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401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2001

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OVERVIEW AND SUMMARY

The economic and financial environment continued to be challenging in 2001, as the bear market dragged on and deepened after the terrorist attacks on September 11.² The end of the year witnessed the beginning revelations of corporate fraud and a series of bankruptcies,³ leading to concern about the use of company stock in 401(k)

plans.^{4,5} Nevertheless, in aggregate, 401(k) plan participants continued to display a long-term investment strategy. At year-end 2001, about 45 million American workers held 401(k) plan accounts with a total of \$1.75 trillion in assets.

This issue of *Perspective* examines asset allocation, account balance, and loan activity of a large and representative group of 401(k) plan participants as of year-end 2001.⁶ On average, asset allocation was little changed over previous years. While broad equity market indexes fell 12 percent in 2001, continuing contributions into 401(k) plans as well as diversified asset allocation generally muted the impact of the poor market performance on participants' account balances. The average account balance fell 4 percent in 2001 among participants with accounts at year-end

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² For example, the S&P 500 was down 11.9 percent in 2001, after falling 9.1 percent in 2000 (see Ibbotson Associates (2002)). The Russell 3000 fell about 11.5 percent in 2001, after falling 7.5 percent in 2000.

³ For example, the Enron Corporation declared bankruptcy on December 2, 2001.

⁴ As a result, many research papers this past year explored the effects of company stock in 401(k) plans. For example, Liang and Weisbenner (September 2002) analyze Securities and Exchange Commission (SEC) Form 11-K data filed by 997 different publicly traded firms between 1991 and 2000. They find that plan design with respect to investment options offered and direction of the employer contribution are important indicators of how employees direct their own contributions. Sengmüller (February 2002), also using 11-K filings, finds that past performance predicts allocations to company stock (and volatility and business performance have a weak effect). (For earlier work using 11-K data, see Benartzi (October 2001).) Other recent research discussing company stock in 401(k) plans includes: Gravelle (September 2002); The Vanguard Group (2002); Purcell (July 2002; March 2002); U.S. Department of the Treasury (February 2002); VanDerhei (February 27, 2002; February 26, 2002; February 13, 2002; January 31, 2002); Fidelity Investments (2002b); and Profit Sharing/401(k) Council of America (2002).

⁵ Much of the research drew attention to the need for further financial education of 401(k) participants and the benefits of diversification. For example, see Mitchell and Utkus (October 2002); Eschtruth and Gemus (September 2002); U.S. General Accounting Office (September 2002; February 2002); Munnell and Sundén (July 2002); and Meulbroek (2002).

⁶ This update extends previous findings from the project for 1996 through 2000. For year-end 2000 results, see Holden and VanDerhei (November 2001). Results for earlier years are available in earlier issues of *Perspective*. All issues of *Perspective* are available through ICI's public policy website at www.ici.org.

1999, year-end 2000, and year-end 2001. In addition, loan activity in 2001 continued as observed since 1996: many participants are in plans offering loans, but few participants have a loan outstanding (16 percent among those with a loan option).

This research uses data gathered by the Employee Benefit Research Institute (EBRI)⁷ and the Investment Company Institute (ICI)⁸ in their collaborative effort—the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.⁹ The EBRI/ICI data collection project is the most comprehensive source of 401(k) plan participant-level data available to date. The EBRI/ICI data are unique because they cover a wide variety of plan administrators and recordkeepers and, therefore, a wide range of plan sizes offering a variety of investment alternatives.¹⁰

The 2001 EBRI/ICI database contains 14.6 million active 401(k) plan participants in 48,786 plans with \$632.7 billion in assets. The 2001 database accounts for 12 percent of the number of all 401(k) plans, 33 percent of all 401(k) participants, and about 36 percent of the assets held in 401(k) plans.¹¹

The principal findings of the year-end 2001 analysis are as follows.

Asset Allocation

▶ The average asset allocation of 401(k) participants in the 2001 EBRI/ICI database was essentially unchanged from year-end 2000, despite the continued volatility in equity markets in 2001. Among 401(k) participants in the 2001 EBRI/ICI database, almost 70 percent of plan balances are invested directly or indirectly in equity securities. Forty-eight percent of plan balances are invested in equity funds, 17 percent in company stock, and 8 percent in balanced funds.¹²

- ▶ Participants' asset allocations vary with age. As also shown in previous years, younger participants tend to concentrate in equity assets, while older participants invest more in fixed-income assets. Plan design also influences participants' asset allocations.
- ▶ The portion of a participant's account allocated to each of the main investment categories analyzed in this study varies across participants. For example, about 28 percent of all participants in the year-end 2001 database have more than 80 percent of their account balances invested in equity funds, while about 28 percent hold no equity funds. However, about half of participants with no equity funds hold equity securities through balanced funds and/or company stock.
- ▶ About 45 percent of the participants in the EBRI/ICI year-end 2001 database are in plans offering company stock as an investment option. More than half of these participants hold 20 percent or less of their account balances in company stock, including 35 percent who hold none. On the other hand, 16 percent of these participants hold more than 80 percent of their account balances in company stock.

⁷ The Employee Benefit Research Institute is a nonprofit, nonpartisan, public policy research organization, which does not lobby or take positions on legislative proposals.

⁸ The Investment Company Institute is the national association of the American investment company industry. Its membership includes 8,935 open-end investment companies ("mutual funds"), 559 closed-end investment companies, and six sponsors of unit investment trusts. Its mutual fund members manage assets of approximately \$6.4 trillion, accounting for approximately 95 percent of total industry assets, and represent more than 90 million individual shareholders.

⁹ In this effort, EBRI and ICI have collected data from some of their members that serve as plan recordkeepers and administrators. The data include demographic information, annual contributions, plan balances, asset allocation, and loan balances.

¹⁰ Other recent studies of 401(k) plan participants have focused on one or a few large plans, the plans of a particular recordkeeper, or household survey data. For a more complete discussion of recent research, see Holden and VanDerhei (November 2001; January/February 2001). Participant-level research using administrative data published most recently includes Agnew and Balduzzi (December 2002); Mitchell and Utkus (October 2002); The Vanguard Group (2002); and Fidelity Investments (2002a; 2002b).

¹¹ For a comparison of the distribution of plans, participants, and assets in the EBRI/ICI database compared to the universe of 401(k) plans, see the Appendix (Figure A1). The Appendix is available through ICI's public policy website at www.ici.org. Hard copies may be obtained from ICI's Research Department.

¹² "Funds" include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated (see pages 3–4 for definitions of the investment categories used in this paper). At the end of 2001, approximately 61 percent of balanced mutual fund assets are invested in equities (see Investment Company Institute, *Quarterly Supplemental Data*).

Account Balances

- ▶ The average account balance of participants who consistently held accounts at year-end 1999, year-end 2000, and year-end 2001 declined about 4 percent in 2001. The change in a participant's account balance consists of contributions, investment returns, withdrawals, borrowing, and loan repayments.
- ▶ The change in account balance in 2001 again varies with participant age. For example, the average account balance of participants in their twenties consistently holding accounts increased about 16 percent in 2001 because contributions typically are large relative to existing account balances and more than offset investment returns. Relative to contributions, investment returns are more significant for older participants and the average account balance among participants in their sixties fell about 9 percent in 2001. However, some participants in their sixties may be making withdrawals as well.
- ▶ At year-end 2001, the average account balance (net of plan loans) for all participants was \$43,215 and there is a wide distribution of account balances around that average.¹³
- ▶ Individuals with account balances of less than \$10,000 are primarily young workers or workers with short tenures. In contrast, those with account balances in excess of \$100,000 are primarily older workers or workers with long tenures. Forty-five percent of participants have account balances of less than \$10,000 in the 401(k) plan at the participant's current employer, while 11 percent have balances greater than \$100,000.

