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# Introduction

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Almost half of American private-sector employees participate in “shared capitalism”—employment relations where the pay or wealth of workers is directly tied to workplace or firm performance. In many of these firms employees also participate in employee involvement committees or workplace teams that help management make decisions regarding the economic activities of the firm. Employees in other countries have similar types of pay and work arrangements but the US is arguably the world leader in shared compensation and decision-making arrangements (Freeman 2008).

This book presents papers from the National Bureau of Economic Research (NBER)’s Shared Capitalism Research Project that investigated the shared capitalist part of the US economy.<sup>1</sup> To determine how shared capitalist arrangements work and how they affect workplace outcomes we developed two new data sets and analyzed some existing data sets. Our main data innovation was a survey of over 40,000 employees in fourteen compa-

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1. On the development of shared capitalism in different sectors of the US economy with related research, see Blasi (1987) on ESOPs, Blasi (1988) on employee ownership in privately-held firms, Blasi and Kruse (1991) on employee ownership in publicly traded corporations, Kruse (1993) on profit sharing, and Blasi, Kruse, and Bernstein (2003) on the high technology sector with special emphasis on stock options and the 100 largest firms that created the Internet.

nies and 323 worksites that have a variety of shared capitalism programs. While our sample of companies is small for a quantitative study, it is large for a qualitative case study, and while the firms are a nonrepresentative sample of those engaged in shared capitalist activities, they mirror how shared capitalism is implemented in most mainstream US corporations. About 90 percent of the workers surveyed are in five Fortune 500 multinational companies where the employee stock ownership accounts for a minority stake of the firm's equity, where workers elect no board representatives, and where the employee stock ownership is combined with cash profit sharing, gain sharing, or broad-based stock options. About 10 percent of the workers surveyed are in nine medium sized ESOP (Employee Stock Ownership Plan) firms with under 1,000 workers that are in most cases 100 percent employee-owned but where nonmanagement employees at times have some board representatives but not a majority of any of the boards.

We asked workers about their experiences with their firms' programs and other aspects of their jobs. We also placed questions about shared capitalism on the nationally representative General Social Survey (GSS) in 2002 and 2006.<sup>2</sup> Since standard labor force surveys do not ask workers a comprehensive set of questions about shared capitalist forms of pay, the GSS provides the best available estimates of the extent of shared capitalism among US workers.

Our analyses show that shared capitalism modes of compensation are spread broadly throughout the US economy and that shared capitalism is linked to worker behavior likely to raise productivity and profits, such as reduced turnover and greater willingness to work hard. We also find that shared capitalism is linked to outcomes that benefit workers, such as better pay, job security, and perceived positive relations with the employer. Workers with more intensive shared capitalist programs report that co-workers are more interested in the firm's performance and are more cooperative than workers in firms with less intensive programs.

But while shared capitalism appears beneficial for workers and firms on average, our analyses also show that it is not a magic potion that cures all economic ills. There is considerable variation in its effects across firms. The positive effects are contingent on an array of human resource policies and workplace practices that give workers freedom from close supervision and create good labor-management relations.

Many economists and others are uneasy about shared capitalist arrange-

2. The General Social Survey is conducted by the National Opinion Research Center of the University of Chicago and supported by the National Science Foundation, among other funders. It is widely viewed as one of the most valuable surveys for research purposes in the United States. The Shared Capitalism segment appears in the 2002 and 2006 survey and is being planned for the 2010 survey. All the data are publicly available from the General Social Survey or repository libraries at various universities.

ments. One reason for their concern is the free rider problem that arises whenever someone gains only part of the reward from their activity. Why should an individual give full effort in an  $N$  person firm if he or she gains only  $1/N$ th of the payoff from that effort? It makes rational “prisoners’ dilemma” sense to shirk and reap rewards from the effort of others. By the free rider argument, shared capitalism should not succeed in motivating workers to do better. Another reason for concern is that shared capitalism increases economic risk by linking individuals’ employment and wealth/income to the performance of their employer. When Enron went belly-up its workers lost not only their jobs but their retirement and other savings held in company shares. Similarly, when United Airlines went bankrupt, the airline pilots and machinists who had received majority ownership were losers in the capital market as well as in the labor market. By inducing workers to invest in their firm, shared capitalism can run counter to the investment precept that one should not put “all the eggs in one basket,” though there are ways to limit the risk through diversification of portfolios.

Our analysis offers some answers to these concerns. On the free rider issue, we examine the hypothesis that workers’ co-monitoring of fellow employees in shared capitalist firms is an important deterrent to free riding. Using a novel set of questions on workers’ ability to observe co-worker activity and their response to shirking, we find that the vast majority of workers have a good idea of what fellow workers are doing (a prerequisite for co-monitoring); that workers paid shared capitalist compensation are more likely than other workers to act against “shirking” by fellow workers; and that worker co-monitoring or anti-shirking behavior is associated with higher worker effort and better workplace performance. Shared capitalist firms seemingly create a cooperative workplace culture that combats the free rider problem inherent in any group incentive pay scheme.

With respect to risk, we found that many workers are highly risk-averse but that even many highly risk-averse workers prefer to receive some of their pay through shared capitalist arrangements. Given plausible risk aversion parameters and the thickness of asset markets, we estimate that by diversifying their portfolios, workers can hold a moderate amount of wealth in their employer without suffering significant losses of utility due to risk. The average amount of share ownership in our data is on the order of the estimated tolerable level of risk, though there are workers who hold too much of their wealth in their firm. Less risky cash profit sharing or stock options can also be combined with reasonable levels of share ownership in order to moderate risk.

The findings in the book show that shared capitalism is an important part of the US economic model. Its magnitude and success merits increased attention from businesses, unions, policymakers, and social scientists, and from economic science more broadly.

## What Exactly is Shared Capitalism?

We use the term “shared capitalism” to refer to a diverse set of compensation practices through which worker pay or wealth depends on the performance of the firm or work group.

*Employee ownership.* The extent of employee ownership varies from workers having complete ownership of the firm to owning a majority stake or a nonnegligible minority stake, usually through a trust or other legal entity that votes the shares as a group. In the US one major form for employee ownership is the Employee Stock Ownership Plan (ESOP), which federal legislation established to allow companies to contribute money to a trust to buy worker shares or to borrow money to fund worker ownership and then repay in installments from company revenues. Under this approach, workers gain an ownership stake without investing their own money to buy the stock. The ESOPs where workers make wage or benefit concessions, while often the subject of major media coverage, actually represent the exception, not the rule, in this sphere. Partnerships are another major form of employee ownership.

*Individual employee stock ownership.* This refers to situations in which workers buy shares in the firm and vote those shares privately. American workers can purchase stock through their company 401k plan, a retirement plan in which they make pretax contributions from their pay. Sometimes firms match employee contributions to 401k plans with company stock. Workers can also buy shares of their firm on the stock market. Sometimes firms subsidize part of employee purchases of shares outside of retirement plans through Employee Stock Purchase Plans, which typically offer stock at a 10 to 15 percent discount to market. The United Kingdom tax code privileges this form of employee ownership.

*Profit sharing* pays workers specified shares of profits when the firm makes money. The payments can be cash bonuses on a yearly or more frequent basis or can take the form of placing the workers’ share of profits in a retirement plan (called “deferred profit-sharing”). Some firms pay profit-sharing bonuses in company stock, so what is received as a profit share becomes employee ownership. Some profit-sharing plans are formal, laying out a formula linking profits to worker payments (sometimes after a certain threshold is met, and sometimes with an additional discretionary component), and other profit-sharing plans are fully discretionary, in which companies decide at the end of each year how much should be given to workers. In this book we use a broad definition, counting as profit sharing all bonus plans in which the payments depend in some way on company performance.

*Gain sharing* offers workers payments based on the performance of their work units rather than of the whole enterprise. These systems often measure performance in productivity or cost saving at a particular work site. One group of workers can benefit from their effort even if the firm does

poorly or if other groups of workers are not meeting their targets. Nonprofit enterprises, including government agencies, can do gain sharing while they cannot readily engage in profit sharing.

*Stock options* are a hybrid between profit sharing and employee ownership. A stock option gives the employee the right to buy stock at a set price anytime during a specified period following the granting of the option. The employee gets the upside gain of a rise in the share price without the downside risk of losing part of their investment. Unlike company stock, stock options are not purchased with employee savings unless they are used for wage substitution. High technology companies began granting stock options to a broad base of employees in the 1960s and 1970s (see, for example, Beyster and Economy [2007]). Start-ups without the resources to match the pay packages of large firms found that they could attract young, highly educated workers through granting shares or options. In the 1990s to 2000s some managers abused stock options for themselves by “backdating” the option to a period when shares were lower, which runs counter to the professed intent of options—to give managers incentives to make decisions that increase the long-run value of the firm and thus its share price. When stock prices fell greatly other managers rewrote options at lower stock prices, which encouraged excessive risk-taking as it reduced the loss to management of poor performance.

By “shared capitalism” we do not include all performance-based pay, or all pay at risk. There are a variety of pay systems based on individual performance (e.g., piece rates, commissions), and some forms of pay may simply be risk-sharing tied to external indicators (e.g., stock market indexes). We restrict the term “shared capitalism” to plans that tie worker pay or wealth to the performance of their own workplace, whether at the level of the work group, establishment, or company.

