses using the March 2002 CPS (Budd, 2004b).

[18] On the other hand, this difference might reflect (illegal) employer or union discrimination, or unobserved differences between the two groups (Budd, 1998; Budd and Na, 2000).

[19] Other studies analyze the determinants of employer-provided family-friendly benefits, and unionization is sometimes included as an explanatory variable in statistical analyses, but unionism is not the focus of attention in these studies (e.g., Deitch and Huffman, 2001; Kelly and Dobbin, 1999; Osterman, 1995). Gerstel and Clawson (2001) investigate union leaders' views on work-family issues.

[20] Some degree of caution is warranted because in the WERS98 data, discrepancies between the managers' and employees' responses might stem from unequal coverage of family-friendly policies rather than employee ignorance. Budd and Mumford's (2004) analyses try to limit this possibility by focusing on workplaces in which other benefits are equally provided and by excluding part-time and temporary workers. Further research with more precise questions, however, is warranted.

[21] Chelius and Smith (1990) investigate profit sharing and employment stability.

[22] This effect on the incidence of contingent compensation should not be confused with the operational argument that conditional upon the existence of a contingent-compensation plan, the

collective voice effect of unions can potentially increase aggregate welfare by making the plan more effective relative to a similar plan in a nonunion setting (Cooke, 1994; Eaton and Voos, 1994).

[23] Perhaps the most significant methodological advance occurred very recently. Buchmueller et al. (2002) apply a semi-parametric decomposition technique to the analysis of union effects on the employer's share of health insurance premium payments.

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Table 1
Health Insurance and Pension Coverage Rates By Union Status, 2004
[sample sizes in brackets]

	Included in a Health Insurance Plan Offered By Employer (1)	Included in a Pension or Retirement Plan Offered By Employer (2)
Full Sample	0.601 [16,244]	0.498 [16,244]
Covered by a Union Contract	0.806 [2,349]	0.772 [2,349]
Union Member	0.815 [2,119]	0.782 [2,119]
Covered Nonmember	0.723 [230]	0.683 [230]
Nonunion	0.566 [13,895]	0.451 [13,895]

Source: Current Population Survey, March 2004.

Table 2

Probit Analysis of Employer-Provided Health Insurance and Pension Plans, March 2004 CPS[a]

	Employer-Provided Health Insurance		Employer-Sponsored Pension Plan	
	(1)	(2)	(3)	(4)
Covered by a Union Contract	0.147* (0.013)	---	0.212* (0.014)	---
Union Member	---	0.156* (0.013)	---	0.224* (0.014)
Covered Nonmember	---	0.066 (0.034)	---	0.110* (0.037)
Additional Controls?[b]	Yes	Yes	Yes	Yes
Sample Size	16,244	16,244	16,244	16,244

Source: Current Population Survey, March 2004.

Notes: [a] Each entry contains the marginal effect and robust standard error (in parentheses) from a probit model. The dependent variables are indicators for whether or not the employee has health insurance or a pension plan provided by their employer.

[b] Each probit model also includes control variables for gender, marital status, ethic background (5 categories), education (6), potential labor market experience, part-time, hourly, employer size (5), public sector (3), industry (12), occupation (9), and region (8).

* denotes statistical significance at the 0.05 level, two-tailed test.

