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Issue BRIEF

What Does Consistent Participation in 401(k) Plans Generate? Changes in 401(k) Plan Account Balances, 2010–2014

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

AT A GLANCE

This *Issue Brief* provides an annual update of the longitudinal analysis of 401(k) plan participants drawn from the EBRI/ICI 401(k) database – the largest, participant-level database of its kind, with about 24.9 million 401(k) participants at year-end 2014.

Because the annual cross sections cover participants with a wide range of participation experience in 401(k) plans, meaningful analysis of the potential for 401(k) participants to accumulate retirement assets must examine the 401(k) plan accounts of participants who maintained accounts over all of the years being studied ("consistent participants"). The main body of the *Issue Brief* focuses on consistent participants for the 2010–2014 period, while the appendix addresses the 2007–2014 period.

Two major insights emerge from looking at the 8.8 million consistent participants in the EBRI/ICI 401(k) database over the four-year period from year-end 2010 to year-end 2014.

1. The average 401(k) plan account balance for consistent participants rose each year from 2010 through year-end 2014. Overall, the average account balance increased at a compound annual average growth rate of 15.5 percent from 2010 to 2014, to $130,493 at year-end 2014.
2. The median (mid-point) 401(k) plan account balance for consistent participants increased at a compound annual average growth rate of 19.7 percent over the period, to $56,653 at year-end 2014.

Analysis of a consistent group of 401(k) participants highlights the impact of ongoing participation in 401(k) plans. At year-end 2014, the average account balance among consistent participants was 1.7 times the average account balance among all participants in the EBRI/ICI 401(k) database. The consistent group's median balance was more than three times the median balance across all participants at year-end 2014.

Younger 401(k) participants or those with smaller year-end 2010 balances experienced higher percent growth in account balances compared with older participants or those with larger year-end 2010 balances. Three primary factors affect account balances: contributions, withdrawal and loan activity, and investment returns. The percent 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 44.1 percent per year between year-end 2010 and year-end 2014.

401(k) participants tend to concentrate their accounts in equity securities. The asset allocation of the 8.8 million 401(k) plan participants in the consistent group was broadly similar to the asset allocation of the 24.9 million participants in the entire year-end 2014 EBRI/ICI 401(k) database. On average at year-end 2014, 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.

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What Does Consistent Participation in 401(k) Plans Generate? Changes in 401(k) Plan Account Balances, 2010–2014

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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.[1] It 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 2014, 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); 18 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 valuable perspectives of 401(k) plan account balances, asset allocation, and loan activity across wide cross sections of participants, cross-sectional analyses are 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.[2] 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.[3]

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 study thus focuses on a consistent group of participants (a longitudinal sample) drawn from the annual cross sections. The main body of the Issue Brief focuses on consistent participants for the 2010-2014 period, while the appendix addresses the 2007-2014 period.

Consistent Participants in the EBRI/ICI 401(k) Database

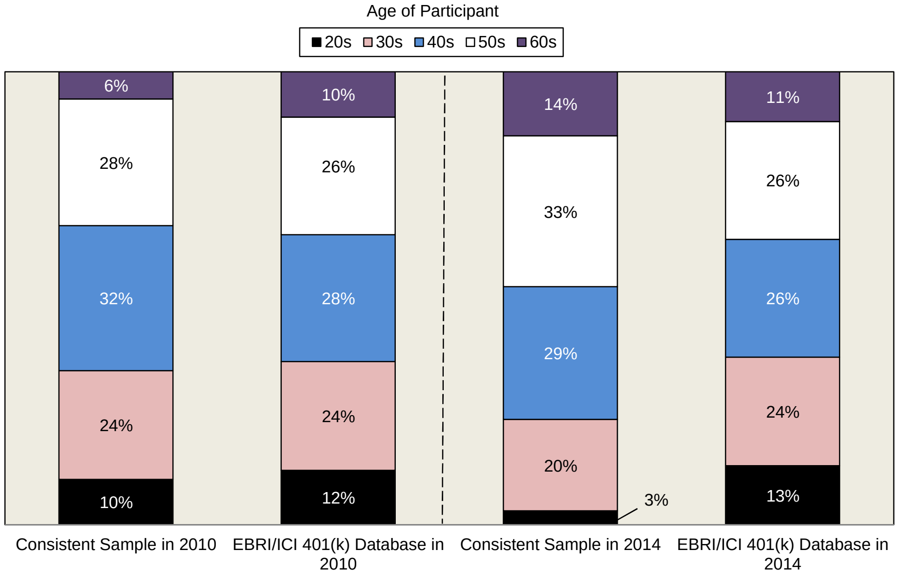
"401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2014"[4] reported year-end 2014 account balance, asset allocation, and loan activity results for the EBRI/ICI 401(k) database, which consists of a large cross section of 24.9 million 401(k) plan participants.

This paper presents a longitudinal analysis—the analysis of 401(k) participants who maintained accounts each year from 2010 through 2014—that was not included in the previous report. The longitudinal analysis tracks the account balances of 8.8 million 401(k) plan participants who had accounts in the year-end 2010 EBRI/ICI 401(k) database and each subsequent year through year-end 2014. The appendix presents results for a longitudinal analysis tracking a group of 3.5 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 2014 (a seven-year period).

Sample of Consistent 401(k) Participants, 2010–2014

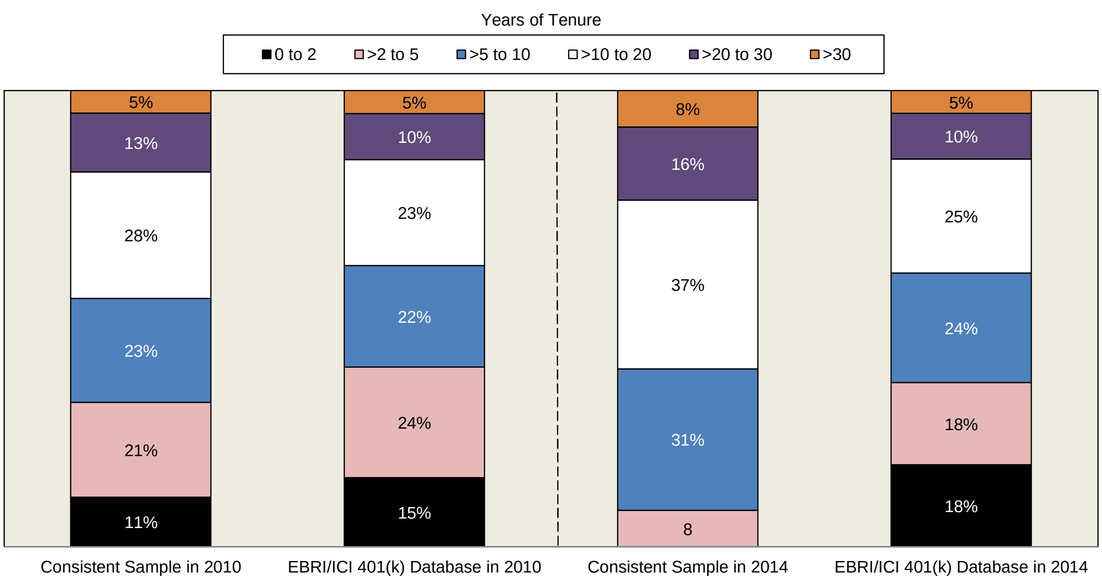
Nearly two-fifths, or 8.8 million, of the 401(k) participants with accounts at the end of 2010 in the EBRI/ICI 401(k) database are in the consistent sample.[5] These consistent participants had accounts at the end of each year from 2010 through 2014. These 8.8 million 401(k) participants make up a group 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 2010. However, by year-end 2014, these participants had grown a bit older, accrued slightly longer job tenures, and accumulated larger account balances compared with participants in the year-end 2014 cross section.

