ebri.org
Employee Benefit Research Institute

September 10, 2018 • No. 458

Issue BRIEF

401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2016

By Jack VanDerhei, EBRI; Sarah Holden, ICI; Luis Alonso, EBRI; and Steven Bass, ICI

AT A GLANCE

- **The bulk of 401(k) assets were invested in stocks.** On average, at year-end 2016, 67 percent of 401(k) participants' assets were invested in equity securities through equity funds, the equity portion of balanced funds, and company stock. Twenty-seven percent of assets were in fixed-income securities such as stable-value investments, bond funds, money funds, and the fixed-income portion of balanced funds.
- **More 401(k) plan participants held equities at year-end 2016 than before the financial market crisis (year-end 2007), and most had the majority of their accounts invested in equities.** For example, more than three-quarters of participants in their twenties had more than 80 percent of their 401(k) plan accounts invested in equities at year-end 2016, up from less than half of participants in their twenties at year-end 2007. Overall, more than 90 percent of 401(k) participants had at least some investment in equities at year-end 2016.
- **About two-thirds of 401(k) plans, covering about three-quarters of 401(k) plan participants, included target-date funds in their investment lineup at year-end 2016.** At year-end 2016, 21 percent of the assets in the EBRI/ICI 401(k) database were invested in target-date funds and more than half of 401(k) participants in the database held target-date funds. Also known as lifecycle funds, these funds are designed to offer a diversified portfolio that automatically rebalances to be more focused on income over time.
- **A majority of new or recent hires invested their 401(k) assets in balanced funds, including target-date funds.** For example, at year-end 2016, 71 percent of recently hired participants held balanced funds in their 401(k) plan accounts. Balanced funds made up 45 percent of the account balances of recently hired 401(k) participants at year-end 2016. A significant subset of that balanced fund category is invested in target-date funds. At year-end 2016, 38 percent of the account balances of recently hired participants were invested in target-date funds.
- **401(k) participants' investment in company stock continued at historically low levels.** Six percent of 401(k) assets were invested in company stock at year-end 2016, the lowest share observed in the database. This share has fallen by 69 percent since 1999 when company stock accounted for 19 percent of assets. Recently hired 401(k) participants contributed to this trend: they tend to be less likely to hold company stock. At year-end 2016, in plans offering company stock, less than one-quarter of recently hired 401(k) plan participants held company stock, compared with about 40 percent of all 401(k) participants.
- **401(k) participants were a bit more likely to have loans outstanding at year-end 2016 than at year-end 2015.** At year-end 2016, 19 percent of all 401(k) participants who were eligible for loans had loans outstanding against their 401(k) plan accounts, slightly up from 18 percent at year-end 2015. Loans

outstanding amounted to 11 percent of the remaining account balance, on average, at year-end 2016, down 1 percentage point from year-end 2015. Loan amounts also edged down a bit in 2016.

- **The year-end 2016 average 401(k) plan account balance in the database was 18 percent higher among consistent participants in the database in both 2015 and 2016.** To understand changes in 401(k) participants' average account balances, it is important to analyze a sample of consistent participants. Among all participants, the average account balance in the year-end 2016 database was 3 percent higher than the average account balance in the year-end 2015 database. However, this largely reflects the changing composition of the sample, rather than the experience of typical 401(k) participants in 2016. As with previous EBRI/ICI updates, analysis of a sample of consistent 401(k) plan participants is expected to be published later this year.

- **The average 401(k) plan account balance tends to increase with participant age and tenure.** For example, at year-end 2016, participants in their forties with more than two to five years of tenure had an average 401(k) plan account balance of about $38,000, compared with an average 401(k) plan account balance of more than $287,000 among participants in their sixties with more than 30 years of tenure.

Jack VanDerhei is director of Research at the Employee Benefit Research Institute (EBRI). Sarah Holden is senior director of Retirement and Investor Research at the Investment Company Institute (ICI). Luis Alonso served as director of Information Technology and Research Databases at EBRI. Steven Bass is an associate economist at ICI. Lauren Higgs, ICI Research Assistant, provided assistance. This *Issue Brief* was written with assistance from the Institute's research and editorial staffs. 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.

Suggested citation: Jack VanDerhei, Sarah Holden, Luis Alonso, and Steven Bass. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2016." *EBRI Issue Brief*, no. 458, and *ICI Research Perspective*, Vol. 24, no. 6 (September 2018).

Report availability: This report is available on the Internet at www.ebri.org and at www.ici.org

Since 1996, the Employee Benefit Research Institute (EBRI) and the Investment Company Institute (ICI) have worked together on collecting and analyzing annual data on millions of 401(k) plan participants' accounts. This report reflects the year-end 2016 update of these data and EBRI's and ICI's ongoing research into 401(k) plan participants' activity.

Table of Contents

Figures

401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2016

By Jack VanDerhei, EBRI; Sarah Holden, ICI; Luis Alonso, EBRI; and Steven Bass, ICI

Introduction

Over the past three decades, 401(k) plans have become the most widespread private-sector employer-sponsored retirement plan in the United States.[1] In 2016, an estimated 55 million American workers were active 401(k) plan participants.[2] By year-end 2016, 401(k) plan assets had grown to $4.7 trillion, representing 18 percent of all retirement assets.[3] In an ongoing collaborative effort, the Employee Benefit Research Institute (EBRI)[4] and the Investment Company Institute (ICI)[5] collect annual data on millions of 401(k) plan participants as a means to examine how these participants manage their 401(k) plan accounts. This report is an update of EBRI and ICI's ongoing research into 401(k) plan participants' activity through year-end 2016.[6] The report is divided into four sections: the first describes the EBRI/ICI 401(k) database; the second presents a snapshot of participant account balances at year-end 2016; the third looks at participants' asset allocations, including analysis of 401(k) participants' use of target-date, or lifecycle, funds; and the fourth focuses on participants' 401(k) loan activity.

EBRI/ICI 401(k) Database

Sources and Types of Data

Several recordkeeping organizations provided records on active participants in 401(k) plans at year-end 2016. These plan recordkeepers include mutual fund companies, banks, insurance companies, and consulting firms. Although the EBRI/ICI project has collected data from 1996 through 2016, the universe of data providers may vary from year to year. In addition, the plans with any given provider may change from year to year, which changes the plans provided. Thus, aggregate figures in this report generally should not be used to estimate time trends. Records were encrypted before inclusion in the database to conceal the identity of employers and employees, but were coded so that both could be tracked by researchers over multiple years.[7] Data provided for each participant included date of birth, from which an age group is assigned; date of hire, from which a tenure range is assigned; outstanding loan balance; funds in the participant's investment portfolios; and asset values attributed to those funds. An account balance for each participant is the sum of the participant's assets in all funds.[8] 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. Within the year-end 2016 EBRI/ICI database, it is possible to link individuals across plans across a majority of the recordkeepers. This improves the identification of active participants and resulted in the reclassification of 1.2 million participant accounts that were multiple accounts owned by single individuals. This procedure allows EBRI and ICI to begin to consolidate account balances for individuals across data providers to provide a more accurate estimate of average account balances per individual.[9]

Investment Options

Investment options are grouped into eight broad categories.[10]

- **Equity funds** consist of pooled investments primarily invested in stocks, including equity mutual funds, bank collective trusts, life insurance separate accounts, and other pooled investments.
- **Bond funds** are any pooled account primarily invested in bonds.
- **Balanced funds** are pooled accounts invested in both stocks and bonds. They are classified into two subcategories: target-date funds and non-target-date balanced funds.

- A target-date fund pursues a long-term investment strategy, using a mix of asset classes, or asset allocation, that the fund provider adjusts to become less focused on growth and more focused on income as the fund approaches and passes its target-date.[11]
- Non-target-date balanced funds include asset allocation, or hybrid, funds and lifestyle funds.[12]

- **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)[13] and other stable-value funds**,[14] are reported as one category.
- **Other** is the residual for other investments, such as real estate funds.
- **Unknown,** which is the final category, consists of assets that could not be identified.[15]

About the EBRI/ICI Database

The EBRI/ICI Participant-Directed Retirement Plan Data Collection Project is the largest, most representative repository of information about individual 401(k) plan participant accounts. As of December 31, 2016, the EBRI/ICI database included statistical information about:

- 27.1 million 401(k) plan participants, in
- 110,794 employer-sponsored 401(k) plans, holding
- $2.0 trillion in assets.

The 2016 EBRI/ICI database covers 49 percent of the universe of 401(k) plan participants, 20 percent of plans, and 44 percent of 401(k) plan assets. The project is unique because it includes data provided by a wide variety of plan record keepers and, therefore, represents the activity of participants in 401(k) plans of varying sizes—from very large corporations to small businesses—with a variety of investment options.

Distribution of Plans, Participants, and Assets by Plan Size

The 2016 EBRI/ICI 401(k) database contains information on 110,794 401(k) plans with $2.0 trillion in assets and 27.1 million participants (Figure 1). As in the 401(k) universe at large, most of the plans in the database are small: 57 percent of the plans have 25 or fewer participants, and 26 percent have 26 to 100 participants (Figure 2). In contrast, less than 2 percent of the plans have more than 2,500 participants. However, participants and assets are concentrated in large plans. For example, 65 percent of participants are in plans with more than 2,500 participants, and these same plans account for 68 percent of all plan assets. Because most of the plans have a small number of participants, the asset size for many plans is modest. Twenty-two percent of the plans have assets of $250,000 or less, and another 30 percent have plan assets between $250,001 and $1,250,000 (Figure 3).

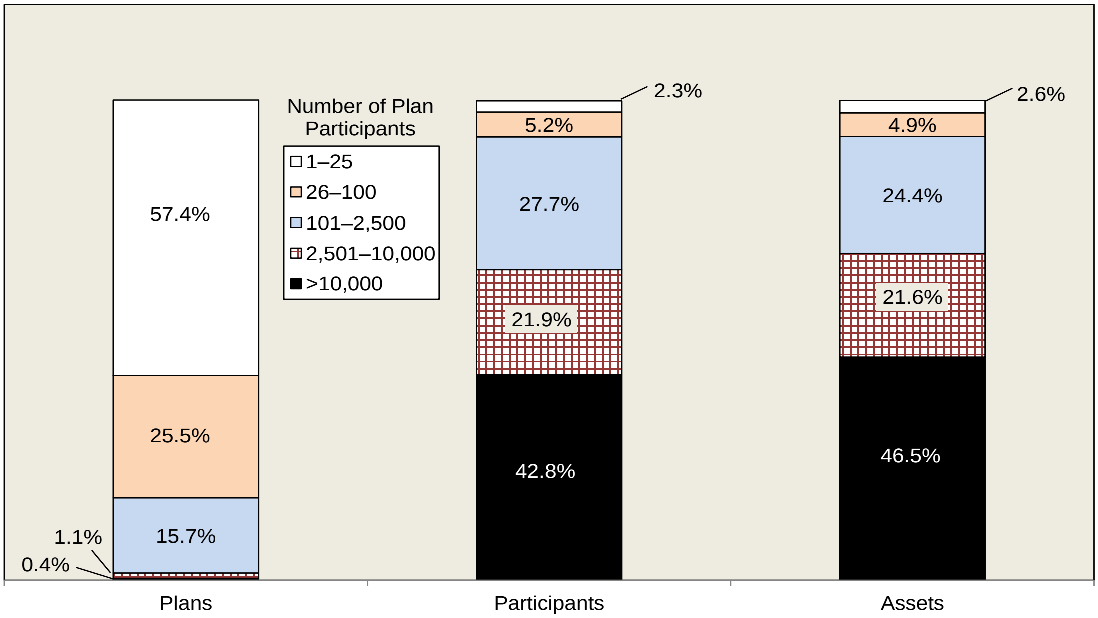
Figure 1
401(k) Plan Characteristics, by Number of Plan Participants, 2016

Number of Plan Participants	Total Plans	Total Participants	Total Assets	Average Account Balance
1–10	37,336	195,336	$17,548,466,427	$89,837
11–25	26,222	440,736	$34,852,702,068	$79,078
26–50	16,642	598,167	$43,737,312,616	$73,119
51–100	11,585	821,278	$56,299,715,999	$68,551
101–250	8,925	1,406,471	$89,546,762,890	$63,668
251–500	4,012	1,411,428	$85,956,267,295	$60,900
501–1000	2,531	1,779,955	$115,431,017,267	$64,851
1,001–2,500	1,887	2,919,219	$208,870,192,012	$71,550
2,501–5,000	822	2,900,150	$215,413,617,525	$74,277
5,001–10,000	442	3,042,625	$226,404,933,881	$74,411
> 10,000	390	11,632,943	$951,785,566,219	$81,818
All	**110,794**	**27,148,308**	**$2,045,846,554,199**	**$75,358**

Note: The median account balance at year-end 2016 was $16,836.

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

Figure 2
Distribution of 401(k) Plans, Participants, and Assets
Percentage of plans, participants, and assets by number of plan participants, 2016



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

Figure 3
401(k) Plan Characteristics, by Plan Assets, 2016

Total Plan Assets (in thousands)	Total Plans	Total Participants	Total Assets	Average Account Balance
$0-$250	24,435	188,750	$2,384,313,388	$12,632
$250-$625	16,551	247,286	$6,970,322,848	$28,187
$625-$1,250	16,714	375,658	$15,221,170,522	$40,519
$1,250-$2,500	17,472	645,424	$31,306,395,874	$48,505
$2,500-$6,250	16,998	1,274,185	$66,836,662,070	$52,454
$6,250-$12,500	7,461	1,218,898	$65,345,007,360	$53,610
$12,500-$25,000	4,379	1,404,451	$76,465,491,729	$54,445
$25,000-$62,500	3,353	2,374,840	$131,162,349,535	$55,230
$62,500-$125,000	1,361	2,041,856	$120,216,217,545	$58,876
$125,000-$250,000	891	2,443,318	$157,161,035,278	$64,323
>$250,000	1,179	14,933,642	$1,372,777,588,050	$91,925
All	**110,794**	**27,148,308**	**2,045,846,554,199**	**$75,358**

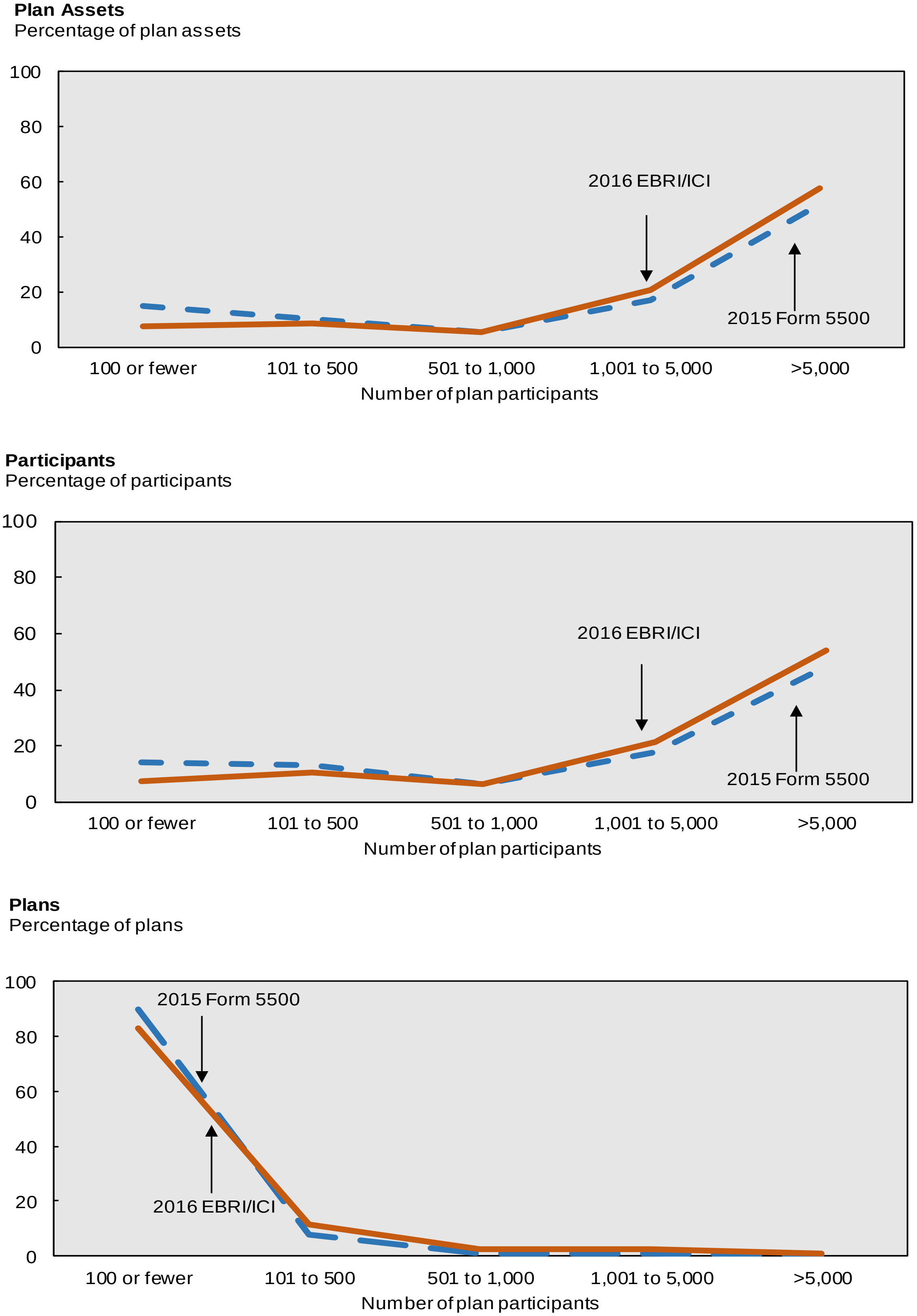
Note: The median account balance at year-end 2016 was $16,836.

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

Figure 4

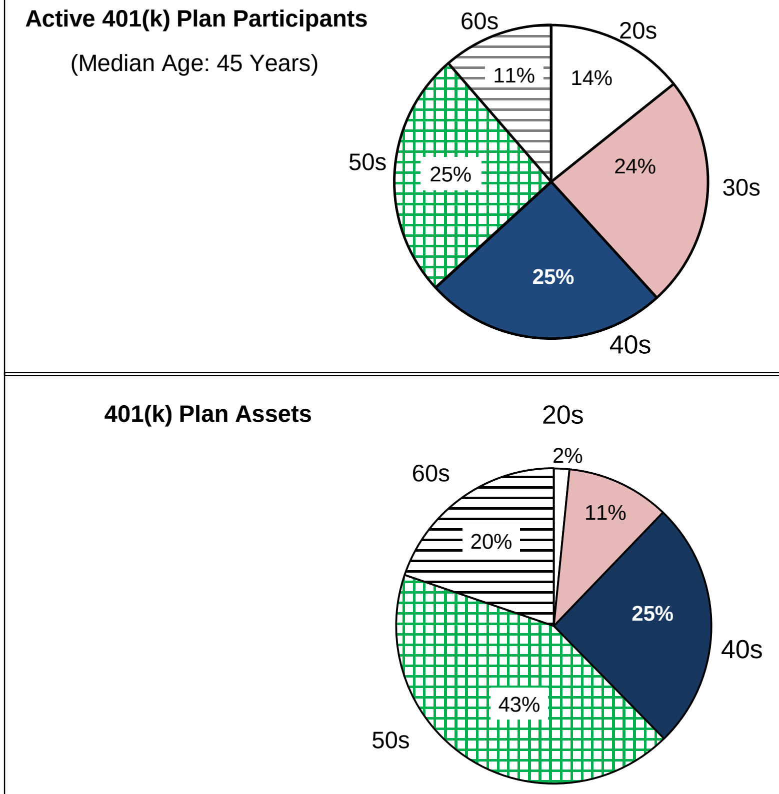
EBRI/ICI 401(k) Database Represents a Wide Cross Section of the 401(k) Universe

401(k) plan characteristics by number of participants: EBRI/ICI 401(k) database in 2016 versus 2015 DOL Form 5500 for all 401(k) plans



Sources: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project and U.S. Department of Labor.

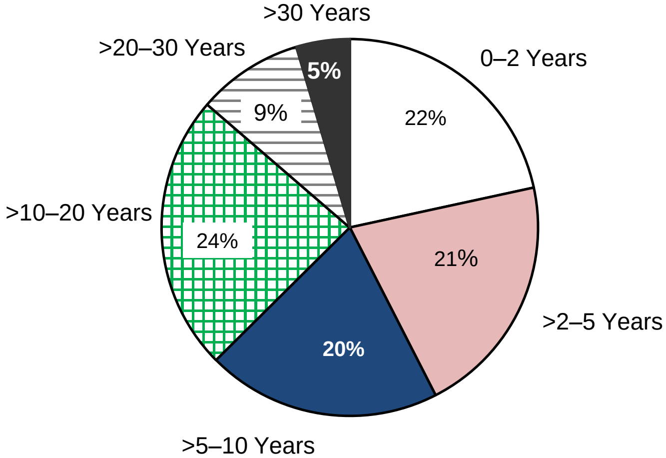
Figure 5
401(k) Participants Represent a Range of Ages
Percentage of active 401(k) plan participants and 401(k) plan assets, by participant age, 2016



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

Figure 6
401(k) Participants Represent a Range of Job Tenures
Percentage of active 401(k) plan participants, by years of tenure, 2016

Median Tenure: 7 Years



Note: The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan. Components do not add to 100 percent because of rounding.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

About Changes in Account Balances

When analyzing the change in participant account balances over time, it is important to have a consistent sample of participants. Comparing average account balances across different year-end snapshots can lead to false conclusions. For example, the addition of a large number of new plans with smaller balances to the database would tend to pull down the average account balance. This could then be mistakenly described as an indication that balances are declining, but actually would tell us nothing about consistently participating workers. Similarly, the aggregate average account balance would tend to be pulled down if a large number of older participants retired. In addition, changes in the sample of recordkeepers and changes in the set of plans for which they keep records also can influence the change in aggregate average account balance. Thus, to ascertain what is happening to 401(k) participants' account balances, a set of consistent participants must be analyzed. Future research will examine linked data to analyze the consistent sample of participants in the EBRI/ICI data collection effort.

Although the average account balance for the entire database at year-end 2016 is slightly higher than the average account balance at year-end 2015, this is muted by participants and plans entering and leaving the database. Among the sample of participants who were present in the database in both 2015 and 2016, the average account balance increased by 18.4 percent between year-end 2015 and year-end 2016, from $76,630 to $90,713.[16]

Relationship of EBRI/ICI 401(k) Database Plans to the Universe of All 401(k) Plans

The 2016 EBRI/ICI 401(k) database is a representative sample of the estimated universe of 401(k) plans. At year-end 2016, all 401(k) plans held a total of $4.7 trillion in assets, and the database represents about 44 percent of that total.[17] The database also covers 49 percent of the universe of active 401(k) plan participants and 20 percent of all 401(k) plans.[18] The distribution of assets, participants, and plans in the database for 2016 is similar to the universe of plans as reported by the U.S. Department of Labor (Figure 4).[19]

Age and Tenure of 401(k) Plan Participants

The database includes 401(k) participants across a wide range of age and tenure groups. At year-end 2016, 49 percent of participants were in their thirties or forties, while 14 percent of participants were in their twenties, 25 percent were in their fifties, and 11 percent were in their sixties (Figure 5, upper panel). The median age of the participants in the 2016 database is 45 years, equal to the median of 45 years in 2015 but down from 46 years in 2014. Because older participants tend to have larger account balances, assets in the database are more concentrated among the older 401(k) participant groups. At year-end 2016, 63 percent of 401(k) plan assets were held by participants in their fifties or sixties, while 13 percent of 401(k) plan assets were held by participants in their twenties or thirties (Figure 5, lower panel). Participants in 401(k) plans represent a wide range of job tenure experiences. In 2016, 43 percent of the participants in the database had five or fewer years of tenure and 5 percent had more than 30 years of tenure (Figure 6). The median tenure at the current employer was seven years in 2016, down from eight years in 2015 and 2014.

