



ESOPs as Retirement Benefits

An analysis of data from the U.S. Department of Labor

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I. Executive Summary

This paper reviews data from the Department of Labor form 5500 on defined contribution retirement plans. We collected data from all companies with employee stock ownership plans (ESOPs) for the most recent filing year available (2007 or 2006, depending on the company) and two prior years, where available. The comparison data comes from all non-ESOP companies with defined contribution plans (DC plans) that filed a form 5500.

The 3,976 ESOP companies in this study, which represent all companies for which 5500 data is available and that meet our screening criteria, represent 38% of all ESOPs, based on the NCEO's most recent estimate for total ESOPs.¹ For more information about how we screened the data, see the Methodology section.

Plan Prevalence

ESOP companies, by definition, have at least one DC plan: the ESOP. More than half of them (56%) have a second DC plan, likely a 401(k). In comparison, the Bureau of Labor statistics reports that 47% of companies overall have a DC plan. In other words, an ESOP company is more likely to have two DC plans than the average company is to have any. See pages 7 to 9.

Contributions

The average ESOP company contributed \$4,443 per active participant to its ESOP in the most recently available year. In comparison, the average non-ESOP company with a DC plan contributed \$2,533 per active participant to their primary plan that year. In other words, on average ESOP companies contributed 75% more to their ESOPs than other companies contributed to their primary DC plan. Controlling for plan age, number of employees, and type of business increases the ESOP advantage to 90% to 110% above the non-ESOP companies in our sample. None of the numbers in this paragraph considers contributions made to secondary DC plans or contributions made by employees. See pages 9 to 11.

Not surprisingly, ESOP companies have much lower average contributions by employees than non-ESOP companies (\$384 versus \$2,848), and only 13% of ESOP companies report any employee contributions at all (see page 10). While it is very difficult to estimate confidently the combined employee and employer contributions to combined first and second DC plans, it appears that total contributions in combined plans are slightly higher in ESOP companies than in non-ESOP companies.

Assets Per Participant

The value of the assets contributed by the company to all DC plans in ESOP companies is substantially higher than the value in non-ESOP companies. We estimate that the average ESOP participant has company-sourced DC-plan assets that are more than twice as much as participants in companies with non-ESOP DC plans. (The average

¹ See *A Statistical Profile of Employee Ownership*, at <http://www.nceo.org/main/article.php/id/2/>.

ESOP participant in the average ESOP company has company-sourced DC assets worth 2.22 to 2.29 times as much as the assets held by the average participant in the average company with a non-ESOP DC plan. See table 8.)

This ESOP difference is necessarily an estimate because the data do not allow us to calculate the actual value of the assets per participant in combined DC plans. Another source of imprecision is our estimate for the portion of accumulated plan assets originally contributed by the company. The data do show how much of each year's contributions are from the company and how much are from employees and this number is stable. We believe it provides a reasonable basis to extrapolate how much of the accumulated assets in the average employee's account was originally a company contribution.

We can ignore the source of the assets and examine the total net assets in the combined plans (the ESOP plus the second DC plan, when available in ESOP companies, and the two DC plans, when two exist, in other companies). We estimate that the average ESOP participant in the average ESOP company has \$55,836 in combined DC plans, compared with \$50,525 for participants in non-ESOP companies with at least one DC plan. In other words, the average ESOP participant has somewhat more DC plan assets than the average DC plan participant, wrapping together both company and employee contributions. Controlling for company size, industry and age of plan suggests that total assets per participant are approximately 20% higher in ESOP companies than in companies with non-ESOP DC plans. See table 7.

While the structure of this data only allows comparisons between ESOPs and companies with non-ESOP DC plans, these numbers are consistent with findings from other studies. Peter Kardas, Jim Keough and Adria Scharf, for example, found that ESOP participants had approximately 2.5 times the assets of employees in non-ESOP companies (excluding personal assets such as houses, cars, and IRAs).² Given that approximately half of companies do not have any retirement plans, the 20% advantage of ESOP companies over companies with non-ESOP DC plans could easily translate into a 2.5 times advantage relative to the work force as a whole, although the available data do not allow that comparison directly. Note, however, that this comparison includes employee deferrals into DC plans, which are common in non-ESOP DC plans and much less important in ESOPs. In a typical non-ESOP DC plan, employee deferrals are only partially matched by employers, so the majority of plan assets are employee money³.

