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This paper is an annual update to ICI and EBRI's ongoing research into 401(k) plan participants' activity. The previous update was "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2011," published in December 2012.

## 401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2012

### KEY FINDINGS

- » **The bulk of 401(k) assets continued to be invested in stocks.** On average, at year-end 2012, 61 percent of 401(k) participants' assets were invested in equity securities through equity funds, the equity portion of balanced funds, and company stock. Thirty-three percent was in fixed-income securities such as stable value investments and bond and money funds.
- » **Seventy-two percent of 401(k) plans included target date funds in their investment lineup at year-end 2012.** At year-end 2012, 15 percent of the assets in the EBRI/ICI 401(k) database were invested in target date funds and 41 percent 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.
- » **More new or recent hires invested their 401(k) assets in balanced funds, including target date funds.** For example, at year-end 2012, nearly 54 percent of the account balances of recently hired participants in their twenties were invested in balanced funds, compared with 51 percent in 2011, and about 7 percent in 1998. A significant subset of that balanced fund category is invested in target date funds. At year-end 2012, 43 percent of the account balances of recently hired participants in their twenties were invested in target date funds, compared with 40 percent at year-end 2011.
- » **401(k) participants continued to seek diversification of their investments.** The share of 401(k) accounts invested in company stock edged down to 7 percent at year-end 2012. This share has fallen by more than half since 1999. Recently hired 401(k) participants contributed to this trend: they tended to be less likely to hold employer stock.

- » **Participants' 401(k) loan activity remained steady, although loan balances increased slightly in 2012.** At year-end 2012, 21 percent of all 401(k) participants who were eligible for loans had loans outstanding against their 401(k) accounts, unchanged from year-end 2011, 2010, and 2009, but up from 18 percent at year-end 2008. Loans outstanding amounted to 13 percent of the remaining account balance, on average, at year-end 2012, down 1 percentage point from year-end 2011. Nevertheless, loan amounts outstanding increased slightly from the previous year.
- » **The year-end 2012 average 401(k) account balance in the database was 8.4 percent higher than the year before, but may not accurately reflect the experience of typical 401(k) participants in 2012.** To understand changes in 401(k) participants' average account balances, it is important to analyze a sample of consistent participants. As with previous EBRI/ICI updates, analysis of a sample of consistent 401(k) participants (those that have been in the same plan since 2007) is expected to be published in 2014.

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## Introduction

Over the past three decades, 401(k) plans have grown to be the most widespread private-sector employer-sponsored retirement plan in the United States.<sup>1</sup> In 2012, an estimated 52 million American workers were active 401(k) plan participants.<sup>2</sup> By year-end 2012, 401(k) plan assets had grown to represent 18 percent of all retirement assets, amounting to \$3.5 trillion.<sup>3</sup> In an ongoing collaborative effort, the Employee Benefit Research Institute (EBRI)<sup>4</sup> and the Investment Company Institute (ICI)<sup>5</sup> collect annual data on millions of 401(k) plan participants as a means to examine how these participants manage their 401(k) accounts.

This report is an update of EBRI and ICI's ongoing research into 401(k) plan participants' activity through year-end 2012.<sup>6</sup> 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 2012; 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.

### *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, 2012, the EBRI/ICI database included statistical information about:

- » 24.0 million 401(k) plan participants, in
- » 64,619 employer-sponsored 401(k) plans, holding
- » \$1.536 trillion in assets.

The 2012 EBRI/ICI database covers 46 percent of the universe of 401(k) plan participants, more than 10 percent of plans, and 44 percent of 401(k) plan assets. The EBRI/ICI project is unique because it includes data provided by a wide variety of plan recordkeepers 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.

## 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 2012. These plan recordkeepers include mutual fund companies, insurance companies, and consulting firms. Although the EBRI/ICI project has collected data from 1996 through 2012, the universe of data providers may vary from year to year. In addition, the sample of plans at any given provider can change. Thus, aggregate figures in this report generally should not be used to estimate time trends. Records were encrypted prior to 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.<sup>7</sup> 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.<sup>8</sup> 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 2012 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 nearly

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.<sup>9</sup>

### Investment Options

Investment options are grouped into eight broad categories.<sup>10</sup> **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. Similarly, **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 over time.<sup>11</sup> Non-target date balanced funds include asset allocation or hybrid funds, in addition to lifestyle funds.<sup>12</sup> **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)**<sup>13</sup> and **other stable value funds**,<sup>14</sup> are reported as one category. The **other** category is the residual for other investments, such as real estate funds. The final category, **unknown**, consists of assets that could not be identified.<sup>15</sup>

### About Changes in Account Balances

When analyzing the change in participant account balances over time, it is important to have a consistent sample. 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 from 2007 through 2012.

## Distribution of Plans, Participants, and Assets by Plan Size

The 2012 EBRI/ICI 401(k) database contains information on 64,619 401(k) plans with \$1.536 trillion in assets and 24.0 million participants (Figure 1). As is the case in the 401(k) universe at large, most of the plans in the database are small: 47 percent of the plans have 25 or fewer participants, and 28 percent have 26 to 100 participants (Figure 2). In contrast, only 2 percent of the plans have more than 2,500 participants. However, participants and assets are concentrated in large plans. For example, 68 percent of participants are in plans with more than 2,500 participants, and these same plans account for 71 percent of all plan assets. Because most of the plans have a small number of participants, the asset size for many plans is modest. About 17 percent of the plans have assets of \$250,000 or less, and another 28 percent have plan assets between \$250,001 and \$1,250,000 (Figure 3).

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

The 2012 EBRI/ICI 401(k) database is a representative sample of the estimated universe of 401(k) plans. At year-end 2012, all 401(k) plans held a total of \$3.5 trillion in assets, and the database represents about 44 percent of that total.<sup>16</sup> The database also covers 46 percent of the universe of active 401(k) plan participants and more than 10 percent of all 401(k) plans.<sup>17</sup> The distribution of assets, participants, and plans in the database for 2012 is similar to the universe of plans as reported by the U.S. Department of Labor (Figure 4).<sup>18</sup>

FIGURE 1

### 401(k) Plan Characteristics by Number of Plan Participants, 2012

| Number of plan participants | Total plans | Total participants | Total assets*     | Average account balance |
|-----------------------------|-------------|--------------------|-------------------|-------------------------|
| 1 to 10                     | 16,704      | 87,801             | \$6,619,953,042   | \$75,397                |
| 11 to 25                    | 13,818      | 235,763            | 16,875,338,636    | 71,578                  |
| 26 to 50                    | 10,212      | 371,371            | 25,390,609,052    | 68,370                  |
| 51 to 100                   | 8,025       | 569,723            | 36,088,127,399    | 63,343                  |
| 101 to 250                  | 7,133       | 1,137,359          | 65,879,803,323    | 57,923                  |
| 251 to 500                  | 3,330       | 1,179,111          | 63,347,473,310    | 53,725                  |
| 501 to 1,000                | 2,185       | 1,535,977          | 86,247,266,366    | 56,151                  |
| 1,001 to 2,500              | 1,685       | 2,629,617          | 151,937,055,030   | 57,779                  |
| 2,501 to 5,000              | 743         | 2,604,097          | 154,768,532,768   | 59,433                  |
| 5,001 to 10,000             | 418         | 2,929,555          | 194,811,866,253   | 66,499                  |
| >10,000                     | 366         | 10,739,454         | 733,586,395,593   | 68,308                  |
| All                         | 64,619      | 24,019,828         | 1,535,552,420,774 | 63,929                  |

\* Assets do not add to the total because of rounding.

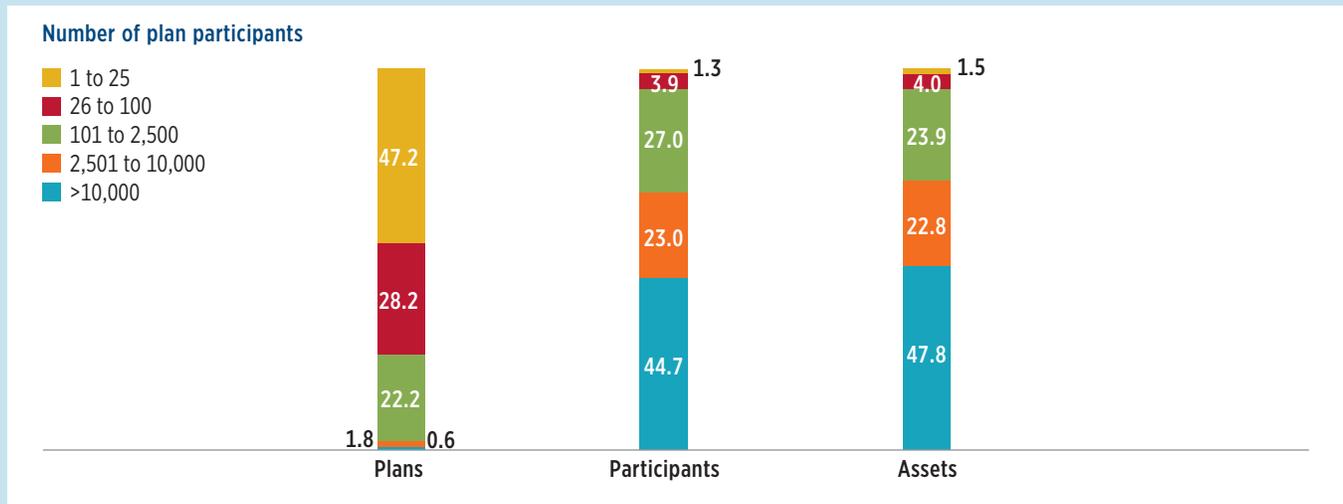
Note: The median account balance at year-end 2012 was \$17,630.

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, 2012



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, 2012

| Total plan assets               | Total plans | Total participants | Total assets*     | Average account balance |
|---------------------------------|-------------|--------------------|-------------------|-------------------------|
| \$0 to \$250,000                | 10,875      | 75,295             | \$1,054,876,218   | \$14,010                |
| >\$250,000 to \$625,000         | 8,738       | 130,432            | 3,725,941,208     | 28,566                  |
| >\$625,000 to \$1,250,000       | 9,452       | 234,160            | 8,633,289,553     | 36,869                  |
| >\$1,250,000 to \$2,500,000     | 10,023      | 424,425            | 18,074,736,878    | 42,586                  |
| >\$2,500,000 to \$6,250,000     | 10,998      | 955,456            | 43,735,589,431    | 45,775                  |
| >\$6,250,000 to \$12,500,000    | 5,583       | 1,057,330          | 48,967,415,665    | 46,312                  |
| >\$12,500,000 to \$25,000,000   | 3,514       | 1,323,214          | 61,923,502,991    | 46,798                  |
| >\$25,000,000 to \$62,500,000   | 2,677       | 2,170,215          | 104,162,790,999   | 47,997                  |
| >\$62,500,000 to \$125,000,000  | 1,133       | 1,935,572          | 100,056,606,372   | 51,694                  |
| >\$125,000,000 to \$250,000,000 | 700         | 2,314,856          | 123,684,349,306   | 53,431                  |
| >\$250,000,000                  | 926         | 13,398,873         | 1,021,533,322,152 | 76,240                  |
| All                             | 64,619      | 24,019,828         | 1,535,552,420,774 | 63,929                  |

\* Assets do not add to the total because of rounding.

Note: The median account balance at year-end 2012 was \$17,630.

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

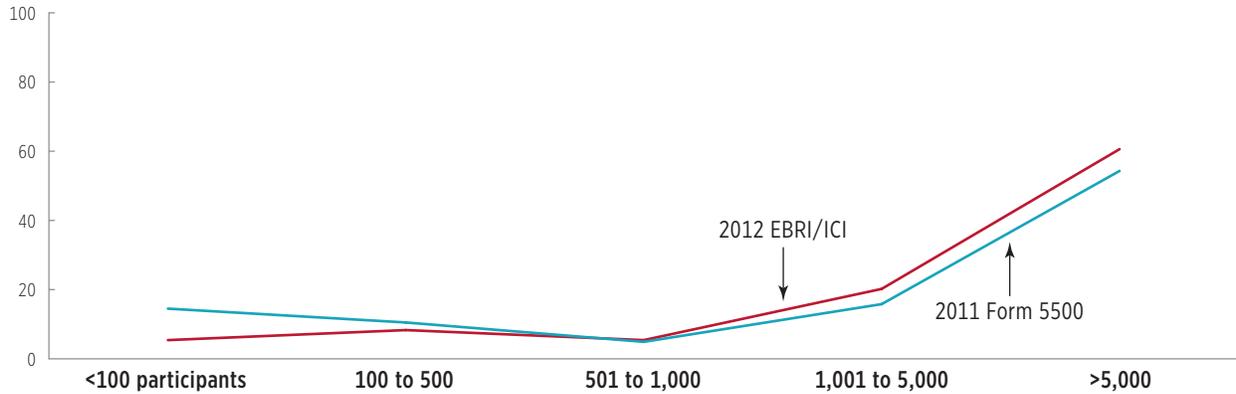
FIGURE 4

### 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 2012 versus 2011 DOL Form 5500 for all 401(k) plans

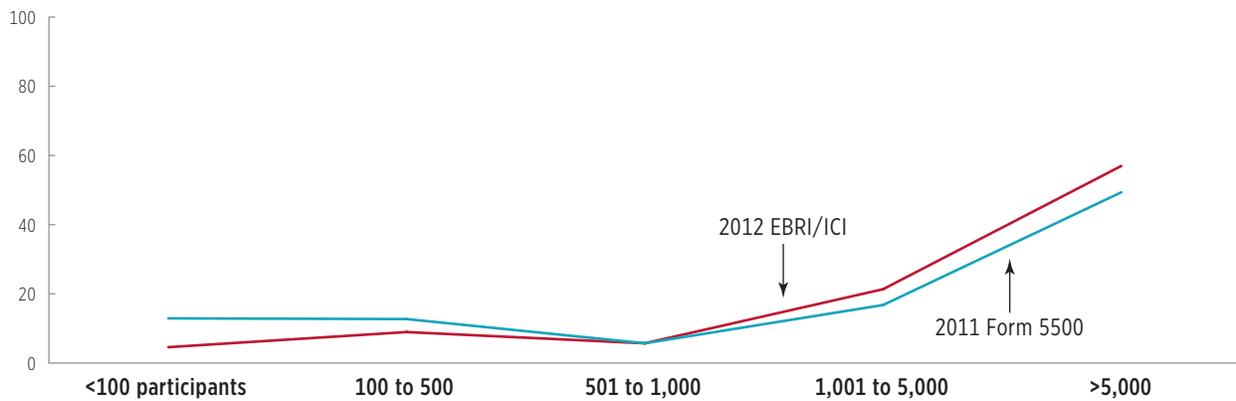
#### Plan assets

Percentage of plan assets



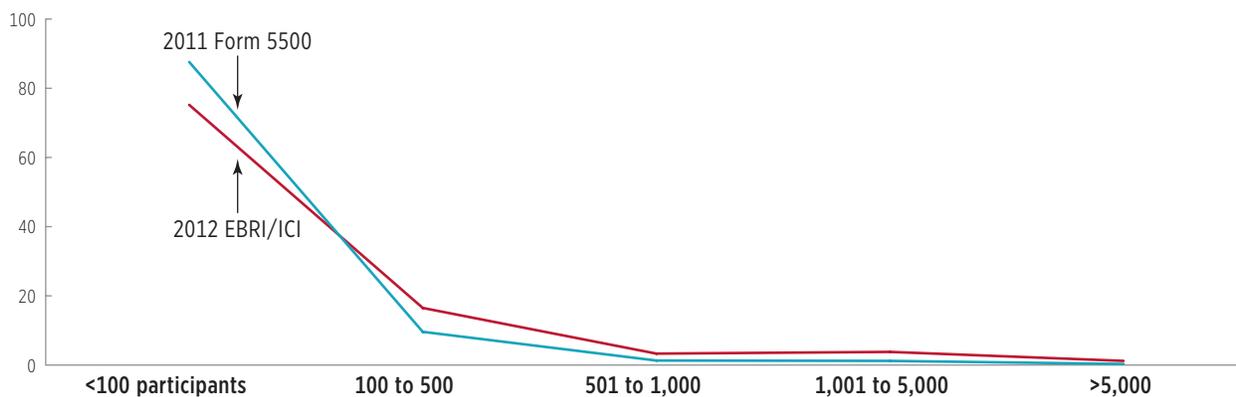
#### Participants

Percentage of participants



#### Plans

Percentage of plans



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

## The Typical 401(k) Plan Participant

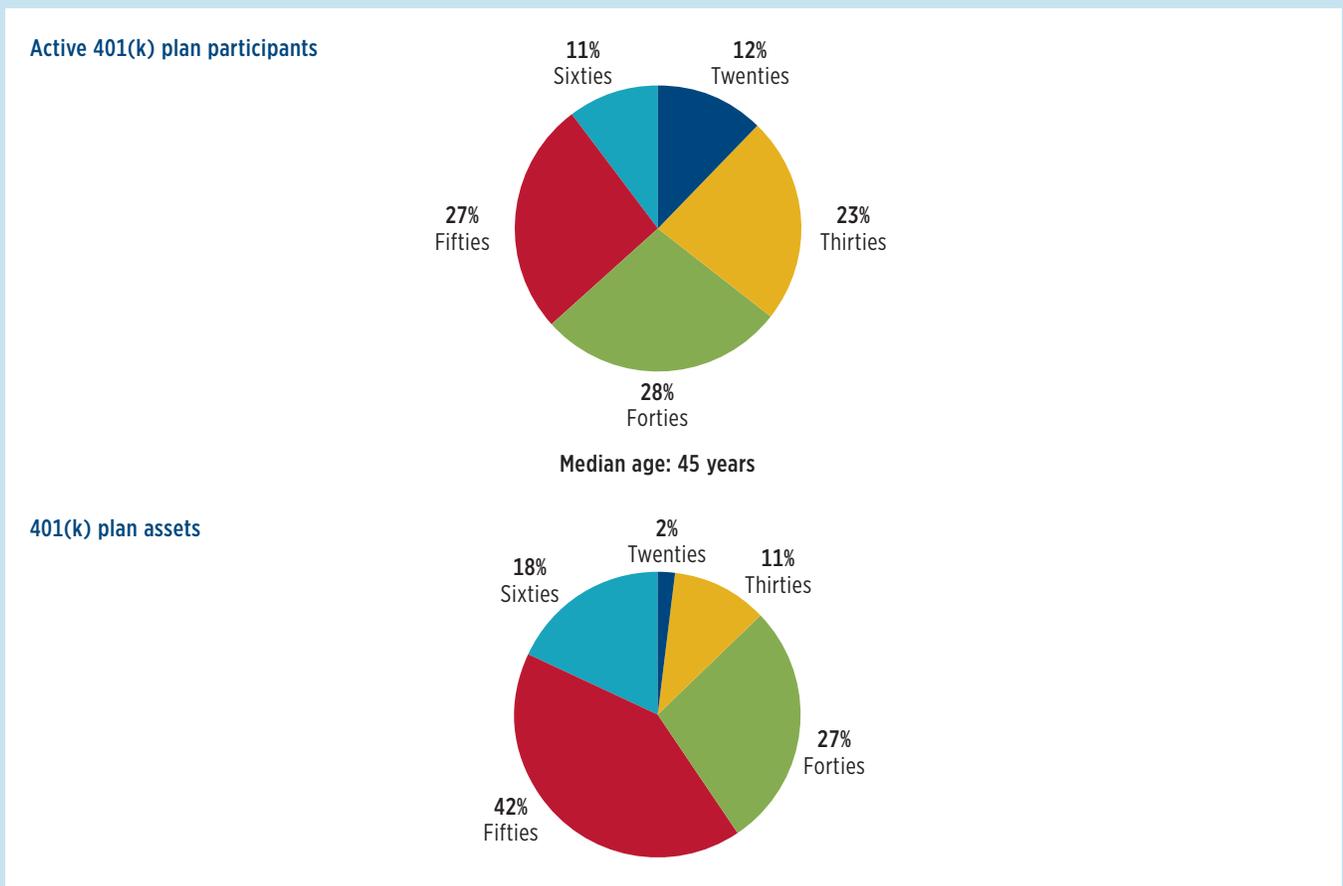
The database includes 401(k) participants across a wide range of age and tenure groups. At year-end 2012, 51 percent of participants were in their thirties or forties, while 12 percent of participants were in their twenties and 11 percent were in their sixties (Figure 5, upper panel). The median age of the participants in the 2012 database is

45 years, the same as in 2011. 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 2012, 60 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).

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, 2012



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

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

Participants in 401(k) plans represent a wide range of job tenure experiences. In 2012, 37 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 eight years in 2012, the same as in 2011.

## Year-End 2012 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 is the sum of three factors:

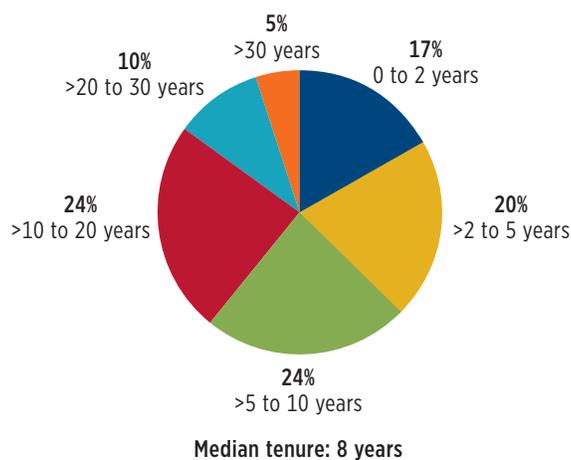
- » new contributions by the participant, the employer, or both;
- » total investment return on account balances, which depends on the performance of financial markets and on the allocation of assets in an individual's account; and
- » withdrawals, borrowing, and loan repayments.

The change in any individual participant's account balance is influenced by the magnitude of these three factors relative to the starting account balance.<sup>19</sup> 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 16.0 percent during 2012, while bonds (as measured by the Barclays Capital U.S. Aggregate Bond Index) increased 4.2 percent (Figures 7 and 8).