Plan Loans

- ▶ Despite the continuing volatility in financial markets, there was virtually no change in loan behavior of 401(k) plan participants in 2001. Only 16 percent of eligible participants had outstanding loans at the end of 2001. In addition, for those with outstanding loans at the end of 2001, the level of the unpaid balance represented 14 percent of the account balance, net of the unpaid loan balance.
- ▶ Loan activity varies with age, tenure, salary, and account balance.

THE EBRI/ICI DATABASE

Source and Type of Data

Several EBRI and ICI members provided records on active participants in 401(k) plans they administered for year-end 2001. These plan administrators include mutual fund companies, insurance companies, and consulting firms. Although the EBRI/ICI project has collected data from 1996 through 2001, the universe of plan administrators varies from year to year. Thus, aggregate figures in this report generally should not be used to estimate time trends, unless this report indicates otherwise. Records were encrypted to conceal the identity of employers and employees but were coded so that both could be tracked over multiple years.

Data provided for each participant include participant date of birth, from which an age cohort is assigned; participant date of hire, from which a tenure range is assigned; outstanding loan balance; funds in the participant's investment portfolios; and asset values attributed to those funds. An account balance for each participant is the sum of the participant's assets in all funds.¹⁴ Plan balances are constructed as the sum of all participant balances in the plan. Plan size is estimated as the sum of active participants in the plan and, as such, does not necessarily represent the total number of employees at the sponsoring firm.

Investment options are grouped into eight categories.¹⁵ Equity funds consist of pooled investments primarily investing in stocks. These funds include equity mutual funds, bank collective trusts, life insurance separate accounts, and other pooled investments. Similarly, bond funds

¹³ The reported account balance represents retirement assets in the 401(k) plan at the participant's current employer. Retirement savings held in plans at previous employers or rolled over into individual retirement accounts (IRAs) are not included in this analysis.

¹⁴ Account balances are net of unpaid loan balances. Thus, unpaid loan balances are not included in any of the eight asset categories described.

¹⁵ This system of classification does not consider the number of distinct investment options presented to a given participant, but rather the types of options presented. Preliminary research analyzing 1.4 million participants drawn from the 2000 EBRI/ICI database suggests that participants are not influenced by the sheer number of investment options presented. On average, participants face 10.4 distinct options but, on average, choose only 2.5 (Holden and VanDerhei (May 2001)). In addition, the preliminary analysis found that 401(k) participants are not naïve—that is, when faced with “n” options they do not divide their assets among all “n.” Indeed, less than 1 percent of participants followed a “1/n” asset allocation strategy.

FIGURE 1

EBRI/ICI Database: 401(k) Plan Characteristics by Number of Plan Participants, 2001

| Number of Plan Participants | Total Plans | Total Participants | Total Assets | Average Account Balance |
|-----------------------------|-------------|--------------------|-------------------|-------------------------|
| 1 to 10 | 7,960 | 51,388 | \$1,474,356,348 | \$28,691 |
| 11 to 25 | 12,829 | 220,658 | \$5,123,937,641 | \$23,221 |
| 26 to 50 | 9,437 | 340,069 | \$8,213,509,192 | \$24,152 |
| 51 to 100 | 6,805 | 484,397 | \$12,426,478,362 | \$25,654 |
| 101 to 250 | 5,678 | 895,504 | \$24,881,790,667 | \$27,785 |
| 251 to 500 | 2,536 | 892,421 | \$26,311,024,797 | \$29,483 |
| 501 to 1,000 | 1,470 | 1,034,736 | \$34,006,495,414 | \$32,865 |
| 1,001 to 2,500 | 1,133 | 1,760,070 | \$63,833,734,756 | \$36,268 |
| 2,501 to 5,000 | 459 | 1,613,037 | \$62,570,598,210 | \$38,791 |
| 5,001 to 10,000 | 248 | 1,733,318 | \$78,068,793,503 | \$45,040 |
| >10,000 | 231 | 5,615,581 | \$315,809,566,386 | \$56,238 |
| All | 48,786 | 14,641,179 | \$632,720,285,276 | \$43,215 |

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

are any pooled account primarily invested in bonds, and balanced funds are pooled accounts invested in both stocks and bonds. Company stock is equity in the plan's sponsor (the employer). Money funds consist of those funds designed to maintain a stable share price. Stable value products such as guaranteed investment contracts (GICs)—insurance company products that guarantee a specific rate of return on the invested capital over the life of the contract—and other stable value funds—synthetic GICs¹⁶ or similar instruments—are reported as one category, “GICs and other stable value funds.”¹⁷ The “other” category is the residual for other investments such as real estate funds. The final category, “unknown,” consists of funds that could not be identified.¹⁸

Distribution of Plans, Participants, and Assets by Plan Size

The 2001 EBRI/ICI database contains 48,786 401(k) plans with \$632.7 billion of assets and 14,641,179 participants (Figure 1). Most of the plans in the database are small, whether measured by the number of plan participants or by total plan assets.¹⁹ Indeed, 43 percent of the plans in the database have 25 or fewer participants, and 33 percent have 26 to 100 participants. In contrast, only 4 percent of the plans have more than 1,000 participants. However, participants and assets are concentrated in large plans. For example, 73 percent of participants are in plans with more than 1,000 participants, and these same plans account for 82 percent of all plan assets.

ASSET ALLOCATION

On average, participants in the 2001 EBRI/ICI database have 70 percent of plan balances invested directly or indirectly in equity securities—the sum of equity funds, company stock, and the equity portion of balanced funds.²⁰ Almost half of their account balances are invested in equity funds, 17 percent in company stock, and 8 percent in balanced funds (Figure 2).²¹

Although the percentage of participants' account balances invested in equity funds has declined during 2000 and 2001, it has still moved up compared with 1996 (Figure 2). At year-end 2001, equity funds represent 48 percent of participants' assets, compared with 44 percent of total balances in 1996. Much of the movement in

¹⁶ A synthetic GIC consists of a portfolio of fixed-income securities “wrapped” with a guarantee (typically by an insurance company or a bank) to provide benefit payments according to the plan at book value.

¹⁷ In previous EBRI/ICI updates, GICs and other stable value funds were reported separately.

¹⁸ Some administrators supplying data were unable to provide complete asset allocation detail on certain pooled asset classes for one or more of their clients. Only plans in which at least 90 percent of all plan assets could be identified were included in the final EBRI/ICI database.

¹⁹ For the distribution of plans, participants, and assets by plan assets see the Appendix (Figure A2).