Finally, if we isolate the ESOP and compare it with the first DC plan in non-ESOP companies, the value of net plan assets per participant in ESOPs for the most recent plan year is lower than the value of net plan assets in the primary DC plan of companies without ESOPs (\$47,556 for ESOP companies versus \$50,149 for non-ESOP companies).

² Kardas, Peter A., Adria L. Scharf, and Jim Keogh, *Wealth and Income Consequences of Employee Ownership*, Oakland: NCEO, 1998.

³ For example, table 5 in this report shows employee contributions are approximately 10% larger than company contributions in non-ESOP plans. By contrast, more than 90% of the contribution to ESOPs is from the company.

This reflects in part the effect of ESOP loans, which directly reduce the current value of net plan assets, but which disappear over time. This difference also disappears or turns into a slight ESOP advantage when the data are controlled by size of work force, industry, and age of plan. See table 6.

Year-to-Year Change in Assets

The year-to-year change in assets available to pay participants (year-end plan assets minus beginning year plan assets plus distributions) was positive \$13,707 in ESOP companies in the most recent plan year, versus positive \$10,496 for the primary DC plans in non-ESOP companies. Non-ESOP companies saw a larger increase in assets per participant in the prior year. This comparison is more difficult to interpret than it first appears. Plans that make large payouts will show lower increases in assets per participant, but that is precisely because they are providing a substantial benefit for former employees. See page 15.

Limitations

An inherent difficulty of this research is making comparisons among appropriate groups of companies. ESOP companies have, by definition, at least one defined contribution plan, while the Bureau of Labor Statistics⁴ reports that only 47% of companies overall offer any DC retirement plans. These companies are not represented in the 5500 data. The most accurate comparison group for ESOP companies would be all non-ESOP companies, but the data source limits this project to a comparison to non-ESOP companies with other DC plans. Several other limitations are built into the design of this study, and we discuss them and present more detailed results in the report that follows.

Conclusions

Despite these limitations, this study comes to several clear conclusions:

- ESOP companies are more likely to offer a second DC plan than non-ESOP companies are to offer any DC plan at all;
- ESOP companies contribute substantially more to their ESOPs than companies with non-ESOP DC plans contribute to their DC plans;
- The average ESOP participant has 20% more DC assets than the average participant in a non-ESOP DC plan, and far less of it comes out of the employee's pocket.
- Considering only DC assets originally contributed by the company, ESOP participants have approximately 2.2 times as much in their accounts as participants in comparable non-ESOP companies with DC plans.

⁴ See <http://www.bls.gov/ncs/ebs/benefits/2009/ownership/private/table01a.htm>

2. Background

Evidence from multiple sources gathered since ESOP legislation passed in 1974 suggests that ESOPs improve firm performance, decrease risk of bankruptcy, and enhance the retirement security of ESOP participants. The current research is an attempt to assemble all data available from the Department of Labor via form 5500 to bring that research up to date and to compare ESOPs with non-ESOP companies.

This project was commissioned by the Employee Ownership Foundation and performed by the National Center for Employee Ownership (NCEO). The source data is information collected by the Department of Labor and distributed by Judy Diamond Associates. The NCEO consulted with two trustees of the Employee Ownership Foundation: Hugh Reynolds (Crowe Horwath) and Rob Edwards (Steiker, Fischer, Edwards & Greenapple, P. C.). We developed a procedure to select the data, screen out inappropriate information, match data from separate plans for companies with more than one plan, and match data from comparable non-ESOP companies to the ESOP data.

3. Limitations

The study design imposes some limits on the conclusions that we can draw. An ideal comparison would be between all ESOP companies on the one hand and all non-ESOP companies on the other. That data is not available, because many companies do not provide any form of qualified retirement plan; data from these companies does not exist in the form 5500 returns. The second-best comparison, presented in this paper, is between all available ESOP companies and all available non-ESOP companies that provide some DC plan, usually a 401(k) plan. According to the Employee Benefit Research Institute (EBRI), approximately 96% of DC participants participate in a 401(k) plan.

