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

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Issue Brief

- This *Issue Brief* examines asset allocation, account balance, and loan activity of a large and representative group of 401(k) plan participants as of year-end 2001 using data gathered by the Employee Benefit Research Institute (EBRI) and the Investment Company Institute (ICI) in their collaborative effort known as the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project. The EBRI/ICI 401(k) database is the most comprehensive source of 401(k) plan participant-level data available to date, containing 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 all 401(k) plans, 33 percent of all 401(k) participants, and about 36 percent of the assets held in 401(k) plans.
- On average, asset allocation in 2001 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 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).
- 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.
- 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.
- 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 20s 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 60s fell about 9 percent in 2001. However, some participants in their 60s 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.

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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.[1] The end of the year witnessed the beginning revelations of corporate fraud and a series of bankruptcies,[2] leading to concern about the use of company stock in 401(k) plans.[3,4] 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 Brief* examines asset allocation, account balance, and loan activity of a large and representative group of 401(k) plan participants as of year-end 2001.[5] 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 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)[6] and the Investment Company Institute (ICI)[7] in their collaborative effort—the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.[8] 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 record keepers and, therefore, a wide range of plan sizes offering a variety of investment alternatives.[9]

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.[10]

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.[11]
- 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.

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 20s 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 60s fell about 9 percent in 2001. However, some participants in their 60s 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.[12]
- 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

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
1–10	7,960	51,388	$1,474,356,348	$28,691
11–25	12,829	220,658	5,123,937,641	23,221
26–50	9,437	340,069	8,213,509,192	24,152
51–100	6,805	484,397	12,426,478,362	25,654
101–250	5,678	895,504	24,881,790,667	27,785
251–500	2,536	892,421	26,311,024,797	29,483
501–1,000	1,470	1,034,736	34,006,495,414	32,865
1,001–2,500	1,133	1,760,070	63,833,734,756	36,268
2,501–5,000	459	1,613,037	62,570,598,210	38,791
5,001–10,000	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 the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

participant is the sum of the participant's assets in all funds.[13] 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.[14] 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 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 GICs[15] or similar instruments—are reported as one category, "GICs and other stable value funds."[16] 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.[17]

Distribution of Plans, Participants, and Assets by Plan Size

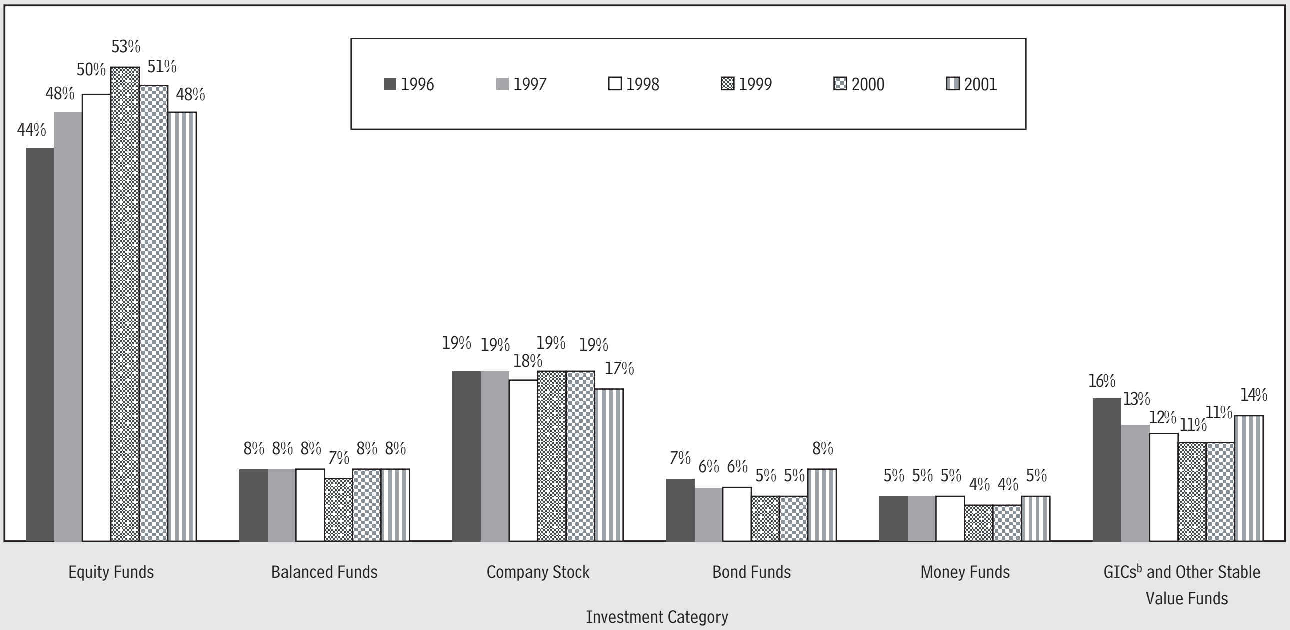
The 2001 EBRI/ICI database contains 48,786 401(k) plans with $632.7 billion of assets and 14,641,179 participants (Figure 1). Most of the plans in the database are small, whether measured by the number of plan participants or by total plan assets.[18] Indeed, 43 percent of the plans in the database have 25 or fewer participants, and 33 percent have 26–100 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.[19] Almost half of their account balances are invested in equity funds, 17 percent in company stock,

Figure 2

401(k) Plan Average Asset Allocation, 1996–2001 (percentage of total assets)[a]



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

[a] Minor investment options are not shown.

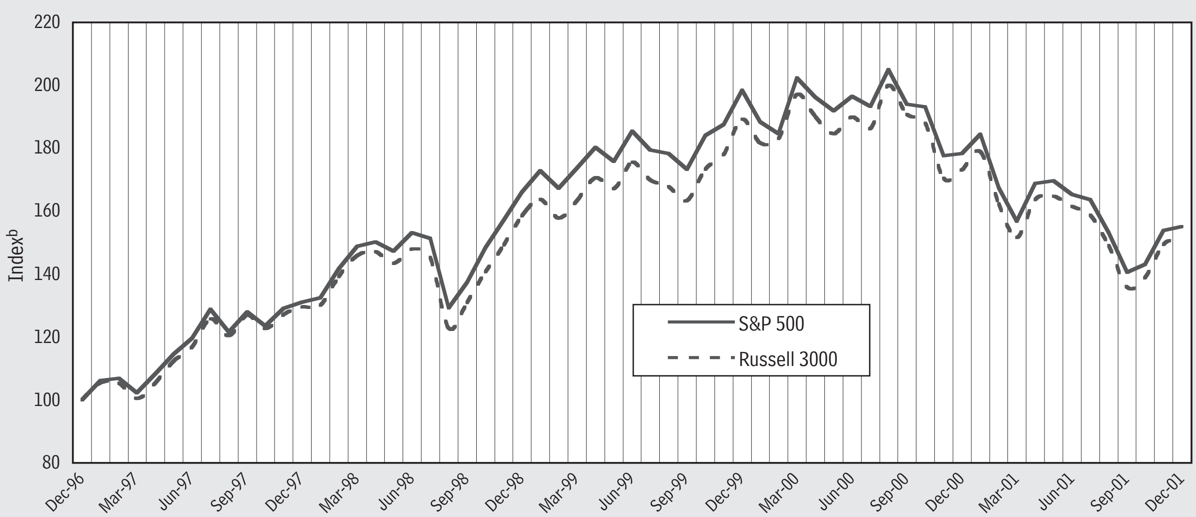
[b] Guaranteed investment contracts.

and 8 percent in balanced funds (Figure 2).[20]

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

Figure 3

Domestic Stock Market Indexes, December 1996–December 2001[a] (month-end level)[b]



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

[a] 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.

[b] All indexes are set to 100 in December 1996.

Figure 4
AVERAGE ASSET ALLOCATION OF 401(K) ACCOUNTS, BY PARTICIPANT AGE, 2001
(PERCENTAGE OF ACCOUNT BALANCES)

Age Cohort	Equity Funds	Balanced Funds	Bond Funds	Money Funds	GICs[a] and Other Stable Value Funds	Company Stock	Other	Unknown	Total[b]
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

Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
[a] Guaranteed investment contracts.
[b] Row percentages may not add to 100 percent because of rounding.

44 percent of total balances in 1996. Much of the movement in 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).[21] 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 20s have 59 percent of their account balances invested in equity funds, compared with about 36 percent of account balances for participants in their 60s. Participants in their 20s invest only about 12 percent of their assets in bond funds and GICs and other stable value funds combined, while those in their 60s invest 35 percent of their accounts in these assets. Allocations to company stock show a more mixed pattern by age. Participants in their 20s have about 14 percent of their plan balances in company stock, while participants in their 40s have 18 percent, and participants in their 60s 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.

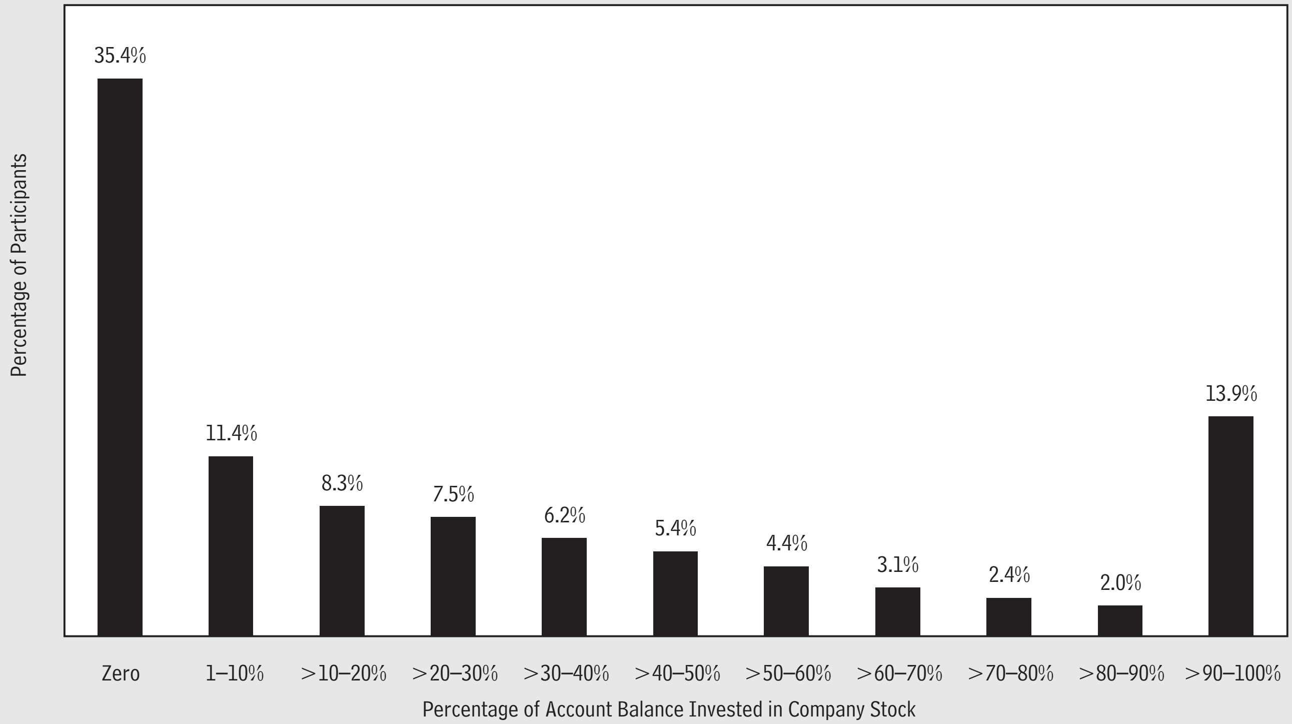
Figure 5
AVERAGE ASSET ALLOCATION OF 401(K) ACCOUNTS, BY INVESTMENT OPTIONS, 2001
(PERCENTAGE OF ACCOUNT BALANCES)[a]

Investment Options Offered by Plan	Equity Funds	Balanced Funds	Bond Funds	Money Funds	GICs[b] 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 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 and/or Other Stable Value Funds	39.0	6.4	3.4	2.5	22.6	25.3

Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
[a] Minor investment options are not shown; therefore row percentages will not add to 100 percent.
[b] Guaranteed investment contracts.