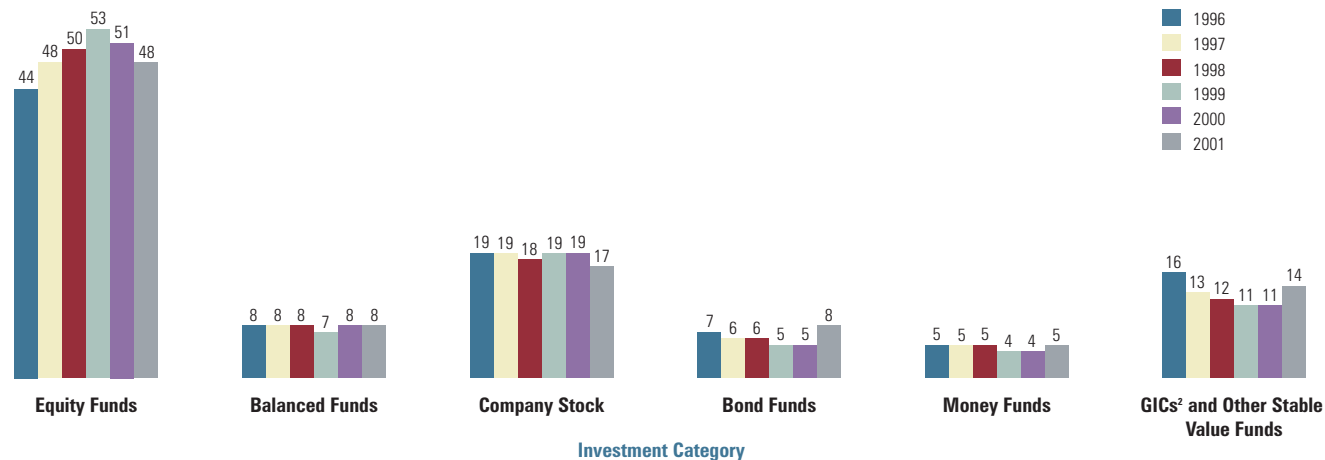
²⁰ At the end of 2001, approximately 61 percent of balanced mutual fund assets are invested in equities (see Investment Company Institute, *Quarterly Supplemental Data*).

²¹ Unless otherwise indicated, all asset allocation averages are expressed as a dollar-weighted average.

FIGURE 2

401(k) Plan Average Asset Allocation, 1996 – 2001

(percent of total assets)¹



¹ Minor investment options are not shown.

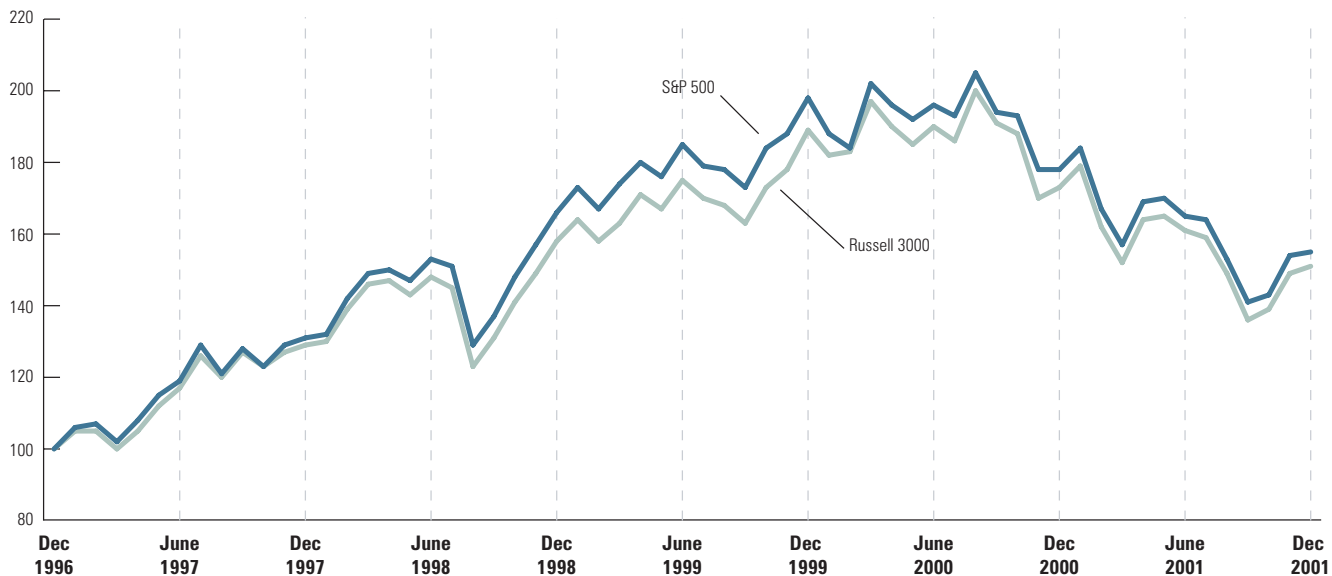
² Guaranteed investment contracts.

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

FIGURE 3

Domestic Stock Market Indexes, December 1996 to December 2001¹

(month-end level)²



¹ The S&P 500 Index consists of 500 stocks chosen for market size, liquidity, and industry group representation. The Russell 3000 measures the performance of the 3,000 largest U.S. companies based on total market capitalization.

² All indexes are set to 100 in December 1996.

Sources: Bloomberg, Frank Russell Company, and Standard & Poor's

FIGURE 4

Average Asset Allocation of 401(k) Accounts by Participant Age, 2001

(percent of account balances)

| Age Cohort | Equity Funds | Balanced Funds | Bond Funds | Money Funds | GICs ¹ and Other Stable Value Funds | Company Stock | Other | Unknown | Total ² |
|------------|--------------|----------------|------------|-------------|--|---------------|-------|---------|--------------------|
| 20s | 58.6 | 8.7 | 6.1 | 5.6 | 6.1 | 13.8 | 0.6 | 0.4 | 100 |
| 30s | 58.0 | 8.0 | 5.7 | 4.2 | 6.5 | 16.5 | 0.8 | 0.3 | 100 |
| 40s | 51.6 | 8.1 | 6.5 | 4.7 | 9.8 | 18.1 | 0.9 | 0.3 | 100 |
| 50s | 45.1 | 8.0 | 7.9 | 5.5 | 14.8 | 17.3 | 0.9 | 0.3 | 100 |
| 60s | 36.2 | 7.8 | 10.7 | 6.3 | 24.0 | 14.0 | 0.8 | 0.2 | 100 |
| All | 47.7 | 8.0 | 7.6 | 5.2 | 13.6 | 16.8 | 0.8 | 0.3 | 100 |

¹ Guaranteed investment contracts.

² Row percentages may not add to 100 percent because of rounding.

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

equity funds likely reflects overall equity market prices, which generally rose from 1996 through 1999 before moving down during 2000 and 2001 (Figure 3).

Asset Allocation by Age

Participant asset allocation varies considerably with age (Figure 4).²² Younger participants tend to favor equity funds, while older participants are more likely to invest in fixed-income securities such as bond funds, GICs, or other stable value funds. On average, participants in their twenties have 59 percent of their account balances invested in equity funds, compared with about 36 percent of account balances for participants in their sixties. Participants in their twenties invest only about 12 percent of their assets in bond funds and GICs and other stable value funds combined, while those in their sixties invest 35 percent of their accounts in these assets. Allocations to company stock show a more mixed pattern by age. Participants in their twenties have about 14 percent of their plan balances in company stock, while participants in their forties have 18 percent, and participants in their sixties have 14 percent. The tendency of younger participants to favor equity funds and older participants to favor fixed-income securities holds up even when accounting for investment options offered by the 401(k) plan sponsor.