FIGURE 6

### 401(k) Participants Represent a Range of Job Tenures

Percentage of active 401(k) plan participants by years of tenure, 2012



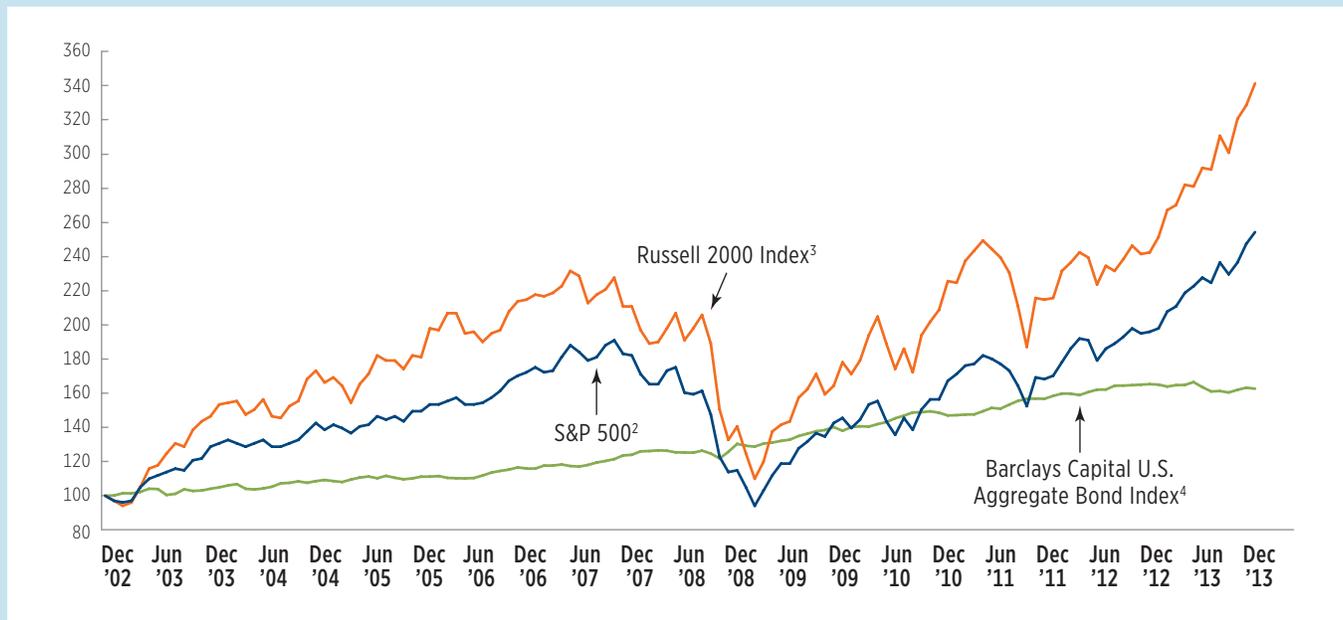
Note: The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.

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

FIGURE 7

### Domestic Stock and Bond Market Indexes

Month-end level,<sup>1</sup> December 2002 to November 2013



<sup>1</sup> All indexes are set to 100 in December 2002.

<sup>2</sup> The S&P 500 is an index of 500 stocks chosen for market size, liquidity, and industry group representation.

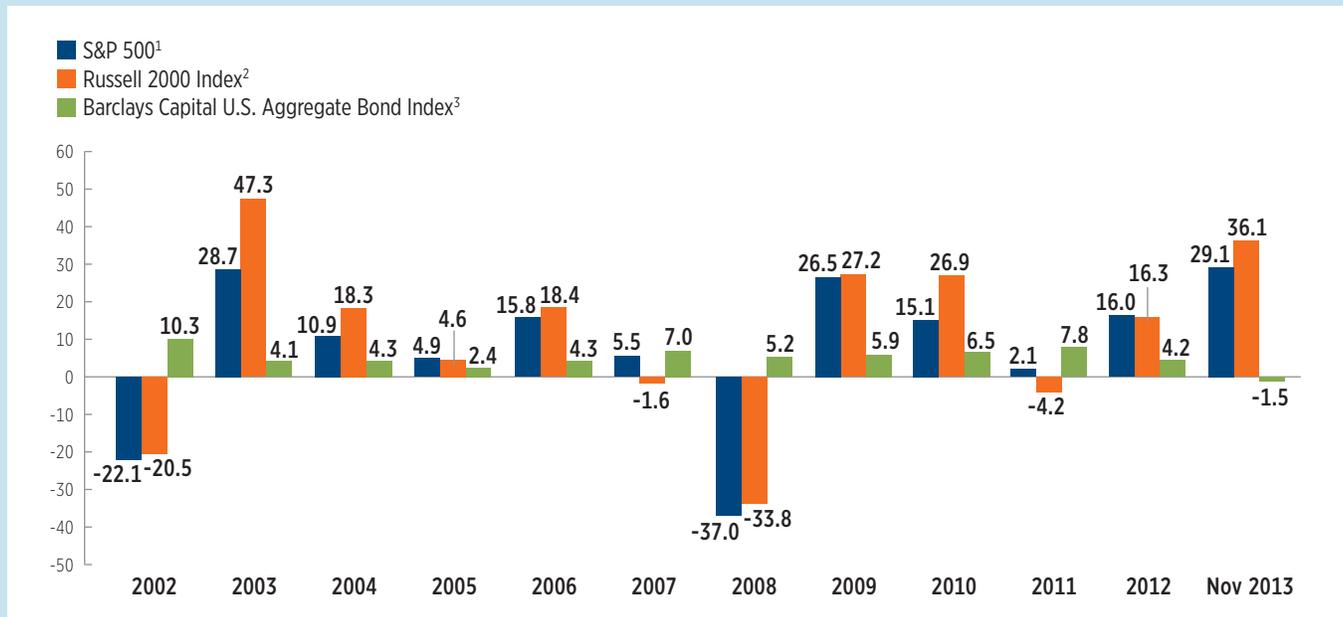
<sup>3</sup> The Russell 2000 Index measures the performance of the 2,000 smallest U.S. companies (based on total market capitalization) included in the Russell 3000 Index (which tracks the 3,000 largest U.S. companies).

<sup>4</sup> 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



<sup>1</sup> The S&P 500 is an index of 500 stocks chosen for market size, liquidity, and industry group representation.

<sup>2</sup> 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).

<sup>3</sup> 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

### Definition of 401(k) 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) 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 over time

because the selection of data providers and sample of plans using a given provider vary from year to year and because 401(k) participants join or leave plans.<sup>20</sup> 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.<sup>21</sup> 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.

## Size of 401(k) Account Balances

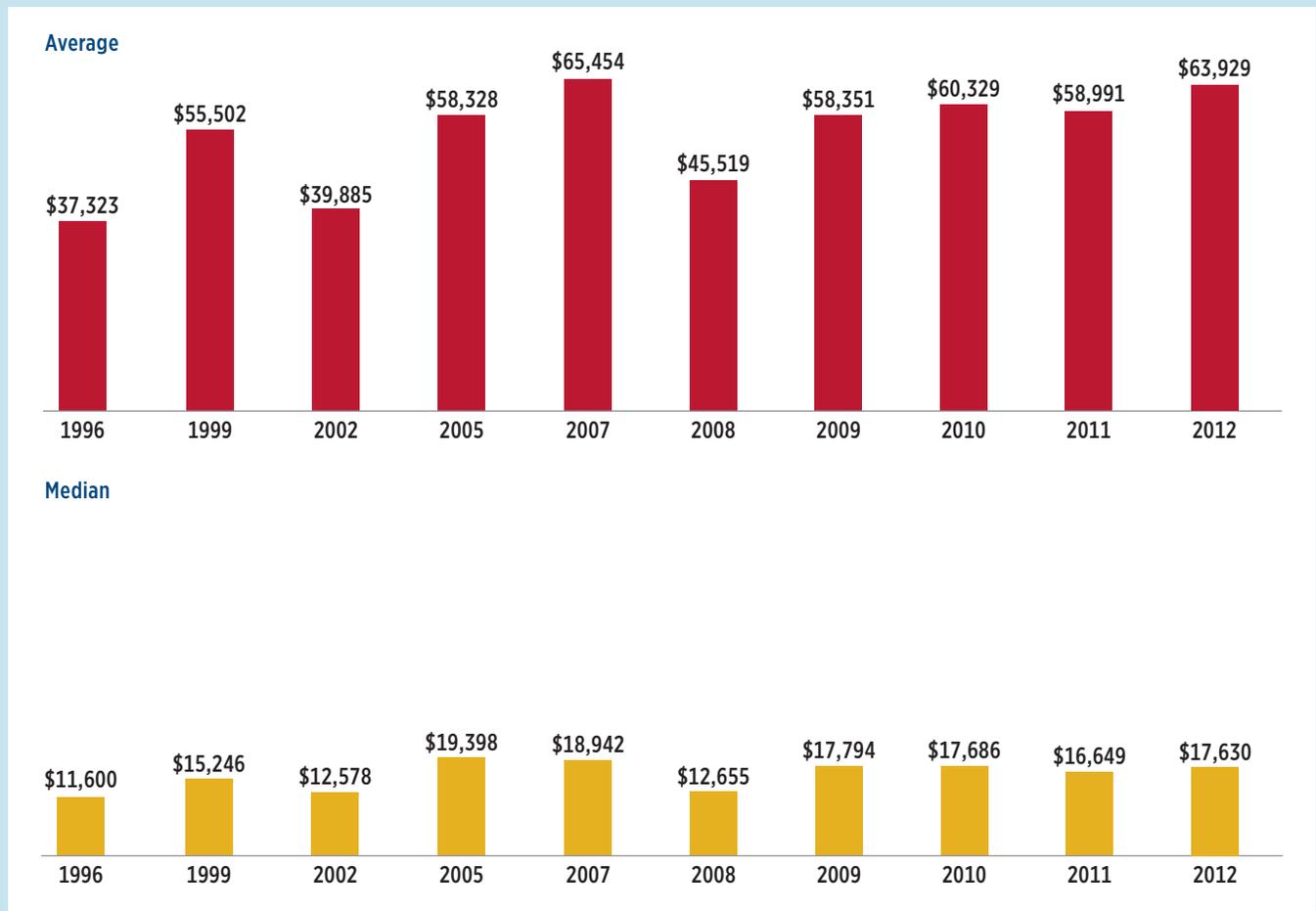
At year-end 2012, the average account balance was \$63,929 and the median account balance was \$17,630 (Figure 9). The account balances of 401(k) plan participants at year-end 2012 exhibit wide variation. More than three-quarters

of the participants in the 2012 EBRI/ICI 401(k) database had account balances that were lower than \$63,929, the size of the average account balance. In fact, 39.6 percent of participants had account balances of less than \$10,000, while 18.0 percent of participants had account balances

FIGURE 9

### Snapshot of Year-End 401(k) Account Balances

401(k) plan participant account balances,<sup>1</sup> selected years<sup>2</sup>



<sup>1</sup> 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.

<sup>2</sup> The sample of participants changes over time.

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

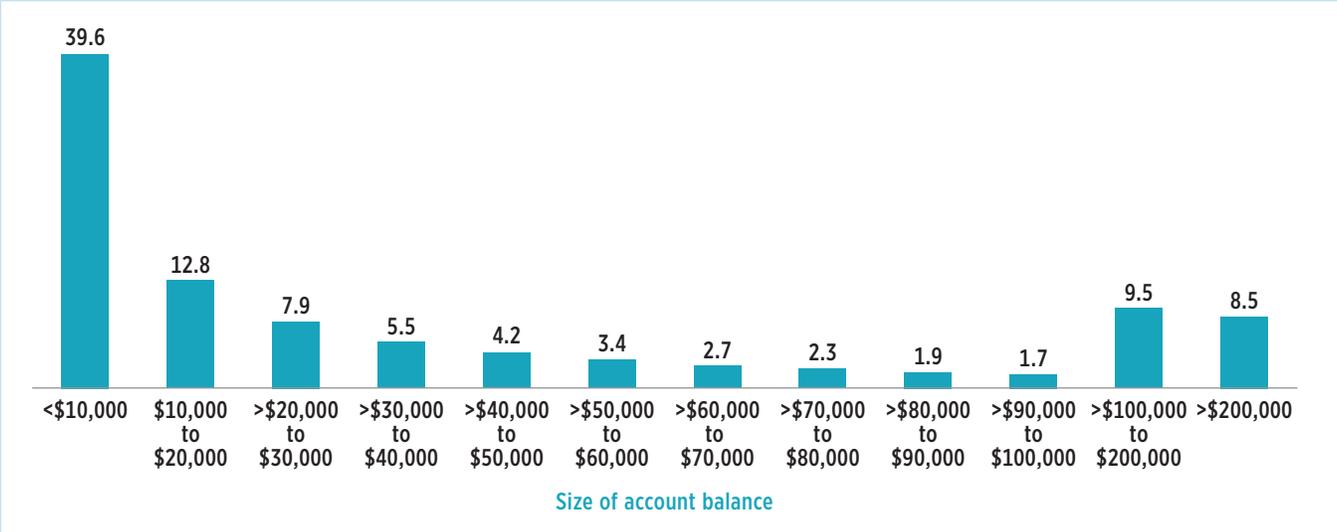
greater than \$100,000 (Figure 10). The variation in account balances partly reflects the effects of participant age, tenure, salary, contribution behavior, rollovers from other plans, asset allocation, withdrawals, loan activity, and

employer contribution rates. This research report examines the relationship between account balances and participants' age, tenure, and salary.

FIGURE 10

**Distribution of 401(k) Account Balances by Size of Account Balance**

*Percentage of participants with account balances in specified ranges, 2012*



Note: At year-end 2012, the average account balance among all 24.0 million 401(k) participants was \$63,929; the median account balance was \$17,630.

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

## Relationship of Age and Tenure to Account Balances

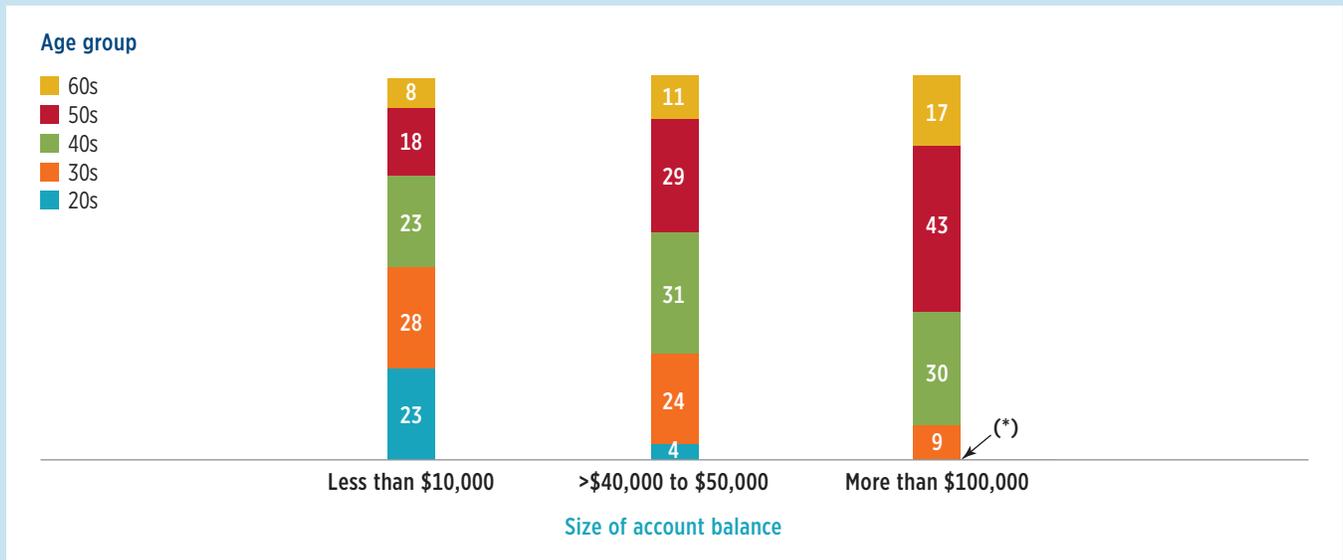
Age and account balance are positively correlated among participants covered by the 2012 database.<sup>22</sup> Examination of the age composition of account balances finds that 51 percent of participants with account balances of less than \$10,000 were in their twenties or thirties (Figure 11). Similarly, 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.

FIGURE 11

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

Percentage of participants with account balances in specified ranges, 2012



(\*) = less than 0.5 percent

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

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

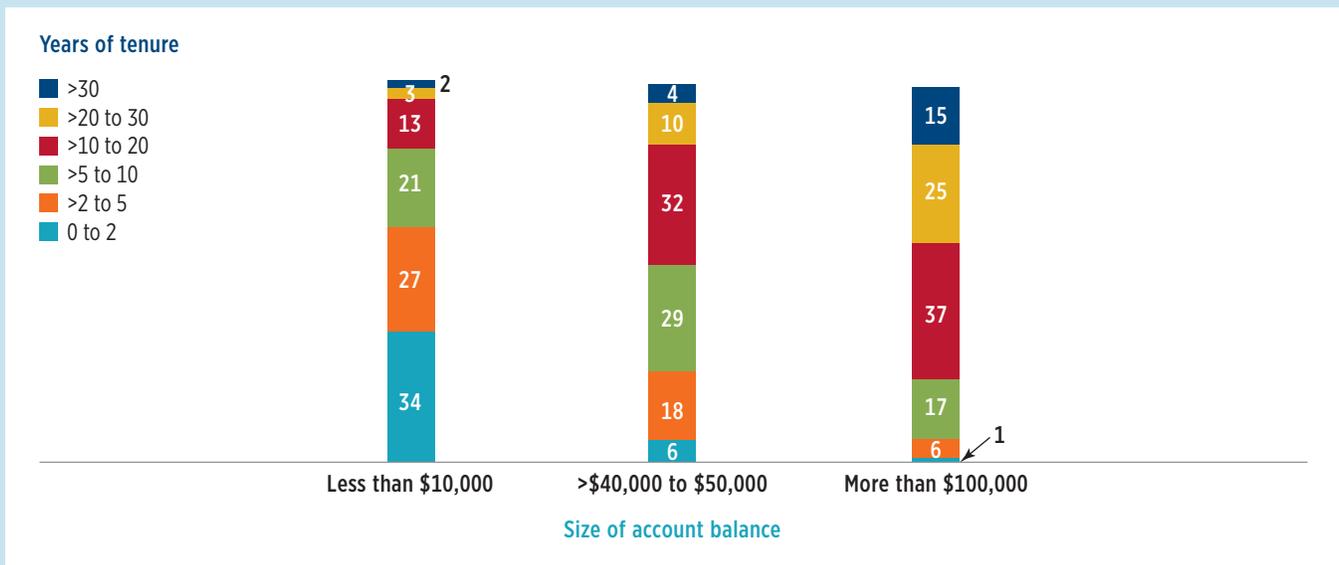
Account balance and tenure are also positively correlated among participants in the 2012 database. A participant's tenure with an employer serves as a proxy for the length of time a worker has participated in the 401(k) plan.<sup>23</sup> Indeed, 61 percent of participants with account balances of less than \$10,000 had five or fewer years of tenure, while 77 percent of participants with account balances greater than \$100,000 had more than 10 years of tenure (Figure 12).<sup>24</sup>

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 \$24,276, compared with \$224,287 for participants in their sixties with more than 30 years of tenure (Figure 13).<sup>25</sup> Similarly, the average account balance of participants in their forties

FIGURE 12

### Tenure Composition of Selected 401(k) Account Balance Categories

Percentage of participants with account balances in specified ranges, 2012



Note: Percentages may not add to 100 percent because of rounding. 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 13

### 401(k) Account Balances Increase with Participant Age and Tenure

Average 401(k) account balance by participant age and tenure, 2012

| Age group | Years of tenure |          |          |           |           |           |
|-----------|-----------------|----------|----------|-----------|-----------|-----------|
|           | 0 to 2          | >2 to 5  | >5 to 10 | >10 to 20 | >20 to 30 | >30       |
| 20s       | \$4,108         | \$10,695 | \$16,647 |           |           |           |
| 30s       | 9,842           | 21,872   | 36,980   | \$57,212  |           |           |
| 40s       | 15,457          | 31,764   | 53,060   | 92,699    | \$136,761 |           |
| 50s       | 20,656          | 38,533   | 60,735   | 106,522   | 187,425   | \$219,196 |
| 60s       | 24,276          | 39,323   | 58,606   | 96,980    | 169,473   | 224,287   |

Note: The average account balance among all 24.0 million 401(k) plan participants was \$63,929; the median account balance was \$17,630. 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

with up to two years of tenure was \$15,457, compared with \$136,761 for participants in their forties with more than 20 years of tenure.

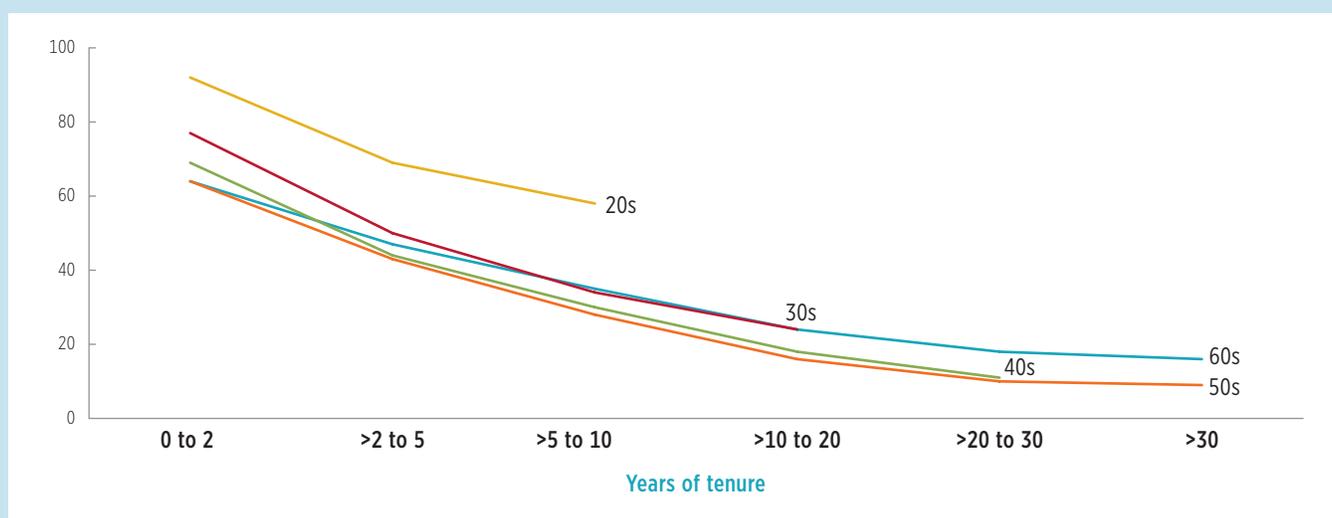
The distribution of account balances underscores the effects of age and tenure on account balances. In a given age group, shorter tenure tends to mean that a higher percentage of participants will have account balances of less than \$10,000. For example, 89 percent of participants in their twenties

with two or fewer years of tenure had account balances of less than \$10,000 in 2012, compared with 55 percent of participants in their twenties with between five and 10 years of tenure (Figure 14). Older workers display a similar pattern. For example, 63 percent of participants in their sixties with two or fewer years of tenure had account balances of less than \$10,000. In contrast, less than one-fifth of those in their sixties with more than 20 years of tenure had account balances of less than \$10,000.<sup>26</sup>

FIGURE 14

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

Percentage of participants with account balances less than \$10,000 at year-end 2012



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

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, 18 percent of participants in their sixties with five to 10 years of tenure had account balances in excess of \$100,000 in 2012 (Figure 15). However, 45 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 52 percent for participants in their sixties with more than 30 years of tenure.