Year-End 2016 Snapshot of 401(k) Participants' Account Balances

Factors That Affect 401(k) Participants' Account Balances

In any given year, the change in a participant's account balance in the database is the sum of three factors:

- New contributions by the participant, the employer, or both;
- Total investment return on account balances, which depends on the performance of financial markets and on the allocation of assets in an individual's account; and
- Withdrawals, borrowing, and loan repayments.

The change in any individual participant's account balance in the database is influenced by the magnitude of these three factors relative to the starting account balance.[20] For example, a contribution of a given dollar amount produces a larger growth rate when added to a smaller account. On the other hand, investment returns of a given percentage produce larger dollar increases (or decreases) when compounded on a larger asset base. Asset allocation also influences investment returns and changes in assets. For example, stocks (as measured by the S&P 500 total return index) increased 12.0 percent during 2016, while bonds (as measured by the Barclays Capital U.S. Aggregate Bond Index) increased 2.6 percent (Figures 7 and 8).

Definition of 401(k) Plan Account Balance

As a cross section, or snapshot, of the entire population of 401(k) plan participants, the database includes 401(k) participants who are young and those who are new to their jobs, as well as older participants and those who have been with their current employers for many years. These annual updates of the database provide snapshots of 401(k) plan account balances, asset allocation, and loan activity across wide cross sections of participants. However, the cross-sectional analysis is not well suited to addressing the question of the impact of participation in 401(k) plans over time. Cross sections change in composition from year to year because the selection of data providers and sample of plans using a given provider vary and because 401(k) participants join or leave plans.[21] In addition, 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 the analysis.[22] Furthermore, account balances are net of unpaid loan balances. Because of all these factors, it is not correct to presume that the change in the average or median account balance for the database as a whole reflects the experience of "typical" 401(k) plan participants. (See About Changes in Account Balances on page 10.)

Size of 401(k) Plan Account Balances

At year-end 2016, the average account balance was $75,358 and the median account balance was $16,836 (Figure 9), but balances varied widely. For example, about three-quarters of the participants in the 2016 EBRI/ICI 401(k) database had account balances that were lower than $75,358, the size of the average account balance. In fact, 41.0 percent of participants had account balances of less than $10,000, while 19.5 percent of participants had account balances greater than $100,000 (Figure 10). The variation in account balances partly reflects the effects of participant age, tenure, salary, contribution behavior, rollovers from other plans, asset allocation, withdrawals, loan activity, and employer contribution rates. This paper examines the relationship between account balances and participants' age, tenure, and salary.

Relationship of Age and Tenure to 401(k) Plan Account Balances

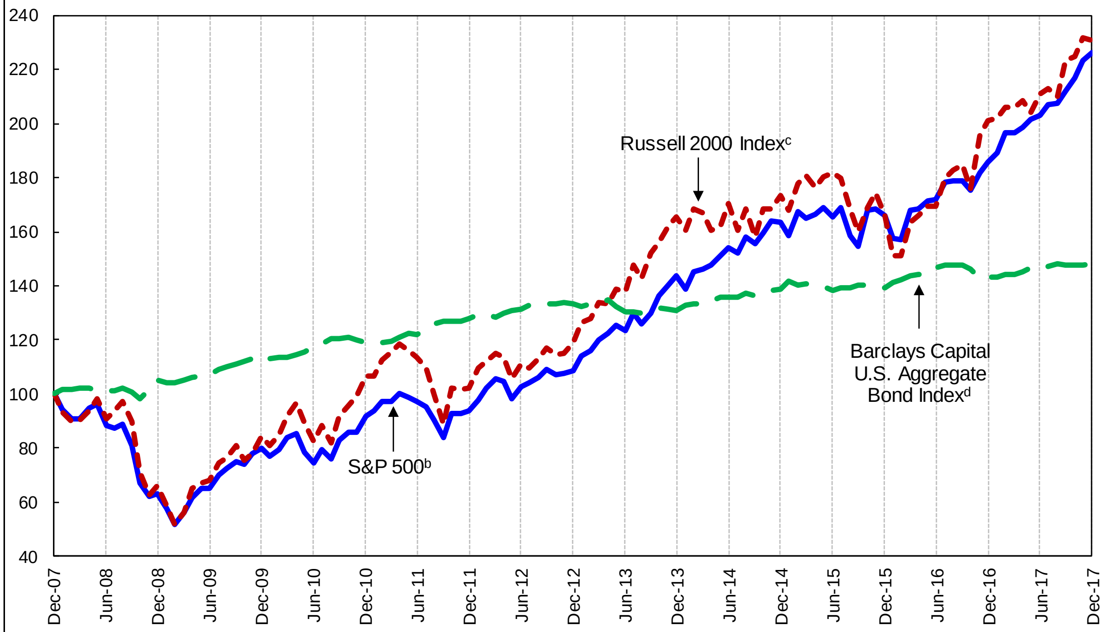
Age and account balance are positively correlated among participants covered by the 2016 database.[23] Examination of the age composition of account balances finds that 54 percent of participants with account balances of less than $10,000 were in their twenties or thirties (Figure 11). Similarly, 60 percent of participants with account balances greater than $100,000 were in their fifties or sixties. 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 employer's plan in their current plan accounts.

Account balance and tenure are also positively correlated among participants in the 2016 database. A participant's tenure with an employer serves as a proxy for the length of time a worker has participated in the 401(k) plan.[24] Indeed, 67 percent of participants with account balances of less than $10,000 had five or fewer years of tenure, while 73 percent of participants with account balances greater than $100,000 had more than 10 years of tenure (Figure 12).[25] Examining the interaction of both age and tenure with account balances reveals that, for a given age group, average account balances tend to increase with tenure. For example, the average account balance of participants in their sixties with up to two years of tenure was $36,339, compared with $287,533 for participants in their sixties with more than 30 years of tenure (Figure 13).[26]

Figure 7

Domestic Stock and Bond Market Indexes

Month-end level,[a] December 2007 to December 2017



[a] All indexes are set to 100 in December 2007.

[b] The S&P 500 is an index of 500 stocks chosen for market size, liquidity, and industry group representation.

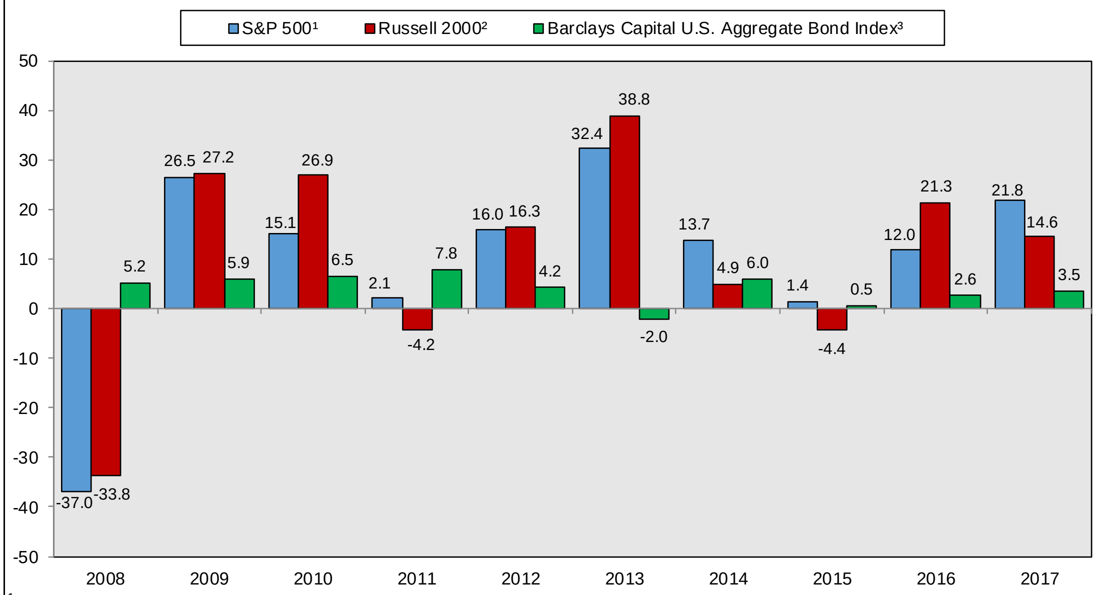
[c] The Russell 2000 Index measures the performance of the 2,000 smallest US companies (based on total market capitalization) included in the Russell 3000 Index (which tracks the 3,000 largest U.S. companies).

[d] Formerly the Lehman Brothers U.S. Aggregate Bond Index, the Barclays Capital U.S. Aggregate Bond Index is composed of securities covering government and corporate bonds, mortgage-backed securities, and asset-backed securities (rebalanced monthly by market capitalization). The index's total return consists of price appreciation/depreciation plus income as a percentage of the original investment.

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

Figure 8

Percent Change in Total Return Indexes



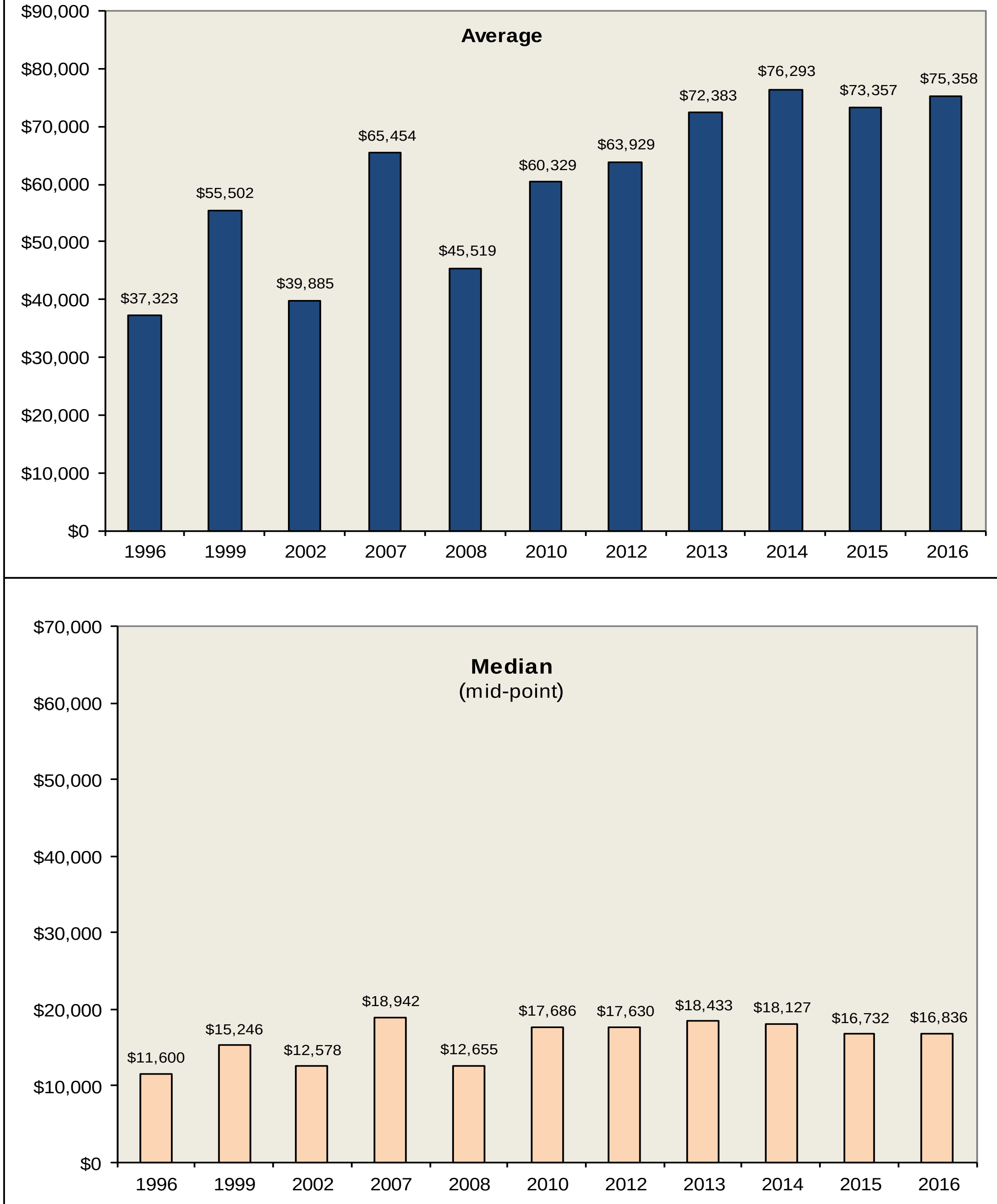
[1] The S&P 500 is an index of 500 stocks chosen for market size, liquidity, and industry group representation.

[2] The Russell 2000 Index measures the performance of the 2,000 smallest U.S. companies (based on total market capitalization) included in the Russell 3000 Index (which tracks the 3,000 largest U.S. companies).

[3] Formerly the Lehman Brothers U.S. Aggregate Bond Index, the Barclays Capital U.S. Aggregate Bond Index is composed of securities covering government and corporate bonds, mortgage-backed securities, and asset-backed securities (rebalanced monthly by market capitalization). The index's total return consists of price appreciation/depreciation plus income as a percentage of the original investment.

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

Figure 9
Snapshot of Year-End 401(k) Plan Account Balances
401(k) plan participant account balances,[a] selected years[b]

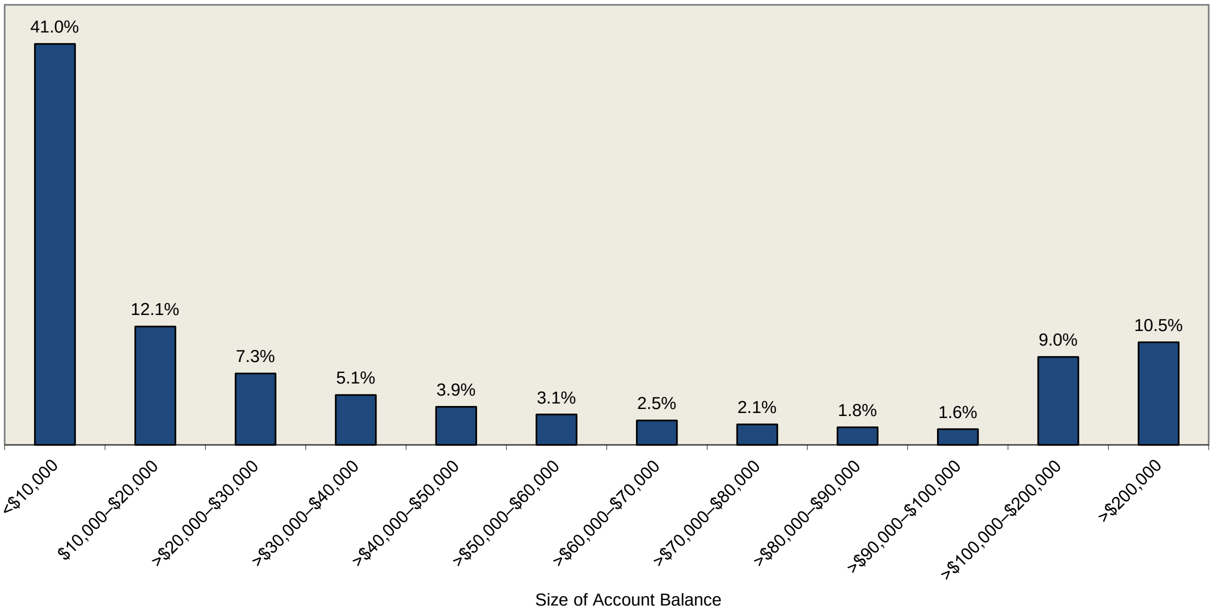


[a]Account balances are participant account balances held in 401(k) plans at the participants' current employers and are net of plan loans. Retirement savings held in plans at previous employers or rolled over into IRAs are not included.
[b]The sample of participants changes over time.
Source: Tabulations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

Figure 10

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

Percentage of participants with account balances in specified ranges, 2016

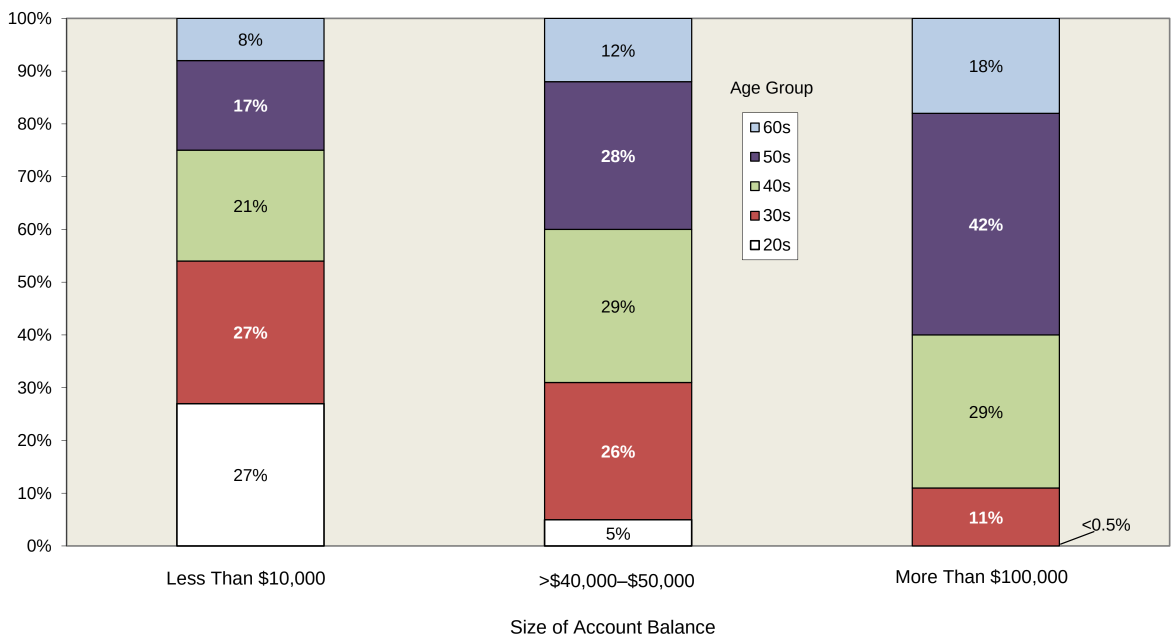


Note: At year-end 2016, the average account balance among all 27.1 million 401(k) participants was $75,358; the median account balance was $16,836. Account balances are participant account balances held in 401(k) plans at the participants' current employers and are net of plan loans. Retirement savings held in plans at previous employers or rolled over into IRAs are not included.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 11

Age Composition of Selected 401(k) Plan Account Balance Categories

Percentage of participants with account balances in specified ranges, 2016



Note: Account balances are participant account balances held in 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.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Similarly, the average account balance of participants in their forties with up to two years of tenure was $19,913, compared with $166,953 for participants in their forties with more than 20 years of tenure. The distribution of account balances underscores the effects of age and tenure on account balances. In a given age group, shorter tenure tends to mean that a higher percentage of participants will have account balances of less than $10,000. For example, 86 percent of participants in their twenties with two or fewer years of tenure had account balances of less than $10,000 in 2016, compared with 53 percent of participants in their twenties with between five and 10 years of tenure (Figure 14). Older workers display a similar pattern. For example, 59 percent of participants in their sixties with two or fewer years of tenure had account balances of less than $10,000. In contrast, about 15 percent of those in their sixties with more than 20 years of tenure had account balances of less than $10,000.[27]

In a given age group, longer tenure tends to mean that a higher percentage of participants will have account balances greater than $100,000. For example, 22 percent of participants in their sixties with five to 10 years of tenure had account balances in excess of $100,000 in 2016 (Figure 15). However, 47 percent of participants in their sixties with between 20 and 30 years of tenure with their current employer had account balances greater than $100,000. The percentage increases to 57 percent for participants in their sixties with more than 30 years of tenure.

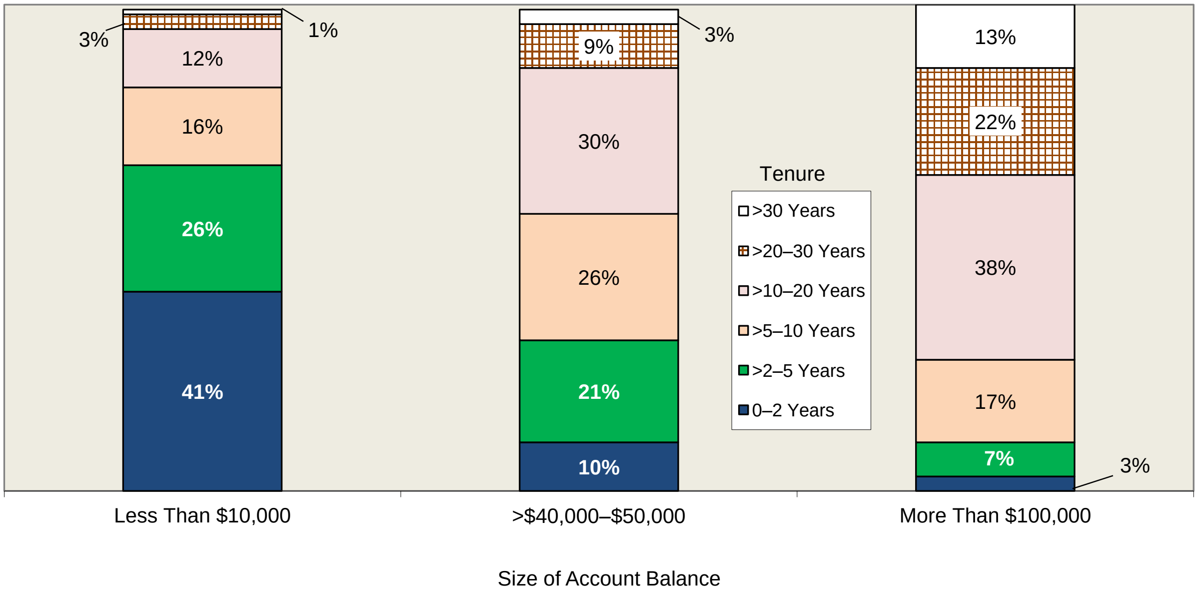
Relationship Between 401(k) Plan Account Balances and Salary

Participants' account balances vary not only with age and tenure, but also with salary. Figure 16 reports the account balances of longer-tenured participants at their current employers' 401(k) plans. Retirement savings held at previous employers or amounts rolled over to IRAs are not included in the analysis. To capture as long a savings history as possible, only longer-tenured participants are included in this analysis. However, it is important to note that the tenure variable indicates the time that individuals have been with their current employers and may not reflect the length of time they have participated in a 401(k) plan. One reason that job tenure may not reflect length of participation in the 401(k) plan, particularly among older participants, is that the proposed regulations for 401(k) plans were not introduced until 1981.[28]

Older, longer-tenured, and higher-income participants tend to have larger account balances, which are important for meeting their income-replacement needs in retirement.[29] For longer-tenured participants in their twenties with salaries between $20,000 and $40,000, the median account balance was $7,319 in 2016 (Figure 16). Longer-tenured participants in their twenties earning more than $80,000 to $100,000 had a median account balance of $50,460, while those earning more than $100,000 had a median account balance of $41,971. Among longer-tenured participants in their sixties with $20,000 to $40,000 in salary in 2016, the median account balance was $68,854. For longer-tenured participants in their sixties earning more than $100,000, the median account balance was $375,718.