There are substantive differences among these forms of sharing the rewards and risks of business. Employee ownership can in theory give workers the power to make decisions that shareholders have in capital-owned firms. Beginning with Benjamin Ward (1958) and Evsey Domar (1966), economists have modeled how worker-owned enterprises might operate compared with other firms. Those models predict that the employee-owned firm will hire fewer workers and respond differently to changes in prices of output than traditional firms, at least in a short or medium time period. If firms can freely enter an industry, these very unique models predict that worker-owned and capital-owned firms will reach the same equilibrium output and employment. Individual share ownership does not have clear consequences for the way the firm operates since individual workers almost never own enough shares to influence management decisions.

None of the fourteen firms in our study are “worker-owned” in the strict sense of this theoretical literature. None have nonmanagement employees representing a majority of their boards, including those that are 100 per-

cent employee-owned. All of them have hierarchical management teams. Management was chosen by boards with the input of outside investors and financial institutions or advisors, not by the workers themselves. Workers participate in the firm's life mostly at the level of their jobs and departments.<sup>3</sup> Shared capitalism as it has developed in the United States and elsewhere differs greatly from the simple economic models that have made some economists uneasy about the way these businesses operate.

Profit sharing and gain sharing give workers rewards for success without the ownership authority to make management decisions. This difference underlies Martin Weitzman's (1984) model of the share economy, in which profit sharing makes the cost of labor completely flexible and gives firms the incentive to hire as many workers as are willing to take jobs. Heuristically, a firm that pays workers a fixed share of profits views workers as comparable to salespersons paid commissions. Since employing more sales workers should increase total sales, profit-sharing firms should want to hire as many persons as will accept jobs. Sales and profits will rise even as the increased number of sales workers drives down sales per employee and the earnings of workers. Firms will also have the incentive to hang onto workers if the demand for the firm's output goes down, leading to Weitzman's prediction that an economy of profit-sharing firms will have lower levels of unemployment and greater macroeconomic stability.<sup>4</sup>

What unifies ownership, profit sharing, gain sharing, and stock options as "shared capitalism" is that in each case workers' compensation depends on the performance of their firm or work group. It is group incentive pay rather than individual incentive pay. By defining shared capitalism in this way, we exclude another prominent form of worker ownership of capital—pension fund ownership of shares (Drucker 1976).

3. A random sample of ESOP (Employee Stock Ownership Plan) firms that tend to have high concentrations of employee ownership, and from which nearly all majority employee-owned and 100 percent employee-owned firms come, found that the ESOP Trustee (often a bank trustee) votes the shares, not the individual workers. In only 14 percent of the cases do the employee owners instruct the trustee of the Employee Stock Ownership Trust how to vote their shares in board elections (National Center for Employee Ownership [NCEO] 2007, 87). Our interviews with the major national associations of these firms could not elicit one example of an ESOP firm where nonmanagement employees made up a majority of a firm's board of directors. The corporate governance patterns of majority and 100 percent employee-owned firms in the United States appear to have converged with the general pattern: single slates of directors put forward by management that are ratified by shareholders or their "trustees" with virtually no examples of corporate governance insurgency on the part of worker owners. In fact, among publicly-traded firms in the United States it is hard to find more than a few cases where nonmanagement worker owners have even one or two board representatives.

4. Weitzman's predictions have received some support in examinations of firm behavior, but the theory is complex to test at this level (requiring good information on average profit share as a percent of pay, the extent of substitution with fixed pay, the size of the demand shocks faced by firms, and whether a positive demand shock is following a previous negative shock or represents new growth) (Kruse 1993, 1998). The theory would be more appropriately tested by the (unlikely) comparison of an economy of profit-sharing firms to an economy of non-profit-sharing firms.

Shared capitalism is often linked to shared decision making. Employee-owned stock comes with at least limited voting rights, but beyond these legal rights employees are often given increased involvement in different types of workplace decision making. There is a strong logic to this: while shared capitalism provides the *incentive* to improve performance, increased involvement in decision making can provide the *means* to do so. Providing shared capitalism without at least some involvement in decision making may have little or no effect on performance, and may in fact have bad effects if employees see the shared capitalism simply as a device to shift income risk onto them. Likewise, many firms use employee involvement in decisions to help improve a variety of outcomes, but if workers are not financially benefiting from the results of their decisions through some type of shared capitalism then any higher productivity may be difficult to sustain. The empirical overlap and possible complementarities between shared capitalism plans and employee involvement in decision making is a major theme that will be discussed at a number of points in this book.

### Why Shared Capitalism is Attractive

Some economists, Alfred Marshall, John Bates Clark, and James Meade, among others, have looked favorably on shared capitalist arrangements. So too have many business leaders and governments.<sup>5</sup> The United States and many other countries give tax incentives to promote worker ownership. The EU directed attention to profit sharing and employee ownership in its 1991 Promotion of Employee Ownership and Profit Sharing report (the “Pepper Report”). It called on member states to promote participation by employed persons in profits and enterprise performance. France requires that some firms pay part of wages in profit shares. What makes shared capitalism attractive to economists, business, labor, and governments is the belief that when workers have a stake in the financial performance of the firm, they will create better outcomes than if the workers were just “paid hands.”

The outcome that receives the most attention is *productivity*. Tying workers’ pay to workplace performance is expected to induce workers to increase effort, commitment, and willingness to share information, and to decrease turnover and absenteeism, particularly in teamwork settings where cooperation and information sharing among employees is important. The resultant growth of productivity and profits creates the potential for the proverbial “win-win” situation, with workers and the firm sharing the benefits of

5. Fear of communism and unionism led John D. Rockefeller of Standard Oil and other corporate leaders to form a Special Conference Committee that later became The Conference Board, whose agenda included profit sharing and employee stock ownership, though perhaps more to gain the loyalty of workers, than in the belief that these systems would improve company performance. In its early days, Princeton University’s Industrial Relations Section studied this phenomenon (see Foerster and Diemel 1927).



the increased production. Most quantitative studies of shared capitalism estimate its impact on productivity by matching information on company stock and profit plans to publicly available measures of performance. They find the expected positive relationship between shared capitalism and performance.<sup>6</sup> But studies show considerable variation in the effects of shared capitalist arrangements on outcomes, with many workplaces having little or no improvement in output or labor productivity. The average effect is positive because shared capitalism is rarely associated with low or declining productivity.

The use of stock options and share ownership in high tech start-ups in Silicon Valley and elsewhere directs attention at the putative impact of shared capitalism on another key aspect of firm performance—its *innovativeness*. Employees whose pay or wealth is tied to the firm's performance are more likely to suggest ideas for innovative products or production technologies, and to help implement these ideas.

In one of the earliest analyses of employee ownership, John Bates Clark argued that, "All the workmen with their employers constitute, collectively, a good entrepreneur" (1886, 183–84), but he was just beginning to review supporting evidence for this claim.<sup>7</sup> Similarly, to the extent that shared capitalism distributes decision making and the rewards from good performance among a larger group of employees than conventional firms, shared capitalist firms could be less prone to the malfeasance in corporate governance that marred corporate America in the 1990s to 2000s. More workers will know how the firm is truly doing and management will have a smaller incentive to cook the books on its behalf since it is sharing ownership with workers as well as with nonemployee shareholders. To the extent that profit sharing helps stabilize employment or that employee ownership gives employees a means to resist job-destroying takeovers or downsizing, it also has the potential to ameliorate fluctuations in employment.

What about the effect of shared capitalism on workers? Many analysts and

6. See reviews in Weitzman and Kruse (1990); Bullock and Tubbs (1990); Kruse (1993); OECD (1995); Douciliagos (1995); Welbourne and Mejia (1995); Kruse and Blasi (1997); Blasi, Kruse, and Bernstein (2003); Kaarsemaker (2006a, 2006b), and Freeman (2007), plus additional recent studies cited in chapter 4.

7. Taking the opposite side, the first President of the American Economic Association, General Francis Amasa Walker, who later became head of MIT, expected worker shares in performance would increase worker effort, but thought it could possibly fail because of the "lack of an entrepreneur" (1876). Walker was referring to companies that were mainly owned by their workers without professional management and not to established capitalist firms with significant employee ownership, of the type found in the United States today. John Bates Clark saw a role for employee ownership and profit sharing in firms but did not rule out it also having outside investors. Bates was associated with a working group at Johns Hopkins University that began to collect information on employee ownership and profit sharing in various regions of the United States (Adams 1888) and publish it in the journal of the new American Economic Association (see, for example, Bemis [1886].) Soon after, established firms with professional managers, for example, Procter & Gamble in 1887, began to use profit sharing and employee stock ownership more widely.

observers believe that shared capitalism improves employee well-being. It gives workers greater participation on their jobs, is associated with increased skills, and improves labor-management cooperation and job satisfaction. By giving workers across the economic spectrum a share of profits and company stock, moreover, shared capitalism could perhaps play a role in mitigating the rising inequality in income and wealth that has characterized the United States since the 1970s and 1980s. The reason is that capital income has risen more than wages, with labor's share of national income falling in the 2000s, so that those with a share of business profits or appreciation in the value of equities or real estate have done better than wage earners.<sup>8</sup> If the boards of directors of companies with some employee ownership see a business purpose for sharing profits and ownership more widely, employee ownership may also help control runaway CEO pay.

