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401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2000

by Sarah Holden and Jack VanDerhei[1]

OVERVIEW AND SUMMARY

At year-end 2000, about 42 million American workers held 401(k) plan accounts with a total of $1.8 trillion in assets. Balances in 401(k) accounts represent an important component of many U.S. households' financial net worth and will be a significant source of income for many individuals in retirement. This issue of *Perspective* examines asset allocation, account balances, and loan activity of a large and representative group of 401(k) plan participants as of year-end 2000.[2]

This research uses data gathered by the Employee Benefit Research Institute (EBRI)[3] and the Investment Company Institute (ICI) in their collaborative effort—the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.[4] 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.[5]

The 2000 EBRI/ICI database contains 11.8 million active 401(k) plan participants in 35,367 plans with $579.8 billion in assets. The 2000 database accounts for 11 percent of all 401(k) plans, 28 percent of all 401(k) participants, and about 33 percent of the assets held in 401(k) plans.

In 2000, equity markets experienced substantial volatility and broad market indexes witnessed their largest annual declines in nearly 20 years.[6] In this market environment, many equity owners earned

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[2] This update extends previous findings from the project for 1996, 1997, 1998, and 1999. For year-end 1999 results, see Holden and VanDerhei (January/February 2001). Results for earlier years are available in earlier issues of *Perspective*. All issues of *Perspective* are available through ICI's website at www.ici.org/economy/perspective.html.

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

[4] 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.

[5] 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 (January/February 2001). For earlier references to research using other participant-level databases, see VanDerhei, Galer, Quick, and Rea (January 1999).

[6] For example, the S&P 500 was down 10 percent in 2000, its largest annual decline since 1981. The Russell 3000 fell about 9 percent, which was its largest annual decline since 1981.

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negative investment returns. Nevertheless, statistics from the EBRI/ICI database indicate that 401(k) plan participants in aggregate did not experience or make significant changes to their 401(k) accounts during 2000.

The principal findings of the analysis are as follows.

Asset Allocation

- The average asset allocation of 401(k) participants in the 2000 EBRI/ICI database was essentially unchanged from year-end 1999, despite the volatility in equity markets in 2000. Among 401(k) participants in the 2000 EBRI/ICI database, three-quarters of plan balances are invested directly or indirectly in equity securities. Fifty-one percent of plan balances are invested in equity funds, 19 percent in company stock, and 8 percent in balanced funds.[7]
- Participants' asset allocation decisions vary with age. As also shown in previous years, younger participants tend to concentrate in equity fund investments, while older participants invest more in fixed-income assets.
- Plan design also influences participants' asset allocation decisions. For example, participants tend to hold a lower share of their accounts in equity funds when the plan offers company stock and/or guaranteed investment contracts (GICs) as investment options.
- Assets allocated to equity funds vary across participants. About 30 percent of participants direct more than 80 percent of their account balances to equity funds, while about 28 percent hold no equity funds. However, 59 percent of participants with no equity funds hold equity securities through balanced funds and/or company stock.

Account Balances

- The average account balance of participants who held accounts in both 1999 and 2000 declined only 0.1 percent in 2000. The change in a participant's account balance is comprised of contributions, investment returns, withdrawals, borrowing, and loan repayments.
- The change in account balance in 2000 varies with participant age. For example, the average account balance of participants in their twenties holding accounts in both 1999 and 2000 increased about 27 percent over 2000 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 almost 6 percent in 2000. However, some participants in their sixties may be making withdrawals.
- At year-end 2000, the average account balance (net of plan loans) for all participants was $49,024 and there is a wide distribution of account balances around that average.[8] 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-four percent of participants have account balances of less than $10,000 in the 401(k) plan at the participant's current employer, while 13 percent have balances greater than $100,000.
- The ratio of account balance to salary in 2000 varies with age, tenure, and salary. Account balances tend to rise relative to salary as age and tenure increase. In addition, the ratio tends to rise with salary until salary reaches $80,000. The ratio tends to decline slightly for salaries greater than $80,000.

Plan Loans

- Despite the volatility in financial markets, there was virtually no change in the loan behavior of 401(k) plan participants in 2000. Only 18 percent of eligible participants had outstanding loans at the end of 2000. In addition, for those with outstanding loans at the end of 2000, 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.

[7] "Funds" include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated (see page 3 for definitions of the investment categories used in this analysis). At the end of 2000, approximately 59 percent of balanced mutual fund assets are invested in equities. See Investment Company Institute, Quarterly Supplemental Data.

[8] 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.

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 from year-end 1996 through year-end 2000. These plan administrators include mutual fund companies, insurance companies, and consulting firms. 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 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.[9] 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 nine categories.[10] 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. Guaranteed investment contracts (GICs) are insurance company products that guarantee a specific rate of return on the invested capital over the life of the contract. Other stable value funds include synthetic GICs[11] or similar instruments. The "other fund" category is the residual for other investments, such as real estate funds. The final category, "unknown," consists of funds that could not be identified.[12]

FIGURE 1

EBRI/ICI Database: 401(k) Plan Characteristics by Number of Plan Participants, 2000

Number of Plan Participants	Total Plans	Total Participants	Total Assets	Average Account Balance
1 to 10	6,123	40,813	$1,169,777,259	$28,662
11 to 25	9,372	160,921	$3,812,754,903	$23,693
26 to 50	6,591	237,758	$6,058,581,664	$25,482
51 to 100	4,791	340,125	$9,888,643,074	$29,074
101 to 250	4,000	632,462	$19,603,810,814	$30,996
251 to 500	1,783	626,191	$20,773,758,455	$33,175
501 to 1,000	1,086	759,671	$29,170,072,218	$38,398
1,001 to 2,500	829	1,286,579	$54,801,654,262	$42,595
2,501 to 5,000	368	1,294,131	$57,003,203,623	$44,047
5,001 to 10,000	227	1,582,919	$79,719,905,764	$50,363
>10,000	197	4,865,686	$297,813,228,397	$61,207
All	35,367	11,827,256	$579,815,390,433	$49,024

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

Distribution of Plans, Participants, and Assets by Plan Size

The 2000 EBRI/ICI database contains 35,367 401(k) plans with $579.8 billion of assets and 11,827,256 participants (Figure 1). Most of the plans in the database are small, whether measured by the number of plan

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

[10] 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.

[11] 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.

[12] 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.

FIGURE 2

EBRI/ICI Database: 401(k) Plan Characteristics by Plan Assets, 2000

Total Plan Assets	Total Plans	Total Participants	Total Assets	Average Account Balance
$0 to $250,000	11,432	191,804	$1,309,024,357	$6,825
>$250,000 to $625,000	7,102	216,709	$2,889,526,242	$13,334
>$625,000 to $1,250,000	4,706	241,214	$4,186,622,523	$17,356
>$1,250,000 to $2,500,000	3,661	324,003	$6,530,029,301	$20,154
>$2,500,000 to $6,250,000	3,527	589,582	$14,061,710,787	$23,850
>$6,250,000 to $12,500,000	1,797	570,534	$15,790,157,182	$27,676
>$12,500,000 to $25,000,000	1,127	710,427	$19,955,665,951	$28,090
>$25,000,000 to $62,500,000	891	1,104,852	$35,897,890,630	$32,491
>$62,500,000 to $125,000,000	443	1,004,708	$38,939,951,613	$38,757
>$125,000,000 to $250,000,000	310	1,274,338	$53,447,405,928	$41,941
> $250,000,000	371	5,599,085	$386,807,405,918	$69,084
All	35,367	11,827,256	$579,815,390,433	$49,024

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

participants or by total plan assets. Indeed, 44 percent of the plans in the database have 25 or fewer participants, and 32 percent have 26 to 100 participants. In contrast, only 5 percent of the plans have more than 1,000 participants. Because most of the plans have a small number of participants, the asset size for many plans is modest. About 32 percent of the plans have assets of $250,000 or less, and another 33 percent have plan assets between $250,001 and $1,250,000 (Figure 2). However, participants and assets are concentrated in large plans. For example, 76 percent of participants are in plans with more than 1,000 participants, and these same plans account for 84 percent of all plan assets (Figure 1).

Relationship of Database Plans to the Universe of Plans

The 2000 EBRI/ICI database appears to be a representative sample of the estimated universe of 401(k) plans. Cerulli Associates (2001) estimates that there were 327,364 401(k) plans at year-end 2000 with about 42.1 million participants and $1,766 billion in assets.[13] Relative to these estimates, the 2000 EBRI/ICI database accounts for 11 percent of all 401(k) plans, 28 percent of all 401(k) participants, and about 33 percent of 401(k) plan assets. The distribution of assets, participants, and plans in the EBRI/ICI database for 2000 is similar to that reported for the universe of plans estimated by Cerulli Associates (Figure 3).[14]

The Typical 401(k) Plan Participant

Participants in 401(k) plans cover wide ranges of age and tenure. Sixty-one percent of participants are in their thirties and forties, while 12 percent of participants are in their twenties and 6 percent are in their sixties (Figure 4). The median age of the participants in the 2000 EBRI/ICI database is 42 years old, the same as in 1999. 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 six years, which is one year less than the median tenure in the 1999 EBRI/ICI database. Salary information available for a subset of participants indicates that the median annual salary among that group is $29,500.[15]

[13] The latest U.S. Department of Labor (forthcoming) 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.

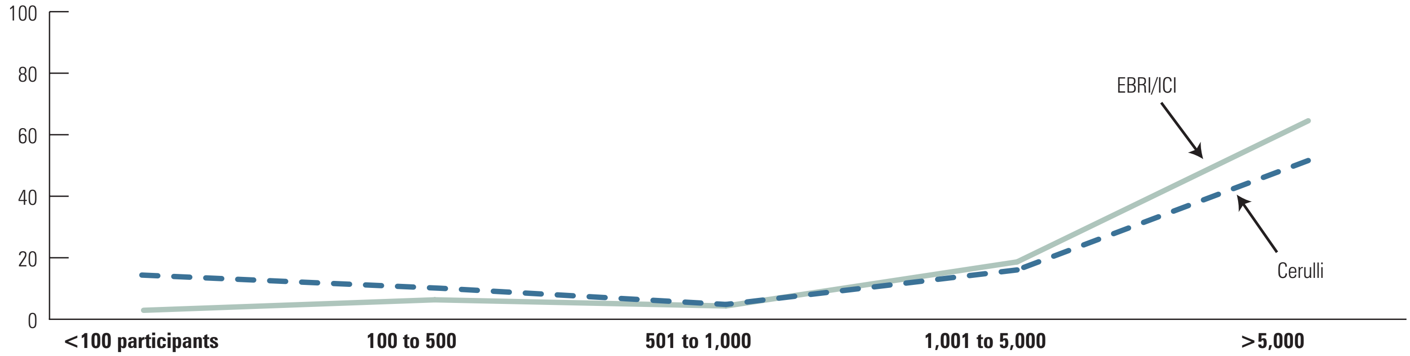
[14] For comparison of the EBRI/ICI database with other participant-level databases, see Holden and VanDerhei (January/February 2001) for a complete list of references. New research released since the beginning of this year includes Choi, Laibson, Madrian, and Metrick (October 2001), which discusses the impact of default investment allocations used with automatic enrollment (when employees must opt out of the 401(k) plan rather than opt in); and Fidelity (2001), which analyzes the activity of participants in defined contribution plans more generally.

[15] In some analyses, the subset is restricted to participants earning $20,000 or more. The median salary in that sub-sample is about $44,800.