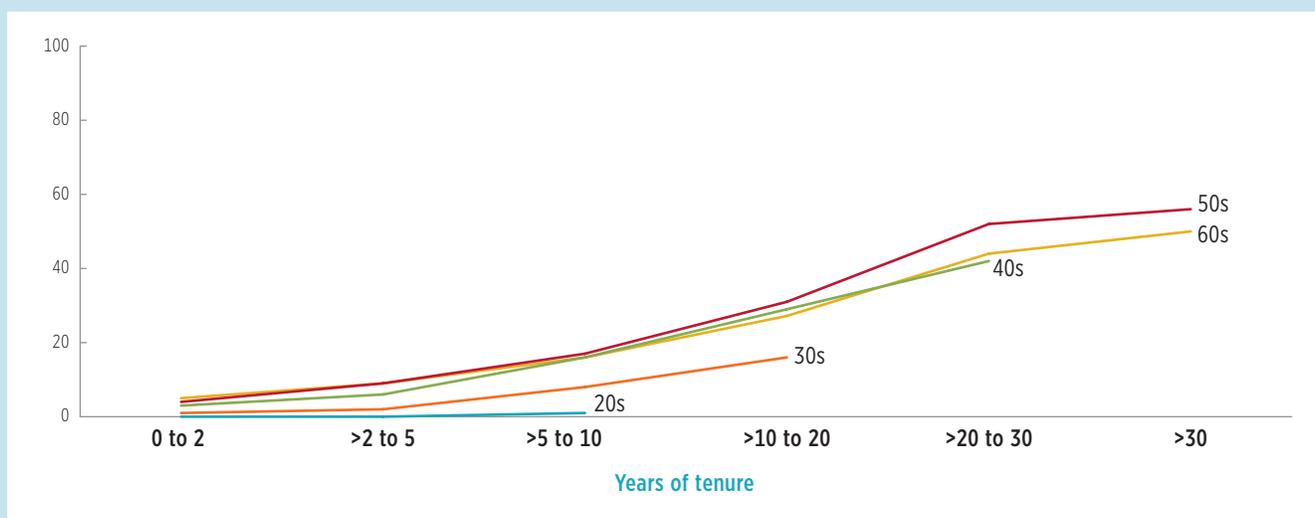
### Relationship Between Account Balances and Salary

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 is 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 regulations for 401(k) plans were not introduced until 1981.<sup>27</sup>

FIGURE 15

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

Percentage of participants with account balances greater than \$100,000 at year-end 2012



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

Older, longer-tenured, and higher-income participants tend to have larger account balances, which are important for meeting their income-replacement needs in retirement.<sup>28</sup> For longer-tenured participants in their twenties with salaries between \$20,000 and \$40,000, the median account balance was \$6,635 in 2012 (Figure 16). Longer-tenured participants in their twenties earning more than \$80,000 to

\$100,000 had a median account balance of \$48,108, while those earning more than \$100,000 had a median account balance of \$46,389. Among longer-tenured participants in their sixties with \$20,000 to \$40,000 in salary in 2012, the median account balance was \$54,867. For longer-tenured participants in their sixties earning more than \$100,000, the median account balance was \$323,835.

FIGURE 16

**Median 401(k) Account Balance<sup>1</sup> Among Longer-Tenured<sup>2</sup> Participants by Age and Salary, 2012**

| Salary range           | Participant age group |          |          |          |          |
|------------------------|-----------------------|----------|----------|----------|----------|
|                        | 20s                   | 30s      | 40s      | 50s      | 60s      |
| \$20,000 to \$40,000   | \$6,635               | \$16,449 | \$46,093 | \$66,304 | \$54,867 |
| >\$40,000 to \$60,000  | 14,045                | 28,572   | 66,161   | 94,425   | 86,268   |
| >\$60,000 to \$80,000  | 28,669                | 50,015   | 106,271  | 146,435  | 140,058  |
| >\$80,000 to \$100,000 | 48,108                | 83,325   | 160,499  | 214,001  | 211,345  |
| >\$100,000             | 46,389                | 119,461  | 270,125  | 343,985  | 323,835  |

<sup>1</sup> 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.

<sup>2</sup> 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 the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

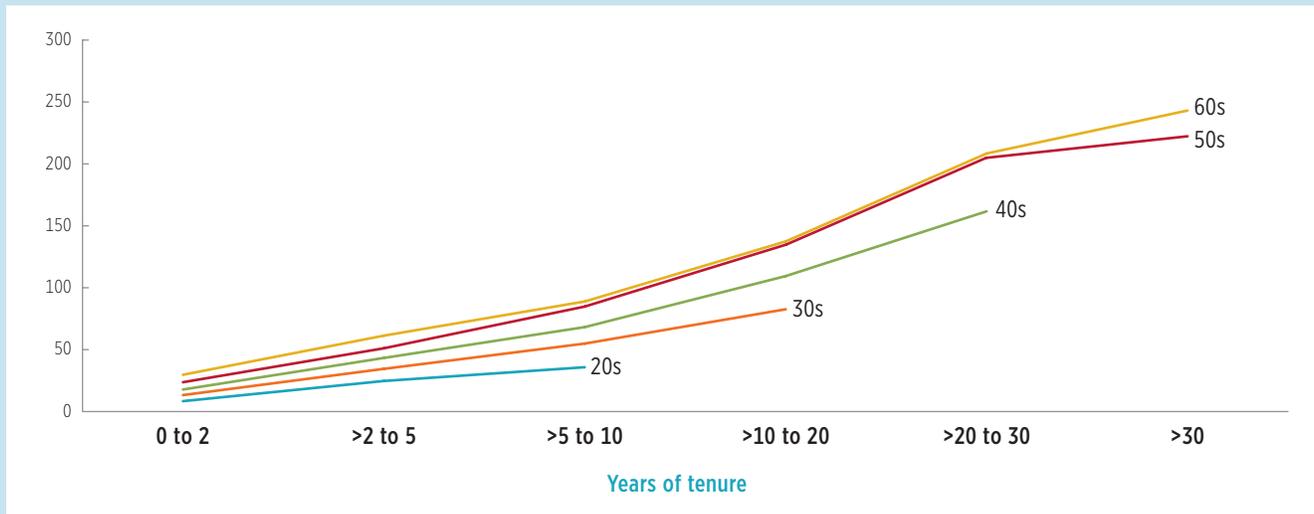
The ratio of participant account balance to salary is positively correlated with age and tenure.<sup>29</sup> Participants in their sixties—having had more time to accumulate assets—tended to have higher ratios, while those in their

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

FIGURE 17

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

Percent, 2012



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

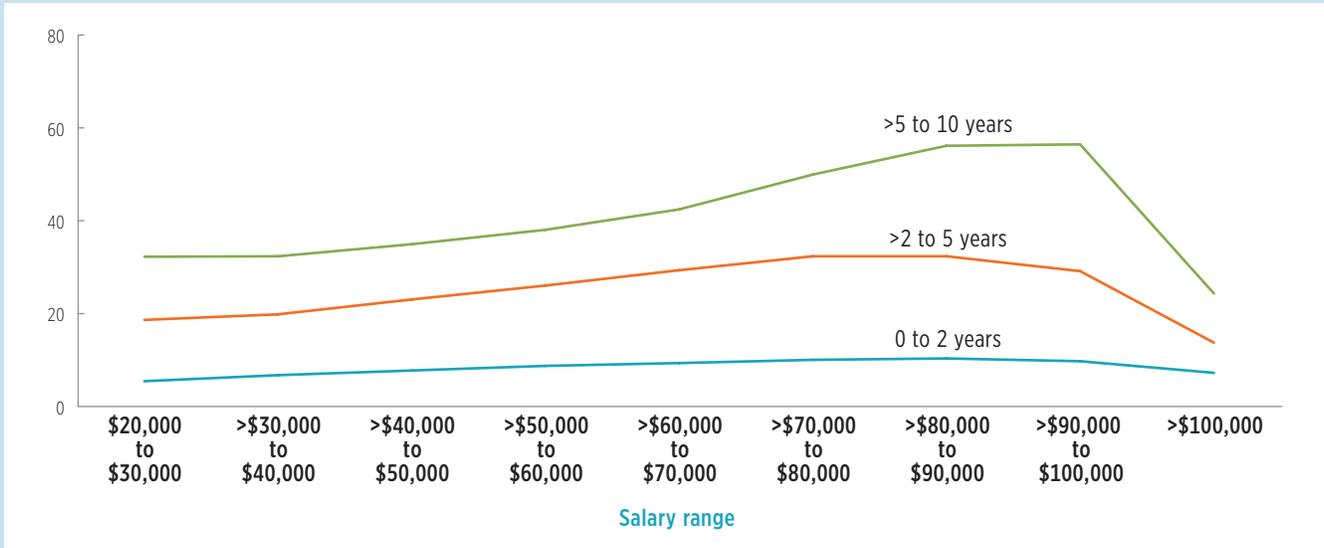
increase slightly with salary for low-to-moderate salary groups (Figure 18). However, at high salary levels the ratio

tends to decline somewhat. A similar pattern occurs among participants in their sixties (Figure 19).<sup>30</sup>

FIGURE 18

**Ratio of 401(k) Account Balance to Salary for Participants in Their Twenties by Tenure**

Percent, 2012



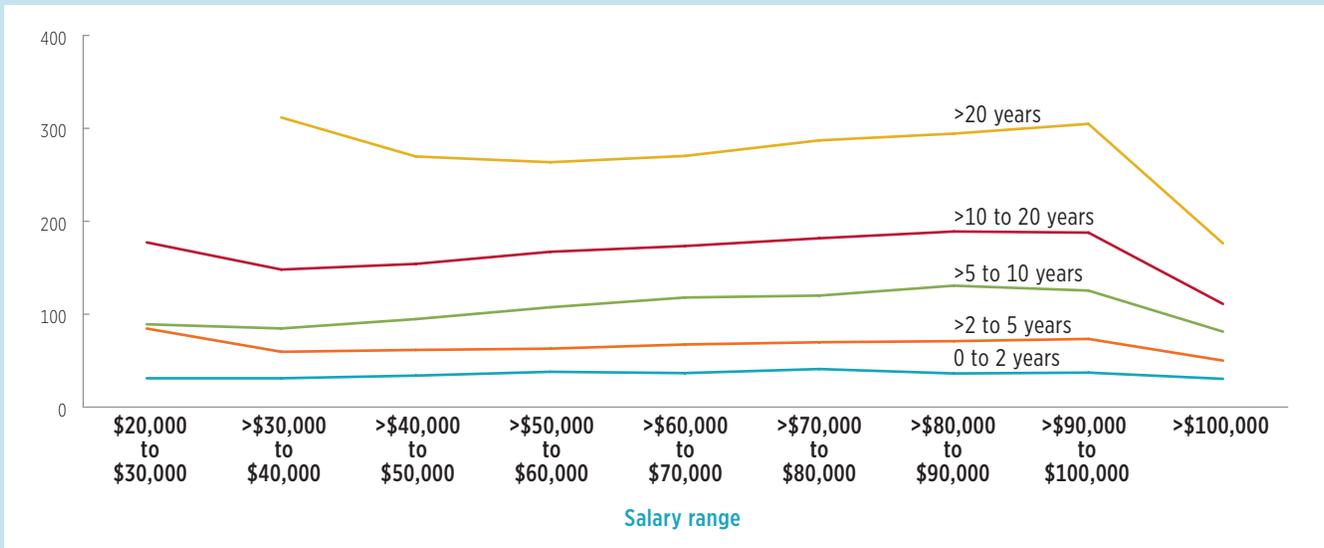
Note: The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan.

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

FIGURE 19

**Ratio of 401(k) Account Balance to Salary for Participants in Their Sixties by Tenure**

Percent, 2012



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

## Year-End 2012 Snapshot of 401(k) Participants' Asset Allocation

At year-end 2012, 39 percent of 401(k) plan participants' account balances were invested in equity funds, on average, the same as at year-end 2011, compared with 37 percent at year-end 2008, and 48 percent at year-end 2007 (Figure 20). Altogether, equity securities—equity funds, the equity portion of balanced funds,<sup>31</sup> and company stock—represented 61 percent of 401(k) plan participants' assets at year-end 2012.

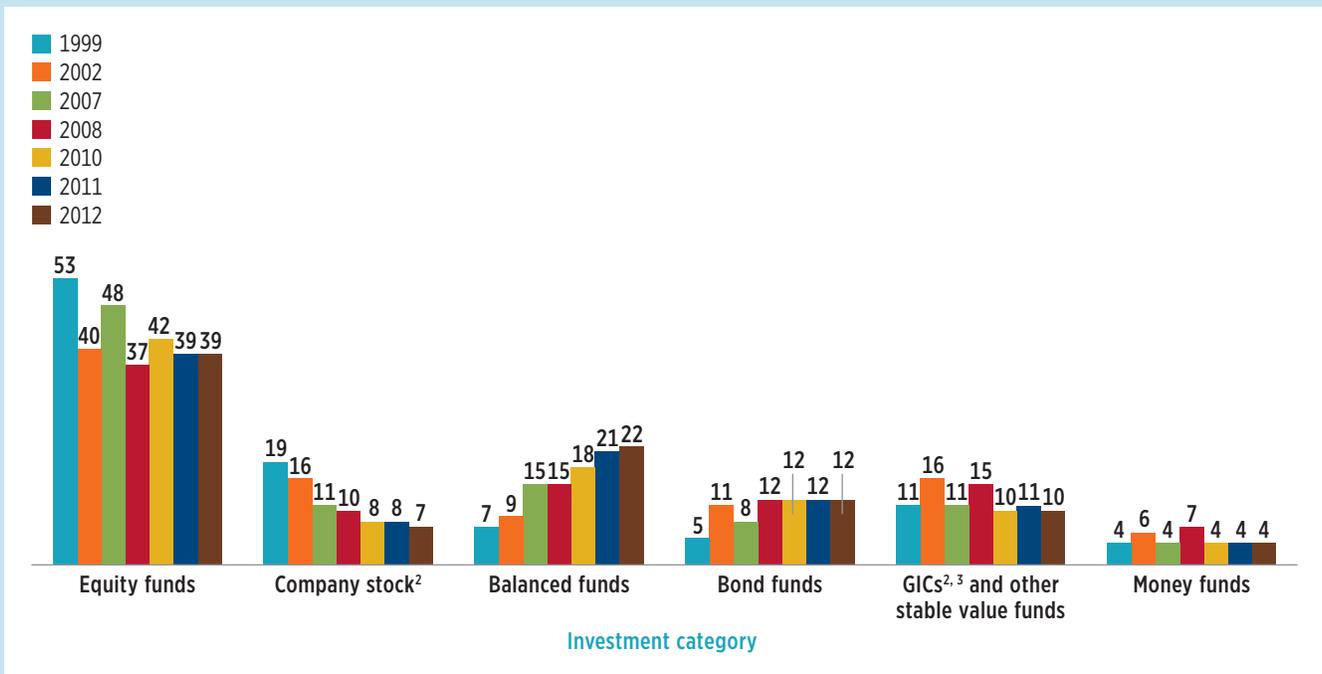
## Changes in Asset Allocation Between Year-End 2011 and Year-End 2012

Investment performance likely explains a good deal of the fluctuation in 401(k) participants' asset allocations over time. Much of the movement in the largest component, equity funds, tends to reflect overall equity market prices, which generally rose from 1997 through 1999, before falling through 2002, rising again from 2003 through 2007, then dropping in 2008, and rising from 2009 through 2010, moderating in 2011, and again rising in 2012 (Figures 8 and 20). At year-end 2012, equity funds were 39 percent of the assets in the EBRI/ICI 401(k) database, the same share as at year-end 2011. Balanced funds, which invest in both equities and fixed-income securities, increased in share, accounting for 22 percent of the assets in the database at year-end 2012. Despite these shifts in shares of balanced and equity funds, most 401(k) participants appeared not to have made dramatic shifts in their asset allocations in 2012.<sup>32</sup>

FIGURE 20

### 401(k) Plan Assets Are Concentrated in Equities

401(k) plan average asset allocation, percentage of total assets,<sup>1</sup> selected years



<sup>1</sup> Minor investment options are not shown; therefore, percentages do not add to 100 percent. Percentages are dollar-weighted averages.

<sup>2</sup> Not all participants are offered this investment option (see Figure 22).

<sup>3</sup> 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

## Asset Allocation and Participant Age

As in previous years, the database for year-end 2012 shows that participants' asset allocation varied considerably with age.<sup>33</sup> 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 nearly 77 percent of assets, compared with nearly 52 percent of assets among participants in their sixties. Among participants in their twenties, the average allocation to equity funds was 31 percent of assets,

compared with 32 percent of assets among participants in their sixties. Younger participants had much higher allocations to balanced funds, particularly 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 over time.<sup>34</sup> At year-end 2012, 15 percent of 401(k) assets in the database were invested in target date funds. Among participants in their twenties, 34 percent of their 401(k) assets were invested in target date funds; among participants in their sixties, nearly 13 percent of their 401(k) assets were invested in target date funds.

FIGURE 21

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

Percentage of account balances,<sup>1</sup> 2012

| Age group | Equity funds | Target date funds <sup>2, 3</sup> | Non-target date balanced funds | Bond funds | Money funds | GICs <sup>3, 4</sup> and other stable value funds | Company stock <sup>3</sup> | Other | Unknown | Total <sup>1</sup> |
|-----------|--------------|-----------------------------------|--------------------------------|------------|-------------|---|----------------------------|-------|---------|--------------------|
| 20s       | 30.7         | 34.2                              | 11.7                           | 6.4        | 1.9         | 3.1   | 5.5                        | 3.4   | 3.0     | 100                |
| 30s       | 42.4         | 22.1                              | 8.1                            | 8.4        | 2.8         | 4.2   | 6.1                        | 3.1   | 2.8     | 100                |
| 40s       | 45.3         | 15.7                              | 7.0                            | 9.8        | 3.3         | 5.8   | 7.1                        | 3.4   | 2.6     | 100                |
| 50s       | 38.4         | 13.4                              | 7.1                            | 12.5       | 4.3         | 10.2  | 7.9                        | 3.9   | 2.3     | 100                |
| 60s       | 32.2         | 12.5                              | 6.9                            | 15.2       | 5.6         | 15.3  | 6.7                        | 3.3   | 2.2     | 100                |
| All       | 39.2         | 14.9                              | 7.2                            | 11.8       | 4.1         | 9.6   | 7.2                        | 3.5   | 2.4     | 100                |

<sup>1</sup> Row percentages may not add to 100 percent because of rounding. Percentages are dollar-weighted averages.

<sup>2</sup> 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.

<sup>3</sup> Not all participants are offered this investment option (see Figure 22).

<sup>4</sup> 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

## 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 and other stable value funds. Thirty-six percent of participants in the 2012

FIGURE 22

### Distribution of 401(k) Plans, Participants, and Assets by Investment Options, 2012

| Investment options offered by plan   | Plans               | Participants                            | Assets <sup>1</sup>               |
|--|---------------------|---|-----------------------------------|
| <b>Equity, bond, money, and/or balanced funds</b>  | <b>42,165</b>       | <b>8,678,685</b>                        | <b>\$469,802,480,229</b>          |
| Of which: target date funds <sup>2</sup> are an option   | 30,364              | 6,500,543                               | 347,328,062,256                   |
| <b>Equity, bond, money, and/or balanced funds; and GICs<sup>3</sup> and/or other stable value funds</b>                | <b>21,092</b>       | <b>6,629,570</b>                        | <b>378,940,206,085</b>            |
| Of which: target date funds <sup>2</sup> are an option   | 15,334              | 4,568,159                               | 258,469,386,815                   |
| <b>Equity, bond, money, and/or balanced funds; and company stock</b>   | <b>544</b>          | <b>3,493,963</b>                        | <b>229,750,055,920</b>            |
| Of which: target date funds <sup>2</sup> are an option   | 441                 | 2,682,263                               | 166,279,586,231                   |
| <b>Equity, bond, money, and/or balanced funds; company stock; and GICs<sup>3</sup> and/or other stable value funds</b> | <b>818</b>          | <b>5,217,610</b>                        | <b>457,059,678,540</b>            |
| Of which: target date funds <sup>2</sup> are an option   | 597                 | 2,637,965                               | 244,882,461,235                   |
| <b>All</b>   | <b>64,619</b>       | <b>24,019,828</b>                       | <b>1,535,552,420,774</b>          |
| Of which: target date funds <sup>2</sup> are an option   | 46,736              | 16,388,930                              | 1,016,959,496,537                 |
| Investment options offered by plan   | Percentage of plans | Percentage of participants <sup>1</sup> | Percentage of assets <sup>1</sup> |
| <b>Equity, bond, money, and/or balanced funds</b>  | <b>65.3%</b>        | <b>36.1%</b>                            | <b>30.6%</b>                      |
| Of which: target date funds <sup>2</sup> are an option   | 47.0                | 27.1                                    | 22.6                              |
| <b>Equity, bond, money, and/or balanced funds; and GICs<sup>3</sup> and/or other stable value funds</b>                | <b>32.6</b>         | <b>27.6</b>                             | <b>24.7</b>                       |
| Of which: target date funds <sup>2</sup> are an option   | 23.7                | 19.0                                    | 16.8                              |
| <b>Equity, bond, money, and/or balanced funds; and company stock</b>   | <b>0.8</b>          | <b>14.5</b>                             | <b>15.0</b>                       |
| Of which: target date funds <sup>2</sup> are an option   | 0.7                 | 11.2                                    | 10.8                              |
| <b>Equity, bond, money, and/or balanced funds; company stock; and GICs<sup>3</sup> and/or other stable value funds</b> | <b>1.3</b>          | <b>21.7</b>                             | <b>29.8</b>                       |
| Of which: target date funds <sup>2</sup> are an option   | 0.9                 | 11.0                                    | 15.9                              |
| <b>All</b>   | <b>100.0</b>        | <b>100.0</b>                            | <b>100.0</b>                      |
| Of which: target date funds <sup>2</sup> are an option   | 72.3                | 68.2                                    | 66.2                              |

<sup>1</sup> Components may not add to the total because of rounding.

<sup>2</sup> 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.

