

## What Does Consistent Participation in 401(k) Plans Generate? Changes in 401(k) Account Balances, 2007–2013

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

### AT A GLANCE

- The annual EBRI/ICI 401(k) database update report is based on large cross sections of 401(k) plan participants. The cross sections cover participants with a wide range of participation experience in 401(k) plans; therefore, meaningful analysis of the potential for 401(k) participants to accumulate retirement assets must examine how a consistent group of participants' 401(k) accounts change over time.
- Two major insights emerge from looking at consistent participants in the EBRI/ICI 401(k) database over the six-year period from year-end 2007 to year-end 2013:
  - The average 401(k) account balance fell 25.8 percent in 2008, and then rose from 2009 through year-end 2013. Overall, the average account balance increased at a compound annual average growth rate of 10.9 percent from 2007 to 2013, to \$148,399 at year-end 2013.
  - The median (midpoint) 401(k) account balance increased at a compound annual average growth rate of 15.8 percent over the period, to \$75,359 at year-end 2013.
- **Analysis of a consistent group of 401(k) participants highlights the impact of ongoing participation in 401(k) plans.** At year-end 2013, the average account balance among consistent participants was more than twice the average account balance among all participants in the EBRI/ICI 401(k) database. The consistent group's median balance was more than four times the median balance across all participants at year-end 2013.
- **Younger 401(k) participants or those with smaller initial balances experienced higher percentage growth in account balances compared with older participants or those with larger initial balances.** Three primary factors affect account balances: contributions, investment returns, and withdrawal/loan activity. The percentage change in average account balance of participants in their 20s was heavily influenced by the relative size of their contributions to their account balances and increased at a compound average growth rate of 46.6 percent per year between year-end 2007 and year-end 2013.
- **401(k) participants tend to concentrate their accounts in equity securities.** The asset allocation of the 4.2 million 401(k) plan participants in the consistent group was broadly similar to the asset allocation of the 26.4 million participants in the entire year-end 2013 EBRI/ICI 401(k) database. On average at year-end 2013, about two-thirds of 401(k) participants' assets were invested in equities, either through equity funds, the equity portion of target-date funds, the equity portion of non-target-date balanced funds, or company stock. Younger 401(k) participants tend to have higher concentrations in equities than older 401(k) participants.
- **Equity holdings by consistent 401(k) participants increased slightly among younger participants and decreased slightly for older participants.** High allocations to equities dropped for both groups from 2007 to 2013.
- **More consistent 401(k) plan participants held target-date funds at year-end 2013 than at year-end 2007, on net; many of those with target-date funds held all of their 401(k) account in target-date funds.**

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# What Does Consistent Participation in 401(k) Plans Generate? Changes in 401(k) Account Balances, 2007–2013

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The December 2014 *EBRI Issue Brief* and *ICI Research Perspective* reported year-end 2013 account balance, asset allocation, and loan activity results for the EBRI/ICI 401(k) database, which consists of a large cross section of 26.4 million 401(k) plan participants. This paper presents a longitudinal analysis—the analysis of 401(k) participants who maintained accounts each year from 2007 through 2013—that was not included in the previous report. The longitudinal analysis tracks the account balances of 4.2 million 401(k) plan participants who had accounts in the year-end 2007 EBRI/ICI 401(k) database and each subsequent year through year-end 2013.

## Introduction

The EBRI/ICI 401(k) database, which is constructed from the administrative records of 401(k) plans, represents a large cross section, or snapshot, of 401(k) plans at the end of each year.<sup>1</sup> The EBRI/ICI 401(k) database is a cross section of the entire population of 401(k) plan participants, and it represents a wide range of participants—including those who are young and individuals who are new to their jobs, as well as older participants and those who have been with their current employers for many years. For example, at year-end 2013, 13 percent of 401(k) participants in the EBRI/ICI 401(k) database were in their 20s, while 11 percent were in their 60s (Figure 1); 19 percent of participants had two or fewer years of tenure at their current jobs, while 5 percent had more than 30 years of tenure (Figure 2).

Although annual updates of the EBRI/ICI 401(k) database provide an invaluable perspective of 401(k) account balances, asset allocation, and loan activity across wide cross sections of participants, the cross-sectional analysis is not well suited to examining the impact of participation in 401(k) plans over time. Cross sections change in composition from year to year because the selection of data providers and sample of plans using a given provider vary, and because 401(k) participants join or leave plans.<sup>2</sup> In addition, the analysis covers account balances held in 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>3,4</sup> To explore the full impact of ongoing participation in 401(k) plans, and to understand how 401(k) plan participants have fared over an extended period, it is important to analyze a group of participants who have been part of the database for an extended period. This consistent group of participants (a longitudinal sample) is drawn from the annual cross sections.

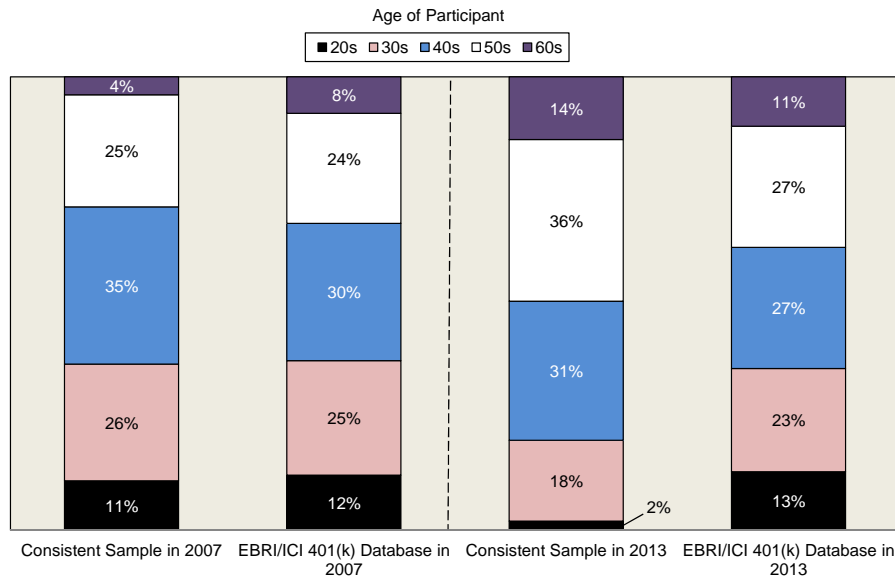
## Sample of Consistent 401(k) Participants, 2007–2013

About 19 percent, or 4.2 million, of the 401(k) participants with accounts at the end of 2007 in the EBRI/ICI 401(k) database are in the consistent sample. These consistent participants had accounts at the end of each year from 2007 through 2013.<sup>5</sup> These 4.2 million 401(k) participants make up a group of consistent participants (or a longitudinal sample), which removes the effect of participants and plans entering and leaving the database. Initially, this group was demographically similar to the entire EBRI/ICI 401(k) database at year-end 2007. However, by year-end 2013, these participants had grown older, accrued longer job tenures, and accumulated larger account balances compared with participants in the year-end 2013 cross section.

## Age and Tenure of Consistent 401(k) Participants

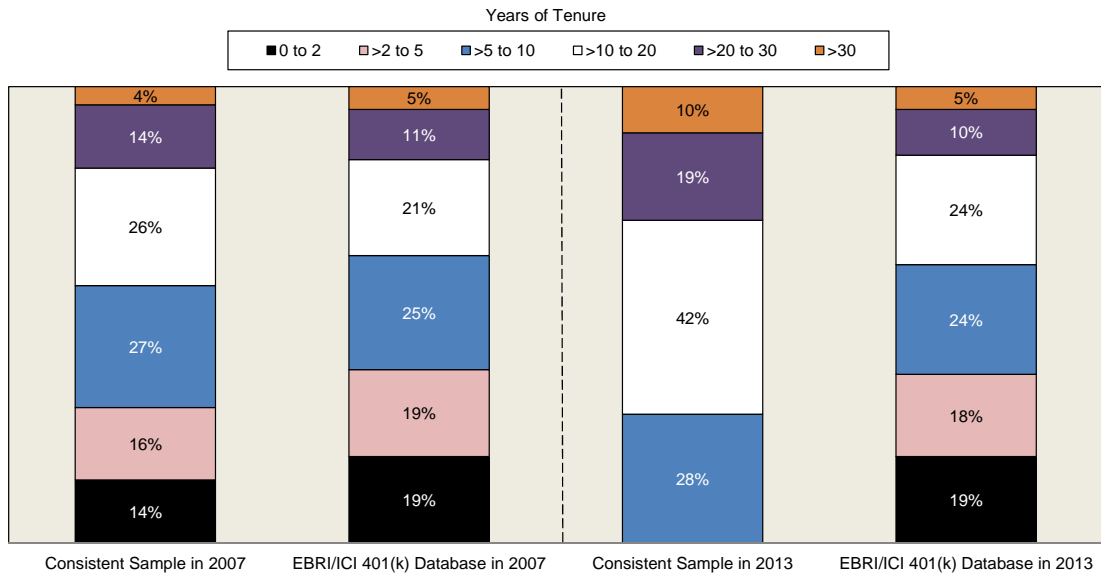
At year-end 2007, the consistent group was similar in age to the participants in the entire EBRI/ICI database. For example, 37 percent of the participants in the consistent sample were in their 20s or 30s in 2007, which is the same for the 21.8 million participants in the entire database (Figure 1).<sup>6</sup> Thirty-five percent of the participants in the consistent sample were in their 40s in 2007, while 30 percent of participants in the entire database were in their 40s. Twenty-nine percent of the participants in the consistent sample were in their 50s or 60s, compared with 32 percent of participants in the EBRI/ICI database overall.