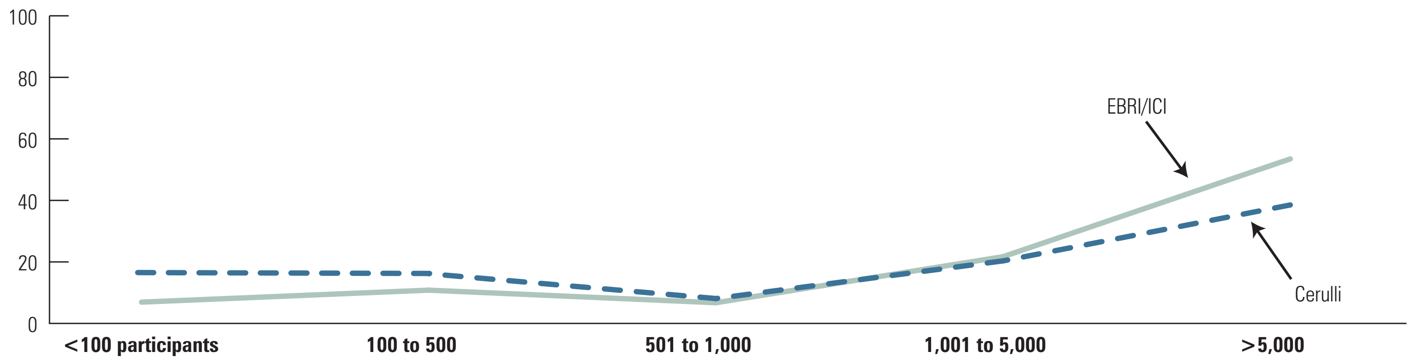
FIGURE 3

401(k) Plan Characteristics by Number of Participants: EBRI/ICI Database vs. Cerulli Estimates for All 401(k) Plans, 2000

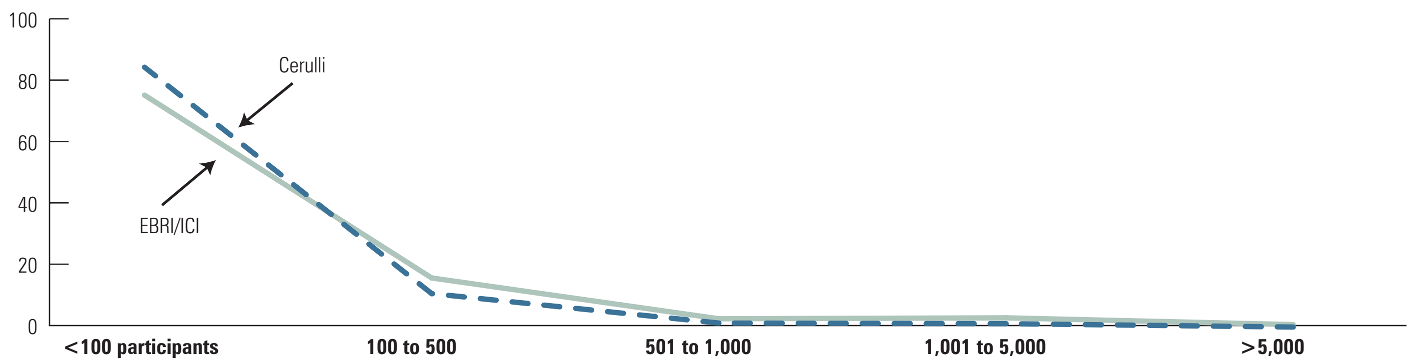
Plan Assets
(percent of plan assets)



Participants
(percent of participants)



Plans
(percent of plans)



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

ASSET ALLOCATION

On average, participants in the 2000 EBRI/ICI database have three-quarters of plan balances invested directly or indirectly in equity securities—the sum of equity funds, company stock, and the equity portion of balanced funds.[16] About half of their account balances are invested in equity funds, 19 percent in company stock, and 8 percent in balanced funds (Figure 5).[17]

Over the past five years, the percentage of participants' account balances invested in equity funds has moved up (Figure 5). At year-end 2000, equity funds represent 51 percent of participants' assets, compared with 44 percent of total balances in 1996. This increase in allocation to equity funds in part reflects the strong performance in equity markets over much of this period. The allocation to equity funds in 2000 was down only slightly from 53 percent in 1999, despite poor equity market performance in 2000.

Asset Allocation by Age and Investment Options

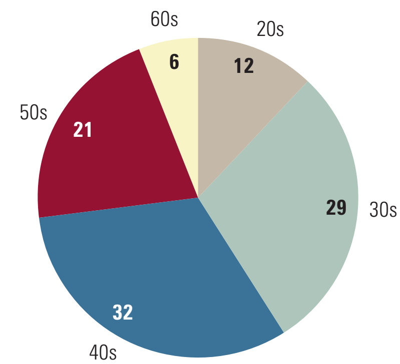
Participant asset allocation varies considerably with age (Figure 6).[18] Younger participants tend to favor equity funds, while older participants are more likely to invest in fixed-income securities, such as GICs and bond funds. On average, participants in their twenties have 61 percent of their account balances invested in equity funds, compared with about 40 percent of account balances for participants in their sixties. Participants in their twenties invest only about 8 percent of their assets in GICs and bond funds combined, while those in their sixties invest 27 percent of their accounts in these assets. Allocations to company stock show a more mixed pattern by age. Participants in their twenties have 15 percent of their plan balances in company stock, while participants in their forties have 20 percent, and participants in their sixties have 16 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.

The mix of investment options offered by a plan sponsor significantly affects the asset allocation of the participants in a plan. Figure 7 presents four combinations of investment offerings,[19] starting with a base group consisting of plans that do not offer company stock or GICs.[20]

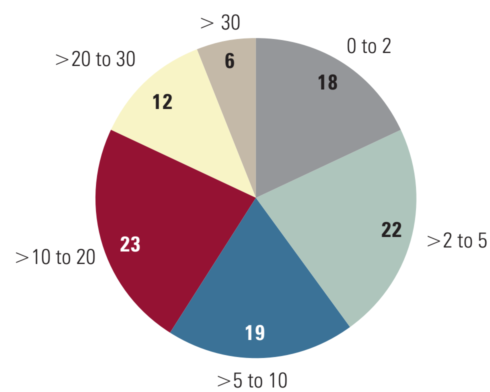
FIGURE 4

Participants by Age and Tenure, 2000
(percent of participants)

By Age
Median Age: 42 Years



By Tenure (years)
Median Tenure: 6 Years



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

[16] At the end of 2000, approximately 59 percent of balanced mutual fund assets are invested in equities. See Investment Company Institute, Quarterly Supplemental Data.

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

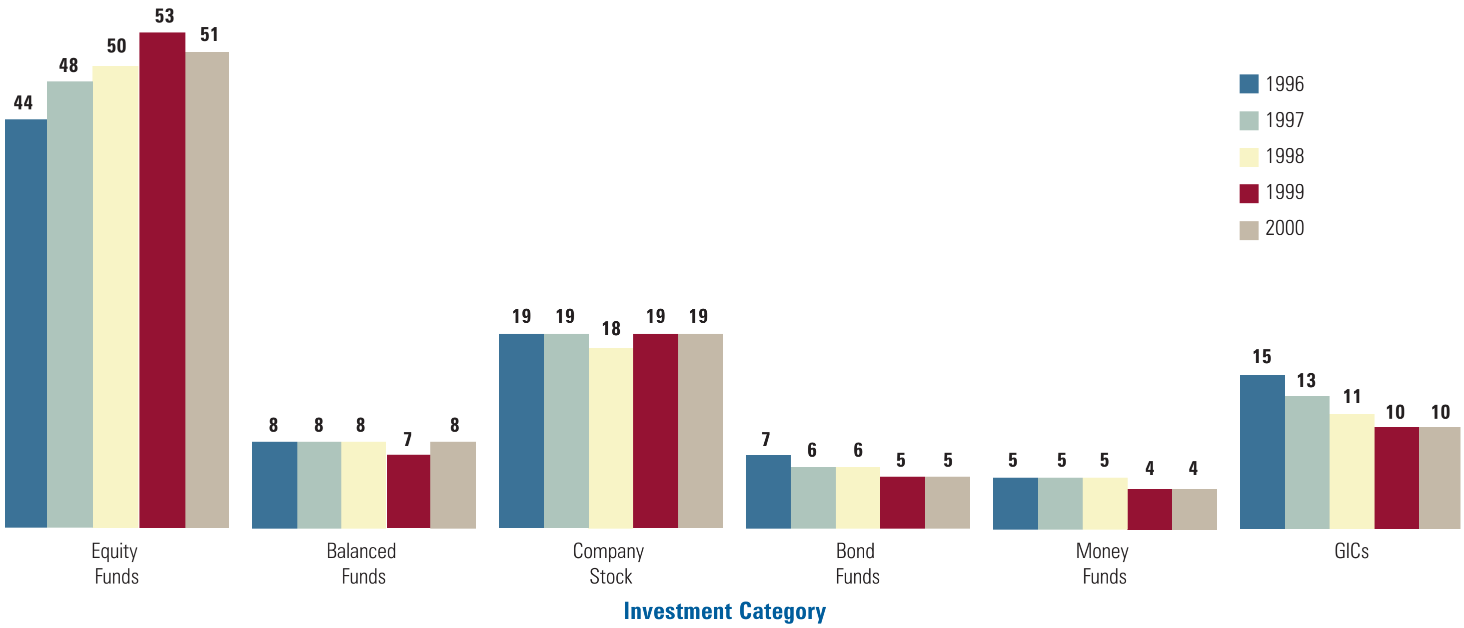
[18] Participants in their twenties hold approximately 2 percent of the assets in the 2000 EBRI/ICI database; participants in their thirties hold 15 percent; participants in their forties hold 34 percent; participants in their fifties hold 36 percent; and participants in their sixties hold the remaining 13 percent of the assets.

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

[20] Plans offering the "base" group of options cover 28 percent of the participants in the database and 20 percent of the assets.

FIGURE 5

Average Asset Allocation, 1996–2000
(percent of total assets)



Note: Minor investment options are not shown.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

FIGURE 6

Average Asset Allocation by Age, 2000
(percent of account balances)

Age Cohort	Equity Funds	Balanced Funds	Bond Funds	Money Funds	Guaranteed Investment Contracts	Company Stock	Other Stable Value Funds	Other	Unknown	Total
20s	61.4	8.6	4.3	4.3	4.0	15.4	0.5	0.7	0.5	100
30s	60.2	8.0	3.8	3.3	4.6	18.4	0.4	0.8	0.4	100
40s	54.8	8.0	4.2	3.8	7.5	19.7	0.6	1.0	0.4	100
50s	49.2	8.0	5.3	4.4	11.5	19.1	1.1	1.0	0.4	100
60s	39.8	8.0	7.7	5.4	19.3	16.3	2.2	0.9	0.4	100
All	51.3	8.0	5.1	4.2	10.4	18.6	1.0	0.9	0.4	100

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

FIGURE 7

Average Asset Allocation by Age and Investment Options, 2000
(percent of account balances)

	Equity Funds	Balanced Funds	Bond Funds	Money Funds	Guaranteed Investment Contracts	Company Stock
ALL AGES COMBINED						
Investment Options						
Equity, Bond, Money, and/or Balanced Funds	70.4	10.1	8.8	7.5		
Equity, Bond, Money, and/or Balanced Funds, and GICs	56.7	14.3	3.5	3.5	19.4	
Equity, Bond, Money, and/or Balanced Funds, and Company Stock	44.6	5.8	7.9	5.8		31.8
Equity, Bond, Money, and/or Balanced Funds, GICs, and Company Stock	43.4	5.6	2.0	1.7	18.9	27.7
PLANS WITHOUT COMPANY STOCK OR GUARANTEED INVESTMENT CONTRACTS						
Age						
20s	77.7	8.0	7.1	5.8		
30s	78.7	8.6	6.4	4.7		
40s	74.1	9.7	7.7	6.1		
50s	67.4	10.8	9.3	8.4		
60s	55.8	12.5	13.8	12.4		
PLANS WITH GUARANTEED INVESTMENT CONTRACTS						
20s	64.5	15.7	3.5	4.0	9.2	
30s	65.1	15.2	3.2	2.9	10.8	
40s	60.5	14.7	3.3	3.2	15.5	
50s	55.1	13.9	3.6	3.6	21.2	
60s	42.4	13.2	3.9	4.4	33.8	
PLANS WITH COMPANY STOCK						
20s	50.9	5.4	4.1	5.4		32.8
30s	50.7	5.3	4.1	4.4		33.5
40s	46.6	5.7	5.4	5.4		34.0
50s	43.4	6.1	8.4	6.3		31.3
60s	37.2	6.4	15.5	7.1		26.1
PLANS WITH COMPANY STOCK AND GUARANTEED INVESTMENT CONTRACTS						
20s	49.0	6.0	2.1	2.0	7.3	31.4
30s	50.5	5.6	1.8	1.5	8.4	31.1
40s	47.0	5.7	1.9	1.6	13.5	29.4
50s	42.4	5.6	2.1	1.8	19.9	27.6
60s	34.1	5.3	2.2	2.1	32.8	22.9

Note: Minor investment options are not shown; therefore, row percentages will not add to 100 percent.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

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 as an investment option allocate a smaller share of their assets to bond and money funds than the base group, and lower their allocation to equity funds, as well.[21] Alternatively, participants in plans that offer company stock, but not GICs, as an investment option have dramatically lower allocations to equity funds and balanced funds than the base group.[22] Finally, in those plans that offer both

[21] Plans offering GICs in addition to the "base" group of options cover 22 percent of the participants in the database and 17 percent of the assets.