Figure 6

ASSET ALLOCATION DISTRIBUTION OF PARTICIPANT ACCOUNT BALANCE TO COMPANY STOCK IN 401(K) PLANS WITH COMPANY STOCK, 2001 (PERCENTAGE OF PARTICIPANTS)[a]



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

[a] Includes the 6.6 million participants in plans with company stock.

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,[22] starting with a base group consisting of plans that do not offer company stock, GICs, or other stable value funds.[23] 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 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.[24]

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 20s with company stock as an investment option held no company stock, compared with 33 percent of participants in their 50s, although nearly 38 percent of participants in their 60s held no company stock (Figure 7).

Figure 7

ASSET ALLOCATION DISTRIBUTION OF PARTICIPANT ACCOUNT BALANCE TO COMPANY STOCK IN 401(K) PLANS WITH COMPANY STOCK,[a] BY AGE, 2001 (PERCENTAGE OF PARTICIPANTS)[b]

Age Cohort	Percentage of Account Balance Invested in Company Stock										
	Zero	1–10%	>10–20%	>20–30%	>30–40%	>40–50%	>50–60%	>60–70%	>70–80%	>80–90%	>90–100%
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

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

[a] Includes the 6.6 million participants in plans with company stock.

[b] Row percentages may not add to 100 percent because of rounding.

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.[25] For example, 29 percent of participants in their 20s have no equity fund investments, compared with 41 percent of participants in their 60s. 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.[26]

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.

Figure 8

ASSET ALLOCATION DISTRIBUTION OF 401(K) PLAN PARTICIPANT ACCOUNT BALANCE TO EQUITY FUNDS, BY AGE, 2001 (PERCENTAGE OF PARTICIPANTS)[a]

Age Cohort	Percentage of Account Balance Invested in Equity Funds										
	Zero	1–10%	>10–20%	>20–30%	>30–40%	>40–50%	>50–60%	>60–70%	>70–80%	>80–90%	>90–100%
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

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

[a] Row percentages may not add to 100 percent because of rounding.

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 the consistent group of 6.9 million participants, the average account balance of participants in their 20s rose about 27 percent in 2000 and another 16 percent in 2001, while the average account balance of participants in their 60s 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 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 60s may be making withdrawals.[27]

Figure 9

Average Account Balances Among 401(k) Participants Present in 1999, 2000, and 2001,[a] by Age[b]

Age Cohort[b]	Average Account Balance (dollars) 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[a]	61,116	61,125	58,785

	Change in Average Account Balance (percentage) 1999–2000	2000–2001	1999–2001
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[a]	0.01	–3.8	–3.8

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

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

[b] Age cohort based on participant's age at year-end 1999.

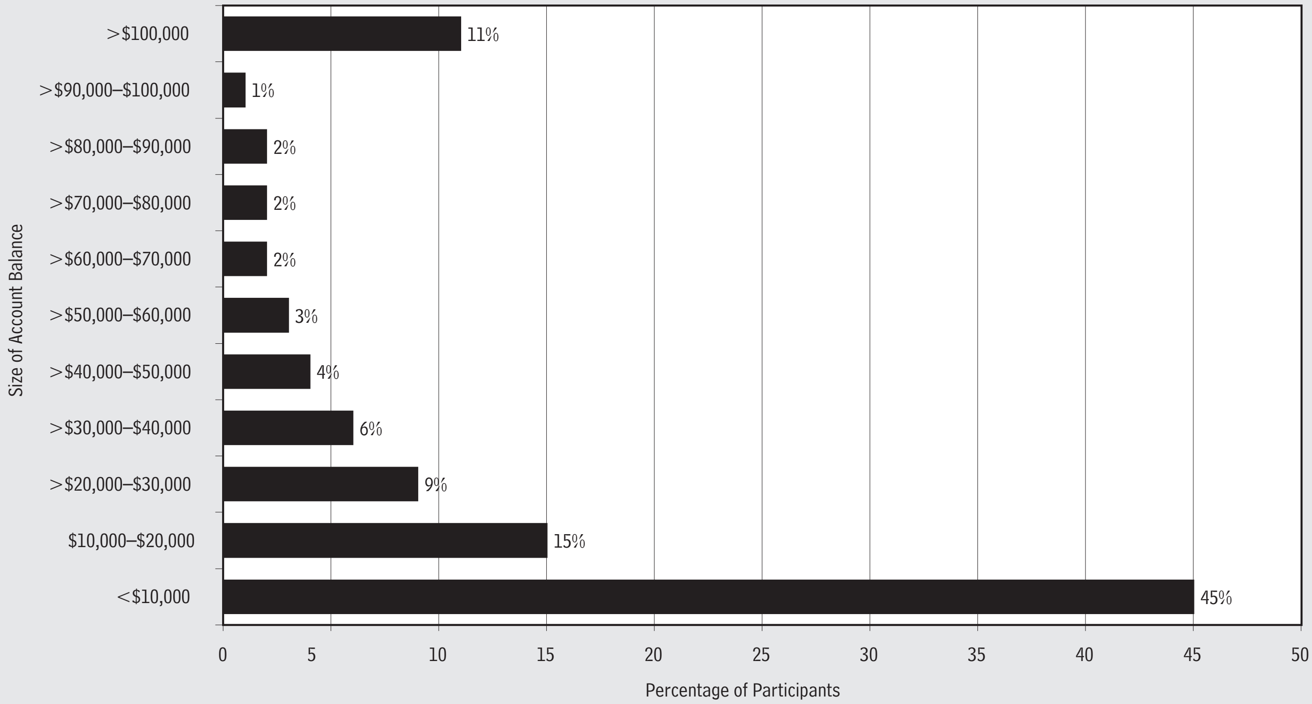
Account Balances at Year-End 2001

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 2001[28]—is lower than the average account balance among the participants with account balances in 1999, 2000, and 2001.[29]

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,

Figure 10

DISTRIBUTION OF 401(K) ACCOUNT BALANCES, BY SIZE OF ACCOUNT BALANCE, 2001
(PERCENTAGE OF PARTICIPANTS WITH ACCOUNT BALANCES IN SPECIFIED RANGES)



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

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.[30] 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.

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.[31] 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 60s with up to two years of tenure is $14,275, compared with $162,042 for participants in their 60s with at least 30 years of tenure (Figure 11). Similarly, the average account balance of participants in their 40s with up to two years of tenure is $10,756, compared with $82,996 for participants in their 40s with more than 20 years of tenure. The increase in account balance as tenure increases tends to be largest for participants in their 50s and 60s.[32]

Plan Loans

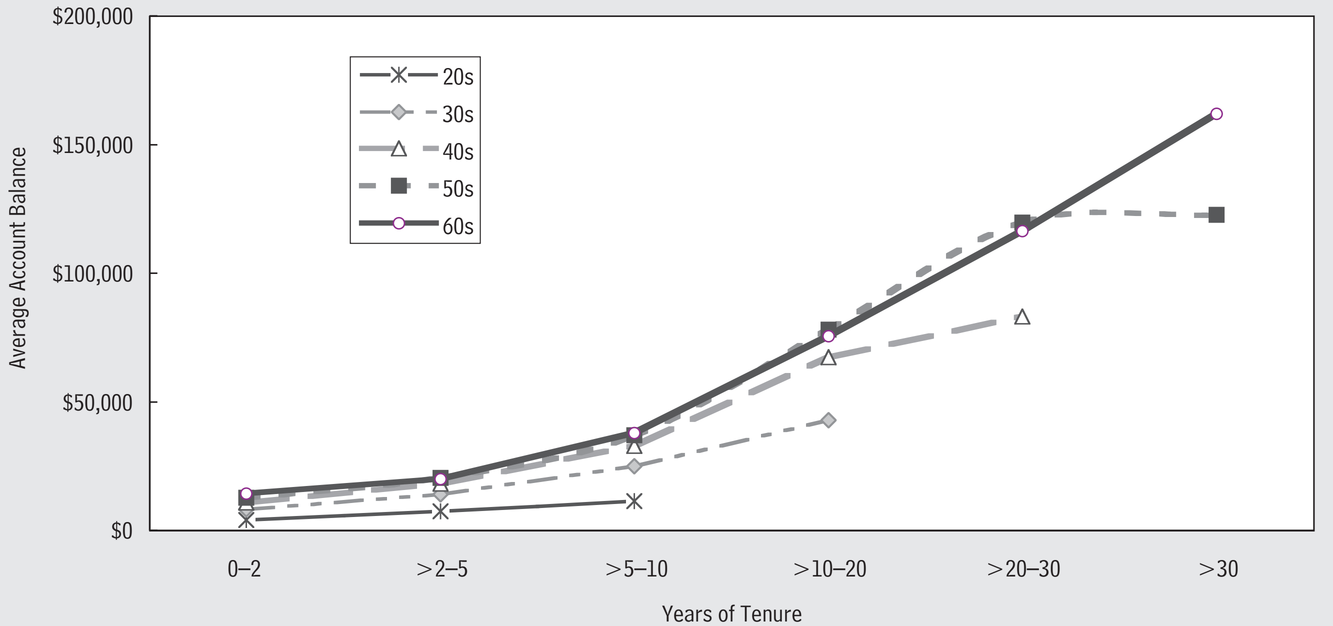
Characteristics of Participants With Outstanding Loans

Most participants in 401(k) plans have borrowing privileges.[33] 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

Figure 11

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

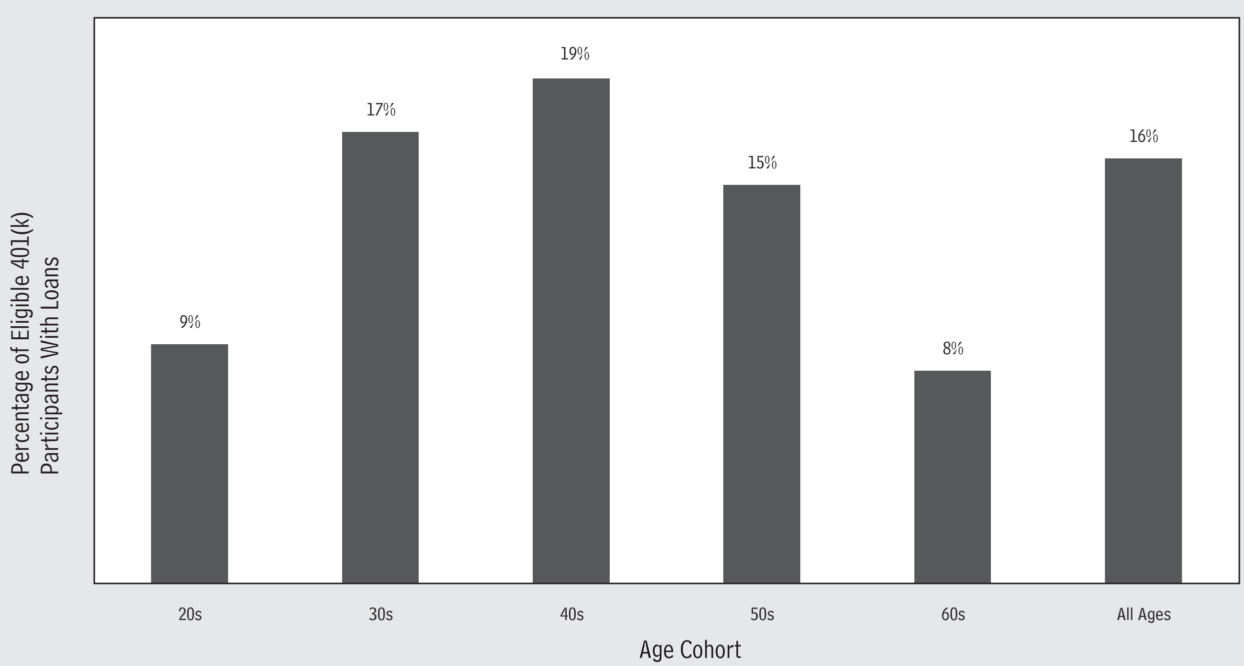


Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

plans offering loans, the highest percentages of participants with outstanding loan balances are among participants in their 30s, 40s, or 50s (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.[34]

