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Show Me the Money: Does Shared Capitalism Share the Wealth?  
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**ABSTRACT**

This paper examines the effect of a variety of employee ownership programs on employees' holdings of their employers' stock, their earnings and their wealth. Two major datasets are employed: the NBER Shared Capitalism Research Project employee survey dataset and the 2002 and 2006 national General Social Surveys (GSS). The GSS national survey shows that 29% of permanent, full-time employees with at least one year on the job own their employers' stock, compared to the unsurprisingly higher 87% of employees in the NBER "shared capitalist" firms. The employees in the national sample hold an average of \$10,600 of employer stock, compared to \$52,800 in the NBER sample. Employee owners in NBER companies with broad-based ownership structures fare better: those in majority-owned ESOPs hold on average \$86,000 in company stock and those in broad-based stock option plans hold options worth an average of \$283,000. We find no evidence – either between datasets or between employee-owners and non-owners within datasets – of substitution of company stock ownership for pay or benefits. Moreover, our analysis suggests that company stock ownership substantially raises total employee wealth, though it appears to have little effect on the overall distribution of wealth. These results suggest that employee ownership tends to raise both ownership stakes and economic resources of American workers across the economic spectrum.

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Cheerleaders for the “ownership society” tout the growing share of U.S. households owning stock – up from 31.7 percent in 1989 to 51.9 percent in 2001.<sup>1</sup> What is less often advertised is that stock ownership remains highly concentrated. The bottom 90 percent of households owns only 23 percent of all stock and just 12 percent of all directly held stock (which confers direct control or voting rights on stockholders).<sup>2</sup> Only 27 percent of households in the bottom 90 percent of the wealth distribution own (directly or indirectly) more than \$10,000 of stock (calculated from Wolff, 2004: Table 13a). If ownership is measured by households’ ownership stake in the corporate sector of the U.S. economy, a large majority of American households have little or no meaningful claim to membership in the ownership society.

This concentration of stock ownership implies a corresponding concentration of income from capital, which contributes to growing income inequality since dividends and capital gains have been a growing share of market-based income in the past 30 years, and capital income disproportionately goes to high-income households (Mishel et al, 2007: 79, 81). Employee stock ownership may help reduce this growing inequality by contributing to broad-based wealth building and income growth across the economic spectrum.

This paper addresses four sets of questions surrounding employee stock ownership as a wealth-sharing tool, going beyond previous studies in the scope of the inquiry and the use of the new data sources. First, how much on average do employee owners own in “shared capitalist” firms (those with broad-based employee ownership, profit sharing, gainsharing, and/or stock

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<sup>1</sup> This figure includes both directly held stock and indirect holdings in mutual funds and retirement accounts. See Wolff (2004: Table 12b). An important reason why the incidence of stock ownership has risen in recent decades is the replacement of defined benefit with defined contribution pension plans. Nevertheless, 34 percent of households have no (defined benefit or defined contribution) pension plan (Wolff, 2005: Table 5), and “more than one-fifth of all households nearing retirement (those between the ages of 56 and 64) had no retirement savings other than Social Security” (Weller and Wolff, 2005: 2).

<sup>2</sup> These statistics are from Wolff (2004: Table 13a) and Kennickell (2003: Table 10), respectively. All statistics in this section are for 2001.

options), and more generally? Second, how is company stock distributed among employee-owners, which ownership structures distribute wealth most equitably, and how does the distribution of employee stock ownership wealth compare to the distribution of wealth among U.S. households? Third, to what extent does employer stock substitute for other forms of compensation (higher pay and benefits) and for other forms of wealth? And fourth, what effect might universal employee ownership of employer stock have on the overall distribution of stock ownership and pension wealth in the U.S?

### History and Review of Employee Ownership

Employee Stock Ownership Plans (ESOPs) were first promoted as a matter of public policy by a provision in the Employee Retirement and Security Act of 1974 (ERISA), authored by Senator Russell Long, allowing for tax deductible contributions of company stock to a workers' trust. Long was influenced by Louis Kelso, a San Francisco investment banker and lawyer who set up the first ESOP at a California newspaper in 1956 and published *The Capitalist Manifesto* (with Mortimer Adler) in 1958. Kelso advocated employee ownership as a means of counteracting (in his view) a declining share of labor income inevitably resulting from labor-saving technical change (Kelso and Adler, 1958: Ch. 4). Long advocated employee ownership on other grounds as well – including promoting labor peace, securing workers' allegiance to the capitalist system and improving workers' motivation and productivity. But Long and Kelso's chief interest in ESOPs was as a vehicle for building workers' wealth and increasing their share of capital and income from capital.<sup>3</sup> And a chief interest of this paper is to determine the extent to which companies with shared capitalism plans do this.

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<sup>3</sup> Paraphrasing Mill, Kelso and Adler (1958:85) wrote that “no man's ownership of (capital) should be so extensive as to exclude others from an economically significant participation in the production of wealth.”

The stock of companies with ESOPs can be publicly traded or privately held and can be minority-owned or 100% owned by the employees. But in any case, ownership must be *broad-based*. With few exceptions, ESOPs are required by law to cover all employees age 21 and over who work more than 1,000 hours per year and have at least a year of service with the company.

Several recent studies have estimated the size of employees' ownership stakes in employee stock ownership plans. A census of Washington State ESOPs (Kardas, Scharf and Keogh 1998) found median pension assets per participant of \$31,600 (vs. \$5,400 for a matching sample of non-ESOP control companies). A 2005 study of Ohio companies found median ESOP account balances of \$30,000 (cited in Rosen, 2005:4), and two surveys of Massachusetts ESOPs found average assets to range from \$39,900 per participant (Scharf and Mackin 2000) to \$56,200 per participant (Mackin 2005). Finally, a survey of 16 S-corporation ESOPs found median employee account balances of \$75,000 to \$100,000 (Rosen, 2005).

In addition to ESOPs, there are a number of other popular employee ownership mechanisms: employee stock purchase plans (ESPPs), company stock in 401k plans, and broad-based stock option plans. Each of these plans – like ESOPs – has implications for retirement savings and employee risk.

ESPPs emerged gradually in the late 1800s and early 1900s as various industrialists sought ways to encourage workers to buy company stock in order to secure loyalty and create a common bond between labor and management. These plans spread rapidly in the context of welfare capitalism before the crash of 1929. They grew again in popularity after WWII, encouraged by a variety of tax incentives created by changes in the federal Internal Revenue Code.

Today, ESPPs constitute one of the “quiet” mechanisms of employee ownership in many major American corporations. In recent times, companies have typically allowed workers to buy

stock through a payroll deduction at 85% of the market price. Many workers have come to see ESPPs as a supplement to their retirement savings, however long-term employees can accumulate substantial ESPP investments that dominate their retirement savings and raise serious issues of diversification.

Another form of employee ownership is the 401k retirement plan. While the U.S. Congress worked intentionally to expand employee ownership through ESOPs, other models of employee ownership emerged with little governmental guidance. In the late seventies, the Internal Revenue Code was amended to allow for company contributions to tax-sheltered individual retirement trusts. The idea was that both company and worker contributions to these plans would be invested in stocks, bonds, and other assets, and this accumulated wealth would provide a supplement to the worker's main retirement fund – a defined benefit pension plan. These 401k defined contribution plans (called that because only the initial employer contribution, and not the final benefit, was defined) were originally intended for top management. But many companies have replaced their workers' defined benefit pension plans with defined contribution plans, shifting the risk associated with retirement income planning from employers to employees. (The risk issue is addressed in the companion paper using these data by Blasi, Kruse, and Markowitz, 2008).