The ratio of participant account balance to salary tends to be positively correlated with age and tenure.[30] Participants in their fifties and sixties—having had more time to accumulate assets—tended to have higher ratios, while those in their twenties had the lowest ratios (Figure 17). 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 twenties, the ratio tends to increase slightly with salary for low-to-moderate salary groups (Figure 18). However, at high salary levels, the ratio tends to decline somewhat. A similar pattern occurs among participants in their sixties (Figure 19).[31]

Figure 12
Tenure Composition of Selected 401(k) Plan Account Balance Categories
Percentage of participants with account balances in specified ranges, 2016



Note: Account balances are participant account balances held in 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. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan. Components may not add to 100 percent because of rounding.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 13
401(k) Plan Account Balances Increase With Participant Age and Tenure
Average 401(k) plan account balance, by age and tenure, 2016

	Tenure (years)					
Age Group	0–2	>2–5	>5–10	>10–20	>20–30	>30
20s	$5,135	$12,467	$18,574			
30s	$12,090	$25,147	$45,444	$68,495		
40s	$19,913	$37,988	$69,607	$122,903	$166,953	
50s	$27,556	$46,852	$80,679	$142,180	$237,825	$296,667
60s	$36,339	$50,136	$76,288	$118,856	$197,048	$287,533

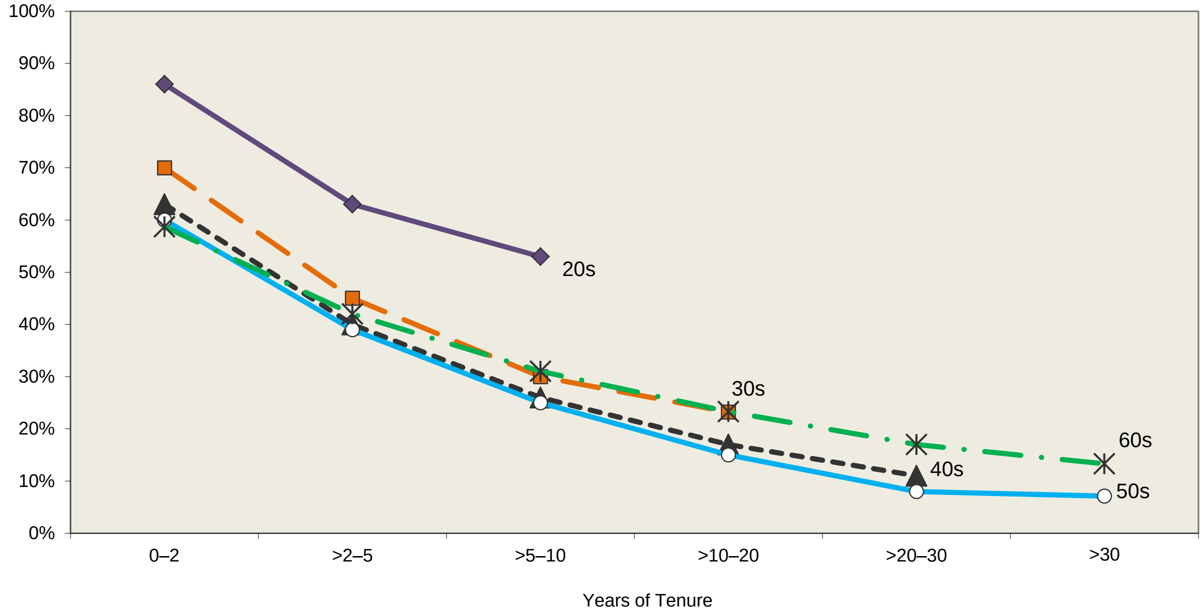
Note: The average account balance among all 27.1 million 401(k) plan participants was $75,358; the median account balance was $16,836. Account balances are participant account balances held in 401(k) plans at the participants' current employers and are net of plan loans. Retirement savings held in plans at previous employers or rolled over into IRAs are not included. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.

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

Figure 14

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

Percentage of participants with account balances less than $10,000 at year-end 2016

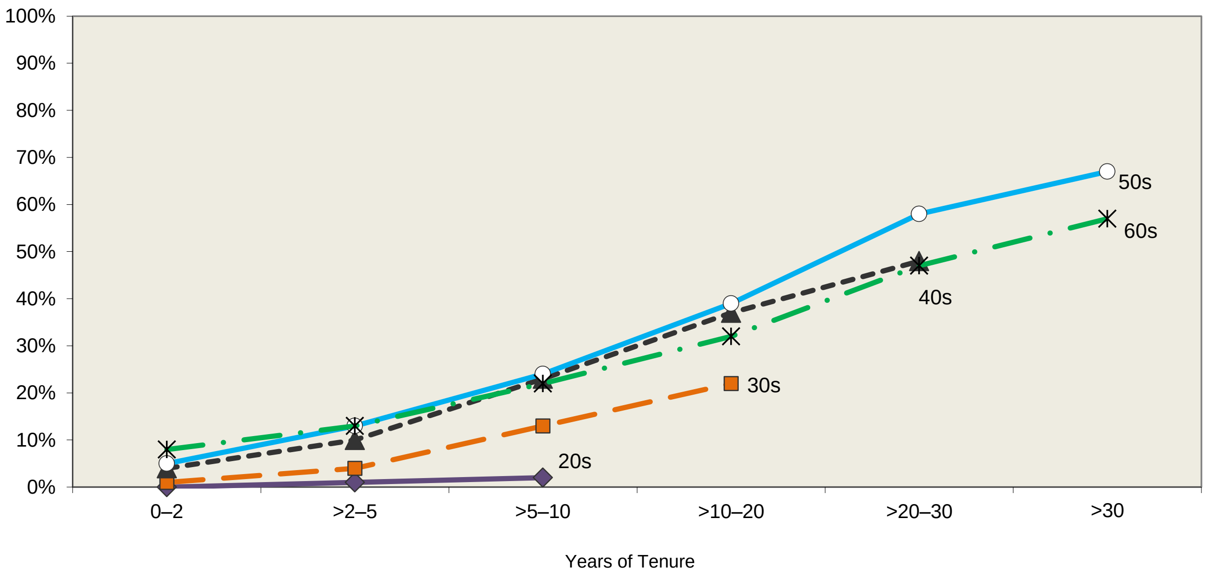


Note: Account balances are participant account balances held in 401(k) plans at the participants' current employers and are net of plan loans. Retirement savings held in plans at previous employers or rolled over into IRAs are not included. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 15

401(k) Plan Account Balances Greater Than $100,000, by Participant Age and Tenure

Percentage of participants with account balances greater than $100,000 at year-end 2016



Note: Account balances are participant account balances held in 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. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 16

Median 401(k) Plan Account Balance[a] Among Longer-Tenured[b] Participants, by Age and Salary, 2016

	Participant Age Group				
Salary Range	20s	30s	40s	50s	60s
$20,000–$40,000	$7,319	$21,164	$58,705	$92,348	$68,854
>$40,000–$60,000	$16,604	$34,799	$79,797	$118,709	$100,929
>$60,000–$80,000	$29,650	$59,469	$123,790	$186,400	$158,444
>$80,000–$100,000	$50,460	$91,635	$178,344	$266,502	$234,868
>$100,000	$41,971	$141,339	$315,380	$439,881	$375,718

[a]Account balances are based on administrative records and cover the account balance at the 401(k) plan participant's current employer. Retirement savings held in plans at previous employers or rolled over into IRAs are not included. Account balances are net of loan balances.

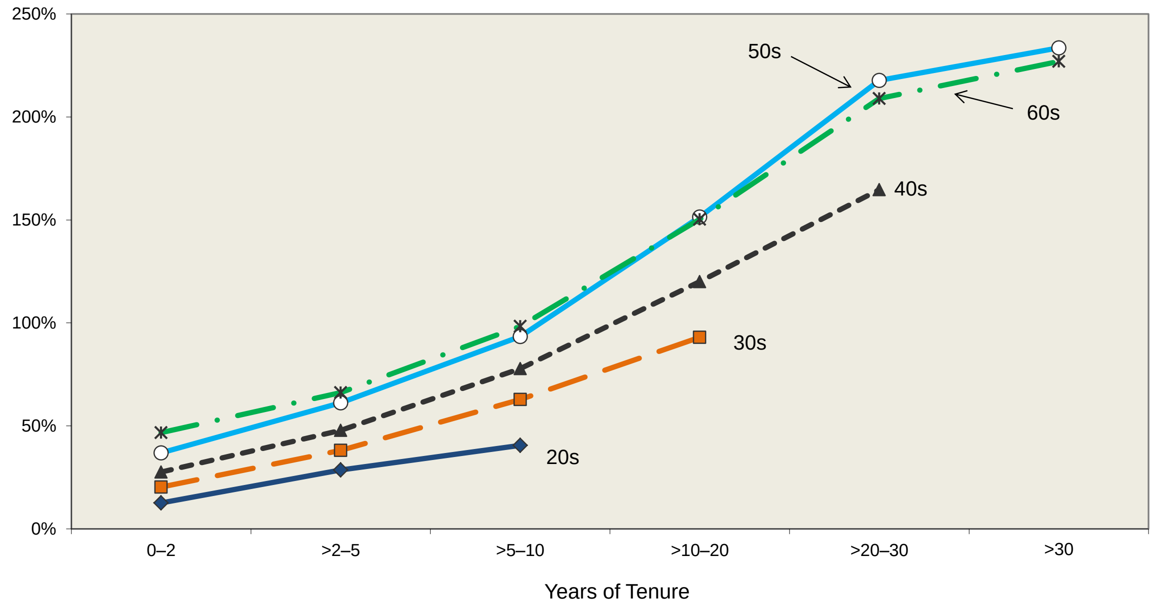
[b]Longer-tenured participants are used in this analysis to capture the longest possible work and savings history (see note 1). The tenure variable tends to be years with the current employer rather than years of participation in the 401(k) plan. One reason that job tenure may not reflect length of participation in the 401(k) plan, particularly among older participants, is that the regulations for 401(k) plans were not introduced until 1981.

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

Figure 17

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

Percentage, 2016



Note: Account balances are participant account balances held in 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. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Year-End 2016 Snapshot of 401(k) Participants' Asset Allocation

At year-end 2016, 44 percent of 401(k) plan participants' account balances were invested in equity funds, on average, in line with recent years (Figure 20). Altogether, equity securities—equity funds, the equity portion of balanced funds,[32] and company stock—represented 67 percent of 401(k) plan participants' assets at year-end 2016 (Figure 21).

Changes in Asset Allocation Between Year-End 2015 and Year-End 2016

Changes in asset allocation over time reflect investment performance, participants' rebalancing, and changes in the EBRI/ICI cross section of plans in the database. Historically, investment performance likely explains a good deal of the fluctuation in 401(k) participants' asset allocations over time (Figures 7, 8, and 20). However, despite a 12 percent gain in the S&P 500 total return index, the overall asset allocation of 401(k) plans in the EBRI/ICI database changed little between year-end 2015 and 2016. At year-end 2016, equity funds were 43.5 percent of the assets in the EBRI/ICI 401(k) database (Figure 21), little changed from 43.1 percent at year-end 2015.[33] Balanced funds, which invest in both equities and fixed-income securities, increased only slightly in share, accounting for 27.4 percent of the assets in the database at year-end 2016. Despite minor shifts, most 401(k) participants appeared not to have made dramatic shifts in their asset allocations in 2016.[34]

Asset Allocation and Participant Age

As in previous years, the database for year-end 2016 shows that participants' asset allocation varied considerably with age.[35] Younger participants tended to favor equity funds and balanced funds, while older participants were more likely to invest in fixed-income securities such as bond funds, GICs and other stable-value funds, or money funds (Figure 21). For example, among participants in their twenties, the average allocation to equity and balanced funds was 84 percent of assets, compared with about 63 percent of assets among participants in their sixties. Younger participants had consistently higher allocations to target-date funds. A target-date, or lifecycle, fund pursues a long-term investment strategy, using a mix of asset classes that follow a predetermined reallocation, typically rebalancing to shift its focus from growth to income as the fund approaches and passes its target date.[36] At year-end 2016, 21.3 percent of 401(k) assets in the database were invested in target-date funds, up from 19.8 percent in 2015.[37] Among participants in their twenties, 47.6 percent of their 401(k) assets were invested in target-date funds at year-end 2016; among participants in their sixties, 18.4 percent of their 401(k) assets were invested in target-date funds.

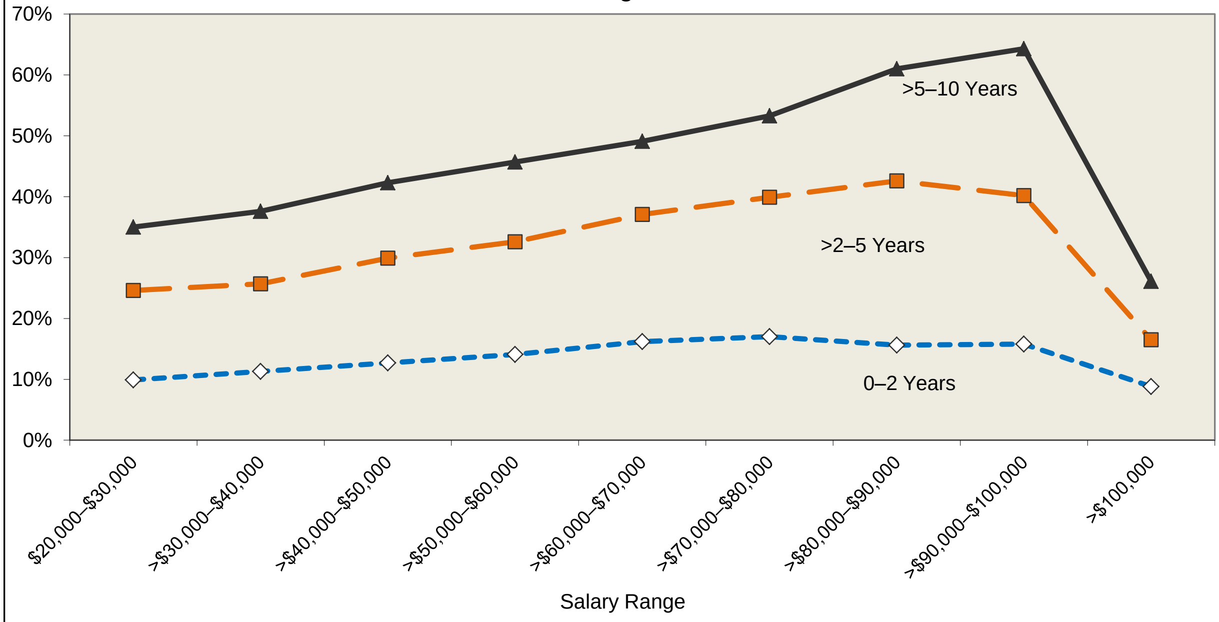
Asset Allocation and Investment Options

The investment options that a plan offers can significantly affect how participants allocate their 401(k) assets. Figure 22 presents the distribution of plans, participants, and assets by four combinations of investment offerings. The first category is the base group, which consists of plans that offer neither company stock nor GICs or other stable-value funds. Forty percent of participants in the 2016 EBRI/ICI 401(k) database were in these plans, which generally offer equity funds, bond funds, money funds, and balanced funds as investment options. Another 29 percent of participants were in plans that offer GICs and other stable-value funds as an investment option, in addition to the base options. Alternatively, 16 percent of participants were in plans that offer company stock but no stable-value products, while the remaining 15 percent of participants were in plans that offered both company stock and stable-value products in addition to the base options. Target-date funds were available in 68 percent of the 401(k) plans in the year-end 2016 database (Figure 22).[38] These plans offered target-date funds to 75 percent of the participants in the database.[39] Among participants who were offered target-date funds, 70 percent held them at year-end 2016. Target-date fund assets represented 30 percent of the assets of plans offering such funds in their investment lineups.

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

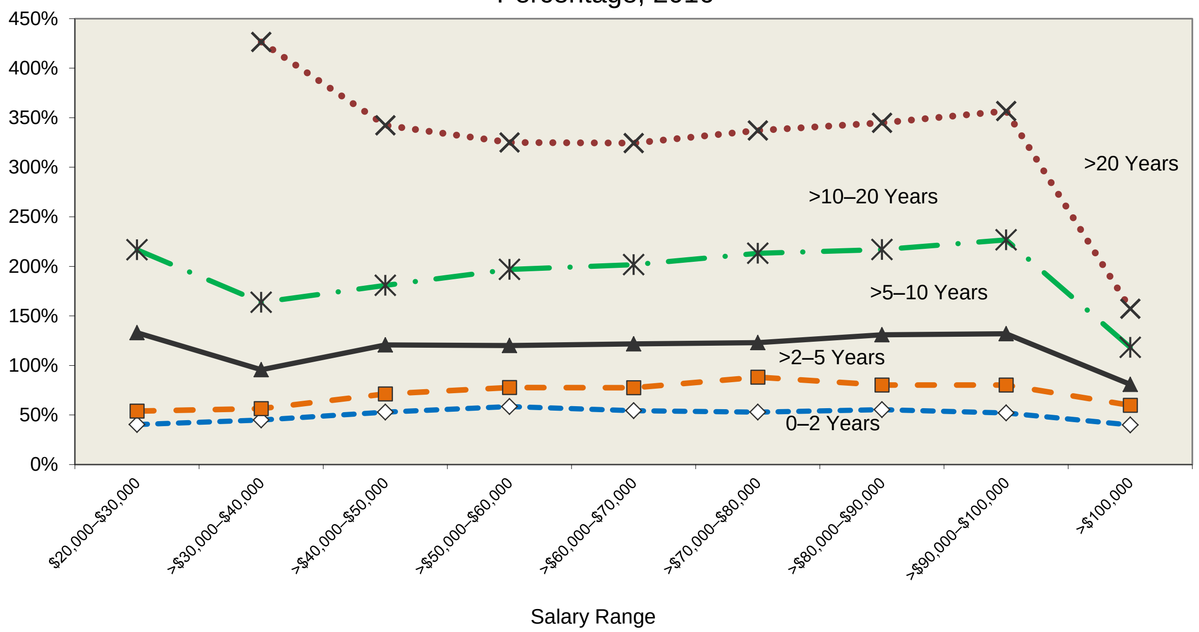
Asset allocation also varies with participant age; Figure 23 demonstrates this with an analysis of asset allocation by investment options, as well as by participant age. Figure 24 presents asset allocation by salary range and by investment options. Salary information is available for a subset of participants in the 2016 EBRI/ICI 401(k) database. Participant asset allocation also varies with plan size (Figure 25, 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

Figure 18
Ratio of 401(k) Plan Account Balance to Salary for Participants in Their 20s, by Tenure
Percentage, 2016



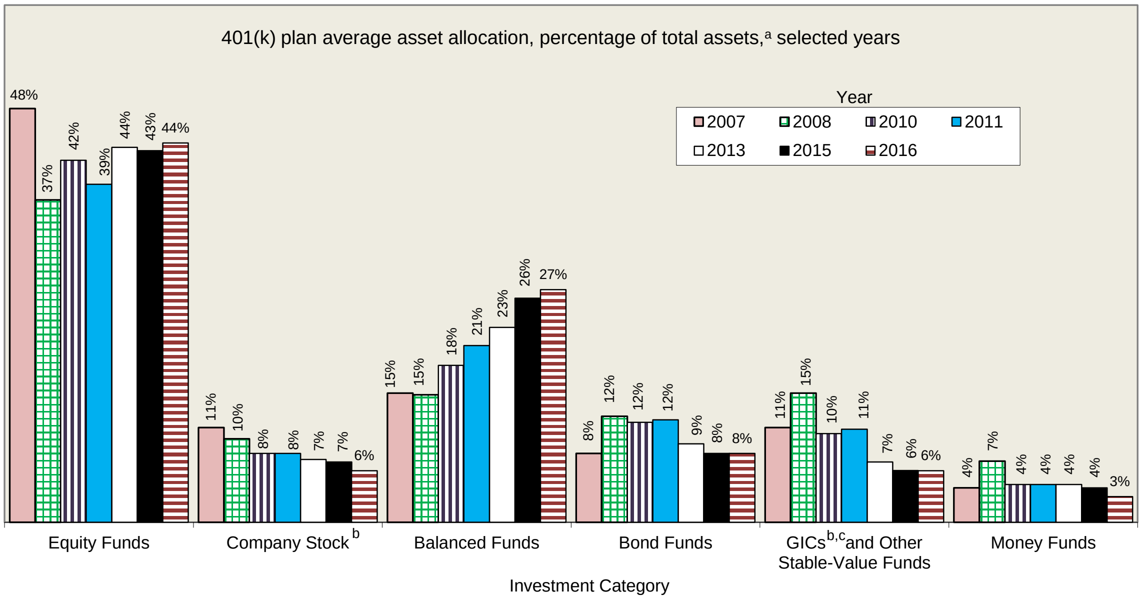
Note: Account balances are participant account balances held in 401(k) plans at the participants' current employers and are net of plan loans. Retirement savings held in plans at previous employers or rolled over into IRAs are not included. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 19
Ratio of 401(k) Plan Account Balance to Salary for Participants in Their 60s, by Tenure
Percentage, 2016



Note: Account balances are participant account balances held in 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. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 20
401(k) Plan Assets Are Concentrated in Equities



[a]Minor investment options are not shown; therefore, components do not add to 100 percent. Percentages are dollar-weighted averages.
[b]Not all participants are offered this investment option (see Figure 22).
[c]GICs are guaranteed investment contracts.
Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

company stock rose with plan size, in part, because few small plans offered company stock as an investment option. For example, 2 percent of participants in small plans (100 participants or fewer) were offered company stock as an investment option, while 49 percent of participants in plans with more than 5,000 participants were offered company stock as an investment option in 2016. Thus, to analyze the potential effect of plan size, the remaining panels of Figure 25 group plans by investment options and plan size.

Distribution of Equity Fund Allocations and Participant Exposure to Equities

Participants in 401(k) plans may hold equities through a variety of options including equity funds, company stock, and balanced funds. This section focuses first on the investing pattern of 401(k) plan participants with respect to equity funds. The asset allocation of participants without equity funds is explored next, because 401(k) participants holding no equity funds may hold equities in the form of company stock or through balanced funds. Finally, the overall investment in equities across all 401(k) plan participants is presented.

Asset Allocation to Equity Funds

The year-end 2016 EBRI/ICI 401(k) database shows that, on average, 44 percent of participant account balances were allocated to equity funds (Figure 21), which is one way to hold equities. However, individual asset allocations varied widely across participants. For example, 57 percent of participants held no equity funds, while 16 percent of participants held more than 80 percent of their balances in equity funds (Figures 26 and 27). Furthermore, the percentage of participants holding no equity funds varied with age, with 73 percent of participants in their twenties, 52 percent of participants in their forties, and 53 percent of participants in their sixties holding no equity funds. The percentage of 401(k) participants holding no equity funds also varied with tenure—participants with five or fewer years of tenure were more likely not to be invested in equity funds (Figure 27). The percentage of participants holding no equity funds tends to fall as salary increases.

Figure 21

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

Percentage of account balances,[a] 2016

Age Group	Equity Funds	Balanced Funds: Target-Date Funds[b, c]	Balanced Funds: Non-Target-Date Balanced Funds	Bond Funds	Money Funds	GICs[c,d]/Stable-Value Funds	Company Stock[c]	Other	Unknown	Memo: Equities[e]
20s	28.8%	47.6%	7.6%	5.2%	1.0%	1.3%	3.9%	3.2%	1.3%	79.5%
30s	41.0%	33.5%	5.9%	5.3%	1.7%	2.3%	5.1%	4.4%	0.9%	79.1%
40s	48.2%	22.2%	5.9%	6.6%	2.3%	3.3%	5.8%	4.7%	0.9%	75.3%
50s	44.7%	18.4%	6.2%	8.7%	3.2%	6.1%	6.4%	5.3%	0.9%	65.7%
60s	38.1%	18.4%	6.3%	10.8%	4.6%	9.6%	5.6%	5.6%	1.0%	55.4%
All	43.5%	21.3%	6.1%	8.2%	3.1%	5.8%	5.9%	5.1%	0.9%	67.4%

[a]Row percentages may not add to 100 percent because of rounding. Percentages are dollar-weighted averages.