Finally, many advocates of shared capitalism view it as a logical extension of political democracy. Albert Gallatin, Jefferson's Secretary of Treasury and one of the signers of the Declaration of Independence, promoted profit sharing for that reason.<sup>9</sup> Investment banker and political economist Louis Kelso contributed one of the earliest analyses along these lines (Kelso and Adler 1958) and developed the ESOP with Senator Russell J. Long. The National Center for Employee Ownership broadened this analysis to focus on the implications of a variety of equity plans for company objectives and performance (see Rosen, Case, and Staubus [2005]). Senator Russell J. Long favored incentives for ESOPs in federal law to broaden the wealth distribution and to give more Americans direct stakes in the economic system. Political scientists argue that democratic workplace structures produce skills that workers can carry to social and political activities outside the workplace.<sup>10</sup>

But there are potential weaknesses to shared capitalist arrangements. The skills needed to manage a firm with significant employee ownership and profit sharing are likely to differ from the skills needed to manage a standard firm, which may limit the ability of those enterprises to recruit top managers,

8. The overall return to capital, reflecting profits and company stock values, has risen since the 1970s while inflation-adjusted wages for middle- and low-income workers have stagnated (Mishel, Bernstein, and Allegretto 2007, 81, 85, 119, 121).

9. Gallatin wrote that the "democratic principle upon which this Nation was founded should not be restricted to the political processes but should be applied to the industrial operation" (quoted in US Senate 1939, 72).

10. Pateman (1970); Mason (1982); and Dahl (1985). See Dow (2003, 23–44) for a review and discussion of these and other perspectives. Three states have centers that work with mostly local groups of companies with meaningful employee ownership, such as the Ohio Employee Ownership Center (see Logue 2002), the Beyster Institute at the University of California at San Diego, and the Vermont Employee Ownership Center. Several nonprofit think tanks have continued to develop political economic analyses and agendas on shared capitalism among them, the Kelso Institute, directed by Patricia H. Kelso; the Carey Center for Democratic Capitalism, organized by Ray Carey (2004); and the Center for Economic and Social Justice, founded by Norman Kurland (2004). A small US Federation for Worker Coops also exists.

although this issue has not been studied. Firms that choose shared capitalist structures to gain the tax breaks associated with forms such as ESOPs may fail to get the economic gains that accrue to firms that introduced them for business reasons. Some on the left have criticized shared capitalism as simply a management trick to speed up work and effort or transfer more risk to workers.

A balanced assessment of shared capitalism must take account of its drawbacks as well as its virtues. For example, while it could expand capital income for the middle class, how would the issue of risk be addressed? To be helpful to participants, moreover, any analysis should also consider possible ways to limit the drawbacks and strengthen the virtues.

### **The NBER Project**

At the heart of this book are the two new surveys of workers referenced earlier. These surveys are fully described at the end of this introduction, but here we give a brief overview. The NBER company survey administered 80 to 100 questions to workers in fourteen firms and 323 work sites who had some shared capitalism modes of compensation.<sup>11</sup> All of the firms have some sort of broad-based employee ownership plan, but the plan types vary: eight have standard ESOPs, one has a 401(k) ESOP, four have Employee Stock Purchase Plans (ESPPs), and three have 401(k)'s with company stock. Eleven of the firms have broad-based profit-sharing plans, while five have broad-based stock option plans. One has a 401(k) plan that prohibits investments in company stock as too risky, using options and profit sharing instead. Our survey garnered 41,206 employee responses, which makes this the largest single data set on workers in shared capitalist firms. Most of the workers (31,994) were based in the United States. The other countries are represented because three US multinationals participated in the study and encouraged their workers around the world to take the survey. In many of these countries, the workers have access to shared capitalism comparable to that of the US workers. The companies vary in industry group and size. Eight are manufacturers, seven with a workforce ranging from 250 to 5,000, and one large multinational manufacturer with approximately 40,000 to 75,000 employees.<sup>12</sup> There are two high technology firms, one with a workforce on the order of 25,000 to 50,000 and one with a workforce of close to 1,000 employees. There is one large national financial services firm with a workforce of 10,000 to 20,000. There are three service firms with workforces of approximately 500, 2,000, and 11,000 employees. Three of the firms are in the Fortune 500.

11. We included special questions of concern to each participating company and provided them analysis of those questions gratis.

12. We give ranges so as not to risk someone identifying the firms.

Initially, we sought to survey paired comparison competitor companies for each company in our data set, but we found that this was a fruitless endeavor. Many firms similar to those in our sample have some shared capitalist compensation programs as well—profit sharing instead of employee ownership or gain sharing instead of profit sharing. Managers in firms that had no programs did not find attractive the idea of being controls for a competitor. In any case, the shared capitalist arrangements differed enough among our fourteen firms and among workers and establishments within those firms to allow us to analyze the effects of these modes of compensation and other management labor practices on outcomes.

The principle drawback of the NBER firm survey is that it is a self-selected nonrandom sample of US establishments. To the extent that our questions relate to issues that face all firms and reflect basic human nature, there are reasons to expect any findings to generalize to a broader population. The empirical study of management and firm behavior and much of psychology is replete with in-depth and useful analysis of nonrandom samples, often of just a single firm or person. Still, we sought a way to address the selectivity problem. Our solution was to apply to the board of the General Social Survey at the National Opinion Research Center at the University of Chicago in order to place a special module on shared capitalism on the nationally representative General Social Survey (GSS) in 2002 and 2006, with a sample of 1,145 employees in for-profit companies in 2002, and 1,081 employees in 2006. We placed questions on the GSS about the incidence of shared capitalism and replicated several key questions from the NBER company survey, such as whether workers observed how fellow employees performed and how they reacted to someone not working as hard as they should. Thus, the GSS provides a validation check on some results in the company survey. It also provides information on the “control” group of workers without shared capitalist arrangements that we could not obtain from our firm surveys.

## **The Main Findings**

As an introduction to what the reader will find in the remaining chapters of this book, in the following we summarize the main findings in the form of six cross cutting “take away messages.” Exhibit 1 lists each of the messages and gives some related information on the underlying findings. To see how the researchers obtained the findings and to assess the strengths and weaknesses of the analyses that developed them, we direct the reader to the chapters themselves.

### **1. Shared Capitalism is a Significant Part of the US Economic Model**

For many years most economists viewed shared capitalism as a niche part of the capitalist system. Worker-owned firms, firms with significant minority

**Exhibit 1**                      **Six “take-away” findings on shared capitalism**

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1. Shared capitalism is a significant part of the US economic model.  
Almost half of workers have some form of shared capitalist pay.  
It has grown rapidly in the 1980s–2000s.  
Shared capitalism is also significant in the United Kingdom and is growing in other advanced countries.  
Shared capitalism can increase wealth for workers at lower and middle income levels.
  2. Worker co-monitoring helps shared capitalist firms overcome incentives to free ride.  
Most workers can observe work activity of co-workers.  
Many take action against shirkers.  
Shared capitalist compensation increases the likelihood of acting against shirkers.  
Combining shared compensation and advanced personnel and labor policies has an even larger effect on worker efforts to discourage shirking.
  3. The risk of shared capitalist investments in one’s employer is manageable.  
Portfolio theory suggests employee ownership can be part of an efficient portfolio as long as the overall portfolio is properly diversified.  
Some workers have invested excessively in shares of their own firm, contrary to the precepts of diversification, but most workers have modest amounts of employee ownership within the ranges suggested by portfolio theory.  
Less risky forms of shared capitalism such as cash profit sharing and stock options where workers are paid market wages, or company stock is not financed by worker savings, can be prudently combined with riskier forms where workers purchase stock.
  4. Shared capitalism improves the performance of firms.  
It is associated with greater attachment, loyalty, and willingness to work hard; lower chances of turnover; worker reports that co-workers work hard and are involved in company issues; and worker suggestions for innovations.  
Shared capitalism is most effective when combined with employee involvement and decision-making and with other advanced personnel and labor policies.
  5. Shared capitalism improves worker well-being.  
It is associated with greater participation in decision-making; higher pay, benefits, and wealth; greater job security, satisfaction with influence at the workplace, trust in the firm, and assessment of management; and better labor management relations practices.  
Shared capitalism is most effective when combined with employee involvement and decision-making and with other advanced personnel and labor policies.
  6. Shared capitalism complements other labor policies and practices.  
Firms with shared capitalist compensation are more likely to have other worker-friendly labor policies and practices  
Combinations of shared capitalist pay and other policies, such as devolving decision-making to employees, wages at or above the market rate, and lower supervisory monitoring, produce the largest benefits for workers and firms.
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employee ownership stakes, or profit sharing might attract the interest of a small band of aficionados but most of the profession viewed the topic as too narrow and small to be worth broad scholarly attention. Many expressed suspicion about the seeming positive effects of shared capitalism on economic performance. One comment we often received was, “If this stuff is as good as some of the research indicates how come all firms don’t choose employee ownership/profit sharing or grant stock options to all workers?”

Another line of critical commentary argued that shared capitalism missed the boat because what really matters in most businesses is top management: “If you want to know why firms succeed, study the superstar CEOs, not regular employees. The CEOs are paid huge sums because they are the key to enterprise performance.”<sup>13</sup>

The evidence on the extent and impacts of shared capitalist arrangements presented in this volume refutes such dismissive views. As noted in the opening paragraph, almost half of US employees participate in some form of shared capitalism. The 2006 GSS estimates that 47 percent of workers are covered by at least one such form, with 38 percent having profit sharing, 27 percent having gain sharing, 18 percent owning their company’s stock, 9 percent holding company stock options, and 5 percent receiving company stock options in any year. Based on these figures, shared capitalism covered 53.4 million American workers.