Increasingly, workers came to see these plans as useful supplements to their retirement. As the plans grew in number and popularity in the late eighties and early nineties, companies began matching employee contributions in company stock, and 401k plans emerged as vehicles for employee ownership. Companies next added company stock as an investment choice whereby workers could direct their own contributions to be used to buy company stock. Many companies found that employee ownership often grew rapidly under such plans. However, 401k plans as vehicles for employee ownership have come under criticism in recent years because (unlike

ESOPs) they finance employee ownership with worker savings and raise concerns about diversification when retirement plans are excessively invested in company stock. Most observers agree however that matching contributions of company stock to 401k retirement plans – within reason – has a useful role to play in expanding employee ownership.

The most recent development in the world of employee ownership is the “broad-based” stock option plan. These gained currency in the 1980s when high-tech firms began offering them to workers involved in developing computer and information systems hardware and software, and often more broadly to all employees in these firms (see Blasi, Kruse and Bernstein, 2003). Unlike ESPPs and employee purchases of company stock in 401k plans, employee stock options require no investment of employees’ savings. Employees are awarded options to buy company stock (after a vesting period), typically at the price it is trading on the day the options are awarded, for a ten year period. If employees exercise their options and hold the stock, broad-based stock options become a way to finance ongoing employee ownership. If employees exercise their stock options and immediately sell the stock (which is much more usually the case) they can pocket the profit on the stock price’s increase. In this case, the stock options serve as a form of cash profit sharing, based on company performance as measured by its stock price.

Broad-based stock option plans have become more common in a variety of manufacturing and service businesses. Stock options for employees, like ESOPs, involve lower risk for workers because they do not require the investment of workers’ savings. However, when stock options are used in lieu of higher base pay or conventional retirement plans – as was sometimes the case in the tech sector start-ups of the 1980s and early 1990s – they are, in effect, risking employees’ savings. Mature high-tech companies today, however, typically use broad-based stock options in combination with market level base pay and benefits.

Today, employee stock ownership is well established in the U.S. economy. Blasi, Kruse and Bernstein (2003: Appendix C) calculate that in 2002 there were 24.1 million participants in 11,561 pension plans that held company stock.<sup>4</sup> About 8.2 million (34%) of these participants were in employee stock ownership plans (including ESOPs and similar plans called KSOPs),<sup>5</sup> and these held 59 percent of all company stock in employee pension plans. ESOPs are “by far the most common form of employee ownership in the U.S.” (Rosen, 2005: 5). Another 13.6 million employees held company stock in 401(k) plans and 1.4 million in ESPPs. In addition 10.6 million employees held stock options in the companies they work for.

Employee-owners bear two distinct types of risk: First, employees who have their own “skin in the game,” having purchased company stock with their own funds, bear the risk of potential investment loss. This risk is minimized in ESOPs because the company stock allocated to workers’ ESOP accounts is almost always contributed by the employer with no out-of-pocket cost to the employee.<sup>6</sup> At the other extreme, company stock acquired through employee stock purchase plans is financed primarily by employee savings.

Second, employees who have concentrations of assets invested in a single company bear risk associated with inadequate diversification. This problem is exacerbated by a firm-specific risk for employee-owners whose jobs (and incomes), as well as a substantial portion of their savings, depend on the fortunes of the company they work for. This is an inevitable feature of any form of employee ownership, but it is likely to be greatest for ESOP employees who accumulate

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<sup>4</sup> As Kruse (2002) points out, these figures double count companies and employees who have more than one plan. His calculations (for 1998) suggest a lower-bound estimate of around 20 million employees (or 18 percent of all private sector workers) holding stock in their companies through various defined contribution pension plans (ESOPs, KSOPs and 401(k)s that hold employer stock) and profit sharing and employee stock purchase plans in 2002.

<sup>5</sup> A KSOP is a combination ESOP and 401(k) plan in which employees’ 401(k) contributions are matched by employer contributions of company stock to their ESOP accounts.

<sup>6</sup> In one company the initial purchase of company stock at the founding of the KSOP was financed by a rollover from employees’ existing 401(k) accounts. Employees of this company are an exception to the ‘no skin in the game’ depiction of ESOP participants. Subsequent stock allocations to the KSOP have been provided by the employer.



company shares in retirement accounts with limited opportunities for diversification. The risk, however, appears generally to be manageable: portfolio theory suggests that a moderate amount of employee ownership can be part of a prudent portfolio depending on how other assets are diversified (Blasi, Kruse, and Markowitz, 2008).

The inadequate diversification issue has come up most frequently with respect to ESOPs because of their retirement-plan structure. Although ESOPs are legally organized as retirement plans, scholars caution that they should not be thought of as a substitute for a diversified retirement plan (e.g., see Kruse 2002), and indeed, all but one of the 14 companies (including nine ESOPs) in the NBER study also have regular diversified 401(k) retirement plans. Among the subset of nine ESOPs, surveyed employees at three companies had less than half of their pension assets in the employer's stock, while employees at three other companies had between half and three-quarters, and employees at another three companies had over three-quarters of pension assets invested in their employer's stock. Clearly, many of these plans should be more diversified, but we need to bear in mind that employee-owners inevitably face greater ownership risk. To the extent that employee ownership increases wealth as well as risk, the question becomes whether this wealth-risk tradeoff leaves employee-owners better off or not.<sup>7</sup>

### Profile of the SCRP Companies and the GSS National Sample

The NBER Shared Capitalism Research Project includes fourteen companies with one or more forms of shared ownership.<sup>8</sup> These companies come from a variety of industries – including

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<sup>7</sup> We thank Jeff Keefe for this point and for pointing out that the U.S. system of employment-based health insurance, life insurance, savings plans, etc. exposes American workers in general to high levels of firm specific risk. Employee-ownership further increases this risk. The better these benefits (including ownership) are, the greater the firm specific risks are. But this does not mean that employees would be better off without them.

<sup>8</sup> An overview of the data is contained in Kruse, Blasi, and Park (2008). Other papers using these data include Blasi, Kruse, and Markowitz (2008), Blasi et al. (2008), Freeman, Kruse, and Blasi (2008), Harden, Kruse, and Blasi (2008), and Kruse, Freeman, and Blasi (2008).

manufacturing (8), professional services (3), high tech (2) and finance (1) and vary in size from a few hundred to almost 50,000 employees. Four have publicly traded stock, and ten are privately held. Many of these companies are very successful, high wage employers and industry leaders. Others (5 of these 14 companies) are in relatively low wage industries and pay below (U.S.) average wages. This study reflects their experiences too, and is relevant to their (lower to middle income) employees.

Employee surveys, conducted between 2001 and 2005, yielded over 41,000 valid surveys, of which over 26,000 were of permanent, full-time employees. These companies were not randomly selected to participate in this study. Their participation hinged on their willingness to allow their employees to be surveyed, and in some cases their involvement grew out of prior professional contacts with project researchers. They are a unique group of companies – certainly more exemplary than representative – with stronger than average wealth-sharing practices and managers who were willing to devote time and organizational resources to participate in this study.

We also draw on the 2002 and 2006 General Social Surveys to provide a nationally representative baseline. The GSS is administered to a national random sample of adults by the National Opinion Research Center of the University of Chicago. The combined surveys include over 5,000 respondents. Excluding non-employees, part-time employees and employees with less than a year on the job reduces the sample to 1,384. Twenty-nine percent of this subsample reports owning their employer's stock.

The 14 NBER companies have a variety of different stock sharing programs in place. As Table 1 indicates, these include nine ESOP-type plans (eight ESOPs and one KSOP), three 401(k) plans that invest in the employer's stock as well as other assets, five employee stock purchase

plans (ESPPs), and six stock option plans (SOPs). Nine of these companies (identified with bold company numbers in Table 1) are majority employee-owned ESOP-type plans (including one KSOP and one set up as a 401(k)).<sup>9</sup> In some of the following tables, we report results for this subset of majority-owned ESOP companies.