Figure 1
Consistent Sample Was Older Than Participants in the EBRI/ICI 401(k) Database at Year-End 2014
Percentage of participants by age, year-end 2010 and year-end 2014



Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
Note: The EBRI/ICI 401(k) database contains 23.4 million 401(k) plan participants at year-end 2010 and 24.9 million at year-end 2014. The consistent sample consists of 8.8 million 401(k) plan participants with account balances at the end of each year from 2010 through 2014. 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 2014
Percentage of participants by years of tenure, year-end 2010 and year-end 2014



Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
Note: The EBRI/ICI 401(k) database contains 23.4 million 401(k) plan participants at year-end 2010 and 24.9 million at year-end 2014. Participant tenure is tenure as of the year-end indicated.The consistent sample consists of 8.8 million 401(k) plan participants with account balances at the end of each year from 2010 through 2014. Components may not add to 100 percent because of rounding.

Age and Tenure of Consistent 401(k) Participants

At year-end 2010, the consistent group was similar in age to the participants in the entire EBRI/ICI database. For example, 34 percent of the participants in the consistent sample were in their 20s or 30s in 2010, similar to 36 percent of the 23.4 million participants in the entire database (Figure 1).[6] Thirty-two percent of the participants in the consistent sample were in their 40s in 2010, while 28 percent of participants in the entire database were in their 40s. Thirty-four percent of the participants in the consistent sample were in their 50s or 60s, compared with 36 percent of participants in the EBRI/ICI database overall.

The tenure composition of the consistent sample also was similar to the tenure composition of 401(k) participants in the year-end 2010 EBRI/ICI 401(k) database.[7] For example, 32 percent of the consistent sample had five or fewer years of tenure in 2010, compared with 39 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 2010, as did 15 percent of the participants in the entire EBRI/ICI 401(k) database.

As expected, the consistent participants who were followed over the four-year period tended to be a bit older and to have slightly longer tenures by year-end 2014, 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 four years in 2014 (the length of time for the longitudinal analysis), with only 8 percent having between four and five years of tenure, 31 percent having between five and 10 years, 37 percent having between 10 and 20 years, and 24 percent having more than 20 years (Figure 2). In contrast, in the entire EBRI/ICI 401(k) database in 2014, 36 percent of participants had five or fewer years of tenure, 24 percent had between five and 10 years, 25 percent had between 10 and 20 years, and 15 percent had more than 20 years.

By year-end 2014, the consistent sample of 401(k) participants also was a bit older, on average, compared with the 24.9 million participants in the entire EBRI/ICI 401(k) database. For example, only 3 percent of the participants in the consistent group were in their 20s and 20 percent were in their 30s at year-end 2014 (Figure 1). In the entire EBRI/ICI 401(k) database at year-end 2014, 13 percent of participants were in their 20s and 24 percent were in their 30s. Thirty-three percent of the participants in the consistent sample were in their 50s and 14 percent were in their 60s, compared with 26 percent and 11 percent, respectively, in the entire database.

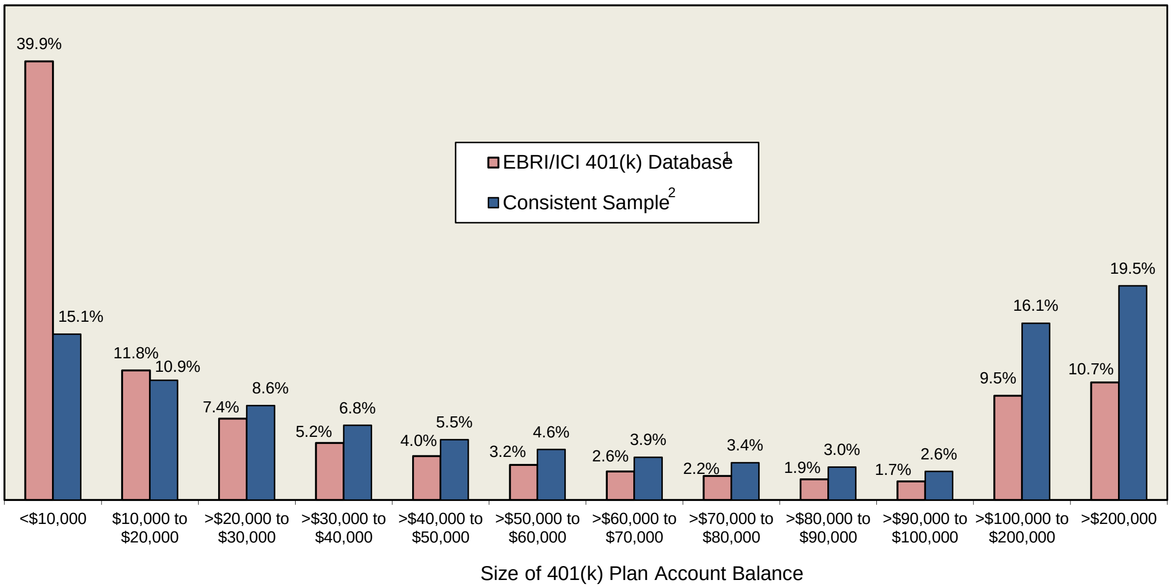
Consistent Participants Have Accumulated Sizable 401(k) Plan Account Balances

Trends in the consistent group's account balances highlight the accumulation effect of ongoing 401(k) participation. At year-end 2014, 19.5 percent of the consistent group had more than $200,000 in their 401(k) plan accounts at their current employers, while another 16.1 percent had between $100,000 and $200,000 (Figure 3). In contrast, in the broader EBRI/ICI 401(k) database, 10.7 percent had accounts with more than $200,000, and 9.5 percent had between $100,000 and $200,000.

Reflecting their higher average age and tenure, the consistent group also had median 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 2014, the average 401(k) plan account balance of the consistent group was $138,553, almost twice the average account balance of $76,293 among participants in the entire EBRI/ICI 401(k) database. The median 401(k) plan account balance among the consistent participants was $56,653 at year-end 2014, more than three times the median account balance of $18,127 for participants in the entire EBRI/ICI 401(k) database.

401(k) plan 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 tenures at their current employers tended to have smaller account balances, while those who were older or had longer job tenures tended to have higher account balances.[8] For example, within the consistent group, among 401(k) participants with more than 10 to 20 years of tenure at year-end 2014, older participants tended to have higher balances than younger participants: those in their 30s with more than 10 to 20 years of tenure had an average account balance of $81,444, compared with an average of $131,282 for participants in their 60s with more than 10 to 20 years of tenure (Figure 5). Among consistent participants in their 60s at year-end 2014, those with more than five to 10 years of tenure had a lower average 401(k) balance ($87,308) than those with more than 30 years of tenure ($304,622).