**Figure 1**  
**Consistent Sample Was Older Than Participants**  
**in the EBRI/ICI 401(k) Database at Year-End 2013**  
*Percentage of participants by age, year-end 2007 and year-end 2013*



Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.  
 Note: The EBRI/ICI 401(k) database contains 21.8 million 401(k) plan participants at year-end 2007 and 26.4 million at year-end 2013. The consistent sample consists of 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013. Participant age is age as of the year-end indicated. Components do not add to 100 percent because of rounding.

**Figure 2**  
**Consistent Sample Had Longer Tenure Than Participants**  
**in the EBRI/ICI 401(k) Database at Year-End 2013**  
*Percentage of participants by years of tenure, year-end 2007 and year-end 2013*



Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.  
 Note: The EBRI/ICI 401(k) database contains 21.8 million 401(k) plan participants at year-end 2007 and 26.4 million at year-end 2013. Participant tenure is tenure as of the year-end indicated. The consistent sample consists of 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013. Components may not add to 100 percent because of rounding.

The tenure composition of the consistent sample also was similar to the tenure composition of 401(k) participants in the year-end 2007 EBRI/ICI 401(k) database.<sup>7</sup> For example, 30 percent of the consistent sample had five or fewer years of tenure in 2007, compared with 38 percent of participants in the entire EBRI/ICI 401(k) database (Figure 2). Eighteen percent of the consistent sample had more than 20 years of tenure in 2007, as did 16 percent of the participants in the entire EBRI/ICI 401(k) database.

As expected, the consistent participants who were followed over the six-year period tended to be older and to have longer tenure by year-end 2013, compared with the broader base of 401(k) participants in the EBRI/ICI 401(k) database. Participants in the consistent sample, by definition, had a minimum tenure of six years in 2013 (the length of time for the longitudinal analysis), with 28 percent having between five and 10 years, 42 percent having between 10 and 20 years, and 29 percent having more than 20 years (Figure 2). In contrast, in the entire EBRI/ICI 401(k) database in 2013, 37 percent of participants had five or fewer years of tenure, 24 percent had between five and 10 years, 24 percent had between 10 and 20 years, and 15 percent had more than 20 years.

By year-end 2013, the consistent sample of 401(k) participants also was older, on average, compared with the 26.4 million participants in the entire EBRI/ICI 401(k) database. For example, only 2 percent of the participants in the consistent group were in their 20s and 18 percent were in their 30s at year-end 2013 (Figure 1). In the entire EBRI/ICI 401(k) database at year-end 2013, 13 percent of participants were in their 20s and 23 percent were in their 30s. Thirty-six percent of the participants in the consistent sample were in their 50s and 14 percent were in their 60s, compared with 27 percent and 11 percent, respectively, in the entire database.

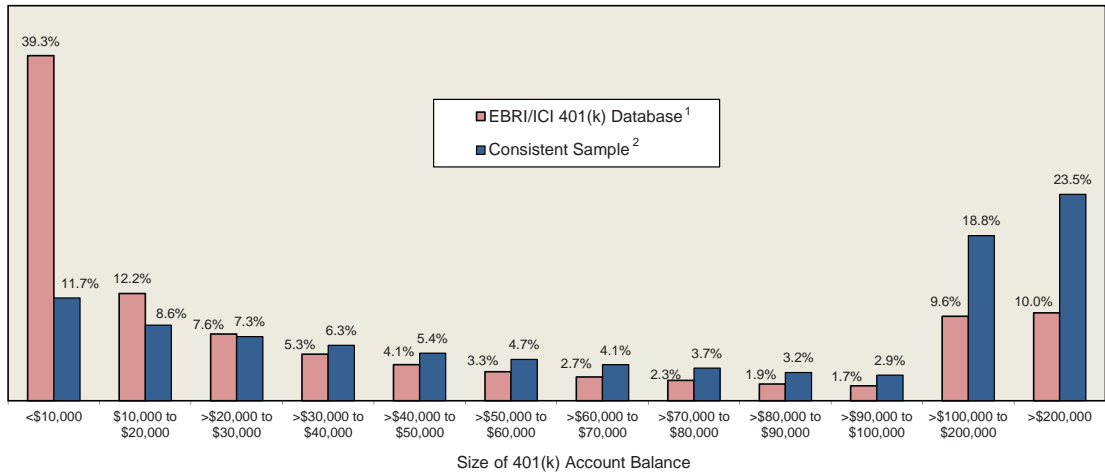
### **Consistent Participants Have Accumulated Sizeable 401(k) Account Balances**

Trends in the consistent group's account balances highlight the accumulation effect of ongoing 401(k) participation. At year-end 2013, 23.5 percent of the consistent group had more than \$200,000 in their 401(k) accounts at their current employers, while another 18.8 percent had between \$100,000 and \$200,000 (Figure 3). In contrast, in the broader EBRI/ICI 401(k) database, 10.0 percent had accounts with more than \$200,000, and 9.6 percent had between \$100,000 and \$200,000.

Reflecting their higher average age and tenure, the consistent group also had median (midpoint) and average account balances that were much higher than the median and average account balances of the broader EBRI/ICI 401(k) database (Figure 4). At year-end 2013, the average 401(k) account balance of the consistent group was \$148,399, more than twice the average account balance of \$72,383 among participants in the entire EBRI/ICI 401(k) database. The median 401(k) account balance among the consistent participants was \$75,359 at year-end 2013, more than four times the median account balance of \$18,433 for participants in the entire EBRI/ICI 401(k) database.

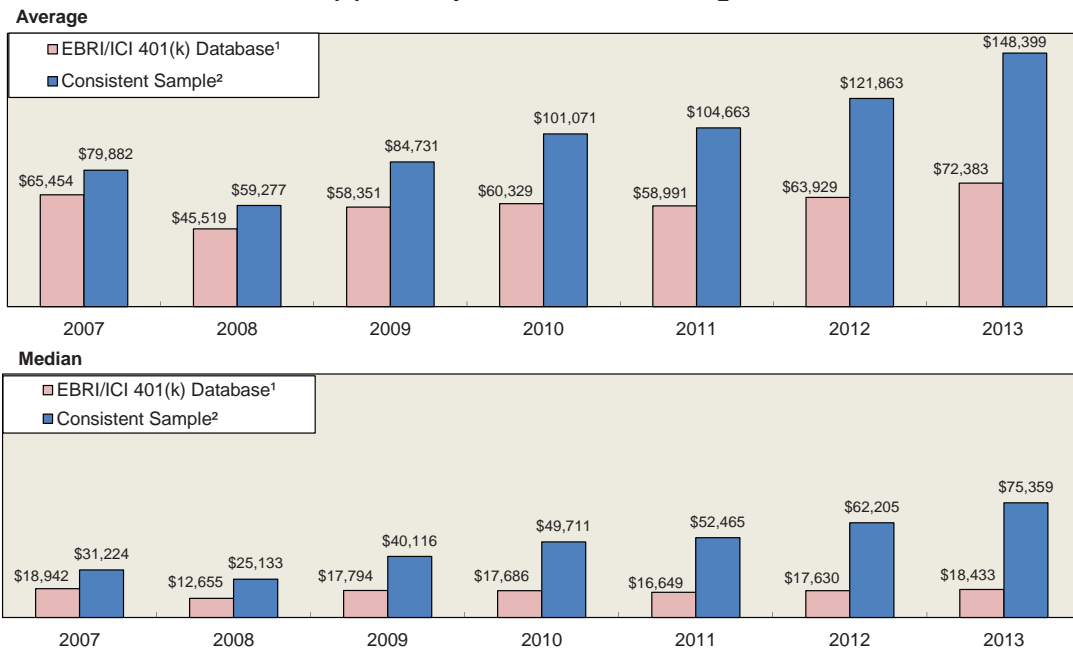
401(k) account balances tended to increase with both age and tenure among the consistent group of participants, as they do in the cross-sectional EBRI/ICI 401(k) database. Younger participants or those with shorter job tenure at their current employers tended to have smaller account balances, while those who were older or had longer job tenure tended to have higher account balances.<sup>8</sup> For example, within the consistent group, among 401(k) participants with 10 to 20 years of tenure at year-end 2013, older participants tended to have higher balances than younger participants: those in their 30s with 10 to 20 years of tenure had an average account balance of \$88,298, compared with an average of \$141,981 for participants in their 60 with 10 to 20 years of tenure (Figure 5). Among consistent participants in their 60s at year-end 2013, those with five to 10 years of tenure had a lower average 401(k) balance (\$92,112) than those with more than 30 years of tenure (\$295,747).

**Figure 3**  
**Distribution of 401(k) Account Balances by Size of Account Balance**  
*Percentage of participants with account balances in specified ranges, year-end 2013*



Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.  
<sup>1</sup> The year-end 2013 EBRI/ICI 401(k) database represents 26.4 million 401(k) plan participants.  
<sup>2</sup> The consistent sample is 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013.  
 Note: Account balances are participant account balances held in 401(k) plans at the participants' current employers and are net of plan loans. Retirement savings held in plans at previous employers or rolled over into IRAs are not included. Components may not add to 100 percent because of rounding.