All of the privately held ESOP companies in the NBER study are majority owned; most are 100% employee owned. Overall participation rates of eligible employees (the percent of employees participating in at least one plan) are high, especially in the ESOPs.<sup>10</sup> The average value of company stock holdings (for employees with any stock) varies widely across companies – from just under \$8,000 to over \$239,000.

### Ownership Stakes

In this section we examine the extent of participation in employee stock ownership, the size of employees' ownership stakes, the importance of ownership relative to base pay, and the value of company stock in relation to employee's total wealth. These measures are reported for all 14 companies in the NBER study, a subsample of the nine ESOP companies in the NBER study, and for the combined 2002 and 2006 General Social Surveys. The measures are also broken down by position: management vs. non-management.

Table 2 presents various measures of employee stock ownership in the NBER shared capitalism companies and the GSS national samples.<sup>11</sup> Panel A confirms a very high participation rate, for managers and non-managers alike, in the NBER companies, with nearly 87% of surveyed

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<sup>9</sup> One of the companies included in this group holds its company stock in a 401(k) rather than an ESOP. One became majority owned shortly after its employee survey was conducted.

<sup>10</sup> As noted in Table 1, overall about 15% of the employees surveyed responded that they did not know if they held any employer stock. Here these employees are counted as non-participants (rather than dropped from the sample), significantly reducing reported participation rates for some companies. In the remaining tables they are excluded from the calculation of participation rates and company stock values.

<sup>11</sup> All stock ownership and pay estimates presented here and below are reported in 2006 dollars.

employees in these firms reporting that they own employer stock – far higher than the 29% incidence of employee ownership in the national sample of private-sector employees.<sup>12</sup>

The two most important sources of company stock ownership in the NBER study are (1) ESOPs (including KSOPs and 401(k) plans that hold company stock), in which stock accumulates in employees' retirement accounts and (2) stock option plans, where employees are free to (and usually do) sell their shares immediately upon exercising their options. Consequently, we expect company stock ownership to be higher for employees in the subset of nine ESOP companies than for employees of all of the companies in the NBER study, and indeed this is the case (see Panel B of Table 2). Company stock holdings per employee (including those with no stock) are about \$52,800 in the NBER full dataset, and \$76,000 for the nine NBER ESOPs. Based on the General Social Surveys, employees nationwide own on average \$10,600 worth of their employers' stock.

We see in Panel C that the average stake of *employee-owners* (i.e., employees who own some company stock) is \$61,000 for all NBER companies and \$85,900 for the NBER ESOPs. The average ownership stake of employee-owners in the GSS national sample is \$48,000. For the NBER shared capitalist firms, non-managers (“Others”) own roughly one-third as much company stock as managers, and the median holdings of the employee-owners is only about a quarter of the

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<sup>12</sup> The GSS asked respondents: “Do you own any shares of stock in the company where you now work, either directly or through some type of retirement or stock plan?” Those who answered affirmatively were asked for “a general estimate of how much cash you would get if all this stock were sold today.” They were not asked how they acquired their company stock, but it is likely that the majority of the GSS employee-owners did so through an employer sponsored program (rather than simply through open market purchases). Freeman (2007:2) indicates that the great majority of private sector employees who own shares in their company do so via either ESOPs or 401(k) plans.

The incidence of company stock ownership among GSS respondents may itself seem surprisingly high. Note that this estimate is based on a sample of permanent, full-time, private sector employees, who are 18 or over and have been in their current job for at least one year, and excludes respondents who didn't know if they owned company stock – all conditions favoring a high participation rate.

mean.<sup>13</sup> Although skewed toward the top, the distribution of employee-owned stock is considerably less skewed than is the distribution of wealth in general.

Company stock contributions to ESOP accounts are governed by ERISA and generally vary in proportion to participants' taxable earnings (with a cap of \$170,000 in 2001). But the longer an employee has been in the plan, the more stock he or she can potentially accrue, so differences in ownership stakes among employees can be due to differences in length of service as well as differences in pay levels. In the case of the NBER ESOPs, controlling for job tenure reduces the manager vs. non-manager gap in average company stock holdings in Panel C by just 9%, because in fact, there is little difference between managers and others in average job tenure.<sup>14</sup> But it reduces the mean-median gap for all employees by 50%.<sup>15</sup> ESOP account balances increase, on average, by about \$8,400 per year of service. As a result, a large part of the variation in account balances among ESOP participants at any point in time is not due to unequal stock allocations to ESOP accounts, but simply to differences in time-in-plan.

Panel D shows the value of employer stock holdings relative to base pay. In all cases employee-owners own stock worth two-thirds or more of their annual base pay, with a higher ratio for managers than for others in the NBER companies but a higher ratio for others than for managers in the GSS. This reversal – with stock being more important (relative to pay) for non-management employees than for managers – is due more to their relatively low pay than to large company stock holdings.

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<sup>13</sup> The ratio of mean to the median employer stock holdings is a rough measure of the degree to which the distribution of company stock ownership is skewed to the right, with a relatively small number of employee-owners holding much more stock than the bulk of more typical owners. For perspective, Wolff (2004: Table1) reports a 13:1 ratio of mean to median household financial net worth in 2001 (\$298,500 vs. \$23,200).

<sup>14</sup> Tenure-adjusted stock values for non-managerial employees are obtained by regressing stock value on job tenure for these employees and using this regression equation to find the expected stock value for non-managerial employees who have the mean job tenure of managerial employees.

<sup>15</sup> Tenure-adjusted stock values are obtained by adjusting each employee's stock value by the expected difference in value for someone with that employee's job tenure vs. the mean job tenure for the sample.

Finally, Panel E reports employees' estimates of the value of their company stock relative to their total wealth. While company stock represents somewhat over half of pension assets, on average, for the full sample of NBER employees (not shown in tables), it represents only about 20 percent, on average, of their total wealth. In the GSS as well, employee-owners hold just under 20% of their wealth in company stock.

Table 3 (Panel A) reports the value of stock options held by employees in the NBER and the 2006 GSS datasets. Just 22% of employees in the NBER companies and 17% of employees in the GSS hold stock options, but among the five broad-based stock option companies in the NBER study, 93% hold options to purchase their employers' stock. The average value of these options is \$262,000 per employee (panel B) or \$283,000 per option holder (Panel C).<sup>16</sup>

Focusing on the broad-based stock-options companies, we see that on average management holds options worth about 2.5 times more than other employees' options (\$583,400 vs. \$213,300). On average, employees in these companies hold options worth almost two years pay (Panel D), and in the case of managers almost three years pay. On average, over half of their wealth is held in these stock-options (Panel E).