[22] Plans offering company stock in addition to the "base" group of options cover 20 percent of the participants in the database and 25 percent of the assets.

FIGURE 8

Average Asset Allocation by Plan Size and Investment Options, 2000
(percent of account balances)

Plan size by number of participants	Equity Funds	Balanced Funds	Bond Funds	Money Funds	Guaranteed Investment Contracts	Company Stock
ALL PLANS						
1 to 100	56.7	20.0	6.7	6.2	7.6	0.1
101 to 500	63.5	13.1	7.5	6.2	6.2	0.8
501 to 1,000	62.1	11.1	7.6	6.2	6.0	3.8
1,001 to 5,000	57.4	9.9	5.7	5.8	10.0	8.7
>5,000	47.0	6.0	4.4	3.3	11.4	25.6
All	51.3	8.0	5.1	4.2	10.4	18.6
PLANS WITHOUT COMPANY STOCK OR GUARANTEED INVESTMENT CONTRACTS						
1 to 100	72.4	9.0	8.9	7.9		
101 to 500	71.5	9.7	9.2	6.9		
501 to 1,000	69.7	9.2	10.3	7.1		
1,001 to 5,000	68.9	10.7	9.0	8.5		
>5,000	71.2	10.6	7.2	6.8		
All	70.4	10.1	8.8	7.5		
PLANS WITH GUARANTEED INVESTMENT CONTRACTS						
1 to 100	44.4	28.8	5.1	4.9	13.6	
101 to 500	49.1	20.6	4.1	4.7	18.4	
501 to 1,000	54.4	17.4	3.4	3.8	18.3	
1,001 to 5,000	57.3	11.3	3.0	3.0	22.9	
>5,000	63.2	9.1	3.1	3.0	19.2	
All	56.7	14.3	3.5	3.5	19.4	
PLANS WITH COMPANY STOCK						
1 to 100	47.1	7.6	6.0	11.7		27.4
101 to 500	59.2	8.6	8.5	8.7		14.5
501 to 1,000	52.6	6.5	6.6	9.2		22.5
1,001 to 5,000	50.8	7.5	6.8	7.6		24.9
> 5,000	42.9	5.4	8.2	5.4		33.6
All	44.6	5.8	7.9	5.8		31.8
PLANS WITH COMPANY STOCK AND GUARANTEED INVESTMENT CONTRACTS						
1 to 100	48.2	15.8	3.3	5.5	12.1	13.0
101 to 500	48.1	12.4	3.3	3.0	17.7	11.5
501 to 1,000	39.9	8.8	2.1	3.7	18.4	25.2
1,001 to 5,000	45.1	9.2	1.9	2.3	22.8	16.6
>5,000	43.2	5.1	2.0	1.6	18.4	29.0
All	43.4	5.6	2.0	1.7	18.9	27.7

Note: Minor investment options are not shown; therefore, row percentages will not add to 100 percent.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

GICs and company stock, company stock appears to displace equity and balanced fund holdings and GICs appear to displace other fixed-income investments.[23] These effects tend to occur across all age groups of participants.

Asset Allocation by Plan Size and Investment Options

Participant asset allocation appears to vary with plan size, 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 (Figure 8, top panel). This trend mainly occurs

[23] Plans offering both GICs and company stock in addition to the "base" group of options cover 30 percent of the participants in the database and 38 percent of the assets.

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 75 percent of participants in plans with more than 5,000 participants are offered company stock as an investment option.

When plans are grouped by investment option and plan size, participants in plans of differing sizes generally do not seem to behave in systematically different ways. For example, asset allocation does not appear to be related to the number of participants in the plan among plans not offering company stock or GICs (but generally offering equity funds, balanced funds, bond funds, and money funds), or among plans offering both GICs and company stock (Figure 8, second and fifth panels). There is some variation in participant asset allocations by plan size among plans offering GICs, but not company stock: for example, the percentage of account balances allocated to equity funds is higher in larger plans (Figure 8, third panel). Furthermore, in plans that offer company stock, but not GICs, the percentage of account balances invested in company stock tends to rise as plan size increases (Figure 8, fourth panel). The percentage allocated to company stock in the smallest plans is also high, but very few small plans fall into this category and it is possible that these figures may be heavily influenced by a few outliers.

FIGURE 9

Impact of Company Stock on Asset Allocation by Age, 2000

(percent of account balances)

Age Cohort	Equity Funds	Balanced Funds	Bond Funds	Money Funds	Guaranteed Investment Contracts	Company Stock
PLANS WITH EMPLOYER-DIRECTED AND PARTICIPANT-DIRECTED BALANCES						
Total Balances (Employer-Directed and Participant-Directed)						
20s	31.8	5.0	0.6	3.1	3.6	53.7
30s	27.9	4.7	0.6	1.8	4.9	58.4
40s	26.0	4.7	0.9	2.8	6.4	56.9
50s	26.2	5.5	1.4	3.6	10.1	50.9
60s	25.0	6.3	2.3	7.2	15.3	41.4
All	26.2	5.2	1.2	3.5	8.8	52.9
Participant-Directed Balances Only						
20s	40.8	6.4	0.8	3.6	4.3	41.3
30s	42.0	7.0	0.8	2.4	6.6	39.0
40s	40.7	7.1	1.5	4.0	9.0	34.9
50s	37.7	7.5	2.0	5.1	12.6	32.0
60s	32.4	7.9	3.1	9.2	18.7	26.0
All	38.5	7.4	1.8	4.9	11.5	33.2
PLANS WITH COMPANY STOCK INVESTMENT OPTION BUT NO EMPLOYER-DIRECTED CONTRIBUTIONS						
Total Balances						
20s	53.9	9.1	2.6	6.6	6.6	18.4
30s	54.5	8.8	2.2	4.7	6.8	20.4
40s	49.4	9.4	2.4	4.8	9.6	22.2
50s	43.5	10.1	3.0	5.5	13.1	22.8
60s	34.2	10.5	3.6	7.3	20.0	22.8
All	46.1	9.7	2.8	5.4	11.8	22.2

Note: Minor investment in other stable value funds and "other" are not shown; therefore, row percentages will not add to 100 percent. Employer-directed balances are invested in the plan sponsor's company stock.

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

Asset Allocation of Employee and Employer Contributions

Typically, in a 401(k) plan, an employee contributes a portion of his or her salary to a plan account[24] and determines how the assets in the account are invested, choosing among investment options made available by the plan sponsor (employer). In many plans, the employer also makes a contribution to the participant's account, generally matching a portion of the employee's contribution. Some employers require that the employer contribution be invested in company stock rather than as directed by the participant.[25] Participants in these plans tend to invest a higher percentage of their self-directed balances in company stock than participants in plans without an employer-directed contribution. Company stock represents 33 percent of the participant-directed account balances in plans with employer-directed contributions (Figure 9, middle panel),[26] compared with 22 percent of account balances in plans offering company stock as an investment option but not requiring that employer contributions be invested in company stock (Figure 9, lower panel).

Overall exposure to equity securities broadly defined is similar between the two groups, suggesting that higher allocations to company stock are offset by lower shares of assets in equity funds and balanced funds. Participants in plans with employer-directed contributions have 76 percent of their participant-directed balances invested in equity securities (defined as company stock, equity funds, and the equity portion of balanced funds). Similarly, participants in plans without employer-directed contributions have 74 percent of their assets invested in equity securities. However, the diversification in these equity security investments varies significantly between the two groups of plans.

When total account balances are considered, the overall exposure to equity securities through company stock and pooled investments is significantly higher for participants in plans with employer-directed contributions. For example, investments in company stock, equity funds, and the equity portion of balanced funds represent 82 percent of the total account balances for participants in plans with employer-directed contributions, compared with 74 percent of the total account balances for participants in plans without employer-directed contributions.[27] This higher allocation to equity securities holds across all age groups.

FIGURE 10

Asset Allocation Distribution of Participant Account Balances to Equity Funds by Age, Tenure, and Salary, 2000
(percent of participants)

	Zero	< 20%	20% to 80%	> 80%	Total
ALL	27.8	6.2	36.4	29.5	100
AGE COHORT					
20s	28.3	4.3	35.1	32.4	100
30s	23.5	5.4	37.4	33.7	100
40s	26.0	6.6	37.9	29.5	100
50s	29.9	7.5	36.5	26.1	100
60s	41.9	8.0	30.8	19.2	100
TENURE (years)					
0 to 2	25.0	3.7	37.4	33.9	100
>2 to 5	25.8	4.8	37.4	31.9	100
>5 to 10	25.7	6.6	37.4	30.3	100
>10 to 20	27.7	7.9	36.9	27.6	100
>20 to 30	33.0	8.6	35.3	23.1	100
> 30	43.5	8.4	30.5	17.7	100
SALARY					
$20,000 to $40,000	29.6	8.8	40.1	21.5	100
>$40,000 to $60,000	26.6	8.6	40.8	24.0	100
>$60,000 to $80,000	17.8	9.0	45.8	27.3	100
>$80,000 to $100,000	14.5	8.3	45.9	31.3	100
>$100,000	14.8	8.4	44.1	32.7	100

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

[24] For recent EBRI/ICI research on the contribution activity of 401(k) plan participants, see Holden and VanDerhei (October 2001).

[25] Source of contribution (employer versus employee) can be matched to fund information for a subset of the data providers in our sample. Of those plans in the 2000 EBRI/ICI database for which the appropriate data are available, less than 0.5 percent require employer contributions to be invested in company stock. However, most of the plans with this feature are large, covering 6 percent of participants and 10 percent of plan assets in the subset.

[26] For this group, the participant-directed portion of the account balances represents 65 percent of the total account balances.

[27] Percentages are derived from data presented in Figure 9.