**Figure 4**  
**Consistent 401(k) Participants Accumulate Significant Balances**



Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.  
<sup>1</sup> The year-end 2013 EBRI/ICI 401(k) database represents 26.4 million 401(k) plan participants.  
<sup>2</sup> The consistent sample is 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013.  
 Note: Account balances are participant account balances held in 401(k) plans at the participants' current employers and are net of plan loans. Retirement savings held in plans at previous employers or rolled over into IRAs are not included.

Figure 5

**401(k) Account Balances Among Consistent 401(k) Participants from 2007 Through 2013**

*Average 401(k) balance for consistent 401(k) participants  
by age and tenure, year-end 2007–2013*

Age Group	Tenure (years)	2007	2008	2009	2010	2011	2012	2013
20s	All	\$3,235	\$4,575	\$10,076	\$15,167	\$17,886	\$23,859	\$32,145
	>5 to 10	3,006	4,475	10,228	15,507	18,459	24,734	33,411
30s	All	21,808	18,355	31,097	41,094	44,723	55,903	72,478
	>5 to 10	11,433	11,711	23,095	32,561	36,945	47,835	63,484
	>10 to 20	35,224	27,073	42,615	53,895	57,066	69,467	88,298
40s	All	60,370	44,482	67,468	82,935	86,739	103,826	130,897
	>5 to 10	21,859	20,016	36,763	49,919	55,517	70,214	91,435
	>10 to 20	66,402	47,807	73,127	89,290	92,938	111,070	140,067
	>20 to 30	106,992	75,516	106,430	125,408	128,388	149,224	183,788
50s	All	108,461	79,093	111,406	131,641	136,026	157,779	191,967
	>5 to 10	26,224	23,960	41,867	55,938	62,436	78,021	100,183
	>10 to 20	79,851	58,358	86,975	104,990	109,746	129,857	160,664
	>20 to 30	157,320	111,153	154,209	178,224	181,402	208,160	251,528
	>30	191,872	138,936	185,259	213,444	218,845	246,807	291,642
60s	All	128,627	96,294	128,801	147,257	148,824	164,473	186,535
	>5 to 10	27,785	26,025	43,284	56,351	62,627	75,647	92,112
	>10 to 20	80,824	61,284	87,602	103,606	107,064	121,846	141,981
	>20 to 30	163,274	119,168	159,226	179,663	179,878	197,867	222,145
	>30	238,023	175,205	225,318	250,284	248,645	267,513	295,747
All	All	79,882	59,277	84,731	101,071	104,663	121,863	148,399

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

Note: The consistent sample is 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013. Age and tenure groups are based on participant age and tenure at year-end 2013. The "all" category includes participants with missing tenure information. 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.

## Changes in Consistent 401(k) Participants' Account Balances

In any given year, the change in a participant's account balance is a combination 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 magnitudes of these three factors relative to the starting account balance. For example, a contribution of a given dollar amount produces a larger growth rate when added to a smaller account than it would if added to a larger one. On the other hand, investment returns of a given percentage produce larger dollar increases (or decreases) when compounded on a larger asset base. In other words, growth rates are a function of the relative size of the dollar adjustment to the size of the individual account.

Altogether, from year-end 2007 through year-end 2013, the average account balance among the group of consistent participants increased by 86 percent, rising from \$79,882 at year-end 2007 to \$148,399 at year-end 2013 (Figures 4, 5, and 6). This translates into a compound annual average growth rate of 10.9 percent over the six-year period. The median account balance among this consistent group also grew, rising 141 percent from \$31,224 in 2007 to \$75,359 in 2013 (a compound annual average growth rate of 15.8 percent) (Figure 4).

Among the consistent group, individual 401(k) participants experienced a wide range of outcomes, often influenced by the relationship among the three factors mentioned above: contributions, investment returns, and withdrawal/loan activity. Participants who were younger or had fewer years of tenure experienced the largest percentage increases in



**Figure 6**

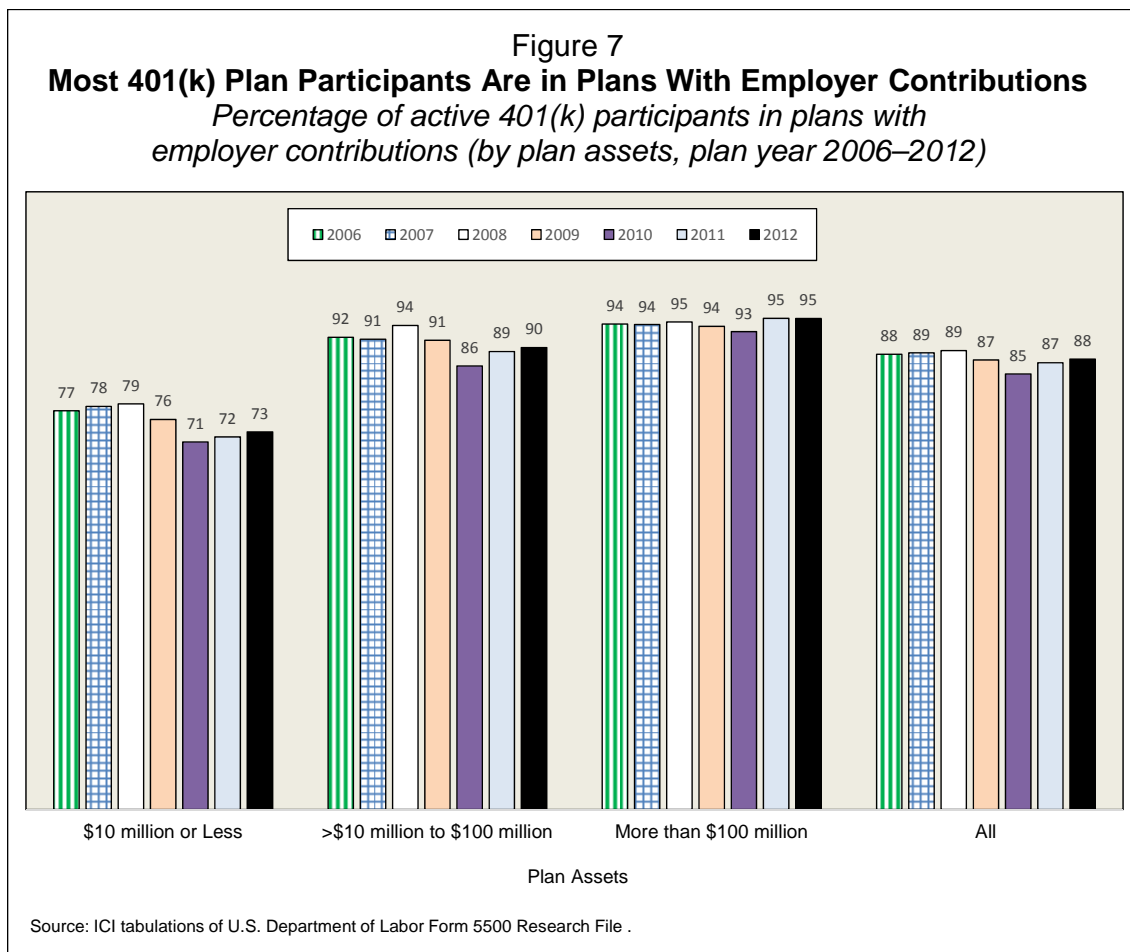
**Changes in 401(k) Account Balances Among Consistent 401(k) Participants from 2007 Through 2013**  
*Percent change in average 401(k) account balance among consistent 401(k) participants by age and tenure, 2007–2013*

Age Group	Tenure (years)	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013	2007–2013	Compound Annual Average Growth Rate, 2007–2013
20s	All	41.4%	120.2%	50.5%	17.9%	33.4%	34.7%	893.7%	46.6%
	>5 to 10	48.9	128.6	51.6	19.0	34.0	35.1	1,011.5	49.4
30s	All	-15.8	69.4	32.1	8.8	25.0	29.6	232.3	22.2
	>5 to 10	2.4	97.2	41.0	13.5	29.5	32.7	455.3	33.1
40s	All	-23.1	57.4	26.5	5.9	21.7	27.1	150.7	16.6
	>5 to 10	-26.3	51.7	22.9	4.6	19.7	26.1	116.8	13.8
50s	All	-8.4	83.7	35.8	11.2	26.5	30.2	318.3	26.9
	>5 to 10	-28.0	53.0	22.1	4.1	19.5	26.1	110.9	13.2
60s	All	-29.4	40.9	17.8	2.4	16.2	23.2	71.8	9.4
	>5 to 10	-27.1	40.9	18.2	3.3	16.0	21.7	77.0	10.0
All	All	-8.6	74.7	33.6	11.6	25.0	28.4	282.0	25.0
	>5 to 10	-26.9	49.0	20.7	4.5	18.3	23.7	101.2	12.4
All	All	-29.3	38.7	15.6	1.8	14.8	20.8	59.9	8.1
	>5 to 10	-27.6	33.3	15.2	2.5	12.8	18.2	52.0	7.2
All	All	-25.1	33.8	14.3	1.1	10.5	13.4	45.0	6.4
	>5 to 10	-6.3	66.3	30.2	11.1	20.8	21.8	231.5	22.1
All	All	-24.2	42.9	18.3	3.3	13.8	16.5	75.7	9.8
	>5 to 10	-27.0	33.6	12.8	0.1	10.0	12.3	36.1	5.3
All	All	-26.4	28.6	11.1	-0.7	7.6	10.6	24.3	3.7
	>5 to 10	-25.8	42.9	19.3	3.6	16.4	21.8	85.8	10.9