[b]A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

[c]Not all participants are offered this investment option (see Figure 22).

[d]GICs are guaranteed investment contracts.

[e]Equities include equity funds, company stock, and the equity portion of balanced funds.

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.

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

Figure 22

Distribution of 401(k) Plans, Participants, and Assets, by Investment Options, 2016

Investment Options Offered by Plan	Plans	Participants	Assets
Equity, bond, money, and/or balanced funds	78,869	10,789,791	$672,981,452,036
Of which: target-date funds[a] are an option	53,122	8,514,887	$498,568,272,593
Equity, bond, money, and/or balanced funds, and GICs[b] and/or other stable value funds	29,391	7,949,610	$558,698,638,617
Of which: target-date funds[a] are an option	20,906	5,522,719	$382,519,284,731
Equity, bond, money, and/or balanced funds, and company stock	953	4,354,020	$348,871,062,851
Of which: target-date funds[a] are an option	610	3,396,214	$264,867,654,418
Equity, bond, money, and/or balanced funds, and company stock, and GICs[b] and/or other stable value funds	1,581	4,054,887	$465,295,400,695
Of which: target-date funds[a] are an option	1,081	2,850,415	$289,903,110,811
All[c]	110,794	27,148,308	2,045,846,554,199
Of which: target-date funds[a] are an option	75,719	20,284,235	1,435,858,322,553

Investment Options Offered by Plan	Percentage of plans[c]	Percentage of participants[c]	Percentage of assets
Equity, bond, money, and/or balanced funds	71.2%	39.7%	32.9%
Of which: target-date funds[a] are an option	47.9%	31.4%	24.4%
Equity, bond, money, and/or balanced funds, and GICs[b] and/or other stable value funds	26.5%	29.3%	27.3%
Of which: target-date funds[a] are an option	18.9%	20.3%	18.7%
Equity, bond, money, and/or balanced funds, and company stock	0.9%	16.0%	17.1%
Of which: target-date funds[a] are an option	0.6%	12.5%	12.9%
Equity, bond, money, and/or balanced funds, and company stock, and GICs[b] and/or other stable value funds	1.4%	14.9%	22.7%
Of which: target-date funds[a] are an option	1.0%	10.5%	14.2%
All[c]	100%	100%	100%
Of which: target-date funds[a] are an option	**68.3%**	**74.7%**	**70.2%**

[a]A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

[b]GICs are guaranteed investment contracts.

[c]Components may not add to total because of rounding.

Note: "Funds" include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.

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

Figure 23

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

Percentage of account balances,[a] 2016

	Equity Funds	Target-Date Funds[b]	Non-Target-Date Balanced Funds	Bond Funds	Money Funds	GICs[c]/Stable-Value Funds	Company Stock
Investment Options, All Ages							
Equity, bond, money, and/or balanced funds	47.2%	24.3%	7.4%	10.7%	4.6%		
Equity, bond, money, and/or balanced funds; and GICs[c] and/or other stable-value funds	44.5%	22.0%	6.1%	7.4%	1.6%	11.7%	
Equity, bond, money, and/or balanced funds; and company	38.6%	21.9%	3.8%	7.5%	4.9%		17.8%
Equity, bond, money, and/or balanced funds, company stock; and GICs[c] and/or other stable-value funds	40.7%	15.6%	6.2%	6.3%	1.6%	11.3%	12.6%
Plans Without Company Stock, and GICs,[c] and/or Other Stable-Value Funds							
Age Group							
20s	29.2%	49.8%	9.8%	4.8%	1.5%		
30s	43.4%	36.5%	6.9%	6.4%	2.4%		
40s	51.7%	24.7%	7.2%	8.2%	3.1%		
50s	49.4%	21.8%	7.5%	11.1%	4.5%		
60s	42.4%	21.8%	7.5%	14.7%	7.0%		
Plans With GICs[c] and/or Other Stable-Value Funds							
20s	30.6%	46.5%	6.4%	6.2%	0.5%	3.0%	
30s	42.3%	33.1%	5.7%	5.0%	0.9%	5.1%	
40s	49.8%	22.6%	5.7%	6.0%	1.4%	7.2%	
50s	46.1%	19.7%	6.0%	8.0%	1.8%	12.0%	
60s	37.9%	19.1%	6.6%	9.1%	1.7%	18.7%	
Plans With Company Stock							
20s	23.3%	47.4%	7.3%	5.5%	1.1%		12.9%
30s	36.2%	34.0%	4.1%	4.6%	2.4%		15.0%
40s	43.1%	22.4%	3.2%	6.1%	3.3%		17.3%
50s	39.0%	18.4%	4.1%	8.2%	5.1%		18.7%
60s	33.7%	18.8%	3.7%	10.2%	8.9%		18.6%
Plans With Company Stock and GICs,[c] and/or Other Stable-Value Funds							
20s	30.7%	44.7%	5.1%	3.8%	0.4%	2.6%	9.1%
30s	39.7%	28.3%	6.2%	4.3%	0.9%	4.7%	11.1%
40s	45.4%	17.8%	6.4%	5.1%	1.3%	6.6%	12.0%
50s	41.5%	13.0%	6.3%	6.7%	1.7%	11.6%	13.0%
60s	34.8%	12.3%	5.8%	7.7%	2.1%	18.2%	12.9%

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

[b] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

[c] GICs are guaranteed investment contracts.

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.

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

Figure 24

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

Percentage of account balances,[a] 2016

Salary[b]	Equity Funds	Target-date Funds[c]	Non-Target-date Balanced Funds	Bond Funds	Money Funds	GICs[d]/Stable-Value Funds	Company Stock
Plans Without Company Stock, GICs,[d] or Other Stable-Value Funds							
$20,000–$40,000	46.1%	28.0%	6.5%	9.5%	7.1%		
>$40,000–$60,000	42.1%	29.4%	7.4%	10.0%	6.5%		
>$60,000–$80,000	44.7%	27.9%	6.9%	9.7%	6.2%		
>$80,000–$100,000	46.8%	26.5%	5.9%	9.6%	5.7%		
>$100,000	50.5%	20.8%	5.3%	10.6%	5.4%		
All	47.2%	24.3%	7.4%	10.7%	4.6%		
Plans With GICs[d] and/or Other Stable-Value Funds							
$20,000–$40,000	37.6%	32.5%	6.8%	6.1%	1.3%	11.3%	
>$40,000–$60,000	38.9%	28.6%	6.8%	6.4%	1.7%	12.3%	
>$60,000–$80,000	41.3%	25.0%	7.1%	6.6%	1.8%	11.4%	
>$80,000–$100,000	43.0%	23.6%	6.5%	6.7%	1.8%	11.1%	
>$100,000	51.3%	16.9%	4.5%	6.8%	1.4%	12.0%	
All	44.5%	22.0%	6.1%	7.4%	1.6%	11.7%	
Plans With Company Stock							
$20,000–$40,000	33.5%	18.1%	3.7%	8.3%	5.4%		26.5%
>$40,000–$60,000	32.1%	24.3%	3.2%	7.1%	6.6%		22.7%
>$60,000–$80,000	32.7%	26.3%	3.5%	6.2%	6.5%		19.9%
>$80,000–$100,000	36.5%	23.8%	3.5%	6.9%	6.4%		18.9%
>$100,000	43.0%	18.7%	2.8%	8.7%	5.7%		16.9%
All	38.6%	21.9%	3.8%	7.5%	4.9%		17.8%
Plans With Company Stock and GICs[d] and/or Other Stable-Value Funds							
$20,000–$40,000	35.1%	18.0%	10.6%	5.3%	1.7%	10.8%	9.8%
>$40,000–$60,000	35.8%	20.0%	7.3%	5.8%	1.7%	11.6%	14.1%
>$60,000–$80,000	36.1%	19.4%	6.2%	5.7%	2.2%	11.1%	14.9%
>$80,000–$100,000	37.6%	18.8%	5.4%	5.6%	2.3%	11.5%	14.4%
>$100,000	41.7%	16.0%	4.9%	5.8%	2.6%	10.7%	12.2%
All	40.7%	15.6%	6.2%	6.3%	1.6%	11.3%	12.6%

[a] Minor investment options are not shown; therefore, row percentages do not add to 100 percent. Percentages are dollar-weighed averages.

[b] Salary information is available for a subset of participants in the EBRI/ICI database 401(k) database.

[c] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

[d] GICs are guaranteed investment contracts.

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.

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

Figure 25
Average Asset Allocation of 401(k) Plan Accounts, by Plan Size and Investment Options
Percentage of account balances,[a] 2016

	Equity Funds	Target-Date Funds[b]	Non-Target-Date Balanced Funds	Bond Funds	Money Funds	GICs[c]/Stable-Value	Company Stock
Plan Size by Number of Participants							
All Plans							
1–100	42.5%	26.0%	6.8%	11.1%	3.8%	3.4%	0.1%
101–500	43.3%	25.4%	7.0%	10.0%	3.7%	4.1%	0.3%
501–1,000	44.1%	24.4%	6.8%	9.1%	3.5%	4.5%	1.4%
1,001–5,000	44.7%	21.7%	5.9%	8.2%	3.3%	5.6%	3.2%
>5,000	43.1%	19.6%	6.0%	7.5%	2.9%	6.5%	8.9%
All	43.5%	21.3%	6.1%	8.2%	3.1%	5.8%	5.9%
Plans Without Company Stock, GICs[c]/Stable-Value Funds							
1–100	42.9%	26.9%	5.9%	12.5%	4.7%		
101–500	44.5%	26.5%	7.3%	11.3%	4.9%		
501–1,000	46.7%	25.2%	7.7%	10.5%	4.9%		
1001–5,000	49.4%	23.2%	7.3%	9.3%	4.5%		
>5,000	48.9%	22.7%	8.2%	10.6%	4.3%		
All	47.2%	24.3%	7.4%	10.7%	4.6%		
Plans With GICs[c]/Stable-Value Funds							
1–100	41.4%	24.6%	8.9%	8.0%	1.6%	11.3%	
101–500	41.8%	24.0%	6.4%	8.1%	1.6%	11.2%	
501–1,000	42.0%	24.8%	5.8%	7.7%	1.5%	11.1%	
1,001–5,000	42.4%	22.2%	5.2%	7.3%	2.0%	12.0%	
>5,000	47.1%	20.4%	6.1%	7.2%	1.3%	11.8%	
All	44.5%	22.0%	6.1%	7.4%	1.6%	11.7%	
Plans With Company Stock							
1–100[d]	41.1%	19.1%	7.3%	7.9%	8.0%		11.0%
101–500	40.5%	20.4%	5.3%	8.7%	5.1%		14.0%
501–1,000	39.3%	18.9%	5.3%	8.7%	4.7%		16.7%
1,001–5,000	42.8%	18.0%	4.6%	9.0%	4.4%		15.7%
>5,000	37.9%	22.6%	3.6%	7.2%	5.0%		18.2%
All	38.6%	21.9%	3.8%	7.5%	4.9%		17.8%
Plans With Company Stock and GICs[c]/Stable-Value Funds							
1–100	41.8%	13.6%	7.7%	7.8%	1.9%	15.3%	5.1%
101–500	35.3%	21.0%	6.2%	6.5%	3.3%	11.3%	4.5%
501–1,000	36.1%	17.3%	5.8%	5.6%	2.5%	9.7%	13.6%
1,001–5,000	38.0%	19.1%	4.6%	6.5%	2.1%	9.7%	11.8%
>5,000	41.1%	15.1%	6.4%	6.2%	1.5%	11.5%	12.8%
All	40.7%	15.6%	6.2%	6.3%	1.6%	11.3%	12.6%

[a] Minor investment options are not shown; therefore, row percentages do not add to 100 percent. Percentages are dollar-weighted averages.
[b] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.
[c] GICs are guaranteed investment contracts.
[d] Because few plans fall into this category, these percentages may be heavily influenced by a few outliers.
Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 26
Asset Allocation Distribution of 401(k) Participant Account Balance to Equity Funds, by Participant Age
Percentage of participants,[a,b] 2016

Age Group	Zero	1–10%	11–20%	21–30%	31–40%	41–50%	51–60%	61–70%	71–80%	81–90%	91–100%
	Percentage of Account Balance Invested in Equity Funds										
20s	73.3%	1.1%	1.0%	1.3%	1.3%	1.7%	2.1%	2.6%	2.9%	3.9%	8.8%
30s	60.8%	1.9%	1.7%	2.1%	2.2%	2.8%	3.4%	3.8%	4.6%	5.3%	11.4%
40s	51.6%	2.5%	2.1%	2.6%	2.9%	3.6%	4.7%	5.2%	6.0%	5.9%	13.0%
50s	49.1%	3.2%	2.5%	3.2%	3.6%	4.7%	6.0%	5.7%	5.9%	4.2%	12.0%
60s	52.8%	3.6%	2.9%	3.6%	4.4%	5.0%	5.8%	5.1%	4.1%	2.9%	9.8%
All	56.6%	2.5%	2.0%	2.6%	2.8%	3.6%	4.5%	4.6%	4.9%	4.7%	11.3%

[a] The analysis includes the 27.1 million participants in the year-end 2016 EBRI/ICI database 401(k) database.
[b] Row percentages may not add to 100 percent because of rounding.
Note: Equity funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in equities. In addition, 401(k) participants may hold equities through balanced funds or company stock—see Figure 30 for the distribution of 401(k) plan account balances to equities.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Asset Allocation of 401(k) Plan Participants Without Equity Funds

Participants with no equity fund balances may still have exposure to the stock market through company stock or balanced funds, which include target-date funds. In fact, 87 percent of 401(k) participants with no equity fund allocation had investments in either company stock or balanced funds at year-end 2016 (Figure 28). For example, 91 percent of participants in their twenties without equity funds held equities through company stock, balanced funds, or both. Seventy-five percent of participants in their twenties without equity funds held target-date funds—which tend to be highly concentrated in equity securities for that age group—as their only equity investment. Another 9 percent of participants in their twenties without equity funds had equity exposure only through non-target-date balanced funds, and another 3 percent held company stock as their only equity investment. Four percent had equity exposure through some combination of target-date funds, non-target-date balanced funds, and/or company stock. As a result, many participants with no equity funds had exposure to equity-related investments through company stock, balanced funds, or both (Figure 29).

Asset Allocation to Equities

Among individual 401(k) plan participants, the allocation of account balances to equities (equity funds, company stock, and the equity portion of balanced funds) varies widely around the average of 67.4 percent for all participants in the 2016 database (Figure 21).[40] Forty-eight percent of participants had more than 80 percent of their account balances invested in equities, while less than 8 percent held no equities at all at the end of 2016 (Figure 30). Younger 401(k) plan participants were slightly more likely to hold at least some equities and much more likely to have high concentrations in equities. At year-end 2016, 7 percent of 401(k) plan participants in their twenties had no equities, compared with 11 percent of 401(k) plan participants in their sixties. More than three-quarters of 401(k) plan participants in their twenties had more than 80 percent of their account balances invested in equities, compared with about one-fifth of 401(k) plan participants in their sixties.

Changes in Concentrations in Equities Since the Financial Crisis

More 401(k) plan participants held equities at year-end 2016 compared with year-end 2007, and a larger percentage had higher concentrations in equities. Overall, at year-end 2016, less than 8 percent of 401(k) plan participants held no equities, down from 13 percent at year-end 2007, and nearly half (48 percent) had more than 80 percent of their account balances invested in equities at year-end 2016, compared with 44 percent at year-end 2007 (Figure 31). Younger 401(k) participants were much more likely to hold equities and to hold high concentrations in equities at year-end 2016 compared with year-end 2007. For example, about three-quarters of 401(k) plan participants in their twenties had more than 80 percent of their account balances invested in equities at year-end 2016, compared with less than half at year-end 2007. Older 401(k) participants were a little less likely to have such high concentrations in equities at year-end 2016 compared with year-end 2007: 19 percent of 401(k) plan participants in their sixties had more than 80 percent of their account balances invested in equities at year-end 2016, compared with 30 percent of 401(k) plan participants in their sixties at year-end 2007. A lower share held no equities.

Distribution of 401(k) Participants' Balanced Fund Allocations by Age

Individual 401(k) participants' asset allocation to balanced funds varied widely around an average of 27 percent at year-end 2016 (Figure 20). For example, 36 percent of participants held no balanced funds, while 45 percent of participants held more than 80 percent of their accounts in balanced funds at the end of 2016 (Figure 32). At year-end 2016, 64 percent of 401(k) participants held balanced funds through target-date funds and non-target-date balanced funds, similar to the share in 2015.[41] More than half (52 percent) of 401(k) participants held target-date funds, 15 percent held non-target-date balanced funds, and 2 percent held both. Target-date fund use varies with participant age and tenure. Younger participants were more likely to hold target-date funds than older participants. At year-end 2016, 64 percent of participants in their twenties held target-date funds, compared with 45 percent of participants in their sixties. Recently hired participants were more likely to hold target-date funds than those with more years on the job: at year-end 2016, 59 percent of participants with two or fewer years of tenure held target-date funds, compared with 52 percent of participants with more than five to 10 years of tenure, and 31 percent of participants with more than 30 years of tenure (Figure 33).

Figure 27
Asset Allocation Distribution of 401(k) Participant Account Balance to Equity Funds, by Participant Age, Tenure, or Salary
Percentage of participants, 2016

	Percentage of Account Balance Invested in Equity Funds			
	Zero	1–20%	>20%–80%	>80%
All	56.6%	4.5%	23.0%	16.0%
Age Group				
20s	73.3%	2.1%	12.0%	12.7%
30s	60.8%	3.6%	18.9%	16.7%
40s	51.6%	4.6%	25.0%	18.8%
50s	49.1%	5.7%	29.1%	16.2%
60s	52.8%	6.4%	28.0%	12.7%
Tenure (years)				
0–2	68.7%	1.9%	14.9%	14.5%
>2–5	63.0%	3.0%	18.8%	15.2%
>5–10	56.0%	4.5%	23.2%	16.3%
>10–20	43.1%	6.4%	30.8%	19.7%
>20–30	35.5%	8.2%	35.6%	20.7%
>30	37.6%	9.8%	36.0%	16.7%
Salary				
$20,000–$40,000	67.7%	4.5%	17.7%	10.1%
>$40,000–$60,000	57.1%	6.0%	24.1%	12.8%
>$60,000–$80,000	49.4%	6.8%	28.4%	15.5%
>$80,000–$100,000	43.1%	7.3%	32.3%	17.3%
>$100,000	31.2%	7.9%	38.3%	22.6%

Note: Row percentages may not add to 100 percent because of rounding. Equity funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in equities. In addition, 401(k) participants may hold equities through balanced funds or company stock—see Figure 30 for the distribution of 401(k) plan account balances to equities. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.

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

Figure 28
Percentage of 401(k) Plan Participants Without Equity Fund Balances Who Have Equity Exposure, by Participant Age or Tenure, 2016

	Percentage of Participants Without Equity Funds				
	Company stock and/or balanced funds	Target-date funds* as only equity investment	Non-target-date balanced funds as only equity investment	Company stock as only equity investment	Combination of company stock and/or target-date funds,* and/or non-target-date balanced funds
Age Group					
20s	**90.8%**	75.1%	9.4%	2.5%	3.8%
30s	**89.3%**	70.9%	9.4%	2.6%	6.5%
40s	**86.9%**	64.8%	11.4%	3.2%	7.4%
50s	**84.4%**	60.1%	11.8%	4.4%	8.2%
60s	**78.9%**	55.2%	10.9%	5.1%	7.7%
All	**86.5%**	65.8%	10.7%	3.4%	6.7%
Tenure (years)					
0–2	**90.3%**	73.5%	11.6%	2.1%	3.2%
>2–5	**89.1%**	70.5%	11.4%	2.5%	4.8%
>5–10	**85.3%**	63.5%	11.0%	3.5%	7.4%
>10–20	**78.8%**	47.5%	10.4%	6.0%	14.9%
>20–30	**72.9%**	38.0%	11.8%	8.3%	14.9%
>30	**66.8%**	33.6%	10.9%	12.9%	9.4%
All	**86.5%**	65.8%	10.7%	3.4%	6.7%

* A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

Note: Row components may not add to total in first column because of rounding. Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.

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

Figure 29

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

Percentage of account balances,[a] 2016

	Target-Date Funds[b]	Non-Target-Date Balanced Funds	Bond Funds	Money Funds	GICs[c]/Stable-Value Funds	Company Stock	Other	Unknown
Age Group								
20s	73.9%	11.0%	4.0%	1.0%	1.0%	3.6%	3.9%	1.6%
30s	71.2%	9.9%	2.6%	2.1%	2.5%	4.9%	6.0%	0.7%
40s	61.2%	11.5%	4.0%	3.7%	4.7%	6.6%	7.4%	0.8%
50s	50.4%	11.7%	6.0%	5.5%	9.2%	8.1%	8.1%	0.9%
60s	43.9%	10.1%	7.7%	7.2%	14.7%	6.8%	8.5%	1.0%
All[d]	54.5%	11.0%	5.5%	5.0%	8.4%	6.9%	7.8%	0.9%
Tenure (years)								
0–2	69.5%	12.8%	5.3%	2.7%	1.6%	1.6%	5.8%	0.6%
>2–5	69.3%	12.6%	4.1%	2.7%	2.4%	2.7%	5.5%	0.7%
>5–10	63.6%	11.8%	4.5%	3.6%	4.2%	4.6%	6.9%	0.7%
>10–20	51.4%	11.1%	5.3%	5.7%	8.8%	8.0%	8.7%	0.9%
>20–30	40.4%	11.9%	6.2%	6.9%	11.7%	10.8%	10.9%	1.2%
>30	32.1%	9.4%	8.0%	7.7%	19.0%	12.0%	10.4%	1.3%
All[d]	54.5%	11.0%	5.5%	5.0%	8.4%	6.9%	7.8%	0.9%

[a] Row percentages may not add to 100 percent because of rounding. Percentages are dollar-weighted averages.

[b] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

[c] GICs are guaranteed investment contracts.

[d] The analysis includes the 15.4 million participants with no equity funds at year-end 2016.

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.

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

Distribution of 401(k) Participants' Company Stock Allocations

Participants' allocations to company stock remained in line with recent previous years. Thirty-one percent (or 8.4 million) of the 401(k) participants in the 2016 EBRI/ICI 401(k) database were in plans that offered company stock as an investment option (Figure 22). Among these participants, 80 percent held 20 percent or less of their account balances in company stock, including 60 percent who held none (Figure 34). On the other hand, 6 percent had more than 80 percent of their account balances invested in company stock.

Asset Allocations of Recently Hired Participants

Comparing snapshots of newly hired 401(k) plan participants' asset allocations provides further insight into recent investment allocations. Balanced funds, which include lifestyle and target-date funds, have increased in popularity among 401(k) participants. Recently hired participants in 2016 tended to be more likely to hold balanced funds compared with recent hires in the past. About 71 percent of recently hired 401(k) plan participants in 2016 and 70 percent in 2015 held balanced funds, compared with about two-thirds from 2011 through 2014, less than half in 2006, and one-third in 2002 (Figure 35). At year-end 2016, 59 percent of recently hired 401(k) participants held target-date funds, while 12 percent held non-target-date balanced funds, and 1 percent held both target-date and non-target-date balanced funds (Figure 36).

Among those who held balanced funds, recently hired participants in 2016 were more likely to hold a high concentration of their accounts in balanced funds compared with past years. At year-end 2016, 82 percent of recently hired participants holding balanced funds had more than 90 percent of their account balances invested in balanced funds, compared with 80 percent in 2015, 79 percent in 2014, 61 percent in 2009, 43 percent in 2006, and 7 percent in 1998 (Figure 37). Concentration is highest among recently hired participants with target-date funds; at year-end 2016, 84 percent of recently hired participants holding target-date funds held more than 90 percent of their account balances in target-date funds (Figure 38). Sixty-three percent of recently hired participants holding non-target-date balanced funds had more than 90 percent of their account balances invested in those funds at year-end 2016.