Figure 12

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



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

Average Loan Balances

Among participants with outstanding loans at the end of 2001, the average unpaid balance is $6,644.[35] 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 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)						
0–2	6	4	3	5	5	3
>2–5	15	13	12	13	14	12
>5–10	24	24	22	23	23	20
>10–20	27	29	27	28	26	25
>20–30	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–$20,000	26	25	23	24	23	20
>$20,000–$30,000	26	27	25	26	25	22
>$30,000–$40,000	25	27	25	26	25	23
>$40,000–$50,000	24	26	25	26	25	22
>$50,000–$60,000	24	26	24	25	24	22
>$60,000–$70,000	23	26	24	25	24	21
>$70,000–$80,000	26	25	23	24	23	21
>$80,000–$90,000	23	25	23	24	23	21
>$90,000–$100,000	22	24	22	23	22	20
>$100,000	21	21	18	19	18	15

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

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)						
0–2	27	27	24	24	24	22
>2–5	24	24	22	22	25	22
>5–10	23	21	19	18	21	20
>10–20	15	15	14	13	14	15
>20–30	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–$20,000	32	32	31	30	32	29
>$20,000–$30,000	28	27	26	26	28	26
>$30,000–$40,000	23	24	23	23	24	23
>$40,000–$50,000	22	21	21	20	21	21
>$50,000–$60,000	19	19	19	18	19	18
>$60,000–$70,000	16	17	17	16	17	17
>$70,000–$80,000	16	15	15	14	15	15
>$80,000–$90,000	14	14	14	13	14	14
>$90,000–$100,000	13	13	12	12	13	12
> $100,000	7	7	7	7	7	7

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

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Appendix

Further information is available in an online appendix at www.ebri.org.

Endnotes

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

[2] For example, the Enron Corporation declared bankruptcy on Dec. 2, 2001.

[3] As a result, many research papers this past year explored the effects of company stock in 401(k) plans. For example, Liang and Weisbenner (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 (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 (2001).) Other recent research discussing company stock in 401(k) plans includes: Gravelle (2002), The Vanguard Group (2002), Purcell (2002a; 2002b), U.S. Department of the Treasury (2002), VanDerhei (2002a; 2002b; 2002c; 2002d), Fidelity Investments (2002b), and Profit Sharing/401(k) Council of America (2002).

[4] 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 (2002); Eschtruth and Gemus (2002); U.S. General Accounting Office (2002a; 2002b); Munnell and Sundén (2002); and Meulbroek (2002).

[5] This update extends previous findings from the project for 1996 through 2000. For year-end 2000 results, see Holden and VanDerhei (2001a). Results for earlier years are available in earlier issues of *EBRI Issue Brief*, which can be obtained on EBRI's Web site at www.ebri.org.

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

[7] 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.

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

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

[10] 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 EBRI's Web site at www.ebri.org.

[11] "Funds" include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated (see page 5 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*).

[12] 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.

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

[14] 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 (2001c)). 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.

[15] 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.

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

[17] 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.

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

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

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

[21] Participants in their 20s hold approximately 2 percent of the total assets in the 2001 EBRI/ICI database; participants in their 30s hold 14 percent; participants in their 40s hold 34 percent; participants in their 50s hold 36 percent; and participants in their 60s hold the remaining 14 percent of the total assets. For the distribution of participants by age or tenure, see the Appendix (Figure A3).

[22] For convenience, minor investment options are not shown.

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

[24] 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.

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

[26] See the Appendix (Figures A9 and A10).

[27] For statistics indicating the higher propensity of withdrawals among participants in their 60s, see Holden and VanDerhei (2002a—Appendix).

[28] 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).

[29] 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.

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

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

[32] 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.

[33] 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).

[34] See the Appendix (Figures A22 and A23) for loan activity by salary.

[35] The median loan balance outstanding is $3,659 at year-end 2001.

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Appendix: Additional Figures for the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project for Year-End 2001

by Sarah Holden, ICI, and Jack VanDerhei, Temple University and EBRI Fellow

Sarah Holden is senior economist, Research Department, at the Investment Company Institute (ICI), and Jack VanDerhei, Temple University, is research director of the Employee Benefit Research Institute (EBRI) Fellows Program. Special thanks to Luis Alonso, research associate at EBRI, who managed the database. In addition, thanks to Darrin Helsel and Stefan Kimball at ICI, who assisted in preparing the graphics. This appendix is being published simultaneously and in conjunction with the March 2003 ICI *Perspective* and *EBRI Issue Brief,* "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2001." Any views expressed in this report are those of the authors and should not be ascribed to the officers, trustees, or other sponsors of EBRI, EBRI-ERF, or their staffs. Neither EBRI nor EBRI-ERF lobbies or takes positions on specific policy proposals. EBRI invites comment on this research.

Table of Contents

Overview and Summary

The March 2003 *EBRI Issue Brief,* covers the year-end 2001 data gathered by the Employee Benefit Research Institute (EBRI)[1] and the Investment Company Institute (ICI)[2] in their collaborative effort—the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.[3] This Appendix provides supplementary tables and charts for that report.

The EBRI/ICI Database

Relationship of Database Plans to the Universe of Plans

The 2001 EBRI/ICI database appears to be a representative sample of the estimated universe of 401(k) plans. Cerulli Associates (2002) estimates that there were 399,944 401(k) plans at year-end 2001 with about 45 million participants. ICI (June 2002) estimates 401(k) plans held $1,754 billion in assets at year-end 2001.[4] Relative to these estimates, the 2001 EBRI/ICI database accounts for 12 percent of all 401(k) plans, 33 percent of all 401(k) plan participants, and about 36 percent of 401(k) plan assets. The distribution of assets, participants, and plans in the EBRI/ICI database for 2001 is similar to that reported for the universe of plans estimated by Cerulli Associates (Figure A1).

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 A2). Because most of the plans have a small number of participants, the asset size for many plans is modest. About 31 percent of the plans have assets of $250,000 or less, and another 34 percent have plan assets between $250,001 and $1,250,000.

The Typical 401(k) Plan Participant

Participants in 401(k) plans cover wide ranges of age and tenure. Sixty percent of participants are in their 30s or 40s, while 12 percent of participants are in their 20s and 6 percent are in their 60s (Figure A3). The median age of the participants in the 2001 EBRI/ICI database is 43 years old, one year older than in 2000. Forty percent of the participants have five or fewer years of tenure, while 6 percent have more than 30 years of tenure. The median tenure at the current employer is

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

[2] 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.

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

[4] The latest U.S. Department of Labor (Winter 2001–2002) estimate of the universe of 401(k)-type plans is for plan-year 1998. For 1998, it reported 300,593 401(k)-type plans, covering 37 million active participants, with $1,541 billion in assets.

six years, the same as the median tenure in the 2000 EBRI/ICI database.[5] Salary information available for a subset of participants indicates that the median annual salary among that group is $30,130.[6]

Asset Allocation

Asset Allocation and Investment Options

The investment options[7] that participants are offered by a plan sponsor significantly affect how participants allocate their 401(k) assets. Figure A4 presents the distribution of plans, participants, and assets by four combinations of investment offerings. The first category is the base group that consists of plans that do not offer company stock, guaranteed investment contracts (GICs), or other stable value funds. Almost 28 percent of participants in the 2001 EBRI/ICI database are in these plans—which generally offer equity funds, bond funds, balanced funds, and money funds as investment options. Another 28 percent of participants are in plans that offer GICs and/or other stable value funds as an investment option, in addition to the "base" options. Alternatively, almost 18 percent of participants are in plans that offer company stock, but no stable value products, while the remaining 27 percent of participants are offered both company stock and stable value products, in addition to the base options.

Asset Allocation by Investment Options and Age, Salary, or Plan Size

Holden and VanDerhei (March 2003) discuss the impact of investment options on participants' asset allocations in aggregate. Figure A5 presents an analysis of asset allocation by investment option and also by age of participant. Salary information is available for a subset of participants in the 2001 EBRI/ICI database.[8] Because asset allocation is influenced by the investment

[5] The median tenure in the 1999 EBRI/ICI database was seven years (see Holden and VanDerhei (January/February 2001)).

[6] In some analyses, the subset is restricted to participants earning $20,000 or more. The median salary in that sub-sample is about $47,500.

[7] Investment options are grouped into eight categories. (Account balances are net of loan balances and thus unpaid loan balances are not included in any of the eight asset categories described.) 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 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 GICs (a portfolio of fixed-income securities "wrapped" with a guarantee to provide benefit payments according to the plan at book value) or similar instruments—are reported as one category, "GICs and other stable value funds." 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. 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 databases.

[8] On average, asset allocation of participants missing salary information is similar to the asset allocation for those with such information, in aggregate.

options available to participants, Figure A6 presents asset allocation by salary range and by investment option.

Participant asset allocation also varies with plan size (Figure A7, top panel), but much of the variation can be explained by differences in the investment options offered by plan sponsors. For example, the percentage of plan assets invested in equity funds tends to fall as plan size increases, while the share in company stock rises with plan size. A portion of this trend occurs because few small plans offer company stock as an investment option. For example, less than 1 percent of participants in small plans are offered company stock as an investment option, while 73 percent of participants in plans with more than 5,000 participants are offered company stock as an investment option. Participants in plans that do not offer company stock tend to invest a larger portion of their assets in equity funds. Thus, to analyze the potential effect of plan size, the remaining panels of Figure A7 group plans by investment option and plan size.

Distribution of Equity Fund Allocations and Participant Exposure to Equities

On average, 48 percent of participant account balances are allocated to equity funds in the year-end 2001 EBRI/ICI database (Figure A7, top panel). However, individual asset allocations vary widely across participants. For example, more than one-quarter of participants hold no equity funds, while a similar number of participants hold more than 80 percent of their balances in equity funds (Figure A8). Furthermore, the percentage of participants holding no equity funds tends to increase with age and tenure. In contrast, the percentage of participants holding no equity funds tends to fall as salary increases.

Participants with no equity fund balances may still have exposure to the stock market through company stock or balanced funds. Indeed, 50 percent of participants with no equity funds have investments in either company stock or balanced funds (Figure A9).[9] As a result, many participants with no equity funds have exposure to equity-related investments through company stock and/or balanced funds (Figure A10).