Source: Tabulations from EBR/ICI Participant-Directed Retirement Plan Data Collection Project.  
Note: The consistent sample is 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013. Age and tenure groups are based on participant age and tenure at year-end 2013. The "all" category includes participants with missing tenure information. 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.

average account balance between year-end 2007 and year-end 2013. For example, the average account balance of 401(k) participants in their 20s rose 893.7 percent (a 46.6 percent compound annual average growth rate) between the end of 2007 and the end of 2013 (Figures 5 and 6). Because younger participants' account balances tended to be smaller (Figure 5), their contributions produced significant percentage growth in their account balances. In contrast, the average account balance of older participants, or those with longer tenures—both of which tended to have larger balances at the beginning of the study period than younger workers or those with shorter tenures—showed more modest percentage growth in account size (Figure 6). For example, the average account balance of 401(k) participants in their 60s increased 45.0 percent (a 6.4 percent compound annual average growth rate) between year-end 2007 and year-end 2013. Investment returns, rather than annual contributions, generally account for most of the change in accounts with larger balances. In addition, participants in their 60s tend to have a higher propensity to make withdrawals, as they approach retirement.<sup>9</sup>

Contributions, which positively affect account balances, include both employer and employee contributions, and most 401(k) participants are in plans where the employer contributes. In 2012, nearly 9 in 10 participants were in 401(k) plans where the employer made contributions (Figure 7). This figure fell slightly in the wake of the financial market crisis, reaching a low of 85 percent in 2010, but mostly rebounded by 2012. Smaller 401(k) plans are less likely to have employer contributions. Fewer than three-quarters of 401(k) participants in plans with assets of \$10 million or less are in plans receiving employer contributions. This rises to 90 percent of participants in plans with more than \$10 million to \$100 million in assets and 95 percent of participants in plans with more than \$100 million in assets.



These percentage changes in 401(k) participant account balances also reflect changes in asset values during the six-year period (Figure 8). Although asset allocation varied with age, and many participants held a range of investments, stock market performance had an impact on these balances because, in large part, 401(k) plan participants' balances tended to be weighted toward equities. Altogether, at year-end 2013, whether looking at the consistent group or the entire EBRI/ICI 401(k) database, equities—equity funds, the equity portion of target-date funds, the equity portion of non-target-date balanced funds,<sup>10</sup> and company stock—represented about two-thirds of 401(k) plan participants' assets (Figure 9, lower panel).<sup>11</sup> The asset allocation of participants in the consistent sample varied with participant age, a pattern that also is observed in the cross-sectional EBRI/ICI 401(k) database. Younger participants generally tended to favor equity funds and target-date funds, while older participants were more likely to invest in fixed-income securities such as bond funds, money funds, or guaranteed investment contracts (GICs) and other stable-value funds. The decline in stock market values that occurred in 2008 (Figure 8) tended to pull 401(k) account balances lower, although diversified portfolios and ongoing contributions<sup>12, 13</sup> helped offset the impact. In the case of the youngest 401(k) participants, ongoing contributions more than offset the impact of the stock market decline on their balances (Figures 5 and 6).

## **Changes in Consistent 401(k) Participants' Allocations to Equities and Target-Date Funds**

Analysis of a group of consistent 401(k) plan participants provides insight into how these investors reacted to the financial crisis of 2008, because the same investors can be observed before (year-end 2007) and after (year-end 2013) the financial market crisis. The annual EBRI/ICI 401(k) database updates provide a snapshot of all participants at a given year-end; some of those participants are new to their 401(k) plans and perhaps new to investing, and thus may not have experienced a direct impact of the financial market crisis on their savings. In other words, new participants might be willing to invest in equities because they did not directly experience the impact of the financial market crisis on a retirement account, while those who held 401(k) accounts through the stock market volatility might have a different reaction. To gain insight into the reaction of 401(k) plan participants to the financial market crisis and events of 2008 through 2013, changes in their allocations to equities overall—and to target-date funds, in particular—are examined. For the most part, despite periods of market uncertainty and volatility, there were relatively small changes in consistent 401(k) plan participants' exposure to equities or target-date funds between year-end 2007 and year-end 2013.

### **Exposure to Equities Has Declined Slightly Among Consistent 401(k) Participants Between 2007 and 2013**

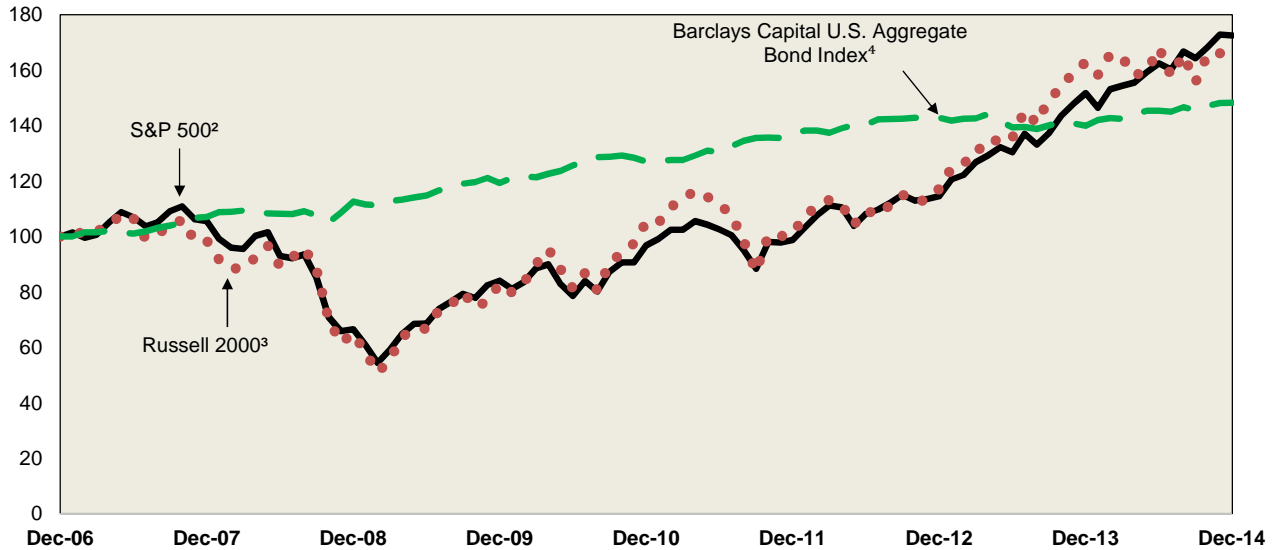
#### ***Changes in Consistent 401(k) Participants' Allocations to Equities***

At both year-end 2007 and year-end 2013, the vast majority of consistent 401(k) plan participants had at least some exposure to equities, whether through equity funds, the equity portion of target-date funds, the equity portion of non-target-date balanced funds, or company stock. At year-end 2007, 91.4 percent of consistent 401(k) participants held at least some equities in their 401(k) accounts; that share edged down slightly to 90.0 percent at year-end 2013 (Figure 10). The downward movement was concentrated among participants in their 50s and 60s, while the fraction holding equities was little changed among those in their 30s and 40s (more than 91 percent in both years), and edged up a bit among participants in their 20s (from 86.7 percent at year-end 2007 to 89.9 percent holding equities at year-end 2013). The decline in the ownership of equities among older participants is consistent with standard financial advice emphasizing decreasing investment risk as individuals approach retirement.<sup>14</sup>

All age groups in the sample of consistent 401(k) participants moved away from high or full allocations to equities between year-end 2007 and year-end 2013, with older participants generally moving more than younger ones.<sup>15</sup> For example, 59.8 percent of consistent 401(k) participants in their 20s had more than 80 percent of their account invested in equities at year-end 2013, compared with 61.3 percent at year-end 2007 (Figures 10 and 11). Those figures include 12.7 percent of consistent 401(k) participants in their 20s who had 100 percent of their account invested in equities at year-end 2013, compared with 14.1 percent fully invested in equities at year-end 2007. At the other end of the age

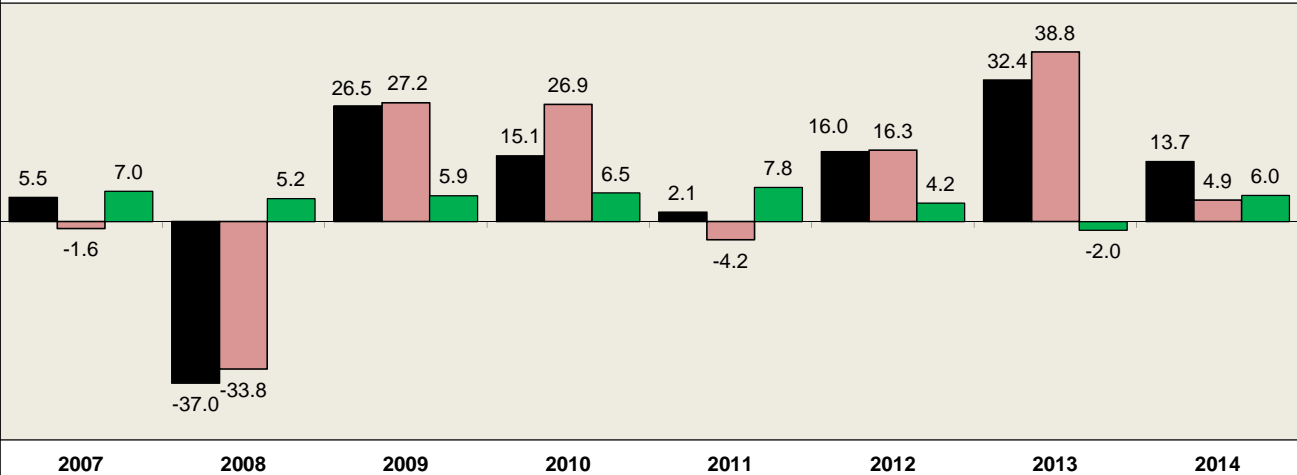
**Figure 8  
Domestic Stock and Bond Market Indexes**

Month-end level,<sup>1</sup> December 2006 to December 2014



Annual percent change in total return index

■ S&P 500<sup>2</sup>   ■ Russell 2000<sup>3</sup>   ■ Barclays Capital U.S. Aggregate Bond Index<sup>4</sup>



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

<sup>1</sup> All indexes are set to 100 in December 2006.