There is also a substantial amount of overlap among shared capitalism plans. Over three-fourths of workers who own company stock also have profit sharing or stock options, and workers with profit sharing often have other programs as well. These patterns suggest that some firms combine the longer-term incentives associated with employee stock ownership or deferred profit sharing in retirement accounts with shorter-term incentives of cash profit or gain sharing bonuses and stock options, presumably to maximize worker commitment and effort over different time horizons and also to combine more and less risky shared capitalist practices.

The data also show that shared capitalist arrangements cover much of the economy, though they are more prevalent in some sectors than others. For example, employee ownership ranges from 10 percent of employees in non-computer services to 43 percent of employees in computer services. However, contrary to some notions that it is more adaptive to service companies, employee ownership and stock options have a moderately high incidence in manufacturing. It is more common in larger establishments, in jobs where it is easier to see how other workers perform, and in jobs with teamwork, low levels of supervision, employee involvement, employer-sponsored training, and job security. Union members are less likely than nonunion members to be part of profit-sharing and gain-sharing plans, but are more likely to hold company stock and stock options (Kruse, Blasi, and Park, chapter 1).

Shared capitalism was not always such a large part of the US economic system. In 1886 John Bates Clark wrote that the test of the economic efficacy of what was then called cooperation was how the firms grew relative to other types of enterprises. For decades, shared capitalist modes of compensation

13. Identifying superstar business leaders is difficult and finding out what they do and whether the huge amounts they make reflect their marginal product is even more difficult. One effort to identify the stars on the basis of business awards and to examine their activities finds that after the CEO gets fame as a superstar, performance falls and shareholders lose. See Malmendier and Tate (2008).

and work as a whole did not expand their share of the market, justifying the dismissal of these institutions as interesting but unimportant aberrations. However, important exceptions appeared throughout American history: Pillsbury dominated flour production in the 1800s with a very public emphasis on profit sharing and Procter & Gamble dominated soap and related cleaning products in the late 1800s and 1900s with a very public emphasis on profit sharing and later employee ownership (on Pillsbury, see Blasi and Kruse [2008]). But from the 1970s to the present, shared capitalist modes of compensation have grown rapidly. Data from diverse administrative sources shows that shared capitalism increased its reach in the economy in the latter part of the twentieth century (Dube and Freeman, chapter 5, figure 5.1). While some of this growth—of ESOPs, in particular<sup>14</sup>—depends on tax advantages given to that form, firms introduced other modes of shared capitalism without any such support. Shared capitalism has also increased its importance in the United Kingdom (Bryson and Freeman, chapter 6) and in many other advanced countries, though it seems most successful at spreading in the United States. Shared capitalism has met Clark's market test.

## 2. Worker Co-Monitoring Helps Overcome Free Riding

The notion that workers will co-monitor themselves when their pay depends on the performance of the work group and act to reduce free riding behavior has long been in the air in discussion of employee ownership and profit sharing.<sup>15</sup> If worker A's pay depends on how worker B performs, then A might be expected to intervene when B is not working up to speed. What was missing was evidence that co-monitoring is extensive and that it helps overcome free-riding and in so doing contributes to the performance of shared capitalist enterprises.

The co-monitoring modules in the NBER fourteen firm survey and in the GSS survey fill some of this lacuna in knowledge (Freeman, Kruse, and Blasi, chapter 2). Asked how well they could observe what co-workers were doing at their workplace, most workers reported that they had good knowledge of how co-workers performed. About two-thirds rated observability above seven on a scale from zero to ten. Asked what they would do if they saw a fellow employee not working up to speed, about one-third of workers

14. Between 1975 and 2005 the number of workers covered by just ESOP plans alone increased from 250,000 to 10,150,000. This does not include the many other types of employee ownership, profit and gain sharing, and broad-based stock options that have also grown.

15. See Bonin and Putterman (1987) and Nalbantian (1987, 26). Tracing the idea back further, Columella, the most important historian of Roman agriculture in the first century AD, described how free tenant farmers who had access to the full profits of their labor were more productive than other forms of labor when the owner of the lands was not available to monitor the work on the lands directly. Columella also stressed the importance of the owner treating the worker courteously and with goodwill while being flexible and respectful of their rights, and having a long-term relationship with the free tenant farmers. (See Columella 1941, Book I: VI, 79–83.) We acknowledge the assistance of Professor Heinrich von Staden of the Institute of Advanced Study with this insight.

reported that they would speak to the shirker or report the behavior to a supervisor. Many said that they had done that in the past. Critical to our analysis, proportionately more workers paid by some form of shared capitalism said they would act against a shirker than did other workers. Workers with larger profit-sharing or gain-sharing bonuses and those who recently received a stock option grant were the most likely to so act.

Looking at self-proclaimed motivation, workers paid under shared capitalist compensation were more likely than other workers to explain their intervention on the grounds that the shirking behavior was costing them money. In establishments where workers as a group reported more anti-shirking behavior, they also reported that co-workers worked harder and were more encouraging to each other, which produced a more effective facility, than did workers in other establishments. Finally, our data show that anti-shirking behavior and the effect of shared capitalism on that behavior depend in important ways on other workplace labor practices and policies—a point we develop as take away message six following, as it runs through virtually every analysis in the book.

As we were conducting our survey of the workers of one company, serendipity provided a natural experiment that gives us an independent “before/after” test of conclusions based on cross-section comparisons of workers with more/less shared capitalist pay. One firm announced that it was going to introduce a new profit-sharing plan shortly after its workers took our survey. We asked if we could conduct a follow-up survey after the firm put in the new scheme. The firm agreed, which gave us an exciting and unanticipated natural experiment. There were two outstanding differences between the before and after surveys: first, the proportion of employees who said they would talk to shirking co-workers went up; second, the proportion who said that they would do so because shirking affected their bonus went up also. There was no difference in the other relevant responses.

Our analysis illuminates only part of the co-monitoring story. It does not explore in depth the factors that lead one person to act against a shirker instead of seeking to free ride off of someone else’s intervening. It does not measure free riding behavior before and after co-monitoring becomes important. What it does do is demonstrate that co-monitoring is real, measurable, and responds to the incentives of shared capitalist compensation. It is also possible that the increased co-monitoring of workers can allow companies with shared capitalism and supportive work practices to cut their supervisory budget, thus creating savings in labor expenses that might affect productivity. This is another issue that needs to be explored in depth.

### 3. The Extra Risk of Shared Capitalism is Manageable

Some analysts view risk as the Achilles Heel of shared capitalism. Workers in shared capitalist firms invest too much of their wealth in the firm, contrary to the principle of diversification, and thus take on too much risk for their



own good. Evidence that a sizable number of workers in the United States place large fractions of their wealth in company stock shows that this is a real problem. In a survey of 401(k) plan participants Hewitt and Associates found that more than 27 percent of the nearly 1.5 million employees surveyed who could invest in company stock had 50 percent or more of their 401(k) plan assets invested in those shares (Sammer 2006). In the NBER firm sample, about 20 percent of workers clearly held too much of their wealth in their firm to meet any plausible diversification strategy (Blasi, Markowitz, and Kruse, chapter 3). The reason workers invest heavily in their own firm is not because they are risk lovers. Most workers in the NBER survey are risk averse, and the more risk averse are less likely to want to participate in shared capitalist modes of compensation than other workers. Nevertheless, workers seem to find the notion of being in an ownership or shared capitalist position at their workplace exceedingly attractive. Two-thirds of the most risk averse employees want shared capitalism as part of their pay package (Kruse, Blasi, and Park, chapter 1).

Blasi, Kruse, and Markowitz (chapter 3) ask whether the risk in shared capitalism makes shared capitalism unwise for most workers or whether the risk can be managed to limit much of the loss of utility from holding the extra risk. They create an index of financial security based on how much each worker's wealth represents relative to their annual salary and whether the worker has reason to believe that the firm substitutes shared capitalist compensation with the associated risk for normal fixed wages. Workers who feel financially insecure exhibit less of the positive outcomes associated with shared capitalism and are less interested in receiving more profit sharing or employee ownership in their workplaces than other workers.

Portfolio theory suggests that any risky investment—including stock in one's company—can be part of an efficient portfolio as long as the overall portfolio is properly diversified. Someone with considerable assets in their firm should invest other parts of their portfolio in assets negatively correlated with the firm's share prices. The loss of utility from the diversified portfolio should be balanced against the gains from shared capitalism to determine the "optimal" investment strategy. In the case of 401(k)'s, in 2006 16 percent of firms that offer company shares in 401(k) plans chose to limit the amount of investment in their shares or eliminate it as an option altogether (Sammer 2006). Blasi, Kruse, and Markowitz stress that an example of a better strategy for the firm would be to personalize individual portfolios on the basis of worker characteristics and preferences. Financial advisors with information on the worker's entire investment portfolio could develop investment strategies that would diversify the portfolio in ways consistent with individual risk preferences. Given estimates of risk aversion parameters, workers could prudently hold up to 10 to 15 percent of their assets in ownership or related financial linkage to their firm with only a modest loss in utility due to risk. Finally, insecurity about shared capitalist risk and its effect on

behavior seems to depend on other workplace labor practices and policies. Combining less risky forms of shared capitalism such as profit sharing and stock options with reasonable amounts of employee stock ownership and complementary work practices captures many of the positive impacts of the research results while minimizing some of the jeopardy. Aside from limiting the overall amount of employee stock ownership to tolerable amounts, one important method to reducing risk is to avoid financing employee stock ownership with worker savings or wage substitution, since our findings show that workers respond poorly to wage substitution.