FIGURE 11

Percentage of Participants Without Equity Fund Balances Who Have Equity Exposure by Age and Tenure, 2000

	Percentage with Company Stock and/or Balanced Funds
AGE COHORT	
20s	53.2
30s	59.6
40s	61.9
50s	63.8
60s	56.0
All	59.4
TENURE (years)	
0 to 2	52.8
>2 to 5	57.1
>5 to 10	58.2
>10 to 20	62.7
>20 to 30	65.1
> 30	63.9
All	59.4

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

Distribution of Equity Fund Allocations and Participant Exposure to Equities

Among individual participants, the allocation of account balances to equity funds varies widely around the average of 51 percent for all participants in the 2000 EBRI/ICI database. Indeed, almost 30 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 10). The percentage of participants holding no equity funds tends to increase with age and tenure. For example, 28 percent of participants in their twenties have no equity investments, compared with 42 percent of participants in their sixties. Similarly, 25 percent of participants with two or fewer years of tenure have no equity fund investments, compared with almost 44 percent of participants with more than 30 years of tenure. In contrast, the percentage

FIGURE 12

Average Asset Allocation for Participants Without Equity Fund Balances by Age and Tenure, 2000
(percent of account balances)

	Balanced Funds	Bond Funds	Money Funds	Guaranteed Investment Contracts	Company Stock	Other Stable Value Funds	Other	Unknown	Total
AGE COHORT									
20s	15.8	7.9	17.8	15.2	40.0	1.0	1.3	1.0	100
30s	13.5	6.3	12.0	15.0	49.5	1.1	1.9	0.7	100
40s	11.4	6.4	10.8	20.8	46.2	1.6	2.0	0.6	100
50s	10.3	7.3	10.1	26.9	40.0	2.7	1.9	0.5	100
60s	8.7	10.7	9.5	37.7	27.2	4.4	1.3	0.3	100
All	10.5	8.0	10.5	27.0	38.8	2.6	1.8	0.5	100
TENURE (years)									
0 to 2	20.2	8.2	23.4	16.4	26.2	2.2	2.0	1.4	100
>2 to 5	19.3	8.3	17.3	15.4	35.7	1.5	1.7	0.7	100
>5 to 10	15.9	7.9	14.3	19.6	38.2	1.3	2.2	0.5	100
>10 to 20	11.8	7.4	11.9	22.7	41.6	1.7	2.3	0.5	100
>20 to 30	8.6	7.1	9.0	28.8	41.5	2.3	2.1	0.3	100
> 30	6.6	10.3	7.1	37.4	32.0	5.1	1.0	0.2	100
All	10.5	8.0	10.5	27.0	38.8	2.6	1.8	0.5	100

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

of participants holding no equity funds tends to fall as salary increases. For example, about 30 percent of participants earning between $20,000 and $40,000 a year hold no equity funds, compared with 15 percent of participants earning in excess of $100,000 a year.

Participants with no equity fund balances may still have exposure to the stock market through company stock or balanced funds. Indeed, 59 percent of participants with no equity funds have investments in either company stock or balanced funds (Figure 11). As a result, participants with no equity funds have 45 percent[28] of account balances in equity-related investments (Figure 12).

Asset Allocation by Salary

Salary information is available for a subset of participants in the 2000 EBRI/ICI database.[29] Because asset allocation is influenced by the

FIGURE 13

Average Asset Allocation by Salary and Investment Options, 2000
(percent of account balances)

Salary	Equity Funds	Balanced Funds	Bond Funds	Money Funds	Guaranteed Investment Contracts	Company Stock
PLANS WITHOUT COMPANY STOCK OR GUARANTEED INVESTMENT CONTRACTS						
$20,000 to $40,000	64.5	9.8	11.7	7.1		
>$40,000 to $60,000	71.0	9.5	11.3	5.2		
>$60,000 to $80,000	74.6	8.5	10.2	4.7		
>$80,000 to $100,000	75.3	8.7	9.6	4.3		
>$100,000	73.3	8.3	9.3	4.6		
All	70.4	10.1	8.8	7.5		
PLANS WITH GUARANTEED INVESTMENT CONTRACTS						
$20,000 to $40,000	47.7	21.7	3.7	4.6	20.2	
>$40,000 to $60,000	51.1	21.6	3.8	4.5	16.8	
>$60,000 to $80,000	55.0	19.4	3.4	4.1	15.7	
>$80,000 to $100,000	58.1	18.8	3.5	3.7	13.8	
>$100,000	57.7	20.5	3.2	4.0	11.7	
All	56.7	14.3	3.5	3.5	19.4	
PLANS WITH COMPANY STOCK						
$20,000 to $40,000	38.0	7.0	5.5	6.4		41.3
>$40,000 to $60,000	37.8	11.2	4.0	6.9		33.7
>$60,000 to $80,000	39.9	12.3	3.1	5.3		29.3
>$80,000 to $100,000	42.6	12.9	3.5	4.7		25.9
>$100,000	46.5	9.5	6.3	4.8		26.4
All	44.6	5.8	7.9	5.8		31.8
PLANS WITH COMPANY STOCK AND GUARANTEED INVESTMENT CONTRACTS						
$20,000 to $40,000	41.2	7.4	1.8	1.1	18.1	29.3
>$40,000 to $60,000	43.6	6.7	1.6	1.0	19.0	27.5
>$60,000 to $80,000	46.5	6.7	1.6	0.6	18.3	25.8
>$80,000 to $100,000	49.9	6.0	1.8	0.6	18.0	23.2
>$100,000	47.1	5.5	1.8	0.6	17.8	26.5
All	43.4	5.6	2.0	1.7	18.9	27.7

Note: Minor investment options are not shown; therefore, row percentages will not add to 100 percent.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

[28] Estimated as the sum of the 39 percent of account balances that is in company stock and 59 percent of the 11 percent of account balances that is in balanced funds.

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

FIGURE 14

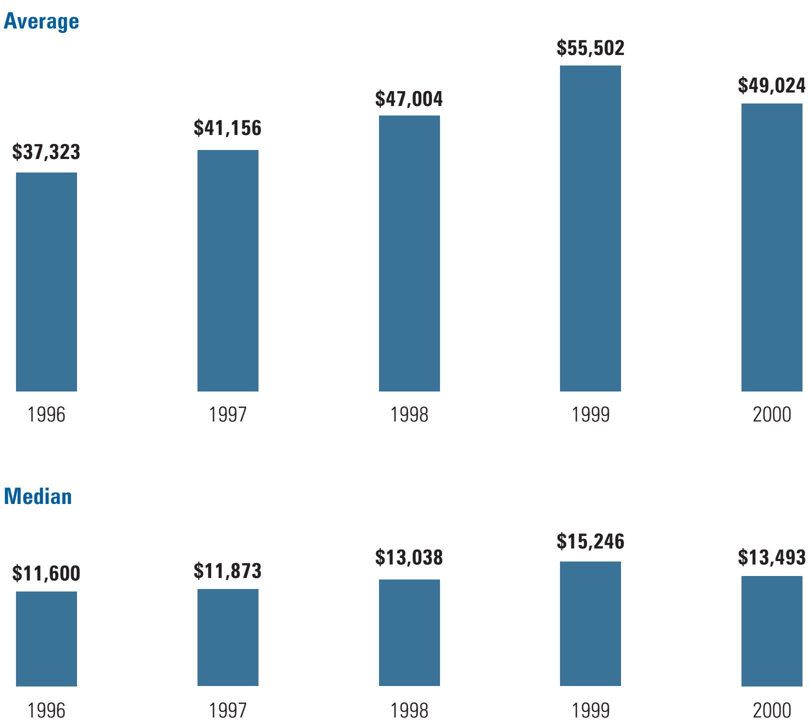
Average Account Balances Among 401(k) Participants Present in Both 1999 and 2000, by Age Group

	Average Account Balance 1999	Average Account Balance 2000	Change (in percent)
All	$58,850	$58,774	-0.1
20s	$8,219	$10,431	26.9
30s	$31,518	$33,125	5.1
40s	$62,059	$62,694	1.0
50s	$98,139	$95,836	-2.3
60s	$122,240	$115,206	-5.8

Note: Sample of 8.3 million participants with account balances at year-end 1999 and year-end 2000.
Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

FIGURE 15

Participant Account Balances,[1] 1996–2000[2]



[1] Participant account balances are net of plan loans.
[2] Sample of participants changes over time.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

investment options available to participants, Figure 13 presents asset allocation by salary range and by investment option. The data show that asset allocation differs somewhat with salary. For example, participants with higher earnings tend to hold a somewhat larger share of their account balances in equity funds, regardless of the investment options offered. Nonetheless, all income groups have substantial overall allocation to equity securities—the sum of equity funds, company stock, and the equity portion of balanced funds. Indeed, the variation in allocation to all equity securities tends to be much less across the different income groups than the variation in allocation to equity funds alone, regardless of the investment options presented.

When GICs, but not company stock, are offered as an investment option, higher income participants tend to allocate a lower percentage of their account balances to GICs (Figure 13, second panel). However, when both GICs and company stock are offered as investment options, there is very little variation in the allocation of account balance to GICs across the different income groups (Figure 13, bottom panel).

ACCOUNT BALANCES

In the EBRI/ICI database, the reported account balance represents retirement assets 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.

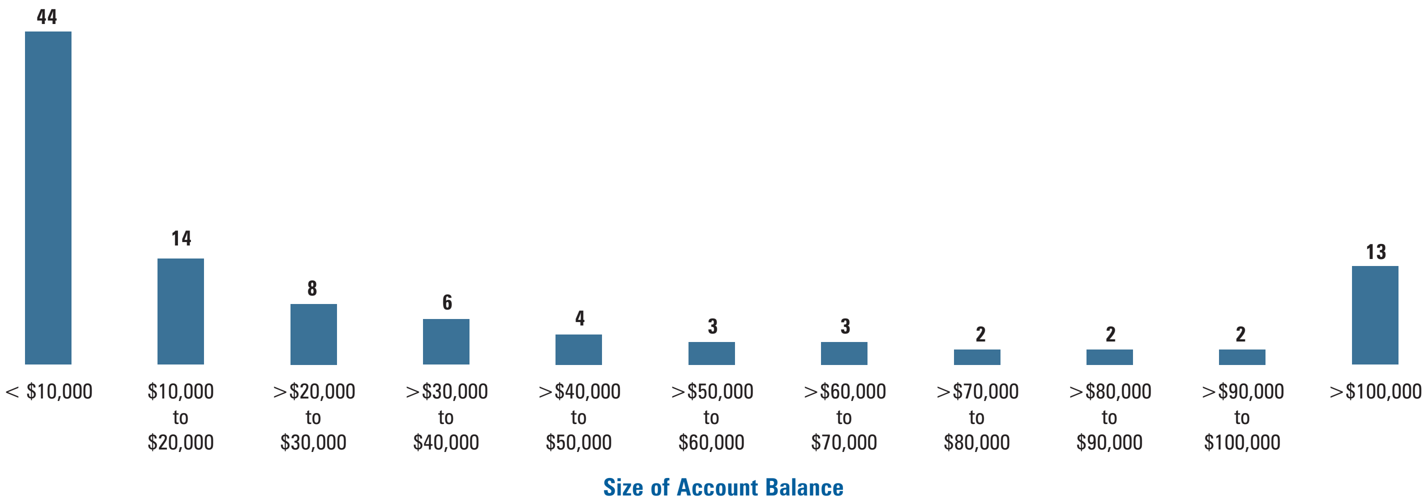
Changes in Account Balances

This section examines the change in account balances of a group of participants who held accounts at both year-end 1999 and year-end 2000.

FIGURE 16

Distribution of Account Balances by Size of Account Balance, 2000

(percent of participants with account balances in specified ranges)



Note: Percentages do not add to 100 percent because of rounding.

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

Analyzing a group of participants holding accounts in both 1999 and 2000 removes the effect of participants entering and leaving plans on the overall average. About 80 percent, or 8.3 million, of the participants with accounts at year-end 1999 had accounts at year-end 2000. The average 401(k) account balance of this group of participants with accounts in 1999 and 2000 declined only slightly in 2000. At year-end 2000, the average account balance of this consistent set stood at $58,774, only 0.1 percent below the average of $58,850 at year-end 1999 (Figure 14). From this standpoint, the balance of the "typical" participant was essentially unchanged in 2000. The change in a participant's account balance is the sum of three factors: new contributions by the participant and 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 among the three components is evident in the change in average account balances by age group. In the group of 8.3 million participants, the average account balance of participants in their twenties rose about 27 percent in 2000, while the average account balance of participants in their sixties fell about 6 percent (Figure 14). 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 sixties may be making withdrawals.