Account Balances

Average and Median Account Balances

The EBRI/ICI database is constructed from administrative records of 401(k) plans. The database contains only the account balances held in the 401(k) plans at participants' current employers. 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

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[9] Data for year-end 2000 published in Holden and VanDerhei (November 2001) have been revised. At year-end 2000, 54.2 percent of participants with no equity funds had exposure to equities through company stock and/or balanced funds. In addition, 48.5 percent of participants in their 20s with no equity funds had exposure to equities; 54.1 percent of participants in their 30s; 56.3 percent of participants in their 40s; 58.3 percent of participants in their 50s; and 52.3 percent of participants in their 60s. Furthermore, 48.6 percent of participants with two or fewer years of tenure with no equity funds had exposure to equities through company stock and/or balanced funds; 51.9 percent of participants with between two and five years of tenure; 53.4 percent of participants with between five and 10 years of tenure; 57.9 percent of participants with between 10 and 20 years of tenure; 60.3 percent of participants with between 20 and 30 years of tenure; and 60.1 percent of participants with more than 30 years of tenure.

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. At year-end 2001, the average account balance was $43,215 and the median account balance was $12,810 (Figure A11). Because of the changing composition of the universe over time, it is not correct to construe the change in average or median account balance for the entire database as the experience of "typical" 401(k) plan participants.[10]

Relationship of Age and Tenure to Account Balances

There is a positive correlation between age and account balance among participants in the 2001 EBRI/ICI database.[11] Examination of the age composition of account balances finds that 53 percent of participants with account balances of less than $10,000 are in their 20s and 30s (Figure A12). Similarly, of those with account balances greater than $100,000, more than half are in their 50s or 60s. The positive correlation between age and account balance is expected because younger workers are likely to have lower incomes and to have had less time to accumulate a balance with their current employer. In addition, they are less likely to have rollovers from a previous job's plan in their current plan accounts.

There is a positive correlation between account balance and tenure among participants in the 2001 EBRI/ICI database. The participant's tenure with the employer serves as a proxy for length of participation in the 401(k) plan.[12] Indeed, 63 percent of those participants with account balances of less than $10,000 have five or fewer years of tenure, while 88 percent of those participants with account balances greater than $100,000 have more than 10 years of tenure (Figure A13).[13]

The distribution of account balances underscores the effects of age and tenure on account balances. In a given age group, fewer years of tenure means a higher percentage of participants with account balances of less than $10,000. For example, 89 percent of participants in their 20s with two or fewer years of tenure have account balances of less than $10,000, compared with 62 percent of participants in their 20s with five to 10 years of tenure (Figure A14). Older workers display a similar pattern. For example, 72 percent of all participants in their 60s with two or fewer years of tenure have account balances of less than $10,000. In contrast, only about 20

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[10] For an analysis of the change in account balances of the group of participants with accounts at year-end 1999, year-end 2000, and year-end 2001, see Holden and VanDerhei (March 2003).

[11] Approximately 1 percent of the participants in the database had a missing birth date; were younger than 20 years old; or were older than 69 years old. They were not included in this analysis.

[12] Approximately 9 percent of the participants in the database had a missing tenure range and were not included in this analysis. In addition, for one data provider, "years of participation" are used for the tenure variable.

[13] The positive correlation between tenure and account balance is expected because long-term employees have had more time to accumulate an account balance. However, a rollover from a previous employer's plan could interfere with this positive correlation because a rollover could give a short-tenure employee a high account balance. There is some discernible evidence of rollover assets among the participants with account balances greater than $100,000 as 1 percent of them have two or fewer years of tenure and 2 percent of them have between two and five years of tenure.

percent of those in their 60s with more than 20 years of tenure have account balances of less than $10,000.[14]

In a given age group, longer tenure means a higher percentage of people with account balances greater than $100,000. For example, about 5 percent of participants in their 60s with 10 or fewer years of tenure have account balances in excess of $100,000 (Figure A15). However, about 34 percent of participants in their 60s with 21–30 years of tenure with their current employer have account balances greater than $100,000. The percentage increases to 42 percent for participants in their 60s with more than 30 years of tenure.

Relationship Between Account Balances and Salary

This section examines how the ratio of 2001 account balances to 2001 salary varies with age, tenure, and salary.[15] The ratio of participant account balances to salary is positively correlated with age and tenure. Participants in their 60s, having had more time to accumulate assets, tend to have higher ratios, while those in their 20s have the lowest ratios (Figure A16).

In addition, for any given age and tenure combination, the ratio of account balance to salary varies somewhat with salary. For example, among participants in their 20s, the ratio tends to increase slightly with salary for low-to-moderate salary groups (Figure A17). However, at high salary levels the ratio tends to decline somewhat. A similar pattern occurs among participants in their 60s (Figure A18).[16]

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[14] Two possible explanations for the low account balances among this group are: (1) that their employer's 401(k) plan has only recently been established (indeed, 49 percent of all 401(k)-type plans in existence in 1995 were established after 1989 (U.S. Department of Labor (Spring 1999), table B.10)), or (2) that the employee only recently joined the plan. In either event, job tenure would not accurately reflect actual 401(k) plan participation.

[15] The ratio of 401(k) account balance (at the current employer) to salary alone is not an indicator of preparedness for retirement. A complete analysis of preparedness for retirement would require estimating projected balances at retirement by also considering retirement income from Social Security, defined benefit plans, IRAs, and other defined contribution plans, possibly from previous employment. For references to such research, see Holden and VanDerhei (January/February 2001). In addition, Holden and VanDerhei (November 2002) develops a model that projects the proportion of an individual's preretirement income that *might* be replaced by 401(k) plan accumulations at retirement, under several different projected scenarios.

[16] The tendency of the ratio of account balances to salary to peak at higher salary levels and then fall off likely reflects the influence of two competing forces. First, empirical research (see Holden and VanDerhei (October 2001) for a complete discussion of EBRI/ICI findings and others' research on the relationship between contribution rates and salary) suggests that higher earners tend to contribute higher percentages of salary; therefore, one would expect the ratio of account balance to salary to rise with salary. However, tax code contribution limits and nondiscrimination rules constrain these high-income individuals' ability to save. The contribution limits (elective deferral limits in Internal Revenue Code (IRC) Sec. 402(g); total contribution limits in IRC Sec. 415(c)) and nondiscrimination rules (Actual Deferral Percentage and Actual Contribution Percentage (ADP/ACP) nondiscrimination rules in IRC Sec. 401(k) and Sec. 401(m)) aim to assure that employees of all income ranges attain the benefits of the 401(k) plan.

Plan Loans

Availability and Use of Plan Loans by Plan Size

Fifty-two percent of the plans for which loan data are available in the 2001 EBRI/ICI database offer a plan loan provision to participants (Figure A19).[17] The loan feature is more commonly associated with large plans (measured by the number of participants in the plan). Eighty-seven percent of plans with more than 10,000 participants include a loan provision, compared with 38 percent of plans with 10 or fewer participants. Furthermore, participants in smaller plans that offer loans tend to be less likely to have taken out a loan than participants in larger plans (Figure A20). Loan ratios vary only slightly when participants are grouped based on the size of their 401(k) plans (measured by the number of plan participants; Figure A21).

Loan Activity by Salary

Loan activity varies with salary. Participants earning between $40,001 and $100,000 are more likely to have a loan outstanding than those earning more or less (Figure A22). Among participants with a loan outstanding, loan ratios tend to decrease as salary increases, falling from 20 percent for participants earning $40,000 or less to 12 percent for participants earning in excess of $100,000 (Figure A23).

[17] Plan-specific information on loan provisions is available for the majority of the plans in the sample (including virtually all of the small plans). Some plans without this information are classified as having a loan provision if any participant in the plan has an outstanding loan balance. This may understate the number of plans offering loans (or participants eligible for loans) because some plans may have offered, but had no participant take out, a plan loan. It is likely that this omission is small as the U.S. General Accounting Office (1997) finds that more than 95 percent of 401(k) plans that offer loans had at least one plan participant with an outstanding loan.

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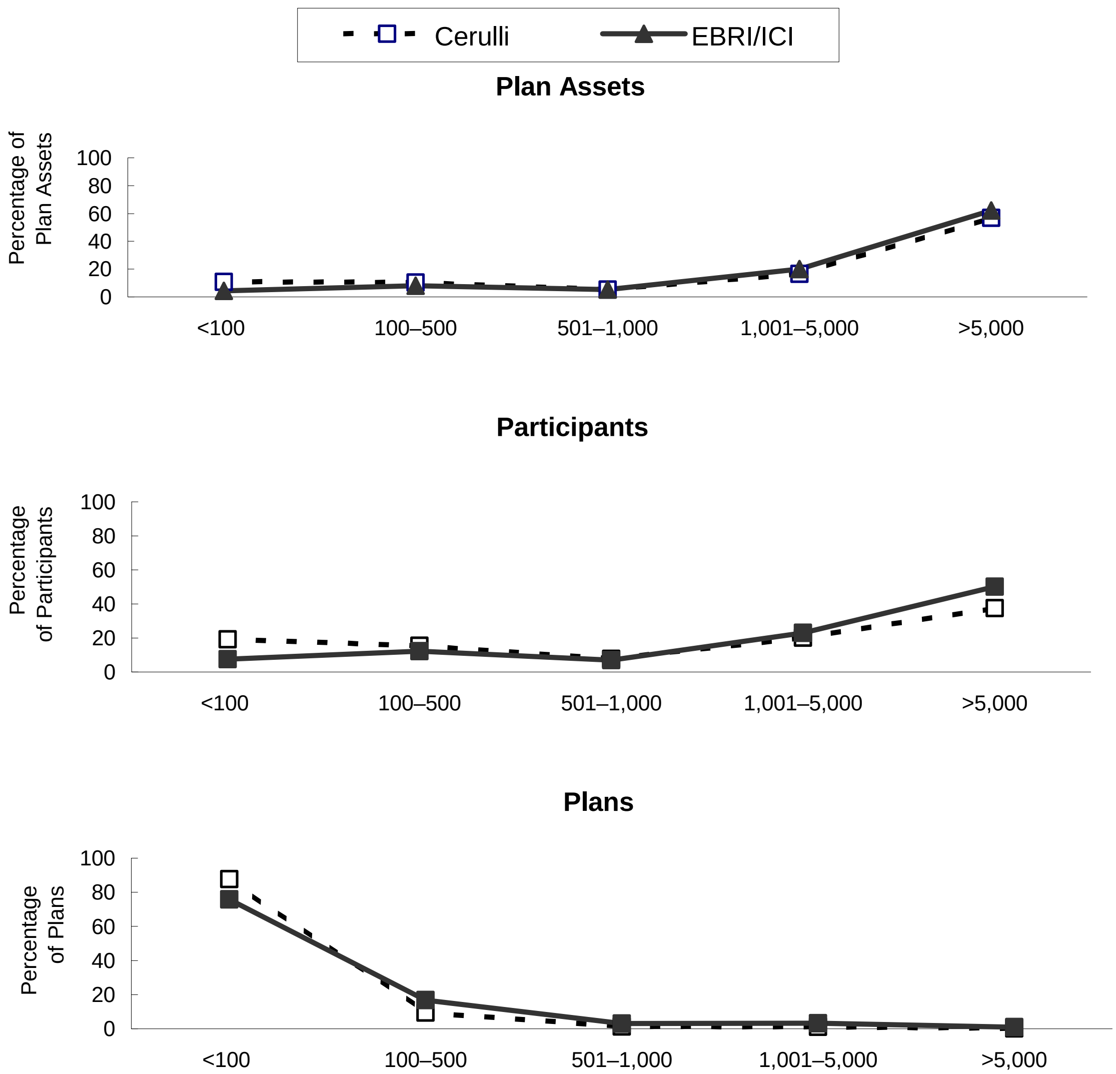
[18] For a complete bibliography, see Holden and VanDerhei (March 2003).