<sup>2</sup> The S&P 500 index measures the performance 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.

**Figure 9**  
**Average Asset Allocation of 401(k) Accounts by Participant Age**  
*Percentage of account balances, year-end 2007 and year-end 2013*

Age Group	Year-End 2007							Year-End 2013							Memo: equities <sup>4</sup>		
	Equity funds	Target-date funds <sup>1,2</sup>	Non-target-date balanced funds	Bond funds	Money funds	GICs <sup>3</sup> and other stable-value funds	Company stock <sup>2</sup>	Equity funds	Target-date funds <sup>1,2</sup>	Non-target-date balanced funds	Bond funds	Money funds	GICs <sup>3</sup> and other stable-value funds	Company stock <sup>2</sup>		Other	Unknown
20s	37.7%	25.2%	8.3%	4.9%	3.8%	6.9%	11.6%	37.7%	25.2%	8.3%	4.9%	3.8%	6.9%	11.6%	0.8%	0.8%	76.7%
30s	53.8%	11.2%	7.5%	7.0%	2.9%	4.5%	11.4%	53.8%	11.2%	7.5%	7.0%	2.9%	4.5%	11.4%	0.9%	0.7%	79.3%
40s	57.2%	7.7%	6.8%	7.2%	2.8%	4.8%	11.6%	57.2%	7.7%	6.8%	7.2%	2.8%	4.8%	11.6%	1.3%	0.6%	78.5%
50s	51.3%	6.9%	7.5%	7.8%	3.6%	7.6%	13.0%	51.3%	6.9%	7.5%	7.8%	3.6%	7.6%	13.0%	1.9%	0.4%	72.8%
60s	45.9%	7.9%	8.1%	9.0%	5.5%	10.3%	10.7%	45.9%	7.9%	8.1%	9.0%	5.5%	10.3%	10.7%	2.1%	0.4%	64.7%
All Consistent Sample <sup>5</sup>	51.3%	7.5%	7.5%	8.0%	4.1%	7.5%	11.9%	51.3%	7.5%	7.5%	8.0%	4.1%	7.5%	11.9%	1.8%	0.5%	72.1%
EBRI/ICI 401(k) Database <sup>6</sup>	48.2%	7.4%	8.0%	8.3%	4.2%	10.6%	10.6%	48.2%	7.4%	8.0%	8.3%	4.2%	10.6%	10.6%	2.1%	0.7%	68.0%
Age Group	Equity funds	Target-date funds <sup>1,2</sup>	Non-target-date balanced funds	Bond funds	Money funds	GICs <sup>3</sup> and other stable-value funds	Company stock <sup>2</sup>	Equity funds	Target-date funds <sup>1,2</sup>	Non-target-date balanced funds	Bond funds	Money funds	GICs <sup>3</sup> and other stable-value funds	Company stock <sup>2</sup>	Other	Unknown	Memo: equities <sup>4</sup>
20s	36.1%	29.5%	9.4%	5.1%	2.1%	3.2%	10.4%	36.1%	29.5%	9.4%	5.1%	2.1%	3.2%	10.4%	1.8%	2.5%	78.6%
30s	49.4%	16.8%	7.7%	6.7%	2.7%	3.4%	8.9%	49.4%	16.8%	7.7%	6.7%	2.7%	3.4%	8.9%	2.5%	2.0%	77.9%
40s	51.8%	11.9%	6.9%	7.6%	3.2%	4.4%	9.4%	51.8%	11.9%	6.9%	7.6%	3.2%	4.4%	9.4%	3.0%	1.8%	75.2%
50s	44.5%	10.9%	7.2%	9.2%	4.6%	8.2%	10.0%	44.5%	10.9%	7.2%	9.2%	4.6%	8.2%	10.0%	3.8%	1.5%	66.1%
60s	38.0%	11.7%	7.2%	10.9%	6.8%	11.9%	8.5%	38.0%	11.7%	7.2%	10.9%	6.8%	11.9%	8.5%	3.6%	1.3%	55.8%
All Consistent Sample <sup>5</sup>	45.6%	11.9%	7.2%	8.9%	4.6%	7.5%	9.4%	45.6%	11.9%	7.2%	8.9%	4.6%	7.5%	9.4%	3.4%	1.6%	67.8%
EBRI/ICI 401(k) Database <sup>7</sup>	43.5%	15.3%	7.3%	9.1%	4.4%	7.0%	7.3%	43.5%	15.3%	7.3%	9.1%	4.4%	7.0%	7.3%	4.0%	2.0%	65.5%

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

<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> Not all participants are offered this investment option.

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

<sup>4</sup> Equities include equity funds, company stock, the equity portion of target-date funds, and the equity portion of non-target-date balanced funds.

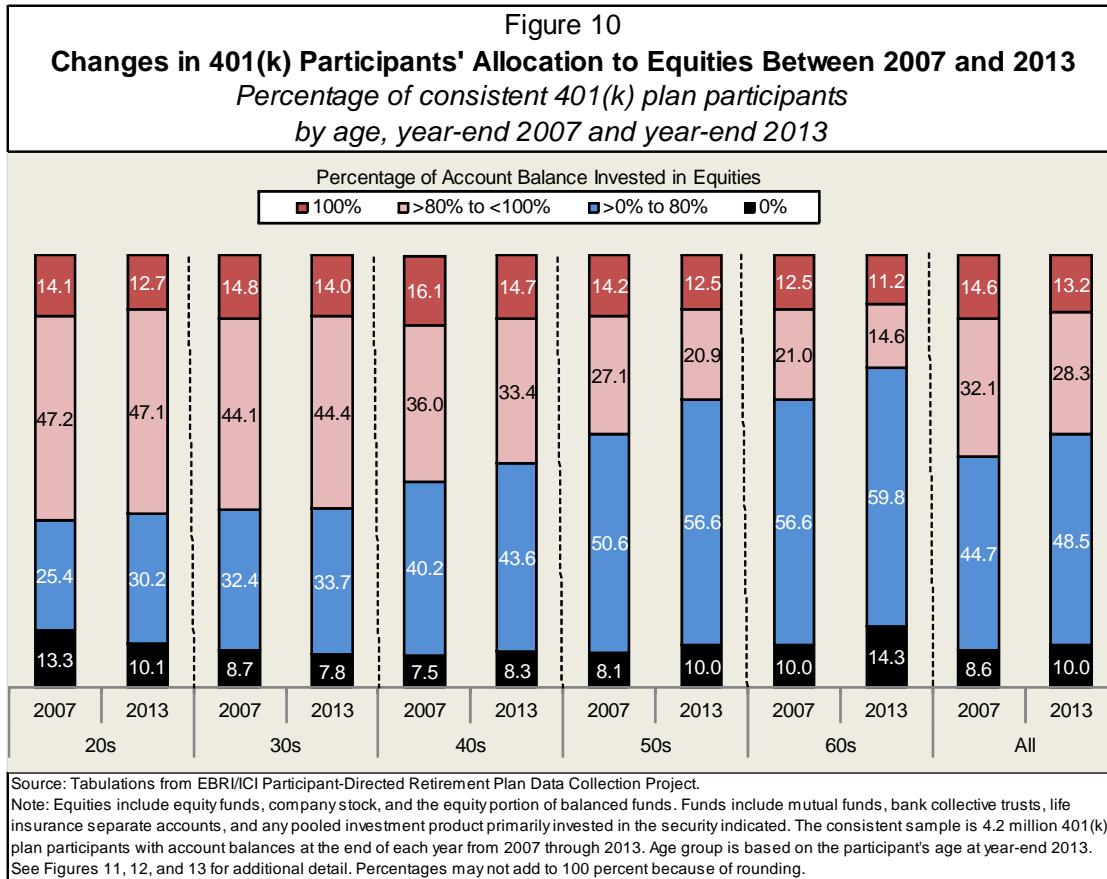
<sup>5</sup> Asset allocation by age group is among the consistent sample of 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013.

<sup>6</sup> The year-end 2007 EBRI/ICI 401(k) database represents 21.8 million 401(k) plan participants.

<sup>7</sup> The year-end 2013 EBRI/ICI 401(k) database represents 26.4 million 401(k) plan participants.