Asset Allocation by Investment Options

The mix of investment options offered by a plan sponsor significantly affects the asset allocation of the participants in a plan. Figure 5 presents four combinations of investment offerings,²³ starting with a base group consisting of plans that do not offer company stock, GICs, or other stable value funds.²⁴ Participants in these plans—which generally offer equity funds, bond funds, balanced funds, and money funds as investment options—have the highest allocation to equity funds. Participants in plans that offer GICs and/or other stable value funds as an investment option allocate a smaller share of their assets to bond and money market funds than the base group, and lower their allocation to equity funds, as well. Alternatively, participants in plans that offer company stock, but no stable value products, as an investment option have dramatically lower allocations to equity funds and balanced funds than the base group. Finally, in those plans that offer both company stock and stable value products, company stock appears to displace

²² Participants in their twenties hold approximately 2 percent of the total assets in the 2001 EBRI/ICI database; participants in their thirties hold 14 percent; participants in their forties hold 34 percent; participants in their fifties hold 36 percent; and participants in their sixties hold the remaining 14 percent of the total assets. For the distribution of participants by age or tenure see the Appendix (Figure A3).

²³ For convenience, minor investment options are not shown.

²⁴ See the Appendix (Figure A4) for the distribution of plans, participants, and assets by investment options.

FIGURE 5

Average Asset Allocation of 401(k) Accounts by Investment Options, 2001

(percent of account balances)¹

| Investment Options Offered by Plan | Equity Funds | Balanced Funds | Bond Funds | Money Funds | GICs ² and Other Stable Value Funds | Company Stock |
|--|--------------|----------------|------------|-------------|--|---------------|
| Equity, Bond, Money, and/or Balanced Funds | 64.8 | 9.5 | 14.3 | 9.7 | | |
| Equity, Bond, Money, and/or Balanced Funds, and GICs ² and/or Other Stable Value Funds | 52.0 | 12.9 | 5.1 | 3.4 | 25.2 | |
| Equity, Bond, Money, and/or Balanced Funds, and Company Stock | 43.1 | 4.8 | 10.9 | 7.4 | | 33.0 |
| Equity, Bond, Money, and/or Balanced Funds, and Company Stock, and GICs ² and/or Other Stable Value Funds | 39.0 | 6.4 | 3.4 | 2.5 | 22.6 | 25.3 |

¹ Minor investment options are not shown; therefore, row percentages will not add to 100 percent.

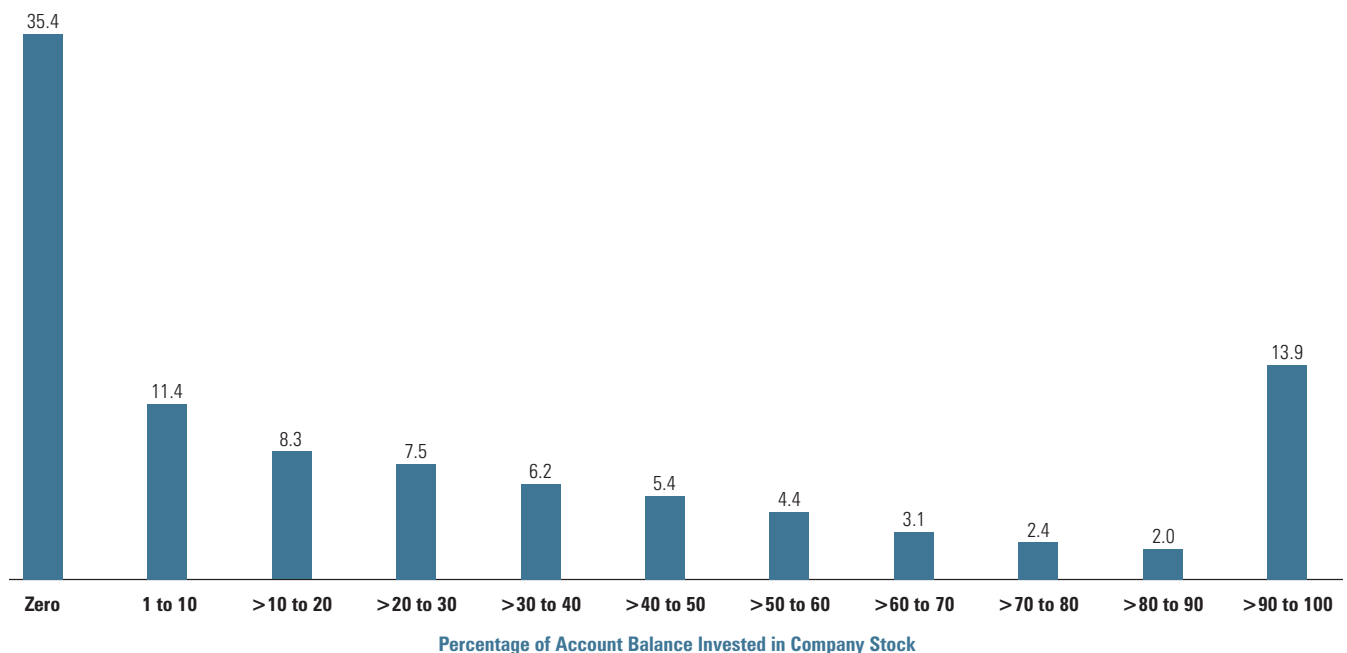
² Guaranteed investment contracts.

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

FIGURE 6

Asset Allocation Distribution of Participant Account Balance to Company Stock in 401(k) Plans with Company Stock, 2001

(percent of participants)



Note: Includes the 6.6 million participants in plans with company stock.

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

FIGURE 7

Asset Allocation Distribution of Participant Account Balance to Company Stock in 401(k) Plans with Company Stock¹ by Age, 2001

(percent of participants)²

| Age Cohort | Percentage of Account Balance Invested in Company Stock | | | | | | | | | | |
|------------|---|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| | Zero | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s | 41.0 | 6.9 | 6.9 | 7.6 | 6.2 | 5.7 | 5.3 | 3.3 | 2.4 | 1.6 | 13.2 |
| 30s | 35.6 | 9.7 | 8.5 | 8.2 | 6.7 | 5.8 | 4.8 | 3.3 | 2.6 | 2.0 | 12.9 |
| 40s | 33.7 | 11.9 | 8.6 | 7.8 | 6.5 | 5.6 | 4.5 | 3.2 | 2.5 | 2.1 | 13.6 |
| 50s | 33.2 | 13.8 | 8.5 | 7.2 | 5.9 | 5.1 | 4.0 | 2.9 | 2.4 | 2.0 | 15.0 |
| 60s | 37.6 | 14.8 | 7.7 | 5.9 | 4.6 | 4.0 | 3.2 | 2.4 | 1.9 | 1.7 | 16.1 |
| All | 35.4 | 11.4 | 8.3 | 7.5 | 6.2 | 5.4 | 4.4 | 3.1 | 2.4 | 2.0 | 13.9 |

¹ Includes the 6.6 million participants in plans with company stock.

² Row percentages may not add to 100 percent because of rounding.