Figures

Figure A1

401(k) Plan Characteristics by Number of Participants: EBRI/ICI Database vs. Cerulli Estimates for All 401(k) Plans, 2001



Sources: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project, Cerulli Associates.

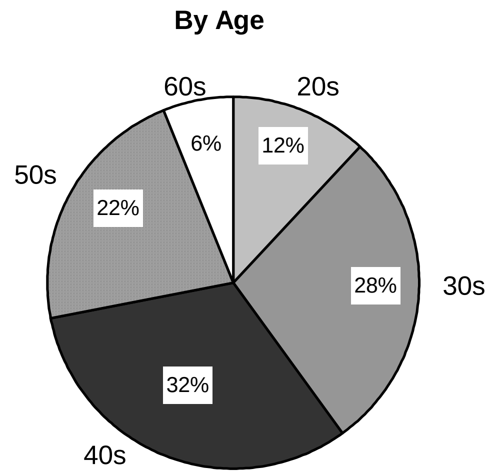
Figure A2

EBRI/ICI Database: 401(k) Plan Characteristics, by Plan Assets, 2001

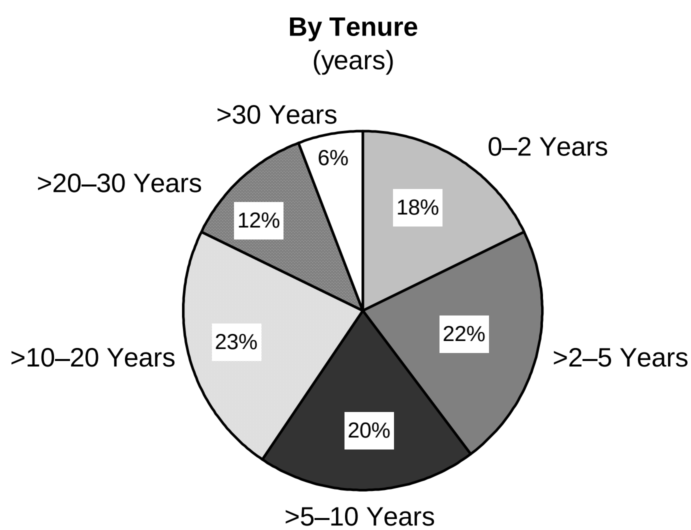
Total Plan Assets	Total Plans	Total Participants	Total Assets	Average Account Balance
$0–$250,000	15,356	254,580	$1,734,932,114	$6,815
>$250,000–$625,000	10,066	324,615	4,119,283,909	12,690
>$625,000–$1,250,000	6,729	371,884	5,961,209,521	16,030
>$1,250,000–$2,500,000	5,252	472,003	9,326,014,100	19,758
>$2,500,000–$6,250,000	5,060	906,161	19,963,771,825	22,031
>$6,250,000–$12,500,000	2,448	874,076	21,396,750,941	24,479
>$12,500,000–$25,000,000	1,505	944,452	26,419,488,196	27,973
>$25,000,000–$62,500,000	1,117	1,454,843	44,238,029,579	30,407
>$62,500,000–$125,000,000	526	1,312,137	46,154,225,482	35,175
>$125,000,000–$250,000,000	329	1,364,307	56,243,364,467	41,225
>$250,000,000	398	6,362,121	397,163,215,142	62,426
All	48,786	14,641,179	632,720,285,276	43,215

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

Figure A3
401(k) Participants, by Age and Tenure, 2001
(percentage of participants)



Median Age: 43 Years



Median Tenure: 6 Years

Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
Note: Percentages may not add to 100 percent because of rounding.

Figure A4

Distribution of 401(k) Plans, Participants, and Assets, by Investment Options, 2001

(percentage of total)

Investment Options Offered by Plan	Plans	Participants	Assets
Equity, Bond, Money, and/or Balanced Funds	40.8%	27.5%	19.9%
Equity, Bond, Money, and/or Balanced Funds, and GICs[a] and/or Other Stable Value Funds	56.6	27.8	20.4
Equity, Bond, Money, and/or Balanced Funds, and Company Stock	1.1	17.6	22.3
Equity, Bond, Money, and/or Balanced Funds and Company Stock, and GICs and/or Other Stable Value Funds	1.5	27.1	37.4

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

[a] Guaranteed investment contracts.

Figure A5

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

(percentage of account balances)[a]

Investment Options/Age	Equity Funds	Balanced Funds	Bond Funds	Money Funds	GICs[b] and Other Stable Value Funds	Company Stock
All Ages Combined						
Equity, Bond, Money, and/or Balanced Funds	64.8%	9.5%	14.3%	9.7%		
Equity, Bond, Money, and/or Balanced Funds, and GICs 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 and/or Other Stable Value Funds	39.0	6.4	3.4	2.5	22.6	25.3
Plans Without Company Stock, GICs, or Other Stable Value Funds						
20s	73.8	8.1	9.9	7.6		
30s	75.0	8.1	9.6	6.4		
40s	69.4	9.2	12.0	8.1		
50s	61.2	10.0	15.6	11.0		
60s	48.8	11.1	22.9	14.5		
Plans With GICs and/or Other Stable Value Funds						
20s	61.6	13.6	4.7	3.6	14.6	
30s	62.0	13.2	4.7	2.8	15.5	
40s	56.2	13.3	4.9	3.1	20.6	
50s	49.4	12.7	5.2	3.5	27.3	
60s	37.5	12.0	5.5	4.1	39.8	
Plans With Company Stock						
20s	48.8	4.8	6.2	7.4		32.2
30s	49.0	4.7	6.2	5.8		33.5
40s	44.8	4.9	8.0	7.0		34.4
50s	41.2	4.9	11.5	8.2		33.5
60s	37.5	4.9	21.0	8.6		27.7
Plans With Company Stock and GICs and/or Other Stable Value Funds						
20s	46.8	7.4	3.2	4.1	8.7	28.5
30s	48.0	6.5	2.9	2.2	10.0	29.2
40s	43.2	6.6	3.2	2.2	16.0	27.8
50s	37.7	6.4	3.7	2.6	23.8	25.0
60s	29.8	5.9	3.3	3.0	37.4	19.8

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

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

[b] Guaranteed investment contracts.

Figure A6

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

(percentage of account balances)[a]

Salary	Equity Funds	Balanced Funds	Bond Funds	Money Funds	GICs[b] and Other Stable Value Funds	Company Stock
Plans Without Company Stock, GICs, or Other Stable Value Funds						
$20,000–$40,000	58.0%	11.0%	18.6%	10.7%		
>$40,000–$60,000	64.8	9.1	17.6	7.7		
>$60,000–$80,000	67.6	8.5	16.3	6.6		
>$80,000–$100,000	67.9	8.4	16.0	6.8		
>$100,000	66.6	8.3	15.3	7.5		
All	64.8	9.5	14.3	9.7		
Plans With GICs and/or Other Stable Value Funds						
$20,000–$40,000	50.8	11.5	3.3	1.5	31.8%	
>$40,000–$60,000	53.2	11.6	3.7	1.8	28.5	
>$60,000–$80,000	56.4	11.3	3.7	2.0	25.6	
>$80,000–$100,000	57.2	11.5	4.0	2.2	24.2	
>$100,000	58.1	10.7	3.3	1.7	25.3	
All	52.0	12.9	5.1	3.4	25.2	
Plans With Company Stock						
$20,000–$40,000	35.0	6.4	8.5	9.2		40.8%
>$40,000–$60,000	34.7	8.1	7.3	10.2		39.7
>$60,000–$80,000	36.8	10.1	7.3	9.0		36.6
>$80,000–$100,000	38.9	11.2	8.0	8.8		33.1
>$100,000	43.1	10.7	11.1	8.1		26.9
All	43.1	4.8	10.9	7.4		33.0
Plans With Company Stock and GICs and/or Other Stable Value Funds						
$20,000–$40,000	35.8	7.2	2.9	1.2	22.1	30.2
>$40,000–$60,000	38.5	7.2	2.9	1.7	22.1	27.1
>$60,000–$80,000	42.0	7.3	3.0	2.0	22.4	22.7
>$80,000–$100,000	45.7	6.5	3.2	1.8	22.3	19.6
>$100,000	45.7	5.0	3.5	1.3	22.1	21.8
All	39.0	6.4	3.4	2.5	22.6	25.3

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

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

[b] Guaranteed investment contracts.

Figure A7

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

(percentage of account balances)[a]

Plan Size (number of participants)	Equity Funds	Balanced Funds	Bond Funds	Money Funds	GICs[b] and Other Stable Value Funds	Company Stock
All Plans						
1–100	54.7%	16.2%	8.8%	7.6%	11.6%	0.1%
101–500	57.1	12.3	9.4	7.2	11.2	0.7
501–1,000	55.7	11.5	10.1	6.4	11.7	2.7
1,001–5,000	51.6	9.7	8.3	6.6	13.0	8.9
>5,000	44.0	6.0	6.8	4.3	14.3	23.8
All	47.7	8.0	7.6	5.2	13.6	16.8
Plans Without Company Stock, GICs, or Other Stable Value Funds						
1–100	67.1	9.9	11.5	10.6		
101–500	65.1	9.9	12.9	9.9		
501–1,000	63.8	10.4	15.4	8.3		
1,001–5,000	63.5	10.4	13.7	10.6		
>5,000	65.6	7.3	16.9	8.9		
All	64.8	9.5	14.3	9.7		
Plans With GICs and/or Other Stable Value Funds						
1–100	45.5	21.0	6.9	5.3	20.3	
101–500	48.6	15.3	5.4	3.9	24.8	
501–1,000	49.8	14.0	4.2	3.5	27.3	
1,001–5,000	50.5	11.1	4.6	2.7	29.0	
>5,000	57.5	9.7	5.0	2.9	23.1	
All	52.0	12.9	5.1	3.4	25.2	
Plans With Company Stock						
1–100	52.7	6.8	10.4	16.3		12.4
101–500	50.9	9.3	11.4	9.7		17.1
501–1,000	48.2	5.9	11.0	11.1		22.4
1,001–5,000	45.3	7.1	9.5	9.1		27.9
>5,000	42.4	4.3	11.3	7.0		34.5
All	43.1	4.8	10.9	7.4		33.0
Plans With Company Stock and GICs and/or Other Stable Value Funds						
1–100	46.3	9.5	5.3	10.3	15.6	9.4
101–500	44.7	12.2	5.1	4.1	19.5	10.5
501–1,000	38.7	12.3	3.9	3.5	22.6	16.1
1,001–5,000	39.7	9.1	3.6	3.3	24.1	17.7
>5,000	38.9	5.9	3.3	2.4	22.4	26.4
All	39.0	6.4	3.4	2.5	22.6	25.3

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

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

[b] Guaranteed investment contracts.