### Do Employee-Owners Pay with Lower Wages?

Skeptics of employee ownership suggest that (for equivalent workers and working conditions) whatever value ownership confers on employees must be offset by correspondingly lower wages, since the market insures that total (risk-adjusted) compensation must be the same everywhere. And there are reasons, besides competitive theory, to suppose that employees receiving company stock might pay for it with lower wages. Unionized workers in airlines and

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<sup>16</sup> The values reported here are the net gain the employee would realize if his/her stock options were exercised and the stock sold.

trucking – industries under pressure of deregulation in the late 1970s and ‘80s – made large wage concessions in return for ownership shares to save their companies and their jobs (Blasi, 1988:94; Russell, 1985:200). Some high-tech startups, such as Amazon, acknowledged a compensation strategy of luring talent on the cheap with stock options and below-market pay.<sup>17</sup>

The preponderance of empirical evidence, however, goes the other way. In a pre/post study of ESOPs adopted by public companies between 1980 and 2004, Kim and Ouimet (2008) find significant increases in employee compensation following the adoption of ESOPs, particularly for ESOPs owning more than 5% of a company where the long-term increase in compensation is 4.5%. A study of 490 firms with broad-based stock options found that these companies paid their employees 8% more than all other public companies when most of them introduced their stock-option plans in the mid 1980s, and continued to pay 8% more a decade later (Sesil et al., 2007). Blasi, Conte and Kruse (1996) found that compensation per employee was 23 percent higher in publicly traded companies with more than 5 percent of their stock held in broad-based employee stock ownership plans than it was in other firms. Kardas, Scharf, and Keogh (1998) found mean and median wages of ESOP companies in Washington State to be higher than a matched set of control companies. And Kruse and Blasi (2001), matching 1,176 pairs of ESOP and non-ESOP companies, found that the ESOP companies were over four times more likely to have traditional defined benefit plans and over five times more likely to have 401(k) plans – in addition to their ESOPs.

What do our data say on this issue? Employees in the NBER companies receive higher pay than employees in the GSS, but this simple comparison does not account for the select nature

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<sup>17</sup> Statistical evidence for wage substitution is harder to come by than anecdotal evidence. One tangentially related study of Italian producer co-ops by Pencavel, Pistaferri and Schivardi (2006) finds that “a worker in a co-op earned 15-16% less than a worker in a capitalist enterprise,” controlling for age, gender, region, establishment size, industry and occupation.

of the NBER firms. For a more finely tuned examination of the relationship between employee ownership and pay levels, we compare wages (and perceptions about them) of employee-owners and non-owners *within* datasets. First we consider employees' views about their base pay relative to the base pay of similarly qualified employees in similar jobs at other companies. Responses to this question are reported in Table 4. Differences in the pattern of responses between owners and non-owners in the NBER data are consistent with the substitution hypothesis, and they are statistically significant. However, they are very small. In particular, the percentage of employee-owners who felt that they were paid below market was only one percentage point more than the percentage of non-owners who felt that they were paid below market (39.5% vs. 38.5%). Responses of GSS employee-owners and non-owners do not differ significantly (due in part to the much smaller sample size) and are not consistent with substitution. In fact a substantially higher percentage of employee-owners felt that they were paid *above* market (29.2% vs. 21.4%).

Next we consider the relationship between employees' pay and their ownership stakes (more specifically, the annual *increase* in their ownership stake). The key independent variable in this analysis is the ratio of the value of the employee's accrued company stock *per year of service* (indicating the annual growth of his/her ownership stake) to his or her annual base pay. A negative relationship between this variable and pay suggests that the more important ownership growth is relative to pay, the lower pay will be – in other words, ownership substitutes for pay. A positive relationship is inconsistent with the substitution hypothesis.<sup>18</sup>

In Table 5A seven different measures of pay are regressed on this independent variable (i.e., the annual increase in stock ownership relative to annual pay), controlling for an extensive list of personal and job-related determinants of pay. The first two dependent variables in Panel A

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<sup>18</sup> We use the average annual increase in ownership stake since the level of stock ownership depends heavily on years of service, which obscures the relationship between pay and ownership.



are the log of base pay and of total pay. The next four are employees' assessments of their pay (fixed and total) relative to the pay of employees in similar jobs at other companies in their region. The last dependent variable indicates respondents' assessment of how hard would it be to find another job with pay and benefits comparable to what they now have. In 12 of the 14 regressions, the coefficient of the key ownership share variable is positive; in six of these it is statistically significant (at better than a 5% level of significance), and in every case where the relationship is statistically significant, it is positive. These results suggest that if there is any relationship between company stock ownership and pay, it is a complementary one.

Panel B of Table 5 presents similar regressions based on the GSS data. Here the five dependent variables are log earnings, perceptions of pay relative to market, assessments of pay and fringe benefits, and the difficulty of finding another job with comparable pay and benefits. In four of these five regressions the signs of the key coefficient are positive and in all of the statistically significant estimates the coefficients are positive.

The main finding here is that there is no evidence that employee ownership substitutes for wages or benefits. On the contrary, it appears on average to be an add-on, with employees' ownership stake growing without sacrificing pay.<sup>19</sup>

### Does Employee Ownership Build Wealth?

Here we turn to the question of whether employee ownership actually adds to wealth or just changes the composition of wealth, substituting company stock for other forms of wealth (e.g., assets in a 401(k) account or an IRA). Do employees, for example, buy company stock

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<sup>19</sup> These relationships were also estimated for samples restricted to non-managers and for the five NBER companies with the lowest pay, all with similar results. In no case was there statistically significant evidence of substitution of ownership for pay or benefits.

through an employee stock purchase plan *instead* of buying other stock or *in addition to* other stock? In this case, employee ownership would just be a substitute for other forms of wealth, rather than an addition to them.

Of course, we cannot know what the wealth levels of employee-owners would have been in the absence of employee ownership, but we can see whether employee ownership is associated with higher levels of overall wealth or not. If it is, that is *prima facie* evidence that employee ownership does not fully substitute for other forms of wealth and thus increases total wealth.<sup>20</sup>

Table 6 presents some evidence on this question. Two regressions are reported for the NBER full data set and two for the nine NBER ESOP companies. In each regression the dependent variable is the employee's wealth. Because wealth is a categorical variable in this dataset, interval regressions are used to assess the relationship of employee ownership to overall wealth.<sup>21</sup> The key independent variable in the first regression on each dataset is the value of company stock held in *all* plans. In the second regression this variable is replaced by the value of company stock in *each* plan. All regressions also include a set of controls for other potential determinants of wealth which might be correlated with the level of company stock holdings (see table notes).

The first and most general result is the coefficient of 0.942 on company stock in all plans in the first regression, which implies that each additional dollar of employer stock is associated with 94.2 cents of higher wealth. That is, there appears to be very little reduction in other wealth associated with increasing employee ownership (only about 6 cents less other wealth as employee

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<sup>20</sup> Moreover, as Joseph Blasi has pointed out to us, even if employee ownership is substituting for other wealth dollar for dollar, that does not mean there is no net gain for the employee. It still allows for a higher level of consumption at the same level of wealth. This is especially relevant for stock options, where options are usually exercised and the stock immediately sold. The proceeds can be reinvested (increasing wealth) or spent (increasing consumption), but in either case there is a welfare gain.

<sup>21</sup> The NBER surveys asked employees to put their wealth into one of between 9 and 16 categories (depending on the survey). The regressions were run using Stata's `intreg` command, with dollar values adjusted for inflation to represent 2006 values.

ownership increases by one dollar). For nine NBER ESOPs the corresponding coefficient is 0.801, which indicates that wealth rises 80.1 cents as employee ownership increases by one dollar, so other wealth is decreasing by only 20 cents. While we cannot know what the wealth of employees would have been in the absence of employee ownership, these results cast doubt on a simple story of dollar-for-dollar substitution.