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

equity and balanced fund holdings, and GICs and other stable value funds appear to displace other fixed-income investments. These effects tend to occur across all age groups of participants.²⁵

Distribution of Participants' Company Stock Allocations by Age

Among the 6.6 million participants in plans with company stock as an investment option in the year-end 2001 EBRI/ICI database, there is a wide range in the proportion of participant account balances allocated to company stock. Among these participants, 55 percent hold 20 percent or less of their account balances in company stock, including 35 percent who hold no company stock in their accounts (Figure 6). On the other hand, about 16 percent have more than 80 percent of their account balances invested in company stock. Youngest and oldest participants tend to be less likely to hold company stock compared with other age groups—41 percent of participants in their twenties with company stock as an investment option held no company stock, compared with 33 percent of participants in their fifties, although nearly 38 percent of participants in their sixties held no company stock (Figure 7).

Distribution of Participants' Equity Fund Allocations by Age

Among individual participants, the allocation of account balances to equity funds varies widely around the average of 48 percent for all participants in the 2001 EBRI/ICI database. Indeed, about 28 percent of participants have more than 80 percent of their account balances invested in equity funds, while 28 percent hold no equity funds at all (Figure 8). The percentage of participants holding no equity funds tends to increase with age.²⁶ For example, 29 percent of participants in their twenties have no equity fund investments, compared with 41 percent of participants in their sixties. However, in aggregate, about 50 percent of participants with no equity fund balances have exposure to the stock market through company stock or balanced funds.²⁷

²⁵ See the Appendix (Figure A5). In addition, Figure A6 presents asset allocation by salary and investment options and Figure A7 presents asset allocation by plan size and investment options.

²⁶ The percentage of participants holding no equity funds also tends to increase with tenure (see the Appendix (Figure A8)).

²⁷ See the Appendix (Figures A9 and A10).

FIGURE 8

Asset Allocation Distribution of 401(k) Plan Participant Account Balance to Equity Funds by Age, 2001

(percent of participants)

| Age Cohort | Percentage of Account Balance Invested in Equity Funds | | | | | | | | | | |
|------------|--|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| | Zero | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s | 29.1 | 2.8 | 2.7 | 4.2 | 4.3 | 6.6 | 6.2 | 6.2 | 8.1 | 5.1 | 24.8 |
| 30s | 23.4 | 3.3 | 3.1 | 4.4 | 4.9 | 7.0 | 6.7 | 6.8 | 8.2 | 5.8 | 26.5 |
| 40s | 25.8 | 4.2 | 3.6 | 4.9 | 5.2 | 7.2 | 6.9 | 6.6 | 7.4 | 5.2 | 22.8 |
| 50s | 30.0 | 4.9 | 4.0 | 5.2 | 5.4 | 7.1 | 6.7 | 6.0 | 6.4 | 4.4 | 19.8 |
| 60s | 40.6 | 5.8 | 4.3 | 5.1 | 4.9 | 6.1 | 5.5 | 4.6 | 4.6 | 3.1 | 15.5 |
| All | 27.8 | 4.0 | 3.5 | 4.7 | 5.0 | 7.0 | 6.6 | 6.3 | 7.3 | 5.0 | 22.8 |

Note: Row percentages may not add to 100 percent because of rounding.

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

ACCOUNT BALANCES

Using administrative records, the EBRI/ICI database reports the account balance held in the 401(k) plan at the participant’s current employer.

Retirement savings held in plans at previous employers or rolled over into individual retirement accounts (IRAs) are not included in this analysis.

Furthermore, account balances are net of unpaid loan balances. In addition, the EBRI/ICI database for any given year captures a snapshot of the account balances at year-end and thus reflects the entrance of new plans and new participants and the exit of participants who retire or change jobs. When analyzing account balances, it is important to recognize the combined effects of actions of participants present in consecutive years in the database as compared with the effects of entry and exit of plans and participants from the database.

Changes in Account Balances

This section examines the change in account balances of a group of participants who held accounts at year-end 1999, year-end 2000, and year-end 2001. Analyzing a consistent group of participants removes the effect of participants entering and leaving plans on the overall average. About two-thirds, or 6.9 million, of the participants with accounts at year-end 1999 had accounts at year-end 2000 and year-end 2001. The average 401(k) account balance of this consistent group of participants

was essentially unchanged from 1999 to 2000 and then declined 3.8 percent in 2001 from \$61,125 at year-end 2000 to \$58,785 at year-end 2001 (Figure 9). The change in a participant’s account balance is the sum of three factors: new contributions by the participant and/or the employer; total investment return on account balances, which depends on the performance of financial markets and on the allocation of assets in the individual’s account; and withdrawals, borrowing, and loan repayments.

A sense of the relation of the three components is evident in the change in average account balances by age group. In our consistent group of 6.9 million participants, the average account balance of participants in their twenties rose about 27 percent in 2000 and another 16 percent in 2001, while the average account balance of participants in their sixties fell about 6 percent in 2000 and another 9 percent in 2001 (Figure 9). For younger participants, contributions are of greater importance in percentage terms than other factors

FIGURE 9

Average Account Balances Among 401(k) Participants Present in 1999, 2000, and 2001¹ by Age²

| Age Cohort ² | Average Account Balance | | |
|-------------------------|-------------------------|-----------|-----------|
| | 1999 | 2000 | 2001 |
| 20s | \$8,842 | \$11,235 | \$12,993 |
| 30s | \$33,055 | \$34,757 | \$34,884 |
| 40s | \$64,055 | \$64,849 | \$62,900 |
| 50s | \$100,410 | \$98,099 | \$92,468 |
| 60s | \$127,136 | \$119,743 | \$108,958 |
| All ¹ | \$61,116 | \$61,125 | \$58,785 |

| Age Cohort ² | Change in Average Account Balance (percent) | | |
|-------------------------|---|--------------|--------------|
| | 1999 to 2000 | 2000 to 2001 | 1999 to 2001 |
| 20s | 27.1 | 15.6 | 47.0 |
| 30s | 5.2 | 0.4 | 5.5 |
| 40s | 1.2 | -3.0 | -1.8 |
| 50s | -2.3 | -5.7 | -7.9 |
| 60s | -5.8 | -9.0 | -14.3 |
| All ¹ | 0.01 | -3.8 | -3.8 |

¹ Sample of 6.9 million participants with account balances at year-end 1999, year-end 2000, and year-end 2001.

² Age cohort based on participant's age at year-end 1999.

Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

because these participants' account balances tend to be small compared with typical contributions. In contrast, for older participants, investment return is of greater importance because their account balances tend to be large relative to their annual contributions. In addition, some participants in their sixties may be making withdrawals.²⁸

Account Balances at Year-End 2001

While the previous section examined the changes in average account balances among participants with account balances at year-end 1999, year-end 2000, and year-end 2001, this section analyzes the account balances among all participants with account balances at year-end 2001. Whereas the year-end 2001 database includes many participants who are new to their 401(k) plans and therefore new to the database, the average account balance (net of plan loans) for all participants in the EBRI/ICI database—\$43,215 at year-end 2001²⁹—is lower than the average account balance among the participants with account balances in 1999, 2000, and 2001.³⁰

²⁸ For statistics indicating the higher propensity of withdrawals among participants in their sixties, see Holden and VanDerhei (November 2002—Appendix).