<sup>3</sup> 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

database were in these plans, which generally offer equity funds, bond funds, money funds, and balanced funds as investment options. Another 28 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, 15 percent of participants were in plans that offer company stock but no stable value products, while the remaining 22 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 72 percent of the 401(k) plans in the year-end 2012 database (Figure 22).<sup>35</sup> These plans offered target date funds to 68 percent of the participants in the database.<sup>36</sup> Among participants who were offered target date funds, 60 percent held them at year-end 2012. Target date fund assets represented 22 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 and also by participant age. Because asset allocation is influenced by the investment options available to participants, Figure 24 presents asset allocation by salary range and by investment options. Salary information is available for a subset of participants in the 2012 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 company stock rises with plan size, in part, because few small plans offered company stock as an investment option. For example, less than 1 percent of participants in small plans (100 participants or fewer) were offered company stock as an investment option, while 55 percent of participants in plans with more than 5,000 participants were offered company stock as an investment option in 2012. Thus, to analyze the potential effect of plan size, the remaining panels of Figure 25 group plans by investment options and plan size.

FIGURE 23

**Average Asset Allocation of 401(k) Accounts by Participant Age and Investment Options***Percentage of account balances,<sup>1</sup> 2012*

|  | Equity funds | Target date funds <sup>2</sup> | Non-target date balanced funds | Bond funds | Money funds | GICs <sup>3</sup> and other stable value funds | Company stock |
|--|--------------|--------------------------------|--------------------------------|------------|-------------|--|---------------|
| <b>All ages combined</b>   |              |                                |                                |            |             |  |               |
| <b>Investment options</b>  |              |                                |                                |            |             |  |               |
| Equity, bond, money, and/or balanced funds   | 44.5         | 18.8                           | 6.6                            | 17.0       | 6.6         |  |               |
| Equity, bond, money, and/or balanced funds; and GICs <sup>3</sup> and/or other stable value funds                | 41.8         | 15.5                           | 7.3                            | 9.5        | 2.2         | 18.0   |               |
| Equity, bond, money, and/or balanced funds; and company stock  | 32.3         | 18.6                           | 5.1                            | 13.0       | 5.5         |  | 18.3          |
| Equity, bond, money, and/or balanced funds; company stock; and GICs <sup>3</sup> and/or other stable value funds | 34.9         | 8.6                            | 8.8                            | 7.9        | 2.5         | 17.3   | 14.9          |
| <b>Plans without company stock, GICs,<sup>3</sup> or other stable value funds</b>                                |              |                                |                                |            |             |  |               |
| <b>Age group</b>   |              |                                |                                |            |             |  |               |
| 20s  | 33.4         | 41.4                           | 8.6                            | 8.5        | 2.7         |  |               |
| 30s  | 46.8         | 25.9                           | 6.8                            | 11.3       | 3.8         |  |               |
| 40s  | 50.3         | 18.9                           | 6.4                            | 13.6       | 4.7         |  |               |
| 50s  | 44.5         | 17.5                           | 6.7                            | 18.0       | 6.9         |  |               |
| 60s  | 37.9         | 16.1                           | 6.6                            | 22.9       | 9.6         |  |               |
| <b>Plans with GICs<sup>3</sup> and/or other stable value funds</b>   |              |                                |                                |            |             |  |               |
| 20s  | 33.5         | 31.1                           | 11.7                           | 6.0        | 1.3         | 6.3  |               |
| 30s  | 43.5         | 23.0                           | 8.6                            | 6.8        | 1.8         | 8.7  |               |
| 40s  | 48.2         | 16.4                           | 7.3                            | 7.9        | 2.1         | 11.5   |               |
| 50s  | 41.9         | 14.2                           | 7.0                            | 10.2       | 2.3         | 18.3   |               |
| 60s  | 34.2         | 12.7                           | 6.6                            | 11.4       | 2.6         | 27.1   |               |
| <b>Plans with company stock</b>  |              |                                |                                |            |             |  |               |
| 20s  | 25.6         | 40.5                           | 8.0                            | 5.8        | 1.9         |  | 12.4          |
| 30s  | 36.7         | 24.9                           | 5.4                            | 8.7        | 3.5         |  | 13.9          |
| 40s  | 38.2         | 19.3                           | 4.5                            | 10.4       | 4.4         |  | 16.7          |
| 50s  | 30.3         | 16.8                           | 5.1                            | 13.8       | 6.0         |  | 19.8          |
| 60s  | 25.5         | 15.8                           | 5.3                            | 18.1       | 8.1         |  | 20.4          |

Continued on the next page

FIGURE 23 CONTINUED

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

Percentage of account balances,<sup>1</sup> 2012

|  | Equity funds | Target date funds <sup>2</sup> | Non-target date balanced funds | Bond funds | Money funds | GICs <sup>3</sup> and other stable value funds | Company stock |
|--|--------------|--------------------------------|--------------------------------|------------|-------------|--|---------------|
| <b>Plans with company stock and GICs<sup>3</sup> and/or other stable value funds</b> |              |                                |                                |            |             |  |               |
| 20s  | 27.9         | 23.5                           | 18.5                           | 4.3        | 1.4         | 6.0  | 13.5          |
| 30s  | 39.4         | 14.7                           | 11.0                           | 6.1        | 1.9         | 7.9  | 14.3          |
| 40s  | 41.4         | 9.4                            | 8.9                            | 6.9        | 2.1         | 10.8   | 15.3          |
| 50s  | 34.1         | 7.4                            | 8.4                            | 8.7        | 2.8         | 18.0   | 15.3          |
| 60s  | 27.4         | 6.9                            | 8.1                            | 9.1        | 3.1         | 27.1   | 14.3          |

<sup>1</sup> Minor investment options are not shown; therefore, row percentages do not add to 100 percent. Percentages are dollar-weighted averages.

<sup>2</sup> 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.

<sup>3</sup> 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) Accounts by Participant Salary and Investment Options***Percentage of account balances,<sup>1</sup> 2012*

| <b>Salary<sup>2</sup></b>  | <b>Equity funds</b> | <b>Target date funds<sup>3</sup></b> | <b>Non-target date balanced funds</b> | <b>Bond funds</b> | <b>Money funds</b> | <b>GICs<sup>4</sup> and other stable value funds</b> | <b>Company stock</b> |
|--|---------------------|--------------------------------------|---------------------------------------|-------------------|--------------------|--|----------------------|
| <b>Plans without company stock, GICs,<sup>4</sup> or other stable value funds</b>    |                     |                                      |                                       |                   |                    |  |                      |
| \$20,000 to \$40,000   | 39.5                | 23.4                                 | 7.4                                   | 15.9              | 9.4                |  |                      |
| >\$40,000 to \$60,000  | 40.6                | 20.1                                 | 8.8                                   | 16.0              | 7.3                |  |                      |
| >\$60,000 to \$80,000  | 43.3                | 19.3                                 | 8.5                                   | 15.8              | 6.3                |  |                      |
| >\$80,000 to \$100,000   | 46.6                | 16.9                                 | 8.6                                   | 16.3              | 5.2                |  |                      |
| >\$100,000   | 49.2                | 13.7                                 | 8.1                                   | 17.6              | 4.9                |  |                      |
| All  | 44.5                | 18.8                                 | 6.6                                   | 17.0              | 6.6                |  |                      |
| <b>Plans with GICs<sup>4</sup> and/or other stable value funds</b>                   |                     |                                      |                                       |                   |                    |  |                      |
| \$20,000 to \$40,000   | 37.3                | 21.6                                 | 8.5                                   | 8.2               | 2.1                | 17.8   |                      |
| >\$40,000 to \$60,000  | 37.1                | 17.1                                 | 10.8                                  | 9.2               | 2.5                | 16.6   |                      |
| >\$60,000 to \$80,000  | 40.8                | 14.4                                 | 9.5                                   | 9.5               | 2.8                | 15.9   |                      |
| >\$80,000 to \$100,000   | 42.7                | 12.5                                 | 9.7                                   | 9.7               | 2.7                | 15.4   |                      |
| >\$100,000   | 46.9                | 11.2                                 | 7.2                                   | 10.1              | 2.3                | 15.3   |                      |
| All  | 41.8                | 15.5                                 | 7.3                                   | 9.5               | 2.2                | 18.0   |                      |
| <b>Plans with company stock</b>  |                     |                                      |                                       |                   |                    |  |                      |
| \$20,000 to \$40,000   | 32.1                | 16.6                                 | 5.5                                   | 14.1              | 5.7                |  | 20.8                 |
| >\$40,000 to \$60,000  | 28.7                | 22.0                                 | 6.9                                   | 12.3              | 5.9                |  | 16.2                 |
| >\$60,000 to \$80,000  | 28.8                | 21.8                                 | 6.4                                   | 11.5              | 6.5                |  | 16.6                 |
| >\$80,000 to \$100,000   | 32.1                | 16.6                                 | 6.5                                   | 11.8              | 6.3                |  | 15.6                 |
| >\$100,000   | 33.6                | 12.5                                 | 6.7                                   | 14.4              | 5.4                |  | 15.4                 |
| All  | 32.3                | 18.6                                 | 5.1                                   | 13.0              | 5.5                |  | 18.3                 |
| <b>Plans with company stock and GICs<sup>4</sup> and/or other stable value funds</b> |                     |                                      |                                       |                   |                    |  |                      |
| \$20,000 to \$40,000   | 30.0                | 10.3                                 | 11.1                                  | 5.5               | 2.2                | 18.1   | 17.3                 |
| >\$40,000 to \$60,000  | 32.2                | 9.8                                  | 12.7                                  | 6.8               | 2.6                | 17.5   | 15.8                 |
| >\$60,000 to \$80,000  | 33.6                | 9.4                                  | 11.5                                  | 7.0               | 2.6                | 17.7   | 15.1                 |
| >\$80,000 to \$100,000   | 35.9                | 7.8                                  | 11.3                                  | 7.6               | 2.4                | 16.0   | 15.2                 |
| >\$100,000   | 36.2                | 6.6                                  | 9.5                                   | 7.4               | 3.7                | 13.7   | 16.7                 |
| All  | 34.9                | 8.6                                  | 8.8                                   | 7.9               | 2.5                | 17.3   | 14.9                 |

<sup>1</sup> Minor investment options are not shown; therefore, row percentages do not add to 100 percent. Percentages are dollar-weighted averages.

<sup>2</sup> Salary information is available for a subset of participants in the EBRI/ICI 401(k) database.

<sup>3</sup> 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.

<sup>4</sup> 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) Accounts by Plan Size and Investment Options***Percentage of account balances,<sup>1</sup> 2012*

| <b>Plan size by number of participants</b>  | <b>Equity funds</b> | <b>Target date funds<sup>2</sup></b> | <b>Non-target date balanced funds</b> | <b>Bond funds</b> | <b>Money funds</b> | <b>GICs<sup>3</sup> and other stable value funds</b> | <b>Company stock</b> |
|---|---------------------|--------------------------------------|---------------------------------------|-------------------|--------------------|--|----------------------|
| <b>All plans</b>  |                     |                                      |                                       |                   |                    |  |                      |
| 1 to 100  | 41.7                | 20.2                                 | 4.7                                   | 15.1              | 6.1                | 5.2  | 0.1                  |
| 101 to 500  | 42.5                | 20.3                                 | 5.2                                   | 14.9              | 5.0                | 6.3  | 0.5                  |
| 501 to 1,000  | 41.5                | 19.7                                 | 6.2                                   | 13.7              | 4.7                | 6.8  | 2.0                  |
| 1,001 to 5,000  | 40.6                | 18.5                                 | 6.3                                   | 12.7              | 4.0                | 7.9  | 4.1                  |
| >5,000  | 38.0                | 12.1                                 | 8.1                                   | 10.8              | 3.8                | 11.3   | 10.3                 |
| All   | 39.2                | 14.9                                 | 7.2                                   | 11.8              | 4.1                | 9.6  | 7.2                  |
| <b>Plans without company stock, GICs,<sup>3</sup> or other stable value funds</b> |                     |                                      |                                       |                   |                    |  |                      |
| 1 to 100  | 40.9                | 22.2                                 | 3.8                                   | 18.0              | 7.2                |  |                      |
| 101 to 500  | 43.4                | 22.5                                 | 4.8                                   | 17.9              | 6.6                |  |                      |
| 501 to 1,000  | 43.1                | 22.5                                 | 5.8                                   | 17.2              | 6.5                |  |                      |
| 1,001 to 5,000  | 44.2                | 20.6                                 | 6.9                                   | 16.6              | 5.7                |  |                      |
| >5,000  | 48.2                | 13.3                                 | 8.6                                   | 17.1              | 7.0                |  |                      |
| All   | 44.5                | 18.8                                 | 6.6                                   | 17.0              | 6.6                |  |                      |
| <b>Plans with GICs<sup>3</sup> and/or other stable value funds</b>                |                     |                                      |                                       |                   |                    |  |                      |
| 1 to 100  | 43.9                | 16.0                                 | 6.6                                   | 9.1               | 3.9                | 16.3   |                      |
| 101 to 500  | 42.4                | 16.1                                 | 5.8                                   | 10.0              | 2.2                | 17.6   |                      |
| 501 to 1,000  | 42.0                | 15.9                                 | 7.0                                   | 9.7               | 2.0                | 17.3   |                      |
| 1,001 to 5,000  | 39.5                | 18.1                                 | 6.3                                   | 9.0               | 1.9                | 18.2   |                      |
| >5,000  | 42.6                | 13.8                                 | 8.1                                   | 9.5               | 2.2                | 18.2   |                      |
| All   | 41.8                | 15.5                                 | 7.3                                   | 9.5               | 2.2                | 18.0   |                      |
| <b>Plans with company stock</b>   |                     |                                      |                                       |                   |                    |  |                      |
| 1 to 100 <sup>4</sup>   | 35.0                | 17.2                                 | 5.0                                   | 13.7              | 9.6                |  | 10.1                 |
| 101 to 500  | 35.7                | 17.7                                 | 5.4                                   | 14.0              | 7.2                |  | 13.0                 |
| 501 to 1,000  | 34.9                | 19.1                                 | 4.4                                   | 13.6              | 6.9                |  | 18.6                 |
| 1,001 to 5,000  | 36.9                | 16.1                                 | 4.4                                   | 14.1              | 5.4                |  | 17.0                 |
| >5,000  | 31.1                | 19.2                                 | 5.2                                   | 12.6              | 5.5                |  | 18.7                 |
| All   | 32.3                | 18.6                                 | 5.1                                   | 13.0              | 5.5                |  | 18.3                 |

Continued on the next page

FIGURE 25 CONTINUED

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

Percentage of account balances,<sup>1</sup> 2012

| Plan size by number of participants  | Equity funds | Target date funds <sup>2</sup> | Non-target date balanced funds | Bond funds | Money funds | GICs <sup>3</sup> and other stable value funds | Company stock |
|--|--------------|--------------------------------|--------------------------------|------------|-------------|--|---------------|
| <b>Plans with company stock and GICs<sup>3</sup> and/or other stable value funds</b> |              |                                |                                |            |             |  |               |
| 1 to 100   | 32.7         | 18.1                           | 7.2                            | 8.4        | 4.7         | 15.1   | 6.6           |
| 101 to 500   | 32.3         | 19.3                           | 7.2                            | 8.0        | 2.8         | 15.1   | 7.0           |
| 501 to 1,000   | 33.8         | 18.0                           | 6.9                            | 7.2        | 2.8         | 12.2   | 12.9          |
| 1,001 to 5,000   | 35.2         | 15.0                           | 6.1                            | 7.4        | 2.1         | 15.0   | 12.1          |
| >5,000   | 34.9         | 7.6                            | 9.2                            | 8.0        | 2.6         | 17.6   | 15.4          |
| All  | 34.9         | 8.6                            | 8.8                            | 7.9        | 2.5         | 17.3   | 14.9          |

<sup>1</sup> Minor investment options are not shown; therefore, row percentages do not add to 100 percent. Percentages are dollar-weighted averages.

<sup>2</sup> 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.

<sup>3</sup> GICs are guaranteed investment contracts.

<sup>4</sup> 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

## 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 2012 EBRI/ICI 401(k) database shows that, on average, 39 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, about 51 percent of participants held no equity funds, while 15 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 69 percent of participants in their twenties, 46 percent of participants in their forties, and

FIGURE 26

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

Percentage of participants,<sup>1,2</sup> 2012

| Age group | Percentage of account balance invested in equity funds |         |           |           |           |           |           |           |           |           |            |
|-----------|--|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|           | Zero   | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s       | 68.8   | 1.3     | 1.6       | 2.0       | 2.3       | 2.9       | 3.3       | 3.3       | 3.2       | 3.3       | 8.0        |
| 30s       | 53.0   | 2.5     | 2.6       | 3.3       | 3.5       | 4.2       | 5.0       | 4.9       | 5.1       | 4.8       | 11.2       |
| 40s       | 46.2   | 3.1     | 3.0       | 3.8       | 4.0       | 4.9       | 5.8       | 5.6       | 6.0       | 4.9       | 12.6       |
| 50s       | 46.2   | 4.1     | 3.6       | 4.5       | 4.7       | 5.6       | 6.2       | 5.5       | 5.1       | 3.5       | 11.0       |
| 60s       | 51.1   | 4.5     | 3.9       | 4.7       | 4.8       | 5.2       | 5.5       | 4.2       | 3.7       | 2.4       | 10.0       |
| All       | 51.2   | 3.2     | 3.0       | 3.7       | 3.9       | 4.7       | 5.3       | 4.9       | 4.9       | 4.0       | 11.0       |

<sup>1</sup> The analysis includes the 24.0 million participants in the year-end 2012 EBRI/ICI 401(k) database.

<sup>2</sup> 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) account balances to equities.

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

51 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. The percentage of participants holding no equity funds tends to fall as salary increases (Figure 27).

FIGURE 27

**Asset Allocation Distribution of 401(k) Participant Account Balance to Equity Funds by Participant Age, Tenure, or Salary**

*Percentage of participants, 2012*

|                        | Percentage of account balance invested in equity funds |                 |                   |             |
|------------------------|--|-----------------|-------------------|-------------|
|                        | Zero   | 1 to 20 percent | >20 to 80 percent | >80 percent |
| <b>All</b>             | 51.2   | 6.2             | 27.4              | 15.0        |
| <b>Age group</b>       |  |                 |                   |             |
| 20s                    | 68.8   | 2.9             | 17.1              | 11.2        |
| 30s                    | 53.0   | 5.0             | 26.0              | 15.9        |
| 40s                    | 46.2   | 6.1             | 30.2              | 17.5        |
| 50s                    | 46.2   | 7.7             | 31.6              | 14.6        |
| 60s                    | 51.1   | 8.4             | 28.0              | 12.5        |
| <b>Years of tenure</b> |  |                 |                   |             |
| 0 to 2                 | 66.7   | 2.7             | 19.0              | 11.6        |
| >2 to 5                | 59.5   | 4.2             | 23.0              | 13.3        |
| >5 to 10               | 50.2   | 6.1             | 28.6              | 15.2        |
| >10 to 20              | 40.5   | 8.1             | 33.9              | 17.5        |
| >20 to 30              | 37.4   | 10.6            | 35.6              | 16.4        |
| >30                    | 41.0   | 12.1            | 33.0              | 14.0        |
| <b>Salary</b>          |  |                 |                   |             |
| \$20,000 to \$40,000   | 61.3   | 5.4             | 23.2              | 10.2        |
| >\$40,000 to \$60,000  | 51.4   | 7.5             | 29.3              | 11.8        |
| >\$60,000 to \$80,000  | 44.3   | 8.5             | 33.9              | 13.3        |
| >\$80,000 to \$100,000 | 38.6   | 9.3             | 37.9              | 14.1        |
| >\$100,000             | 30.8   | 10.1            | 43.0              | 16.2        |

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. 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

## 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, 80 percent of 401(k) participants with no equity fund allocation had investments in either company stock or

balanced funds at year-end 2012 (Figure 28). For example, 87 percent of participants in their twenties without equity funds held equities through company stock, balanced funds, or both. Indeed, 59 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 12 percent of participants in their twenties without equity funds had

FIGURE 28

### Percentage of 401(k) Participants Without Equity Fund Balances Who Have Equity Exposure by Participant Age or Tenure, 2012

|                        | Percentage of participants without equity funds |  |  |   | Combination of company stock and/or target date funds* and/or non-target date balanced 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 |  |
| <b>Age group</b>       |   |  |  |   |  |
| 20s                    | <b>87.1</b>                                     | 59.4   | 12.3   | 3.3                                     | 12.1   |
| 30s                    | <b>84.7</b>                                     | 55.6   | 7.4  | 4.4                                     | 17.3   |
| 40s                    | <b>80.7</b>                                     | 49.6   | 6.4  | 6.0                                     | 18.7   |
| 50s                    | <b>76.4</b>                                     | 44.0   | 4.6  | 7.7                                     | 20.0   |
| 60s                    | <b>69.7</b>                                     | 38.3   | 5.0  | 8.3                                     | 18.1   |
| All                    | <b>80.1</b>                                     | 49.6   | 7.1  | 5.9                                     | 17.5   |
| <b>Years of tenure</b> |   |  |  |   |  |
| 0 to 2                 | <b>87.5</b>                                     | 63.0   | 13.4   | 2.7                                     | 8.4  |
| >2 to 5                | <b>84.4</b>                                     | 56.2   | 11.4   | 3.6                                     | 13.1   |
| >5 to 10               | <b>79.2</b>                                     | 45.5   | 7.1  | 5.3                                     | 21.4   |
| >10 to 20              | <b>74.0</b>                                     | 31.8   | 1.7  | 9.6                                     | 34.3   |
| >20 to 30              | <b>67.4</b>                                     | 25.8   | 2.9  | 15.1                                    | 23.7   |
| >30                    | <b>61.1</b>                                     | 20.5   | 6.0  | 19.3                                    | 15.4   |
| All                    | <b>80.1</b>                                     | 49.6   | 7.1  | 5.9                                     | 17.5   |

\*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

equity exposure through non-target date balanced funds, and another 3 percent held company stock as their only equity investment. Twelve percent had equity exposure through some combination of target date funds, non-target

date balanced funds, or company stock. As a result, many participants with no equity funds had exposure to equity-related investments through company stock or balanced funds or both (Figure 29).