The regressions that include all plan types indicate the effect on total wealth of increases in the value of company stock in each of the various methods of stock ownership – ESOPs, 401(k)'s, Employee Stock Purchase Plans (ESPPs), exercised stock options, and open market purchases. In these regressions, all of the coefficients are positive and statistically significant, indicating that employee ownership is associated with higher wealth. The ESOP coefficient in the full dataset is not significantly different from one, indicating no substitution of ESOP stock with other wealth, while the coefficient of 0.880 in the ESOP-only regression indicates only minimal substitution for other wealth. The coefficients on open market purchases and stock purchased through ESPPs are much larger than one, which probably indicates that increases in (other) wealth lead to increased investment in the employer's stock.<sup>22</sup> Exercised stock options have a coefficient of 0.646, suggesting that an extra dollar of stock from stock options is associated with 64.6 cents of greater wealth, and the remainder of the extra dollar (35.4 cents) may be substituting for other wealth as employees save less as this form of wealth increases. A similar story may apply to the 401(k) coefficient in the ESOP-only regression. While these estimates are necessarily rough, they are generally inconsistent with the idea that employee ownership is substituting for other wealth, and

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<sup>22</sup> The large ESPP coefficient might also be partly due to the fact that company stock in ESPPs is typically bought at a 20% discount, so every \$1 of stock purchased automatically raises wealth by \$1.25. Also employees are most likely to buy company stock when its price is rising, and if the price does rise the value of their wealth will rise more than their dollar investment.

more consistent with the idea that increasing employee stock ownership by a dollar tends to raise employee wealth by almost a dollar.

Another way to examine the wealth impact of employee ownership across the economic spectrum is to compare the distribution of wealth classes with and without employee ownership. Figures 1 to 3 provide such a comparison for the GSS sample, full NBER sample, and NBER ESOP sample. Within each of these samples, the distribution of employees by wealth class was predicted using multinomial logits, and the probabilities of membership in each class were then predicted with the value of employer stock set to zero.<sup>23</sup> If employee ownership makes no difference in the levels or distribution of wealth (that is, if it fully substitutes for other wealth) then these predicted and actual distributions will be identical.

As seen in Figure 1, the predicted and actual distributions by wealth class in the GSS sample are fairly similar but employee ownership seems to shift the distribution to the right, slightly decreasing the likelihood of being in the two lowest wealth classes (<\$20,000) and slightly increasing the likelihood of being in the \$150,000-250,000 and >\$500,000 wealth classes. Figure 2 shows a larger difference for employee ownership among the NBER shared capitalism employees, where it appears to decrease membership in the six lowest wealth classes (<\$150,000) and increase membership in the classes above that, particularly in the >\$500,000 class. Figure 3 finds the same pattern among employees in ESOP companies, but with more dramatic differences. Combined membership in the four lowest wealth categories (<\$75,000) is 47% without employee ownership, and 34% with employee ownership. These figures are consistent with the idea that employee ownership is enhancing wealth, not substituting for other forms of wealth.

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<sup>23</sup> The predictors used in the multinomial logits were gender, age, married, BA degree, graduate degree, black, Hispanic, household size, number of children, tenure, natural logarithm of annual earnings, and dollar value of employer stock held. The predicted likelihoods were averaged within each wealth class for an estimate of the percent of employees who would be in each wealth class.

## The Distribution of Employee Stock Ownership and the Distribution of Wealth

Finally, we assess the distribution of company stock ownership and of all wealth (net worth). Table 7A shows the distribution of employer stock across employees (for the NBER companies and GSS employees) and compares it with Edward Wolff's estimates of the distribution of all stock across households. In both the NBER full sample and the ESOP subsample the top 10% of employees hold about 64% of employer stock and the next 50% hold almost all the rest. In the GSS the top 10 percent hold an estimated 73% of the company stock (which is likely to be a lower bound estimate<sup>24</sup>), and the next 50% hold the remaining 27%. By way of a rough comparison, Wolff (2004) finds that the top 10 percent of households hold 77% of all stock.<sup>25</sup> It is not surprising to find a more equal distribution of company stock among employees of the "shared capitalism" companies in the NBER study (with over a third of company stock held by those between the 40<sup>th</sup> and 90<sup>th</sup> percentile). Many fewer GSS respondents are employee-owners and even fewer of them are likely to be employed in companies with a broad-based employee ownership plan.

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<sup>24</sup> A problem with estimating the distribution of company stock ownership in the GSS sample is that 30% of the respondents who reported that they owned company stock did not report the value of that stock (usually because they didn't know, rather than refused to say). Omitting these respondents from the calculation lends an upward bias to the distribution, resulting in an estimate that 91% of the company stock is held by the top 10%. We have no way of knowing the actual stock holdings of those who did not respond to the question. The GSS estimates in Table 7 are based on imputing stock values for employees who said they owned company stock but didn't report how much. This imputation was done by regressing stock value on pay, sex, age, education, tenure and position (management vs. other) for the portion of the sample of employees who report stock value and using the resulting equation to estimate stock values for those who didn't report. This procedure relies on the assumption that employee-owners who are statistically alike in their personal characteristics will have similar company stock holdings. Since it is likely that employee-owners who do not know the value of their company stock do not hold as much of it as their statistically similar counterparts who do know, we take 73.3% as a rough 'lower bound' estimate of the share of company stock held by the top 10% of GSS employees.

<sup>25</sup> Comparisons in panel A of this table are confounded by inconsistencies in the unit of observation between the NBER/GSS data (company stock value per employee) and Wolff's data (stock value per household). This observation does not apply to panel B, where the unit of observation is the household in the NBER/GSS data, as well as Wolff's data.

Turning to Panel B of Table 7, we find that for both the NBER full sample and ESOPs and the GSS, the top 10 percent of households hold around 55-58% of all wealth and the next 50% hold 37-41%.<sup>26</sup> The similarity of the numbers provides little evidence that employee ownership has a significant impact on the wealth distribution. Comparisons among these samples may, however, be affected by demographic differences (e.g., age, marital status, and household size) that are related to wealth levels. This was checked in two ways. First, the NBER wealth distribution was imputed based on predictors of wealth in the GSS sample, to see what the distribution would look like if the NBER employees had the same wealth levels of demographically-similar people in the general population.<sup>27</sup> The result (not reported in the table) was that 55.9% of the wealth among NBER employees was predicted to be held by the top 10 percent, and 38.9% by the next 50 percent, indicating that the actual NBER wealth distribution is similar to, but slightly less equal than, the NBER distribution predicted from the GSS.

A second and more straightforward way to examine the influence of employee ownership on wealth distribution is to calculate the distribution for employees both with and without employer stock (assuming that employer stock is not substituting for other forms of wealth, as is

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<sup>26</sup> Because the NBER and GSS wealth data are based on categorical variables rather than exact dollar values, the figures in Table 7B are approximations. The calculation of the wealth distribution is based on assigning mean dollar values to each category using data from the 2004 Survey of Consumer Finances (SCF). When the 90<sup>th</sup> and 40<sup>th</sup> percentiles fell within a wealth category, the distribution of wealth within that category in the SCF was used in order to estimate the total wealth of those above and below those percentiles. E.g., if those in the \$500,000-1,000,000 wealth category covered the 85<sup>th</sup> to 95<sup>th</sup> percentiles of the NBER distribution, the median of the \$500,000-1,000,000 category was identified in the SCF distribution, and the mean wealth was calculated above that median and multiplied by the number of NBER employees in the 90<sup>th</sup> to 95<sup>th</sup> percentiles for an estimate of total wealth among employees in that part of the distribution. That figure was then added to an estimate of total wealth for those in the 95<sup>th</sup> to 100<sup>th</sup> percentiles, using mean SCF wealth for each category multiplied by the number of employees in that category, to determine the total held by the top 10 percent. This procedure assumes that wealth is distributed similarly within each category for the NBER, GSS, and SCF samples. While only an approximation, it is unlikely to lead to any systematic bias.