Balanced fund, target-date fund, and non-target-date balanced fund use varied somewhat by age among recently hired participants—recently hired participants in their twenties were more likely to be highly concentrated in such funds. For example, 62 percent of recently hired participants in their twenties held more than 90 percent of their account balances in balanced funds, compared with 56 percent of recent hires in their forties, and 55 percent of recent hires in their sixties in 2016 (Figure 39). Concentrated target-date fund use ranged from 54 percent of recent hires in their twenties holding more than 90 percent of their account balances in target-date funds to 46 percent of recently hired participants in their sixties. In addition, at year-end 2016, 58 percent of the account balances of recently hired participants in their twenties were invested in balanced funds, compared with 54 percent in 2012, 42 percent in 2009, 24 percent in 2006, and about 7 percent among that age group in 1998 (Figure 40). At year-end 2016, among recently hired participants in their twenties, target-date funds accounted for 85 percent of their balanced fund assets, or 49 percent of their account balances overall. The pattern of target-date and non-target-date balanced fund use varied with participant age.

Comparing recently hired participants in 2016 with similar age groups in 1998 also illustrates that asset allocation to balanced funds tended to be higher in 2016 than in 1998, rising from 9 percent of the account balances of recently hired participants in 1998 to 45 percent in 2016 (Figure 40). The share of account balances invested in equity funds decreased over the same period, from 65 percent for recently hired participants in 1998 to 35 percent for recently hired participants in 2016. Company stock also declined for the two groups of recently hired participants, from 9 percent of 401(k) plan account balances in 1998 to 2 percent in 2016.

In addition to devoting a greater share of their assets to balanced funds, recently hired participants also have become more likely to hold these diversified investment options. At year-end 2016, 71 percent of recently hired 401(k) participants held balanced funds, compared with 29 percent at year-end 1998 (Figure 35). Over the same period, recently hired 401(k) participants have become less likely to hold company stock (Figure 41) and less likely to hold equity funds.[42] Recently hired 401(k) participants also tend not to hold a high concentration of their account balances in company stock (Figures 42 and 43).[43]

Figure 30
Asset Allocation to Equities Varied Widely Among 401(k) Plan Participants

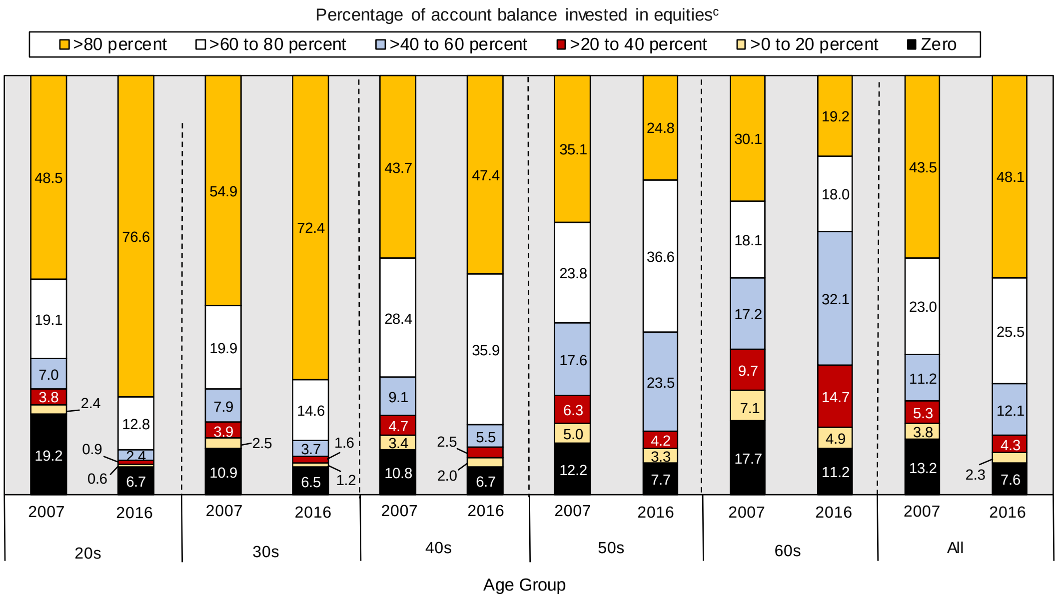
Asset allocation distribution of 401(k) participant account balances to equities,[a] by age, percentage of participants,[b] 2016

Age Group	Percentage of Account Balance Invested in Equities[a] Zero	1–20%	>20–40%	>40–60%	>60–80%	>80–100%
20s	6.7%	0.6%	0.9%	2.4%	12.8%	76.6%
30s	6.5%	1.2%	1.6%	3.7%	14.6%	72.4%
40s	6.7%	2.0%	2.5%	5.5%	35.9%	47.4%
50s	7.7%	3.3%	4.2%	23.5%	36.6%	24.8%
60s	11.2%	4.9%	14.7%	32.1%	18.0%	19.2%
All	7.6%	2.3%	4.3%	12.1%	25.5%	48.1%

[a] Equities include equity funds, company stock, and the equity portion of balanced funds. Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.
[b] Participants include the 27.1 million 401(k) plan participants in the year-end 2016 EBRI/ICI 401(k) database.
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 31
Exposure to Equities Increased Among 401(k) Participants Between 2007 and 2016

Percentage of 401(k) participants by age of participant,[a, b] year-end 2007 and year-end 2016



[a] Participants include the 27.1 million 401(k) plan participants in the year-end 2016 EBRI/ICI 401(k) database and the 21.8 million 401(k) plan participants in the year-end 2007 EBRI/ICI database.
[b] Components may not add to 100 percent because of rounding.
[c] Equities include equity funds, company stock, and the equity portion of balanced funds. Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 32

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

Percentage of participants,[a,b] 2016

	Percentage of Account Balance Invested in Balanced Funds										
Age Group	Zero	1–10%	>10–20%	>20–30%	>30–40%	>40–50%	>50–60%	>60–70%	>70–80%	>80–90%	>90–100%
20s	26.2%	1.8%	1.5%	1.4%	1.1%	1.2%	1.5%	1.0%	1.2%	1.1%	62.0%
30s	31.5%	3.6%	2.9%	2.6%	1.9%	1.8%	1.9%	1.4%	1.6%	1.7%	49.3%
40s	36.9%	5.2%	4.0%	3.4%	2.3%	2.1%	1.9%	1.4%	1.6%	1.7%	39.5%
50s	39.8%	5.8%	4.3%	3.8%	2.5%	2.2%	1.9%	1.4%	1.5%	1.7%	35.1%
60s	42.1%	5.5%	3.8%	3.5%	2.4%	2.1%	1.9%	1.3%	1.4%	1.6%	34.3%
All	35.6%	4.5%	3.4%	3.0%	2.1%	1.9%	1.8%	1.3%	1.5%	1.6%	43.3%

	Percentage of Account Balance Invested in Target-date Funds[c]										
Age Group	Zero	1–10%	>10–20%	>20–30%	>30–40%	>40–50%	>50–60%	>60–70%	>70–80%	>80–90%	>90–100%
20s	35.9%	1.1%	1.0%	1.0%	0.9%	1.0%	1.3%	0.9%	1.0%	1.0%	54.9%
30s	42.0%	2.4%	1.9%	1.8%	1.4%	1.4%	1.6%	1.2%	1.4%	1.5%	43.4%
40s	49.7%	3.5%	2.5%	2.2%	1.6%	1.5%	1.5%	1.2%	1.4%	1.5%	33.5%
50s	53.6%	3.8%	2.6%	2.3%	1.7%	1.5%	1.4%	1.1%	1.2%	1.4%	29.4%
60s	55.4%	3.6%	2.3%	2.1%	1.5%	1.4%	1.3%	1.0%	1.1%	1.3%	28.8%
All	47.8%	3.0%	2.1%	2.0%	1.5%	1.4%	1.4%	1.1%	1.3%	1.4%	37.2%

	Percentage of Account Balance Invested in Non-Target-date Balanced Funds										
Age Group	Zero	1–10%	>10–20%	>20–30%	>30–40%	>40–50%	>50–60%	>60–70%	>70–80%	>80–90%	>90–100%
20s	89.1%	1.4%	0.9%	0.6%	0.3%	0.2%	0.2%	0.1%	0.2%	0.1%	6.9%
30s	87.4%	2.5%	1.7%	1.1%	0.5%	0.4%	0.3%	0.2%	0.2%	0.2%	5.6%
40s	84.6%	3.3%	2.3%	1.6%	0.8%	0.6%	0.4%	0.2%	0.2%	0.2%	5.7%
50s	83.5%	3.6%	2.6%	1.9%	0.9%	0.7%	0.5%	0.3%	0.3%	0.3%	5.4%
60s	84.2%	3.3%	2.3%	1.9%	1.0%	0.7%	0.6%	0.3%	0.3%	0.3%	5.2%
All	85.5%	2.9%	2.0%	1.5%	0.7%	0.5%	0.4%	0.2%	0.2%	0.2%	5.8%

[a] The analysis includes the 27.1 million participants in the year-end 2016 EBRI/ICI 401(k) database.

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

[c] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.

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

Figure 33

Asset Allocation Distribution of 401(k) Participant Account Balance to Balanced Funds, by Tenure

Percentage of Participants,[a,b] 2016

	Percentage of Account Balance Invested in Balanced Funds										
Tenure (years)	Zero	1–10%	11–20%	21–30%	31–40%	41–50%	51–60%	61–70%	71–80%	81–90%	91–100%
0–2	29.5%	1.9%	1.7%	1.7%	1.2%	1.3%	1.6%	1.0%	1.2%	1.0%	58.0%
>2–5	31.5%	3.0%	2.3%	2.3%	1.7%	1.7%	1.8%	1.3%	1.5%	1.4%	51.4%
>5–10	36.3%	4.3%	3.4%	3.1%	2.2%	2.0%	2.0%	1.6%	1.7%	1.9%	41.6%
>10–20	44.3%	7.0%	5.2%	4.4%	2.9%	2.4%	2.0%	1.6%	1.8%	2.3%	26.1%
>20–30	49.6%	8.7%	5.9%	4.9%	3.2%	2.7%	2.2%	1.9%	2.0%	2.0%	16.8%
>30	54.5%	8.8%	5.6%	4.5%	3.0%	2.5%	1.9%	1.4%	1.3%	1.3%	15.1%
All	35.6%	4.5%	3.4%	3.0%	2.1%	1.9%	1.8%	1.3%	1.5%	1.6%	43.3%

	Percentage of Account Balance Invested in Target-Date Funds[c]										
Tenure (years)	Zero	1–10%	11–20%	21–30%	31–40%	41–50%	51–60%	61–70%	71–80%	81–90%	91–100%
0–2	40.8%	1.0%	1.0%	1.2%	0.9%	1.0%	1.4%	0.8%	1.0%	0.9%	49.9%
>2–5	43.2%	1.8%	1.5%	1.6%	1.3%	1.3%	1.5%	1.1%	1.3%	1.3%	44.0%
>5–10	48.3%	2.8%	2.2%	2.2%	1.7%	1.5%	1.6%	1.3%	1.5%	1.7%	35.2%
>10–20	57.6%	4.9%	3.3%	2.7%	1.9%	1.6%	1.5%	1.2%	1.5%	2.1%	21.7%
>20–30	65.1%	5.7%	3.4%	2.7%	2.0%	1.8%	1.6%	1.4%	1.6%	1.6%	13.1%
>30	69.4%	5.8%	3.2%	2.6%	1.9%	1.5%	1.2%	0.9%	0.9%	1.0%	11.5%
All	47.8%	3.0%	2.1%	2.0%	1.5%	1.4%	1.4%	1.1%	1.3%	1.4%	37.2%

	Percentage of Account Balance Invested in Non-Target-Date Balanced Funds										
Tenure (years)	Zero	1–10%	11–20%	21–30%	31–40%	41–50%	51–60%	61–70%	71–80%	81–90%	91–100%
0–2	87.6%	1.4%	1.1%	0.7%	0.4%	0.3%	0.2%	0.1%	0.2%	0.1%	7.9%
>2–5	86.5%	2.1%	1.5%	1.0%	0.5%	0.4%	0.3%	0.2%	0.2%	0.2%	7.1%
>5–10	85.5%	2.8%	1.9%	1.4%	0.7%	0.5%	0.4%	0.3%	0.2%	0.2%	6.0%
>10–20	83.4%	4.2%	3.0%	2.2%	1.0%	0.7%	0.5%	0.3%	0.3%	0.3%	4.0%
>20–30	81.3%	5.1%	3.5%	2.6%	1.3%	1.0%	0.7%	0.4%	0.3%	0.3%	3.5%
>30	82.1%	5.0%	3.3%	2.4%	1.3%	0.9%	0.6%	0.4%	0.3%	0.3%	3.3%
All	85.5%	2.9%	2.0%	1.5%	0.7%	0.5%	0.4%	0.2%	0.2%	0.2%	5.8%

[a] The analysis includes the 27.1 million 401(k) plan participants in the year-end 2016 EBRI/ICI 401(k) database 401k(k) database.

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

[c] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.

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

Figure 34

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

Percentage of Participants,[a,b] 2016

Percentage of Account Balance Invested in Company Stock

Age Group	Zero	1–10%	11–20%	21–30%	31–40%	41–50%	51–60%	61–70%	71–80%	81–90%	91–100%
20s	75.6%	4.9%	3.9%	3.3%	2.0%	1.6%	1.4%	0.7%	0.5%	0.3%	5.8%
30s	62.8%	11.3%	6.9%	4.7%	3.0%	2.2%	1.9%	1.2%	0.8%	0.6%	4.6%
40s	56.7%	13.6%	8.2%	5.5%	3.6%	2.7%	2.1%	1.4%	1.0%	0.8%	4.6%
50s	54.5%	14.7%	8.3%	5.5%	3.7%	2.7%	2.2%	1.5%	1.1%	0.8%	5.0%
60s	56.7%	14.0%	7.5%	5.0%	3.3%	2.5%	2.0%	1.4%	1.0%	0.8%	5.7%
All	60.3%	12.1%	7.2%	4.9%	3.2%	2.4%	2.0%	1.3%	0.9%	0.7%	5.0%

[a] The analysis includes the 8.4 million participants in plans with company stock at year-end 2016.

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

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

Figure 35

Many Recently Hired 401(k) Plan Participants[a] Hold Balanced Funds[b]

Percentage of recently hired 401(k) participants[a] holding balanced funds,[b] 1998–2016

Age Group	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
20s	27.0%	28.3%	27.1%	27.3%	32.7%	35.1%	38.9%	43.5%	48.5%	51.1%	63.6%	64.1%	69.6%	72.0%	70.8%	67.6%	68.1%	72.7%	72.3%
30s	29.0%	31.0%	28.3%	26.5%	33.1%	36.2%	39.8%	42.8%	47.9%	54.2%	59.6%	61.2%	63.0%	68.1%	69.5%	67.8%	67.5%	69.9%	71.0%
40s	30.5%	33.6%	30.8%	27.9%	33.7%	35.7%	39.8%	42.1%	46.6%	52.8%	57.8%	59.3%	59.9%	65.0%	67.2%	65.6%	67.6%	68.3%	69.8%
50s	30.9%	34.9%	32.1%	29.2%	33.9%	35.5%	40.3%	43.3%	47.8%	53.4%	58.0%	58.7%	59.1%	64.2%	66.7%	64.5%	65.6%	67.0%	68.8%
60s	28.4%	34.9%	33.2%	29.1%	30.2%	30.7%	36.3%	41.6%	45.5%	50.1%	53.9%	53.6%	55.2%	60.7%	63.9%	60.6%	63.9%	63.6%	66.9%
All	28.9%	31.3%	29.1%	27.4%	33.0%	35.4%	39.3%	42.8%	47.6%	52.7%	59.9%	60.9%	63.0%	67.5%	68.6%	66.3%	67.2%	69.6%	70.5%

[a] The analysis includes 401(k) participants with two or fewer years of tenure in the year indicated.

[b] Balanced funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in a mix of equities and fixed-income securities.

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

Year-End 2016 Snapshot of 401(k) Plan Loan Activity

Availability and Use of 401(k) Plan Loans by Plan Size

Fifty-four percent of the 401(k) plans for which loan data were available in the 2016 EBRI/ICI 401(k) database offered a plan loan provision to participants (Figure 44).[44] The loan feature was more commonly associated with large plans (as measured by the number of participants in the plan). About 90 percent of plans with more than 1,000 participants included a loan provision, compared with 30 percent of plans with 10 or fewer participants. Participant loan activity varied modestly by plan size, ranging from 16 percent of participants with loans outstanding in 401(k) plans with 26 to 250 participants to 23 percent of participants in 401(k) plans with 10 or fewer participants (Figure 45). Loan ratios—the amount of the loan outstanding divided by the remaining account balance—vary only slightly when participants are grouped based on the size of their 401(k) plans (as measured by the number of plan participants). Among those in plans with 1,000 or fewer participants, the loan ratio was 12 percent of the remaining assets in 2016, while in plans with more than 10,000 participants, the loan ratio was 10 percent (Figure 46).

In the 21 years that the database has been tracking loan activity among 401(k) plan participants, there has been little variation. From 1996 through 2008, on average, less than one-fifth of 401(k) participants with access to loans had loans outstanding. At year-end 2009, the percentage of participants who were offered loans with loans outstanding ticked up to 21 percent and remained at that level from year-end 2010 through year-end 2013 before falling to 20 percent at year-end 2014, 18 percent at year-end 2015, and rising to 19 percent at year-end 2016 (Figure 47).[45] However, not all participants have access to 401(k) plan loans—factoring in all 401(k) participants with and without loan access in the database, only 16 percent had loans outstanding at year-end 2016.[46] On average, over the past 21 years, among participants with loans outstanding, about 14 percent of the remaining account balance remained unpaid. U.S. Department of Labor data indicate that loan amounts tend to be a negligible portion of plan assets.[47]

401(k) Plan Loan Activity Varies With Participant Age, Tenure, Account Balance, and Salary

In the 2016 EBRI/ICI 401(k) database, 86 percent of participants were in plans offering loans. However, relatively few participants made use of this borrowing privilege—which has been the case for the 21 years that the database has tracked 401(k) plan participants. At year-end 2016, 19 percent of those eligible for loans had 401(k) plan loans outstanding (Figure 47). As in previous years, loan activity varies with age, tenure, account balance, and salary. Of those participants in plans offering loans, the highest percentages of participants with outstanding loan balances were among participants in their thirties, forties, or fifties (Figure 48). In addition, participants with five or fewer years of tenure or with more than 30 years of tenure were less likely to use the loan provision than other participants. Ten percent of participants with account balances of less than $10,000 had loans outstanding.

Average Loan Balances

Among participants with outstanding 401(k) loans at the end of 2016, the average unpaid balance was $7,907, compared with $7,982 in the year-end 2015 database (Figure 49). The median loan balance outstanding was $4,279 at year-end 2016, compared with $4,359 in the year-end 2015 database. The ratio of the loan outstanding to the remaining account balance decreased slightly, from 12 percent at year-end 2015 to 11 percent at year-end 2016 (Figures 47 and 50). In addition, as in previous years, variation around this average tends to correspond with age (the older the participant, the lower the average), tenure (the higher the tenure of the participant, the lower the average), account balance (the higher the account balance, the lower the average),[48] and salary (the higher the participant's salary, the lower the average) (Figure 50).

Overall, loans from 401(k) plans tended to be small, with a sizable majority of eligible 401(k) participants in all age groups having no loan outstanding at all. For example, 92 percent of participants in their twenties, 75 percent of participants in their forties, and 87 percent of participants in their sixties had no loans outstanding at year-end 2016 (Figure 51).

Figure 36

Many Recently Hired 401(k) Plan Participants Hold Target-Date[a] Funds

Percentage of recently hired participants, 2006-2016

Holding Balanced Funds

Age Group	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
20s	48.5%	51.1%	63.6%	64.1%	69.6%	72.0%	70.8%	67.6%	68.1%	72.7%	72.3%
30s	47.9%	54.2%	59.6%	61.2%	63.0%	68.1%	69.5%	67.8%	67.5%	69.9%	71.0%
40s	46.6%	52.8%	57.8%	59.3%	59.9%	65.0%	67.2%	65.6%	67.6%	68.3%	69.8%
50s	47.8%	53.4%	58.0%	58.7%	59.1%	64.2%	66.7%	64.5%	65.6%	67.0%	68.8%
60s	45.5%	50.1%	53.9%	53.6%	55.2%	60.7%	63.9%	60.6%	63.9%	63.6%	66.9%
All	47.6%	52.7%	59.9%	60.9%	63.0%	67.5%	68.6%	66.3%	67.2%	69.6%	70.5%

Holding Target-Date Funds[a]

Age Group	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
20s	29.4%	32.4%	47.5%	50.5%	55.3%	59.3%	59.4%	58.6%	60.6%	64.0%	62.3%
30s	28.5%	35.5%	44.3%	48.3%	49.8%	55.9%	58.7%	58.2%	59.7%	61.0%	60.8%
40s	27.4%	34.6%	42.6%	46.6%	47.2%	52.8%	55.8%	54.8%	57.7%	57.8%	57.5%
50s	28.1%	35.3%	42.7%	46.2%	46.8%	52.4%	55.5%	53.6%	57.0%	55.9%	55.7%
60s	26.1%	32.3%	39.1%	41.8%	43.1%	49.0%	51.5%	48.9%	55.4%	51.0%	54.0%
All	28.3%	34.3%	44.4%	47.9%	49.8%	55.2%	57.3%	56.3%	58.9%	59.7%	59.2%

Holding Non-Target-Date Funds

Age Group	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
20s	22.5%	21.2%	18.5%	16.7%	15.8%	14.0%	12.8%	10.1%	8.6%	9.7%	10.9%
30s	22.5%	21.9%	18.2%	16.2%	15.1%	14.0%	12.6%	11.2%	11.9%	10.4%	11.4%
40s	21.3%	21.1%	17.7%	15.8%	14.4%	13.9%	13.3%	12.4%	14.8%	12.0%	13.6%
50s	21.4%	20.9%	17.6%	15.4%	13.8%	13.5%	13.0%	12.4%	13.3%	12.4%	14.3%
60s	19.8%	20.1%	16.7%	14.0%	13.2%	13.1%	13.9%	13.0%	13.1%	13.5%	14.1%
All	21.9%	21.3%	18.0%	16.1%	14.8%	13.9%	13.0%	11.4%	11.8%	11.3%	12.4%

[a] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

Note: The analysis includes the 2.8 million recently hired participants (those with two or fewer years of tenure) in 2006, the 3.8 million recently hired participants in 2007, the 4.0 million recently hired participants in 2008, the 3.1 million recently hired participants in 2009, the 3.2 million recently hired participants in 2010, the 3.4 million recently hired participants in 2011, the 3.6 million recently hired participants in 2012, the 4.4 million recently hired participants in 2013, the 4.1 million recently hired participants in 2014, the 4.8 million recently hired participants in 2015, and the 5.1 million recently hired participants in 2016.

Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.

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

Figure 37

Many Recently Hired 401(k) Participants Hold High Concentrations in Balanced Funds

Percentage of recently hired participants holding balanced fund assets,[a,b] 2015-2016

	Percentage of Account Balance Invested in Balanced Funds		
	2015		
Age Group	>0–50 percent	>50–90 percent	>90 percent
20s	9.0%	8.2%	82.8%
30s	12.5%	9.0%	78.4%
40s	14.2%	8.1%	77.7%
50s	14.7%	7.4%	77.9%
60s	14.9%	6.7%	78.4%
All	12.2%	8.2%	79.6%
	2016		
Age Group	>0–50 percent	>50–90 percent	>90 percent
20s	8.3%	6.4%	85.2%
30s	11.1%	7.4%	81.5%
40s	12.8%	7.0%	80.2%
50s	13.2%	6.3%	80.5%
60s	12.7%	5.6%	81.8%
All	11.0%	6.7%	82.3%

[a] The analysis includes the 3.3 million recently hired participants holding balanced funds in 2015, and the 3.6 million recently hired participants holding balanced funds in 2016.