A second difficulty arises from the existence of multiple DC plans per company. It is impossible to calculate the combined value of multiple plans: a different set of employees may participate in each plan and the mix of employer and employee contributions is almost certain to be different. Although the data from form 5500 do not allow a way to combine the data from multiple plans accurately, we have made estimates where possible.

A third limitation of this study is defined benefit (DB) plans. This study does not attempt to value or even track the incidence of DB plans among ESOP and non-ESOP companies. EBRI reports that 24.5% of households have a participant in a DB plan, although these are much more prevalent in public sector than private sector companies.

Fourth, the data is also subject to the time delay inherent in government data. We used data from 2007 where available, in 670 ESOP companies, or 17% of the total ESOP dataset. Data for the other 3,306 ESOP companies is from 2006. The data includes three years of data for all companies, where available. 670 companies have data from 2005 to 2007; the other 3,306 have data from 2004 to 2006.

Fifth, the 5500 data do not include payroll, a major factor in driving retirement benefits and evaluating their effectiveness.

Finally, the data available in this study is company-wide, so we are not able to look at individual participants and their outcomes. We also cannot account for turnover rates and growth rates, both of which would also affect the average assets and contributions per employee. ESOP companies have been shown to grow employment about 2.5% per year faster than they would have without an ESOP, which would dilute their per participant findings substantially over time.

The quality of this data from form 5500 has improved markedly over the last years. The NCEO screened the data in multiple ways, often redundant, to further improve the quality of the data. However, it is likely that some data entry errors remain, both on the part of the people originally completing the forms and in the transfer of the data from a physical form to a database.

4. About the Data

An ideal research design would match ESOP companies to comparison companies that are identical in every way except for the ESOP. Since this is clearly impossible, this study takes two steps to minimize the differences that result from factors other than the ESOP. First, we looked at differences between ESOP and non-ESOP companies within categories. We used three categories: size of work force, line of business (defined by two-digit NAICS code) and plan age. The differences between ESOP and non-ESOP companies within each of those categories is detailed in the Supplemental Tables (a separate document).

Second, in order to reduce the differences in overall averages, we made most calculations using only companies with 20 to 1,000 employees. We refer to this set of companies throughout this report as the “base data,” and unless otherwise noted, all calculations use this set of companies. When we use data from all companies we will refer to that as the “extended data.” Table 1 shows that ESOP companies and non-ESOP companies have drastically different distributions among size categories. Using the base data does not eliminate this difference, but it does reduce it dramatically.

The distribution by NAICS code is also somewhat different between the ESOP and non-ESOP sets of companies. The biggest differences are that ESOPs are much more likely to be in Finance and Insurance (NAICS code 52) and less likely to be in Health Care and Social Assistance (NAICS code 62). Table 2 shows the distribution for the base data.

Table 1: Size of Work Force

Size of Work Force	ESOPs	Non-ESOPs	Extended Data (a to g)		Base Data (b to f)	
			ESOPs	Non-ESOPs	ESOPs	Non-ESOPs
a. Under 20	658	128,500	13%	66%		
b. 20 to 40	920	28,440	18%	15%	23%	44%
c. 41 to 80	1,079	17,003	21%	9%	27%	26%
d. 81 to 150	827	8,701	16%	4%	21%	14%
e. 151 to 300	628	5,448	12%	3%	16%	8%
f. 301 to 1000	522	4,573	10%	2%	13%	7%
g. Over 1000	436	3,024	9%	2%		
Total Companies			5,070	195,689	3,976	64,165