Note: Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated. Age group is based on the participant's age at year-end 2013. Row percentages may not add to 100 percent because of rounding. Percentages are dollar-weighted averages.

spectrum, consistent 401(k) participants in their 60s moved away from high concentrations in equities: 25.8 percent of consistent 401(k) participants in their 60s had more than 80 percent of their account invested in equities at year-end 2013, compared with 33.5 percent at year-end 2007. Those figures include 11.2 percent of consistent 401(k) participants in their 60s who had 100 percent of their account invested in equities at year-end 2013, compared with 12.5 percent fully invested in equities at year-end 2007. Although the financial crisis that occurred during this period<sup>16</sup> may have influenced participants' allocation to equities, some of this movement may have simply been normal reallocation as participants approached retirement.<sup>17</sup>



**Evidence of Reallocation Activity to or from Equities Among Consistent 401(k) Participants**

Movement in the concentration of equities in 401(k) participants' accounts results from changes in stock values, in addition to reallocation activity by participants. Although information on specific trading activity of 401(k) participants is not available in the EBRI/ICI 401(k) database,<sup>18</sup> it is possible to observe activity away from or to zero or 100 percent equity holdings at year-end.

Among consistent 401(k) participants between year-end 2007 and year-end 2013, few moved toward, or away from, these extremes of equity holdings; in addition, there was only a slight net movement toward reduced exposure to equities. For example, analyzing the group of consistent 401(k) participants at year-end 2013, the data show that 1.4 percent, on net, moved to a zero equities allocation—8.6 percent of this group had no equities at year-end 2007 and 10.0 percent had no equities at year-end 2013 (Figure 12). This net change reflects 3.2 percent moving from zero equities to at least some, 4.6 percent moving from some to zero, and 5.4 percent sticking with zero holdings in both 2007 and 2013. While younger 401(k) participants were more likely to move to holding some equities than older 401(k) participants, older 401(k) participants displayed slightly higher reallocation activity toward a zero equities allocation. Some of the activity of older participants could have been in anticipation of retirement rather than in response to financial market movements. Indeed, household survey information indicates that households anticipate rebalancing their portfolios as they age.<sup>19</sup>

Figure 11

**Younger 401(k) Participants Have Higher Concentrations in Equities**  
*Asset allocation distribution of 401(k) participant account balance to equities  
 by age, percentage of participants, year-end 2007 and year-end 2013*

Age Group	Percentage of account balance invested in equities at year-end 2007					
	Zero	1 to 20 percent	>20 to 40 percent	>40 to 60 percent	>60 to 80 percent	>80 percent
20s	13.3	2.0	2.4	4.6	16.4	61.3
30s	8.7	2.4	3.5	7.3	19.2	58.9
40s	7.5	2.9	4.1	8.2	25.0	52.1
50s	8.1	4.3	5.8	14.6	25.9	41.3
60s	10.0	6.0	10.1	19.1	21.4	33.5
All consistent sample <sup>1</sup>	8.6	3.8	5.6	11.8	23.5	46.7
2007 EBR/ICI 401(k) database <sup>2</sup>	13.2	3.8	5.3	11.2	23.0	43.4
Age Group	Percentage of account balance invested in equities at year-end 2013					
	Zero	1 to 20 percent	>20 to 40 percent	>40 to 60 percent	>60 to 80 percent	>80 percent
20s	10.1	2.6	2.7	5.8	19.1	59.8
30s	7.8	3.2	3.7	7.2	19.6	58.4
40s	8.3	4.1	4.6	8.6	26.3	48.1
50s	10.0	6.0	6.8	16.9	26.9	33.4
60s	14.3	8.0	11.9	21.0	18.9	25.8
All consistent sample <sup>1</sup>	10.0	5.2	6.4	12.9	24.0	41.5
2013 EBR/ICI 401(k) database <sup>3</sup>	10.2	3.3	5.0	11.9	25.7	43.9

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

<sup>1</sup>The consistent sample is 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013.

<sup>2</sup>The year-end 2007 EBR/ICI 401(k) database represents 21.8 million 401(k) plan participants.

<sup>3</sup>The year-end 2013 EBR/ICI 401(k) database represents 26.4 million 401(k) plan participants.

Note: 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. Age group is based on the participant's age at year-end 2013. Row percentages may not add to 100 percent because of rounding.

Few consistent 401(k) participants had their entire 401(k) balances invested in equities, and only a small net movement away from that full concentration occurred between year-end 2007 and year-end 2013. To be 100 percent invested in equities, the 401(k) investor would have allocated their full 401(k) balance to equity funds and/or company stock.<sup>20</sup> Analyzing the group of consistent 401(k) participants at year-end 2013, the data show that 1.4 percent, on net, moved away from a 100 percent equities allocation—14.6 percent of this group at year-end 2007 and 13.2 percent at year-end 2013 were 100 percent invested in equities (Figure 13). This net change reflects 7.1 percent moving away from the 100 percent allocation to something less, 5.7 percent moving to a 100 percent allocation, and 7.5 percent sticking with 100 percent allocation to equities in both 2007 and 2013. In other words, about half of consistent 401(k) participants with their 401(k) accounts fully invested in equities at year-end 2007 were fully invested in equities at year-end 2013.

### **Exposure to Target-Date Funds Has Increased Slightly Among Consistent 401(k) Participants Between 2007 and 2013**

#### ***Changes in Consistent 401(k) Participants' Allocations to Target-Date Funds***

Between year-end 2007 and year-end 2013, consistent 401(k) participants' use of target-date funds increased slightly, with few participants moving into or out of these funds. At year-end 2007, 27.1 percent of consistent 401(k) participants held at least some target-date fund investments in their 401(k) accounts, and that share increased slightly to 30.4 percent at year-end 2013, with the growth occurring across all age groups (Figures 14 and 15). In both years, younger 401(k) participants were more likely to hold some target-date fund investments, compared with older participants: 42.1 percent of consistent 401(k) participants in their 20s had target-date funds in their 401(k) accounts at year-end 2013, compared with 28.8 percent of consistent 401(k) participants in their 60s. Nevertheless, the largest movement toward target-date fund use over the period occurred among consistent 401(k) participants in their 40s, 50s, and 60s, and was lowest among those in their 20s.

Figure 12  
**Changes in Zero Allocation to Equities Among  
 Consistent 401(k) Participants Between 2007 and 2013**  
*Percentage of consistent 401(k) participants,  
 by age, year-end 2007 and year-end 2013*

Age	Zero in 2007	Moved Away From Zero by 2013	Remained at Zero	Moved to Zero by 2013	Net Change	Zero in 2013
20s	13.3%	-6.0%	7.3%	2.8%	-3.2%	10.1%
30s	8.7%	-4.0%	4.7%	3.1%	-0.9%	7.8%
40s	7.5%	-3.1%	4.4%	3.9%	0.8%	8.3%
50s	8.1%	-2.9%	5.2%	4.8%	1.9%	10.0%
60s	10.0%	-2.8%	7.2%	7.1%	4.3%	14.3%
All	8.6%	-3.2%	5.4%	4.6%	1.4%	10.0%

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.  
 Note: Equities include equity funds, company stock, and the equity portion of balanced funds. The consistent sample is the 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013. Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated. Age group is based on the participant's age at year-end 2013.

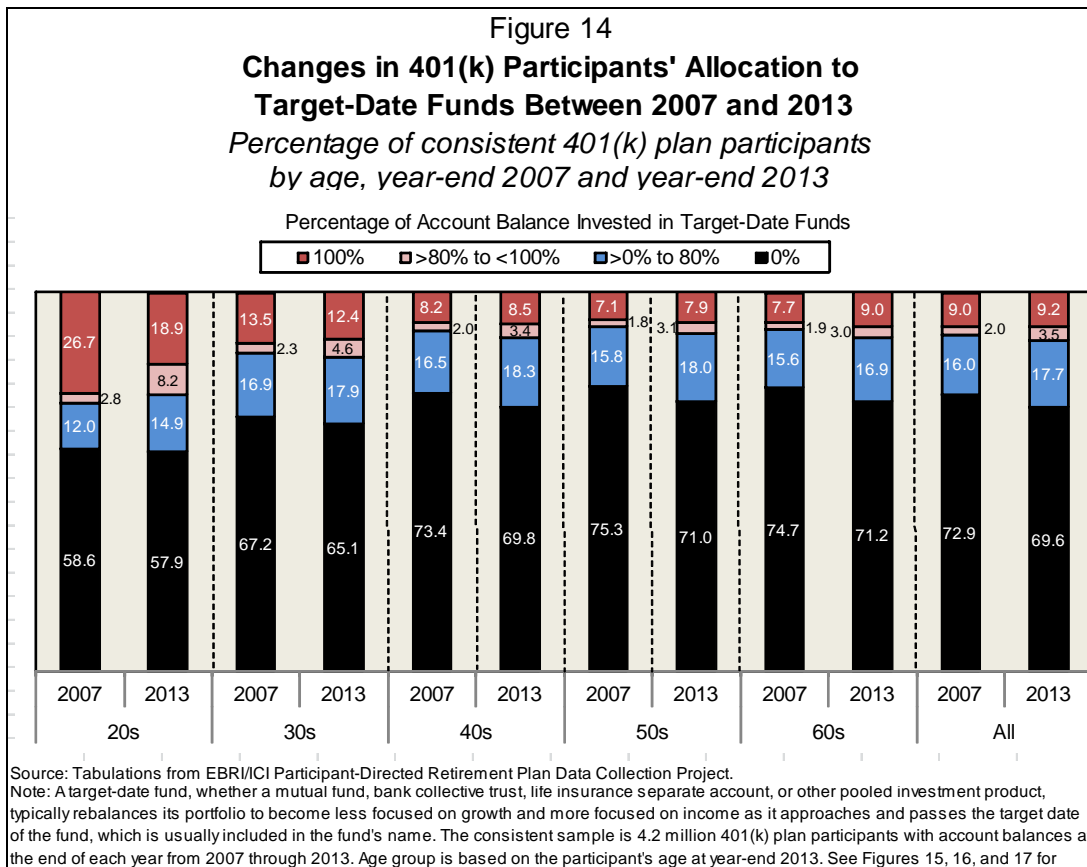
Figure 13  
**Changes in 100 Percent Allocation to Equities Among  
 Consistent 401(k) Participants Between 2007 and 2013**  
*Percentage of consistent 401(k) participants,  
 by age, year-end 2007 and year-end 2013*

Age	100 Percent in 2007	Moved Away From 100 Percent by 2013	Remained at 100 Percent	Moved to 100 Percent by 2013	Net Change	100 Percent in 2013
20s	14.1%	-8.1%	5.9%	6.8%	-1.4%	12.7%
30s	14.8%	-7.5%	7.3%	6.7%	-0.8%	14.0%
40s	16.1%	-7.5%	8.6%	6.1%	-1.4%	14.7%
50s	14.2%	-6.9%	7.3%	5.2%	-1.7%	12.5%
60s	12.5%	-6.3%	6.2%	5.0%	-1.3%	11.2%
All	14.6%	-7.1%	7.5%	5.7%	-1.4%	13.2%

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.  
 Note: Equities include equity funds, company stock, and the equity portion of balanced funds. The consistent sample is the 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013. Funds include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in the security indicated. Age group is based on the participant's age at year-end 2013.