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

Note: "Balanced funds" include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in a mix of equities and fixed-income securities.

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

Figure 38

Many Recently Hired 401(k) Participants Hold High Concentrations in Target-Date Funds[a]

Percentage of recently hired 401(k) participants holding the type of fund indicated,[b, c] 2016

	Percentage of Account Balance Invested in Balanced Funds		
Age Group	>0–50 percent	>50–90 percent	>90 percent
20s	8.3%	6.4%	85.2%
30s	11.1%	7.4%	81.5%
40s	12.8%	7.0%	80.2%
50s	13.2%	6.3%	80.5%
60s	12.7%	5.6%	81.8%
All	11.0%	6.7%	82.3%
	Percentage of Account Balance Invested in Target-Date Funds[a]		
Age Group	>0–50 percent	>50–90 percent	>90 percent
20s	6.7%	6.7%	86.6%
30s	9.0%	7.8%	83.2%
40s	10.3%	7.3%	82.3%
50s	10.3%	6.4%	83.3%
60s	9.6%	5.3%	85.1%
All	8.7%	7.0%	84.3%
	Percentage of Account Balance Invested in Non-Target-Date Balanced Funds		
Age Group	>0–50 percent	>50–90 percent	>90 percent
20s	27.0%	4.9%	68.1%
30s	33.4%	4.7%	61.9%
40s	33.5%	4.8%	61.7%
50s	33.5%	5.3%	61.1%
60s	32.8%	6.4%	60.8%
All	31.6%	5.0%	63.4%

[a] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

[b] The analysis includes the 3.6 million recently hired participants (those with two or fewer years of tenure) holding balanced funds in 2016; the 3.0 million recently hired participants holding target date funds in 2016; and the 0.6 million recently hired participants holding non-target-date balanced funds in 2016.

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

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.

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

Figure 39

Asset Allocation Distribution of 401(k) Plan Account Balance to Balanced Funds Among Recently Hired Participants, by Participant Age

Percentage of Recently Hired Participants,[a,b] 2016

Percentage of Account Balance Invested in Balanced Funds

Age Group	Zero	1–10%	11–20%	21–30%	31–40%	41–50%	51–60%	61–70%	71–80%	81–90%	91–100%
20s	27.7%	1.5%	1.3%	1.2%	1.0%	1.1%	1.6%	0.9%	1.2%	1.0%	61.6%
30s	29.0%	1.9%	1.7%	1.6%	1.3%	1.3%	1.8%	1.1%	1.3%	1.1%	57.9%
40s	30.2%	2.2%	2.0%	1.9%	1.4%	1.4%	1.7%	1.0%	1.2%	1.0%	56.0%
50s	31.2%	2.2%	2.0%	2.0%	1.3%	1.5%	1.6%	0.9%	1.0%	0.9%	55.4%
60s	33.1%	2.3%	1.7%	1.9%	1.2%	1.4%	1.4%	0.7%	0.8%	0.8%	54.8%
All	29.5%	1.9%	1.7%	1.7%	1.2%	1.3%	1.6%	1.0%	1.2%	1.0%	58.0%

Percentage of Account Balance Invested in Target-Date Funds[c]

Age Group	Zero	1–10%	11–20%	21–30%	31–40%	41–50%	51–60%	61–70%	71–80%	81–90%	91–100%
20s	37.7%	0.8%	0.8%	0.9%	0.8%	0.9%	1.4%	0.8%	1.0%	0.9%	53.9%
30s	39.2%	1.1%	1.1%	1.2%	1.0%	1.1%	1.6%	1.0%	1.2%	1.0%	50.6%
40s	42.5%	1.2%	1.2%	1.4%	1.0%	1.1%	1.5%	0.8%	1.0%	0.8%	47.3%
50s	44.3%	1.2%	1.1%	1.3%	1.0%	1.1%	1.3%	0.7%	0.8%	0.7%	46.4%
60s	46.0%	1.2%	1.0%	1.2%	0.8%	1.0%	1.1%	0.6%	0.6%	0.6%	45.9%
All	40.8%	1.0%	1.0%	1.2%	0.9%	1.0%	1.4%	0.8%	1.0%	0.9%	49.9%

Percentage of Account Balance Invested in Non-Target-Date Balanced Funds

Age Group	Zero	1–10%	11–20%	21–30%	31–40%	41–50%	51–60%	61–70%	71–80%	81–90%	91–100%
20s	89.1%	1.1%	0.8%	0.5%	0.3%	0.2%	0.2%	0.1%	0.2%	0.1%	7.4%
30s	88.6%	1.5%	1.0%	0.7%	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%	7.1%
40s	86.4%	1.7%	1.3%	0.8%	0.4%	0.4%	0.3%	0.1%	0.1%	0.1%	8.4%
50s	85.7%	1.6%	1.3%	1.0%	0.5%	0.4%	0.3%	0.1%	0.2%	0.1%	8.8%
60s	85.9%	1.5%	1.1%	1.1%	0.5%	0.5%	0.4%	0.2%	0.2%	0.2%	8.6%
All	87.6%	1.4%	1.1%	0.7%	0.4%	0.3%	0.2%	0.1%	0.2%	0.1%	7.9%

[a] The analysis includes the 5.1 million recently hired participants (those with two or fewer years of tenure) in 2016.

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

[c] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.

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

Figure 40

Average Asset Allocation of 401(k) Plan Accounts, by Participant Age Among Recently Hired 401(k) Plan Participants[a]

Percentage of account balances,[b] 1998 and 2016

Age Group	Equity Funds		Balanced Funds: Total		Balanced Funds: Target-date funds[c]	Balanced Funds: Non-Target-date balanced funds	Bond Funds		Money Funds		GICs[d] and Other Stable-Value Funds		Company Stock	
	1998	2016	1998	2016	2016	2016	1998	2016	1998	2016	1998	2016	1998	2016
20s	66.9%	29.0%	7.4%	58.2%	49.3%	8.9%	5.1%	4.8%	4.0%	0.9%	3.7%	0.9%	10.5%	2.8%
30s	67.8%	35.7%	8.0%	51.8%	44.5%	7.3%	5.1%	4.7%	4.1%	1.2%	3.2%	1.1%	9.4%	1.9%
40s	64.5%	37.9%	9.7%	45.7%	37.7%	8.0%	5.9%	6.5%	5.1%	1.7%	4.4%	1.3%	8.0%	1.7%
50s	60.5%	36.9%	11.3%	41.5%	33.7%	7.8%	6.6%	9.7%	5.9%	2.7%	6.7%	2.1%	6.5%	1.5%
60s	50.0%	31.2%	12.1%	36.1%	29.3%	6.8%	8.7%	15.6%	7.8%	4.0%	13.3%	2.5%	5.7%	1.0%
All	64.8%	35.3%	9.1%	45.3%	37.5%	7.8%	5.7%	8.2%	4.9%	2.3%	4.6%	1.6%	8.6%	1.7%

[a] The analysis is based on samples of 1.2 million recently hired participants (those with two or fewer years of tenure) in 1998 and 5.1 million recently hired participants in 2016.

[b] Minor investment options are not shown; therefore, row percentages do not add to 100 percent. Percentages are dollar-weighted averages.

[c] A target-date fund typically rebalances its portfolio to become less focused on growth and more focused on income as it approaches and passes the target date of the fund, which is usually included in the fund's name.

[d] GICs are guaranteed investment contracts.

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated.

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

Figure 41

Recently Hired 401(k) Participants Tend to Be Less Likely to Hold Company Stock

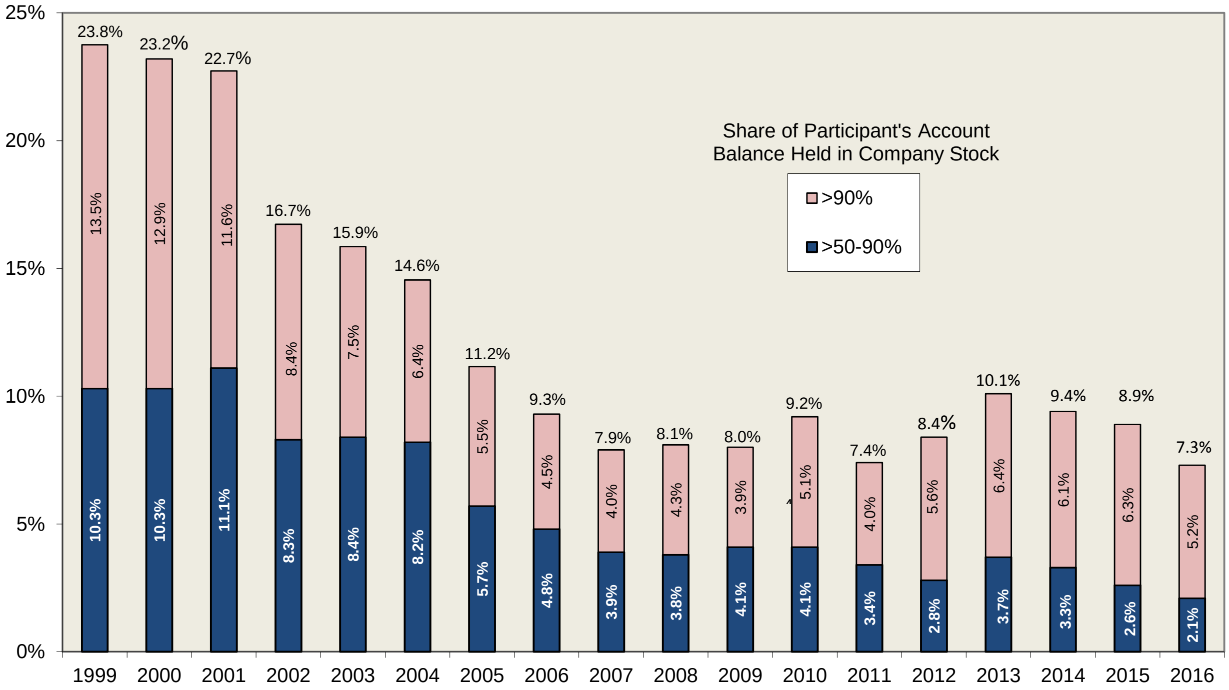
Percentage of recently hired participants offered and holding company stock, by participant age, 1998–2016

Age Group	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
20s	60.8%	61.1%	60.5%	58.1%	53.9%	49.6%	49.8%	45.4%	40.0%	35.4%	32.9%	32.3%	30.3%	26.2%	23.0%	27.9%	26.9%	24.4%	23.2%
30s	61.9%	62.3%	61.6%	60.0%	57.2%	53.3%	52.3%	47.6%	43.6%	40.4%	37.4%	36.2%	33.6%	30.0%	26.4%	30.7%	29.2%	27.4%	24.0%
40s	59.8%	60.6%	59.5%	58.8%	55.9%	52.6%	52.0%	47.3%	43.6%	40.7%	37.9%	37.0%	34.4%	31.4%	27.5%	31.3%	29.1%	26.7%	23.4%
50s	57.6%	58.8%	57.4%	57.9%	53.9%	51.2%	49.5%	45.2%	42.3%	39.6%	37.8%	37.6%	34.4%	31.3%	26.9%	30.8%	29.1%	25.7%	22.8%
60s	54.1%	55.5%	53.6%	55.7%	51.0%	49.5%	47.8%	43.9%	40.4%	38.4%	38.7%	40.5%	36.8%	30.8%	26.7%	30.0%	27.6%	23.3%	21.3%
All	60.5%	61.0%	60.0%	58.7%	55.3%	51.6%	51.0%	46.3%	42.0%	38.7%	36.2%	35.5%	33.0%	29.3%	25.7%	29.9%	28.3%	25.7%	23.2%

Note: The analysis includes 401(k) plan participants with two or fewer years of tenure in the year indicated and in a plan offering company stock as an investment option.

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

Figure 42
New 401(k) Participants Tend Not to Hold High Concentrations in Company Stock
Percentage of recently hired participants offered company stock holding the percentage of their account balance indicated in company stock, 1999–2016



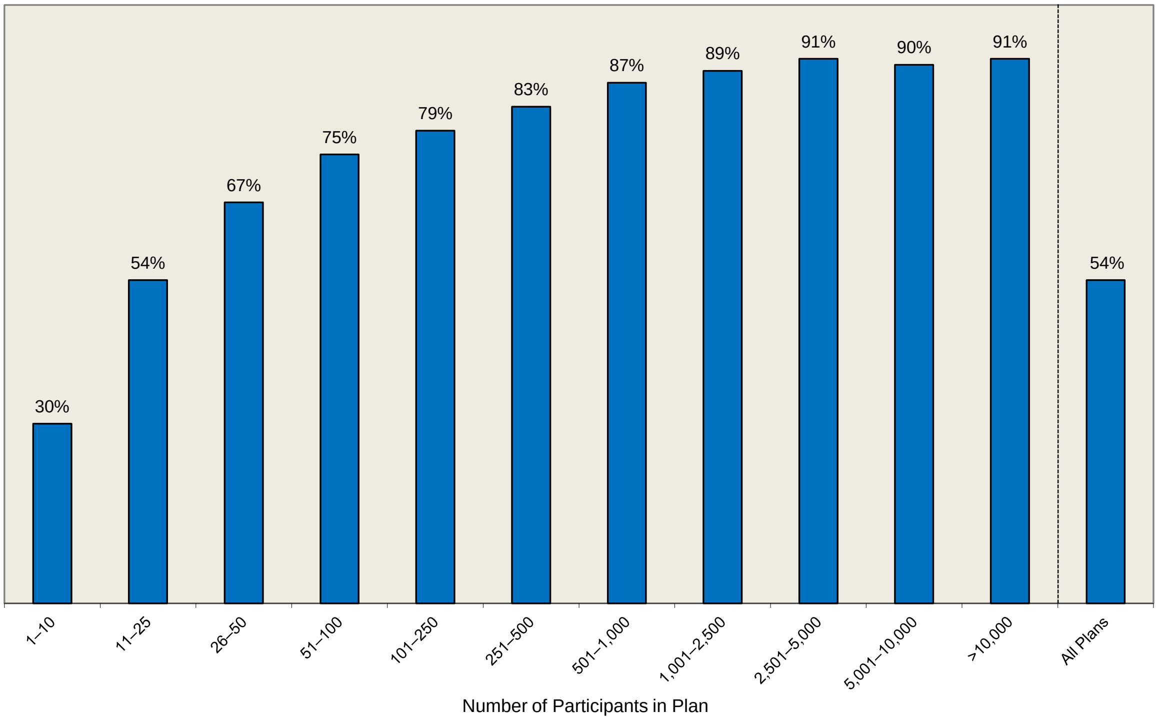
Note: The analysis includes 401(k) plan participants with two or fewer years of tenure in the year indicated and in a plan offering company stock as an investment option.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 43
Asset Allocation Distribution of Recently Hired 401(k) Participant Account Balance to Company Stock in 401(k) Plans With Company Stock, by Participant Age
Percentage of recently hired participants in plans offering company stock as an investment option,[a,b] 2016

	Percentage of Account Balance Invested in Company Stock										
Age Group	Zero	1–10%	11–20%	21–30%	31–40%	41–50%	51–60%	61–70%	71–80%	81–90%	91–100%
20s	76.8%	4.2%	3.7%	3.2%	1.9%	1.5%	1.2%	0.4%	0.3%	0.2%	6.6%
30s	76.0%	5.7%	4.4%	3.8%	2.2%	1.5%	1.2%	0.5%	0.3%	0.2%	4.3%
40s	76.6%	5.6%	4.5%	3.5%	2.0%	1.5%	1.2%	0.4%	0.3%	0.2%	4.2%
50s	77.2%	5.2%	4.3%	3.3%	1.9%	1.4%	1.2%	0.4%	0.3%	0.2%	4.7%
60s	78.7%	4.3%	3.8%	2.9%	1.6%	1.3%	1.0%	0.4%	0.3%	0.2%	5.5%
All	76.8%	5.0%	4.1%	3.4%	2.0%	1.5%	1.2%	0.4%	0.3%	0.2%	5.2%

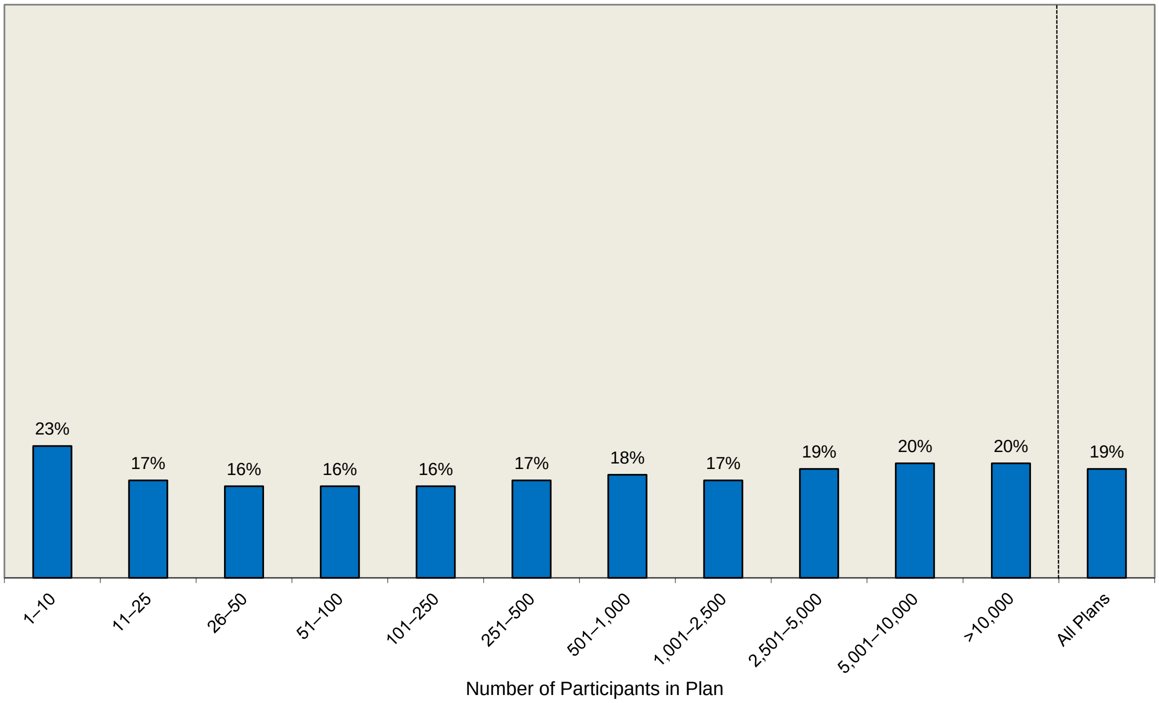
[a] The analysis includes the 1.3 million participants with two or fewer years of tenure in 2016 and in plans offering company stock as an investment option.
[b] Row percentages may not add to 100 percent because of rounding.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 44
Percentage of 401(k) Plans Offering Loans, by Plan Size, 2016



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

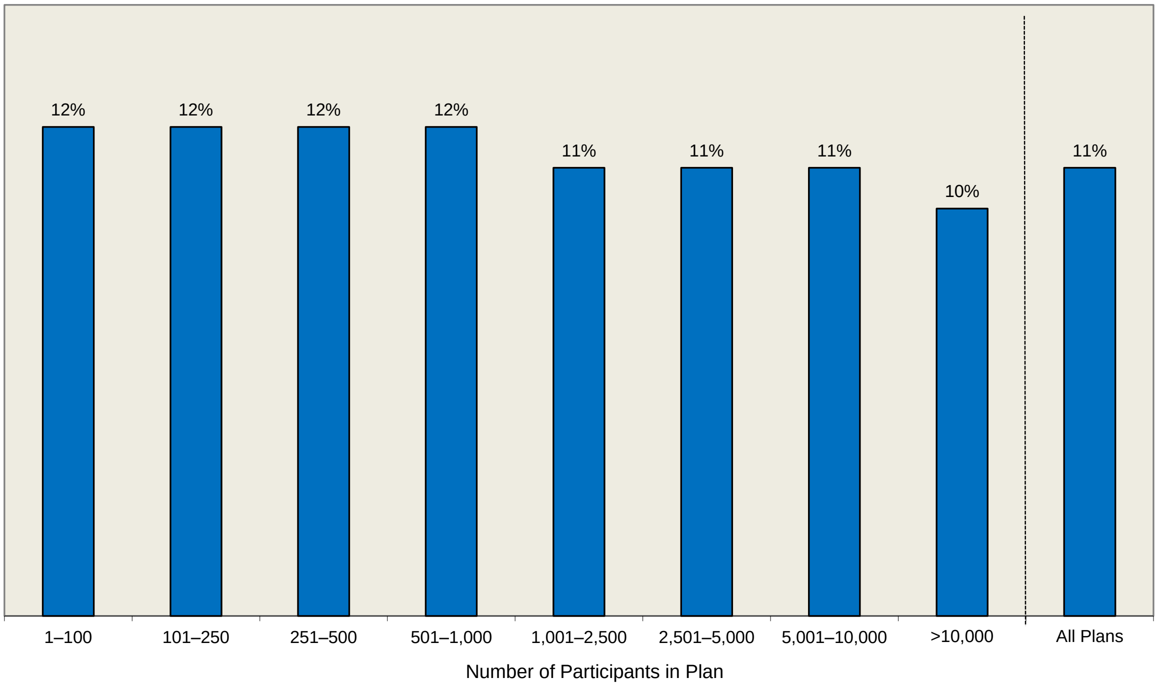
Figure 45
Percentage of Eligible 401(k) Plan Participants With 401(k) Loans, by Plan Size, 2016



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

Figure 46

401(k) Loan Balances as a Percentage of 401(k) Plan Account Balances for Participants With 401(k) Loans, by Plan Size, 2016

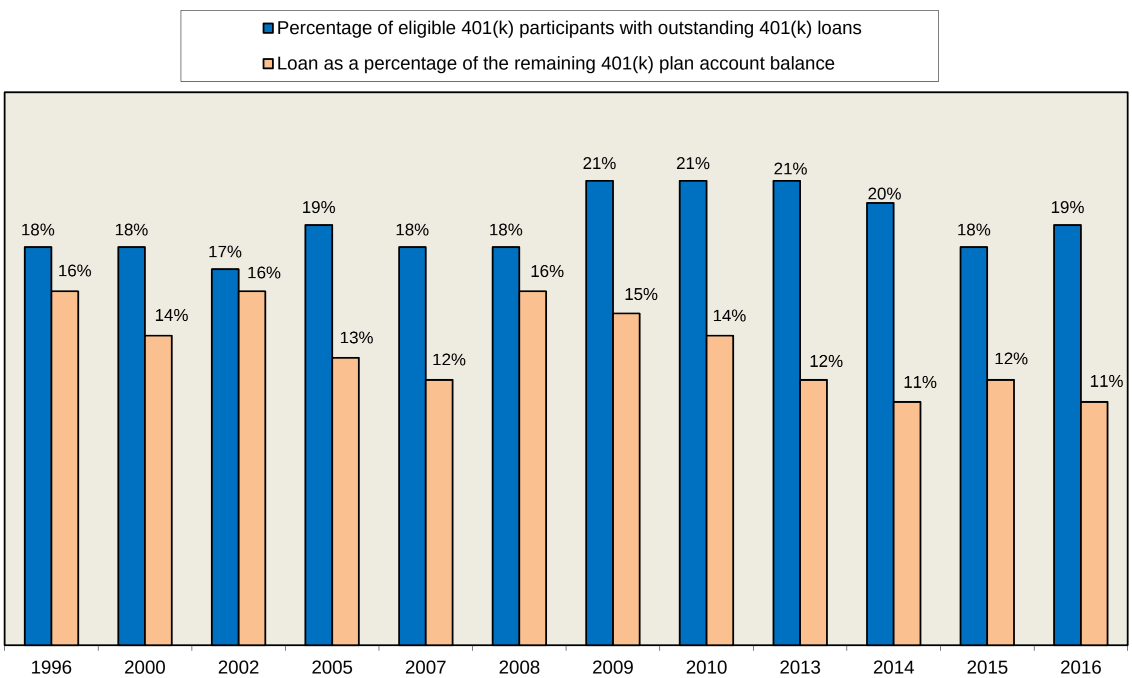


Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 47

Few 401(k) Participants Had Outstanding 401(k) Loans; Loans Tended to Be Small

Selected Years



Source: Tabulations from the EBRI/ICI 401(k) Participant-Directed Retirement Plan Data Collection Project.