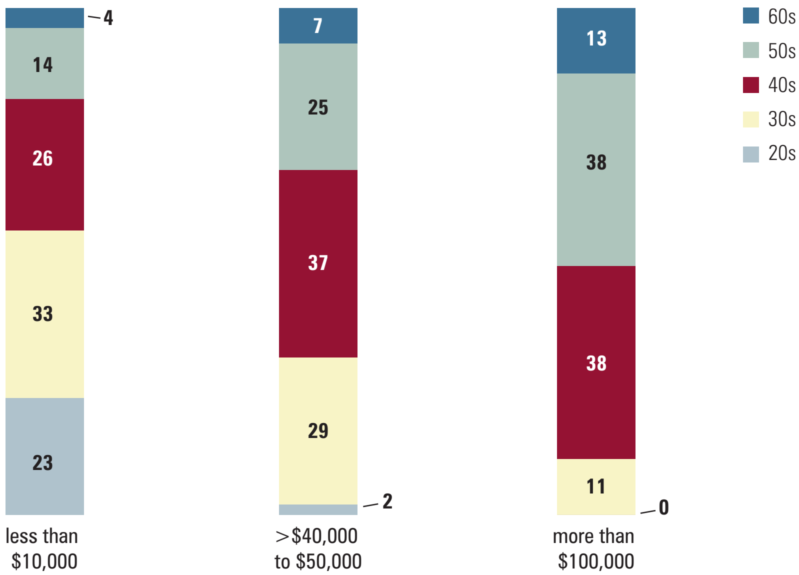
Account Balances at Year-End 2000

The average account balance (net of plan loans) for all participants in the EBRI/ICI database was $49,024 at year-end 2000, which is 12 percent lower than the average account balance of $55,502 at year-end 1999, but 4 percent higher than the $47,004 average account balance at year-end 1998 (Figure 15).[30] The median account balance was $13,493 at year-end 2000, which is 11 percent lower than the median account balance of $15,246 at year-end 1999, but 3 percent higher than the $13,038 median account balance at year-end 1998.

[30] 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, forthcoming), a figure that is within 12 percent of the $47,004 average balance estimate from the 1998 EBRI/ICI database. Cerulli Associates (2001) estimates an average account balance (including loan balances as part of account assets) of $41,919 for 2000. Profit Sharing/401(k) Council of America (2001) suggests that the average account balance (also including loans) for participants in their 2000 survey, which includes profit-sharing and combination plans as well as 401(k) plans, is approximately $75,700.

FIGURE 17

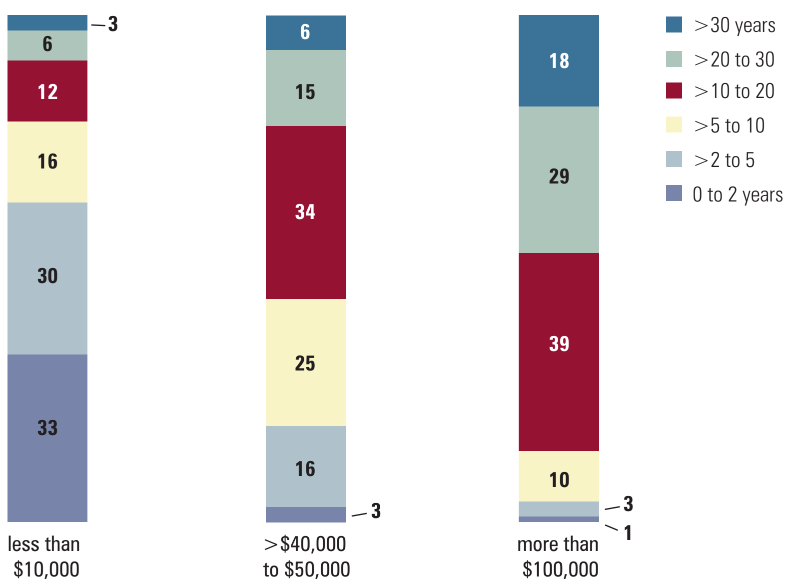
Age Composition of Selected Account Balance Categories, 2000
(percent)



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

FIGURE 18

Tenure Composition of Selected Account Balance Categories, 2000
(percent)



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

There is wide variation in account balances around the average of $49,024 at year-end 2000. Approximately three-quarters of the participants in the 2000 EBRI/ICI database have account balances that are lower than the average. Indeed, 44 percent of participants have account balances of less than $10,000, while 13 percent of participants have account balances greater than $100,000 (Figure 16).

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

Among participants in the 2000 EBRI/ICI database, there is a positive correlation between age and account balance.[31] Examination of the age composition of account balances finds that 56 percent of participants with account balances of less than $10,000 are in their twenties and thirties, while less than one-fifth are in their fifties or sixties (Figure 17). Similarly, of those with account balances greater than $100,000, about half are in their fifties and sixties, while only 11 percent are in their thirties and virtually none are in their twenties.

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. Likewise, tenure (or years of participation) and account balance also should be

[31] 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.

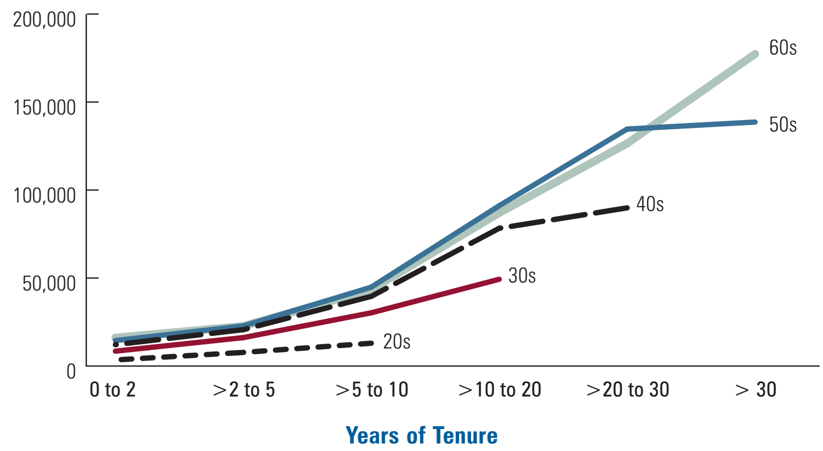
positively correlated as long-term employees have had more time to accumulate an account balance.[32] The participant's tenure with the employer serves as a proxy for length of participation in the 401(k) plan.[33] Among participants in the 2000 EBRI/ICI database, there is a positive correlation between account balance and tenure. Indeed, 63 percent of those participants with account balances of less than $10,000 have five or fewer years of tenure, while 86 percent of those participants with account balances greater than $100,000 have more than 10 years of tenure (Figure 18).[34]

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 two or fewer years of tenure is $16,132, compared with $177,289 for participants in their sixties with more than 30 years of tenure (Figure 19). Similarly, the average account balance of participants in their forties with two or fewer years of tenure is $12,145, compared with $89,874 for participants in their forties with more than 20 years of tenure. The increase in account balance as tenure increases is largest for participants in their fifties and sixties.

The distribution of account balances underscores the effects of age and tenure on account balances. In a given age group, fewer years of tenure mean a higher percentage of participants with account balances of less than $10,000. For example, 91 percent of participants in their twenties with two or fewer years of tenure have account balances of less than $10,000, compared with 58 percent of participants in their twenties with five to 10 years of tenure (Figure 20). Older workers display a similar pattern.

FIGURE 19

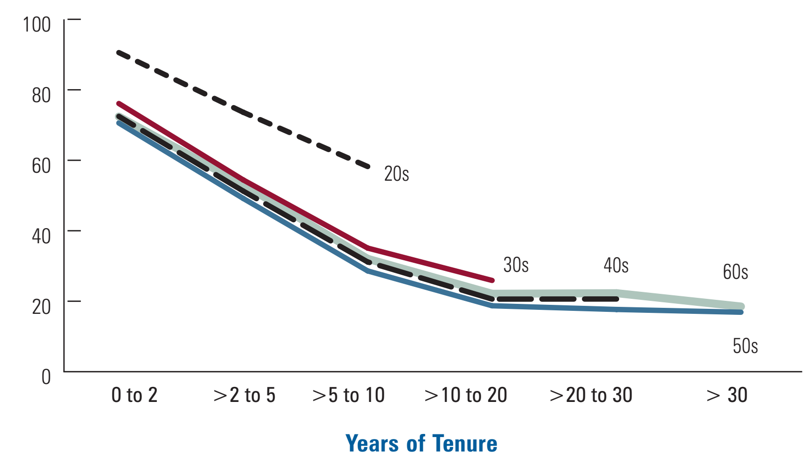
Average Account Balance by Age and Tenure, 2000
(dollars)



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

FIGURE 20

Account Balances Less Than $10,000 by Age and Tenure, 2000
(percent of participants with account balances less than $10,000)



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

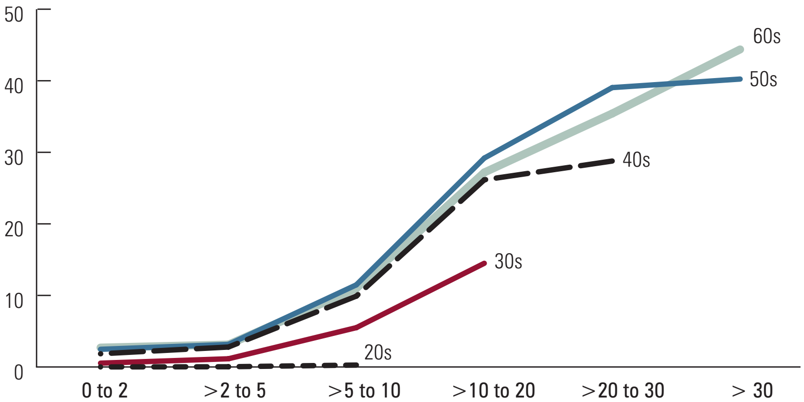
[32] A rollover from a previous employer's plan could interfere with this positive correlation because a rollover could give a short-tenure employee a high account balance.

[33] Approximately 10 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.

[34] 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 3 percent of them have between two and five years of tenure (Figure 18).

FIGURE 21

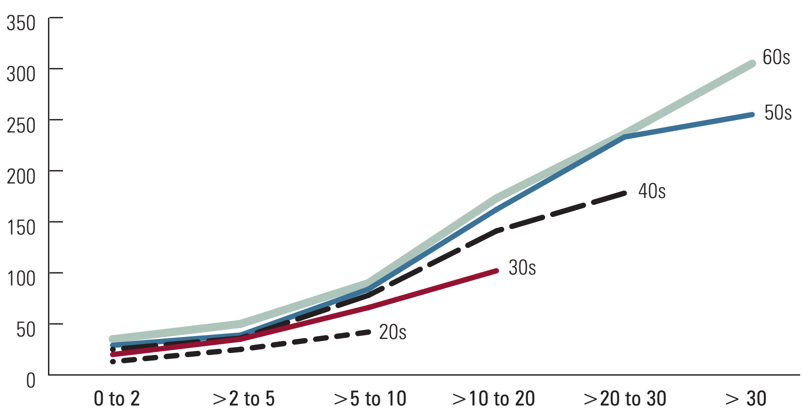
Account Balances Over $100,000 by Age and Tenure, 2000
(percent of participants with account balances over $100,000)



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

FIGURE 22

Ratio of Account Balance to Salary by Age and Tenure, 2000
(percent)



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

For example, 72 percent of participants in their sixties with two or fewer years of tenure have account balances of less than $10,000. In contrast, only 20 percent of those in their sixties with more than 20 years of tenure have account balances of less than $10,000.[35]

In a given age group, longer tenure means a higher percentage of people with account balances greater than $100,000. For example, about 7 percent of participants in their sixties with 10 or fewer years of tenure have account balances in excess of $100,000 (Figure 21). However, about 35 percent of participants in their sixties with 21 to 30 years of tenure with their current employer have account balances greater than $100,000. The percentage increases to 44 percent for participants in their sixties with more than 30 years of tenure.