Table 3

The Union Effect on Health Insurance Coverage: Subgroup Differences, 2004

	Sample Size	Health Insurance Coverage Rate		Unadjusted Union – Nonunion Difference	Adjusted Difference[b]	
		Union[a]	Nonunion		Marginal Effect	Standard Error
	(1)	(2)	(3)	(4)	(5)	(6)
Full Sample	16,244	0.806	0.566	0.240*	0.147*	0.013
Gender						
Male	8,182	0.836	0.621	0.215*	0.143*	0.015
Female	8,062	0.766	0.513	0.253*	0.140*	0.021
Ethnic Background						
White	13,585	0.812	0.566	0.246*	0.152*	0.014
Nonwhite	2,659	0.778	0.565	0.213*	0.130*	0.028
Marital Status						
Not Married	6,583	0.815	0.514	0.301*	0.177*	0.024
Married	9,661	0.801	0.603	0.198*	0.129*	0.015
Age						
16-24	2,181	0.492	0.222	0.269*	0.188*	0.053
25-34	3,495	0.773	0.604	0.169*	0.084*	0.031
35-44	4,189	0.822	0.616	0.205*	0.148*	0.022
45-54	3,946	0.830	0.651	0.179*	0.115*	0.020
55+	2,433	0.861	0.636	0.225*	0.127*	0.027
Highest Grade Completed						
Less Than High School	1,775	0.667	0.279	0.388*	0.296*	0.049
High School Diploma	4,818	0.812	0.531	0.281*	0.199*	0.022
Some College	4,790	0.811	0.558	0.253*	0.149*	0.024
College Degree	3,203	0.796	0.700	0.095*	0.056*	0.026
Graduate Degree	1,658	0.856	0.779	0.077*	0.037	0.027
Private or Public Sector						
Private Sector	13,471	0.792	0.548	0.244*	0.187*	0.016
Public Sector	2,773	0.821	0.699	0.122*	0.074*	0.019
Industry						
Agriculture and Mining	209	0.706	0.427	0.279*	-0.129	0.127
Construction	921	0.803	0.447	0.357*	0.268*	0.046
Manufacturing	2,046	0.859	0.731	0.128*	0.095*	0.025
Wholesale and Retail Trade	2,453	0.693	0.518	0.175*	0.235*	0.043
Transportation and Utilities	847	0.840	0.646	0.194*	0.147*	0.035
Information	430	0.932	0.639	0.293*	0.291*	0.053
Financial Activities	1,178	0.848	0.658	0.191*	0.210*	0.054
Prof. and Bus. Services	1,383	0.612	0.586	0.026	0.081	0.089
Educ. and Health Services	3,793	0.792	0.584	0.209*	0.106*	0.023
Leisure and Hospitality	1,360	0.738	0.290	0.448*	0.322*	0.067

Other Services	729	0.667	0.418	0.249*	0.231*	0.099
Public Administration	895	0.852	0.807	0.046	-0.010	0.029
Occupation						
Management and Financial	2,231	0.805	0.754	0.050	0.003	0.042
Professional	3,557	0.814	0.677	0.137*	0.075*	0.022
Service Occupations	2,620	0.770	0.333	0.437*	0.242*	0.038
Sales	1,773	0.662	0.498	0.164*	0.251*	0.063
Office and Admin. Support	2,386	0.785	0.577	0.208*	0.136*	0.036
Construction and Extraction	762	0.793	0.418	0.374*	0.244*	0.049
Install, Maintain, and Repair	602	0.875	0.637	0.238*	0.111*	0.052
Production	1,192	0.889	0.636	0.253*	0.171*	0.035
Transportation and Moving	1,015	0.796	0.488	0.308*	0.192*	0.044
Firm Size (Number of Employees)						
Less Than 10	2,285	0.458	0.278	0.179*	0.141*	0.052
10 – 24	1,694	0.667	0.419	0.248*	0.200*	0.057
25 – 99	2,199	0.777	0.554	0.223*	0.177*	0.038
100 – 499	2,390	0.794	0.661	0.133*	0.093*	0.030
500 – 999	953	0.779	0.673	0.107*	0.065	0.043
1,000 or More	6,750	0.856	0.678	0.178*	0.131*	0.014

Source: Current Population Survey, March 2004.

Notes: [a] Covered by a union contract.

[b] Adjusted differences are the marginal effect and standard error from a probit model that includes the control variables listed in Table 2.

* denotes statistical significance at the 0.05 level, two-tailed test.