Figure 3
Distribution of 401(k) Plan Account Balances by Size of Account Balance
Percentage of participants with account balances in specified ranges, year-end 2014



Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
[1] The year-end 2014EBRI/ICI 401(k) database represents 24.9 million 401(k) plan participants.
[2] The consistent sample is 8.8 million 401(k) plan participants with account balances at the end of each year from 2010 through 2014.
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.

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:

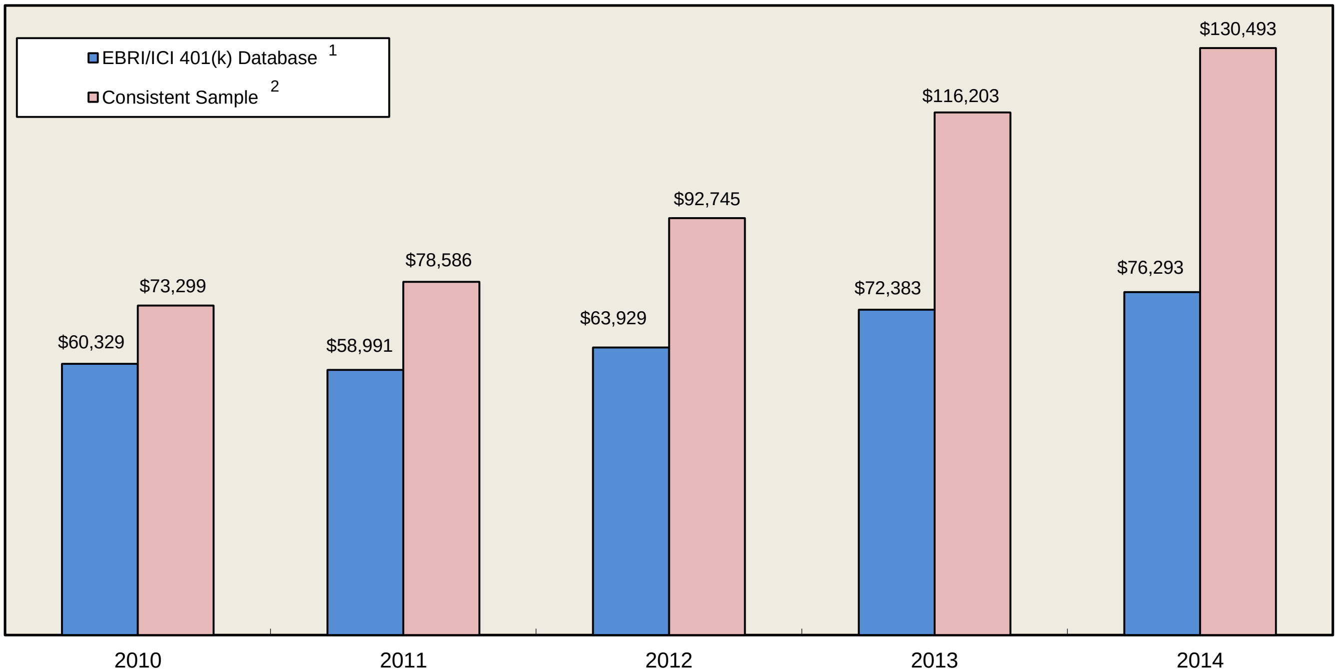
- New contributions by the participant (+), the employer (+), or both;
- Withdrawals (-), borrowing (-), and loan repayments (+); and
- Total investment return on account balances (+/-), which depends on the performance of financial markets and on the allocation of assets in an individual's account.

The change in any individual participant's 401(k) plan 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.

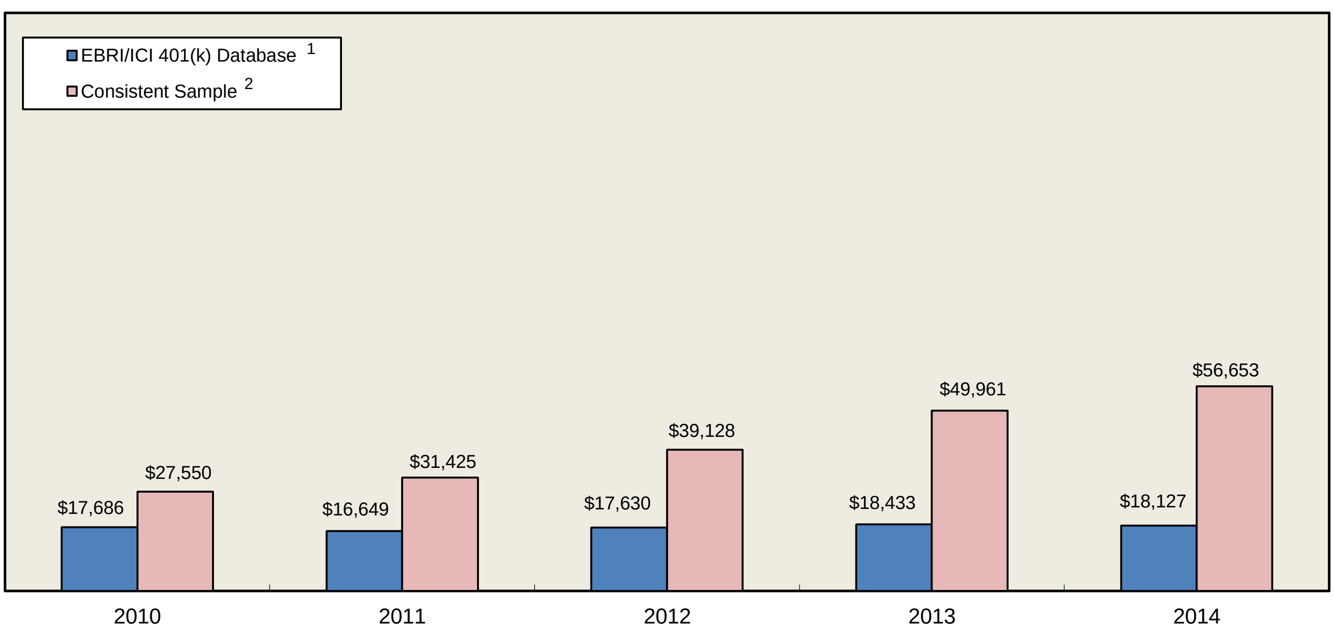
Altogether, from year-end 2010 through year-end 2014, the average 401(k) plan account balance among the group of consistent participants increased by 89 percent, rising from $73,299 at year-end 2010 to $130,493at year-end 2014

Figure 4
Consistent 401(k) Participants
Accumulate Significant Balances

Average



Median



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

[1] The number of 401(k) plan participants varies from year to year in the EBRI/ICI 401(k) database. The year-end 2014 EBRI/ICI 401(k) database represents 24.9 million 401(k) plan participants.

[2] Participants include the 8.8 million 401(k) plan participants with account balances at the end of each year from 2010 through 2014.

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.