Figure 48

401(k) Loan Activity Varied Across 401(k) Plan Participants

Percentage of Eligible 401(k) Participants With 401(k) Loans,
by Participant Age, Tenure, Account Size, or Salary, Selected Years

	1996	2000	2002	2005	2007	2008	2009	2010	2014	2015	2016
All	18%	18%	17%	19%	18%	18%	21%	21%	20%	18%	19%
Age Group											
20s	12%	11%	10%	11%	10%	10%	13%	13%	11%	8%	8%
30s	20%	19%	18%	20%	20%	20%	23%	23%	22%	19%	20%
40s	22%	21%	20%	22%	22%	22%	26%	26%	26%	24%	25%
50s	17%	17%	17%	19%	19%	19%	22%	22%	23%	21%	23%
60s	9%	9%	9%	10%	10%	11%	12%	13%	13%	13%	14%
Tenure (years)											
0–2	6%	5%	4%	5%	7%	6%	9%	7%	9%	8%	7%
>2–5	15%	14%	12%	14%	15%	15%	17%	18%	19%	17%	18%
>5–10	24%	23%	21%	22%	23%	23%	25%	27%	26%	24%	26%
>10–20	27%	26%	26%	26%	26%	26%	29%	29%	28%	27%	29%
>20–30	25%	26%	25%	24%	24%	25%	27%	26%	26%	25%	27%
>30	13%	16%	15%	17%	17%	18%	19%	19%	18%	17%	19%
Account Size											
<$10,000	12%	11%	11%	12%	11%	12%	16%	16%	13%	11%	10%
$10,000–$20,000	26%	23%	22%	26%	25%	26%	28%	29%	28%	26%	26%
>$20,000–$30,000	26%	25%	22%	27%	26%	26%	28%	29%	30%	28%	28%
>$30,000–$40,000	25%	25%	23%	26%	26%	26%	28%	28%	30%	28%	29%
>$40,000–$50,000	24%	25%	23%	25%	26%	25%	27%	27%	29%	28%	29%
>$50,000–$60,000	24%	24%	22%	24%	25%	24%	25%	26%	28%	27%	29%
>$60,000–$70,000	23%	24%	22%	23%	24%	23%	25%	25%	27%	27%	29%
>$70,000–$80,000	26%	23%	22%	22%	23%	22%	24%	24%	27%	26%	28%
>$80,000–$90,000	23%	23%	21%	21%	23%	21%	23%	23%	26%	25%	28%
>$90,000–$100,000	22%	22%	21%	20%	22%	20%	23%	22%	25%	25%	27%
>$100,000–$200,000	22%	20%	19%	18%	19%	18%	19%	19%	23%	22%	25%
>$200,000	18%	15%	13%	13%	13%	12%	13%	12%	14%	14%	16%
Salary Range											
$20,000–$40,000	18%	17%	13%	19%	20%	19%	24%	22%	23%	22%	20%
>$40,000–$60,000	20%	23%	21%	26%	28%	27%	30%	26%	28%	27%	29%
>$60,000–$80,000	18%	23%	20%	24%	24%	24%	26%	23%	24%	23%	25%
>$80,000–$100,000	17%	21%	17%	22%	21%	20%	23%	20%	21%	20%	22%
>$100,000	14%	16%	13%	16%	14%	14%	16%	14%	16%	15%	16%

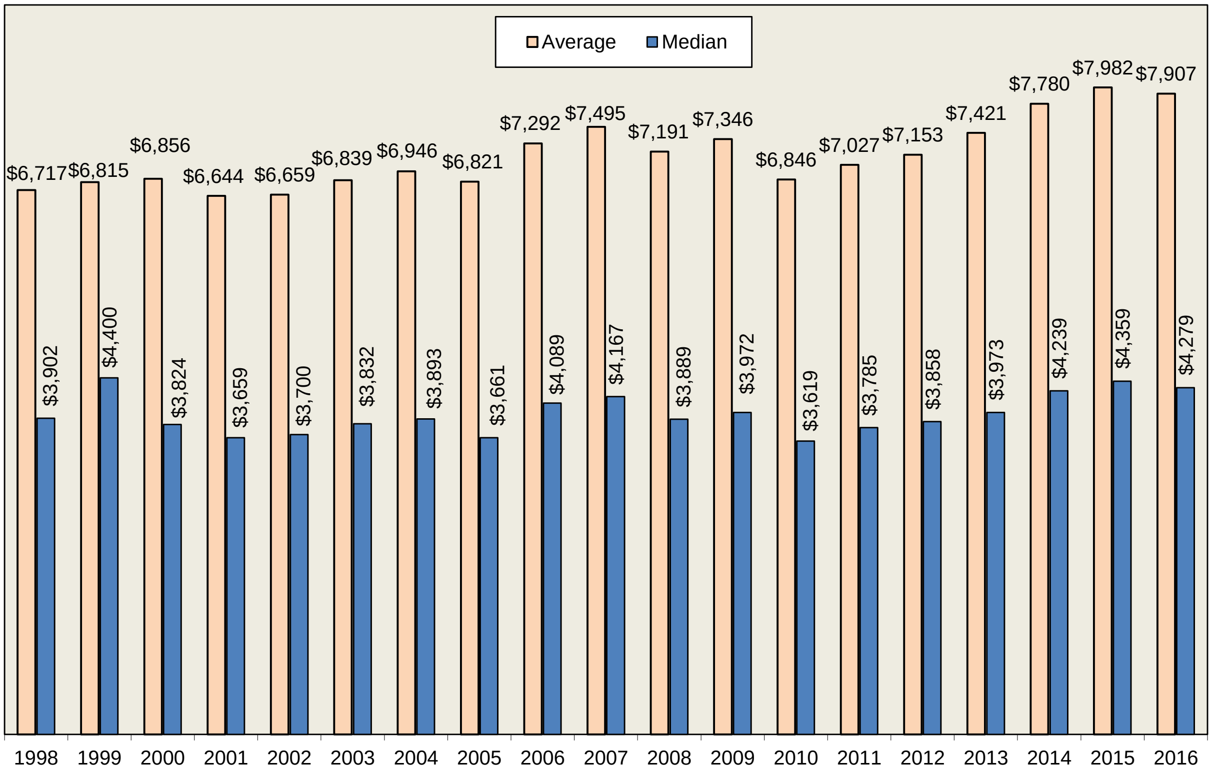
Note: The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.

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

Figure 49

401(k) Loan Balances

Average and median loan balances for 401(k) participants with 401(k) loans, 1998–2016



Note: Average and median 401(k) loan amounts are calculated among participants with 401(k) loans at year-end.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 50

401(k) Loan Amounts Varied Across 401(k) Participants

401(k) Loan Balances as a Percentage of 401(k) Plan Account Balances for Participants With Loans, by Participant Age, Tenure, Account Size, or Salary, Selected Years

	1996	2000	2002	2005	2007	2008	2009	2010	2014	2015	2016
All	16%	14%	16%	13%	12%	16%	15%	14%	11%	12%	11%
Age Group											
20s	30%	30%	28%	24%	25%	29%	26%	24%	26%	25%	23%
30s	22%	20%	22%	19%	19%	25%	22%	20%	18%	19%	17%
40s	16%	15%	16%	13%	13%	18%	16%	15%	13%	13%	12%
50s	12%	11%	12%	10%	10%	13%	12%	11%	9%	9%	9%
60s	10%	9%	10%	8%	8%	11%	10%	9%	8%	8%	7%
Tenure (years)											
0–2	27%	24%	27%	23%	21%	25%	22%	19%	16%	19%	18%
>2–5	24%	25%	25%	21%	22%	26%	23%	20%	18%	19%	17%
>5–10	23%	21%	23%	19%	18%	24%	20%	19%	16%	16%	15%
>10–20	15%	14%	16%	13%	13%	17%	16%	14%	12%	12%	11%
>20–30	11%	10%	11%	9%	8%	12%	11%	9%	8%	7%	7%
>30	7%	8%	10%	8%	7%	9%	9%	7%	6%	6%	5%
Account Size											
<$10,000	39%	39%	37%	35%	36%	39%	39%	35%	42%	38%	35%
$10,000–$20,000	32%	32%	31%	29%	30%	33%	31%	28%	32%	31%	28%
>$20,000–$30,000	28%	28%	28%	25%	26%	29%	27%	25%	28%	27%	25%
>$30,000–$40,000	23%	24%	25%	22%	23%	26%	25%	23%	24%	24%	23%
>$40,000–$50,000	22%	21%	22%	20%	21%	24%	22%	20%	21%	22%	20%
>$50,000–$60,000	19%	19%	20%	18%	19%	21%	21%	19%	19%	20%	18%
>$60,000–$70,000	16%	17%	18%	16%	17%	19%	19%	17%	17%	18%	17%
>$70,000–$80,000	16%	15%	16%	15%	16%	18%	17%	16%	16%	16%	16%
>$80,000–$90,000	14%	14%	15%	14%	14%	16%	16%	15%	14%	15%	14%
>$90,000–$100,000	13%	13%	13%	13%	13%	15%	15%	14%	13%	13%	14%
>$100,000–$200,000	10%	9%	10%	9%	10%	11%	11%	10%	10%	10%	10%
>$200,000	5%	5%	5%	4%	5%	5%	5%	5%	4%	4%	4%
Salary Range											
$20,000–40,000	17%	19%	18%	18%	17%	21%	19%	17%	14%	15%	15%
>$40,000–$60,000	17%	16%	16%	16%	15%	19%	17%	15%	12%	13%	13%
>$60,000–$80,000	15%	13%	14%	13%	12%	17%	14%	13%	11%	12%	11%
>$80,000–$100,000	14%	12%	12%	11%	11%	14%	12%	11%	10%	10%	10%
>$100,000	14%	10%	10%	9%	9%	11%	10%	9%	7%	8%	7%

Note: The tenure variable is generally years w orking at current employer, and thus may overstate years of participation in the 401(k) plan.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

Figure 51

Loans From 401(k) Plans Tended to Be Small

Percentage of eligible participants, by participant age, 2016

401(k) Loan as a Percentage of Remaining 401(k) Plan Account Balance	Age Group 20s	30s	40s	50s	60s	All
Zero (no loan)	92%	80%	75%	78%	87%	81%
1–10%	2%	6%	9%	10%	7%	7%
>10%–20%	2%	4%	6%	5%	3%	4%
>20–30%	1%	3%	3%	3%	1%	3%
>30–80%	3%	6%	6%	4%	2%	5%
>80%	(*)	1%	1%	(*)	(*)	1%

(*) = less than 0.5 percent.
Note: Components may not add to 100 percent because of rounding.
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.

References

Aon 2016. *2016 Universe Benchmarks.* Lincolnshire, IL: Aon plc.

Barclays Capital U.S. Aggregate Bond Index. San Francisco: Barclays Global Investors.

Bloomberg Data. New York: Bloomberg L.P.

Brady, Peter. 2010. "Measuring Retirement Resource Adequacy." *Journal of Pension Economics and Finance* 9, no. 2 (April): 235–262.

Brady, Peter. 2016. *How America Supports Retirement: Challenging the Conventional Wisdom on Who Benefits*. Washington, DC: Investment Company Institute. Available at www.ici.org/pdf/rpt_16_america_supports_retirement.pdf

Brady, Peter, Steven Bass, Jessica Holland, and Kevin Pierce. 2017. "Using Panel Tax Data to Examine the Transition to Retirement." SOI Working Paper (April). Washington, DC: Internal Revenue Service. Available at www.irs.gov/pub/irs-soi/17rptransitionretirement.pdf

Brady, Peter, and Michael Bogdan. 2010. "A Look at Private-Sector Retirement Plan Income After ERISA." *Investment Company Institute Research Perspective* 16, no. 2 (November). Available at www.ici.org/pdf/per16-02.pdf

Brady, Peter, and Michael Bogdan. 2016. "A Look at Private-Sector Retirement Plan Income After ERISA." *ICI Research Perspective* 22, no. 8 (December). Available at www.ici.org/pdf/per22-08.pdf

Brady, Peter, Kimberly Burham, and Sarah Holden. 2012. *The Success of the U.S. Retirement System* (December). Washington, DC: Investment Company Institute. Available at www.ici.org/pdf/ppr_12_success_retirement.pdf

BrightScope and Investment Company Institute. 2018*. The BrightScope/ICI Defined Contribution Plan Profile: A Close Look at 401(k) Plans, 2015*. San Diego, CA: BrightScope and Washington, DC: Investment Company Institute. Available at www.ici.org/pdf/ppr_18_dcplan_profile_401k.pdf

Choi, James J., David Laibson, Brigitte C. Madrian, and Andrew Metrick. 2001. "Defined Contribution Pensions: Plan Rules, Participant Decisions, and the Path of Least Resistance." NBER Working Paper, no. 8655 (December). Cambridge, MA: National Bureau of Economic Research. Available at www.nber.org/papers/w8655

Congressional Budget Office. 2017. *CBO's 2017 Long-Term Projections for Social Security: Supplemental Data* (October). Washington, DC: Congressional Budget Office. Available at www.cbo.gov/system/files?file=115th-congress-2017-2018/reports/53245-supplementaldata.xlsx

Copeland, Craig. 2011. "Target-Date Fund Use in 401(k) Plans and the Persistence of Their Use, 2007–2009." *EBRI Issue Brief*, no. 361 (August). Available at www.ebri.org/pdf/EBRI_IB_08-2011_No361_TDFs.pdf

Deloitte Consulting LLP. 2017a. *Defined Contribution Benchmarking Survey: 2017 Edition*. New York: Deloitte Consulting LLP. Available at www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/us-hc-defined-contributions-benchmarking-survey-report.pdf

Deloitte Consulting LLP. 2017b. *Defined Contribution Benchmarking Survey Appendix: 2017 Edition*. New York: Deloitte Consulting LLP. Available at www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/us-hc-defined-contributions-benchmarking-survey-appendix.pdf

Employee Benefit Research Institute. 2005. "History of 401(k) Plans: An Update." *Facts from EBRI* (February). Washington, DC: Employee Benefit Research Institute. Available at www.ebri.org/pdf/publications/facts/0205fact.a.pdf

Gustman, Alan L., and Thomas L. Steinmeier. 2008. "How Changes in Social Security Affect Recent Retirement Trends." NBER Working Paper, no. 14105 (June). Cambridge, MA: National Bureau of Economic Research. Available at www.nber.org/papers/w14105

Gustman, Alan L., and Thomas L. Steinmeier. 2013. "Effects of Social Security Policies on Benefit Claiming, Retirement, and Saving." NBER Working Paper, no. 19071 (May). Cambridge, MA: National Bureau of Economic Research. Available at www.nber.org/papers/w19071

Holden, Sarah, Peter Brady, and Michael Hadley. 2006. "401(k) Plans: A 25-Year Retrospective." *Investment Company Institute Research Perspective* 12, no. 2 (November). Available at www.ici.org/pdf/per12-02.pdf

Holden, Sarah, and Daniel Schrass. 2018. "Defined Contribution Plan Participants' Activities, 2017." *ICI Research Report* (May). Available at www.ici.org/pdf/ppr_17_rec_survey_q4.pdf

Holden, Sarah, Daniel Schrass, and Michael Bogdan. 2017. "Ownership of Mutual Funds, Shareholder Sentiment, and Use of the Internet, 2017." *ICI Research Perspective* 23, no. 7 (October). Available at www.ici.org/pdf/per23-07.pdf

Holden, Sarah, Daniel Schrass, Jason Seligman, and Michael Bogdan. 2018. "American Views on Defined Contribution Plan Saving, 2017." *ICI Research Report* (February). Available at www.ici.org/pdf/ppr_18_dc_plan_saving.pdf

Holden, Sarah, and Jack VanDerhei. 2001a. "Contribution Behavior of 401(k) Plan Participants." *Investment Company Institute Perspective* 7, no. 4, and *EBRI Issue Brief*, no. 238 (October). Available at www.ici.org/pdf/per07-04.pdf and www.ebri.org/pdf/briefspdf/1001ib.pdf

Holden, Sarah, and Jack VanDerhei. 2001b. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 1999." *Investment Company Institute Perspective* 7, no. 1 (January), and *EBRI Issue Brief*, no. 230 (February). Available at www.ici.org/pdf/per07-01.pdf and www.ebri.org/pdf/briefspdf/0201ib.pdf

Holden, Sarah, and Jack VanDerhei. 2001c. "The Impact of Employer-Selected Investment Options on 401(k) Plan Participants' Asset Allocations: Preliminary Findings." Working paper prepared for the Center for Pension and Retirement Research (CPRR) Current Pension Policy Issues Conference, at Miami University, Oxford, OH, June 8–9, 2001.

Holden, Sarah, and Jack VanDerhei. 2002. "Can 401(k) Accumulations Generate Significant Income for Future Retirees?" *Investment Company Institute Perspective* 8, no. 3, and *EBRI Issue Brief*, no. 251 (November). Available at www.ici.org/pdf/per08-03.pdf and www.ebri.org/pdf/briefspdf/1102ib.pdf

Holden, Sarah, and Jack VanDerhei. 2003. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2002." *Investment Company Institute Perspective* 9, no. 5, and *EBRI Issue Brief*, no. 261 (September). Available at www.ici.org/pdf/per09-05.pdf and www.ebri.org/pdf/briefspdf/0903ib.pdf

Holden, Sarah, and Jack VanDerhei. 2004a. "Appendix: Additional Figures for the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project for Year-End 2003." *Investment Company Institute Perspective* 10, no. 2A (August). Available at www.ici.org/pdf/per10-02_appendix.pdf

Holden, Sarah, and Jack VanDerhei. 2004b. "Contribution Behavior of 401(k) Plan Participants During Bull and Bear Markets." National Tax Association Proceedings, Ninety-Sixth Annual Conference on Taxation, November 13–15, 2003, Chicago: 44–53. Washington, DC: National Tax Association.

Holden, Sarah, and Jack VanDerhei. 2004c. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2003." *Investment Company Institute Perspective* 10, no. 2, and *EBRI Issue Brief*, no. 272 (August). Available at www.ici.org/pdf/per10-02.pdf and www.ebri.org/pdf/briefspdf/0804ib1.pdf

Holden, Sarah, and Jack VanDerhei. 2005. "The Influence of Automatic Enrollment, Catch-Up, and IRA Contributions on 401(k) Accumulations at Retirement." *Investment Company Institute Perspective* 11, no. 2, and *EBRI Issue Brief*, no. 283 (July). Available at www.ici.org/pdf/per11-02.pdf and www.ebri.org/pdf/briefspdf/ebri_ib_07-20054.pdf

Holden, Sarah, Jack VanDerhei, and Luis Alonso. 2009. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2008." *Investment Company Institute Research Perspective* 15, no. 2, and *EBRI Issue Brief*, no. 335 (October). Available at www.ici.org/pdf/per15-02.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_10-2009_No335_KUpdate.pdf

Holden, Sarah, Jack VanDerhei, and Luis Alonso. 2010. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2009." *Investment Company Institute Research Perspective* 16, no. 3, and *EBRI Issue Brief*, no. 350 (November). Available at www.ici.org/pdf/per16-03.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_011-2010_No350_401k_Update-09.pdf

Holden, Sarah, Jack VanDerhei, Luis Alonso, and Steven Bass. 2011. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2010." *ICI Research Perspective* 17, no. 10, and *EBRI Issue Brief*, no. 366 (December). Available at www.ici.org/pdf/per17-10.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_12-2011_No366_401(k)-Update.pdf

Holden, Sarah, Jack VanDerhei, Luis Alonso, and Steven Bass. 2012. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2011." *ICI Research Perspective* 18, no. 9, and *EBRI Issue Brief*, no. 380 (December). Available at www.ici.org/pdf/per18-09.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_12-2012_No380.401k-eoy2011.pdf

Holden, Sarah, Jack VanDerhei, Luis Alonso, and Steven Bass. 2013. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2012." *ICI Research Perspective* 19, no. 12, and *EBRI Issue Brief*, no. 394 (December). Available at www.ici.org/pdf/per19-12.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_012-13.No394.401k-Update-2012.pdf

Holden, Sarah, Jack VanDerhei, Luis Alonso, and Steven Bass. 2016a. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2014." *ICI Research Perspective* 22, no. 3, and *EBRI Issue Brief*, no. 423 (April). Available at www.ici.org/pdf/per22-03.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_423.Apr16.401kUpdate.pdf

Holden, Sarah, Jack VanDerhei, Luis Alonso, and Steven Bass. 2016b. "What Does Consistent Participation in 401(k) Plans Generate? Changes in Account Balances, 2007–2014." *ICI Research Perspective* 22, no. 5, and *EBRI Issue Brief*, no. 426 (September). Available at www.ici.org/pdf/per22-05.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_426.Sept16.Consist-Ks.pdf

Holden, Sarah, Jack VanDerhei, Luis Alonso, and Steven Bass. 2017a. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2015." *ICI Research Perspective* 23, no. 6, and *EBRI Issue Brief*, no. 436 (August). Available at www.ici.org/pdf/per23-06.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_436_K-update.3Aug17.pdf

Holden, Sarah, Jack VanDerhei, Luis Alonso, and Steven Bass. 2017b. "What Does Consistent Participation in 401(k) Plans Generate? Changes in Account Balances, 2010–2015." *ICI Research Perspective* 23, no. 9, and *EBRI Issue Brief*, no. 439 (October). Available at www.ici.org/pdf/per23-09.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_439_Long-K.24Oct172.pdf

Holden, Sarah, Jack VanDerhei, Luis Alonso, Steven Bass, and AnnMarie Pino. 2014. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2013." *ICI Research Perspective* 20, no. 10, and *EBRI Issue Brief*, no. 408 (December). Available at www.ici.org/pdf/per20-10.pdfand www.ebri.org/pdf/briefspdf/EBRI_IB_408_Dec14.401(k)-update.pdf

Holden, Sarah, Jack VanDerhei, Luis Alonso, and Craig Copeland. 2008. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2007." *Investment Company Institute Research Perspective* 14, no. 3, and *EBRI Issue Brief*, no. 324 (December). Available at www.ici.org/pdf/per14-03.pdf and www.ebri.org/pdf/briefspdf/EBRI_IB_12a-2008.pdf

Holden, Sarah, Jack VanDerhei, and Carol Quick. 2000. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 1998." *Investment Company Institute Perspective* 6, no. 1 (January), and *EBRI Issue Brief*, no. 218 (February). Available at www.ici.org/pdf/per06-01.pdf and www.ebri.org/pdf/briefspdf/0200ib.pdf

Investment Company Institute. Quarterly Supplementary Data. Washington, DC: Investment Company Institute.