Figure A8

Asset Allocation Distribution of 401(k) Plan Participant Account Balances to Equity Funds, by Age, Tenure, and Salary, 2001

(percentage of participants)

	Zero	1–20%	>20%–80%	>80%	Total
All	27.8%	7.5%	36.9%	27.8%	100.0%
Age Cohort					
20s	29.1	5.4	35.6	29.9	100
30s	23.4	6.3	38.0	32.3	100
40s	25.8	7.8	38.4	28.0	100
50s	30.0	9.0	36.8	24.2	100
60s	40.6	10.1	30.8	18.6	100
Tenure (years)					
0–2	26.7	5.3	36.6	31.4	100
>2–5	24.1	6.3	38.0	31.5	100
>5–10	23.3	8.3	38.3	30.1	100
>10–20	26.8	9.0	37.8	26.4	100
>20–30	32.7	9.6	36.2	21.5	100
>30	43.7	9.4	30.6	16.3	100
Salary					
$20,000–$40,000	32.2	8.4	36.1	23.3	100
>$40,000–$60,000	28.1	8.9	38.0	25.1	100
>$60,000–$80,000	19.8	9.1	42.4	28.7	100
>$80,000–$100,000	16.9	8.2	43.2	31.7	100
>$100,000	16.5	7.3	41.9	34.3	100

Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
Note: Row percentages may not add to 100 percent because of rounding.

Figure A9

Percentage of 401(k) Plan Participants Without Equity Fund Balances Who Have Equity Exposure, by Age and Tenure, 2001

	Percentage With Company Stock and/or Balanced Funds
Age Cohort	
20s	45.4%
30s	49.4
40s	51.5
50s	53.0
60s	48.4
All	49.8
Tenure (years)	
0–2	45.2
>2–5	48.1
>5–10	47.7
>10–20	51.8
>20–30	56.8
>30	58.5
All	49.8

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

Figure A10

Average Asset Allocation for 401(k) Plan Participants Without Equity Fund Balances, by Age and Tenure, 2001

(percentage of account balances)

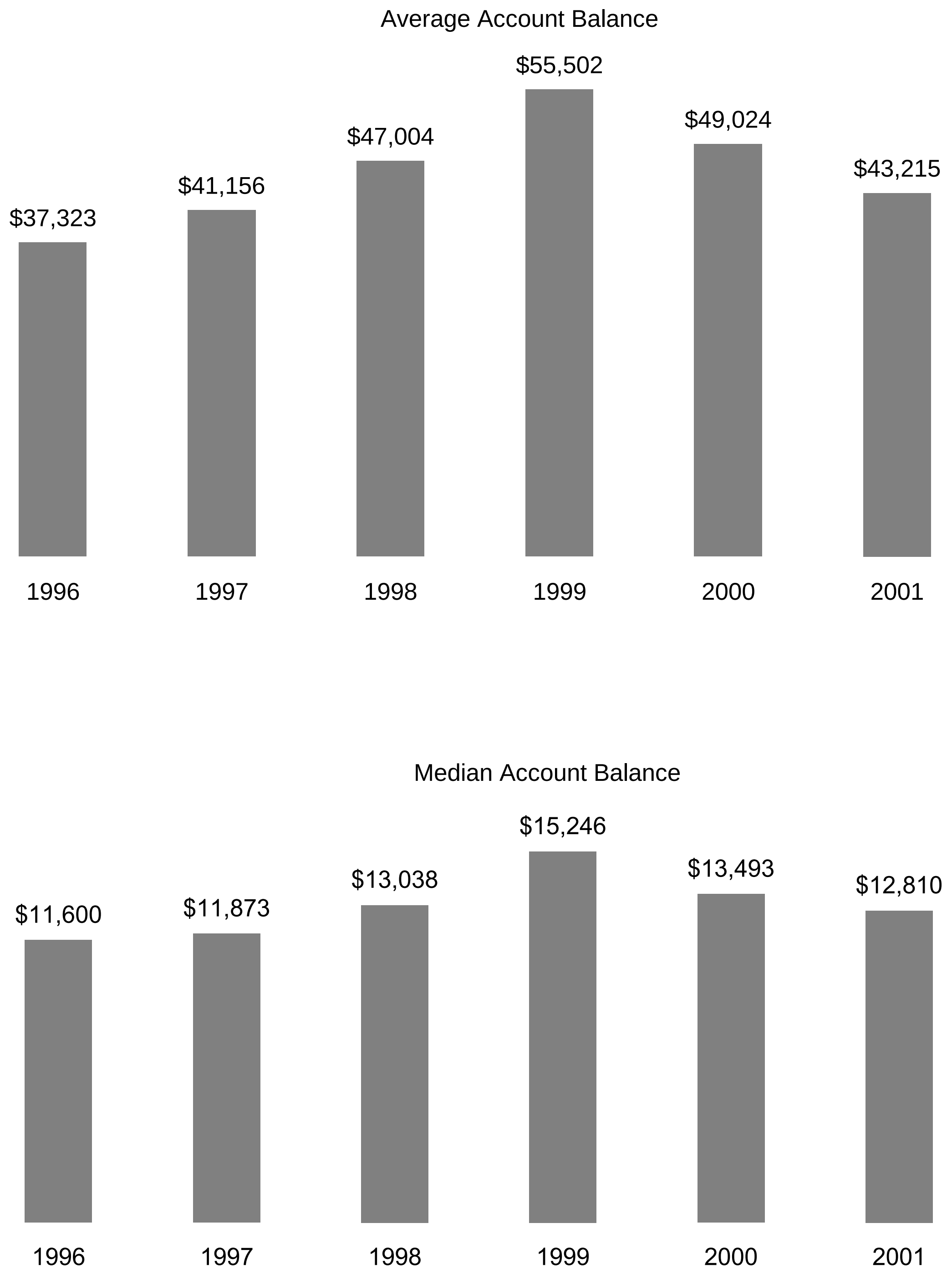
	Balanced Funds	Bond Funds	Money Funds	GICs[a] and Other Stable Value Funds	Company Stock	Other	Unknown	Total[b]
Age Cohort								
20s	16.8%	10.1%	20.6%	19.5%	31.1%	1.1%	0.5%	100.0%
30s	13.5	9.9	14.0	19.8	40.4	1.6	0.4	100
40s	11.2	10.1	12.4	25.5	38.3	1.7	0.4	100
50s	9.6	11.2	11.7	32.8	32.4	1.6	0.3	100
60s	7.9	14.4	10.5	44.3	21.6	1.1	0.2	100
All	10.0	11.7	11.9	32.9	31.5	1.5	0.3	100
Tenure (years)								
0–2	21.1	13.3	24.7	18.9	20.2	1.1	0.5	100
>2–5	18.8	12.2	19.6	19.4	27.8	1.4	0.5	100
>5–10	14.8	11.5	16.8	22.7	31.3	2.0	0.4	100
>10–20	11.1	10.5	13.8	29.3	32.6	2.1	0.3	100
>20–30	8.5	9.8	10.7	34.5	34.1	1.9	0.2	100
>30	6.4	11.8	8.0	46.1	26.5	0.9	0.1	100
All	10.0	11.7	11.9	32.9	31.5	1.5	0.3	100

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

[a] Guaranteed investment contracts.

[b] Row percentages may not add to 100 percent because of rounding.

Figure A11
401(k) Plan Participant Account Balances,[a] 1996–2001[b]

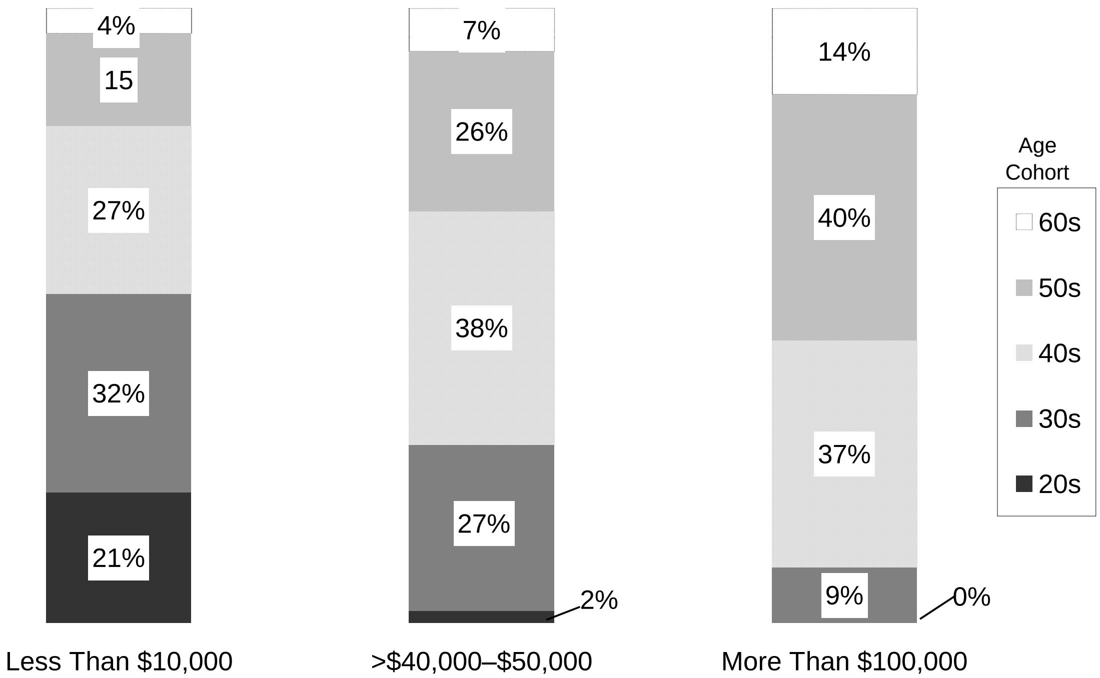


Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
[a] Account balances are participant account balances held in the 401(k) plans at the participants' current employers and are net of plan loans. Retirement savings held in plans at previous employers or rolled over into IRAs are not included.
[b] Sample of participants changes over time.

Figure A12

Age Composition of Selected 401(k) Account Balance Categories, 2001

(percentage)[a]



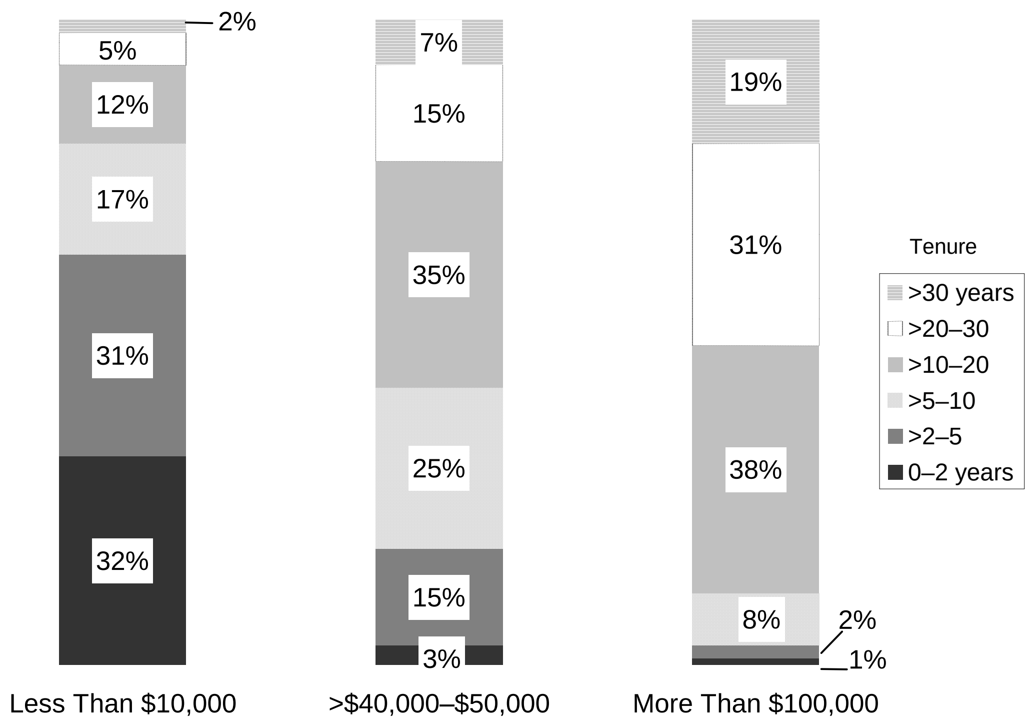
Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

[a] Percentages may not add to 100 percent because of rounding.