Table 2: Industry

NAICS Category	NAICS Code	ESOPs	Non-ESOPs
Agriculture, Forestry, Fishing and Hunting	11	1%	1%
Mining, Quarrying, and Oil and Gas Extraction	21	0%	1%
Utilities	22	0%	0%
Construction	23	11%	10%
Manufacturing	31 to 33	22%	19%
Wholesale Trade	42	10%	7%
Retail Trade	44 and 45	6%	8%
Transportation and Warehousing	48 and 49	2%	2%
Information	51	2%	2%
Finance and Insurance	52	20%	6%
Real Estate and Rental and Leasing	53	1%	2%
Professional, Scientific, and Technical Services	54	17%	16%
Management of Companies and Enterprises	55	3%	0%
Administrative and Support and Waste Management and Remediation Services	56	2%	2%
Educational Services	61	0%	1%
Health Care and Social Assistance	62	2%	15%
Arts, Entertainment, and Recreation	71	0%	1%
Accommodation and Food Services	72	1%	2%
Other Services (except Public Administration)	81	2%	4%

5. Plan Prevalence

The most striking feature of retirement assets in the United States is the small number of people covered by an employer-sponsored retirement plan. The Bureau of Labor Statistics (BLS) reports that in 2006, 43% of private-sector workers participated in a DC plan.⁵ In EBRI's August 2009 Issue Brief, Craig Copeland analyzes data from the Federal Reserve Board's 2007 Survey of Consumer Finances. He found that in 2007, 33.6% of

⁵ See <http://data.bls.gov/cgi-bin/surveymost?eb>, series ID EBUDCINC000000AP

families included a participant in an employment-based DC retirement plan from a current job.”⁶

The DOL data do not allow us to look at households or individual employees. The comparison we can draw is between rates at which companies offer DC plans. As cited earlier, the BLS reports that 47% of all establishments offer a DC retirement plan. By contrast, 56% of the ESOP companies in the base data set for this study (i.e., companies meeting the screen and having between 20 and 1000 employees) offer a second DC plan beyond their ESOPs. Using the extended data set, which includes companies with under 20 employees and with over 1000, the percentage of ESOP companies with second plans is 52%. In other words, ESOP companies of any size are more likely to offer an additional DC plan than non-ESOP companies are to offer any DC plan.

Table 3: ESOP Companies with a Second DC Plan

	Number of ESOP Companies in Data Set	Number with Second DC Plans	Percent with Second DC Plans
Base Data <i>(20 to 1000 employees)</i>	3,976	2,239	56%
Extended Data <i>(all companies)</i>	5,070	2,624	52%
By Size of Work Force			
A. Under 20 Employees	658	223	34%
B. 20 to 40 Employees	920	449	49%
C. 41 to 80 Employees	1,079	577	53%
D. 81 to 150 Employees	827	481	58%
E. 151 to 300 Employees	628	399	64%
F. 301 to 1000 Employees	522	333	64%
G. Over 1000 Employees	436	162	37%
Data from Prior Years			
Base Data (Prior Year)	3,530	2,077	59%
Base Data (Twice-Prior Year)	3,201	1,845	58%

The results for companies with over 1000 employees are likely skewed by the increased chance of these companies having a DB plan.

The National Compensation Survey, run by the Bureau of Labor Statistics, describes the percentage of companies in the economy as a whole with defined contribution plans.

⁶ Craig Copeland, “Individual Account Retirement Plans: An Analysis of the 2007 Survey of Consumer Finances, With Market Adjustments to June 2009,” *EBRI Issue Brief*, no. 333, August 2009.

These numbers are from their 2007 survey (more recent data is available, but 2007 is more comparable with the ESOP-company data). This 2007 survey data also suggests that ESOP companies are more likely to have a second DC plan than companies in general are to have one DC plan, although the pattern does not hold for companies with over 100 employees.⁷

Table 4: Prevalence of DC Plans

	Percent of ESOP Companies with Second DC Plans	Percent of U.S. Companies with DC Plans
All companies (base data set for ESOPs)	56%	44%
Companies with Under 100 Employees	48%	42%
Companies with 100 Employees or More	57%	82%

The percentage of ESOP companies with a second DC plan (56%) is strikingly higher than the percentage (3%) of non-ESOP companies with a second DC plan as shown in the linked comparison data (see table 5, parts A). This disparity may result from the fact that the vast majority of defined contribution plans are 401(k) plans and relatively few companies offer more than one 401(k) plan.