Table 4

The Union Effect on Pension Coverage: Subgroup Differences, 2004

	Sample Size	Pension Coverage Rate		Unadjusted Union – Nonunion Difference	Adjusted Difference[b]	
		Union[a]	Nonunion		Marginal Effect	Standard Error
	(1)	(2)	(3)	(4)	(5)	(6)
Full Sample	16,244	0.772	0.451	0.321*	0.212*	0.014
Gender						
Male	8,182	0.769	0.474	0.294*	0.212*	0.018
Female	8,062	0.776	0.429	0.347*	0.214*	0.022
Ethnic Background						
White	13,585	0.795	0.464	0.331*	0.219*	0.015
Non-White	2,659	0.674	0.384	0.290*	0.182*	0.032
Marital Status						
Not Married	6,583	0.680	0.330	0.350*	0.200*	0.024
Married	9,661	0.817	0.538	0.279*	0.195*	0.015
Age						
16-24	2,181	0.418	0.125	0.293*	0.178*	0.043
25-34	3,495	0.704	0.439	0.265*	0.164*	0.033
35-44	4,189	0.779	0.519	0.260*	0.175*	0.024
45-54	3,946	0.838	0.574	0.264*	0.184*	0.022
55+	2,433	0.807	0.490	0.317*	0.221*	0.032
Highest Grade Completed						
Less Than High School	1,775	0.481	0.160	0.321*	0.191*	0.040
High School Diploma	4,818	0.720	0.390	0.330*	0.202*	0.025
Some College	4,790	0.782	0.451	0.331*	0.206*	0.025
College Degree	3,203	0.854	0.608	0.246*	0.187*	0.026
Graduate Degree	1,658	0.877	0.676	0.202*	0.144*	0.030
Private or Public Sector						
Private Sector	13,471	0.686	0.421	0.266*	0.223*	0.017
Public Sector	2,773	0.865	0.678	0.188*	0.139*	0.019
Industry						
Agriculture and Mining	209	0.765	0.349	0.416*	0.433*	0.217
Construction	921	0.746	0.324	0.422*	0.344*	0.053
Manufacturing	2,046	0.771	0.590	0.181*	0.175*	0.030
Wholesale and Retail Trade	2,453	0.547	0.380	0.167*	0.227*	0.048
Transportation and Utilities	847	0.786	0.504	0.282*	0.215*	0.042
Information	430	0.729	0.496	0.233*	0.114	0.088
Financial Activities	1,178	0.576	0.559	0.017	0.013	0.100
Prof. and Bus. Services	1,383	0.612	0.454	0.158*	0.227*	0.083
Educ. and Health Services	3,793	0.827	0.513	0.314*	0.204*	0.023
Leisure and Hospitality	1,360	0.537	0.154	0.384*	0.163*	0.052

Other Services	729	0.467	0.280	0.186	0.152*	0.085
Public Administration	895	0.879	0.763	0.116*	0.056	0.031
Occupation						
Management and Financial	2,231	0.812	0.665	0.147*	0.077	0.046
Professional	3,557	0.856	0.593	0.263*	0.193*	0.021
Service Occupations	2,620	0.709	0.225	0.484*	0.202*	0.037
Sales	1,773	0.514	0.357	0.156*	0.247*	0.070
Office and Admin. Support	2,386	0.764	0.473	0.290*	0.162*	0.040
Construction and Extraction	762	0.729	0.298	0.431*	0.290*	0.051
Install, Maintain, and Repair	602	0.805	0.475	0.330*	0.241*	0.059
Production	1,192	0.765	0.445	0.320*	0.209*	0.042
Transportation and Moving	1,015	0.670	0.329	0.341*	0.222*	0.047
Firm Size (Number of Employees)						
Less Than 10	2,285	0.346	0.165	0.181*	0.143*	0.044
10 – 24	1,694	0.537	0.259	0.278*	0.200*	0.058
25 – 99	2,199	0.714	0.408	0.306*	0.217*	0.041
100 – 499	2,390	0.780	0.522	0.258*	0.214*	0.031
500 – 999	953	0.826	0.580	0.245*	0.202*	0.041
1,000 or More	6,750	0.823	0.593	0.230*	0.176*	0.016

Source: Current Population Survey, March 2004.
Notes: See Notes to Table 3.

Table 5
British Workplaces with Employee Benefits by Union Status, 1998

	Employees in Largest Occupational Group Entitled to…			
	Private Health Insurance (1)	Employer Pension Scheme (2)	Sick Pay in Excess of Statutory Requirements (3)	At Least Four Weeks of Paid Annual Leave (4)
A. Unadjusted Differences: Sample Means [sample sizes in brackets]				
Full Sample	0.179 [1,987]	0.783 [1,987]	0.757 [1,987]	0.897 [1,987]
Largest Occupational Group Has Collective Bargaining for Pay	0.086 [665]	0.934 [665]	0.877 [665]	0.974 [665]
Nonunion	0.226 [1,322]	0.707 [1,322]	0.697 [1,322]	0.858 [1,322]
B. Adjusted Differences: Probit Marginal Effect [p-values in brackets] [a]				
Largest Occupational Group Has Collective Bargaining for Pay	-0.058* [0.0006]	0.162* [0.0007]	0.092* [0.0004]	0.176* [0.0002]

Source: Workplace Employee Relations Survey, 1998.