#### 4. Shared Capitalism Improves the Performance of Firms

The sine qua non in most economics and business discussions of shared capitalism is that it improves the performance of firms. Four chapters in this volume examine the relation between shared capitalist modes of pay and the economic outcomes of firms. Chapters 4 and 7 use the NBER firm survey and the GSS survey. Chapter 5 uses two other data sets for the United States and Chapter 6 uses a data set for the United Kingdom to estimate the impact of shared capitalism on firm outcomes. By estimating similar models with different data sets and in the UK as well as in the US we test the generality and robustness of our findings. Results consistent across data sets and economies presumably reflect the most fundamental aspects of economic behavior. Results that vary across data sets/countries suggest more subtle relations, in which unobservable factors may be influencing the observed patterns.

Blasi, Freeman, Mackin, and Kruse (chapter 4) find that measures of shared capitalist pay are associated with a host of workplace outcomes beneficial to firms in the NBER firm and GSS surveys. More workers report that they are “not likely to search for a new job,” “would turn down another job for more pay,” have “loyalty to the company,” and are “proud to be working for the employer” when they are paid with shared capitalist compensation than otherwise. The workers with shared capitalism are also more likely to report that “co-workers work hard,” that they personally “are willing to work harder to help the company,” that “co-workers have enough interest in company issues to get involved,” and are more likely to make suggestions to improve the business. The only outcome that is adversely linked with shared capitalism is number of days absent, which is higher with shared capitalist compensation than otherwise, but not when shared capitalism is accompanied by complementary workplace practices.

To illuminate the motivation behind the positive worker responses to shared capitalism, we asked workers on the NBER survey how their desire to improve the business success of their employer would be affected by various forms of shared capitalist incentives. Employees said that cash incentives and stock options would motivate them the most, followed by shares in the ESOP. Respondents said that they would be motivated less if the shared

capitalist policy involved buying shares with company discounts and said they would be motivated the least by buying shares in the open market. The implication is that the context or form in which the firm makes its shared capitalist compensation greatly influences how shared capitalist pay affects behavior. Consistent with this, Blasi, Freeman, Mackin, and Kruse show that the effects of shared capitalism on the diverse outcomes given before vary depending on other labor policies and practices.

Dube and Freeman (chapter 5) examine the links between modes of shared compensation in pay and employee involvement and other forms of shared decision making with various measures of productivity in the 1994–95 Workplace Representation and Participation Survey (WRPS) that asked workers about their workplace activities and modes of compensation, and in the 2003 California Establishment Survey that asked firms about compensation and decision-making practices. They find weaker links between shared capitalist modes of pay—when examined alone—and worker behavior likely to benefit firms than are found in the NBER and GSS surveys. Shared capitalist pay has positive but generally statistically insignificant effects on behavior likely to raise firm output. Since every firm has a set of workplace practices, looking at the combination of shared capitalism with such practices is the key to our analysis. The labor practice that has a big effect on behavior is an employee involvement committee, which increases employee participation in decision making. Shared capitalist forms have their impact on outcomes by augmenting the effect of involvement committees. For instance, in the WRPS an employee involvement committee by itself increases the probability that a worker will likely stay with the firm by 0.10 percentage points, whereas combined with profit sharing and employee ownership, the effect is increased to 0.18 percentage points (chapter 5, table 5.4). Similarly, in the establishment-based data set, having an employee involvement committee by itself increases productivity by 0.12 percentage points, whereas combined with profit sharing and employee ownership, the productivity effect nearly doubles to a 0.23 percentage point gain.

In the late 1990s the United Kingdom enacted tax laws that privileged employee share ownership at the expense of profit-related pay, which it had previously tax-advantaged. One reason for the change was the belief that firms were exploiting the profit-related pay system by claiming the tax break when in fact they were not truly creating pay that varied with profits. Most studies of shared capitalism linked the mode of wage payment to management perceptions of the productivity of their workplace and found modestly positive effects, which, however, differed over time and among studies. Bryson and Freeman (chapter 6) supplement management reports on labor productivity with data on sales per employee and value added per employee data for establishments in the 2004 British Workplace Employment Relations Survey (WERS) in the period following the change in tax laws. They find that stock ownership plans are positively correlated with productiv-

ity while other forms of shared capitalism have modest and generally not significant effects. But, as in analyses of US data, the biggest effects occur when shared capitalist forms of pay are combined with policies that increase worker decision making. They reference a UK Treasury study of a much larger sample of firms that yields consistent results.

As information and knowledge work have moved to the forefront of economic activity in advanced economies, it is important to determine how well, if at all, shared capitalism fits in this “new economy.” The NBER survey contained a module of questions focused on innovative activity by workers. It asked workers, for instance, whether they “would be willing to be more involved in efforts to develop innovative products and services” and whether in their firm “innovative ideas are carefully considered and fairly evaluated.” Using the largest company in the NBER dataset, with over 27,000 employee respondents and 280 different work sites in twenty-two countries, Harden, Kruse, and Blasi (chapter 7) examine the relation between workers’ engagement in innovative behavior and shared capitalist rewards. Workers with shares in the firm perceive a more innovative culture and have a greater willingness to engage in innovative activity. The combination of shared capitalism and high performance workplace policies had the strongest impact on innovation culture and willingness to innovate. This is true for both a measure of coverage by different policies, and a measure of the effectiveness of high performance policies in one’s immediate work group or team.

In sum, differences in the source and type of data notwithstanding, these chapters tell a consistent story that supports and enriches the earlier production function analyses of the relation between shared capitalism and company performance of firms, and show that its effects vary with other aspects of the firm’s policies and practices.

## 5. Shared Capitalism Benefits Workers

The four chapters of the book that examine the relation between shared capitalism and worker well-being show that shared capitalism benefits workers along a host of dimensions. Shared capitalism is associated with better working lives and greater wealth relative to otherwise comparable workers paid by conventional means. Most workers appear to have sufficiently accurate information about shared capitalist compensation to motivate the various behavioral responses found throughout the book. At the same time, because shared capitalism does not cover many of the lowest paid workers in society it does little to reduce earnings inequality at those income levels in our society.

To begin with, workers with shared capitalist modes of pay report better outcomes on both the NBER firm survey and the GSS in such areas as participation in decisions, management treatment of employees and supervision, formal and informal training opportunities, pay and benefits,

co-worker relations, job security, and labor management-relations broadly (Kruse, Freeman, and Blasi, chapter 8). Profit sharing is most consistently linked to such positive outcomes, though gain sharing, stock options, and employee ownership also affect outcomes positively. For some outcomes the positive effect is related to the worker being covered by a policy (e.g., being eligible for profit sharing, or being an employee-owner), but for other outcomes the effect is tied to the size of the financial stake involved (e.g., size of the most recent bonus, or value of employer stock or potential profit on stock options). Workers report higher job satisfaction when shared capitalism is combined with high performance work practices and low supervision, and report high participation in decisions and satisfaction with participation under similar circumstances. By contrast, the combination of close supervision with shared capitalism has negative effects on almost every outcome. And the impacts of shared capitalism are diluted for workers who believe that they are paid below the market rate for their job. This presumably reflects worker concern that shared capitalism has replaced fixed pay with less desirable variable pay. In the WRPS, employee involvement has a greater impact than shared capitalist forms on worker satisfaction related outcomes, as it did on productivity, with shared capitalism substantially augmenting the effect of involvement on such outcomes as satisfaction with influence at the workplace, job satisfaction, trust in the firm, and assessment of management (Dube and Freeman, chapter 5). Overall the results in the various studies support the idea that workers gain by sharing, but that the effect depends on other workplace policies as well.

Workers' knowledge of the benefits their firm offers them (Gustman and Steinmeier 2001; Chan and Stevens 2003) and of labor protections more broadly (Freeman and Rogers 2006) is often sparse and in some cases inaccurate. In the case of pension rights, Chan and Stevens have found that inaccurate understanding of pension systems leads some workers to choose their retirement in ways against their self-interest: they choose optimally on the basis of their inaccurate knowledge of the plans. Given this finding, Budd (chapter 9) examined whether employees in the NBER firm survey had accurate information about the shared capitalist forms of compensation at their firm by comparing their reports to company information about the plans. This comparison found that 18 to 25 percent of employees reported involvement in company plans that differed from company reports on whether they should or should not participate on the basis of the characteristics of the plans. At first, this seemed consistent with the pension results as reflecting employee ignorance about the participation, which should dampen the effects of company plans on firms and workers. But at our research conference, company representatives said they were unsure about who is covered by their own plans, particularly at the establishment level. Thus, the differences between what workers said and what we garnered from the firms appears to

reflect both inaccurate worker information and management uncertainty about the implementation of plans.

Stories about ordinary workers who became millionaires through shares in a small start-up or a growing firm that prospered abound in Silicon Valley and related places. Surely most workers in shared capitalist enterprises are not so lucky, but employees with ownership stakes do develop on average greater wealth as a result of their ownership than do employees in other types of enterprises. In the NBER firm survey employee-owners have an average stake of nearly \$62,000; in the GSS employer owners report nearly \$48,000 in wealth from their firm. At the time the surveys were taken, stock option holders had an average \$283,000 in potential stock option profits if their options could be sold. While in some cases these stakes substitute for other wealth, Buchele, Kruse, Rodgers, and Scharf (chapter 11) indicate that employee ownership does not generally come at the expense of pay and other benefits and appears to add to employees' wealth on average.<sup>16</sup> Comparisons of the distribution of stock between the NBER company data and national data show that broad-based employee ownership plans expand stock ownership for workers in the middle of the distribution.<sup>17</sup> Employee ownership constitutes about 5 percent of the median employee's wealth in the NBER companies, which means that it can have only a modest impact on the overall wealth distribution, but at the same time does not give the median worker an unduly risky portfolio.