6. Contributions

As noted in the executive summary, ESOP companies contribute more per active participant to their ESOPs than other companies contribute to their primary DC plans. Part A of Table 5 shows the overall averages for all ESOP and non-ESOP companies in the sample regarding company contributions to the first DC plan, the second DC plan (when such a plan exists), and an estimate of the company contribution to both plans combined. Part B shows employee contributions and part C shows the combined employer and employee contributions.

Table 5: Contributions Per Active Participant
Part A: Company Contributions

	ESOP / First DC Plan			Second DC Plan			Combined Plans	
	N	Average	% Non-Zero	Per-cent	Average	% Non-Zero	Average	% Non-Zero
ESOP Companies								
Most recent year	3,976	\$4,443	83%	56%	\$1,103	67%	\$4,667	85%
Prior year	3,530	\$4,390	84%	59%	\$1,052	67%	\$4,618	86%
Twice-prior year	3,201	\$4,233	85%	58%	\$964	65%	\$4,466	87%

(continued)

⁷ The report, *National Compensation Survey: Employee Benefits in Private Industry in the United States, March 2007*, is available here: <http://www.bls.gov/ncs/ebs/sp/ebsm0006.pdf>.

Non-ESOP Companies								
Most recent year	64,165	\$2,533	84%	3%	\$2,826	73%	\$2,553	84%
Prior year	60,478	\$2,580	85%	3%	\$2,588	73%	\$2,598	85%
Twice-prior year	57,235	\$2,539	84%	3%	\$2,724	72%	\$2,557	84%

Part B: Employee Contributions

	ESOP / First DC Plan			Second DC Plan			Combined Plans	
	N	Average	% Non-Zero	Per-cent	Average	% Non-Zero	Average	% Non-Zero
ESOP Companies								
Most recent year	3,976	\$384	13%	56%	\$3,118	95%	\$943	29%
Prior year	3,530	\$361	13%	59%	\$2,941	94%	\$888	29%
Twice-prior year	3,201	\$356	13%	58%	\$2,708	93%	\$893	31%
Non-ESOP Companies								
Most recent year	64,165	\$2,848	85%	3%	\$2,506	66%	\$2,862	86%
Prior year	60,478	\$2,733	84%	3%	\$2,431	66%	\$2,745	84%
Twice-prior year	57,235	\$2,563	83%	3%	\$2,268	65%	\$2,576	83%

Part C: Combined Employee and Company Contributions

	ESOP / First DC Plan			Second DC Plan			Combined Plans	
	N	Average	% Non-Zero	Per-cent	Average	% Non-Zero	Average	% Non-Zero
ESOP Companies								
Most recent year	3,976	\$4,828	83%	56%	\$4,221	98%	\$5,611	86%
Prior year	3,530	\$4,751	85%	59%	\$3,993	98%	\$5,505	88%
Twice-prior year	3,201	\$4,589	85%	58%	\$3,672	97%	\$5,359	88%
Non-ESOP Companies								
Most recent year	64,165	\$5,381	97%	3%	\$5,332	92%	\$5,415	97%
Prior year	60,478	\$5,313	97%	3%	\$5,019	93%	\$5,343	97%
Twice-prior year	57,235	\$5,103	97%	3%	\$4,992	93%	\$5,133	97%

Part D: Company Contributions: Controlled by Company Characteristics

	Contributions to First Plan: ESOPs versus Non-ESOPs (weighted average, most recent year)
Controlling for Number of Employees	194%
Controlling for NAICS Code	211%
Controlling for Plan Age	197%

Part D of table 5 looks at company contributions to companies' primary DC plans in the most recent plan year, controlling for major factors that affect the size of company contributions, such as the number of employees, the age of the plan, and the type of business. It compares ESOP and non-ESOP companies within each category (for example, the difference between ESOPs with 20 to 40 employees and non-ESOP companies that are the same size). The numbers in part D are the weighted averages of those within-category differences. Full details on this method are described in the discussion of Methodology and the detailed tables summarized in part D are in the separate *Supplemental Tables*.

Overall, it seems safe to say that in the most recent plan year, ESOP companies contributed an amount equal to 194% to 211% relative to their ESOPs than comparable non-ESOP companies contributed to their primary DC plans (see table 5, part D). This does not count contributions any of these companies made to second DC plans.