<sup>27</sup> The imputations were done using multinomial logits with the GSS data to predict membership in the wealth categories, then using these estimates to make predictions in the NBER sample of the likelihood of being in each wealth category. The predicted likelihoods were averaged within each wealth category for an estimate of the percent of employees who would be in each wealth category. The wealth distribution was then estimated using the procedure described in the previous footnote. The predictors used in the multinomial logits were gender, age, married, BA degree, graduate degree, black, Hispanic, household size, number of children, tenure, and natural logarithm of annual earnings.

strongly suggested by the earlier results). Panel C of Table 7 shows that when employee ownership is subtracted from estimated wealth holdings, the share of wealth held by the top 10 percent is 57.0% among NBER employees, just slightly higher than the 56.3% figure that includes employer stock (panel B). Both the middle and lower groups see slightly increased shares of wealth from adding employee ownership. A similar pattern appears in the GSS data, where the presence of employer stock slightly decreases the share of wealth among the top 10 percent from 55.9% (panel C) to 55.4% (panel B). The difference is larger in the ESOP sample, where 61.0% of the wealth excluding employer stock is held by the top 10 percent, and adding employer stock decreases that share to 58.5%, with increases in the shares of both the middle and bottom wealth holders. This indicates that ESOPs may play a stronger role than other forms of employee ownership in broadening ownership of wealth.

Examination of employee ownership by wealth class can also shed light on how employee ownership affects the wealth distribution. Table 8 shows that average employee ownership, as a percent of wealth, is very similar across the wealth categories for the NBER sample, with only a slightly higher figure (19.5%) for the richest class compared to the poorest class (16.3%). There is a similar pattern for ESOPs, with fairly uniform percentages across the wealth classes although a higher percentage in the richest class. This indicates that while employee ownership may increase wealth, it appears unlikely to have much effect on the distribution of wealth across workers since everyone's wealth is going up by a similar percentage (assuming a similar rate of substitution of employee ownership for other wealth across the categories). The NBER-SCF comparison in Table 8 clearly shows that employee ownership increases stock ownership as a percentage of wealth across all of the wealth categories. This reinforces the finding at the top of Table 7 that

stock ownership is greater amid middle and lower employees in the NBER companies than in the national samples.

The data in Tables 6 to 8 and Figure 1 point toward a wealth-enhancing effect of employee ownership but suggest that the shape of the wealth distribution (reflecting the relative amounts held by those at the top, middle, and bottom) may not be greatly affected by employee ownership. This is not surprising when one considers that employee ownership plans often distribute company stock in proportion to salary, and salary is also distributed unequally. Some simple calculations illustrate this point. If each person in the NBER dataset were simply given an amount of company stock equal to 10% of their yearly pay, we estimate that the percent of wealth held by the top 10 percent would fall from 56.3% (Table 7) to 55.7%. If a similar total were distributed in equal dollar amounts (\$5989) to each employee, that figure would fall only to 55.5%. The fact that employee ownership is only a small portion of most workers' wealth, and is often distributed in proportion to pay which is itself unequal, indicates that employee ownership, as currently practiced, is unlikely to significantly impact the existing distribution of wealth.

Finally, Table 9 compares the mean and median pension wealth of employees in the NBER (full sample and ESOPs) with Wolff's estimates of mean and median household pension wealth. Here again we run into the problem of inconsistent units of observation, and the comparison likely favors Wolff's measure because households may have more than one member with a pension plan and therefore more pension assets.

We expect pension values to be higher for the NBER ESOP companies than for all NBER companies because ESOPs operate as retirement plans, with stock accumulating in them until the employee retires (or otherwise leaves the company). The mean pension wealth for the ESOPs is just a little higher than the mean in Wolff's Survey of Consumer Finances data, but the *median* is



almost three times higher (\$32,000 vs. \$11,000), suggesting that companies with broad-based employee ownership do benefit mid-level or median employees in their effect on the distribution of pension assets. Turning to the “pre-retirement,” 47-64 age group, however, we find no practical difference between the median pension assets of employees of these ESOPs vs. Wolff’s households.

### Conclusion

The NBER Shared Capitalism Research Project employee surveys indicate that shared ownership builds wealth for employees. The average value of company stock held by employee owners in the nine majority-owned ESOP companies is almost \$86,000, and the average value of stock options held by option holders in the five broad-based stock option companies is almost \$283,000. Median holdings are considerably lower (\$22,800 and \$93,400, respectively), and non-managers’ holdings are only about one-third those of managers, on average. Nonetheless, comparison of the NBER and GSS datasets shows that if all employees worked for companies with broad-based employee-ownership plans like the NBER firms, a lot more employees would own a lot more company stock.

There is no evidence that employees’ ownership gains are offset by lower wages or benefits. While increases in company stock ownership appear to be partially offset by decreases in other wealth, there is a substantial net gain in total wealth resulting from increases in employee ownership – with a one dollar increase in ownership associated with almost a one dollar increase in total wealth. We find some evidence here that the general pattern of capital ownership and income going almost exclusively to the top is partly reversed by employee ownership, with expanded stock ownership among those at the middle and bottom of the wealth distribution.

While employee-ownership inevitably increases employees' firm specific risks in proportion to the value of company stock owned, the risk-reward tradeoff appears to be manageable (Blasi, Kruse, and Markowitz, 2008). Since employee ownership does not cause a substantial decrease in ownership of other assets, this increased risk applies only to assets that employees would not have if they worked at a non employee-ownership company. In addition, employee ownership is only a small portion of wealth for most employee owners, consistent with the bounds suggested by portfolio theory (assuming other assets are properly diversified). These results indicate that broad-based employee ownership may be raising wealth for many workers without unduly increasing worker risk.

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Table 1: NBER Company Plans and Disposition of Company Stock

<u>Company</u> <sup>1</sup>	<u>Plans</u>	<u>Stock is Publicly Traded/Private Held</u>	<u>Percent of Stock Held by Employees</u>	<u>Participation Rate (% holding co. stock)</u> <sup>4</sup>	<u>Value per Employee-Owner</u> <sup>4,5</sup>
<b>1</b>	ESOP	Private	100%	88.5%	\$239,139
<b>2</b>	ESOP	Private	100	81.9	23,827
3	ESPP, SOP	Public	n.a.	97.1	138,430
<b>4</b>	ESOP	Private	77	64.1	26,155
<b>5</b>	ESOP	Private	33 <sup>2</sup>	39.1	7,877
<b>6</b>	401(k), ESPP, SOP	Private	100	88.5	36,623
7	ESOP, ESPP, SOP	Public	5 <sup>3</sup>	88.1	15,865
<b>8</b>	KSOP	Private	100	77.5	166,713
<b>9</b>	ESOP	Private	100	69.3	38,411
<b>10</b>	ESOP	Private	75	52.0	40,407
11	401(k), ESPP, SOP	Public	n.a.	82.0	39,547
<b>12</b>	ESOP	Private	100	87.1	99,000
13	ESPP, SOP	Public	n.a.	60.3	175,687
14	401(K), SOP	Public	n.a.	67.7	27,952

Notes: ESOP – Employee Stock Ownership Plan

KSOP – A 401(k) plan with matching contributions of company stock to a companion ESOP.

401(k) – A 401(k) plan that holds company stock, as well as other assets.

(Note: All but one of these companies has a regular 401(k) plan.)

ESPP – Employee Stock Purchase Plan

SOP – Company grants stock options (broad based in all but one case)

1. Bold numbers indicate a subset of 9 ESOPs (or near-ESOPs) that are broken out in some subsequent analyses.

2. 33% at the time of the survey, soon after increased to 67%.

3. 15% including unexercised stock options.

4. Includes only U.S. based, full-time employees (35 or more hours per week), age 18 and over, with at least one year of service.

Employees who didn't know if they owned their employer's stock (about 15% of this subsample) are assumed not to. In the case of stock option plans, employees who have ever received stock options are counted, even if they do not currently hold company stock.