If all workers were equally covered by shared capitalist modes of pay and if firms with shared capitalist compensation had lower inequality among their employees than other firms, then shared capitalist pay would likely be associated with lower overall inequality. In fact, shared capitalist arrangements are disproportionately distributed in the economy. While there is little difference by gender in participation in these plans, African-Americans and men with disabilities are less likely to be paid by shared capitalism than other workers. The financial values of capital income accounts are also lower for some of these groups. The primary reason for this stratification is the different distribution of persons among occupations. At the same time, shared capitalism and the employee involvement that often accompanies it appear to affect similarly the behavior and attitudes of workers with different demographic characteristics, as found by Carberry (chapter 10). Thus, firms

16. Even Frederick Taylor, whose system of scientific management emphasized high supervision and low participation by workers, strongly held the notion that "Men [and women] will not do an extraordinary day's work for an ordinary day's pay." He spent much of his life searching for the simple premium on top of normal pay that would spur workers to greater productivity even in the absence of an engaging corporate culture (Kanigel 1997, 212–13).

17. Workers may have gotten lucky with good performance of their employee-owned stock, but these results suggest that even if the stock had performed poorly, they would have been no worse off without the stock since there was little or no substitution with pay, benefits, or other wealth.

can expect reductions in turnover, increased loyalty to the firm, increased willingness to work hard, and related behaviors to improve if shared capitalist pay arrangements were extended to groups underrepresented in current plans.

#### 6. Shared Capitalism Complements Other Labor Policies and Practices

The single overriding empirical result in this volume, which shows up in virtually all outcomes and data sets, is that combinations of policies—shared capitalism, employee involvement, and other positive labor practices—are complementary. There are some independent effects of shared capitalism but it is the combination of compensation and labor policies that seems to be the key feature of shared capitalism’s success.

The evidence for the complementary effect is twofold. First, we find that firms with shared capitalist pay are more likely than other firms to have employee involvement committees and to devolve decisions to workers and other policies associated with high performance workplaces (Kruse, Blasi, and Park, chapter 1; Dube and Freeman, chapter 5; Bryson and Freeman, chapter 6). Second, as noted in preceding summary points, we find that the combination of shared capitalist pay and other policies has a greater impact on outcomes than policies taken separately. Workers are more likely to undertake anti-shirking behavior when shared capitalism is combined with higher trust in management, low levels of supervision, high performance work policies, and wages at or above market levels (chapter 2). Workers in workplaces with poor employee relations and a lack of high performance work policies view their economic position as inherently more risky and are less positively inclined toward shared capitalist modes of pay (chapter 3). Workers with shared capitalist practices and high performance work policies, low levels of supervision, and fixed wages that are at or above the market level had lower expected turnover, higher loyalty, higher willingness to work hard, and a greater frequency of suggestions (chapters 4, 7). In the UK and US establishment production function data, the combinations produce higher productivity (chapters 5, 6). Similarly, workers in firms that combine shared capitalism with other practices report greater participation in decisions, lower levels of supervision, better management treatment of employees, formal and informal training opportunities, pay and benefits, co-worker relations, job security, and job satisfaction (chapter 5, 8).

The interaction of the effects of shared capitalism with other corporate policies suggests that the various shared capitalist and other policies may operate through a latent variable, “corporate culture.”

### **Conclusion**

The findings summarized previously give a favorable picture of shared capitalism. Firms have managed to overcome the incentive to free ride that

threatens to undermine any form of group pay and have increased the shared capitalist modes of pay to nearly half of the US workforce at the turn of the twenty-first century. While some workers hold too much wealth in their firm, the median worker who receives shared capitalist pay does not do so. Diversification can reduce the potentially excessive risk of linking labor market and capital market outcomes in the same firm. The chapters on workplace performance show substantial and statistically significant positive relations between shared capitalism and almost all outcomes. In most cases, the biggest effects come when shared capitalism is accompanied by other identifiable policies. The chapters on worker outcomes tell a similar story about the benefits that accrue to workers. Overall, the volume shows that shared capitalism works best when it combines monetary incentives with employee decision-making and personnel and labor policies that empower and encourage employees.

The shared capitalism vision of the US economy differs in important ways from the vision of capitalism as dependent primarily on concentrating rewards with superstar entrepreneurs and CEOs and a thin slice of executives and managers at the top of firms. Our analysis differs in important ways from the economic theories that stress the behavior of the superstar manager over that of workers more broadly or from theories of the firm that hold that profits should go to a central owner for optimal incentives to monitor work.<sup>18</sup> To the extent that workers monitor workers better than do managers, and that shareholders cannot write contracts that align management interests with their interests, much less with the interests of workers, shared capitalist modes of pay may offer better solutions to principal/agent problems and to the division of the rewards of joint activity than traditional capital versus labor divisions. Giving employees shared capitalism with significant discretion or residual control over how they do their jobs may be more efficient than lodging such control in management or shareholders as residual claimants, at least in some sectors.

As this summary and ensuing chapters make clear, our research has answered some questions about shared capitalist enterprises and highlights other important questions that require additional data and research. We direct attention in particular to three issues. First, there is the way shared capitalist pay and organization of work that empowers workers complement each other. This seems to reflect the elusive concept of corporate culture, which we view as potentially the latent variable behind the interactions between shared capitalism and other policies found throughout the volume. Second, there is how co-monitoring helps shared capitalist enterprises overcome free-riding tendencies. Our analysis has just scratched the surface of this phenomenon, which can potentially illuminate the deep social science problem of explaining the seemingly inordinate success of cooperative solu-

18. This theory is stated most prominently in Alchian and Demsetz (1972).



tions in economic life. Third, there is the way the risk of shared capitalism can be minimized when workers do not pay for employee stock ownership through reduced wages and lower savings; when less risky forms of shared capitalism such as cash profit sharing and stock options are combined with riskier forms such as company stock; when workers wealth portfolios hold a prudent share of ownership in their firm, and the rest of the portfolio is diversified. From the perspective of economic theory, the success of shared capitalism engages fundamental mainstream issues pertaining to risk aversion and portfolio theory, game theory and the free rider problem, behavioral finance, and theories of compensation, such as efficiency wage theories. From the perspective of policy, we hope the volume provides some evidence and guidance for business and labor leaders, as well as analysts and policymakers about ways to think about shared capitalist firms and to devise policies to help them contribute to economic well-being.

### **Studying Shared Capitalism**

In the rest of this introduction we provide an overview of the two main surveys used in this book. We discuss the strengths and weaknesses of the surveys, the ways in which they complement each other, some of the methodological problems in researching shared capitalism, and the ways we have addressed those problems. Readers mainly interested in the results should go straight to chapter 1.

#### **The NBER Company Survey**

For an intensive look inside companies that use shared capitalism, the NBER project members recruited fourteen companies with a variety of shared capitalist programs, and employee surveys were conducted over the 2001 to 2006 period in 323 worksites. We drew up a sample of firms varying in size, industry, and type of program, and contacted them in various ways to participate. As is usual in this sort of research, we were able to convince only some firms to participate. Two firms that agreed to participate were bought out by other firms who did not want to cooperate with the study.

The basic characteristics of the fourteen firms are described in table 1 (only broadly so as not to leave open the possibility of someone identifying the firms). All of the firms have some sort of broad-based employee ownership plan, but the plan types vary: eight have standard Employee Stock Ownership Plans (ESOPs), one has a 401(k) ESOP, four have Employee Stock Purchase Plans (ESPPs), and three have 401(k)'s with company stock. Eleven of the firms have broad-based profit-sharing plans, while five have broad-based stock option plans. Most have combinations of these plans, reflecting the combinations we observe in the American labor market in general (Kruse, Blasi, and Park, chapter 1, table 1.1). While each of these fourteen firms has some type of shared capitalist plan, the plans and details differed enough among the firms and among workers and establishments

**Table 1** NBER survey companies

	Broad-based profit sharing	Broad-based employee ownership	Broad-based stock options
<b>Manufacturing</b>			
<1,000 employees			
Company 1	Yes	ESOP	No
Company 2	Yes	ESOP	No
Company 3	Yes	ESOP	No
Company 4	Yes	ESOP and ESPP	Yes
1,000–9,999 employees			
Company 5	Yes	ESOP	No
Company 6	Yes	401(k) ESOP	No
Company 7	Yes	ESOP	No
10,000+ employees			
Company 8	Yes	401(k) w/co. stock	No
<b>Service/financial</b>			
<1,000 employees			
Company 9	No	ESOP	No
1,000–9,999 employees			
Company 10	No	ESOP	No
Company 11	No	ESPP and 401(k) w/co. stock	Yes
10,000 employees			
Company 12	Yes	ESPP and 401(k) w/co. stock	Yes
<b>Hi-tech/Internet</b>			
<1,000 employees			
Company 13	Yes	ESPP	Yes
10,000+ employees			
Company 14	Yes	ESPP	Yes
Total companies with plans	11	14	5

within those firms to allow us to analyze the effects of these modes of compensation and other management labor practices on outcomes.

As noted earlier, the companies vary in industry group and size. There are eight manufacturers (seven small or medium-sized and one large), two high technology firms (one medium-sized and one large), one large financial services firm, and three service firms (one small, one medium-sized, and one large).