The nature of ESOP contributions is different from the majority of non-ESOP DC plans, which in most cases are 401(k) plans. Whereas the majority of contributions to ESOPs are made by the employer and allocated based on the relative pay of participating employees, employer contributions to a 401(k) plan often depend on whether the employee has elected to have a portion of his or her compensation paid into the 401(k) plan, with the employer contribution applied to match all or a designated portion of the employee's deferral.

7. Assets Per Participant

Raw accumulated net assets per plan participant is lower in ESOP companies than in non-ESOP companies with DC plans, as table 6 indicates. Part of what at first glance appears to be an ESOP disadvantage is due to the company characteristics of ESOP and non-ESOP companies—part B of this table shows that controlling for size of work force, industry type, and age of plan leaves ESOP companies with slightly more accumulated assets per participant (1% to 9%).

Most importantly, accumulated plan assets per participant for the ESOP companies where the ESOP is still leveraged is not the same as the accumulated assets allocated to the participants. This is the result of the assets in the plan being offset by the outstanding loan balance. The actual asset value allocated per participant is higher and often significantly higher than the accumulated plan assets per participant.

Table 6: Accumulated Plan Assets per Participant
Part A: Full-Sample Averages and Medians

	Assets Per Participant: ESOP / First DC Plan			Assets Per Participant: Second DC Plan		
	N	Average	Median	Percent with Second Plan	Average	Median
ESOP Companies						
Most recent year	3,976	\$47,556	\$29,775	56%	\$45,732	\$23,615
Prior year	3,530	\$45,285	\$28,539	59%	\$46,163	\$22,930
Twice-prior year	3,201	\$43,337	\$27,642	58%	\$54,554	\$22,680
Non-ESOP Companies						
Most recent year	64,163	\$50,149	\$30,414	3%	\$63,403	\$27,201
Prior year	60,478	\$48,726	\$29,194	3%	\$67,894	\$26,957
Twice-prior year	57,235	\$44,766	\$26,674	3%	\$59,004	\$24,387

Part B: First-Plan Assets, Controlled by Company Characteristics

	ESOP Assets versus First-Plan Assets in non-ESOP Companies (weighted average, most recent year)
Controlling for Number of Employees	109%
Controlling for NAICS Code	102%
Controlling for Plan Age	101%

These results indicate that an ESOP, in isolation, provides approximately the same benefit as other DC plans, but table 6 omits three vital aspects of the comparison:

- (1) the increased chance that ESOP companies have a second DC plan,
- (2) the frequency with which non-ESOP companies have no DC plans, and
- (3) the source of the accumulated plan assets, which is far more likely to be the company in the case of ESOPs.

(1) Multiple Plans

Table 6 above shows that the majority of ESOP companies have a second DC plan, while only a handful of non-ESOP companies do (see the three right-hand columns of part A). We approximated the combined value per participant of each company's first DC plan and its second plan, when a second plan exists. For companies with two plans, we added the value of the assets in each plan *only if* the two plans had approximately the same number of active participants. When the number of active participants in the first and second plans differed by more than 5% and when a company has just one plan, we counted the value of the first plan. We used the same process for ESOP and non-ESOP companies, and show the results in table 7.

**Table 7: Estimate of Accumulated Assets Per Participant: All DC Plans
Part A: Full-Sample Averages and Medians**

	N	Average	Median
ESOP Companies			
Most recent year	3,976	\$55,836	\$33,213
Prior year	3,530	\$53,859	\$32,335
Twice-prior year	3,201	\$51,923	\$30,944
Non-ESOP Companies			
Most recent year	64,165	\$50,525	\$30,498
Prior year	60,478	\$49,064	\$29,250
Twice-prior year	57,235	\$45,095	\$26,720

Part B: Accumulated Assets Per Participant in All DC Plans, Controlled by Company Characteristics

	Accumulated Assets: ESOP Companies versus Non-ESOP Companies (weighted average, most recent year)
Controlling for Number of Employees	123%
Controlling for NAICS Code	119%
Controlling for Plan Age	120%

This is an approximation. While we believe that we screened out most companies where different populations are covered by each plan, it is impossible to be sure. From part B, it appears that the total DC assets for ESOP participants is 19% to 23% higher than the total DC assets for a participants in DC plans at comparable non-ESOP companies.