(Figures 4, 5, and 6). This translates into a compound annual average growth rate of 17.3 percent over the four-year period. The median account balance among this consistent group also grew, more than doubling from $27,550 in 2010 to $56,653 in 2014 (a compound annual average growth rate of 19.7 percent) (Figure 4).

Figure 5

401(k) Plan Account Balances Among Consistent 401(k) Participants from 2010 Through 2014

Average 401(k) plan balance for consistent 401(k) participants by age and tenure, year-end 2010–2014

Age Group	Tenure (years)	2010	2011	2012	2013	2014
20s	All	$6,128	$9,257	$14,144	$21,026	$26,428
	>2 to 5	$2,838	$6,337	$11,758	$19,377	$26,096
	>5 to 10	7,647	10,712	15,701	22,683	28,087
30s	All	25,361	29,664	38,467	51,989	61,757
	>2 to 5	9,330	13,570	21,393	32,334	42,432
	>5 to 10	20,114	24,782	33,563	46,506	57,116
	>10 to 20	39,467	43,648	53,828	70,546	81,428
40s	All	60,376	65,483	79,417	102,781	117,863
	>2 to 5	23,140	27,438	38,210	53,599	65,824
	>5 to 10	33,182	38,906	50,693	68,300	83,254
	>10 to 20	70,392	75,639	91,192	117,565	135,113
	>20 to 30	106,324	111,660	129,835	164,492	183,119
50s	All	101,731	108,073	126,484	157,845	176,922
	>2 to 5	37,572	41,579	54,358	72,452	85,980
	>5 to 10	40,550	46,755	59,402	78,215	93,670
	>10 to 20	81,823	88,131	105,157	133,284	153,247
	>20 to 30	152,800	159,662	184,077	227,643	253,132
	>30	193,163	202,138	228,917	279,035	303,084
60s	All	116,442	121,876	136,947	161,083	171,641
	>2 to 5	46,096	50,101	61,800	77,449	87,170
	>5 to 10	43,920	49,913	61,177	76,631	87,294
	>10 to 20	80,046	85,866	99,217	119,470	131,238
	>20 to 30	151,760	157,192	175,349	203,877	217,280
	>30	228,098	234,173	255,340	294,255	304,570
All	All	73,299	78,586	92,745	116,203	130,493

Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
Note: The analysis is based on a sample of 8.8 million 401(k) plan participants with account balances at the end of each year from 2010 through 2014. Age and tenure groups are based on participant age and tenure at year-end 2014. 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.

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, withdrawal/loan activity, and investment returns. Participants who were younger or had fewer years of tenure experienced the largest percent increases in average account balance between year-end 2010 and year-end 2014. For example, the average account balance of 401(k) participants in their 20s rose 331.3 percent (a 44.1 percent compound annual average growth rate) between the end of 2010 and the end of 2014 (Figures 5 and 6). Because younger participants' account balances tended to be smaller (Figure 5), their contributions produced significant percent 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 percent growth in account size (Figure 6). For example, the average account balance of 401(k) participants in their 60s increased 47.4 percent (a 10.2 percent compound annual average growth rate) between year-end 2010 and year-end 2014. 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.[9]

Figure 6

Changes in 401(k) Plan Account Balances Among Consistent 401(k) Participants from 2010 Through 2014

Percent change in average 401(k) plan account balance among consistent 401(k) participants by age and tenure, 2010–2014

Age Group	Tenure (years)	2010–2011	2011–2012	2012–2013	2013–2014	2010-2014	Annual Average Growth Rate, 2010–2014
20s	All	51.1%	52.8%	48.7%	25.7%	331.3%	44.1%
	>2 to 5	123.3%	85.5%	64.8%	34.7%	819.5%	74.1%
	>5 to 10	40.1%	46.6%	44.5%	23.8%	267.3%	38.4%
30s	All	17.0%	29.7%	35.2%	18.8%	143.5%	24.9%
	>2 to 5	45.4%	57.6%	51.1%	31.2%	354.8%	46.0%
	>5 to 10	23.2%	35.4%	38.6%	22.8%	184.0%	29.8%
	>10 to 20	10.6%	23.3%	31.1%	15.4%	106.3%	19.8%
40s	All	8.5%	21.3%	29.4%	14.7%	95.2%	18.2%
	>2 to 5	18.6%	39.3%	40.3%	22.8%	184.5%	29.9%
	>5 to 10	17.3%	30.3%	34.7%	21.9%	150.9%	25.9%
	>10 to 20	7.5%	20.6%	28.9%	14.9%	91.9%	17.7%
	>20 to 30	5.0%	16.3%	26.7%	11.3%	72.2%	14.6%
50s	All	6.2%	17.0%	24.8%	12.1%	73.9%	14.8%
	>2 to 5	10.7%	30.7%	33.3%	18.7%	128.8%	23.0%
	>5 to 10	15.3%	27.0%	31.7%	19.8%	131.0%	23.3%
	>10 to 20	7.7%	19.3%	26.7%	15.0%	87.3%	17.0%
	>20 to 30	4.5%	15.3%	23.7%	11.2%	65.7%	13.5%
	>30	4.6%	13.2%	21.9%	8.6%	56.9%	11.9%
60s	All	4.7%	12.4%	17.6%	6.6%	47.4%	10.2%
	>2 to 5	8.7%	23.4%	25.3%	12.6%	89.1%	17.3%
	>5 to 10	13.6%	22.6%	25.3%	13.9%	98.8%	18.7%
	>10 to 20	7.3%	15.5%	20.4%	9.9%	64.0%	13.2%
	>20 to 30	3.6%	11.6%	16.3%	6.6%	43.2%	9.4%
	>30	2.7%	9.0%	15.2%	3.5%	33.5%	7.5%
All	All	7.2%	18.0%	25.3%	12.3%	78.0%	15.5%

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

Note: The analysis is based on a sample of 8.8 million 401(k) plan participants with account balances at the end of each year from 2010 through 2014. Age and tenure groups are based on participant age and tenure at year-end 2014. 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.

Investment returns, which vary with 401(k) plan account asset allocation, also influence the changes in participants' accounts. Although asset allocation varied with age, and many participants held a range of investments, stock market performance tends to have an impact on these balances because, in large part, 401(k) plan participants' balances tended to be weighted toward equities. Altogether, at year-end 2014, 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,[10] and company stock—represented about two-thirds of 401(k) plan participants' assets (Figure 7, lower panel).[11] 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.

Background Factors Influencing 401(k) Plan Assets

Aggregate data on 401(k) plans provide insight into the possible influence of each of the factors that cause changes in account balances: contributions, withdrawal/loan activity, and investment returns. In recent years, contributions to 401(k) plans have averaged a bit over about $300 billion a year, and benefits paid (including rollovers) have averaged about nearly $290 billion (Figure 8). Investment returns—interest, dividends, and realized and unrealized asset appreciation/depreciation vary significantly year-to-year—on net had nearly no impact on assets in 2011 and provided a significant boost as the stock market rose sharply in 2013.