Once firms agreed to the survey, we surveyed either all employees or a random sample of employees. Each survey had 80 to 100 questions, including core questions common across all companies and some questions of special concern to each participating company (for which we provided analysis gratis). To help ensure validated questions and useful comparisons, a number of the core questions were drawn from other surveys, including questions on job security and turnover intention from the General Social Survey, and questions on employee involvement from the Workplace Representation and Participation Survey (Freeman and Rogers 2006). The core survey questions also included new comprehensive measures of every identifiable

form of profit, equity, and bonus sharing. Measures of employee ownership include participation in ESOPs and ESPPs, company stock in 401(k) plans and deferred profit-sharing plans, stock held after exercising stock options, stock grants, and open market purchases. The bonus measures cover all types of bonuses, including those linked to company performance (profit sharing), department or team performance (gainsharing), and individual performance. Appendix A reproduces the questions and gives descriptive statistics for the presence of different practices and their intensity (i.e., as a percent of salary or wealth). Appendix B describes our summary measure of shared capitalism. We create the summary measure because our surveys are virtually the only ones that include all forms of shared capitalism and remuneration. Given how widespread bundles of shared capitalist practices are in the US economy, some past studies may have only measured the variable of interest and ignored other important shared capitalist variables.

Six company surveys were conducted over the web, seven company surveys were done on paper, and one survey was done using both the web and paper surveys. The web surveys were on a university-sponsored server, not on the company server, so that workers knew this was not a company activity. When we administered surveys in person, to protect confidentiality the surveys were gathered by either members of our team or a committee of three nonmanagement employees, who administered them in one room, collected them in sealed envelopes in a box, and brought them immediately to an express mail facility and sent them directly to the NBER research team for analysis. Workers were informed about these procedures for their protection on the cover of each survey. The company response rates ranged from 11 to 80 percent, with an average of 53 percent across the fourteen companies. A total of 41,206 respondents provided usable surveys, in 323 establishments. Most of the workers (31,994) were based in the United States, though as noted the three US multinationals in the study encouraged their workers around the world to take the survey. Most of the workers could be matched to specific establishments, enabling some site-level analysis.

As noted earlier, we initially sought to find and survey paired comparison competitor companies for each company in our data set. This did not work out, both because many of the prospective comparison firms also had some form of shared capitalism, and because managers in many of the firms did not want to simply serve as controls. We nonetheless found that there was substantial variation in shared capitalism and complementary practices both within and among our fourteen firms, 323 establishments, and 41,206 workers, allowing us ample opportunity to explore the effects of shared capitalism.

### General Social Survey

As noted earlier, the main limitation of the survey of firms is that it is based on a self-selected nonrandom sample of firms. This raises questions about the generalizability of the results that must be addressed head-on.

We note first that these are mainstream companies operating in the highly competitive US market, not strange entities operating under peculiar rules or regulations (per the worker-managed firms in old Yugoslavia). To the extent that our questions relate to issues that face all firms and reflect basic human nature, there are reasons to expect the findings to generalize to a broader population. But expectation/argumentation is not evidence. To see if in fact some of the main results from our firm survey hold in a representative sample of firms, we arranged to add a special module on shared capitalism on the nationally representative General Social Survey (GSS) in 2002 and 2006 by submitting a research proposal to the board of the GSS. The GSS is a national area probability sample of noninstitutionalized adults conducted by the National Opinion Research Center of the University of Chicago. The GSS started in 1972 and has been conducted every year or two since then (currently every other year). It is the major ongoing source of information on the changing attitudes and experiences of Americans over the past four decades. “Except for the US Census, the GSS is the most frequently analyzed source of information in the social sciences” (<http://www.norc.org/gss+website/about+gss>). The 2002 GSS had a sample of 1,145 employees, and the 2006 GSS had a sample of 1,081 employees, in for-profit companies. The response rates were 70.1 percent for the 2002 survey and 71.2 percent for the 2006 survey. The 2010 GSS with related questions is being administered as this book goes to press.

We placed questions on the GSS about the incidence of shared capitalism and replicated the questions from the NBER company survey on whether workers observed how fellow employees performed and how they reacted to someone not working as hard as they should. As noted before, we also put some standard GSS questions on the NBER survey (e.g., job security, turnover intention). Thus, the GSS provides a validation check on some results in the company survey, as well as a representative group of workers without shared capitalism that can serve as “controls” for our NBER firm surveys. An additional advantage of the GSS is that in both 2002 and 2006 there were special work modules with a wide variety of questions on work attitudes and experiences, allowing a broader look at the relationship of shared capitalism to workplace variables. The GSS questions analyzed in this book are described in appendix A. These data are available on the GSS web site (<http://www.norc.org/GSS+Website/>) and can be readily downloaded and analyzed by other researchers. The GSS contains information on many aspects of social life that we did not explore, which creates potential for other investigators to illuminate the relation of shared capitalism to other parts of US society.

### Survey Strengths, Weaknesses, and Complementarities

Correlation between variables in nonexperimental survey research does not imply causation. There may be a variety of explanations for a positive association between two variables. A positive association between employee

participation in shared capitalism and feelings of organizational commitment, for example, could reflect the effect of shared capitalism on commitment, or the placement of committed employees into positions with shared capitalism, or simply the dependence of both variables on a third factor. In these latter two cases the shared capitalism variable would be endogenous—determined by other variables in the system so that we could not reliably infer from the statistical association that independent changes in shared capitalism would create the observed correlation between the variable and organizational commitment.

Many of these problems could be solved by a true experiment, where subjects are randomly assigned to treatment and control groups, with the treatment carefully constructed and manipulated by the researchers. We would certainly like to be able to impose a variety of shared capitalism plans on 1,000 randomly-selected companies, and compare their outcomes to those of another randomly-selected 1,000 companies in a control group. As nice as this would be from a research standpoint, obviously we have neither the authority nor the resources for such a vast experiment. Instead we rely on a quasi-experimental approach (Cook and Campbell 1979), examining how naturally-occurring variation is related to outcomes of interest, while attempting to control as well as possible for potential sources of bias. It is noteworthy that the largely (though not uniformly) positive outcomes for shared capitalism in this book are consistent with laboratory experiments comparing behavior in employee-owned versus conventionally-owned “firms” (collections of randomly-assigned subjects)(Frohlich et al. 1998). Our approach has an advantage over laboratory experiments by showing the real-world existence and relevance of these findings to actual firms and workers. A recent field experiment provides corroborating evidence by randomly assigning profit-sharing plans to three stores in a twenty-one-store fast food company, with the result that profits and productivity rose and turnover fell in the profit-sharing stores relative to the control group (Peterson and Luthans 2006). By using random assignment, both of these studies provide some assurance that the findings in this book are not due to an array of potential biases.

In the rest of this chapter we discuss some of the potential biases more thoroughly, and how the studies in this book attempt to minimize them.

### *Employee-Reported versus Objective Data*

One potential limitation of these data is that almost all of the policies, experiences, attitudes, and behaviors are reported by employees, so there may be a subjective component that muddies the analysis. Particularly when analyzing workplace performance, it is valuable to have objective data—measures of actual output or turnover behavior, for instance, rather than reported productivity or intention to leave a company. Indeed, much of the shared capitalist literature has used establishment data to examine such

patterns. There have been over 100 studies of workplace performance under shared capitalism (reviewed in Weitzman and Kruse [1990], Kruse [1993]; OECD [1995]; Douciliagos [1995]; Kruse and Blasi [1997]; Blasi, Kruse, and Bernstein [2003], Kaarsemaker [2006a, 2006b]; and Freeman [2007]). These studies show that shared capitalism is associated with better firm performance on average, but that there is enough variation in outcomes so that a positive outcome is by no means automatic. This suggests that the effects of shared capitalism may be conditioned by a variety of workplace factors such as human resource policies, the quality of employee relations, the nature of supervision, and how the job is constructed. Rather than do another large-scale survey of firms, we wanted to try a new approach, delving more deeply into the “black box” of shared capitalism in ways that might illuminate the factors that might condition the effects of shared capitalism.

Since relatively few studies have looked at shared capitalism from the workers point of view, we designed the NBER project to find out directly from workers how they experience work, and how shared capitalism fits into that experience. The workers reported on a number of attitudes and behaviors for which they are the only source (e.g., job satisfaction, turnover intention, and company loyalty). Of course it would be ideal to have objective performance data that could be matched to each individual worker, but: (a) companies do not have individual-level objective performance data for most jobs; and (b) even if they did have such individual-level data, we could not have matched to survey data without compromising anonymity. In their own right, moreover, employee reports are meaningful both as measures of subjective attitudes and as predictors of future behavior, as shown by meta-analyses of prior studies, which find that many employee-reported attitudes and behaviors are linked to important outcomes—for example, turnover intention predicts actual turnover, and employee engagement predicts behaviors that improve objective outcomes (Griffeth, Hom, and Gaertner 2000; Harter, Schmidt, and Hayes 2003). In sum, our bottom-up approach measures attitudes and behaviors that cannot be easily measured in any other way, and that are not purely subjective but are also related to behavioral outcomes.

### *Selectivity Bias*

Many of the difficulties in reaching valid conclusions in nonexperimental research are due to potential statistical bias from self-selection of respondents. A classic experiment generally removes such selectivity bias by randomly assigning subjects to treatment and control groups (though such bias may still occur in who volunteers to be part of the experiment, and who drops out before the experiment is done). In field research like this, a number of types of selectivity bias can be at work in: (a) how those who participate in the study may be different from those who do not; and (b) how those who select, or are selected into, the treatment of interest may differ from

those without the treatment. Selectivity bias can lead to biased conclusions regarding the sample being analyzed (internal validity) and problems in generalizing to the universe of interest (external validity) (Cook and Campbell 1979). In these two surveys, selectivity bias can operate at both the firm and individual levels.