(2) Companies With No Plans

The ESOP advantage appears at first glance to be substantially lower than prior estimates of the wealth-building impact of ESOPs. The study by Kardas, Keough and Scharf, cited above, found that ESOP participants had approximately 2.5 times the assets of employees in non-ESOP companies (excluding personal assets such as houses, cars, and IRAs). However, Kardas et al had access to information from companies without qualified plans, which are not available in the DOL data used in this study. Given the estimate from the Bureau of Labor Statistics that only 47% of companies offer any DC plans, the numbers above are consistent with the ESOP wealth effect found by Kardas et al.

(3) Source of Plan Assets

The third important distinction lost in table 6 is between assets contributed by the company and assets contributed by employees. While DOL data do not allow us to

track the original source of accumulated assets, we can calculate the percentage of contributions to both plans made by the company and by employees in each plan year. We used the same method for combining contributions as we used to estimate combined plan assets.

For ESOP companies, the contributions to the ESOP and to the second DC plan were mostly from the sponsoring company. We calculate that 83% of the contribution in the most recent years in ESOP companies came from the company, and this percent was similar in the two prior years. For non-ESOP companies, the percent of the company contributions to both plans was much lower: between 40% and 42% of contributions (depending on the year) were from the company.

We made a rough estimate of the accumulated assets that are company-sourced. To make these estimates, we made two key assumptions: first, that the ratio between company and employee contributions remains steady over the years; second, that assets acquired via company contributions have growth rates similar to assets acquired via employee contributions. While these assumptions are unlikely to be exact, the broad outlines of table 8 should be reasonably accurate.

Table 8: Company-Sourced Assets per Participant: All DC Plans Combined
Part A: Full- Averages and Medians

	ESOP Companies			Non-ESOP Companies		
	N	Average	Median	N	Average	Median
Most recent year	3,976	\$46,344	\$27,567	64,165	\$20,210	\$12,199
Prior year	3,530	\$44,703	\$26,838	60,478	\$20,116	\$11,992
Twice-prior year	3,201	\$43,096	\$25,683	57,235	\$18,940	\$11,222

Part B: Company-Sourced Assets: ESOP Companies as a Percent of Non-ESOP Companies

	Company-Sourced Assets Per Participant: ESOP Companies versus Non-ESOP Companies (most recent year)	
	Weighted Average	Median
Most Recent Year	229%	226%
Prior Year	222%	224%
Twice-Prior Year	228%	229%

In other words, table 8 shows that the average ESOP participant in the average ESOP company has between 2.22 and 2.29 times as much value in assets contributed by the company when compared with the average employee in a comparable non-ESOP company with a DC plan.

8. Year-to-Year Change in Assets

All DC plans change in value from one year to the next based on the increase in the value of the assets in the plans, contributions by the company (if any), contributions by participants (if any), the outflow for distributions to former participants, and other factors.

In table 9, we estimate the change in net asset value per active participant over the course of a year. We started with the year-end net asset value for the entire plan, subtracted the year-end balance from the prior year, added distributions, then divided the total by the number of active participants. Note that total plan assets and net plan assets are approximately the same in 401(k) plans, but ESOPs often have debt, making their net plan assets potentially much lower than their total plan assets.