FIGURE 29

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

Percentage of account balances, 2012

|                        | Target date funds <sup>1</sup> | Non-target date balanced funds | Bond funds | Money funds | GICs <sup>2</sup> and other stable value funds | Company stock | Other | Unknown | Total <sup>3</sup> |
|------------------------|--------------------------------|--------------------------------|------------|-------------|--|---------------|-------|---------|--------------------|
| <b>Age group</b>       |                                |                                |            |             |  |               |       |         |                    |
| 20s                    | 60.2                           | 17.4                           | 3.6        | 2.2         | 3.6  | 6.0           | 4.2   | 2.8     | 100                |
| 30s                    | 55.1                           | 13.9                           | 5.8        | 4.4         | 6.6  | 7.5           | 4.0   | 2.7     | 100                |
| 40s                    | 44.7                           | 12.1                           | 8.5        | 6.2         | 10.5   | 9.8           | 5.6   | 2.6     | 100                |
| 50s                    | 33.4                           | 10.4                           | 11.5       | 7.7         | 17.7   | 10.8          | 6.0   | 2.6     | 100                |
| 60s                    | 26.1                           | 9.0                            | 14.5       | 9.4         | 25.0   | 9.0           | 4.6   | 2.4     | 100                |
| All <sup>4</sup>       | 36.7                           | 11.0                           | 10.8       | 7.3         | 16.6   | 9.6           | 5.2   | 2.7     | 100                |
| <b>Years of tenure</b> |                                |                                |            |             |  |               |       |         |                    |
| 0 to 2                 | 63.6                           | 11.6                           | 7.4        | 3.4         | 5.0  | 3.5           | 3.9   | 1.7     | 100                |
| >2 to 5                | 56.0                           | 13.6                           | 8.5        | 4.5         | 6.5  | 5.1           | 4.1   | 2.0     | 100                |
| >5 to 10               | 46.0                           | 13.3                           | 9.6        | 6.4         | 10.9   | 6.9           | 4.4   | 2.6     | 100                |
| >10 to 20              | 36.3                           | 11.0                           | 10.5       | 7.8         | 15.2   | 10.3          | 5.3   | 3.4     | 100                |
| >20 to 30              | 25.9                           | 10.2                           | 11.4       | 8.2         | 21.1   | 12.8          | 7.1   | 3.1     | 100                |
| >30                    | 17.6                           | 9.5                            | 12.5       | 10.0        | 28.8   | 13.7          | 5.6   | 2.3     | 100                |
| All <sup>4</sup>       | 36.7                           | 11.0                           | 10.8       | 7.3         | 16.6   | 9.6           | 5.2   | 2.7     | 100                |

<sup>1</sup> 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.

<sup>2</sup> GICs are guaranteed investment contracts.

<sup>3</sup> Row percentages may not add to 100 percent because of rounding. Percentages are dollar-weighted averages.

<sup>4</sup> The analysis includes the 12.3 million participants with no equity funds at year-end 2012.

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

## Asset Allocation to Equities

Among individual participants, the allocation of account balances to equities (equity funds, company stock, and the equity portion of balanced funds<sup>37</sup>) varies widely around the average of 61 percent for all participants in the 2012 database. Forty-one percent of participants had more than 80 percent of their account balances invested in equities, while 10 percent held no equities at all at the end of 2012 (Figure 30).

### Distribution of Participants' Balanced Fund Allocations by Age

Individual 401(k) participants' asset allocation to balanced funds varied widely around an average of 22 percent at year-end 2012 (Figure 20). For example, nearly 43 percent of participants held no balanced funds, while 32 percent of participants held more than 80 percent of their accounts in balanced funds at the end of 2012 (Figure 31). At year-

end 2012, nearly 58 percent of 401(k) participants held balanced funds, up from the 56 percent of participants holding balanced funds at year-end 2011.<sup>38</sup> At year-end 2012, balanced fund use by participants occurred through target date funds and non-target date balanced funds: 41 percent of 401(k) participants held target date funds, 19 percent held non-target date balanced funds, and 3 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 2012, 52 percent of participants in their twenties held target date funds, compared with 34 percent of participants in their sixties (Figure 31). Recently hired participants were more likely to hold target date funds than those with more years on the job: at year-end 2012, 52 percent of participants with two or fewer years of tenure held target date funds, compared with 40 percent of participants with more than five to 10 years of tenure, and 23 percent of participants with more than 30 years of tenure (Figure 32).

FIGURE 30

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

Asset allocation distribution of 401(k) participant account balance to equities<sup>1</sup> by age; percentage of participants,<sup>2,3</sup> 2012

| Age group        | Percentage of account balance invested in equities <sup>1</sup> |                 |                   |                   |                   |             |
|------------------|---|-----------------|-------------------|-------------------|-------------------|-------------|
|                  | Zero  | 1 to 20 percent | >20 to 40 percent | >40 to 60 percent | >60 to 80 percent | >80 percent |
| 20s              | 8.9   | 1.2             | 2.2               | 4.8               | 19.4              | 63.5        |
| 30s              | 8.1   | 2.4             | 3.5               | 7.2               | 19.8              | 59.0        |
| 40s              | 8.9   | 3.6             | 4.6               | 8.8               | 32.5              | 41.6        |
| 50s              | 10.9  | 5.7             | 6.9               | 21.3              | 31.1              | 24.1        |
| 60s              | 15.5  | 7.7             | 14.1              | 26.3              | 16.4              | 20.0        |
| All <sup>2</sup> | 10.2  | 4.1             | 5.9               | 13.0              | 25.7              | 41.0        |

<sup>1</sup> 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.

<sup>2</sup> Participants include the 24.0 million 401(k) plan participants in the year-end 2012 EBRI/ICI 401(k) database.

<sup>3</sup> 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

**Asset Allocation Distribution of 401(k) Participant Account Balance to Balanced Funds by Age***Percentage of participants,<sup>1,2</sup> 2012*

| Percentage of account balance invested in balanced funds |      |         |           |           |           |           |           |           |           |           |            |
|--|------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Age group  | Zero | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s  | 30.4 | 2.4     | 2.6       | 2.1       | 1.5       | 1.5       | 2.6       | 1.4       | 1.3       | 1.3       | 52.8       |
| 30s  | 38.1 | 4.5     | 4.3       | 3.7       | 2.5       | 2.2       | 2.5       | 1.7       | 1.9       | 2.1       | 36.5       |
| 40s  | 43.6 | 5.8     | 4.9       | 4.4       | 2.8       | 2.4       | 2.4       | 1.7       | 1.8       | 1.9       | 28.2       |
| 50s  | 46.5 | 6.2     | 4.8       | 4.5       | 3.0       | 2.5       | 2.4       | 1.7       | 1.7       | 1.8       | 24.7       |
| 60s  | 50.0 | 5.8     | 4.2       | 4.1       | 2.7       | 2.4       | 2.3       | 1.5       | 1.6       | 1.7       | 23.8       |
| All  | 42.5 | 5.2     | 4.4       | 3.9       | 2.6       | 2.3       | 2.4       | 1.6       | 1.7       | 1.8       | 31.6       |

| Percentage of account balance invested in target date funds <sup>3</sup> |      |         |           |           |           |           |           |           |           |           |            |
|--|------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Age group  | Zero | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s  | 48.4 | 1.2     | 1.1       | 1.2       | 0.8       | 0.9       | 1.6       | 0.9       | 0.9       | 0.9       | 42.2       |
| 30s  | 54.5 | 2.7     | 2.2       | 2.1       | 1.4       | 1.4       | 1.7       | 1.3       | 1.4       | 1.7       | 29.6       |
| 40s  | 60.2 | 3.6     | 2.6       | 2.3       | 1.6       | 1.5       | 1.6       | 1.2       | 1.3       | 1.5       | 22.6       |
| 50s  | 62.9 | 3.8     | 2.5       | 2.3       | 1.6       | 1.5       | 1.5       | 1.2       | 1.3       | 1.5       | 19.9       |
| 60s  | 65.7 | 3.5     | 2.2       | 2.1       | 1.5       | 1.4       | 1.4       | 1.0       | 1.1       | 1.3       | 18.9       |
| All  | 59.0 | 3.1     | 2.2       | 2.1       | 1.5       | 1.4       | 1.6       | 1.1       | 1.3       | 1.4       | 25.3       |

| Percentage of account balance invested in non-target date balanced funds |      |         |           |           |           |           |           |           |           |           |            |
|--|------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Age group  | Zero | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s  | 80.8 | 2.0     | 2.0       | 1.2       | 0.7       | 0.7       | 1.0       | 0.5       | 0.5       | 0.4       | 10.3       |
| 30s  | 81.1 | 3.5     | 2.9       | 2.0       | 1.1       | 0.8       | 0.8       | 0.5       | 0.4       | 0.4       | 6.4        |
| 40s  | 80.7 | 4.0     | 3.2       | 2.5       | 1.3       | 0.9       | 0.8       | 0.5       | 0.4       | 0.4       | 5.2        |
| 50s  | 80.8 | 4.2     | 3.2       | 2.7       | 1.5       | 1.1       | 0.9       | 0.5       | 0.4       | 0.4       | 4.4        |
| 60s  | 82.1 | 3.7     | 2.7       | 2.4       | 1.4       | 1.0       | 0.9       | 0.5       | 0.4       | 0.4       | 4.6        |
| All  | 81.0 | 3.6     | 2.9       | 2.3       | 1.2       | 0.9       | 0.9       | 0.5       | 0.4       | 0.4       | 5.9        |

<sup>1</sup> The analysis includes the 24.0 million participants in the year-end 2012 EBRI/ICI 401(k) database.

<sup>2</sup> Row percentages may not add to 100 percent because of rounding.

<sup>3</sup> 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 32

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

Percentage of participants,<sup>1,2</sup> 2012

| Years of tenure | Percentage of account balance invested in balanced funds                 |         |           |           |           |           |           |           |           |           |            |
|-----------------|--|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|                 | Zero   | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 0 to 2          | 31.4   | 2.3     | 2.6       | 2.3       | 1.5       | 1.5       | 2.5       | 1.5       | 1.4       | 1.1       | 52.0       |
| >2 to 5         | 36.4   | 3.6     | 3.3       | 3.0       | 2.1       | 2.1       | 2.4       | 1.7       | 1.7       | 1.7       | 42.0       |
| >5 to 10        | 42.5   | 5.1     | 4.6       | 4.3       | 2.8       | 2.5       | 2.5       | 1.8       | 1.8       | 1.9       | 30.2       |
| >10 to 20       | 48.8   | 7.1     | 5.8       | 5.2       | 3.3       | 2.7       | 2.6       | 1.9       | 2.3       | 3.1       | 17.2       |
| >20 to 30       | 54.3   | 8.4     | 6.0       | 5.3       | 3.6       | 2.9       | 2.6       | 1.7       | 1.5       | 1.3       | 12.3       |
| >30             | 60.2   | 8.5     | 5.3       | 4.6       | 3.1       | 2.3       | 2.0       | 1.3       | 1.2       | 1.1       | 10.5       |
| All             | 42.5   | 5.2     | 4.4       | 3.9       | 2.6       | 2.3       | 2.4       | 1.6       | 1.7       | 1.8       | 31.6       |
| Years of tenure | Percentage of account balance invested in target date funds <sup>3</sup> |         |           |           |           |           |           |           |           |           |            |
|                 | Zero   | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 0 to 2          | 47.7   | 1.3     | 1.3       | 1.4       | 1.0       | 1.0       | 1.8       | 1.1       | 1.0       | 0.8       | 41.7       |
| >2 to 5         | 52.8   | 2.2     | 1.9       | 1.9       | 1.4       | 1.4       | 1.7       | 1.2       | 1.2       | 1.2       | 33.3       |
| >5 to 10        | 60.4   | 3.0     | 2.4       | 2.3       | 1.6       | 1.4       | 1.5       | 1.2       | 1.3       | 1.4       | 23.5       |
| >10 to 20       | 66.3   | 4.3     | 2.9       | 2.5       | 1.8       | 1.6       | 1.6       | 1.4       | 1.8       | 2.7       | 13.0       |
| >20 to 30       | 72.2   | 5.1     | 3.0       | 2.6       | 1.9       | 1.7       | 1.6       | 1.2       | 1.0       | 0.9       | 8.9        |
| >30             | 77.1   | 5.1     | 2.6       | 2.1       | 1.4       | 1.2       | 1.0       | 0.7       | 0.7       | 0.7       | 7.4        |
| All             | 59.0   | 3.1     | 2.2       | 2.1       | 1.5       | 1.4       | 1.6       | 1.1       | 1.3       | 1.4       | 25.3       |
| Years of tenure | Percentage of account balance invested in non-target date balanced funds |         |           |           |           |           |           |           |           |           |            |
|                 | Zero   | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 0 to 2          | 82.3   | 1.8     | 1.8       | 1.2       | 0.6       | 0.5       | 0.7       | 0.4       | 0.4       | 0.3       | 10.0       |
| >2 to 5         | 81.6   | 2.6     | 2.1       | 1.5       | 0.9       | 0.8       | 0.8       | 0.5       | 0.5       | 0.5       | 8.2        |
| >5 to 10        | 79.5   | 3.8     | 3.1       | 2.5       | 1.4       | 1.1       | 1.0       | 0.5       | 0.5       | 0.5       | 6.1        |
| >10 to 20       | 79.4   | 4.8     | 3.8       | 3.1       | 1.7       | 1.2       | 1.0       | 0.5       | 0.4       | 0.4       | 3.8        |
| >20 to 30       | 79.0   | 5.4     | 3.9       | 3.2       | 1.8       | 1.2       | 1.0       | 0.5       | 0.4       | 0.4       | 3.1        |
| >30             | 80.5   | 5.1     | 3.5       | 2.9       | 1.7       | 1.2       | 1.0       | 0.5       | 0.4       | 0.4       | 2.9        |
| All             | 81.0   | 3.6     | 2.9       | 2.3       | 1.2       | 0.9       | 0.9       | 0.5       | 0.4       | 0.4       | 5.9        |

<sup>1</sup> The analysis includes the 24.0 million participants in the year-end 2012 EBRI/ICI 401(k) database.

<sup>2</sup> Row percentages may not add to 100 percent because of rounding.

<sup>3</sup> 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

## Distribution of Participants' Company Stock Allocations

Participants' allocations to company stock remained in line with previous years. Thirty-six percent (or 8.7 million) of the 401(k) participants in the 2012 EBRI/ICI 401(k) database were in plans that offered company stock as an investment

option (Figure 22). Among these participants, 76 percent held 20 percent or less of their account balances in company stock, including 54 percent who held none (Figure 33). On the other hand, 7 percent had more than 80 percent of their account balances invested in company stock.

FIGURE 33

### 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,<sup>1,2</sup> 2012

| Age group | Percentage of account balance invested in company stock |         |           |           |           |           |           |           |           |           |            |
|-----------|---|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|           | Zero  | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s       | 70.2  | 7.4     | 4.1       | 3.2       | 2.5       | 3.1       | 1.5       | 0.9       | 0.7       | 0.5       | 5.9        |
| 30s       | 56.2  | 12.9    | 8.2       | 5.4       | 3.6       | 3.0       | 2.1       | 1.3       | 1.0       | 0.8       | 5.5        |
| 40s       | 51.1  | 14.2    | 8.9       | 6.2       | 4.3       | 3.3       | 2.5       | 1.7       | 1.2       | 0.9       | 5.7        |
| 50s       | 48.5  | 15.8    | 9.1       | 6.1       | 4.3       | 3.3       | 2.6       | 1.7       | 1.3       | 1.0       | 6.2        |
| 60s       | 51.5  | 14.7    | 8.0       | 5.5       | 3.8       | 2.9       | 2.4       | 1.6       | 1.3       | 1.0       | 7.4        |
| All       | 54.0  | 13.5    | 8.1       | 5.5       | 3.8       | 3.2       | 2.3       | 1.5       | 1.1       | 0.9       | 6.1        |

<sup>1</sup> The analysis includes the 8.7 million participants in plans with company stock at year-end 2012.

<sup>2</sup> Row percentages may not add to 100 percent because of rounding.

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

## Asset Allocation 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 2012 tended to be more likely to hold balanced funds compared with recent hires in the past. Sixty-nine percent of recently hired participants in 2012 held balanced funds, compared with 68 percent of recently hired participants in 2011, 63 percent in 2010, 61 percent in 2009, 60 percent

in 2008, 53 percent in 2007, 33 percent in 2002, and 29 percent in 1998 (Figure 34). At year-end 2012, 52 percent of recently hired 401(k) participants held target date funds, while 18 percent held non-target date balanced funds, and 1 percent held both target date and non-target date balanced funds (Figure 35). At year-end 2011, 51 percent of recently hired 401(k) participants held target date funds, 18 percent held non-target date balanced funds, and 2 percent held both.

FIGURE 34

### Many Recently Hired 401(k) Plan Participants Hold Balanced Funds

Percentage of recently hired participants<sup>1</sup> holding balanced funds,<sup>2</sup> 1998–2012

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

<sup>1</sup> The analysis includes 401(k) plan participants with two or fewer years of tenure in the year indicated.

<sup>2</sup> 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 35

**Many Recently Hired 401(k) Plan Participants Hold Target Date Funds***Percentage of recently hired participants, 2006–2012*

| <b>Holding balanced funds</b>                 |             |             |             |             |             |             |             |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Age group</b>                              | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> | <b>2011</b> | <b>2012</b> |
| 20s   | 48.5        | 51.1        | 63.6        | 64.1        | 69.6        | 72.0        | 70.8        |
| 30s   | 47.9        | 54.2        | 59.6        | 61.2        | 63.0        | 68.1        | 69.5        |
| 40s   | 46.6        | 52.8        | 57.8        | 59.3        | 59.9        | 65.0        | 67.2        |
| 50s   | 47.8        | 53.4        | 58.0        | 58.7        | 59.1        | 64.2        | 66.7        |
| 60s   | 45.5        | 50.1        | 53.9        | 53.6        | 55.2        | 60.7        | 63.9        |
| All   | 47.6        | 52.7        | 59.9        | 60.9        | 63.0        | 67.5        | 68.6        |
| <b>Holding target date funds*</b>             |             |             |             |             |             |             |             |
| <b>Age group</b>                              | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> | <b>2011</b> | <b>2012</b> |
| 20s   | 29.4        | 31.7        | 46.5        | 48.5        | 52.0        | 53.6        | 52.0        |
| 30s   | 28.5        | 35.1        | 43.5        | 47.3        | 47.8        | 52.1        | 54.3        |
| 40s   | 27.4        | 34.2        | 41.8        | 45.5        | 45.3        | 49.5        | 51.9        |
| 50s   | 28.1        | 34.9        | 42.2        | 45.2        | 45.0        | 49.2        | 51.8        |
| 60s   | 26.1        | 32.1        | 38.4        | 41.0        | 41.7        | 46.5        | 48.8        |
| All   | 28.3        | 33.8        | 43.6        | 46.6        | 47.6        | 51.2        | 52.3        |
| <b>Holding non–target date balanced funds</b> |             |             |             |             |             |             |             |
| <b>Age group</b>                              | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> | <b>2011</b> | <b>2012</b> |
| 20s   | 22.5        | 21.8        | 19.3        | 17.7        | 19.0        | 19.5        | 19.8        |
| 30s   | 22.5        | 22.2        | 18.8        | 16.4        | 16.9        | 17.6        | 16.9        |
| 40s   | 21.3        | 21.4        | 18.3        | 16.1        | 16.1        | 17.1        | 17.0        |
| 50s   | 21.4        | 21.2        | 18.1        | 15.5        | 15.5        | 16.5        | 16.5        |
| 60s   | 19.8        | 20.3        | 17.3        | 14.2        | 14.5        | 15.4        | 16.5        |
| All   | 21.9        | 21.7        | 18.7        | 16.5        | 17.0        | 17.8        | 17.7        |

\* 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: 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, and the 3.6 million recently hired participants in 2012. 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

Among those who held balanced funds, recently hired participants in 2012 were more likely to hold a high concentration of their accounts in balanced funds compared with past years. At year-end 2012, 76 percent of recently hired participants holding balanced funds had more than 90 percent of their account balance invested in balanced funds, compared with 74 percent in 2011, 70 percent in 2010, 61 percent in 2009, 56 percent in 2008, 48 percent in 2007, 43 percent in 2006, and 7 percent in 1998 (Figure 36). Concentration is highest among recently hired participants with target date funds; at year-end 2012, 80 percent of recently hired participants holding target date funds held more than 90 percent of their account balance in target date funds (Figure 37). Fifty-seven percent of recently hired participants holding non-target date balanced funds had more than 90 percent of their account balance invested in non-target date balanced funds at year-end 2012.

Balanced fund, target date fund, and non-target date balanced fund use varied somewhat by age group among recently hired participants—recently hired participants in their twenties were more likely to be highly concentrated in such funds. For example, 57 percent of recently hired participants in their twenties held more than 90 percent of their account balances in balanced funds, compared with 49 percent of recent hires in their forties, and 48 percent of recent hires in their sixties in 2012 (Figure 38). Concentrated target date fund use ranged from 44 percent of recent hires in their twenties holding more than 90 percent of

their account balances in target date funds to 39 percent of recently hired participants in their sixties. In addition, at year-end 2012, 54 percent of the account balances of recently hired participants in their twenties were invested in balanced funds, compared with 51 percent in 2011, 44 percent in 2010, 42 percent in 2009, 36 percent in 2008, 28 percent in 2007, 24 percent in 2006, 19 percent in 2005, and about 7 percent among that age group in 1998 (Figure 39).<sup>39</sup> At year-end 2012, among recently hired participants in their twenties, target date funds accounted for 79 percent of their balanced fund assets, or 43 percent of their account balances overall. The increase in asset allocation to balanced funds occurred in the target date fund category: target date fund assets accounted for 40 percent of the account balance assets of recently hired participants in their twenties at year-end 2011 (non-target date balanced funds were 11 percent at year-end 2011 and 2012).<sup>40</sup> The pattern of target date and non-target date balanced fund use varied with participant age and lineup of plan investment options.