At year-end 2007, 9.0 percent of consistent 401(k) participants had their entire account balance invested in target-date funds, essentially the same share as at year-end 2013, but small movements to or away from such a full allocation varied by participant age. Younger consistent 401(k) participants moved away from a 100 percent allocation, on net, while older consistent 401(k) participants edged toward a 100 percent allocation to target-date funds, on net. For example, 18.9 percent of consistent 401(k) participants in their 20s had 100 percent of their 401(k) account invested in target-date funds at year-end 2013, compared with 26.7 percent at year-end 2007 (Figure 14). At the other end of the age spectrum, consistent 401(k) participants in their 60s moved toward a 100 percent concentration in target-date funds, on net: 9.0 percent of consistent 401(k) participants in their 60s had 100 percent of their 401(k) account invested in target-date funds at year-end 2013, compared with 7.7 percent at year-end 2007.



### Evidence of Reallocation Activity to or from Target-Date Funds Among Consistent 401(k) Participants

Movement in the share of target-date funds in 401(k) participants' accounts results from changes in the value of their target-date fund assets relative to the other investments in the 401(k) account, which depends on the relative performance of stocks versus fixed-income securities, in addition to reallocation activity by participants. Although information on specific trading activity of 401(k) participants is not available in the EBRI/ICI 401(k) database, it is possible to observe activity into or out of zero or 100 percent investment in target-date funds at year-end.

Among consistent 401(k) participants between year-end 2007 and year-end 2013, few moved toward, or away from, these extremes of equity holdings; in addition, there was only slight net movement toward increased exposure to target-date funds. For example, analyzing the group of consistent 401(k) participants at year-end 2013, the data show that 3.3 percent, on net, moved away from a zero target-date funds allocation—72.9 percent of this group had no target-date funds at year-end 2007 and 69.6 percent had no target-date funds at year-end 2013 (Figure 16). This net change reflects 11.2 percent moving from zero target-date funds to at least some, 7.9 percent moving from some to

zero, and 61.7 percent sticking with zero holdings in both 2007 and 2013. Movement toward target-date fund use was highest among participants in their 40s, 50s, or 60s, and lowest among those in their 20s.

Analyzing the group of consistent 401(k) participants at year-end 2013, the data show that virtually none, on net, moved to or from a 100 percent target-date funds allocation—9.0 percent of this group at year-end 2007 and 9.2 percent at year-end 2013 were 100 percent invested in target-date funds (Figure 17). However, even though there was nearly no net change, some participants did reallocate their assets: 2.8 percent of consistent 401(k) participants moved away from the 100 percent allocation to something less, 3.0 percent moved to a 100 percent allocation, and 6.2 percent stuck with a 100 percent allocation to target-date funds in both 2007 and 2013. In other words, nearly 70 percent of consistent 401(k) participants with their 401(k) accounts fully invested in target-date funds at year-end 2007 were fully invested in target-date funds at year-end 2013. This high level of persistence in target-date fund investing was observed across all participant ages, although the lowest level of participants remaining 100 percent allocated to target-date funds from 2007 to 2013 (55 percent) was seen among consistent 401(k) participants in their 20s.

### **Target-Date Fund Use Rose Substantially in the Entire EBRI/ICI 401(k) Database**

Though target-date fund use was relatively stable in the consistent sample between 2007 and 2013, edging up only slightly, target-date fund use has increased substantially in the entire cross-sectional EBRI/ICI 401(k) database over the same period. At year-end 2007, 27.1 percent of 401(k) participants in the consistent sample owned target-date funds, compared with 25.1 percent of the year-end 2007 cross section (Figure 15). By year-end 2013, ownership in the consistent sample had increased to 30.4 percent, while ownership of target-date funds in the 2013 cross section had increased considerably more to 41.2 percent (an increase of 16.1 percentage points). Because target-date funds are often used as a default investment option in 401(k) plans with automatic enrollment,<sup>21</sup> some of their growth is related to the spread of automatic enrollment in recent years. This helps to explain the relative stability of the consistent sample as compared to the cross sections, where newly enrolled participants are included, many of whom could have been automatically enrolled into a target-date fund. In addition, the offering of target-date funds in 401(k) plans' investment lineups has increased, resulting in more participants having the opportunity to select target-date funds.<sup>22</sup>

Figure 15

**Younger 401(k) Participants Have Higher Concentrations in Target-Date Funds**

*Asset allocation distribution of 401(k) participant account balance to target date funds by age, percentage of participants, year-end 2007 and year-end 2013*

Age group	Percentage of Account Balance Invested in Target-Date Funds at Year-End 2007					
	Zero	1 to 20 percent	>20 to 40 percent	>40 to 60 percent	>60 to 80 percent	>80 percent
20s	58.6	3.5	3.2	2.8	2.5	29.5
30s	67.2	6.9	4.4	3.1	2.5	15.8
40s	73.4	7.7	4.2	2.7	1.9	10.2
50s	75.3	7.5	4.0	2.6	1.7	8.9
60s	74.7	7.2	4.0	2.7	1.7	9.6
All consistent sample <sup>1</sup>	72.9	7.3	4.1	2.7	1.9	11.0
2007 EBR/ICI 401(k) database <sup>2</sup>	74.9	6.3	4.0	2.5	1.6	10.9
<b>Percentage of Account Balance Invested in Target-Date Funds at Year-End 2013</b>						
Age group	Zero	1 to 20 percent	>20 to 40 percent	>40 to 60 percent	>60 to 80 percent	>80 percent
20s	57.9	5.0	3.5	3.0	3.4	27.1
30s	65.1	7.4	4.5	3.1	2.9	17.0
40s	69.8	8.4	4.5	3.0	2.4	11.9
50s	71.0	8.3	4.4	3.0	2.3	11.0
60s	71.2	7.5	4.2	3.0	2.2	12.0
All consistent sample <sup>1</sup>	69.6	7.9	4.4	3.0	2.4	12.7
2013 EBR/ICI 401(k) database <sup>3</sup>	58.8	5.2	3.3	2.6	2.1	27.9

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

<sup>1</sup>The consistent sample is 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013.

<sup>2</sup>The year-end 2007 EBR/ICI 401(k) database represents 21.8 million 401(k) participants.

<sup>3</sup>The year-end 2013 EBR/ICI 401(k) database represents 26.4 million 401(k) participants.

Note: A target date fund, whether a mutual fund, bank collective trust, life insurance separate account, or other pooled investment product, 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. Age group is based on the participant's age at year-end 2013. Row percentages may not add to 100 percent because of rounding.

Figure 16  
**Changes in Zero Allocation to Target-Date Funds Among  
 Consistent 401(k) Participants Between 2007 and 2013**  
*Percentage of consistent 401(k) participants  
 by age, year-end 2007 and year-end 2013*

Age	Zero in 2007	Moved Away			Net Change	Zero in 2013
		From Zero by 2013	Remained at Zero	Moved to Zero by 2013		
20s	58.6%	-10.4%	48.2%	9.7%	-0.7%	57.9%
30s	67.2%	-11.1%	56.1%	9.0%	-2.1%	65.1%
40s	73.4%	-11.3%	62.1%	7.7%	-3.6%	69.8%
50s	75.3%	-11.6%	63.7%	7.3%	-4.3%	71.0%
60s	74.7%	-11.0%	63.7%	7.5%	-3.5%	71.2%
All	72.9%	-11.2%	61.7%	7.9%	-3.3%	69.6%

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.  
 Note: A target-date fund, whether a mutual fund, bank collective trust, life insurance separate account, or other pooled investment product, 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. The consistent sample is 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013. Age group is based on the participant's age at year-end 2013.