Table 9: Change in Net Assets per Active Participant
Part A: Full-Sample Averages and Medians

	Change in Assets Per Active Participant: ESOP / First DC Plan			Change in Assets Per Active Participant: Second DC Plan		
	N	Average	Median	Percent with Second Plan	Average	Median
ESOP Companies						
Most recent year	3,530	+\$13,707	+\$7,050	54%	+\$14,376	+\$6,836
Prior year	3,111	+\$11,911	+\$6,368	56%	+\$12,272	+\$6,208
Non-ESOP Companies						
Most recent year	60,478	+\$10,496	+\$6,912	3%	+\$9,689	+\$6,125
Prior year	55,945	+\$12,852	+\$8,517	3%	+\$15,997	+\$7,148

Part B: Change in First-Plan Net Assets, Controlled by Company Characteristics

	Change in First-Plan Assets: ESOP Companies versus Non-ESOP Companies (weighted average, most recent year)
Controlling for Number of Employees	136%
Controlling for NAICS Code	144%
Controlling for Plan Age	135%

Here, looking at the change in assets in the primary plans only, ESOP companies have a larger increase in assets per participant in the most recent year. In the prior year, however, ESOP companies had a smaller increase than non-ESOP companies. (We cannot calculate the twice-prior year because the calculation uses the year-end value of the prior year.)

9. Company Stock

ESOPs hold assets other than company stock. They often hold cash for various purposes, and federal law requires that participants meeting certain eligibility requirements be allowed to diversify a portion of their accounts into other assets. Table 10 indicates that the percentage of total ESOP assets is stable at 84%. Not surprisingly, very little of the assets in the first DC plan in the non-ESOP companies is in the form of company stock. Typically the only non-ESOP DC plan that hold company stock is a publicly traded company, and few of them are included in this sample.

Table 10: Company Stock as a Percent of Total First-Plan Assets

	ESOP Companies		Non-ESOP Companies	
	N	% of ESOP in Company Stock	N	% of Plan in Company Stock
Most recent year	3,976	84%	63,786	0.2%
Prior year	3,530	84%	60,153	0.2%
Twice-prior year	3,201	84%	56,925	0.3%

II. Methodology

The NCEO purchased access to the Judy Diamond King of Pension Funds data, which is an electronically accessible version of the data collected on form 5500 for the Department of Labor. On lines 8a and 8b of form 5500 companies indicate which of several codes from a list applies to them. We included companies that use at least one of the following codes:

2O (ESOP other than a leveraged ESOP)

2P (Leveraged ESOP – An ESOP that acquires employer securities with borrowed money or other debt-financing techniques)

2Q (The employer maintaining this ESOP is an S corporation)

We excluded companies with zero active participants and companies with zero employer securities in their plans. The NCEO reviewed the data exhaustively, both by summary statistics and on a record-by-record basis. We combined multiple years for the same plan at the same company into a single record.

We queried the Judy Diamond data to find additional non-ESOP DC plans at the companies in the ESOP database. We quality-tested those records and corrected obvious mistakes (when possible) or eliminated records with obviously flawed data that we could not correct. We eliminated multiple DC plans and matched the non-ESOP DC plans with the ESOP companies in the database.

We again queried the Judy Diamond data to find the comparison companies that have non-ESOP DC plans. The query used the following criteria:

- Not a company with an EIN (employer identification number) matching one of the EINs in the ESOP database
- Plans with at least one active participant
- A plan-type code that matches a non-ESOP DC plan
- No plan-type codes that match DB plans
- Only companies that have NAICS codes that are on the list of ESOP company NAICS codes.

We quality-checked the data and repaired as needed, ending up with 659,000 records. We re-arranged the data to put multiple years for a single plan into a single record, and then re-arranged to put a second plan for a single company into the company's main record.

We used the existing data to generate new variables:

“Distribution” is either “plan expense : payment to participants” or “plan expense: total” depending on whether the company filled out schedule H or form 5500

“Change in assets” is year 0 total plan assets *minus* year 1 total plan assets *plus* year 0 distributions. (“Year 0” means the most recently available plan year; “year 1” is the prior year; “year 2” is the twice-prior year.)

Other variables are straightforward.

We used the two-digit NAICS code and company size to match comparison companies with ESOP companies. Each ESOP company was paired with the average of all companies with other DC plans in its category for work force size and NAICS code. In other words, an ESOP company with 100 employees and in NAICS code 52 (Finance and Insurance) would have the average of all companies with non-ESOP DC plans as its benchmark.

Based on numbers of companies and irregularities in the data, we screened out companies with 20 or fewer employees and companies with over 1000 employees. In the end, we had 3,976 ESOP companies and 64,165 companies with other DC plans.