Comparing recently hired participants in 2012 with similar age groups in 1998 also illustrates that asset allocation to company stock and equity funds tended to be lower in 2012 than in 1998 (Figure 39). Recently hired 401(k) participants tended to be less likely to hold company stock (Figure 40) and tended not to hold a high concentration of their account balance in company stock (Figures 41 and 42).<sup>41</sup>

FIGURE 36

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

*Percentage of recently hired participants holding balanced fund assets,<sup>1,2</sup> selected years*

| Percentage of account balance invested in balanced funds |                  |                   |             |
|--|------------------|-------------------|-------------|
| 1998   |                  |                   |             |
| Age group  | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s  | 84.9             | 7.3               | 7.8         |
| 30s  | 86.0             | 7.6               | 6.4         |
| 40s  | 84.1             | 8.9               | 7.0         |
| 50s  | 81.1             | 10.7              | 8.2         |
| 60s  | 77.0             | 12.4              | 10.6        |
| All  | 84.5             | 8.2               | 7.3         |
| 2006   |                  |                   |             |
| Age group  | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s  | 40.1             | 13.7              | 46.2        |
| 30s  | 47.7             | 12.8              | 39.5        |
| 40s  | 46.0             | 13.1              | 40.9        |
| 50s  | 43.3             | 13.3              | 43.4        |
| 60s  | 39.5             | 12.6              | 47.9        |
| All  | 43.9             | 13.3              | 42.8        |
| 2007   |                  |                   |             |
| Age group  | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s  | 36.3             | 14.7              | 49.0        |
| 30s  | 40.9             | 12.6              | 46.5        |
| 40s  | 40.1             | 12.9              | 47.0        |
| 50s  | 38.1             | 13.0              | 48.8        |
| 60s  | 36.4             | 12.8              | 50.8        |
| All  | 38.8             | 13.3              | 47.9        |
| 2008   |                  |                   |             |
| Age group  | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s  | 26.1             | 11.8              | 62.2        |
| 30s  | 33.5             | 13.3              | 53.2        |
| 40s  | 33.9             | 13.5              | 52.6        |
| 50s  | 32.8             | 13.5              | 53.6        |
| 60s  | 32.1             | 12.8              | 55.1        |
| All  | 31.0             | 12.9              | 56.1        |

Continued on the next page

FIGURE 36 CONTINUED

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

Percentage of recently hired participants holding balanced fund assets,<sup>1,2</sup> selected years

| 2009      |                  |                   |             |
|-----------|------------------|-------------------|-------------|
| Age group | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s       | 20.4             | 13.3              | 66.3        |
| 30s       | 27.8             | 13.9              | 58.3        |
| 40s       | 28.8             | 13.9              | 57.4        |
| 50s       | 28.7             | 13.7              | 57.6        |
| 60s       | 29.4             | 13.3              | 57.3        |
| All       | 25.9             | 13.6              | 60.5        |
| 2010      |                  |                   |             |
| Age group | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s       | 14.8             | 10.0              | 75.2        |
| 30s       | 21.2             | 11.3              | 67.5        |
| 40s       | 22.7             | 10.7              | 66.6        |
| 50s       | 22.4             | 10.1              | 67.5        |
| 60s       | 22.3             | 9.2               | 68.5        |
| All       | 19.7             | 10.5              | 69.8        |
| 2011      |                  |                   |             |
| Age group | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s       | 11.6             | 10.2              | 78.2        |
| 30s       | 16.8             | 10.4              | 72.7        |
| 40s       | 18.4             | 10.3              | 71.2        |
| 50s       | 18.2             | 9.9               | 71.8        |
| 60s       | 17.6             | 8.9               | 73.5        |
| All       | 15.8             | 10.2              | 74.0        |
| 2012      |                  |                   |             |
| Age group | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s       | 11.3             | 8.8               | 79.9        |
| 30s       | 15.5             | 10.1              | 74.4        |
| 40s       | 17.3             | 9.8               | 73.0        |
| 50s       | 16.9             | 9.3               | 73.8        |
| 60s       | 16.4             | 8.3               | 75.3        |
| All       | 14.9             | 9.4               | 75.7        |

<sup>1</sup> The analysis includes the 0.4 million recently hired participants (those with two or fewer years of tenure) holding balanced funds in 1998; the 1.4 million recently hired participants holding balanced funds in 2006; the 2.0 million recently hired participants holding balanced funds in 2007; the 2.4 million recently hired participants holding balanced funds in 2008; the 1.9 million recently hired participants holding balanced funds in 2009; the 2.0 million recently hired participants holding balanced funds in 2010; the 2.3 million recently hired participants holding balanced funds in 2011, and the 2.5 million recently hired participants holding balanced funds in 2012.

<sup>2</sup> 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 37

### Many Recently Hired 401(k) Participants Hold High Concentrations in Target Date Funds

Percentage of recently hired participants holding the type of fund indicated,<sup>1,2</sup> 2012

| Percentage of account balance invested in balanced funds                 |                  |                   |             |
|--|------------------|-------------------|-------------|
| Age group  | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s  | 11.3             | 8.8               | 79.9        |
| 30s  | 15.5             | 10.1              | 74.4        |
| 40s  | 17.3             | 9.8               | 73.0        |
| 50s  | 16.9             | 9.3               | 73.8        |
| 60s  | 16.4             | 8.3               | 75.3        |
| All  | 14.9             | 9.4               | 75.7        |
| Percentage of account balance invested in target date funds <sup>3</sup> |                  |                   |             |
| Age group  | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s  | 7.8              | 8.0               | 84.1        |
| 30s  | 12.0             | 9.8               | 78.2        |
| 40s  | 13.7             | 9.5               | 76.8        |
| 50s  | 13.1             | 8.9               | 78.0        |
| 60s  | 12.6             | 7.6               | 79.8        |
| All  | 11.4             | 9.0               | 79.6        |
| Percentage of account balance invested in non-target date balanced funds |                  |                   |             |
| Age group  | >0 to 50 percent | >50 to 90 percent | >90 percent |
| 20s  | 25.7             | 10.6              | 63.7        |
| 30s  | 36.3             | 10.1              | 53.6        |
| 40s  | 38.1             | 9.5               | 52.4        |
| 50s  | 38.7             | 9.8               | 51.5        |
| 60s  | 36.5             | 9.7               | 53.8        |
| All  | 33.5             | 10.0              | 56.5        |

<sup>1</sup> The analysis includes the 2.5 million recently hired participants (those with two or fewer years of tenure) holding balanced funds in 2012; the 1.9 million recently hired participants holding target date funds in 2012; and the 0.6 million recently hired participants holding non-target date balanced funds in 2012.

<sup>2</sup> Row percentages may not add to 100 percent because of rounding.

<sup>3</sup> 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 38

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

Percentage of recently hired participants,<sup>1,2</sup> 2012

| Age group | Percentage of account balance invested in balanced funds |         |           |           |           |           |           |           |           |           |            |
|-----------|--|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|           | Zero   | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s       | 29.2   | 1.7     | 2.3       | 1.6       | 1.2       | 1.2       | 2.7       | 1.4       | 1.2       | 1.0       | 56.6       |
| 30s       | 30.5   | 2.3     | 2.8       | 2.4       | 1.6       | 1.6       | 2.6       | 1.7       | 1.5       | 1.2       | 51.8       |
| 40s       | 32.8   | 2.6     | 2.8       | 2.7       | 1.8       | 1.7       | 2.4       | 1.6       | 1.5       | 1.1       | 49.0       |
| 50s       | 33.3   | 2.9     | 2.4       | 2.6       | 1.7       | 1.7       | 2.2       | 1.5       | 1.4       | 1.1       | 49.2       |
| 60s       | 36.1   | 2.9     | 2.1       | 2.3       | 1.5       | 1.6       | 2.0       | 1.2       | 1.1       | 0.9       | 48.1       |
| All       | 31.4   | 2.3     | 2.6       | 2.3       | 1.5       | 1.5       | 2.5       | 1.5       | 1.4       | 1.1       | 52.0       |

| Age group | Percentage of account balance invested in target date funds <sup>3</sup> |         |           |           |           |           |           |           |           |           |            |
|-----------|--|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|           | Zero   | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s       | 48.0   | 0.9     | 0.8       | 0.9       | 0.7       | 0.8       | 1.8       | 0.9       | 0.8       | 0.6       | 43.8       |
| 30s       | 45.7   | 1.4     | 1.4       | 1.5       | 1.1       | 1.1       | 2.0       | 1.3       | 1.1       | 0.9       | 42.4       |
| 40s       | 48.1   | 1.6     | 1.5       | 1.7       | 1.1       | 1.2       | 1.8       | 1.2       | 1.1       | 0.9       | 39.8       |
| 50s       | 48.2   | 1.6     | 1.4       | 1.6       | 1.1       | 1.2       | 1.6       | 1.1       | 1.0       | 0.8       | 40.4       |
| 60s       | 51.2   | 1.6     | 1.2       | 1.4       | 0.9       | 1.1       | 1.4       | 0.8       | 0.8       | 0.7       | 39.0       |
| All       | 47.7   | 1.3     | 1.3       | 1.4       | 1.0       | 1.0       | 1.8       | 1.1       | 1.0       | 0.8       | 41.7       |

| Age group | Percentage of account balance invested in non-target date balanced funds |         |           |           |           |           |           |           |           |           |            |
|-----------|--|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|           | Zero   | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s       | 80.2   | 1.4     | 1.8       | 0.9       | 0.5       | 0.4       | 0.9       | 0.5       | 0.4       | 0.3       | 12.6       |
| 30s       | 83.1   | 1.8     | 2.0       | 1.2       | 0.6       | 0.5       | 0.6       | 0.4       | 0.4       | 0.3       | 9.1        |
| 40s       | 83.0   | 1.9     | 1.9       | 1.4       | 0.7       | 0.5       | 0.6       | 0.3       | 0.4       | 0.3       | 8.9        |
| 50s       | 83.5   | 2.1     | 1.6       | 1.4       | 0.7       | 0.6       | 0.6       | 0.3       | 0.4       | 0.3       | 8.5        |
| 60s       | 83.5   | 2.0     | 1.3       | 1.3       | 0.7       | 0.6       | 0.7       | 0.4       | 0.3       | 0.3       | 8.9        |
| All       | 82.3   | 1.8     | 1.8       | 1.2       | 0.6       | 0.5       | 0.7       | 0.4       | 0.4       | 0.3       | 10.0       |

<sup>1</sup> The analysis includes the 3.6 million recently hired participants (those with two or fewer years of tenure) in 2012.

<sup>2</sup> Row percentages may not add to 100 percent because of rounding.

<sup>3</sup> 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 39

**Average Asset Allocation of 401(k) Accounts by Participant Age and Investment Options Among 401(k) Plan Participants with Two or Fewer Years of Tenure<sup>1</sup>**

Percentage of account balances,<sup>2</sup> 1998 and 2012

| Age group   | Equity funds |      | Balanced funds |      |                                |                                | Bond funds |      | Money funds |      | GICs <sup>4</sup> and other stable value funds |      | Company stock |      |
|---|--------------|------|----------------|------|--------------------------------|--------------------------------|------------|------|-------------|------|--|------|---------------|------|
|   | 1998         | 2012 | Total          |      | Target date funds <sup>3</sup> | Non-target date balanced funds | 1998       | 2012 | 1998        | 2012 | 1998   | 2012 | 1998          | 2012 |
|   |              |      | 1998           | 2012 | 2012                           | 2012                           |            |      |             |      |  |      |               |      |
| <b>All</b>  |              |      |                |      |                                |                                |            |      |             |      |  |      |               |      |
| 20s   | 66.9         | 26.5 | 7.4            | 53.6 | 42.6                           | 11.0                           | 5.1        | 6.0  | 4.0         | 1.4  | 3.7  | 1.5  | 10.5          | 3.7  |
| 30s   | 67.8         | 33.4 | 8.0            | 46.1 | 38.2                           | 7.9                            | 5.1        | 8.1  | 4.1         | 1.9  | 3.2  | 2.1  | 9.4           | 3.1  |
| 40s   | 64.5         | 37.2 | 9.7            | 39.1 | 31.9                           | 7.2                            | 5.9        | 9.9  | 5.1         | 2.5  | 4.4  | 3.1  | 8.0           | 3.4  |
| 50s   | 60.5         | 35.0 | 11.3           | 35.7 | 29.2                           | 6.5                            | 6.6        | 13.0 | 5.9         | 2.7  | 6.7  | 5.4  | 6.5           | 3.3  |
| 60s   | 50.0         | 30.1 | 12.1           | 31.0 | 25.0                           | 6.1                            | 8.7        | 16.9 | 7.8         | 3.3  | 13.3   | 9.8  | 5.7           | 3.4  |
| All   | 64.8         | 33.9 | 9.1            | 40.3 | 32.9                           | 7.4                            | 5.7        | 10.7 | 4.9         | 2.4  | 4.6  | 4.1  | 8.6           | 3.3  |
| <b>Plans without company stock, GICs,<sup>4</sup> or other stable value funds</b> |              |      |                |      |                                |                                |            |      |             |      |  |      |               |      |
| 20s   | 77.8         | 26.5 | 7.8            | 60.6 | 53.3                           | 7.3                            | 7.7        | 7.2  | 4.9         | 1.9  |  |      |               |      |
| 30s   | 77.9         | 34.2 | 8.4            | 49.2 | 43.6                           | 5.6                            | 7.2        | 9.9  | 4.8         | 2.5  |  |      |               |      |
| 40s   | 74.0         | 37.0 | 9.9            | 42.6 | 37.0                           | 5.6                            | 8.3        | 12.1 | 6.0         | 3.0  |  |      |               |      |
| 50s   | 70.3         | 33.8 | 11.3           | 40.4 | 35.4                           | 5.0                            | 10.0       | 16.1 | 6.5         | 3.7  |  |      |               |      |
| 60s   | 59.4         | 30.7 | 11.8           | 35.6 | 31.0                           | 4.7                            | 13.5       | 21.2 | 12.2        | 4.8  |  |      |               |      |
| All   | 75.0         | 33.7 | 9.3            | 44.4 | 38.9                           | 5.5                            | 8.2        | 13.2 | 5.7         | 3.2  |  |      |               |      |
| <b>Plans with GICs<sup>4</sup> and/or other stable value funds</b>                |              |      |                |      |                                |                                |            |      |             |      |  |      |               |      |
| 20s   | 73.4         | 29.6 | 7.3            | 45.1 | 33.0                           | 12.1                           | 3.9        | 6.0  | 2.9         | 0.9  | 9.1  | 3.7  |               |      |
| 30s   | 73.5         | 32.8 | 8.1            | 44.8 | 35.1                           | 9.7                            | 4.1        | 6.6  | 2.8         | 1.2  | 7.9  | 5.0  |               |      |
| 40s   | 69.0         | 36.9 | 9.4            | 40.4 | 31.7                           | 8.7                            | 5.0        | 7.8  | 3.4         | 2.1  | 9.5  | 7.0  |               |      |
| 50s   | 63.6         | 34.9 | 10.2           | 37.5 | 29.5                           | 7.9                            | 5.9        | 10.1 | 4.6         | 1.3  | 11.9   | 11.3 |               |      |
| 60s   | 52.7         | 29.2 | 11.2           | 33.3 | 26.0                           | 7.4                            | 6.8        | 12.1 | 7.2         | 1.3  | 19.2   | 19.1 |               |      |
| All   | 69.7         | 33.7 | 7.9            | 40.2 | 31.2                           | 9.0                            | 5.0        | 8.3  | 3.5         | 2.0  | 10.1   | 8.6  |               |      |
| <b>Plans with company stock</b>   |              |      |                |      |                                |                                |            |      |             |      |  |      |               |      |
| 20s   | 51.8         | 24.0 | 6.1            | 52.5 | 43.7                           | 8.8                            | 5.0        | 5.8  | 5.4         | 1.4  |  |      | 29.5          | 9.8  |
| 30s   | 56.0         | 31.7 | 6.6            | 44.4 | 38.8                           | 5.6                            | 5.3        | 8.2  | 5.2         | 2.3  |  |      | 24.6          | 8.1  |
| 40s   | 54.4         | 33.8 | 8.2            | 39.6 | 34.1                           | 5.5                            | 6.5        | 10.6 | 6.4         | 3.3  |  |      | 22.6          | 8.9  |
| 50s   | 53.2         | 30.1 | 9.8            | 38.2 | 33.0                           | 5.2                            | 6.9        | 13.3 | 8.6         | 4.2  |  |      | 19.4          | 10.0 |
| 60s   | 47.2         | 24.7 | 11.1           | 33.3 | 28.7                           | 4.6                            | 14.3       | 19.8 | 6.4         | 5.2  |  |      | 19.3          | 11.3 |
| All   | 54.2         | 30.1 | 7.2            | 41.3 | 35.6                           | 5.7                            | 6.3        | 10.9 | 6.1         | 3.2  |  |      | 24.1          | 9.3  |

Continued on the next page

FIGURE 39 CONTINUED

**Average Asset Allocation of 401(k) Accounts by Participant Age and Investment Options Among 401(k) Plan Participants with Two or Fewer Years of Tenure<sup>1</sup>**

Percentage of account balances,<sup>2</sup> 1998 and 2012

| Age group  | Equity funds |      | Balanced funds |      |                                |                                | Bond funds |      | Money funds |      | GICs <sup>4</sup> and other stable value funds |      | Company stock |      |
|--|--------------|------|----------------|------|--------------------------------|--------------------------------|------------|------|-------------|------|--|------|---------------|------|
|  | 1998         | 2012 | Total          |      | Target date funds <sup>3</sup> | Non-target date balanced funds | 1998       | 2012 | 1998        | 2012 | 1998   | 2012 | 1998          | 2012 |
|  |              |      | 1998           | 2012 | 2012                           | 2012                           |            |      |             |      |  |      |               |      |
| <b>Plans with company stock and GICs<sup>4</sup> and/or other stable value funds</b> |              |      |                |      |                                |                                |            |      |             |      |  |      |               |      |
| 20s  | 56.2         | 24.8 | 8.2            | 49.4 | 31.0                           | 18.4                           | 2.3        | 3.8  | 2.5         | 1.0  | 6.7  | 3.1  | 22.0          | 10.9 |
| 30s  | 56.3         | 33.3 | 8.9            | 42.3 | 29.9                           | 12.4                           | 2.6        | 5.9  | 3.3         | 1.2  | 5.9  | 4.8  | 20.6          | 9.0  |
| 40s  | 53.8         | 39.8 | 11.0           | 31.7 | 21.6                           | 10.1                           | 2.8        | 7.2  | 5.0         | 1.3  | 7.8  | 7.3  | 17.3          | 8.8  |
| 50s  | 49.3         | 39.4 | 13.8           | 25.3 | 16.7                           | 8.6                            | 3.3        | 9.8  | 5.3         | 1.5  | 11.8   | 12.7 | 14.5          | 8.1  |
| 60s  | 38.0         | 31.6 | 14.3           | 20.3 | 12.3                           | 8.0                            | 2.6        | 11.8 | 4.9         | 1.7  | 27.8   | 23.3 | 10.7          | 9.0  |
| All  | 54.1         | 36.0 | 10.1           | 32.3 | 21.7                           | 10.6                           | 2.4        | 7.8  | 2.4         | 1.3  | 10.1   | 10.0 | 18.6          | 8.9  |

<sup>1</sup> The analysis is based on samples of 1.2 million participants with two or fewer years of tenure in 1998 and 3.6 million participants with two or fewer years of tenure in 2012.

<sup>2</sup> Minor investment options are not shown; therefore, row percentages do not add to 100 percent. Percentages are dollar-weighted averages.

<sup>3</sup> 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.

<sup>4</sup> 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 40

**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, 1998–2012*

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

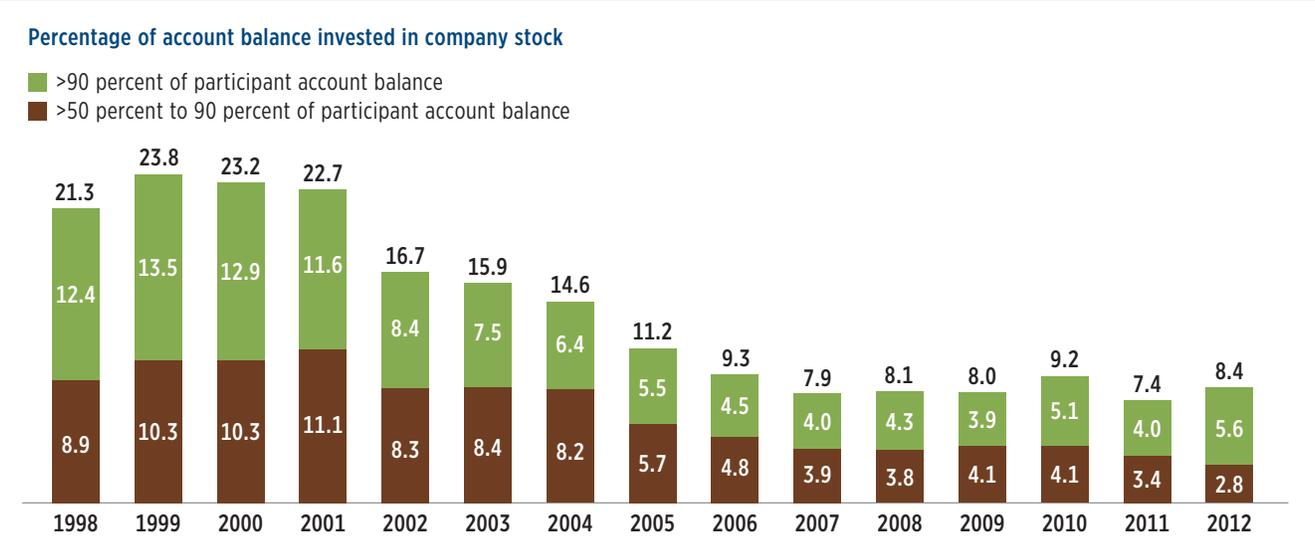
Note: The analysis includes 401(k) plan participants with two or fewer years of tenure in the year indicated and in a plan offering company stock as an investment option.

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

FIGURE 41

### 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, 1998–2012



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

### 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,<sup>1,2</sup> 2012

| Age group | Percentage of account balance invested in company stock |         |           |           |           |           |           |           |           |           |            |
|-----------|---|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|           | Zero  | 1 to 10 | >10 to 20 | >20 to 30 | >30 to 40 | >40 to 50 | >50 to 60 | >60 to 70 | >70 to 80 | >80 to 90 | >90 to 100 |
| 20s       | 77.0  | 3.7     | 3.2       | 2.7       | 2.3       | 2.7       | 1.0       | 0.6       | 0.5       | 0.4       | 6.1        |
| 30s       | 73.6  | 5.4     | 4.4       | 3.6       | 2.5       | 2.2       | 1.2       | 0.7       | 0.5       | 0.4       | 5.4        |
| 40s       | 72.5  | 5.6     | 4.7       | 4.0       | 2.7       | 2.1       | 1.3       | 0.7       | 0.6       | 0.4       | 5.4        |
| 50s       | 73.1  | 5.4     | 4.5       | 4.0       | 2.7       | 2.1       | 1.3       | 0.7       | 0.5       | 0.4       | 5.2        |
| 60s       | 73.3  | 5.0     | 4.3       | 3.6       | 2.6       | 2.0       | 1.2       | 0.7       | 0.5       | 0.4       | 6.4        |
| All       | 74.3  | 4.9     | 4.1       | 3.5       | 2.5       | 2.3       | 1.2       | 0.7       | 0.5       | 0.4       | 5.6        |

<sup>1</sup> The analysis includes the 1.2 million participants with two or fewer years of tenure in 2012 and in plans offering company stock as an investment option.

<sup>2</sup> Row percentages may not add to 100 percent because of rounding.