Figure 7

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

Percentage of account balances, year-end 2010 and year-end 2014

Year-End 2010

Age Group	Equity Funds	Target-date Funds[1, 2]	Non–target-date Balanced Funds	Bond Funds	Money Funds	GICs[2, 3] and other stable-value funds	Company Stock[2]	Other	Unknown	Memo: Equities[4]
20s	29.4%	38.3%	8.5%	6.8%	2.2%	3.7%	8.2%	1.4%	1.6%	76.7%
30s	44.4%	21.0%	6.6%	8.3%	2.9%	4.5%	8.6%	2.2%	1.5%	75.3%
40s	49.1%	13.8%	5.7%	9.2%	3.2%	5.4%	9.3%	2.8%	1.4%	72.7%
50s	43.7%	11.6%	6.0%	10.8%	3.9%	8.8%	10.5%	3.2%	1.4%	64.5%
60s	37.2%	12.2%	6.3%	13.1%	5.7%	12.0%	8.7%	3.5%	1.2%	55.0%
All Consistent Sample[5]	43.4%	13.0%	6.1%	10.8%	4.2%	8.5%	9.6%	3.1%	1.3%	64.8%
EBRI/ICI 401(k) Database[6]	42.0%	11.1%	7.1%	11.6%	4.4%	10.3%	8.0%	2.9%	2.6%	62.0%

Year-End 2014

Age Group	Equity funds	Target-date funds[1, 2]	Non–target-date balanced funds	Bond funds	Money funds	GICs[2, 3] and other stable-value funds	Company stock[2]	Other	Unknown	Memo: equities[4]
20s	36.0%	37.8%	5.2%	5.1%	1.3%	2.6%	6.1%	4.4%	1.4%	78.8%
30s	44.9%	23.5%	7.0%	6.4%	2.0%	3.2%	6.8%	4.6%	1.5%	76.6%
40s	49.0%	16.0%	6.7%	7.3%	2.5%	4.3%	7.9%	4.8%	1.5%	73.5%
50s	44.2%	14.0%	6.5%	9.0%	3.4%	7.7%	8.7%	5.4%	1.1%	64.9%
60s	38.4%	14.6%	7.1%	10.9%	4.6%	11.0%	7.3%	5.0%	1.0%	56.3%
All Consistent Sample[5]	44.3%	15.6%	6.7%	8.7%	3.3%	7.1%	8.0%	5.1%	1.2%	66.6%
EBRI/ICI 401(k) Database[7]	43.2%	18.0%	6.9%	8.4%	3.8%	6.3%	7.0%	5.0%	1.4%	66.2%

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

[1] 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.

[2] Not all participants are offered this investment option.

[3] GICs are guaranteed investment contracts.

[4] Equities include equity funds, company stock, the equity portion of target-date funds, and the equity portion of non-target-date balanced funds

[5] Asset allocation by age group is among the consistent sample of 8.8 million 401(k) plan participants with account balances at the end of each year from 2010 through 2014.

[6] The year-end 2010 EBRI/ICI 401(k) database represents 23.4 million 401(k) plan participants.

[7] The year-end 2014 EBRI/ICI 401(k) database represents 24.9 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 2014. Row percentages may not add to 100 percent because of rounding. Percentages are dollar-weighted averages.

Figure 8
401(k) Plan Contributions, Benefits Disbursed, Investment Returns, and Assets

Annual flows reported on Form 5500 and year-end assets, billions of dollars, 2000–2015

	Total Contributions[1]	Total Benefits Disbursed[2]	Interest, Dividends, Gains, and Other Items[3]	Assets at Year-End[4]
2000	169	172	-52	1,739
2001	174	148	-60	1,706
2002	182	147	-172	1,569
2003	187	141	323	1,937
2004	204	167	225	2,199
2005	223	190	166	2,399
2006	251	229	361	2,782
2007	273	262	190	2,983
2008	286	233	-827	2,208
2009	258	208	489	2,746
2010	267	245	380	3,148
2011	285	252	-40	3,141
2012	305	284	364	3,526
2013	327	328	659	4,184
2014	N/A	N/A	N/A	4,559
2015	N/A	N/A	N/A	4,650

Sources: Investment Company Institute and Department of Labor.

[1]Total contributions include both employer and employee contributions.

[2]Total benefits disbursed include both benefits paid directly from trust funds and premium payments made by plans to insurance carriers. Amounts exclude benefits paid directly by insurance carriers.

[3]This category includes interest, dividends, rent, net gains or losses on sale of assets, unrealized appreciation or depreciation of assets, and other income and expenses. The bulk of this category is net investment gains or losses.

[4]Estimates for 401(k) plan assets through 2013 are based on the Department of Labor Form 5500 Research File.

Note: Data exclude plans covering only one participant.

N/A = not available.

Contributions, which positively affect 401(k) plan account balances, include both employer and employee contributions, and most 401(k) participants are in plans where the employer contributes. In 2013, nearly 9 in 10 participants were in 401(k) plans where the employer made contributions (Figure 9). Although this figure fell slightly in the wake of the financial market crisis, reaching a low of 85 percent in 2010, it had generally rebounded during the time of the longitudinal study. With regard to individual participants' contribution activity, defined contribution (DC) plan participants tend to continue contributing in any given year to their plans.[12]

Withdrawals and borrowing reduces 401(k) plan account balances in the EBRI/ICI 401(k) database, while loan repayment has a positive impact. Withdrawal activity among active DC plan participants is relatively rare. Typically, fewer than 5 percent of active DC plan participants take any withdrawal in a given year, with fewer than 2 percent taking hardship withdrawals.[13] Data from the EBRI/ICI 401(k) database indicate that only 20 percent of 401(k) plan participants in plans offering loans had loans outstanding at year-end 2014, with the youngest (11 percent of participants in their 20s) and oldest (13 percent of participants in their 60s) less likely to have loans outstanding than those in their 30s, 40s, or 50s (Figure 10). In the database, a participant's account balance is reduced in the year that the loan is originated, but repayment of the loan in the ensuing years contributes to account growth.

Between year-end 2010 and year-end 2014, the U.S. stock market generally rose (Figure 11), which tends to provide a boost to 401(k) plan accounts holding equities. On average, about two-thirds of the consistent sample of 401(k) participants' account balances were invested in equities (Figure 7). Subdued stock market performance in 2011 was followed by stronger growth in 2012 through 2014, with particularly strong appreciation in 2013 (Figure 11). While contributions and loan repayments also play a role in the growth of the average 401(k) plan account balances observed, the pattern of account balance growth rates year-to-year also reflects the stock market performance.

About the EBRI/ICI 401(k) 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, 2014, the EBRI/ICI 401(k) database included statistical information about 24.9 million 401(k) plan participants, in 81,139 employer-sponsored 401(k) plans, holding $1.9 trillion in assets. The 2014 EBRI/ICI 401(k) database covered 45 percent of the universe of active 401(k) plan participants, 15 percent of plans, and 42 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 2014.[14] 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 2014, 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.[15]

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.[16] Plan balances are constructed as the sum of all participant balances in the plan.