5. Average value of employer stock for employees owning company stock.

Table 2: Employee Stock Ownership by Employee Position

	NBER Full <u>Dataset</u>	NBER ESOP <u>Companies</u> <sup>1</sup>	GSS National <u>Sample 2002&amp;06</u>
<b>A. <u>Percent Owning Employer Stock</u></b>			
All employees	86.8%	88.6%	29.3%
Managers	96.5	97.1	33.9
Others	85.6	87.4	28.5
(Sample size)	(24,918)	(3,889)	(1370)
<b>B. <u>Value per Employee</u><sup>2</sup></b>			
All Employees	\$ 52,759	\$76,041	\$10,590
Managers	126,948	202,078	17,814
Others	41,745	55,756	9,576
(Sample size)	(24,202)	(4,314)	(1245)
<b>C. <u>Value per Employee-Owner</u><sup>3</sup></b>			
All Employees	\$61,059	\$85,926	\$47,961
Managers	131,654	208,190	63,281
Others	49,030	63,874	45,109
All Employees (median)	15,484	22,767	15,000
Managers (median)	46,452	70,560	28,016
Others (median)	13,340	20,645	11,206
(Sample size)	(20,912)	(3,423)	(276)
<b>D. <u>Value of Employer Stock as a Percentage of Annual Base Pay (NBER) or Earnings (GSS)</u><sup>3</sup></b>			
All Employees	65.4%	118.5%	75.8%
Managers	95.5	179.8	62.0
Others	60.0	107.3	78.3
(Sample size)	(18,796)	(2,527)	(269)
<b>E. <u>Value of Employer Stock as a Percentage of Total Wealth</u><sup>3</sup></b>			
All Employees	19.5%	28.0%	18.2% <sup>4</sup>
Managers	21.9	34.1	13.5
Others	19.0	26.7	19.0
(Sample size)	(18,789)	(2,419)	(113)

Notes: All measures are based on a sample of US-based, full-time (35 or more hours per week) employees of for-profit companies, who are age 18 and over and have at least one year of service. Employees who reported that they didn't know if they owned their employer's stock are dropped from these calculations.

1. This is a subset of nine majority owned, privately held ESOP companies identified in Table 1.
2. Includes employees who own no employer stock.
3. Includes only employees who own employer stock.
4. Based on 2006 GSS only.

Table 3: Stock Options by Employee Position

	<u>NBER Full Dataset</u>	<u>NBER Broad-based Stock Option Cos.<sup>1</sup></u>	<u>GSS National Sample 2002&amp;06</u>
<u>A. Percent Holding Stock Options</u>			
All employees	22.1%	93.2%	17.1%
Managers	44.1	97.1	18.4
Others	19.4	92.4	16.9
(Sample size)	(27,952)	(5,896)	(1359)
<u>B. Value per Employee<sup>2</sup></u>			
All Employees	\$55,592	\$262,931	
Managers	183,935	566,146	
Others	38,730	196,498	
(Sample size)	(27,711)	(5,711)	
<u>C. Value per Stock Option Holder<sup>3</sup></u>			
All Employees	\$259,740	\$282,841	
Managers	428,614	583,424	
Others	205,995	213,264	
All Employees (median)	80,042	93,383	
Managers (median)	112,805	213,446	
Others (median)	80,042	80,042	
(Sample size)	(5,931)	(5,309)	
<u>D. Value of Stock Options as a Percentage of Annual Base Pay<sup>3</sup></u>			
All Employees	175.6%	189.6%	
Managers	219.7	287.7	
Others	161.9	167.2	
(Sample size)	(5,769)	(5,185)	
<u>E. Value of Stock Options as a Percentage of Total Wealth<sup>3</sup></u>			
All Employees	54.5%	58.9%	
Managers	45.2	57.5	
Others	57.4	59.3	
(Sample size)	(5,617)	(5,102)	

Notes: All measures are based on a sample of US-based, full-time (35 or more hours per week) employees of for-profit companies, who are age 18 and over and have at least one year of service. Employees who reported that they didn't know if they hold stock options are dropped from these calculations

1. This is a subset of five SOP companies (excluding company 14 which is not broad-based) identified in Table 1.
2. Total value of vested and unvested options. Includes employees who hold no stock options.
3. Total value of vested and unvested options. Includes only employees who hold stock options.

Table 4: Perceptions of Base Pay Relative to Market for Employee-owners and Non-owners

	NBER Full Dataset		GSS 2006 National Sample	
	<u>Employee-owners</u>	<u>Non-owners</u>	<u>Employee-owners</u>	<u>Non-owners</u>
1 Below market	14.2%	17.8%	15.5%	18.5%
2	25.3	20.7	14.3	11.0
3 At market	42.5	41.8	41.1	49.1
4	15.1	15.0	15.5	10.6
5 Above market	2.9	4.7	13.7	10.8
	$\chi^2 = 72.9$ (p=.000)		$\chi^2 = 6.90$ (p=.141)	
Sample size	19,093	2,836	168	464

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Notes: All subsamples are restricted to US-based employees of for-profit, private sector companies, who are 18 or over, usually work at least 35 hours per week and have at least one year of service with their employer. Respondents were asked “Do you believe your fixed annual wages last year were higher or lower than those of employees with similar experience and job descriptions in other companies in your region?”



Table 5: Does Employer Stock Substitute for Pay?

A. <u>NBER Dataset</u>		<u>Ratio of Annual Ownership Stake to Base Pay</u>	
<u>Dependent Variable</u>	<u>Full Dataset</u>	<u>Nine ESOPs</u>	
1. Log base pay	.006 (.012)	.000 (.042)	
2. Log total pay	.114** (.013)	.068 (.043)	
3. Base pay relative to market (5 point scale: 1. below, ... 5. above)	.073* (.040)	.016 (.175)	
4. Base pay percent of market (percent below/above market)	.765 (.585)	-.294 (3.05)	
5. Total pay relative to market (5 point scale: 1. below, ... 5. above)	.218** (.041)	.431** (.159)	
6. Total pay percent of market (percent below/above market)	3.313** (.690)	7.155** (2.925)	
7. Difficulty replacing pay & benefits (3 point scale: 1. easy, ... 3. not at all easy)	-.002 (.024)	.088 (.090)	
B. <u>GSS National Sample 2002&amp;06</u>		<u>Ratio of Annual Ownership Stake to Earnings</u>	
1. Log earnings		.238 (.109)	
2. Base pay relative to market (5 point scale: 1. below, ... 5. above)		.682 (1.017)	
3. Paid what you deserve (5 point scale: 1. much less, ... 5. much more)		-.107 (.173)	
4. Fringe benefits are good (4 point scale: 1. not true, ... 4. Very true)		.798* (.378)	
5. Difficulty replacing pay and benefits (3 point scale: 1. easy, ... 3. not at all easy)		1.657* (.694)	

Notes: Each entry involves a separate regression. The key independent variable is the ratio of the value of employer stock (divided by years of tenure) to annual earnings. All regressions include controls for sex, age, education, job tenure, hours worked, management, hourly, union membership and company fixed effects. Equations A. 3, 5 and 7 and B. 2, 3 4, and 5 are ordered probits; others are OLS. Samples are restricted as indicated in Table 4. Standard errors are in parentheses. \* and \*\* indicate  $p < .05$  and  $p < .01$  in a one-sided test of significance.

Table 6: Does Employer Stock Displace Other Wealth?