Figure 17  
**Changes in 100% Allocation to Target-Date Funds Among  
 Consistent 401(k) Participants Between 2007 and 2013**  
*Percentage of consistent 401(k) participants,  
 by age, year-end 2007 and year-end 2013*

Age	100% in 2007	Moved Away			Net Change	100% in 2013
		From 100% by 2013	Remained at 100%	Moved to 100% by 2013		
20s	26.7%	-12.1%	14.6%	4.3%	-7.8%	18.9%
30s	13.5%	-4.4%	9.1%	3.3%	-1.1%	12.4%
40s	8.2%	-2.4%	5.8%	2.7%	0.3%	8.5%
50s	7.1%	-2.0%	5.1%	2.8%	0.8%	7.9%
60s	7.7%	-2.1%	5.6%	3.4%	1.3%	9.0%
All	9.0%	-2.8%	6.2%	3.0%	0.2%	9.2%

Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project  
 Note: A target-date fund, whether a mutual fund, bank collective trust, life insurance separate account, or other pooled investment product, 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. The consistent sample is 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013. Age group is based on the participant's age at year-end 2013.

## 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, 2013, the EBRI/ICI 401(k) database included statistical information about 26.4 million 401(k) plan participants, in 72,676 employer-sponsored 401(k) plans, holding \$1.912 trillion in assets. The 2013 EBRI/ICI 401(k) database covered about half of the universe of active 401(k) plan participants, nearly 15 percent of plans, and 46 percent of 401(k) plan assets. The EBRI/ICI project is unique because of its inclusion of data provided by a wide variety of plan recordkeepers, permitting the analysis of the activity of participants in 401(k) plans of varying sizes—from very large corporations to small businesses—with a variety of investment options.

### Sources and Types of Data

Several EBRI and ICI members provided records on active participants in 401(k) plans for which they kept records at year-end 2013.<sup>23</sup> These plan recordkeepers include mutual fund companies, banks, insurance companies, and consulting firms. Although the EBRI/ICI 401(k) project has collected data from 1996 through 2013, the universe of data providers varies from year to year. In addition, the plans using a particular provider can change over time. Records were encrypted to conceal the identity of employers and employees, but were coded so that both could be tracked over multiple years.<sup>24</sup>

Data provided for each participant include 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>25</sup> Plan balances are constructed as the sum of all participant balances in the plan.

### Investment Options

In the EBRI/ICI 401(k) database, investment options are grouped into eight broad categories.<sup>26</sup> Equity funds consist of pooled investments primarily invested in stocks, including equity mutual funds, banks, 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 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. Non-target-date balanced funds include asset allocation or hybrid funds, in addition to lifestyle funds.<sup>27</sup> Company stock is equity in the 401(k) plan's sponsor (the employer). Money funds consist of those funds designed to maintain a stable share price. Stable-value products, such as GICs<sup>28</sup> and other stable value funds,<sup>29</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 funds that could not be identified.<sup>30</sup>

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## Endnotes

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<sup>1</sup> For example, as of December 31, 2013, the EBRI/ICI 401(k) database included statistical information on 26.4 million 401(k) plan participants, in 72,676 employer-sponsored 401(k) plans, holding \$1.912 trillion in assets (see Holden et al. 2014b). 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 53 million in 2013 and the number of 401(k) plans to be about 518,000 (see note 2 in Holden et al. 2014b; and U.S. Department of Labor 2015). At year-end 2013, 401(k) plan assets were \$4.2 trillion (see Investment Company Institute 2015). The 2013 EBRI/ICI database covers about half of the universe of 401(k) plan participants, nearly 15 percent of plans, and 46 percent of 401(k) plan assets.

<sup>2</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 retire and roll over their account balances.

<sup>3</sup> About half of traditional IRA assets resulted from rollovers from employer-sponsored retirement plans. See Holden and Chism 2014.

<sup>4</sup> Account balances are net of unpaid loan balances.

<sup>5</sup> The value of this percentage is lower than it would have been if it merely reflected employee turnover and retirement. Any time a 401(k) plan sponsor changes service providers, all participants in the plan would be excluded from the consistent sample.

<sup>6</sup> For the report on the year-end 2007 EBRI/ICI 401(k) database, see Holden et al. 2008.

<sup>7</sup> Tenure refers to years at the current employer and is generally derived from date of hire reported for the participant. Tenure will not reflect the years of participation in the 401(k) plan if the 401(k) plan was added by the employer at a later date or if there are restrictions on participating in the 401(k) plan immediately upon hire.

<sup>8</sup> The cross-sectional EBRI/ICI 401(k) database also shows that younger participants and those with shorter tenures tend to have lower 401(k) balances than those who are older or have longer tenures. See Holden et al. 2014b.

<sup>9</sup> For statistics indicating the higher propensity of withdrawals among participants in their 60s, see Holden and VanDerhei 2002. In addition, nonhardship withdrawals, which are generally limited to employees who are aged 59-½ or older, constitute a majority of all withdrawals (see The Vanguard Group 2015).

<sup>10</sup> At year-end 2013, 62 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 Index.

<sup>11</sup> For a description of the investment options, see page 21.

<sup>12</sup> For an analysis of contribution activity during the bear market of 2000–2002 using the cross-sectional EBRI/ICI 401(k) databases, see Holden and VanDerhei 2004. The analysis finds that, overall, 401(k) participants' contribution rates were little changed in 2000, 2001, and 2002 when compared to 1999. On average, 401(k) participants' contribution behavior does not appear to have been materially affected by the bear market in equities from 2000 through 2002, whether measured in dollar amounts or percentage of salary they contributed.



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<sup>13</sup> Data from the ICI Survey of Defined Contribution Plan Recordkeepers find that DC plan participants generally stayed the course through the financial crisis. The vast majority of DC plan participants continued contributing and only a negligible share took withdrawals; in addition, a minority of participants rebalanced either their contribution investment allocations or their account investment allocations. See Holden and Schrass 2015a for DC plan participants' annual activities between 2008 and 2014. Analysis of Department of Labor Form 5500 data finds that the percentage of 401(k) plan sponsors making employer contributions edged back a bit during the financial market crisis and recent recession; still, about eight in 10 401(k) plan sponsors made contributions to their plans in 2012 (see BrightScope and Investment Company Institute 2014).

<sup>14</sup> For discussion of how U.S. households' investments change over the life cycle, see Sabelhaus, Bogdan, and Schrass 2008.

<sup>15</sup> Although some movement to or away from high concentrations in equities may be due to active reallocation by participants, it also may be due to passive changes, such as the relative prices of equities and fixed-income securities or the reallocation of target-date funds towards fixed-income securities over time.

<sup>16</sup> The National Bureau of Economic Research (NBER), which publishes its assessment of U.S. business cycles, indicated that the most recent recession occurred from December 2007 through June 2009. See National Bureau of Economic Research 2010.

<sup>17</sup> Household survey information indicates that households anticipate rebalancing their portfolios as they age. See Sabelhaus, Bogdan, and Schrass 2008.

<sup>18</sup> The Investment Company Institute tracks reallocation of account balances and changes to the asset allocation of contributions for a sample of recordkeepers. The survey results indicate a minority of DC plan participants change their asset allocation in any given period. For example, 10.5 percent of DC plan participants changed the asset allocation of their account balances, and 6.6 percent changed the asset allocation of their contributions in 2014 (see Holden and Schrass 2015a). For the most recent update covering 2015:Q1, see Holden and Schrass 2015b.

<sup>19</sup> See Sabelhaus, Bogdan, and Schrass 2008.

<sup>20</sup> Because no target-date funds have a 100 percent equity allocation, investors with a 100 percent allocation to target-date funds would not be counted as having 100 percent equities.

<sup>21</sup> Plan Sponsor Council of America 2014 reports that among 401(k) plans surveyed with automatic enrollment, 72.1 percent use target-date funds as the default investment in 2013, compared with 30.6 percent in 2006 (see Plan Sponsor Council of America 2007). BrightScope and Investment Company Institute 2014 also find rising availability and use of target-date funds among 401(k) plans filing audited Form 5500 reports.

<sup>22</sup> At year-end 2013, 71 percent of plans in the EBRI/ICI 401(k) database offered target-date funds in their investment lineups, 41 percent of 401(k) participants were holding target-date funds, and 15 percent of the assets in the database were invested in target-date funds (see Holden et al. 2014b). At year-end 2007, 67 percent of plans in the EBRI/ICI 401(k) database offered target-date funds in their investment lineups, 25 percent of 401(k) participants were holding target-date funds, and 7 percent of the assets in the database were invested in target-date funds (see Holden et al. 2008).

<sup>23</sup> For the complete update from the year-end 2013 EBRI/ICI 401(k) database, see Holden et al. 2014b.

<sup>24</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>25</sup> Account balances are net of unpaid loan balances. Thus, unpaid loan balances are not included in any of the eight asset categories described.

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<sup>26</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 (See Holden and VanDerhei 2001). In addition, the preliminary analysis found that 401(k) participants are not naive—that is, when given  $n$  options, they do not divide their assets among all  $n$ . Indeed, less than 1 percent of participants followed a  $1/n$  asset allocation strategy. Plan Sponsor Council of America 2014 indicates that in 2013, the average number of investment fund options available for participant contributions was 19 among the 613 plans surveyed; Aon Hewitt 2014 indicates an average number of 20 investment options in 2013; 14 on average when premixed portfolios are counted as one option. Deloitte Consulting LLP, International Foundation of Employee Benefit Plans, and the International Society of Certified Employee Benefit Specialists 2015 report that the average number of funds offered by the nearly 400 401(k) plan sponsors surveyed was 22 in 2015. BrightScope and Investment Company Institute 2014 reports an average of 25 investment options in 2012, and an average of 20 investment options when a target-date fund suite is counted as a single investment option.

<sup>27</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>28</sup> GICs are insurance company products that guarantee a specific rate of return on the invested capital over the life of the contract.

<sup>29</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>30</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.

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