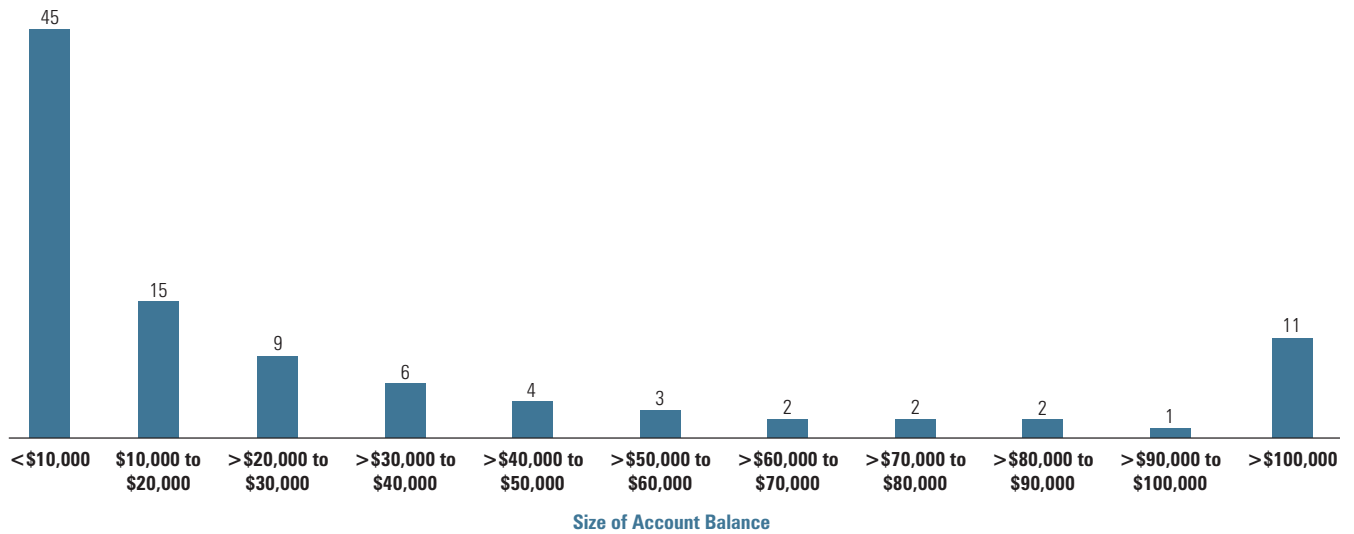
²⁹ A wide range of average account balances is reported for 401(k) type plans. Data for the universe of 401(k) type plans compiled by the Department of Labor from the Form 5500 for 1998 imply an average account balance (including loan balances as a part of account assets) per active participant of \$41,520 (U.S. Department of Labor, Winter 2001–2002), a figure that is within 12 percent of the \$47,004 average balance estimate from the 1998 EBRI/ICI database. Cerulli Associates (2002) estimates an average account balance (including loan balances as part of account assets) of \$36,390 for 2001. Profit Sharing/401(k) Council of America (2002) suggests that the average account balance (also including loans) for plan sponsors participating in their 2001 survey, which includes profit-sharing and combination plans as well as 401(k) plans, is approximately \$70,300. For a comparison of the average account balances in the EBRI/ICI databases from 1996 to 2001, see the Appendix (Figure A11).

³⁰ The difference in average account balance between the consistent subset at year-end 2001 and the entire year-end 2001 EBRI/ICI database is explained, in part, by the different tenure composition of the participants. While 40 percent of the participants in the year-end 2001 EBRI/ICI database have five or fewer years of tenure and 18 percent have more than 20 years of tenure (see the Appendix, Figure A3), at year-end 2001, only 25 percent of the consistent subset of participants have five or fewer years of tenure and 23 percent have more than 20 years of tenure.

FIGURE 10

Distribution of 401(k) Account Balances by Size of Account Balance, 2001

(percent of participants with account balances in specified ranges)



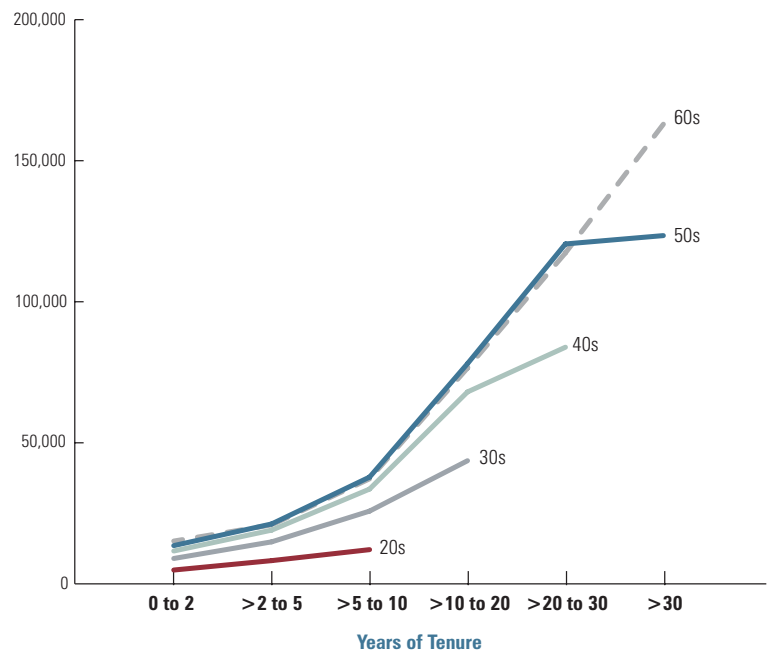
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

There is wide variation in 401(k) participants' account balances around the average of \$43,215 at year-end 2001. Approximately three-quarters of the participants in the 2001 EBRI/ICI database have account balances that are lower than the average. Indeed, 45 percent of participants have account balances of less than \$10,000, while 11 percent of participants have account balances greater than \$100,000 (Figure 10). The median account balance was \$12,810 at year-end 2001.³¹ The variation in account balances partly reflects the effects of participant age, tenure, contribution behavior, rollovers from other plans, asset allocation, withdrawals, loan activity, and employer contribution rates. Information in the EBRI/ICI database can be used to examine the relationship between account balances and age, tenure, and salary of participants.

FIGURE 11

Average 401(k) Account Balance by Age and Tenure, 2001

(dollars)

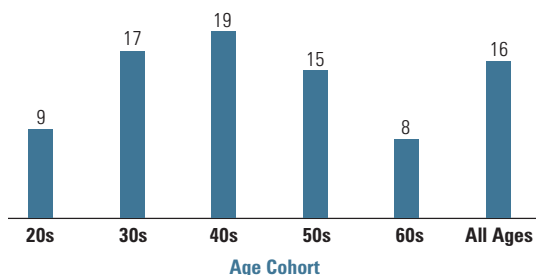


Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

³¹ For a comparison of the median account balances in the EBRI/ICI databases from 1996 to 2001, see the Appendix (Figure A11).