Figure A13

Tenure Composition of Selected 401(k) Account Balance Categories, 2001

(percentage)[a]



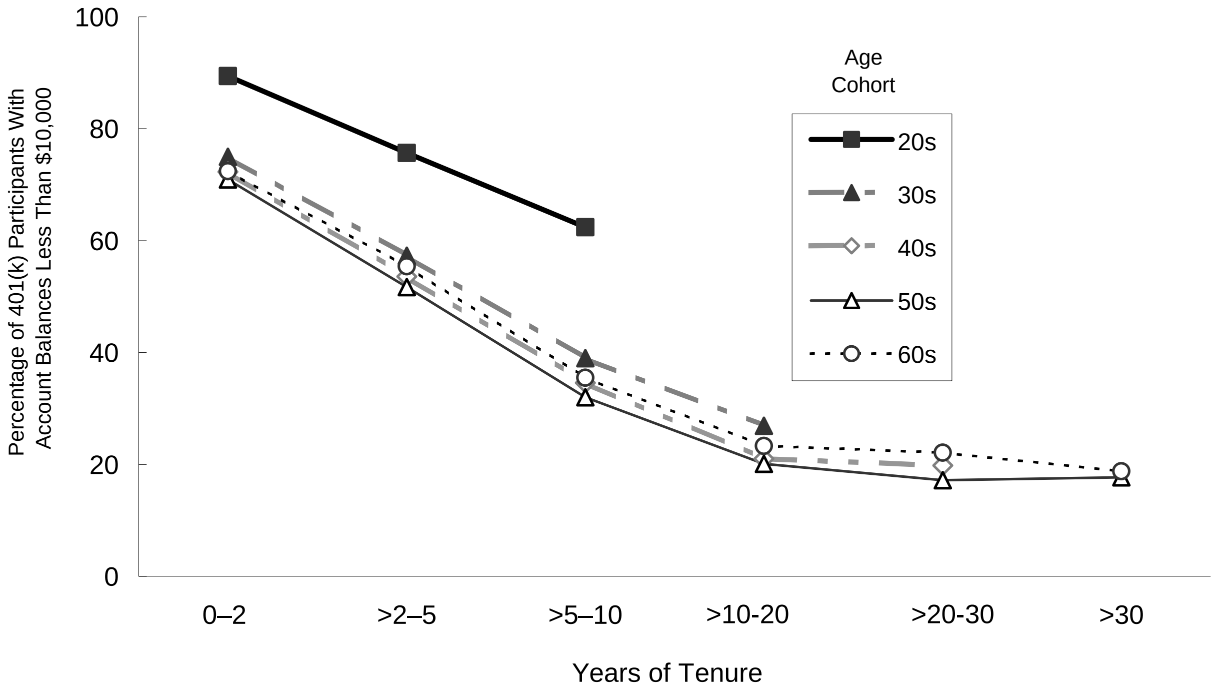
Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

[a] Percentages may not add to 100 percent because of rounding.

Figure A14

401(k) Account Balances Less Than $10,000, by Age and Tenure, 2001

(percentage of participants with account balances less than $10,000)

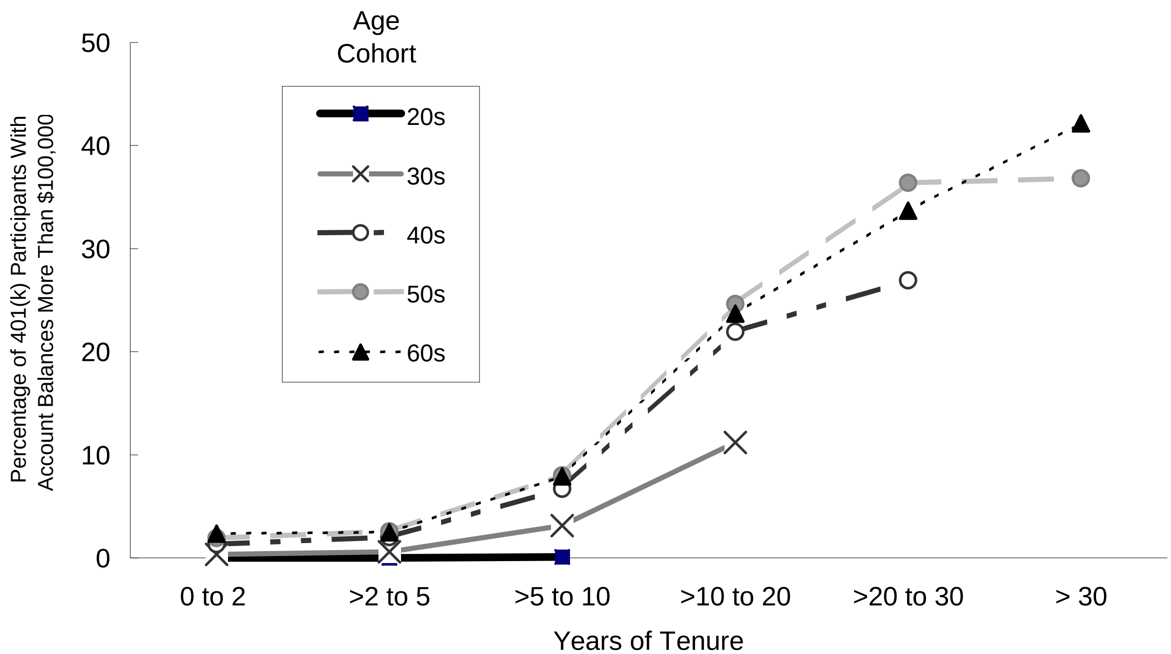


Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure A15

401(k) Account Balances Over $100,000, by Age and Tenure, 2001

(percentage of participants with account balances over $100,000)

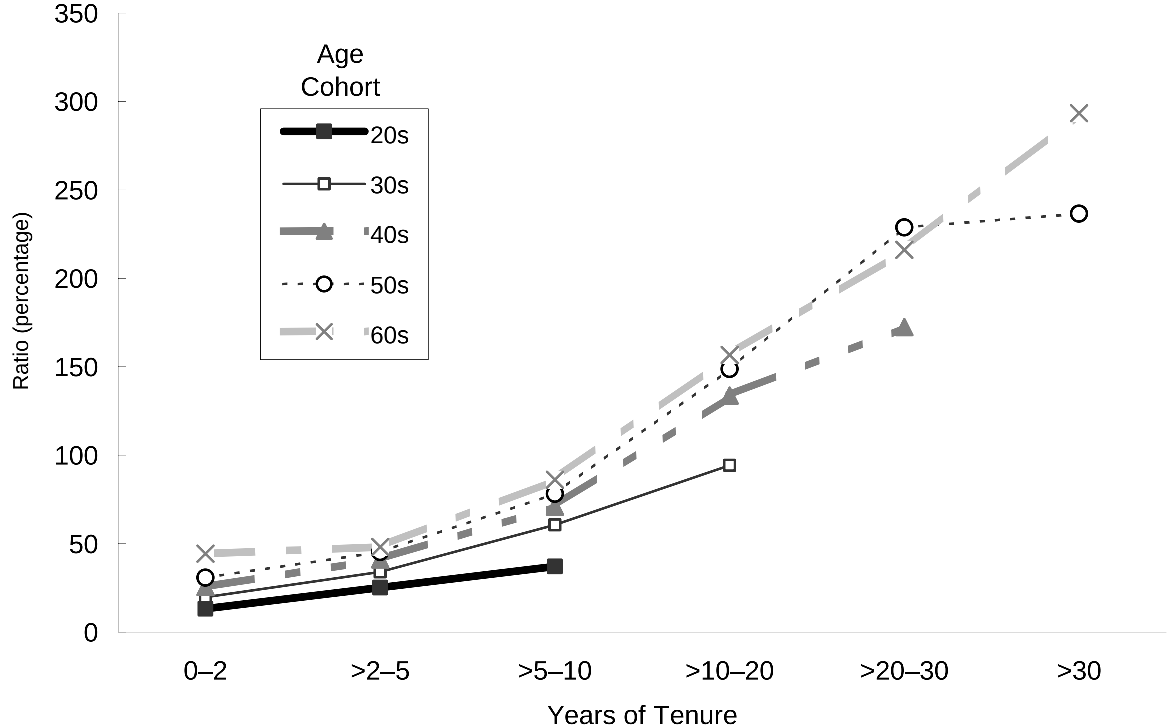


Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure A16

Ratio of 401(k) Account Balance to Salary, by Age and Tenure, 2001

(percentage)

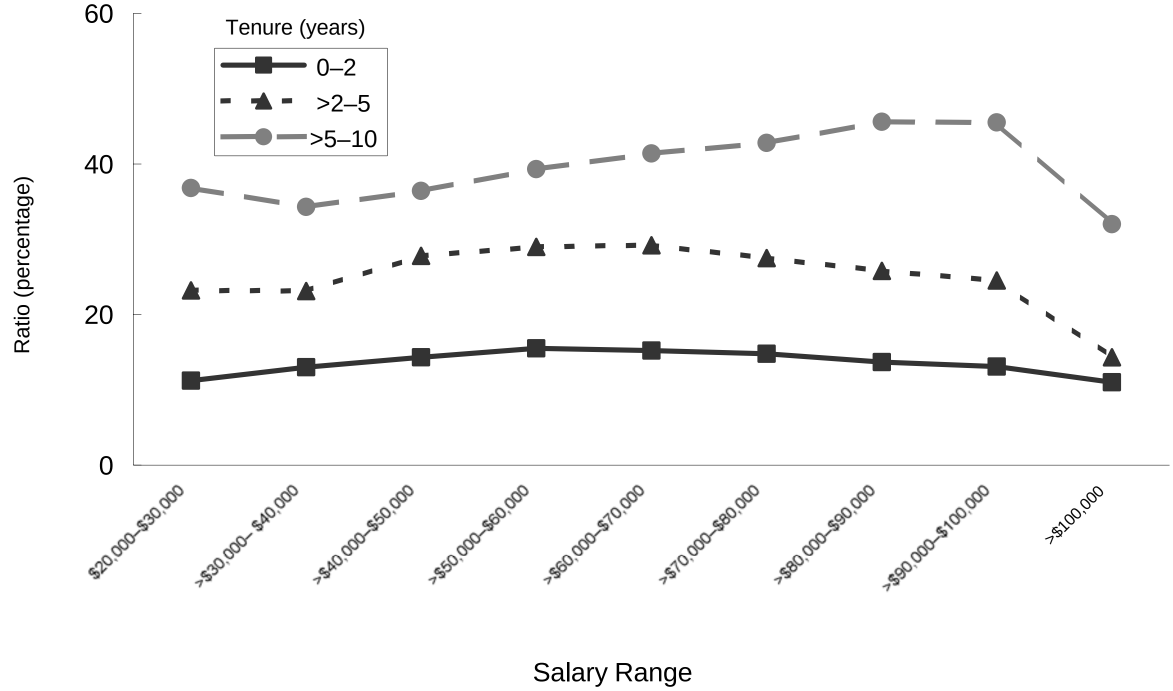


Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure A17

Ratio of 401(k) Account Balance to Salary for Participants in Their 20s by Tenure, 2001