<u>Independent Variables</u>	<u>Dependent Variable: Wealth</u>	
	<u>NBER Full Dataset</u>	<u>Nine NBER ESOPs</u>
Value of employer stock from		
All plans	0.942** (.023)	0.801** (.034)
ESOP	1.007** (.098)	0.880** (.045)
401(k)	1.280** (.100)	0.661** (.051)
ESPP	3.590** (.106)	3.062** (0.725)
Open market purchases	2.179** (.148)	
Exercised stock options	0.646** (.020)	

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Notes: All regressions run as interval regressions due to categorical coding of wealth. Controls include earnings, sex, age, marital status, family size, number of children, education, job tenure, hours worked, management, paid hourly, union membership and company fixed effects. Samples are restricted as indicated in Table 4. Standard errors in parentheses. \*\* indicates  $p < .01$  in a one-sided test of significance.

Table 7. Distribution of Stock Ownership and Wealth

Wealth Class	NBER Employees Full Sample	NBER Employees ESOPs	GSS Employees National Sample 2002 & 2006	Wolff 2001 (Households)
	<u>A. Share of Employer Stock</u>			<u>Share of All Stock</u>
Top 10%	64.0%	64.0%	73.3% <sup>a</sup>	76.9% <sup>b</sup>
Next 50%	34.9	34.5	26.7	22.4
Bottom 40%	1.1	1.6	0.0	0.7
	<u>B. Share of All Wealth (Net Worth)</u>			
Top 10%	56.3%	58.5%	55.4%	71.5% <sup>c</sup>
Next 50%	39.5	37.4	40.8	28.2
Bottom 40%	4.2	4.0	3.7	0.3
	<u>C. Share of All Wealth Excluding Employer Stock</u>			
Top 10%	57.0%	61.0%	55.9%	
Next 50%	39.2	36.0	40.5	
Bottom 40%	3.8	3.0	3.6	

Note: NBER and GSS samples are restricted as indicated in Table 4. NBER sample employees who reported that they did not know if they owned employer stock are excluded.

a. Imputes the value of employer's stock for employee-owners who didn't report it (see footnote 23).

b. Wolff (2004), Table 13a.

c. Wolff (2004), Table 2.

Table 8. Employee Ownership Distribution by Wealth Class

Wealth class	Percent of employee's wealth in:			
	Employee ownership		All stocks	
	NBER full sample	NBER ESOPs	SCF	NBER
<\$5000	16.3%	26.8%	1.4%	19.6%
\$5000-20,000	16.7%	18.7%	8.9%	23.0%
\$20,000-40,000	16.4%	19.1%	13.7%	23.3%
\$40,000-75,000	17.7%	22.4%	12.9%	26.2%
\$75,000-100,000	18.0%	24.8%	13.6%	28.2%
\$100,000-150,000	17.2%	24.7%	14.4%	29.0%
\$150,000-250,000	17.8%	26.6%	16.9%	31.9%
\$250,000-500,000	17.3%	27.9%	19.4%	34.3%
\$500,000 or more	19.5%	35.3%	26.8%	39.4%

Table 9. Pension Wealth: NBER Employees and All Households

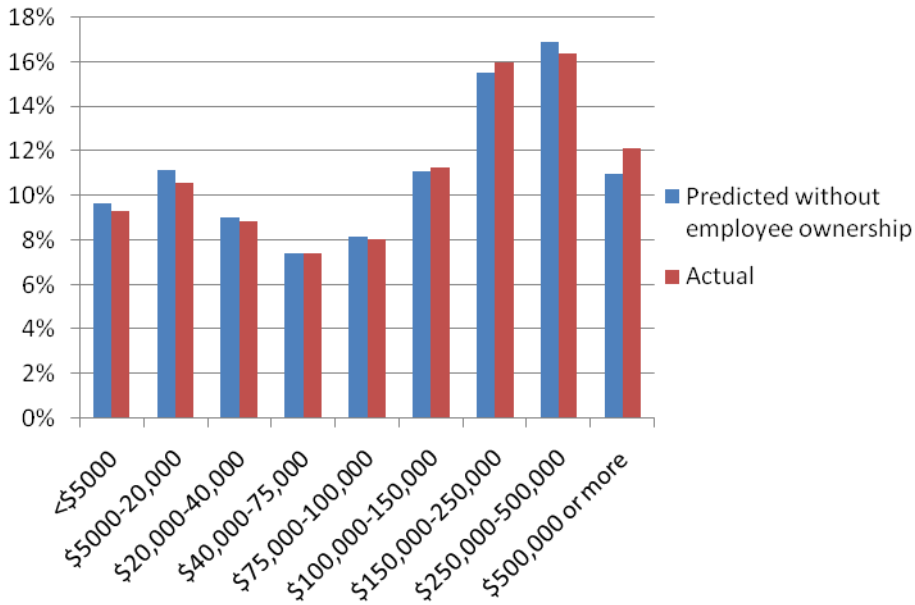
	<u>All NBER companies Assets in All Pensions<sup>a</sup></u>		<u>NBER ESOPs Assets in All Pensions<sup>a</sup></u>		<u>Wolff 2001 Estimates of Household Pension Wealth<sup>b</sup></u>	
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>
<u>Age 18 &amp; over</u>	\$67,035	\$34,006	\$102,589	\$31,738	\$94,800	\$10,900
Percent in employer stock	31.2%		71.5%			
Sample size	22,558		3,076			
 <u>Ages 47-64</u>	 \$100,802	 \$49,875	 \$165,469	 \$54,409	 \$170,800	 \$50,000
Percent in employer stock	33.9%		73.7%			
Sample size	7,709		925			

Notes: Sample is restricted as indicated in Table 7.

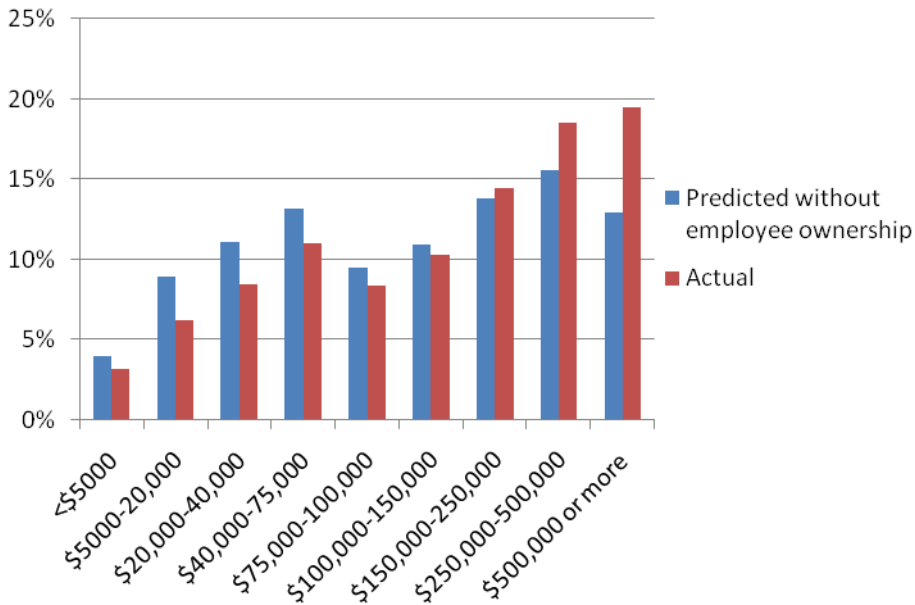
a. There are nine companies with majority owned ESOPs. Assets include employer and other stock in ESOPs and 401(k) plans. Dollar values have been adjusted to 2001 levels for comparison with Wolff's figures.

b. Value of employees' Defined Benefit and Defined Contribution pension plans. Wolff (2005), Table 11.

**Figure 1: Wealth class distribution for all employees (GSS)**



**Figure 2: Wealth class distribution for employees in shared capitalism companies**



**Figure 3: Wealth class distribution for ESOP employees**