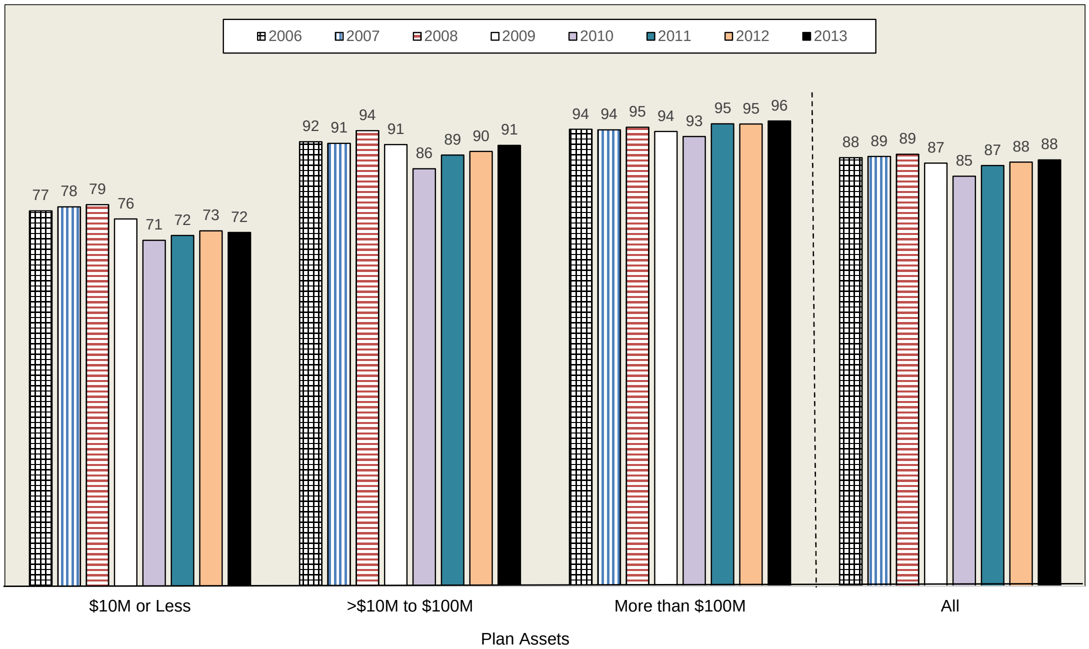
Investment Options

In the EBRI/ICI 401(k) database, investment options are grouped into eight broad categories.[17] 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 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.[18] 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[19] and other stable value funds,[20] 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.[21]

Figure 9

Most 401(k) Plan Participants Are in Plans With Employer Contributions

Percentage of active 401(k) participants in plans with employer contributions (by plan assets, plan year 2006–2013)

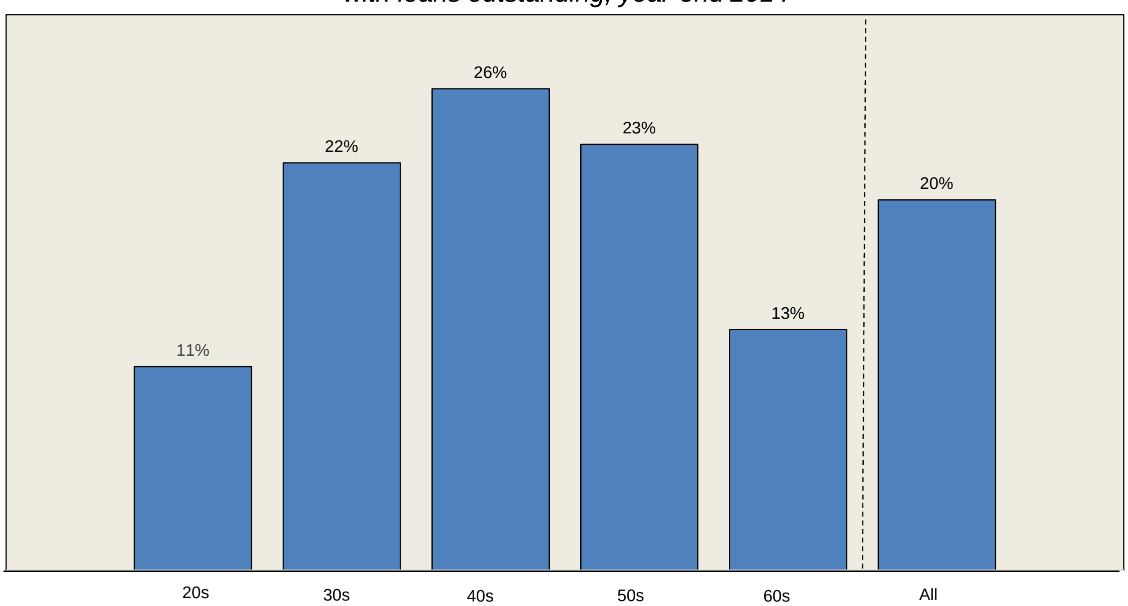


Source: ICI tabulations of U.S. Department of Labor Form 5500 Research File.

Figure 10

One-Fifth of Eligible 401(k) Plan Participants Have Loans Outstanding

Percentage of eligible 401(k) plan participants with loans outstanding, year-end 2014

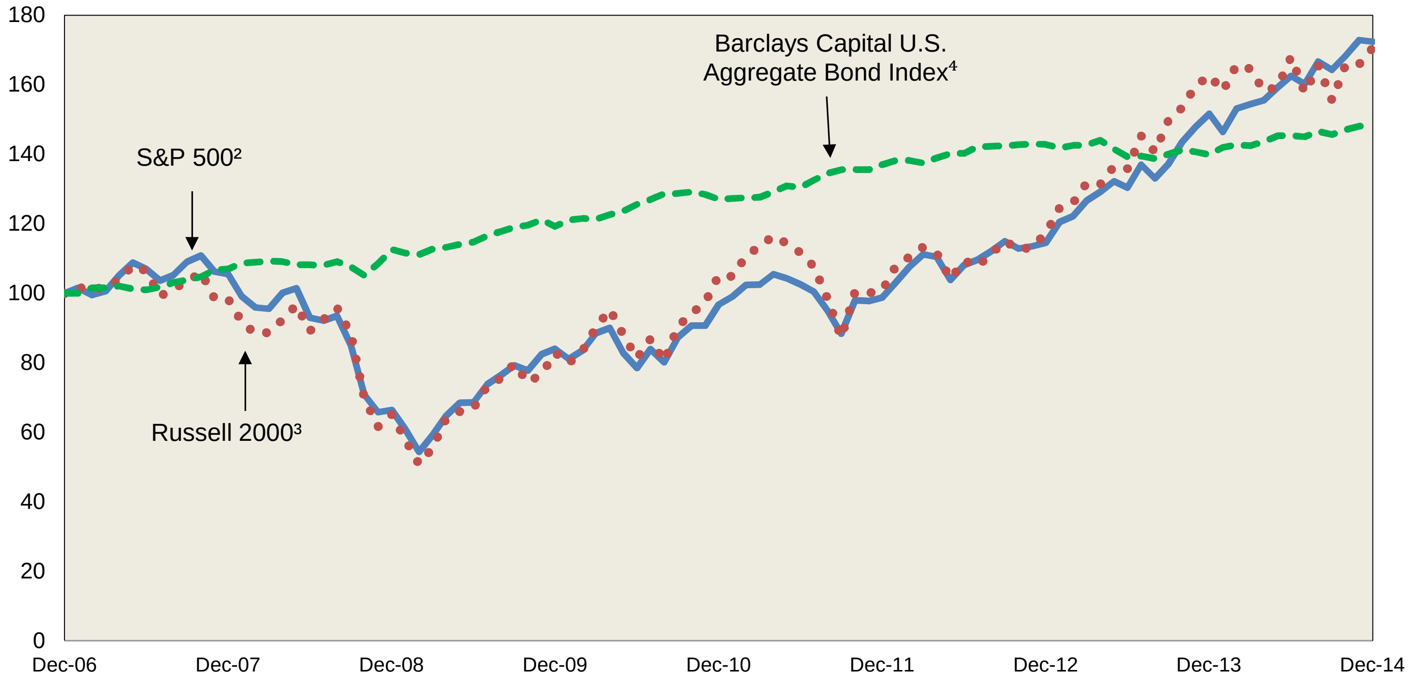


Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
Note: Eligible 401(k) plan participants are those in 401(k) plans that offer loans.