FIGURE 12

Percentage of Eligible 401(k) Participants with Loans by Age, 2001



Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

Relationship of Age and Tenure to Account Balances

In the EBRI/ICI database, there is a positive correlation between age and account balance and likewise there is a positive correlation between tenure and account balance.³² Examining the interaction of both age and tenure with account balances reveals that, for a given age group, average account balances increase with tenure. For example, the average account balance of participants in their sixties with up to two years of tenure is \$14,275, compared with \$162,042 for participants in their sixties with at least 30 years of tenure (Figure 11). Similarly, the average account balance of participants in their forties with up to two years of tenure is \$10,756, compared with \$82,996 for participants in their forties with more than 20 years of tenure. The increase in account balance as tenure increases tends to be largest for participants in their fifties and sixties.³³

FIGURE 13

Percentage of Eligible 401(k) Participants with Loans from the Plan by Age, Tenure, or Account Size, 1996–2001

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|------------------------|------|------|------|------|------|------|
| ALL | 18 | 18 | 16 | 18 | 18 | 16 |
| AGE COHORT | | | | | | |
| 20s | 12 | 11 | 9 | 11 | 11 | 9 |
| 30s | 20 | 20 | 18 | 20 | 19 | 17 |
| 40s | 22 | 22 | 20 | 22 | 21 | 19 |
| 50s | 17 | 18 | 16 | 18 | 17 | 15 |
| 60s | 9 | 9 | 9 | 9 | 9 | 8 |
| TENURE (years) | | | | | | |
| 0 to 2 | 6 | 4 | 3 | 5 | 5 | 3 |
| >2 to 5 | 15 | 13 | 12 | 13 | 14 | 12 |
| >5 to 10 | 24 | 24 | 22 | 23 | 23 | 20 |
| >10 to 20 | 27 | 29 | 27 | 28 | 26 | 25 |
| >20 to 30 | 25 | 28 | 25 | 27 | 26 | 25 |
| >30 | 13 | 16 | 14 | 17 | 16 | 15 |
| ACCOUNT SIZE | | | | | | |
| <\$10,000 | 12 | 11 | 9 | 11 | 11 | 9 |
| \$10,000 to \$20,000 | 26 | 25 | 23 | 24 | 23 | 20 |
| >\$20,000 to \$30,000 | 26 | 27 | 25 | 26 | 25 | 22 |
| >\$30,000 to \$40,000 | 25 | 27 | 25 | 26 | 25 | 23 |
| >\$40,000 to \$50,000 | 24 | 26 | 25 | 26 | 25 | 22 |
| >\$50,000 to \$60,000 | 24 | 26 | 24 | 25 | 24 | 22 |
| >\$60,000 to \$70,000 | 23 | 26 | 24 | 25 | 24 | 21 |
| >\$70,000 to \$80,000 | 26 | 25 | 23 | 24 | 23 | 21 |
| >\$80,000 to \$90,000 | 23 | 25 | 23 | 24 | 23 | 21 |
| >\$90,000 to \$100,000 | 22 | 24 | 22 | 23 | 22 | 20 |
| >\$100,000 | 21 | 21 | 18 | 19 | 18 | 15 |

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

³² See discussion of these observed correlations in the Appendix (Figures A12, A13, A14, and A15).

³³ The analysis of “Relationship Between Account Balances and Salary” that typically appears in the EBRI/ICI year-end updates has been included in the Appendix (Figures A16, A17, and A18). Results for year-end 2001 are essentially similar to the year-end 2000 results.

PLAN LOANS

Characteristics of Participants with Outstanding Loans

Most participants in 401(k) plans have borrowing privileges.³⁴ In the 2001 EBRI/ICI database, 80 percent of participants are in plans offering loans. However, as has been the case for the six years that the EBRI/ICI databases have tracked 401(k) plan participants' loan activity, few participants have loans outstanding. At year-end 2001, only 16 percent of those eligible for loans have loans outstanding (Figure 12).

Loan activity varies with age, tenure, salary, account balance, and plan size. Of those participants in plans offering loans, the highest percentages of participants with outstanding loan balances are among participants in their thirties, forties, or fifties (Figures 12 and 13). In addition, participants with five or fewer years of tenure or with more than 30 years of tenure are less likely to use the loan provision than other participants (Figure 13). Furthermore, only 9 percent of participants with account balances of less than \$10,000 have loans outstanding.³⁵

Average Loan Balances

Among participants with outstanding loans at the end of 2001, the average unpaid balance is \$6,644.³⁶ Again, similarly to all other years of analysis, loan balances as a percentage of account balances (net of the unpaid loan balance) for participants with loans is 14 percent at year-end 2001 (Figure 14). However, there is variation around this average with age (lower the older the participant), tenure (lower the higher the tenure of the participant), and account balance (lower the higher the account balance).

FIGURE 14

Loan Balances as a Percentage of 401(k) Account Balances for Participants with Loans by Age, Tenure, or Account Size, 1996 – 2001

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|------------------------|------|------|------|------|------|------|
| ALL | 16 | 15 | 14 | 14 | 14 | 14 |
| AGE COHORT | | | | | | |
| 20s | 30 | 29 | 28 | 25 | 30 | 27 |
| 30s | 22 | 20 | 20 | 18 | 20 | 20 |
| 40s | 16 | 15 | 14 | 14 | 15 | 15 |
| 50s | 12 | 11 | 11 | 11 | 11 | 11 |
| 60s | 10 | 9 | 9 | 9 | 9 | 9 |
| TENURE (years) | | | | | | |
| 0 to 2 | 27 | 27 | 24 | 24 | 24 | 22 |
| >2 to 5 | 24 | 24 | 22 | 22 | 25 | 22 |
| >5 to 10 | 23 | 21 | 19 | 18 | 21 | 20 |
| >10 to 20 | 15 | 15 | 14 | 13 | 14 | 15 |
| >20 to 30 | 11 | 11 | 11 | 10 | 10 | 11 |
| >30 | 7 | 8 | 8 | 9 | 8 | 9 |
| ACCOUNT SIZE | | | | | | |
| <\$10,000 | 39 | 38 | 36 | 37 | 39 | 34 |
| \$10,000 to \$20,000 | 32 | 32 | 31 | 30 | 32 | 29 |
| >\$20,000 to \$30,000 | 28 | 27 | 26 | 26 | 28 | 26 |
| >\$30,000 to \$40,000 | 23 | 24 | 23 | 23 | 24 | 23 |
| >\$40,000 to \$50,000 | 22 | 21 | 21 | 20 | 21 | 21 |
| >\$50,000 to \$60,000 | 19 | 19 | 19 | 18 | 19 | 18 |
| >\$60,000 to \$70,000 | 16 | 17 | 17 | 16 | 17 | 17 |
| >\$70,000 to \$80,000 | 16 | 15 | 15 | 14 | 15 | 15 |
| >\$80,000 to \$90,000 | 14 | 14 | 14 | 13 | 14 | 14 |
| >\$90,000 to \$100,000 | 13 | 13 | 12 | 12 | 13 | 12 |
| >\$100,000 | 7 | 7 | 7 | 7 | 7 | 7 |

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

³⁴ See "Availability and Use of Plan Loans by Plan Size" in the Appendix for explanation of EBRI/ICI data on plan loans (Figure A19). In addition, for the analysis of loan activity by plan size see the Appendix (Figures A20 and A21).

³⁵ See the Appendix (Figures A22 and A23) for loan activity by salary.

³⁶ The median loan balance outstanding is \$3,659 at year-end 2001.