Investment Company Institute. 2018. "The US Retirement Market, First Quarter 2018" (June). Available at www.ici.org/research/stats/retirement

MacDonald, Bonnie-Jeanne, and Kevin D. Moore. 2011. "Moving Beyond the Limitations of Traditional Replacement Rates." *Society of Actuaries* (September). Available at www.soa.org/research/research-projects/pension/research-moving-beyond.aspx

Mitchell, Olivia S., and Stephen Utkus. 2012. "Target-Date Funds in 401(k) Retirement Plans." NBER Working Paper, no. 17911 (March). Cambridge, MA: National Bureau of Economic Research. Available at www.nber.org/papers/w17911

Morningstar. 2015. *Morningstar Lifecycle Allocation Indexes—U.S. Investors* (June). Chicago: Morningstar, Inc. Available at www.corporate.morningstar.com/us/documents/Indexes/AssetAllocationsSummary.pdf

Plan Sponsor Council of America. 2016. *59th Annual Survey of Profit Sharing and 401(k) Plans: Reflecting 2015 Plan Experience*. Chicago: Plan Sponsor Council of America.

Plan Sponsor Council of America. 2018. 60th Annual Survey of Profit Sharing and 401(k) Plans: Reflecting 2016 Plan Experience. Chicago: Plan Sponsor Council of America.

Poterba, James, Steven F. Venti, and David A. Wise. 2007. "Rise of 401(k) Plans, Lifetime Earnings, and Wealth at Retirement." NBER Working Paper, no. 13091 (May). Cambridge, MA: National Bureau of Economic Research. Available at www.nber.org/papers/w13091

Russell 2000 Index. Tacoma, WA: Frank Russell Company. S&P 500. New York: Standard & Poor's.

U.S. Department of Labor, Bureau of Labor Statistics. 2012*. National Compensation Survey: Employee Benefits in Private Industry in the United States, March 2012*. Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics. Available at www.bls.gov/ncs/ebs/benefits/2012/ebbl0050.pdf

U.S. Department of Labor, Bureau of Labor Statistics. 2013. *National Compensation Survey: Employee Benefits in the United States, March 2013*. Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics. Available at www.bls.gov/ncs/ebs/benefits/2013/ebbl0052.pdf

U.S. Department of Labor, Bureau of Labor Statistics. 2014. *National Compensation Survey: Employee Benefits in the United States, March 2014*. Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics. Available at www.bls.gov/ncs/ebs/benefits/2014/ebbl0055.pdf

U.S. Department of Labor, Bureau of Labor Statistics. 2015. *National Compensation Survey: Employee Benefits in the United States, March 2015*. Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics. Available at www.bls.gov/ncs/ebs/benefits/2015/ebbl0057.pdf

U.S. Department of Labor, Bureau of Labor Statistics. 2016. *National Compensation Survey: Employee Benefits in the United States, March 2016*. Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics. Available at www.bls.gov/ncs/ebs/benefits/2016/ebbl0059.pdf

U.S. Department of Labor, Bureau of Labor Statistics. 2017. *National Compensation Survey: Employee Benefits in the United States, March 2017*. Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics. Available at www.bls.gov/ncs/ebs/benefits/2017/ebbl0061.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2012a. *Private Pension Plan Bulletin, Abstract of 2005 Form 5500 Annual Reports* (Version 1.1). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (March). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/2005pensionplanbulletin.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2012b. *Private Pension Plan Bulletin, Abstract of 2006 Form 5500 Annual Reports* (Version 1.1). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (March). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/2006pensionplanbulletin.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2012c. *Private Pension Plan Bulletin, Abstract of 2007 Form 5500 Annual Reports* (Version 1.5). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (March). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/2007pensionplanbulletin.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2012d. *Private Pension Plan Bulletin, Abstract of 2008 Form 5500 Annual Reports* (Version 1.2). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (March). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/2008pensionplanbulletin.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2015a. *Private Pension Plan Bulletin, Abstract of 2009 Form 5500 Annual Reports* (Version 1.1). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (January). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/2009pensionplanbulletin.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2012e. *Private Pension Plan Bulletin, Abstract of 2010 Form 5500 Annual Reports* (Version 1.0). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (November). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/2010pensionplanbulletin.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2014. *Private Pension Plan Bulletin, Abstract of 2011 Form 5500 Annual Reports* (Version 1.1). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (September). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/2011pensionplanbulletin.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2015b. *Private Pension Plan Bulletin, Abstract of 2012 Form 5500 Annual Reports* (Version 1.2). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (January). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/2012pensionplanbulletin.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2015c. *Private Pension Plan Bulletin, Abstract of 2013 Form 5500 Annual Reports* (Version 1.0). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (September). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/2013pensionplanbulletin.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2016. *Private Pension Plan Bulletin, Abstract of 2014 Form 5500 Annual Reports* (Version 1.0). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (September). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/private-pension-plan-bulletins-abstract-2014.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2018a. *Private Pension Plan Bulletin, Abstract of 2015 Form 5500 Annual Reports* (Version 1.0). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (February). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/private-pension-plan-bulletins-abstract-2015.pdf

U.S. Department of Labor, Employee Benefits Security Administration. 2018b. *Private Pension Plan Bulletin Historical Tables and Graphs 1975–2015* (Version 1.0). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (February). Available at www.dol.gov/sites/default/files/ebsa/researchers/statistics/retirement-bulletins/private-pension-plan-bulletin-historical-tables-and-graphs.pdf

U.S. Government Accountability Office. 1997. "401(k) Pension Plans: Loan Provisions Enhance Participation but May Affect Income Security for Some." *Letter Report*, GAO/HEHS-98-5 (October). Washington, DC: U.S. Government Accountability Office. Available at www.gao.gov/archive/1998/he98005.pdf

U.S. Internal Revenue Service. 1981. "Notice of Proposed Rule Making, Certain Cash or Deferred Arrangements Under Employee Plans." *Federal Register* 46, no. 217 (November 10): 55544–55549.

U.S. Joint Committee on Taxation. 2006. *Technical Explanation of H.R. 4, the "Pension Protection Act of 2006" as Passed by the House on July 28, 2006, and as Considered by the Senate on August 3, 2006*. JCX-38-06 (August 3). Washington, DC: U.S. Joint Committee on Taxation. Available at www.jct.gov/x-38-06.pdf

Utkus, Stephen P., and Jean A. Young. 2017. *How America Saves 2017: Vanguard 2016 Defined Contribution Plan Data.* Valley Forge, PA: The Vanguard Group, Vanguard Center for Retirement Research. Available at https://institutional.vanguard.com/iam/pdf/HAS17.pdf

Utkus, Stephen P., and Jean A. Young. 2018. *How America Saves 2018: Vanguard 2017 Defined Contribution Plan Data*. Valley Forge, PA: The Vanguard Group, Vanguard Center for Retirement Research. Available at https://institutional.vanguard.com/iam/pdf/HAS18.pdf

VanDerhei, Jack L. 2002. "The Role of Company Stock in 401(k) Plans." Written statement for the House Education and Workforce Committee Subcommittee on Employer-Employee Relations Hearing on "Enron and Beyond: Enhancing Worker Retirement Security" (February 13). Available at www.ebri.org/pdf/publications/testimony/t133.pdf

VanDerhei, Jack. 2010. "The Impact of Automatic Enrollment in 401(k) Plans on Future Retirement Accumulations: A Simulation Study Based on Plan Design Modifications of Large Plan Sponsors." *EBRI Issue Brief*, no. 341 (April). Available at www.ebri.org/pdf/briefspdf/EBRI_IB_04-2010_No341_Auto-Enrl.pdf

VanDerhei, Jack. 2014. "Why Does Retirement Readiness Vary: Results from EBRI's 2014 Retirement Security Projection Model®." *Journal of Retirement* 1, no. 4 (April): 95–117.

VanDerhei, Jack, and Craig Copeland. 2008. "The Impact of PPA on Retirement Savings for 401(k) Participants." *EBRI Issue Brief*, no. 318 (June). Available at www.ebri.org/pdf/briefspdf/ebri_ib_06-20087.pdf

VanDerhei, Jack, and Lori Lucas. 2010. "The Impact of Auto-Enrollment and Automatic Contribution Escalation on Retirement Income Adequacy." *EBRI Issue Brief*, no. 349 (November). Available at www.ebri.org/pdf/briefspdf/EBRI_IB_011-2010_No349_EBRI_DCIIA.pdf

Endnotes

[1] For data on 401(k) plan assets, participants, and plans through 2015, see U.S. Department of Labor, Employee Benefits Security Administration 2018a and 2018b. For total retirement assets (including those in 401(k) plans) through the first quarter of 2018, see Investment Company Institute 2018. For a discussion of trends between defined benefit (DB) and

defined contribution (DC) plans, see Poterba, Venti, and Wise 2007; Holden, Brady, and Hadley 2006; Brady and Bogdan 2010 and 2016; and Brady, Burham, and Holden 2012.

[2] Before 2005, the U.S. Department of Labor private pension plan bulletins reported a count of active 401(k) plan participants that had been adjusted from the number of active participants actually reported in the Form 5500 filings to exclude: (1) individuals eligible to participate in a 401(k) plan who had not elected to have their employers make contributions; and (2) nonvested former employees who had not (at the time the Form 5500 filings were submitted) incurred the break-in service period established by their plan (see U.S. Department of Labor, Employee Benefits Security Administration 2012a for further detail). This change in methodology results in a dramatic increase in the number of individuals reported as active participants in 401(k) plans; in 2004, the number of active participants increased to 53.1 million (new method) from 44.4 million (old method; see U.S. Department of Labor, Employee Benefits Security Administration 2018b). As the U.S. Department of Labor notes: "In a purely economic sense and for research purposes, individuals in these groups should not be included in the count of active participants." However, the form schedule needed to make the adjustment is no longer required. Using National Compensation Survey data and historical relationships and trends evident in the Form 5500 data, EBRI and ICI estimate the number of active 401(k) participants to be about 55 million in 2016 and the number of 401(k) plans to be about 555,000. The estimate of the number of active 401(k) plan participants is based on a combination of data from U.S. Department of Labor, Bureau of Labor Statistics 2012, 2013, 2014, 2015, 2016 and 2017; and U.S. Department of Labor, Employee Benefits Security Administration 2012a, 2012b, 2012c, 2012d, 2012e, 2014, 2015a, 2015b, 2015c, 2016, and 2018a.

[3] See Investment Company Institute 2018. At year-end 2017, 401(k) plans had $5.3 trillion in assets.

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

[5] The Investment Company Institute (ICI) is the leading association representing regulated funds globally, including mutual funds, exchange-traded funds (ETFs), closed-end funds, and unit investment trusts (UITs) in the United States, and similar funds offered to investors in jurisdictions worldwide. ICI seeks to encourage adherence to high ethical standards, promote public understanding, and otherwise advance the interests of funds, their shareholders, directors, and advisers. ICI carries out its international work through ICI Global, with offices in London, Hong Kong, and Washington, DC.

[6] This update extends previous findings from the project for 1996 through 2015. For year-end 2015 results, see Holden et al. 2017a. Results for earlier years are available in earlier issues of *ICI Research Perspective* (www.ici.org/research/investors/ebri_ici) and *EBRI Issue Brief* (www.ebri.org/publications/ib).

[7] The EBRI/ICI 401(k) database environment is certified to be fully compliant with the ISO-27002 Information Security Audit standard. Moreover, EBRI has obtained a legal opinion that the methodology used meets the privacy standards of the Gramm-Leach-Bliley Act. At no time has any nonpublic personal information that is personally identifiable, such as a Social Security number, been transferred to or shared with EBRI.

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

[9] The cross-sectional analysis for this publication found that consolidating the multiple accounts across a majority of the providers to the single individual owning them resulted in an overall increase of 3.1 percent in the average 401(k) plan account balance. This statistic should be interpreted with caution, as it may not represent the total 401(k) assets owned by the individual. The impact of account consolidation varied with the participant's age and tenure with the current employer. The largest increases in average account balance occurred among older participants with fewer years of tenure. For example, among participants in their sixties with two or fewer years of tenure, the average account balance increased 9.8 percent with the consolidation of their multiple accounts. Among participants in their fifties or sixties with more than 30 years of tenure, the average account balance increased 1.7 percent with the consolidation of their multiple accounts. Future joint research with this feature will explore the longitudinal aspects of this consolidation in more detail.

[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 401(k) database suggests that the sheer number of investment options presented does not influence participants. On average, participants have 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 naive—that is, when given *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. Plan Sponsor Council of America 2018 indicates that in 2016, the average number of investment fund options available for participant contributions was 20 among the 590 plans surveyed. Deloitte Consulting LLP 2017b reports that the average number of funds offered by the 160 401(k) and 403(b) plan sponsors surveyed was 19 in 2017. BrightScope and Investment

Company Institute 2018 reports an average of 29 investment options in 2015, and an average of 22 investment options when a target-date fund suite is counted as a single investment option.

[11] The asset allocation path that the target-date fund follows to shift its focus from growth to income over time is typically referred to as the glide path. Because discussions of asset allocation usually focus on the percentage of the portfolio invested in equities, the glide path generally reflects the declining percentage of equities in the portfolio as it approaches and passes the target date, which is usually indicated in the fund's name. The target date generally is the date at which the typical investor for whom that fund is designed would reach retirement age and stop making new investments in the fund.

[12] Lifestyle funds maintain a predetermined risk level and generally use words such as "conservative," "moderate," or "aggressive" in their name to indicate the fund's risk level. Lifestyle funds generally are included in the non-target-date balanced fund category.

[13] GICs are insurance company products that guarantee a specific rate of return on the invested capital over the life of the contract.

[14] Other stable-value funds include synthetic GICs, which consist 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.

[15] Some recordkeepers supplying data were unable to provide complete asset allocation detail on certain pooled asset classes for one or more of their clients. The final EBRI/ICI 401(k) database includes only plans for which at least 90 percent of all plan assets could be identified.

[16] The average account balance is calculated for the 20.0 million 401(k) plan participants who had account balances at both year-end 2015 and year-end 2016.

[17] For 401(k) asset figures, see Investment Company Institute 2018.

[18] Estimates of the number of 401(k) plans and active participants are based on a combination of data from the U.S. Department of Labor's Bureau of Labor Statistics and Employee Benefits Security Administration. See discussion in note 2.

[19] The latest available data from the U.S. Department of Labor are for plan year 2015 (see U.S. Department of Labor, Employee Benefits Security Administration 2018a).

[20] For an analysis of the changes in account balances of consistent participants in the EBRI/ICI 401(k) database in the wake of the financial crisis (over the five-year period from year-end 2010 to year-end 2015), see Holden et al. 2017b.

[21] Because of these changes in the cross sections, comparing average account balances across different year-end cross-sectional snapshots can lead to false conclusions. For example, newly formed plans would tend to pull down the average account balance, but would tell us nothing about consistently participating workers. Similarly, the aggregate average account balance would tend to be pulled down if a large number of participants retired.

[22] Tabulations of the Survey of Consumer Finances reveal that 55 percent of traditional IRA assets in 2016 resulted from rollovers from employer-sponsored retirement plans.

[23] At year-end 2016, 2 percent of the participants in the database were missing a birth date entry, were younger than 20, or were older than 69. They were not included in this analysis.

[24] At year-end 2016, 12 percent of the participants in the database were missing a date of hire entry and were not included in this analysis.

[25] 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-tenured employee a high account balance. There is some discernible evidence of rollover assets among the participants with account balances greater than $100,000, as 3 percent of them had two or fewer years of tenure, and 7 percent of them had between two and five years of tenure (see Figure 12).

[26] Because 401(k) plans were introduced about 35 years ago, older and longer-tenured employees may not have participated in 401(k) plans for their entire careers. The Revenue Act of 1978 contained a provision that became Internal Revenue Code Section 401(k). The law went into effect on January 1, 1980, but it was not until November 1981 that proposed regulations

were issued (see Holden, Brady, and Hadley 2006; Employee Benefit Research Institute 2005; and U.S. Internal Revenue Service 1981).

[27] Low account balances among this group can be explained in two possible ways: (1) their employer's 401(k) plan has only recently been established (73 percent of all 401(k)-type plans in existence in 2015 were established after 1996 [tabulations of U.S. Department of Labor Form 5500 data for 2015]), or (2) the employee only recently joined the plan (whether on his or her own or through automatic enrollment). In either event, job tenure would not accurately reflect actual 401(k) plan participation.

[28] It is possible that these older, longer-tenured workers accumulated DC plan assets (e.g., in a profit-sharing plan) before the introduction of 401(k) plan features. However, such DC plan arrangements generally did not permit employee contributions and often were designed to be supplemental to other employer plans. Participants' account balances that predate the 401(k) plan are not included in this analysis, which focuses on 401(k) plan balance amounts.

[29] Social Security replaces a much higher fraction of preretirement earnings for lower-income workers. For example, the first-year replacement rate (mean scheduled Social Security first-year benefits as a percentage of average inflation-indexed career earnings for retired workers in the 1960–1969 birth cohort [individuals aged 48 to 57 in 2017]) decreased as income increased. The mean replacement rate for the lowest lifetime household earnings quintile was 83 percent; for the middle quintile, the mean Social Security replacement rate was 54 percent; and for the highest quintile, it was 33 percent. See "C-2. Replacement Rate—Prices" in Congressional Budget Office 2017. For additional discussion, see Brady et al. 2017; Brady and Bogdan 2016; and Brady, Burham, and Holden 2012.

[30] The ratio of 401(k) plan account balance (at the current employer) to salary alone is not an indicator of preparedness for retirement, nor is it the only measure that can be used to judge retirement readiness or savings adequacy (see Brady, Burham, and Holden 2012). 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 DC plans, possibly from previous employment (for example, see VanDerhei 2014). For references to other such research, see MacDonald and Moore 2011 and Holden and VanDerhei 2005. For an analysis of the possible impact of automatic increases in participants' contribution rates in automatic enrollment plans, see VanDerhei and Copeland 2008, VanDerhei 2010, and VanDerhei and Lucas 2010. For a discussion of the variety of factors (e.g., taxes, savings, mortgages, children) that affect replacement rates, see Brady 2010. For analysis of the impact of changes in Social Security on retirement patterns, see Gustman and Steinmeier 2008 and 2013. For a discussion of the variety of measures that can be used to evaluate Americans' retirement readiness, see Brady, Burham, and Holden 2012. For simulation results showing the contributions of employer-sponsored retirement plans and Social Security to income in retirement, see Brady 2016. For an analysis of income near Social Security claiming, see Brady et al. 2017.

[31] The ratio of account balance to salary tends to peak at higher salary levels and then fall off, likely reflecting the influence of two competing forces. First, empirical research 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, which aim to ensure that employees of all income ranges attain the benefits of the 401(k) plan, constrain the ability of high-income individuals to save in the plan. See Holden and VanDerhei 2001a for a complete discussion of EBRI/ICI findings and other research on the relationship between contribution rates and salary. For an analysis of 401(k) participants' contribution activity during the bear market of 2000 to 2002, see Holden and VanDerhei 2004b. For summary statistics on contribution activity in 2016, see Utkus and Young 2017.

[32] At year-end 2016, 59 percent of non-target-date balanced mutual fund assets were assumed to be invested in equities (see Investment Company Institute, Quarterly Supplementary Data). Allocation to equities in target-date funds is assumed to vary with investor age. Asset allocation to equities for target-date funds was based on Morningstar analysis of target-date fund asset allocation (see Morningstar 2015 and note 40 for additional discussion).

[33] For year-end 2015 asset allocations, see Figure 21 in Holden et al. 2017b.

[34] Other research suggests that most 401(k) participants do not make active changes to their asset allocations during any given year. For example, an ICI survey of recordkeepers covering more than 29 million DC plan participant accounts found that 9.4 percent of DC plan participants changed the asset allocation of their account balances in 2016 and 5.6 percent changed the asset allocation of their contributions during 2016 (see Holden and Schrass 2018). Analyzing 2017 data, Utkus and Young 2018 reported that 8 percent of DC plan participants made participant-directed exchanges within the account, in line with recent prior years. Aon 2016 found that 14 percent of participants traded in their accounts in 2015. Furthermore, Choi et al. 2001 found that 401(k) participants rarely made changes after the initial point of enrollment. (For household survey results from fall 2017 reflecting households' sentiment toward and confidence in 401(k) plans, see Holden et al. 2018.)

[35] For the age distribution of 401(k) plan participants and assets at year-end 2016, see Figure 5.

[36] See note 11 for additional detail on target-date funds.

[37] See Figure 21 in Holden et al. 2017a (the year-end 2015 EBRI/ICI 401(k) database update).

[38] For an analysis tracking target-date fund use and the persistence of their use from 2007 through 2009, see Copeland 2011. For an analysis of target-date fund use among defaulted and non-defaulted 401(k) plan participants, see Mitchell and Utkus 2012.

[39] Target-date funds often are used as the default investment in automatic enrollment plans and in plans' investment lineups (see Plan Sponsor Council of America 2018). At year-end 2016, 67 percent of target-date mutual fund assets were held in DC plans (see Investment Company Institute 2018). Plan Sponsor Council of America 2018 reported an increase in the incidence of automatic enrollment in 2016. Of the nearly 600 plans surveyed, 59.7 percent had automatic enrollment in 2016, compared with 57.5 percent in 2015, 52.4 percent in 2014, 39.6 percent in 2008, and 10.5 percent in 2004. Utkus and Young 2018 reports that 46 percent of DC plans in their recordkeeping system in 2017 offer automatic enrollment, up from 45 percent in 2016, 41 percent in 2015, and 36 percent in 2014.

[40] At year-end 2016, 59 percent of non-target-date balanced fund assets were assumed to be invested in equities (see Investment Company Institute, Quarterly Supplementary Data). The allocation to equities in target-date funds varies with the funds' target dates. For target-date funds, investors were assumed to be in a fund whose target date was nearest to their 65th birthday. The equity portion was estimated using the industry average equity percentage for the assigned target-date fund calculated using the Morningstar Lifecycle Allocation Indexes (see Morningstar 2015). For the average 401(k) plan asset allocation to equities (through equity funds, company stock, and the equity portion of balanced funds) by participant age, see Figure 21.

[41] For year-end 2015 data, see Holden et al. 2017a.

[42] For year-end 1998 data, see Holden, VanDerhei, and Quick 2000.

[43] In the database, 401(k) plan participants' holdings of, and concentration in, company stock have tended to decline. In the wake of the collapse of Enron in 2001, participants' awareness of the need to diversify may have increased and some plan sponsors may have changed plan design (see VanDerhei 2002). In addition, some of this movement may be the result of regulations put in place by the Pension Protection Act of 2006 (PPA), which limited the length of time participants could be required to hold company stock contributed to their accounts by their employer; specified rules regarding the notification of blackout periods; and required quarterly statements that must include a notice highlighting the importance of diversification (see U.S. Joint Committee on Taxation 2006).

[44] 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 a plan loan, but no participant had taken out a loan. It is likely that this omission is small, as U.S. Government Accountability Office 1997 found that more than 95 percent of 401(k) plans that offer loans had at least one plan participant with an outstanding loan.

[45] For a complete time series of the percentage of eligible 401(k) participants with outstanding 401(k) loans and loan amounts as a percentage of the remaining 401(k) plan account balance, see Holden et al. 2013.

[46] The percentage of 401(k) participants with 401(k) loans outstanding across all participants both with and without 401(k) plan loan access was similar in earlier years. For example, in 2015, this measure was 16 percent; in 2014, 17 percent; from 2010 through 2013, 18 percent; in 2009, 19 percent; in 2007 and 2008, 16 percent; and in 2006, 15 percent.

[47] In plan year 2015 (latest data available), only 1.5 percent of the $4.4 trillion in 401(k) plan assets were participant loans. See Table D6 in U.S. Department of Labor, Employee Benefits Security Administration 2018a.

[48] This pattern is driven in part by restrictions placed on loan amounts.

EBRI Issue Brief is registered in the U.S. Patent and Trademark Office. ISSN: 0887–137X/90 0887–137X/90 $ .50+.50