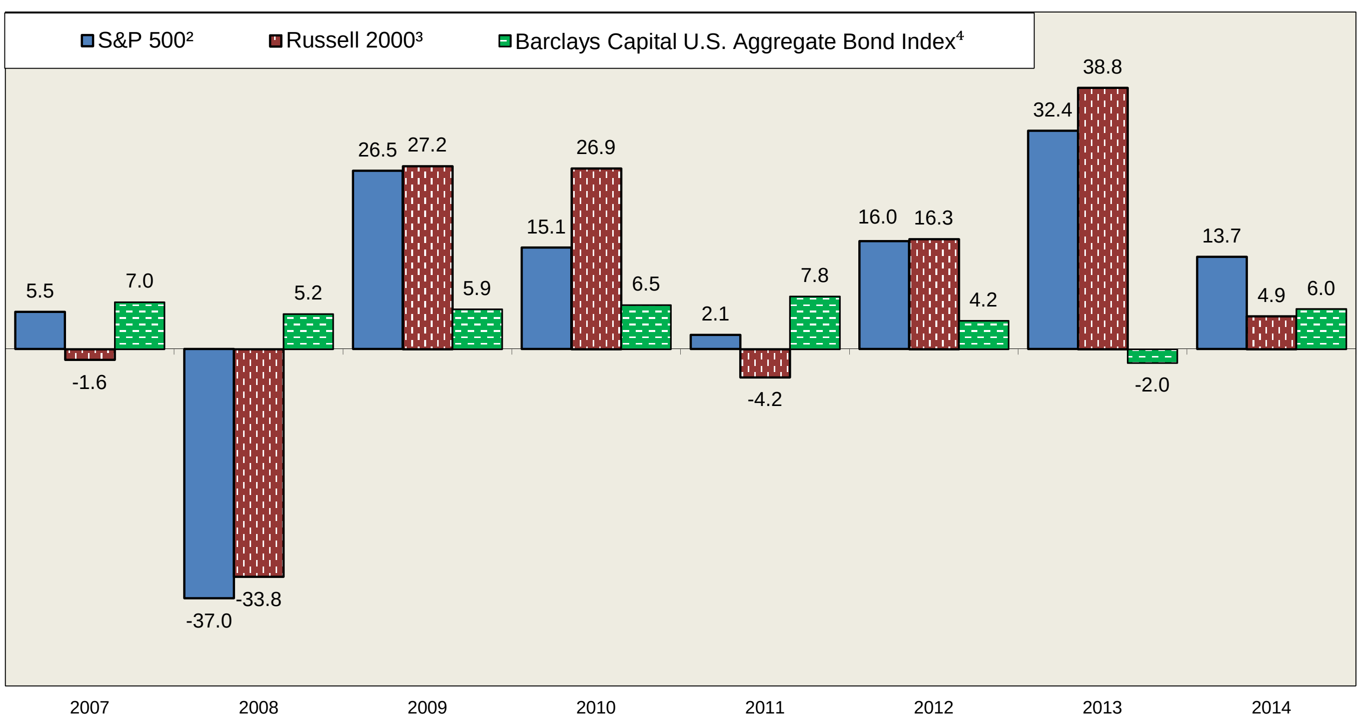
Figure 11

Domestic Stock and Bond Market Indexes

Month-end Level,[1] December 2006 to December 2014



Annual Percent Change in Total Return Index



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

[1] All indexes are set to 100 in December 2006.

[2] The S&P 500 index measures the performance of 500 stocks chosen for market size, liquidity, and industry group representation.

[3] 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).

[4] 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.

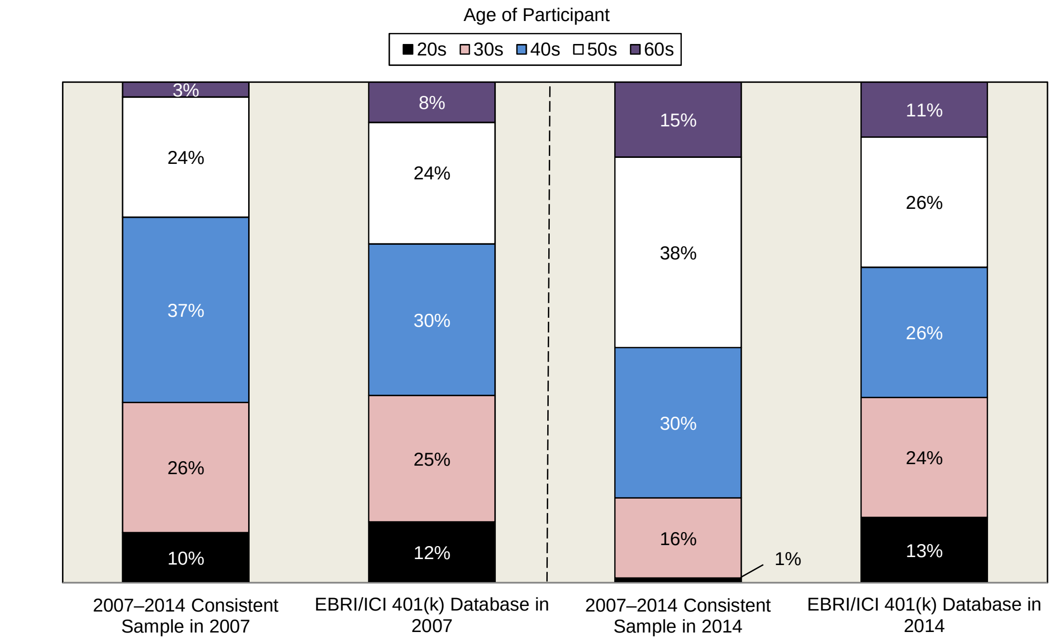
Appendix: Consistent 401(k) Participants 2007–2014

This appendix contains a longitudinal analysis tracking a group of 3.5 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 2014 (a seven-year period).[22] About 16 percent, or 3.5 million, of the 401(k) participants with accounts at the end of 2007 in the EBRI/ICI 401(k) database are in the 2007–2014 consistent sample.[23] These consistent participants had accounts at the end of each year from 2007 through 2014. These 3.5 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.