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

## Year-End 2012 Snapshot of 401(k) Plan Loan Activity

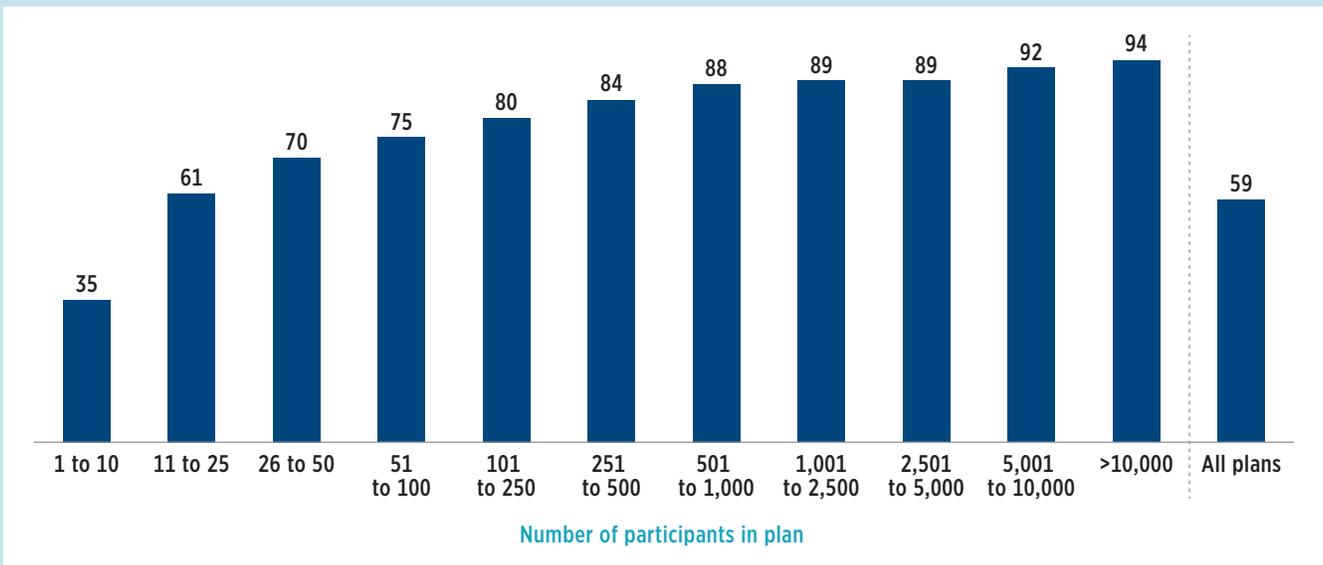
### Availability and Use of 401(k) Plan Loans by Plan Size

Fifty-nine percent of the 401(k) plans for which loan data were available in the 2012 EBRI/ICI 401(k) database offered a plan loan provision to participants (Figure 43).<sup>42</sup> The loan feature was more commonly associated with

large plans (as measured by the number of participants in the plan). Ninety-four percent of plans with more than 10,000 participants included a loan provision, compared with 35 percent of plans with 10 or fewer participants. Participant loan activity varied modestly by plan size, ranging from 20 percent of participants with loans outstanding in 401(k) plans with 11 to 2,500 participants to 24 percent of participants in 401(k) plans with 10 or

FIGURE 43

### Percentage of 401(k) Plans Offering Loans by Plan Size, 2012



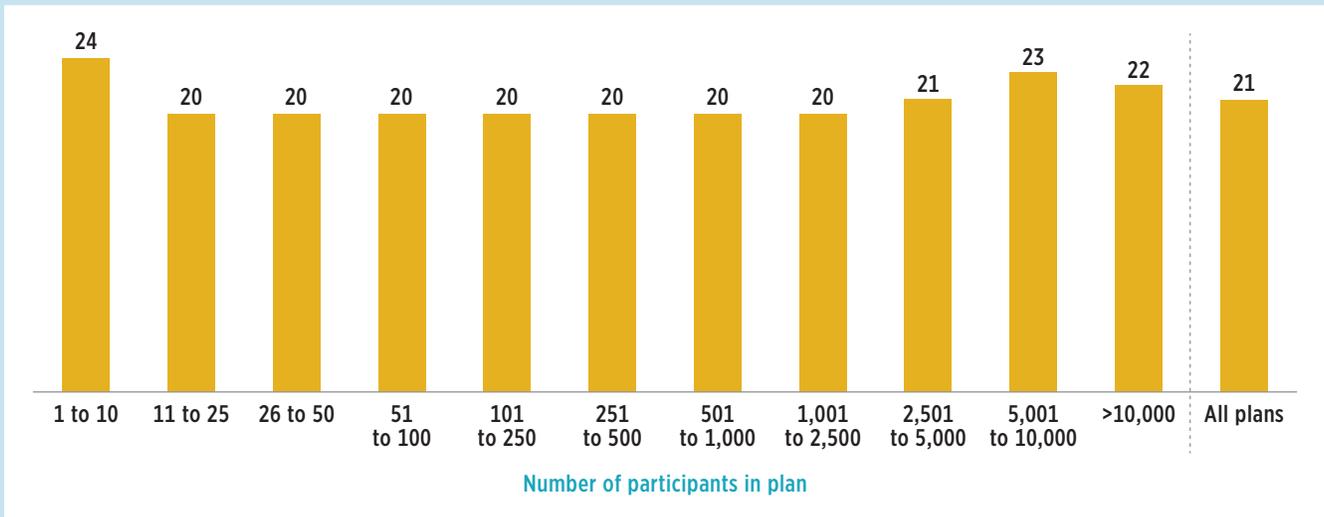
Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

fewer participants (Figure 44). 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 500 or fewer participants, the loan ratio was 15 percent of the remaining assets in 2012, while in plans with more than 5,000 participants, the loan ratio was 13 percent (Figure 45).

FIGURE 44

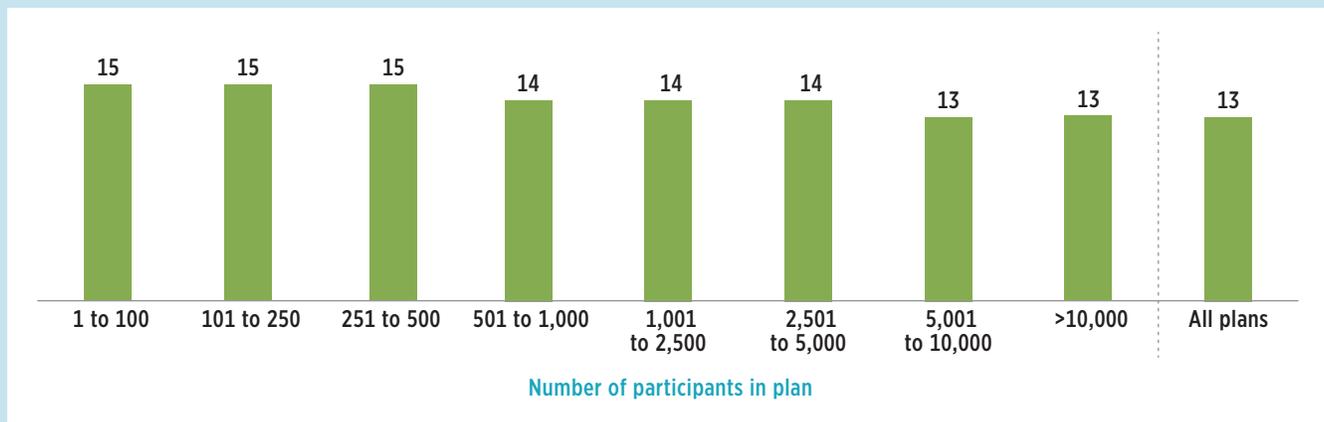
**Percentage of Eligible 401(k) Participants with 401(k) Loans by Plan Size, 2012**



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

FIGURE 45

**401(k) Loan Balances as a Percentage of 401(k) Account Balances for Participants with 401(k) Loans by Plan Size, 2012**



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

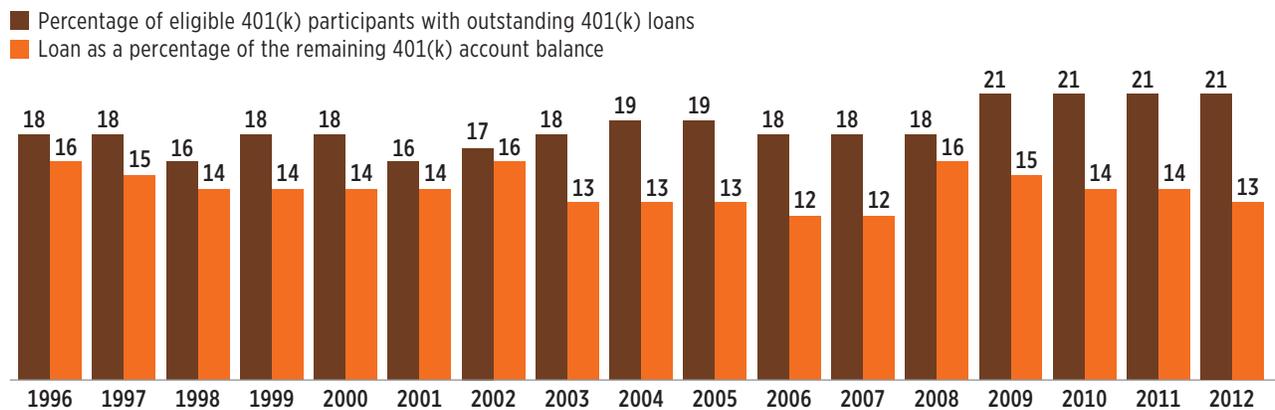
In the 17 years that the database has been tracking loan activity among 401(k) plan participants, there has been little variation. From 1996 through 2008, on average, less than one-fifth of 401(k) participants with access to loans had loans outstanding. At year-end 2009, the percentage of participants who were offered loans with loans outstanding ticked up to 21 percent and remained at that level from year-end 2010 through year-end 2012. 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 18 percent had loans outstanding at year-end 2012.<sup>43</sup> On average, over the past 17 years, among participants with loans outstanding, about 14 percent of the remaining account balance remained unpaid (Figure 46). U.S. Department of Labor data indicate that loan amounts tend to be a negligible portion of plan assets.<sup>44</sup>

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

In the 2012 EBRI/ICI 401(k) database, 87 percent of participants were in plans offering loans. However, as has been the case for the 17 years that the database has tracked 401(k) plan participants, relatively few participants made use of this borrowing privilege. At year-end 2012, 21 percent of those eligible for loans had 401(k) plan loans outstanding (Figure 46). 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 47). 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. Fifteen percent of participants with account balances of less than \$10,000 had loans outstanding.

FIGURE 46

#### Few 401(k) Participants Had Outstanding 401(k) Loans; Loans Tended to Be Small, 1996–2012



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

FIGURE 47

**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 | 2011 | 2012 |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|
| <b>All</b>                     | 18   | 18   | 17   | 19   | 18   | 18   | 21   | 21   | 21   | 21   |
| <b>Age group</b>               |      |      |      |      |      |      |      |      |      |      |
| 20s                            | 12   | 11   | 10   | 11   | 10   | 10   | 13   | 13   | 13   | 13   |
| 30s                            | 20   | 19   | 18   | 20   | 20   | 20   | 23   | 23   | 22   | 23   |
| 40s                            | 22   | 21   | 20   | 22   | 22   | 22   | 26   | 26   | 25   | 26   |
| 50s                            | 17   | 17   | 17   | 19   | 19   | 19   | 22   | 22   | 22   | 23   |
| 60s                            | 9    | 9    | 9    | 10   | 10   | 11   | 12   | 13   | 13   | 14   |
| <b>Years of tenure*</b>        |      |      |      |      |      |      |      |      |      |      |
| 0 to 2                         | 6    | 5    | 4    | 5    | 7    | 6    | 9    | 7    | 5    | 6    |
| >2 to 5                        | 15   | 14   | 12   | 14   | 15   | 15   | 17   | 18   | 18   | 18   |
| >5 to 10                       | 24   | 23   | 21   | 22   | 23   | 23   | 25   | 27   | 26   | 27   |
| >10 to 20                      | 27   | 26   | 26   | 26   | 26   | 26   | 29   | 29   | 29   | 30   |
| >20 to 30                      | 25   | 26   | 25   | 24   | 24   | 25   | 27   | 26   | 26   | 28   |
| >30                            | 13   | 16   | 15   | 17   | 17   | 18   | 19   | 19   | 19   | 20   |
| <b>Size of account balance</b> |      |      |      |      |      |      |      |      |      |      |
| <\$10,000                      | 12   | 11   | 11   | 12   | 11   | 12   | 16   | 16   | 15   | 15   |
| \$10,000 to \$20,000           | 26   | 23   | 22   | 26   | 25   | 26   | 28   | 29   | 30   | 30   |
| >\$20,000 to \$30,000          | 26   | 25   | 22   | 27   | 26   | 26   | 28   | 29   | 30   | 31   |
| >\$30,000 to \$40,000          | 25   | 25   | 23   | 26   | 26   | 26   | 28   | 28   | 29   | 30   |
| >\$40,000 to \$50,000          | 24   | 25   | 23   | 25   | 26   | 25   | 27   | 27   | 27   | 29   |
| >\$50,000 to \$60,000          | 24   | 24   | 22   | 24   | 25   | 24   | 25   | 26   | 26   | 28   |
| >\$60,000 to \$70,000          | 23   | 24   | 22   | 23   | 24   | 23   | 25   | 25   | 25   | 27   |
| >\$70,000 to \$80,000          | 26   | 23   | 22   | 22   | 23   | 22   | 24   | 24   | 24   | 26   |
| >\$80,000 to \$90,000          | 23   | 23   | 21   | 21   | 23   | 21   | 23   | 23   | 23   | 25   |
| >\$90,000 to \$100,000         | 22   | 22   | 21   | 20   | 22   | 20   | 23   | 22   | 22   | 24   |
| >\$100,000 to \$200,000        | 22   | 20   | 19   | 18   | 19   | 18   | 19   | 19   | 19   | 21   |
| >\$200,000                     | 18   | 15   | 13   | 13   | 13   | 12   | 13   | 12   | 12   | 13   |
| <b>Salary range</b>            |      |      |      |      |      |      |      |      |      |      |
| \$20,000 to \$40,000           | 18   | 17   | 13   | 19   | 20   | 19   | 24   | 22   | 25   | 25   |
| >\$40,000 to \$60,000          | 20   | 23   | 21   | 26   | 28   | 27   | 30   | 26   | 26   | 28   |
| >\$60,000 to \$80,000          | 18   | 23   | 20   | 24   | 24   | 24   | 26   | 23   | 22   | 25   |
| >\$80,000 to \$100,000         | 17   | 21   | 17   | 22   | 21   | 20   | 23   | 20   | 19   | 21   |
| >\$100,000                     | 14   | 16   | 13   | 16   | 14   | 14   | 16   | 14   | 14   | 16   |

\*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

## Average Loan Balances

Among participants with outstanding 401(k) loans at the end of 2012, the average unpaid balance was \$7,153, compared with \$7,027 in the year-end 2011 database (Figure 48). The median loan balance outstanding was \$3,858 at year-end 2012, compared with \$3,785 in the year-end 2011 database. Nevertheless, the ratio of the loan outstanding to the remaining account balance decreased slightly, from 14 percent at year-end 2011 to 13 percent in

2012 (Figures 46 and 49). In addition, as in previous years, variation around this average corresponds 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),<sup>45</sup> and salary (the higher the participant's salary, the lower the average). Overall, loans from 401(k) plans tended to be small, with the vast majority of 401(k) participants in all age groups having no loan outstanding at all (Figure 50).

FIGURE 48

### 401(k) Loan Balances

*Average and median loan balances for 401(k) participants with 401(k) loans, 1998–2012*

| Year | Average loan outstanding | Median loan outstanding |
|------|--------------------------|-------------------------|
| 1998 | \$6,717                  | \$3,902                 |
| 1999 | 6,815                    | 4,400                   |
| 2000 | 6,856                    | 3,824                   |
| 2001 | 6,644                    | 3,659                   |
| 2002 | 6,659                    | 3,700                   |
| 2003 | 6,839                    | 3,832                   |
| 2004 | 6,946                    | 3,893                   |
| 2005 | 6,821                    | 3,661                   |
| 2006 | 7,292                    | 4,089                   |
| 2007 | 7,495                    | 4,167                   |
| 2008 | 7,191                    | 3,889                   |
| 2009 | 7,346                    | 3,972                   |
| 2010 | 6,846                    | 3,619                   |
| 2011 | 7,027                    | 3,785                   |
| 2012 | 7,153                    | 3,858                   |

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 49

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

401(k) loan balances as a percentage of 401(k) account balances for 401(k) participants with loans by participant age, tenure, account size, or salary; selected years

|                                | 1996 | 2000 | 2002 | 2005 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|
| <b>All</b>                     | 16   | 14   | 16   | 13   | 12   | 16   | 15   | 14   | 14   | 13   |
| <b>Age group</b>               |      |      |      |      |      |      |      |      |      |      |
| 20s                            | 30   | 30   | 28   | 24   | 25   | 29   | 26   | 24   | 26   | 25   |
| 30s                            | 22   | 20   | 22   | 19   | 19   | 25   | 22   | 20   | 21   | 20   |
| 40s                            | 16   | 15   | 16   | 13   | 13   | 18   | 16   | 15   | 16   | 15   |
| 50s                            | 12   | 11   | 12   | 10   | 10   | 13   | 12   | 11   | 11   | 11   |
| 60s                            | 10   | 9    | 10   | 8    | 8    | 11   | 10   | 9    | 9    | 9    |
| <b>Years of tenure*</b>        |      |      |      |      |      |      |      |      |      |      |
| 0 to 2                         | 27   | 24   | 27   | 23   | 21   | 25   | 22   | 19   | 21   | 22   |
| >2 to 5                        | 24   | 25   | 25   | 21   | 22   | 26   | 23   | 20   | 21   | 21   |
| >5 to 10                       | 23   | 21   | 23   | 19   | 18   | 24   | 20   | 19   | 20   | 18   |
| >10 to 20                      | 15   | 14   | 16   | 13   | 13   | 17   | 16   | 14   | 15   | 14   |
| >20 to 30                      | 11   | 10   | 11   | 9    | 8    | 12   | 11   | 9    | 10   | 9    |
| >30                            | 7    | 8    | 10   | 8    | 7    | 9    | 9    | 7    | 7    | 7    |
| <b>Size of account balance</b> |      |      |      |      |      |      |      |      |      |      |
| <\$10,000                      | 39   | 39   | 37   | 35   | 36   | 39   | 39   | 35   | 37   | 38   |
| \$10,000 to \$20,000           | 32   | 32   | 31   | 29   | 30   | 33   | 31   | 28   | 30   | 30   |
| >\$20,000 to \$30,000          | 28   | 28   | 28   | 25   | 26   | 29   | 27   | 25   | 27   | 26   |
| >\$30,000 to \$40,000          | 23   | 24   | 25   | 22   | 23   | 26   | 25   | 23   | 24   | 24   |
| >\$40,000 to \$50,000          | 22   | 21   | 22   | 20   | 21   | 24   | 22   | 20   | 21   | 21   |
| >\$50,000 to \$60,000          | 19   | 19   | 20   | 18   | 19   | 21   | 21   | 19   | 19   | 19   |
| >\$60,000 to \$70,000          | 16   | 17   | 18   | 16   | 17   | 19   | 19   | 17   | 18   | 17   |
| >\$70,000 to \$80,000          | 16   | 15   | 16   | 15   | 16   | 18   | 17   | 16   | 16   | 16   |
| >\$80,000 to \$90,000          | 14   | 14   | 15   | 14   | 14   | 16   | 16   | 15   | 15   | 15   |
| >\$90,000 to \$100,000         | 13   | 13   | 13   | 13   | 13   | 15   | 15   | 14   | 14   | 14   |
| >\$100,000 to \$200,000        | 10   | 9    | 10   | 9    | 10   | 11   | 11   | 10   | 11   | 10   |
| >\$200,000                     | 5    | 5    | 5    | 4    | 5    | 5    | 5    | 5    | 5    | 5    |
| <b>Salary range</b>            |      |      |      |      |      |      |      |      |      |      |
| \$20,000 to \$40,000           | 17   | 19   | 18   | 18   | 17   | 21   | 19   | 17   | 17   | 17   |
| >\$40,000 to \$60,000          | 17   | 16   | 16   | 16   | 15   | 19   | 17   | 15   | 16   | 15   |
| >\$60,000 to \$80,000          | 15   | 13   | 14   | 13   | 12   | 17   | 14   | 13   | 13   | 13   |
| >\$80,000 to \$100,000         | 14   | 12   | 12   | 11   | 11   | 14   | 12   | 11   | 12   | 11   |
| >\$100,000                     | 14   | 10   | 10   | 9    | 9    | 11   | 10   | 9    | 9    | 9    |

\*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 50

**Loans from 401(k) Plans Tended to Be Small**

*Percentage of eligible participants by participant age, 2012*

| 401(k) loan as a percentage of remaining 401(k) account balance | Age group |     |     | All |
|---|-----------|-----|-----|-----|
|   | 20s       | 40s | 60s |     |
| Zero (no loan)  | 87        | 74  | 86  | 79  |
| 1 to 10 percent   | 2         | 8   | 6   | 7   |
| >10 to 20 percent   | 2         | 6   | 3   | 5   |
| >20 to 30 percent   | 2         | 4   | 2   | 3   |
| >30 to 80 percent   | 4         | 8   | 3   | 6   |
| >80 percent   | 2         | 1   | 1   | 1   |

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

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

## Notes

- <sup>1</sup> For data on 401(k) plan assets, participants, and plans through 2011, see U.S. Department of Labor, Employee Benefits Security Administration 2013a and 2013b. For total retirement assets, including those in 401(k) plans, through the third quarter of 2013, see Investment Company Institute 2013. 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 2013; and Brady, Burham, and Holden 2013.
- <sup>2</sup> Prior to 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 2008a and 2008b 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 2008b and 2010b). 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 52 million in 2012 and the number of 401(k) plans to be about 515,000. 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 and 2013; U.S. Department of Labor, Employee Benefits Security Administration 2008a, 2008b, 2010a, 2010b, 2011, 2012, 2013a, and 2013b; and analysis of samples of consistent plans in the EBRI/ICI database.
- <sup>3</sup> See Investment Company Institute 2013. By 2013:Q3, 401(k) plans had \$4.0 trillion in assets.
- <sup>4</sup> The Employee Benefit Research Institute (EBRI) is a nonprofit, nonpartisan, public policy research organization that does not lobby or take positions on legislative proposals.
- <sup>5</sup> The Investment Company Institute (ICI) is the national association of U.S. investment companies, including mutual funds, closed-end funds, exchange-traded funds (ETFs), and unit investment trusts (UITs). ICI seeks to encourage adherence to high ethical standards, promote public understanding, and otherwise advance the interests of funds, their shareholders, directors, and advisers. Members of ICI manage total assets of \$16.1 trillion and serve more than 90 million shareholders (see Burham, Bogdan, and Schrass 2013).
- <sup>6</sup> This update extends previous findings from the project for 1996 through 2011. For year-end 2011 results, see Holden et al. 2012. Results for earlier years are available in earlier issues of *ICI Research Perspective* ([www.ici.org/research/perspective](http://www.ici.org/research/perspective)) and *EBRI Issue Brief* ([www.ebri.org/publications/ib](http://www.ebri.org/publications/ib)).
- <sup>7</sup> 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.
- <sup>8</sup> Account balances are net of unpaid loan balances. Thus, unpaid loan balances are not included in any of the eight asset categories described.
- <sup>9</sup> 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 5 percent in the average 401(k) 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 17 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 4 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.