Relationship between Account Balances and Salary

This section examines how the ratio of 2000 account balance to 2000 salary varies with age, tenure, and salary.[36] The ratio of participant account balance to salary is positively correlated with age and tenure. Participants in their sixties, having had more time to accumulate assets, have higher ratios, while those in their twenties have the lowest ratios (Figure 22). For example, the average ratio of account balance to salary for participants in their twenties with two or fewer years of tenure is 13 percent, while the average ratio for participants in their sixties with two or fewer years of tenure is 35 percent. Furthermore, for a given age group, the ratio of account balance to salary rises as tenure increases. For example, for participants in their

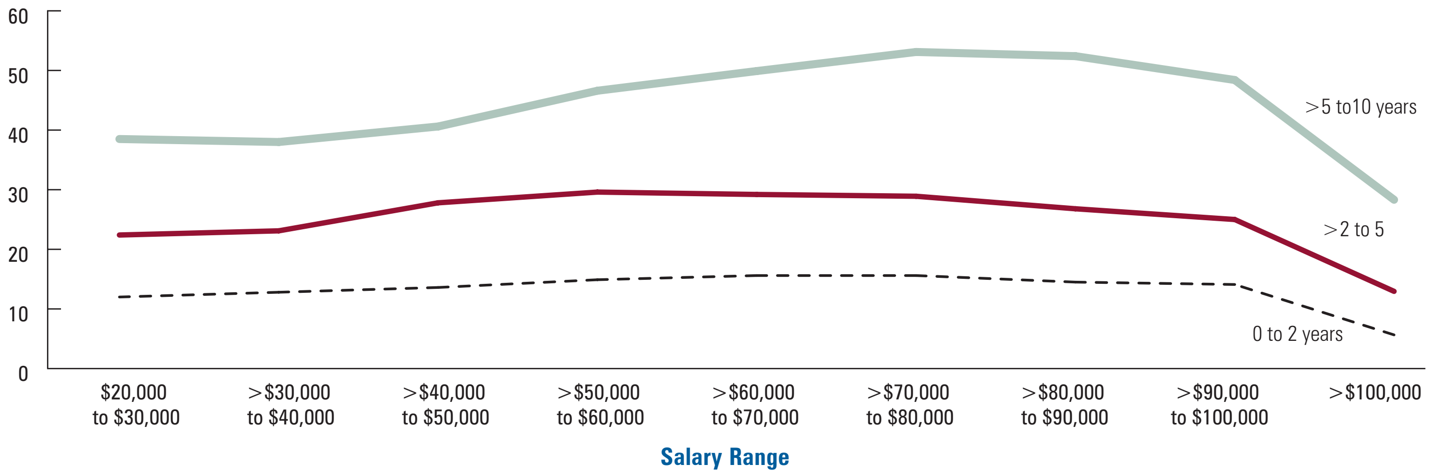
[35] Two possible explanations for the low account balances among this group are: (1) that their employer's 401(k) plan has only recently been established (indeed, 49 percent of all 401(k)-type plans in existence in 1995 were established after 1989 (U.S. Department of Labor (Spring 1999), table B.10)),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

[36] 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).

FIGURE 23

Ratio of Account Balance to Salary for Participants in Their Twenties by Tenure, 2000

(percent)

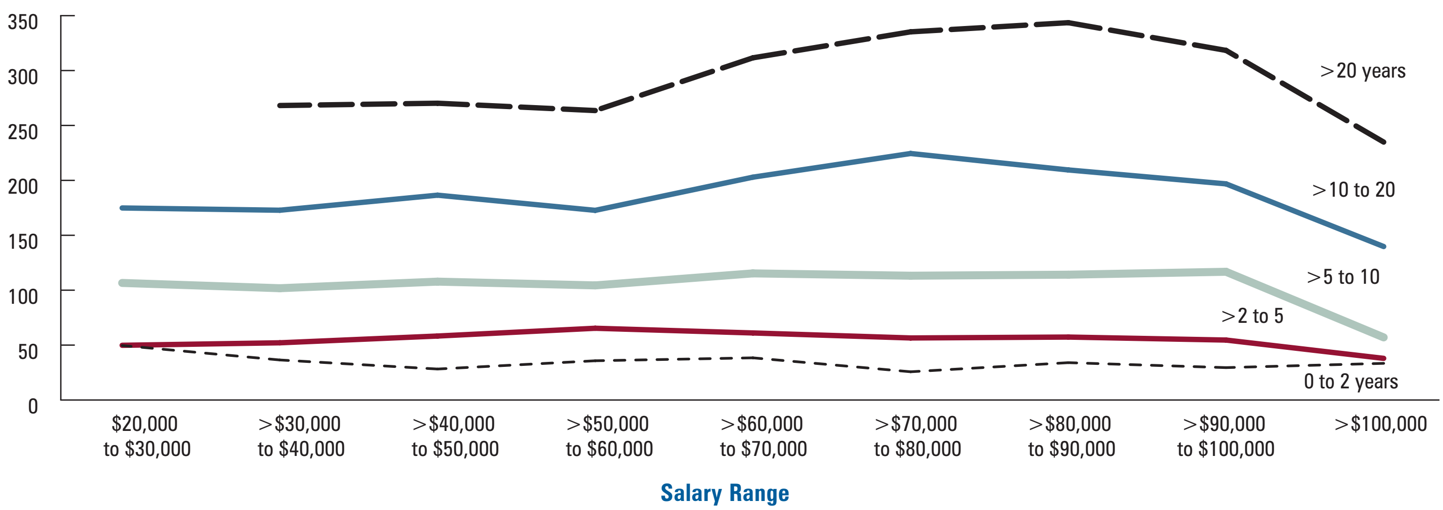


Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

FIGURE 24

Ratio of Account Balance to Salary for Participants in Their Sixties by Tenure, 2000

(percent)



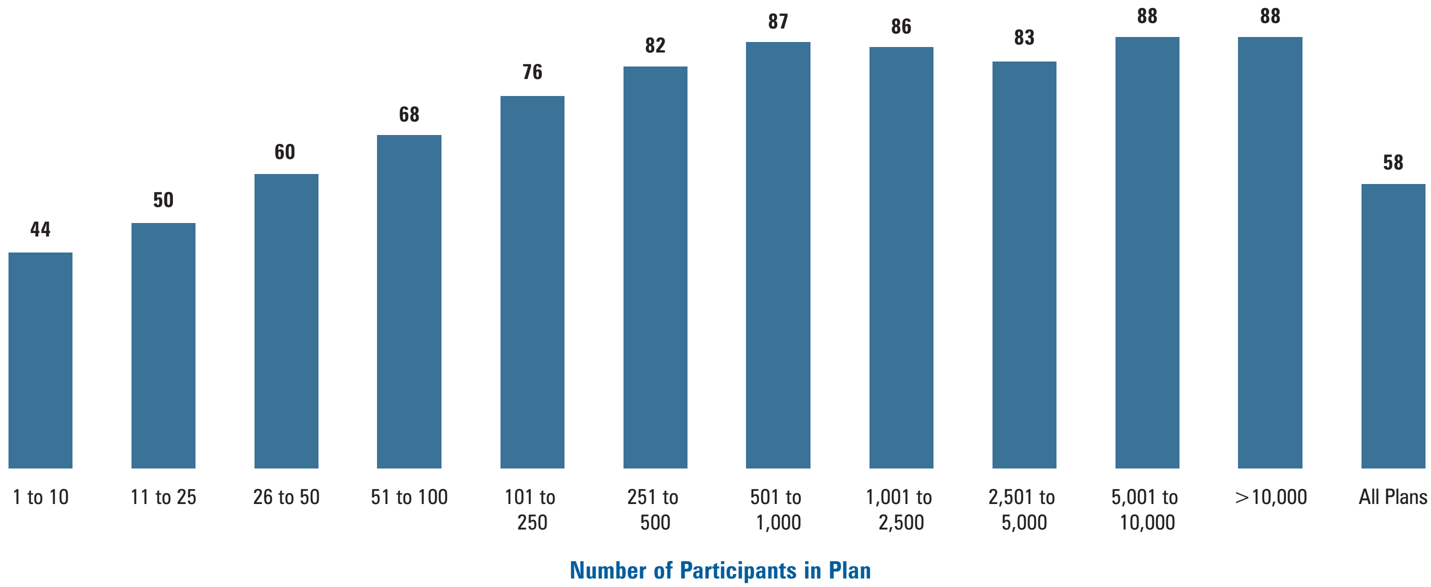
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

sixties with more than 30 years of tenure, the ratio of account balance to 2000 salary is 305 percent.

The ratio of account balance to salary varies somewhat with salary. For example, among participants in their twenties, the ratio tends to increase slightly with salary for low-to-moderate salary groups (Figure 23). However, at high salary levels the ratio tends to decline somewhat. For example, for participants in their twenties with two to five years of tenure, the ratio of account balance to salary rises from 22 percent for salaries between $20,000 and $30,000 to 29 percent for salaries between $70,001 and $80,000. Thereafter, the ratio falls to 13 percent for salaries in excess of $100,000. Similarly, for participants in their sixties with 11 to 20 years of tenure, the ratio rises from 173 percent for salaries between $30,001 and $40,000 to about 224 percent for salaries between $70,001 and $80,000, then falls to 140 percent for salaries in excess of $100,000 (Figure 24).

FIGURE 25

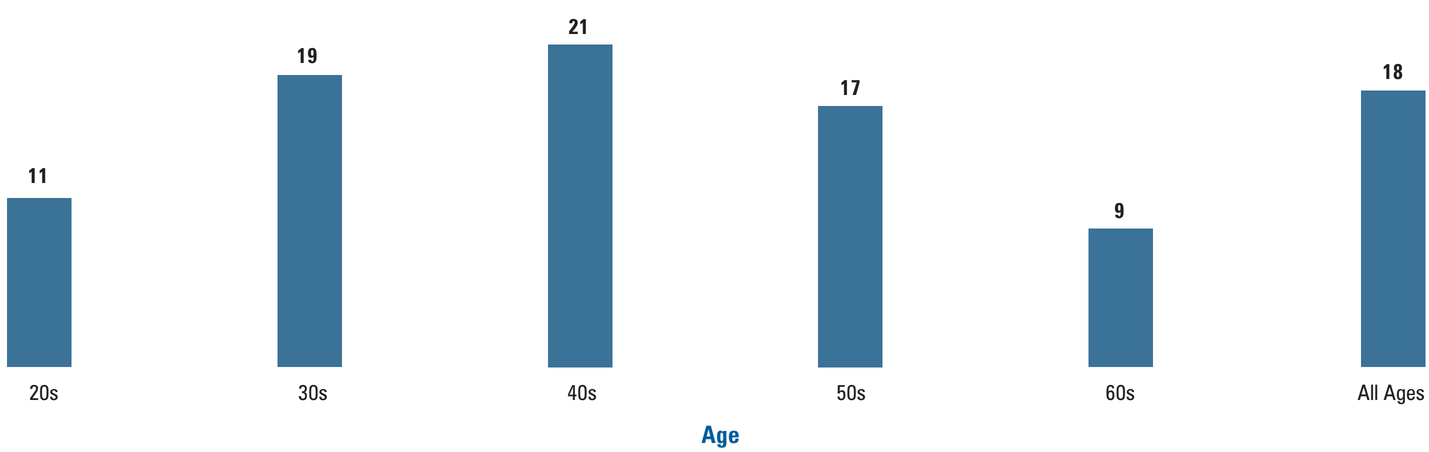
Availability of Plan Loans by Plan Size, 2000
(percent of plans offering loans)