### *Selectivity Bias in Who Participates in Study*

As noted before, the firms agreeing to cooperate with the NBER survey are clearly not a random sample of all shared capitalism firms, and there may be something “special” about them that influences the results. It is possible that some special characteristic of these firms conditions the relationships observed in these firms, so that the relationships cannot be generalized to other firms with similar policies of interest. For example, perhaps the managers in the studied firms are especially knowledgeable about how to implement shared capitalism in an effective way, whereas managers in other shared capitalism firms (not part of our study) are not as effective in implementing it. Or perhaps the employees in the studied firms especially like shared capitalism and respond well to it. Similarly, there may be selectivity bias in the types of employees who respond to the survey: perhaps employees who are motivated by shared capitalism are more likely to respond to the survey.

Our principal method to check for such selectivity bias in our NBER sample is to compare results to those in the GSS national sample to see if the relationships hold among other employees with shared capitalism. As will be seen, this is largely the case, providing some reassurance that our NBER firms and employees are not atypical of other shared capitalism firms and employees. Still, at the individual level, it is possible that employees who responded to the survey may be unlike nonrespondents in some way, making it difficult to achieve valid conclusions and generalize the results. One basic method to minimize this bias is to create the highest response rate possible. As noted previously, the average response rate across the NBER surveys is 53 percent, and the response rate for the GSS is 70 percent in 2002 and 71 percent in 2006, which are all considered good response rates in individual survey research. We used two additional methods to check for selectivity bias at the individual level in the NBER surveys. In addition to the 41,206 employees who completed usable surveys, an additional 5,701 started the survey but did not complete enough of it to be usable.<sup>19</sup> We found that this latter “nonrespondent” group had lower average levels of shared capitalism, but the relationships between shared capitalism and outcome variables were generally similar for this group as for those included in the full analysis.<sup>20</sup>

19. Surveys were deemed not usable if respondents did not answer at least half of eighteen basic job and demographic questions.

20. The nonrespondent group had an average score on the shared capitalism index (described in Appendix B) that was 3.5 points lower than for the respondent group. The regressions including the nonrespondent group excluded the demographic controls, since these were based on

*Selectivity Bias in Who Participates in Shared Capitalism*

An even thornier type of selectivity bias concerns what types of firms and employees choose shared capitalism. Are they also different in some other way that affects the results? The firms that choose to implement shared capitalism may be better-performing companies in general, or have unmeasured policies or other qualities that affect the outcomes of interest. One solution is to do pre/post studies that hold constant any fixed unobservable qualities of the company (e.g., comparing company performance before and after the adoption of profit sharing as in Kruse [1993] or company performance and pay levels before and after the adoption of ESOPs in Kim and Ouimet [2008]). In this project we have an example of a pre/post study in which the NBER survey was administered twice at one company, the first time before a profit-sharing plan was implemented and the second time several months later after it was implemented. The results are analyzed in chapter 2.

Our primary method of avoiding much of the potential selectivity bias at the firm level is to do within-company comparisons: seeing how outcomes differ among workers with greater and lesser amounts of shared capitalism while controlling for a variety of job and personal characteristics, and effectively holding constant any firm characteristic that is common to all workers. In other words, in contrast to the many cross-sectional studies comparing firms with and without shared capitalism programs, these results here are not biased by unmeasured between-firm differences in management, policies, or anything else. By comparing to the GSS national sample, as noted before, we can be more confident that the relationships we find apply across shared capitalism firms in general. Even if the relationships hold among all shared capitalism companies, however, it remains possible that they will not generalize to firms without shared capitalism—that is, we would not get the same results if we could somehow convince or require all firms to have shared capitalism plans.

There may also be selectivity bias in the type of worker who joins a shared capitalism firm. Workers who are especially interested in performance-based pay, for example, may be especially likely to join shared capitalism firms, and these workers may have other special personal qualities that affect their attitudes and behavior at work. There is little direct evidence on this question. Weiss (1987) finds that both the initially high and low performers were more likely to quit the company after their pay became tied to group incentives—suggesting that there is some self-selection in group incentives—but this self-selection imparts no general upward or downward bias to estimates of the effects of group incentive systems.

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questions at the end of the survey that very few nonrespondents answered. In addition, we used information from the “nonrespondent” group to create standard Heckman selection corrections (Heckman 1976), and found little change in the estimated relationships of shared capitalism to outcome variables.



In our NBER companies, all of the employees have chosen to join a firm with broad-based shared capitalism, but there may still be systematic within-company differences between the employees with and without shared capitalism. It may be, for example, that employees who display the best attitudes are put in positions where they are eligible for shared capitalism plans, and the positive link between shared capitalism and attitudes simply reflects this preexisting individual difference. Or certain jobs may be deemed appropriate for shared capitalism compensation and those same jobs may be structured to require certain behaviors (e.g., monitoring co-workers), but there is no causal connection between the shared capitalism and behaviors.

Selectivity bias can result from self-selection on observable or unobservable variables. The most straightforward method of minimizing selectivity bias is simply to control for a rich array of observable individual and job variables that may determine selection. One advantage of our detailed NBER surveys is that we can observe variables that many studies have had to treat as unobservable. In addition to standard demographic and job controls, we had access to variables available in few or no other studies, such as level of risk aversion, closeness of supervision, ease of seeing co-workers, and total wealth. A common supposition, for example, is that workers who choose to work in shared capitalism programs have higher tolerance for risk than do other workers, and this may be related to a variety of other personal attitudes and characteristics that affect responses to shared capitalism. The rich array of individual-level variables helps reduce the potential for selectivity bias to account for differences found in the individual-level analysis.

But there remains the possibility of self-selection on unobservable variables—for example, the employees with shared capitalism may simply have greater ability or “spunk” or other intangible qualities that affect their attitudes and behavior. One way to control for selectivity bias due to unobservable individual qualities is to do pre/post comparisons at the individual level (e.g., comparing pay and benefits of workers before and after joining profit-sharing plans, as in Kruse [1998]), but we are not able to follow individuals over time with the anonymous NBER surveys or the 2002 and 2006 cross-sectional GSS surveys. Another way to deal with selectivity bias is to use instrumental variables that substitute a predicted value for the actual value of the variable of interest, in order to remove the correlation with the error term. This requires finding some exogenous variables that predict the variable of interest (e.g., shared capitalism) but that do not directly affect the outcome of interest (e.g., response to shirkers). For example, given that shared capitalism introduces compensation risk, it is plausible that our measures of personal risk aversion might serve as exogenous variables predicting participation in shared capitalism by workers without directly predicting the workplace outcome of interest. We tested risk aversion and a variety of other variables as exogenous variables in instrumental variables models, but could not identify any that consistently met tests of exogeneity. Without

a genuine controlled experiment or some natural experiment that closely mimics a controlled experiment econometrics does not enable us to rule out the effect of unobserved factors on our results. However, the case for a causal effect of shared capitalism is supported by the workers' own views about the effects of shared capitalism (chapters 2 and 4), the one pre/post study (chapter 2), and the detailed controls available in the NBER survey. In addition, as noted before, the results in this book are broadly consistent with the findings noted previously from the true experiment of Frohlich et al. (1998), where many forms of selection bias were removed by the random assignment of subjects.

### *Ecological Correlation Bias*

There is one other difficulty that runs through many of the analyses of the NBER company data sets that we flag here. The difficulty is that correlations obtained at the level of individuals in our data set may not hold at the level of worksites where shared capitalist and other labor policies are implemented. For example, one worker could report lots of shared capitalist pay and work effort at his firm while a co-worker could report little shared capitalism and little effort. The result would be a strong positive correlation between shared capitalism and reported effort among individuals in the data set but no correlation at the possibly more appropriate establishment level of analysis. Readers familiar with the ecological correlation bias (in which correlations among aggregate units may not carry over for individuals within the units) can view this disaggregation correlation bias as a parallel problem in the opposite direction. To deal with it, we aggregated individual worker reports into worksite level averages and examined the link between the establishment level variables. To the extent that some of the individual variation within an establishment reflects real variation in conditions—for example, one part of the establishment has gain sharing or a stock option plan and another part does not—the results from the establishment level analysis may understate the true effects of shared capitalism while the results from analysis of individuals may overstate it. Where appropriate, the chapters test the link between shared capitalist pay and outcomes at both the individual and establishment levels.

### **Conclusion on Methodology**

These two new surveys represent the most extensive “bottom-up” approach to the study of shared capitalism to date, going straight to workers to find out how they experience and respond to shared capitalism, as opposed to the largely “top-down” approach of most prior studies that rely on company-level data that is often manager-reported or administrative data from government data sets created as a result of company reporting requirements.

Neither survey is ideal. The GSS is nationally representative, but has limited numbers of persons with different forms of compensation arrangements, which makes it hard to reach statistically valid conclusions in some areas. Because it is a small national sample, workers are likely to all be employed by different firms so that we view comparisons among workers as comparisons across firms. It is not longitudinal. The NBER has a large number of respondents, but they are taken from a sample of firms that is nonrandom. Because the NBER survey covers a small number of firms, much of the variation comes from variation among workers within firms, and we generally include firm fixed effects in analyses to focus on this variation. By combining analyses of the small national sample that lives on cross-company variation and the larger nonrandom sample of workers from participating companies that lives on within-company variation, we hopefully surmount these weaknesses and reach conclusions that have general validity.

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