BIBLIOGRAPHY

- Agnew, Julie, and Pierluigi Balduzzi. "What do we do with our Pension Money? Recent Evidence from 401(k) Plans." *Working Paper*, Williamsburg, VA: The College of William and Mary, and Chestnut Hill, MA: Boston College, December 20, 2002.
- Benartzi, Shlomo. "Excessive Extrapolation and the Allocation of 401(k) Accounts to Company Stock." *The Journal of Finance*, Vol. 56, No. 5, October 2001: pp. 1747–1764.
- Bloomberg Data*. New York, NY: Bloomberg, L.P.
- Cerulli Associates, Inc. "Retirement Industry Update: Trends in 401(k) and IRA Markets." *The Cerulli Report*. Boston, MA: Cerulli Associates, Inc., 2002.
- Enron. "Enron Files Voluntary Petitions for Chapter 11 Reorganization; Sues Dynegy for Breach of Contract, Seeking Damages of at Least \$10 Billion," *News Release*, Houston, TX: Enron Corporation, December 2, 2001.
- Eschtruth, Andrew D., and Jonathan Gemus. "Are Older Workers Responding to the Bear Market?" *Just the Facts On Retirement Issues*, No. 5, Chestnut Hill, MA: Center for Retirement Research at Boston College, September 2002.
- Fidelity Investments. *Building Futures, Volume III: How Workplace Savings Are Shaping the Future of Retirement, A Report on Corporate Defined Contribution Plans*. Boston, MA: Fidelity Investments, 2002a.
- Fidelity Investments. *Building Futures, Volume III: Company Stock and 401(k) Plans, Supplemental Report*. Boston, MA: Fidelity Investments, 2002b.
- Gravelle, Jane G. "Employer Stock in Pension Plans: Economic and Tax Issues," *CRS Report for Congress*, Washington, DC: Congressional Research Service, September 4, 2002.
- Holden, Sarah, and Jack VanDerhei. "Can 401(k) Accumulations Generate Significant Income for Future Retirees?" *ICI Perspective*, Vol. 8, No. 3, and *EBRI Issue Brief*, No. 251. Washington, DC: Investment Company Institute and Employee Benefit Research Institute, November 2002.
- Holden, Sarah, and Jack VanDerhei. "Appendix: EBRI/ICI 401(k) Accumulation Projection Model." *ICI Perspective*, Vol. 8, No. 3A. Washington, DC: Investment Company Institute, November 2002—Appendix.
- Holden, Sarah, and Jack VanDerhei. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2000." *ICI Perspective*, Vol. 7, No. 5, and *EBRI Issue Brief*, No. 239. Washington, DC: Investment Company Institute and Employee Benefit Research Institute, November 2001.
- Holden, Sarah, and Jack VanDerhei. "Contribution Behavior of 401(k) Plan Participants." *ICI Perspective*, Vol. 7, No. 4, and *EBRI Issue Brief*, No. 238. Washington, DC: Investment Company Institute and Employee Benefit Research Institute, October 2001.
- Holden, Sarah, and Jack VanDerhei. "The Impact of Employer-Selected Investment Options on 401(k) Plan Participants' Asset Allocations: Preliminary Findings." *Working Paper prepared for The Center for Pension and Retirement Research (CPRR) Current Pension Policy Issues Conference, at Miami University, Oxford, OH, June 8–9, 2001*: Draft, May 2001.
- Holden, Sarah, and Jack VanDerhei. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 1999." *ICI Perspective*, Vol. 7, No. 1, and *EBRI Issue Brief*, No. 230. Washington, DC: Investment Company Institute, January 2001, and Employee Benefit Research Institute, February 2001.
- Ibbotson Associates. *SBBI (Stocks, Bonds, Bills, and Inflation) 2002 Yearbook: Market Results for 1926–2001*. Chicago, IL: Ibbotson Associates, 2002.
- Investment Company Institute. *Quarterly Supplemental Data*.
- Investment Company Institute. "Mutual Funds and the U.S. Retirement Market in 2001." *ICI Fundamentals*, Vol. 11, No. 2, Washington, DC: Investment Company Institute, June 2002.
- Liang, Nellie, and Scott Weisbenner. "Investor Behavior and the Purchase of Company Stock in 401(k) Plans — The Importance of Plan Design." *NBER Working Paper*, No. 9131, Cambridge, MA: National Bureau of Economic Research, September 2002.
- Meulbroek, Lisa. "Company Stock in Pension Plans: How Costly Is It?" *Working Paper*, No. 02-058, Boston, MA: Harvard Business School, 2002.
- Mitchell, Olivia S., and Stephen P. Utkus. "The Role of Company Stock in Defined Contribution Plans." *NBER Working Paper*, No. 9250, Cambridge, MA: National Bureau of Economic Research, October 2002.

- Munnell, Alicia H., and Annika Sundén. "401(k)s and Company Stock: How Can We Encourage Diversification?" *Issue In Brief*, No. 9, Chestnut Hill, MA: Center for Retirement Research at Boston College, July 2002.
- Profit Sharing/401(k) Council of America. *45th Annual Survey of Profit Sharing and 401(k) Plans: Reflecting 2001 Plan Year Experience*. Chicago, IL: Profit Sharing/401(k) Council of America, 2002.
- Purcell, Patrick J. "Employer Stock in Retirement Plans: Investment Risk and Retirement Security." *CRS Report for Congress*, Washington, DC: Congressional Research Service, July 12, 2002.
- Purcell, Patrick J. "The Enron Bankruptcy and Employer Stock in Retirement Plans." *CRS Report for Congress*, Washington, DC: Congressional Research Service, March 11, 2002.
- Russell 3000 Index*. Tacoma, WA: Frank Russell Company.
- Sengmüller, Paul. "Performance Predicts Asset Allocation: Company Stock in 401(k) Plans." *Working Paper*, New York, NY: Columbia University, February 2002.
- S&P 500 Index*. New York, NY: Standard & Poor's.
- U.S. Department of Labor, Pension and Welfare Benefits Administration. *Private Pension Plan Bulletin, Abstract of 1998 Form 5500 Annual Reports*. Washington, DC: Winter 2001–2002.
- U.S. Department of the Treasury. *Report of the Department of the Treasury on Employer Stock in 401(k) Plans*, No. 3055, Washington, DC: February 28, 2002.
- U.S. General Accounting Office. "Private Pensions: Participants Need Information on the Risks of Investing in Employer Securities and the Benefits of Diversification." *Letter Report*, GAO-02-943. Washington, DC: September 2002.
- U.S. General Accounting Office. "Private Pensions: Key Issues to Consider Following the Enron Collapse." *Testimony Before the Senate Finance Committee*, GAO-02-480T. Washington, DC: February 27, 2002.
- VanDerhei, Jack L. "Retirement Security and Defined Contribution Pension Plans: The Role of Company Stock in 401(k) Plans." *Written Statement for the Senate Finance Committee, Hearing on Retirement Security: Picking Up the Enron Pieces*, Washington, DC: Employee Benefit Research Institute, February 27, 2002.
- VanDerhei, Jack L. "The Role of Company Stock in 401(k) Plans." *Written Statement for the House Ways and Means Committee, Hearing on Retirement Security and Defined Contribution Pension Plans*, Washington, DC: Employee Benefit Research Institute, February 26, 2002.
- VanDerhei, Jack L. "The Role of Company Stock in 401(k) Plans." *Written Statement for the House Education and Workforce Committee, Subcommittee on Employer-Employee Relations, Hearing on Enron and Beyond: Enhancing Worker Retirement Security*, Washington, DC: Employee Benefit Research Institute, February 13, 2002.
- VanDerhei, Jack L. "Company Stock in 401(k) Plans: Results of a Survey of ISCEBS [International Society of Certified Employee Benefit Specialists] Members," *EBRI Special Report*, Washington, DC: Employee Benefit Research Institute, January 31, 2002.
- The Vanguard Group. *How America Saves: A Report on Vanguard Defined Contribution Plans*. Valley Forge, PA: The Vanguard Group, Vanguard Center for Retirement Research, 2002.

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