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

FIGURE 26

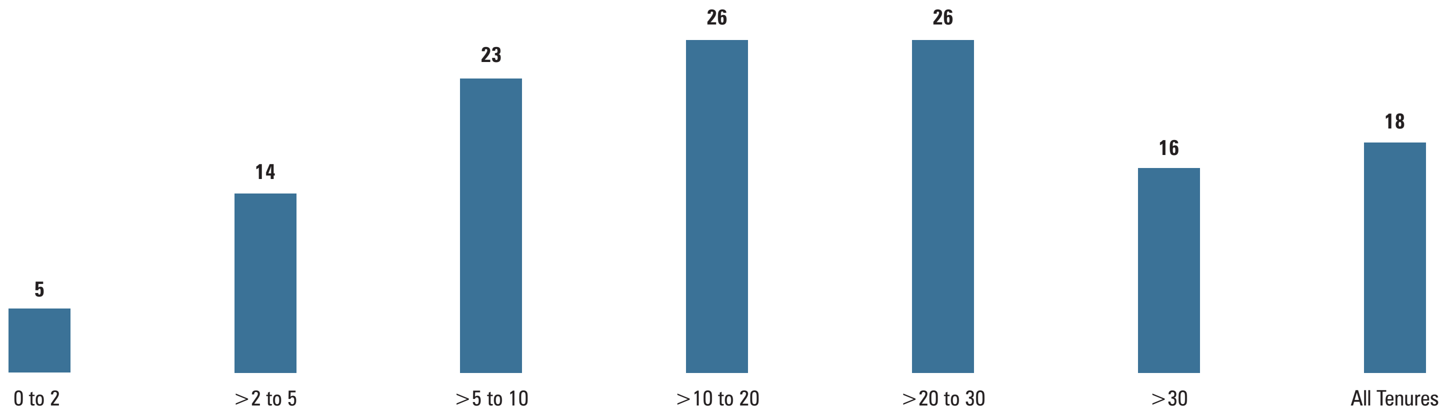
Percentage of Eligible Participants with Loans by Age, 2000



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

FIGURE 27

Percentage of Eligible Participants with Loans by Tenure, 2000



Years of Tenure

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

FIGURE 28

Percentage of Eligible Participants with Loans by Salary, 2000

Salary Range

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

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. Empirical research suggests that higher earners tend to contribute higher percentages of salary;[37] therefore, one would expect the ratio of account balance to salary to rise with salary. However, tax code contribution limits and nondiscrimination rules (which aim to assure that employees of all income ranges attain the benefits of the 401(k) plan)[38] restrain these individuals' ability to save.

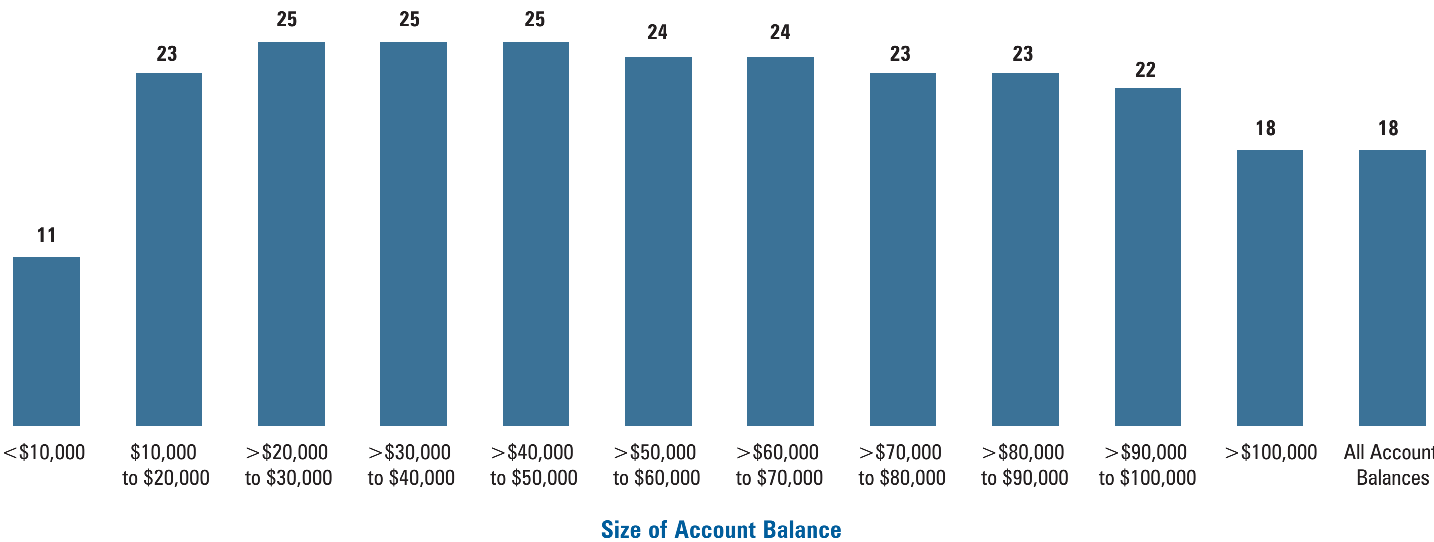
[37] See Holden and VanDerhei (October 2001) for a complete discussion of EBRI/ICI findings and others' research on the relationship between contribution rates and salary.

[38] Specifically, contributions of high income participants are constrained by election deferral limits in Internal Revenue Code (IRC) Section 402(g) and Actual Deferral Percentage and Actual Contribution Percentage (ADP/ACP) nondiscrimination rules in IRC Sections 401(k) and 401(m).

The "Economic Growth and Tax Relief Reconciliation Act of 2001" (EGTRRA), which includes an array of reforms related to retirement savings, raises the contribution limits applicable to 401(k) plan participants.

FIGURE 29

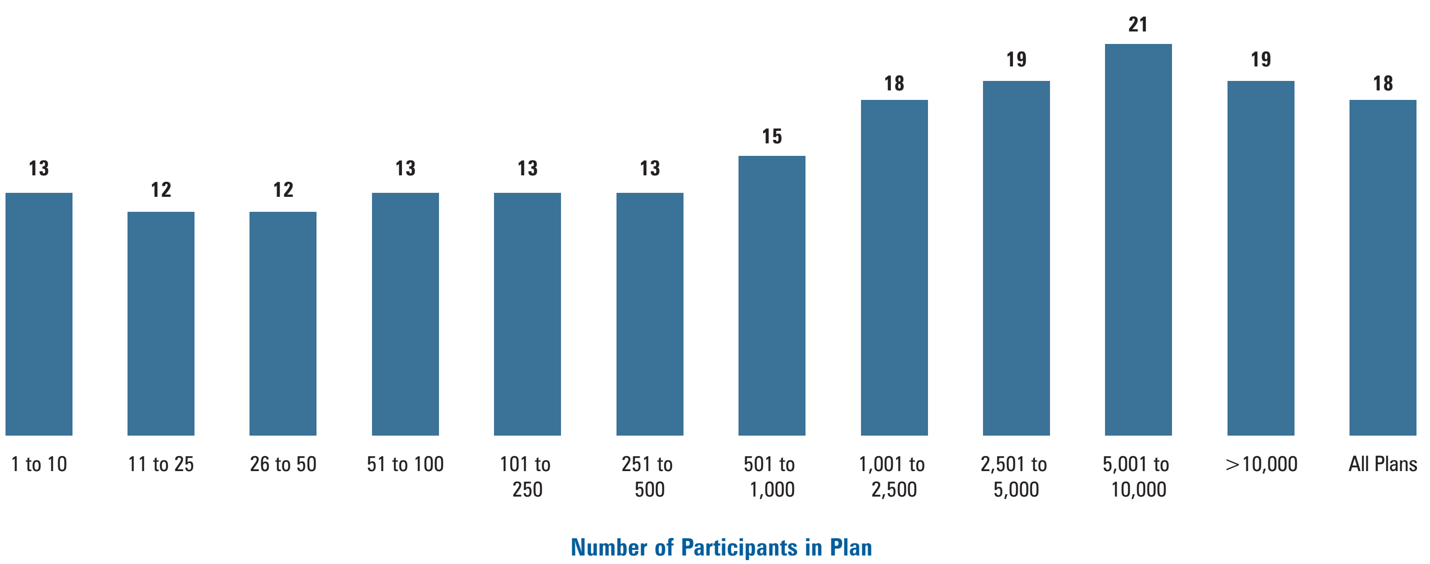
Percentage of Eligible Participants with Loans by Account Balance, 2000



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

FIGURE 30

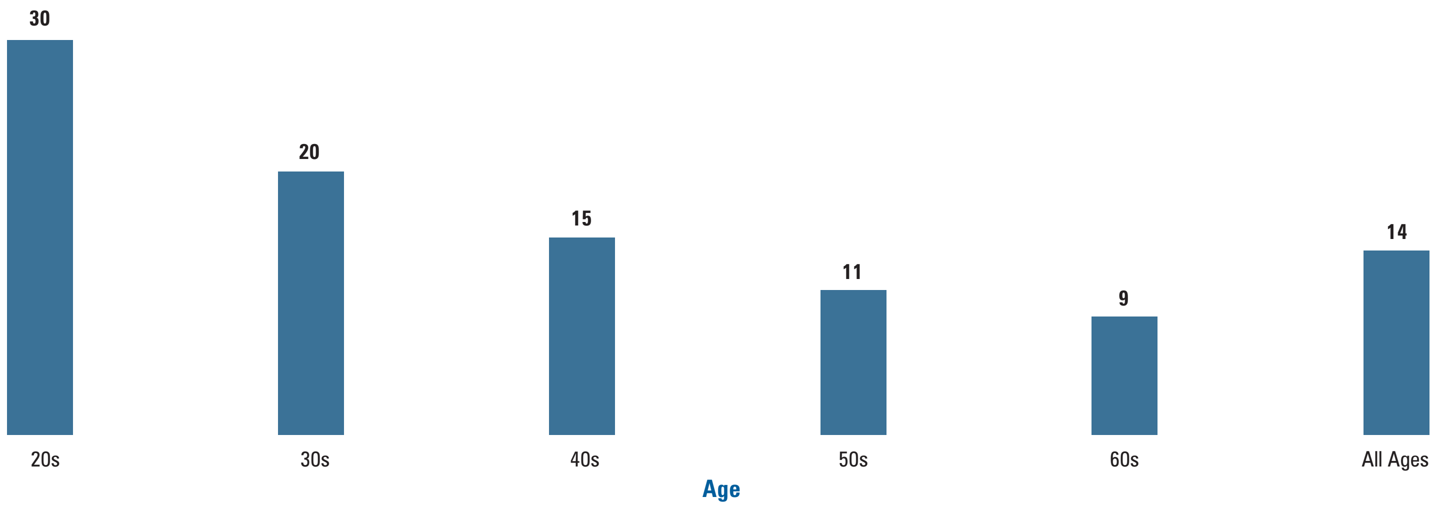
Percentage of Eligible Participants with Loans by Plan Size, 2000



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

FIGURE 31

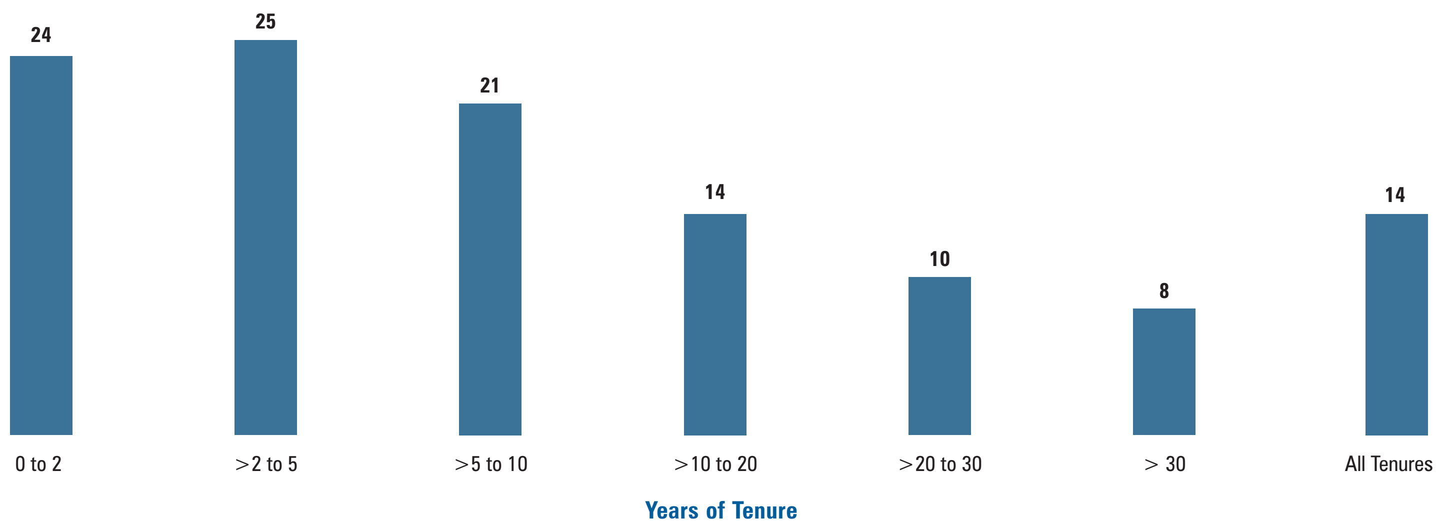
Loan Balances as a Percentage of Account Balances for Participants with Loans by Age, 2000