(percentage)

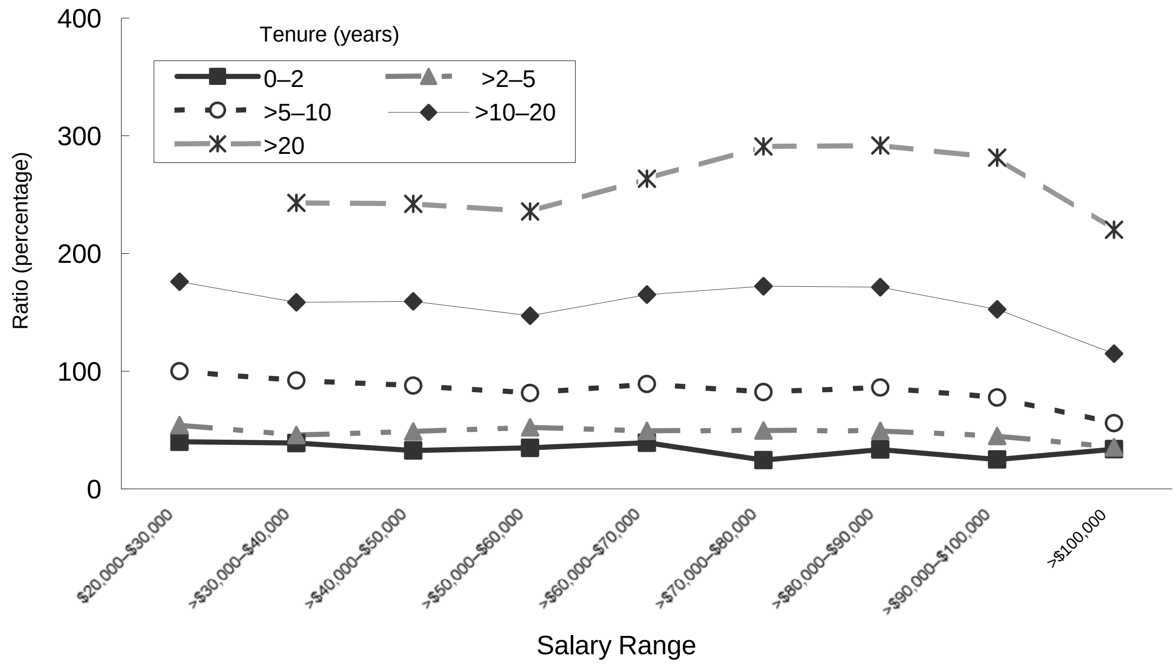


Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure A18

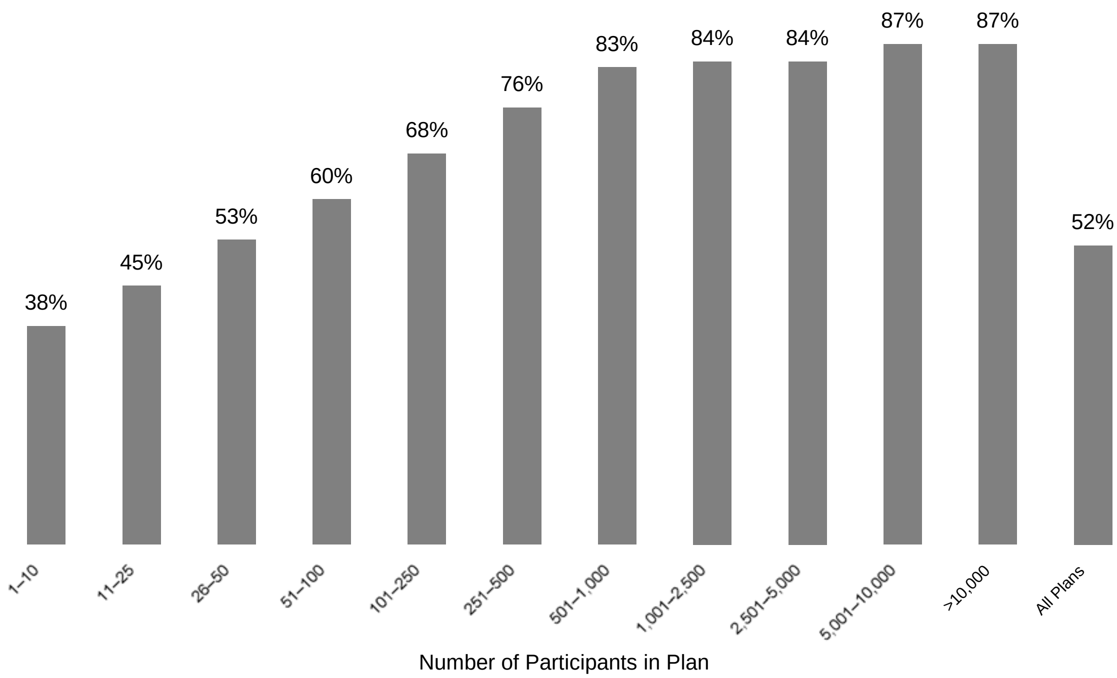
Ratio of 401(k) Account Balance to Salary for Participants in Their 60s by Tenure, 2001

(percentage)



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

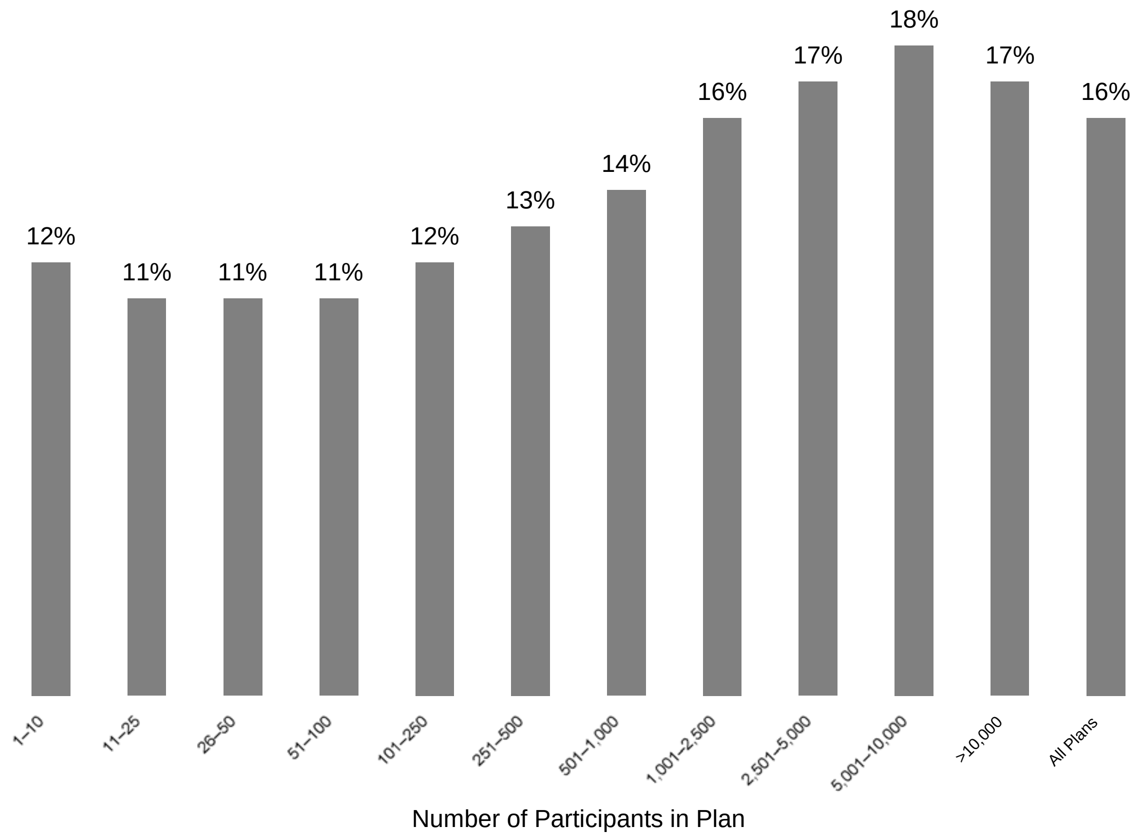
Figure A19
Availability of 401(k) Plan Loans, by Plan Size, 2001
(percentage of plans offering loans)



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

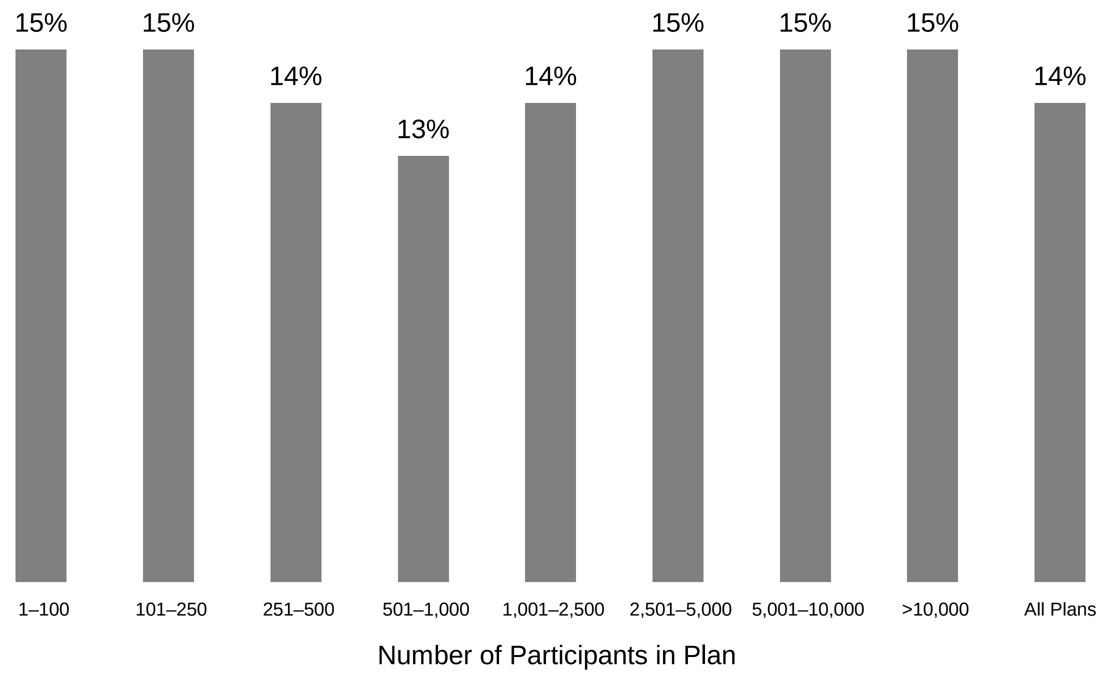
Figure A20

Percentage of Eligible 401(k) Plan Participants With Loans, by Plan Size, 2001



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

Figure A21
Loan Balances as a Percentage of 401(k) Account Balances for Participants With Loans, by Plan Size, 2001



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

Figure A22
Percentage of Eligible 401(k) Plan Participants With Loans, by Salary, 2001

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

Figure A23
Loan Balances as a Percentage of 401(k) Account Balances for Participants With Loans, by Salary, 2001

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