Notes: [a] Each entry contains the marginal effect and *p*-value of the union coefficient in a probit model for each of the four employee benefits. The probit model includes sampling weights and the p-values account for the stratification in the sampling procedure. Each probit model also includes control variables for employer size, establishment age, multiple worksites, public sector, workplace demographics (proportion female, ort-time, youth, older, and non-white), presence of a human resources representative, workplace proportion in teams and quality circles, industry (11), occupation (7), and region (10). The sample size is 1,987.

* denotes statistical significance at the 0.05 level, two-tailed test.

Table 6
Union-Nonunion Differences in the Private Sector Total Compensation Package, 2004

	Union		Nonunion	
	Share of Total Compensation (1)	Fraction with the Benefit (2)	Share of Total Compensation (3)	Fraction with the Benefit (4)
Total Compensation Per Hour	1.000 [$32.13]	---	1.000 [$22.01]	---
Straight-Time Hourly Wage	0.644	---	0.741	---
Benefits, Total	0.356	---	0.259	---
Benefits, Mandated	0.091	1.000	0.099	1.000
Benefits, Voluntary	0.265	0.997	0.160	0.964
Health Insurance	0.102	0.960	0.060	0.685
Defined Benefit Retirement	0.044	0.764	0.007	0.162
Defined Contribution Retirement	0.012	0.509	0.014	0.563
Life and Disability Insurance	0.006	0.913	0.004	0.637
Vacation	0.034	0.911	0.025	0.772
Holidays	0.023	0.904	0.018	0.774
Sick Leave	0.009	0.685	0.006	0.583
Overtime Premiums	0.021	0.870	0.011	0.532
Shift Differentials	0.006	0.496	0.002	0.126
Nonproduction Bonuses	0.005	0.362	0.010	0.417
Other[a]	0.006	0.809	0.003	0.536
Sample Size	4,703	[b]	29,073	[b]

Source: Employer Costs for Employee Compensation Survey, March 2004.
Notes: [a] Other benefits include supplemental unemployment benefits, severance pay, and other leave.
[b] Sample sizes vary in columns 2 and 4 because these calculations omit observations with imputed values.

Table 7

Estimating Monopoly and Collective Voice Effects from Private Sector Compensation Expenditures, 2004[a]

	All Private Sector Establishments		Small Private Sector Establishments		Low-Paid Private Sector Jobs	
	Log Voluntary Benefits (1)	Log Total Compensation (2)	Log Voluntary Benefits (3)	Log Total Compensation (4)	Log Voluntary Benefits (5)	Log Total Compensation (6)
1 if Union-Covered Job	0.191* (0.034)	0.289* (0.014)	0.397* (0.084)	0.395* (0.040)	0.474* (0.129)	0.116* (0.017)
Log Total Compensation	1.795* (0.047)	---	2.079* (0.097)	---	3.017* (0.214)	---
3-digit Industry and Occupation Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Implied Voice Effect[b]	26.93 percent		32.62 percent		57.56 percent	
Adjusted R^2	0.643	0.729	0.577	0.681	0.389	0.405
Sample Size	32,804	32,804	6,618	6,618	5,073	5,073

Source: Employer Costs for Employee Compensation Survey, March 2004.

Notes: [a] Each entry reports the OLS coefficient and robust standard error (also adjusted for clustering by establishment). Each regression also includes control variables for establishment size (2 categories) (except in columns 3 and 4), and region (8 categories) and is weighted using establishment-occupation weights. Small establishments (columns 3 and 4) are those with less than 50 employees. Low-paid jobs (columns 5 and 6) are those with total compensation less than the 25th percentile.

[b] See text.

* denotes statistical significance at the 0.05 level, two-tailed test.