- <sup>10</sup> 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 2001b). 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. Deloitte/ICI Defined Contribution/401(k) Fee Study 2011 data indicate that in 2010, the median number of investment options offered among the 525 plans in the survey was 14 (see Deloitte Consulting LLP and Investment Company Institute 2011). Plan Sponsor Council of America 2013 indicates that in 2012, the average number of investment fund options available for participant contributions was 19 among the 686 plans surveyed; Aon Hewitt 2013 indicates an average number of 20 investment options in 2012. Deloitte Consulting LLP, International Foundation of Employee Benefit Plans, and the International Society of Certified Employee Benefit Specialists 2013 report that the average number of funds offered by the nearly 400 401(k) plan sponsors surveyed was 19 in 2012.
- <sup>11</sup> 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. Since 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.
- <sup>12</sup> 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.
- <sup>13</sup> GICs are insurance company products that guarantee a specific rate of return on the invested capital over the life of the contract.
- <sup>14</sup> 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.
- <sup>15</sup> 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.
- <sup>16</sup> For 401(k) asset figures, see Investment Company Institute 2013.
- <sup>17</sup> Estimates of the number of 401(k) plans and active participants are based on a combination of data from U.S. Department of Labor, Bureau of Labor Statistics, and U.S. Department of Labor, Employee Benefits Security Administration reports; as well as consistent plans in the EBRI/ICI database. See discussion in note 2.
- <sup>18</sup> The latest available data from the U.S. Department of Labor are for plan year 2011 (see U.S. Department of Labor, Employee Benefits Security Administration 2013b).
- <sup>19</sup> 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 four-year period from year-end 2007 to year-end 2011), see Holden et al. 2013.
- <sup>20</sup> 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.
- <sup>21</sup> Tabulations of the Survey of Consumer Finances reveal that about half of traditional IRA assets in 2010 resulted from rollovers from employer-sponsored retirement plans. In addition, account balances are net of unpaid loan balances.
- <sup>22</sup> At year-end 2012, 1.8 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.
- <sup>23</sup> At year-end 2012, 9.8 percent of the participants in the database were missing a date of hire entry and were not included in this analysis.
- <sup>24</sup> 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 1 percent of them had two or fewer years of tenure, and 6 percent of them had between two and five years of tenure (see Figure 12).

- <sup>25</sup> Because 401(k) plans were introduced about 32 years ago, older and longer-tenured employees would not have participated in 401(k) plans for their entire careers. The Revenue Act of 1978 contained a provision that became Internal Revenue Code Sec. 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).
- <sup>26</sup> 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 (79 percent of all 401(k)-type plans in existence in 2011 were established after 1992 [tabulations of U.S. Department of Labor Form 5500 data for 2011]), 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.
- <sup>27</sup> It is possible that these older, longer-tenured workers accumulated DC plan assets (e.g., in a profit-sharing plan) prior to 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) balance amounts.
- <sup>28</sup> Social Security replaces a much higher fraction of pre-retirement earnings for lower-income workers. For example, the first-year replacement rate (scheduled Social Security benefits as a percentage of average career earnings) for retired workers in the 1940–1949 birth cohort (individuals aged 63 to 72 in 2012) decreased as income increased. The median replacement rate for the lowest household lifetime earnings quintile was 77 percent; for the middle quintile, the median Social Security replacement rate was 45 percent; and for the highest quintile it was 32 percent. See Congressional Budget Office 2013.
- <sup>29</sup> The ratio of 401(k) 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 references to 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 impact 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.
- <sup>30</sup> The tendency of the account balance-to-salary ratio to peak at higher salary levels and then fall off likely reflects 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 2001c 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 2004c. For summary statistics on contribution activity in 2012, see The Vanguard Group 2013 and Aon Hewitt 2013.

<sup>31</sup> At year-end 2012, 60 percent of balanced mutual fund assets were 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 2013b and note 37 for additional discussion).

<sup>32</sup> 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 nearly 24 million DC plan participant accounts found that 9.7 percent of DC plan participants changed the asset allocation of their account balances in 2012 and 6.6 percent changed the asset allocation of their contributions during 2012 (see Holden and Schrass 2013). Covering a year earlier, the ICI survey of recordkeepers covering nearly 24 million DC plan participant accounts found that 10.5 percent of DC plan participants changed the asset allocation of their account balances in 2011 and 7.7 percent changed the asset allocation of their contributions during 2011 (see Holden and Schrass 2013). Analyzing 2012 data, The Vanguard Group 2013 reported that “only 12 [percent] of DC plan participants traded within their accounts.” Similarly, The Vanguard Group 2012 reported that “only 11 [percent] of DC plan participants traded in their accounts,” in 2011, down from 16 percent in 2008, making it “the lowest level observed since [they] began tracking this data in 1999.” Utkus and Young 2010 reported that 13 percent of DC plan participants traded in their retirement accounts in 2009, analyzing the plans administered by Vanguard. Aon Hewitt 2013 found that 14.5 percent of participants traded in their accounts in 2012. Similarly, Aon Hewitt 2012 found that 14.6 percent of participants traded in their accounts in 2011, and 12.9 percent changed the asset allocation of their contributions. Aon Hewitt 2011 found that 14.2 percent of participants traded in their accounts in 2010, and 14.6 percent changed the asset allocation of their contributions. Hewitt Associates 2009 reported that 19.6 percent of participants made asset transfers in their account balances during 2008, which was “up only marginally” from 2007 (although, they tended to move larger portions of their account balances). Fidelity Investments 2008 reported that overall only 6.6 percent of participants in their recordkeeping system made exchanges during September, October, and November 2008, a time of stock market volatility. Furthermore, Choi et al. 2001 found that 401(k) participants rarely made changes after the initial point of enrollment. (For household survey results from late 2012/early 2013 reflecting households’ sentiment toward and confidence in 401(k) plans, see Holden and Bass 2013.)

<sup>33</sup> For the age distribution of 401(k) plan participants and assets at year-end 2012, see Figure 5.

<sup>34</sup> See note 11 for additional detail on target date funds.

<sup>35</sup> 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.

<sup>36</sup> 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 2013). At year-end 2012, 71 percent of target date mutual fund assets were held in DC plans (see Investment Company Institute 2013). Plan Sponsor Council of America 2013 reported an increase in the incidence of automatic enrollment in 2012. Of nearly 700 plans surveyed, 47.2 percent had automatic enrollment in 2012, compared with 45.9 percent in 2011, 41.8 percent in 2010, 38.4 percent in 2009, 39.6 percent in 2008, 35.6 percent in 2007, about 17 percent in 2005, and 10.5 percent in 2004. Ninety percent of plans with automatic enrollment in 2012 applied automatic enrollment only to new hires, while 10 percent applied automatic enrollment to all nonparticipants. The Vanguard Group 2013 reports that 32 percent of DC plans in their recordkeeping system in 2012 offer automatic enrollment, up from 29 percent in 2011.

<sup>37</sup> At year-end 2012, 60 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 2013b).

At year-end 2012, on average, participants in their twenties had 73 percent of their 401(k) plan assets invested in equities—through equity funds, company stock, and the equity portion of balanced funds; participants in their thirties, on average, had 73 percent invested in equities; participants in their forties had 69 percent invested in equities; participants in their fifties had 58 percent invested in equities; and participants in their sixties had 48 percent invested in equities.

<sup>38</sup> For year-end 2011 data, see Holden et al. 2012.

<sup>39</sup> See Holden et al. 2008; Holden, VanDerhei, and Alonso 2009; Holden, VanDerhei, and Alonso 2010; and Holden et al. 2011 and 2012 for data for earlier years.

<sup>40</sup> For year-end 2011 data, see Holden et al. 2012.

<sup>41</sup> In the database, there has been a downward trend in 401(k) plan participants' holdings of, and concentration in, company stock. 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).

<sup>42</sup> 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.

<sup>43</sup> 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 2011, this measure was 18 percent; in 2010, 18 percent; in 2009, 19 percent; in 2008, 16 percent; in 2007, 16 percent; and in 2006, 15 percent.

<sup>44</sup> In plan year 2011 (latest data available), only 1.8 percent of the \$3.1 trillion in 401(k) plan assets were participant loans. See U.S. Department of Labor, Employee Benefits Security Administration 2013b.

<sup>45</sup> This pattern is driven in part by restrictions placed on loan amounts.

## References

- Aon Hewitt. 2011. *Navigating the Path to Retirement: 2011 Universe Benchmarks*. Lincolnshire, IL: Aon Hewitt.
- Aon Hewitt. 2012. *2012 Universe Benchmarks*. Lincolnshire, IL: Aon Hewitt.
- Aon Hewitt. 2013. *2013 Universe Benchmarks*. Lincolnshire, IL: Aon Hewitt.
- Barclays Capital U.S. Aggregate Bond Index. San Francisco, CA: Barclays Global Investors.
- Bloomberg Data. New York, NY: Bloomberg L.P.
- Brady, Peter. 2010. "Measuring Retirement Resource Adequacy." *Journal of Pension Economics and Finance* 9, no. 2 (April): 235–262.
- 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](http://www.ici.org/pdf/per16-02.pdf).
- Brady, Peter, and Michael Bogdan. 2013. "A Look at Private-Sector Retirement Plan Income After ERISA." *ICI Research Perspective* 19, no. 8 (October). Available at [www.ici.org/pdf/per19-08.pdf](http://www.ici.org/pdf/per19-08.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](http://www.ici.org/pdf/ppr_12_success_retirement.pdf).
- Burham, Kimberly, Michael Bogdan, and Daniel Schrass. 2013. "Ownership of Mutual Funds, Shareholder Sentiment, and Use of the Internet, 2013." *ICI Research Perspective* 19, no. 9 (October). Available at [www.ici.org/pdf/per19-09.pdf](http://www.ici.org/pdf/per19-09.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](http://www.nber.org/papers/w8655).
- Congressional Budget Office. 2013. *The 2013 Long-Term Projections for Social Security: Additional Information* (October). Washington, DC: Congressional Budget Office. Available at [www.cbo.gov/sites/default/files/cbofiles/attachments/44972-SocialSecurity.pdf](http://www.cbo.gov/sites/default/files/cbofiles/attachments/44972-SocialSecurity.pdf).
- 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/briefspdf/EBRI\\_IB\\_08-2011\\_No361\\_TDFs.pdf](http://www.ebri.org/pdf/briefspdf/EBRI_IB_08-2011_No361_TDFs.pdf).
- Deloitte Consulting LLP, International Foundation of Employee Benefit Plans, and the International Society of Certified Employee Benefit Specialists. 2013. *Annual 401(k) Benchmarking Survey: 2012 Edition*. New York, NY: Deloitte Consulting LLP. Available at [www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Consulting/us\\_cons\\_hc\\_401ksbecnchmarkingsurvey2012.pdf](http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Consulting/us_cons_hc_401ksbecnchmarkingsurvey2012.pdf).
- Deloitte Consulting LLP and Investment Company Institute. 2011. *Inside the Structure of Defined Contribution/401(k) Plan Fees: A Study Assessing the Mechanics of the 'All-In' Fee*. Washington, DC: Investment Company Institute, and New York, NY: Deloitte Consulting LLP. Available at [www.ici.org/pdf/rpt\\_11\\_dc\\_401k\\_fee\\_study.pdf](http://www.ici.org/pdf/rpt_11_dc_401k_fee_study.pdf).
- Employee Benefit Research Institute. 2005. "History of 401(k) Plans: An Update." *FACTS from EBRI*. Washington, DC: Employee Benefit Research Institute (February). Available at [www.ebri.org/pdf/publications/facts/0205fact.a.pdf](http://www.ebri.org/pdf/publications/facts/0205fact.a.pdf).
- Fidelity Investments. 2008. "Impact of Market Volatility on Participant Exchange Behavior." *Building Futures: Impact of Market Volatility* (December). Boston, MA: Fidelity Investments.
- Gustman, Alan L., and Thomas 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](http://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](http://www.nber.org/papers/w19071).

Hewitt Associates. 2009. *How Well Are Employees Saving and Investing in 401(k) Plans: 2009 Hewitt Universe Benchmarks*. Lincolnshire, IL: Hewitt Associates LLC.

Holden, Sarah, and Steven Bass. 2013. *America's Commitment to Retirement Security: Investor Attitudes and Actions, 2013*. Washington, DC: Investment Company Institute (February). Available at [www.ici.org/pdf/ppr\\_13\\_retir\\_sec\\_update.pdf](http://www.ici.org/pdf/ppr_13_retir_sec_update.pdf).

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](http://www.ici.org/pdf/per12-02.pdf).

Holden, Sarah, and Daniel Schrass. 2013. "Defined Contribution Plan Participants' Activities, 2012." *ICI Research Report* (April). Available at [www.ici.org/pdf/ppr\\_13\\_rec\\_survey\\_q4.pdf](http://www.ici.org/pdf/ppr_13_rec_survey_q4.pdf).

Holden, Sarah, and Jack VanDerhei. 2001a. "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](http://www.ici.org/pdf/per07-01.pdf) and [www.ebri.org/pdf/briefspdf/0201ib.pdf](http://www.ebri.org/pdf/briefspdf/0201ib.pdf).

Holden, Sarah, and Jack VanDerhei. 2001b. "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. 2001c. "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](http://www.ici.org/pdf/per07-04.pdf) and [www.ebri.org/pdf/briefspdf/1001ib.pdf](http://www.ebri.org/pdf/briefspdf/1001ib.pdf).

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](http://www.ici.org/pdf/per08-03.pdf) and [www.ebri.org/pdf/briefspdf/1102ib.pdf](http://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](http://www.ici.org/pdf/per09-05.pdf) and [www.ebri.org/pdf/briefspdf/0903ib.pdf](http://www.ebri.org/pdf/briefspdf/0903ib.pdf).

Holden, Sarah, and Jack VanDerhei. 2004a. "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](http://www.ici.org/pdf/per10-02.pdf) and [www.ebri.org/pdf/briefspdf/0804ib1.pdf](http://www.ebri.org/pdf/briefspdf/0804ib1.pdf).

Holden, Sarah, and Jack VanDerhei. 2004b. "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](http://www.ici.org/pdf/per10-02_appendix.pdf).

Holden, Sarah, and Jack VanDerhei. 2004c. "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, IL: 44–53. Washington, DC: National Tax Association.

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](http://www.ici.org/pdf/per11-02.pdf) and [www.ebri.org/pdf/briefspdf/ebri\\_ib\\_07-20054.pdf](http://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](http://www.ici.org/pdf/per15-02.pdf) and [www.ebri.org/pdf/briefspdf/EBRI\\_IB\\_10-2009\\_No335\\_K-Update.pdf](http://www.ebri.org/pdf/briefspdf/EBRI_IB_10-2009_No335_K-Update.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](http://www.ici.org/pdf/per16-03.pdf) and [www.ebri.org/pdf/briefspdf/EBRI\\_IB\\_011-2010\\_No350\\_401k\\_Update-09.pdf](http://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](http://www.ici.org/pdf/per17-10.pdf) and [www.ebri.org/pdf/briefspdf/EBRI\\_IB\\_12-2011\\_No366\\_401\(k\)-Update.pdf](http://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](http://www.ici.org/pdf/per18-09.pdf) and [www.ebri.org/pdf/briefspdf/EBRI\\_IB\\_12-2012\\_No380.401k-eoy2011.pdf](http://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) Participants in the Wake of the Financial Crisis: Changes in Account Balances, 2007–2011." *ICI Research Perspective* 19, no. 7 and *EBRI Issue Brief*, no. 391 (October). Available at [www.ici.org/pdf/per19-07.pdf](http://www.ici.org/pdf/per19-07.pdf) and [www.ebri.org/pdf/briefspdf/EBRI\\_IB\\_010-13.No391.K-Lngtd.pdf](http://www.ebri.org/pdf/briefspdf/EBRI_IB_010-13.No391.K-Lngtd.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](http://www.ici.org/pdf/per14-03.pdf) and [www.ebri.org/pdf/briefspdf/EBRI\\_IB\\_12a-2008.pdf](http://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* 9, no. 5 (January), and *EBRI Issue Brief*, no. 218 (February). Available at [www.ici.org/pdf/per09-05.pdf](http://www.ici.org/pdf/per09-05.pdf) and [www.ebri.org/pdf/briefspdf/0200ib.pdf](http://www.ebri.org/pdf/briefspdf/0200ib.pdf).
- Investment Company Institute. Quarterly Supplementary Data. Washington, DC: Investment Company Institute.
- Investment Company Institute. 2013. "The U.S. Retirement Market, Third Quarter 2013" (December). Available at [www.ici.org/info/ret\\_13\\_q3\\_data.xls](http://www.ici.org/info/ret_13_q3_data.xls).
- 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](http://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](http://www.nber.org/papers/w17911).
- Morningstar. 2013a. *Ibbotson SBBI 2013 Classic Yearbook: Market Results for Stocks, Bonds, Bills, and Inflation 1926–2012*. Chicago, IL: Morningstar Inc.
- Morningstar. 2013b. *Morningstar Lifecycle Allocation Indexes—U.S. Investors*. Chicago, IL: Morningstar, Inc. (June 2013). Available at <http://corporate.morningstar.com/us/documents/Indexes/AssetAllocationsSummary.pdf>.
- Plan Sponsor Council of America. 2013. *56th Annual Survey of Profit Sharing and 401(k) Plans: Reflecting 2012 Plan Experience*. Chicago, IL: 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](http://www.nber.org/papers/w13091).

Russell 2000 Index. Tacoma, WA: Frank Russell Company.

S&P 500. New York, NY: 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](http://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 Private Industry 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](http://www.bls.gov/ncs/ebs/benefits/2013/ebbl0052.pdf).

U.S. Department of Labor, Employee Benefits Security Administration. 2008a. *Private Pension Plan Bulletin, Abstract of 2005 Form 5500 Annual Reports*. Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (February). Available at [www.dol.gov/ebsa/pdf/2005pensionplanbulletin.pdf](http://www.dol.gov/ebsa/pdf/2005pensionplanbulletin.pdf).

U.S. Department of Labor, Employee Benefits Security Administration. 2008b. *Private Pension Plan Bulletin, Abstract of 2006 Form 5500 Annual Reports*. Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (December). Available at [www.dol.gov/ebsa/pdf/2006pensionplanbulletin.pdf](http://www.dol.gov/ebsa/pdf/2006pensionplanbulletin.pdf).

U.S. Department of Labor, Employee Benefits Security Administration. 2010a. *Private Pension Plan Bulletin, Abstract of 2007 Form 5500 Annual Reports* (Version 1.4). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (June). Available at [www.dol.gov/ebsa/PDF/2007pensionplanbulletin.pdf](http://www.dol.gov/ebsa/PDF/2007pensionplanbulletin.pdf).

U.S. Department of Labor, Employee Benefits Security Administration. 2010b. *Private Pension Plan Bulletin, Abstract of 2008 Form 5500 Annual Reports* (Version 1.0). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (December). Available at [www.dol.gov/ebsa/PDF/2008pensionplanbulletin.pdf](http://www.dol.gov/ebsa/PDF/2008pensionplanbulletin.pdf).

U.S. Department of Labor, Employee Benefits Security Administration. 2011. *Private Pension Plan Bulletin, Abstract of 2009 Form 5500 Annual Reports* (Version 1.0). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (December). Available at [www.dol.gov/ebsa/PDF/2009pensionplanbulletin.pdf](http://www.dol.gov/ebsa/PDF/2009pensionplanbulletin.pdf).

U.S. Department of Labor, Employee Benefits Security Administration. 2012. *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/ebsa/PDF/2010pensionplanbulletin.pdf](http://www.dol.gov/ebsa/PDF/2010pensionplanbulletin.pdf).

U.S. Department of Labor, Employee Benefits Security Administration. 2013a. *Private Pension Plan Bulletin Historical Tables and Graphs* (2011 Data Release Version 1.0). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (June). Available at [www.dol.gov/ebsa/pdf/historicaltables.pdf](http://www.dol.gov/ebsa/pdf/historicaltables.pdf).

U.S. Department of Labor, Employee Benefits Security Administration. 2013b. *Private Pension Plan Bulletin, Abstract of 2011 Form 5500 Annual Reports* (Version 1.0). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration (June). Available at [www.dol.gov/ebsa/PDF/2011pensionplanbulletin.pdf](http://www.dol.gov/ebsa/PDF/2011pensionplanbulletin.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](http://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, 1981: 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](http://www.jct.gov/x-38-06.pdf).

Utkus, Stephen P., and Jean A. Young. 2010. *Resilience in Volatile Markets: 401(k) Participant Behavior September 2007–December 2009*. Valley Forge, PA: The Vanguard Group, Vanguard Center for Retirement Research (March). Available at <https://institutional.vanguard.com/iam/pdf/CRRRES.pdf>.

VanDerhei, Jack L. 2002. *Company Stock in 401(k) Plans: Results of a Survey of ISCEBS Members*. Washington, DC: Employee Benefit Research Institute. Available at [www.ebri.org/pdf/iscebs.pdf](http://www.ebri.org/pdf/iscebs.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](http://www.ebri.org/pdf/briefspdf/EBRI_IB_04-2010_No341_Auto-Enrl.pdf).

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](http://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](http://www.ebri.org/pdf/briefspdf/EBRI_IB_011-2010_No349_EBRI_DCIIA.pdf).

The Vanguard Group. 2012. *How America Saves 2012: A Report on Vanguard 2011 Defined Contribution Plan Data*. Valley Forge, PA: The Vanguard Group, Vanguard Center for Retirement Research. Available at <https://institutional.vanguard.com/iam/pdf/HAS12.pdf>.

The Vanguard Group. 2013. *How America Saves 2013: A Report on Vanguard 2012 Defined Contribution Plan Data*. Valley Forge, PA: The Vanguard Group, Vanguard Center for Retirement Research. Available at [https://pressroom.vanguard.com/nonindexed/2013.06.03\\_How\\_America\\_Saves\\_2013.pdf](https://pressroom.vanguard.com/nonindexed/2013.06.03_How_America_Saves_2013.pdf).



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