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

FIGURE 32

Loan Balances as a Percentage of Account Balances for Participants with Loans by Tenure, 2000



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

PLAN LOANS

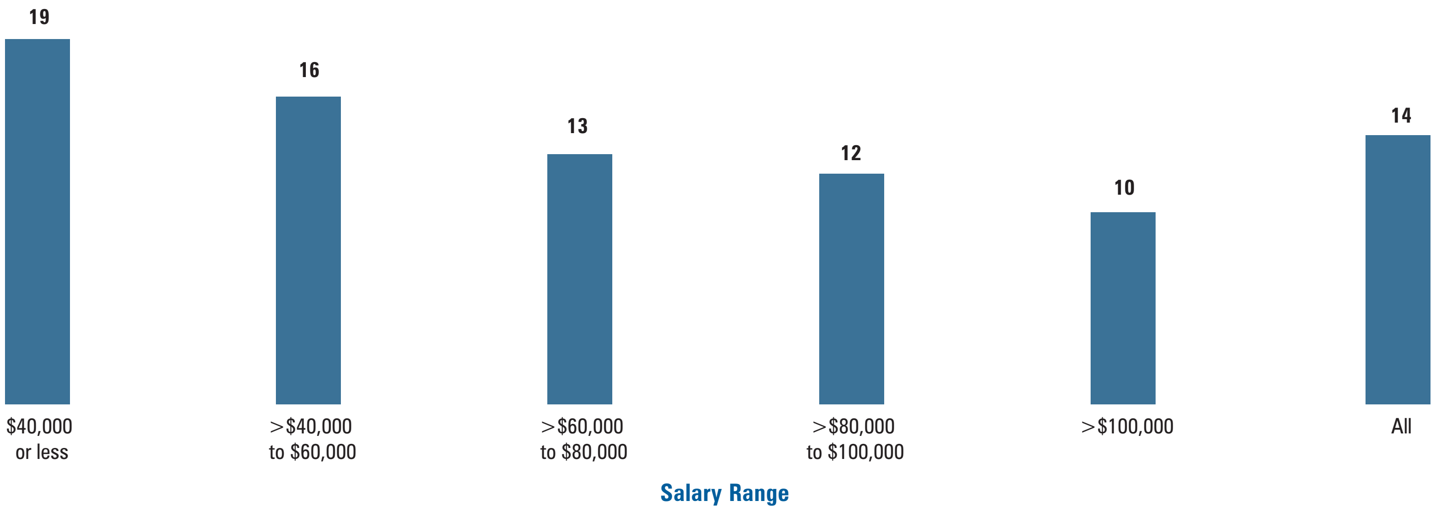
Availability of Plan Loans

Fifty-eight percent of the plans for which loan data are available in the 2000 EBRI/ICI database offer a plan loan provision to participants (Figure 25).[39] The loan feature is more commonly associated with large plans (measured by the number of participants in the plan). Fifty-four percent of plans with 100 or fewer participants and 78 percent of plans with 101 to 1,000 participants offer loans to employees, whereas 88 percent of plans with more than 5,000 participants include a loan provision.

[39] 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.

FIGURE 33

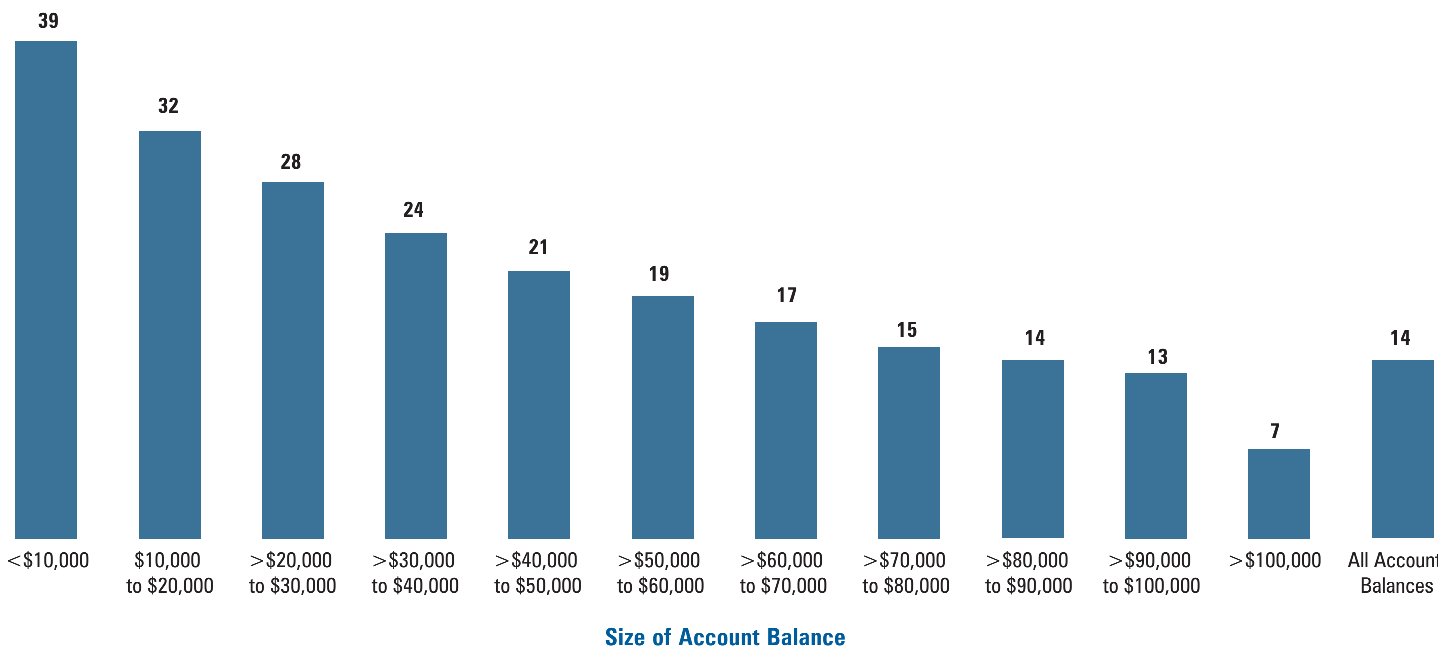
Loan Balances as a Percentage of Account Balances for Participants with Loans by Salary, 2000



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

FIGURE 34

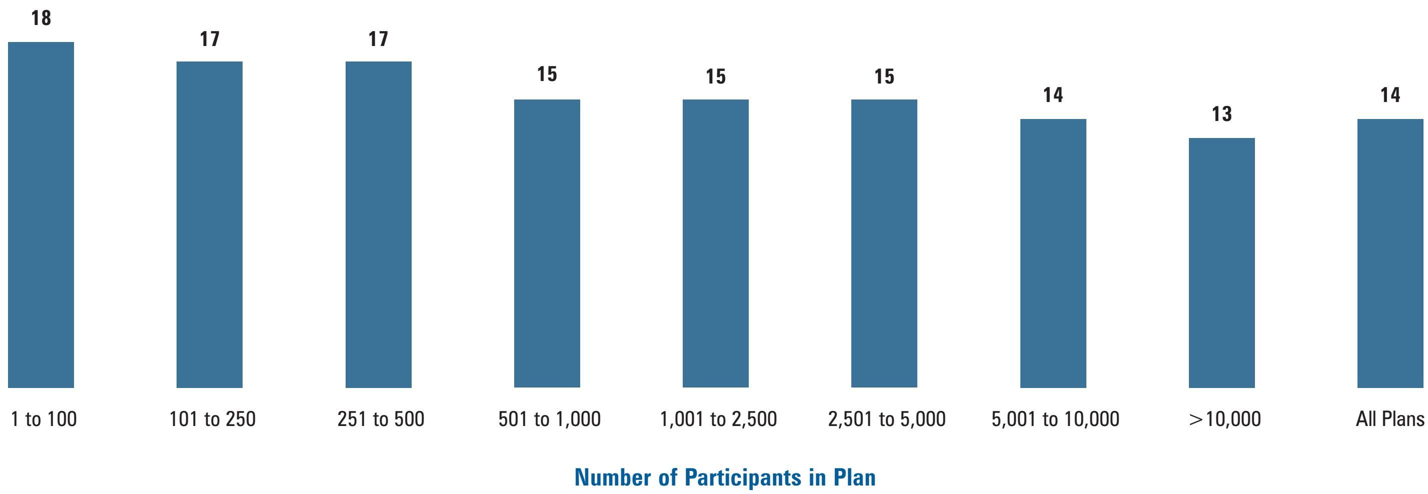
Loan Balances as a Percentage of Account Balances for Participants with Loans by Account Balance, 2000



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

FIGURE 35

Loan Balances as a Percentage of Account Balances for Participants with Loans by Plan Size, 2000



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

Characteristics of Participants With Outstanding Loans

Most participants in 401(k) plans have borrowing privileges. In the 2000 EBRI/ICI database, 83 percent of participants are in plans offering loans. However, only 18 percent of those eligible for loans have loans outstanding at year-end 2000 (Figure 26).

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 (Figure 26). 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 27). Participants earning between $40,001 and $100,000 are more likely to have a loan outstanding than those earning more or less (Figure 28). Furthermore, only 11 percent of participants with account balances of less than $10,000 have loans outstanding (Figure 29). Finally, participants in smaller plans that offer loans are less likely to have taken out a loan than participants in larger plans (Figure 30).

Average Loan Balances

Among participants with outstanding loans at the end of 2000, the average unpaid balance is $6,856.[40] Loan balance as a percentage of account balance (net of the unpaid loan balance) for participants with loans is 14 percent (Figure 31). However, there is variation around this average with age, tenure, salary, and account balance. Loan ratios vary only slightly among participants with loans in differing plan sizes.

[40] The median loan balance outstanding is $3,824 at year-end 2000.

Loan ratios tend to decrease as age increases, dropping steadily from 30 percent for participants in their twenties to 9 percent for those in their sixties (Figure 31). Likewise, loan ratios tend to decrease as tenure increases, falling from between 24 percent and 25 percent for participants with five or fewer years of tenure to 8 percent for those with more than 30 years of tenure (Figure 32).

Furthermore, loan ratios tend to decrease as salary increases, falling from 19 percent for participants earning $40,000 or less a year to 10 percent for participants earning in excess of $100,000 (Figure 33). Loan ratios also tend to decrease as account balances increase. Indeed, the loan ratio for participants with account balances of less than $10,000 is 39 percent, while the loan ratio for those with account balances in excess of $100,000 is only 7 percent (Figure 34).

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). On average, participants in plans with 100 or fewer participants have borrowed 18 percent of their account balance, while participants in the largest plans, on average, have a loan ratio of 13 percent (Figure 35).

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