Age and Tenure Composition of the 2007–2014 Sample of Consistent 401(k) Participants

Initially, the 2007–2014 consistent sample was demographically similar to the entire EBRI/ICI 401(k) database at year-end 2007 (Figure A1). However, by year-end 2014, these participants had grown older and accrued longer job tenures (the minimum tenure possible for this group is seven years) compared against the entire EBRI/ICI 401(k) database.

Figure A1
Consistent Sample Was Older Than Participants in the EBRI/ICI 401(k) Database at Year-End 2014
Percentage of participants by age, year-end 2007 and year-end 2014



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 24.9 million at year-end 2014. The consistent sample consists of 3.5 million 401(k) plan participants with account balances at the end of each year from 2007 through 2014. Participant age is age as of the year-end indicated. Components may not add to 100 percent because of rounding.

2007–2014 Sample of Consistent Participants Has Accumulated Sizable 401(k) Plan Account Balances

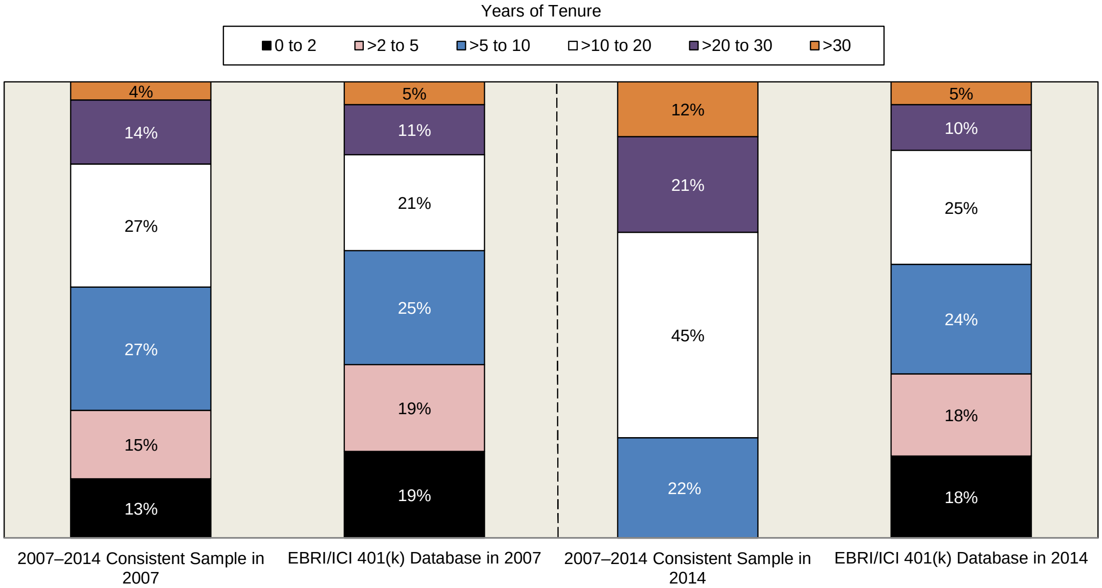
Trends in the 2007–2014 consistent group's account balances highlight the accumulation effect of ongoing 401(k) participation. At year-end 2014, 26.9 percent of this consistent group had more than $200,000 in their 401(k) plan accounts at their current employers, while another 19.3 percent had between $100,000 and $200,000 (Figure A2). In contrast, in the broader EBRI/ICI 401(k) database, 10.7 percent had accounts with more than $200,000, and 9.5 percent had between $100,000 and $200,000 at year-end 2014.

Reflecting their higher average age and tenure, the consistent group also had median and average account balances that were much higher than the median and average account balances of the broader EBRI/ICI 401(k) database (Figure A3). At year-end 2014, the average 401(k) plan account balance of the 2007–2014 consistent group was

Figure A2

Consistent Sample Had Longer Tenure Than Participants in the EBRI/ICI 401(k) Database at Year-End 2014

Percentage of participants by years of tenure, year-end 2007 and year-end 2014

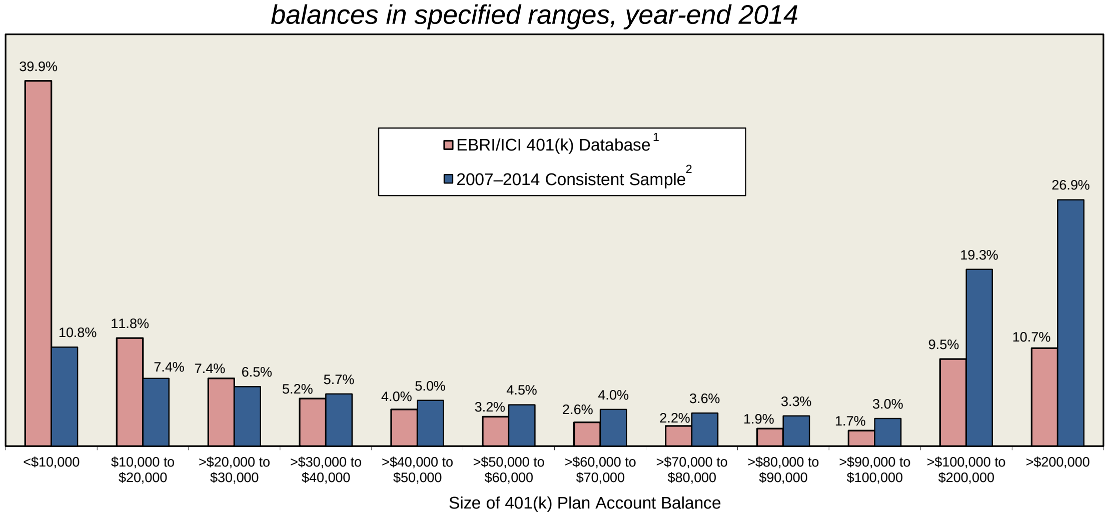


Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
Note: The EBRI/ICI 401(k) database contains 21.8 million 401(k) plan participants at year-end 2007 and 24.9 million at year-end 2014. Participant tenure is tenure as of the year-end indicated.The consistent sample consists of 3.5 million 401(k) plan participants with account balances at the end of each year from 2007 through 2014.

Figure A3

Distribution of 401(k) Plan Account Balances by Size of Account Balance for 2007–2014 Consistent Participants and EBRI/ICI 401(k) Database

Percentage of participants with account balances in specified ranges, year-end 2014



Source: Tabulations from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
[1] The year-end 2014 EBRI/ICI 401(k) database represents 24.9 million 401(k) plan participants.
[2] The consistent sample is 3.5 million 401(k) plan participants with account balances at the end of each year from 2007 through 2014.
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.

$170,290, more than twice the average account balance of $76,293 among participants in the entire EBRI/ICI 401(k) database. The median 401(k) plan account balance among the consistent participants was $87,418 at year-end 2014, more than four times the median account balance of $18,127 for participants in the entire EBRI/ICI 401(k) database.

Changes in 2007–2014 Consistent 401(k) Participants' Account Balances

401(k) plan account balances tended to increase with both age and tenure among the 2007–2014 consistent group of participants, as they do in the cross-sectional EBRI/ICI 401(k) database. Younger participants or those with shorter job tenures at their current employers tended to have smaller account balances, while those who were older or had longer job tenures tended to have higher account balances (Figure A4).[24]

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

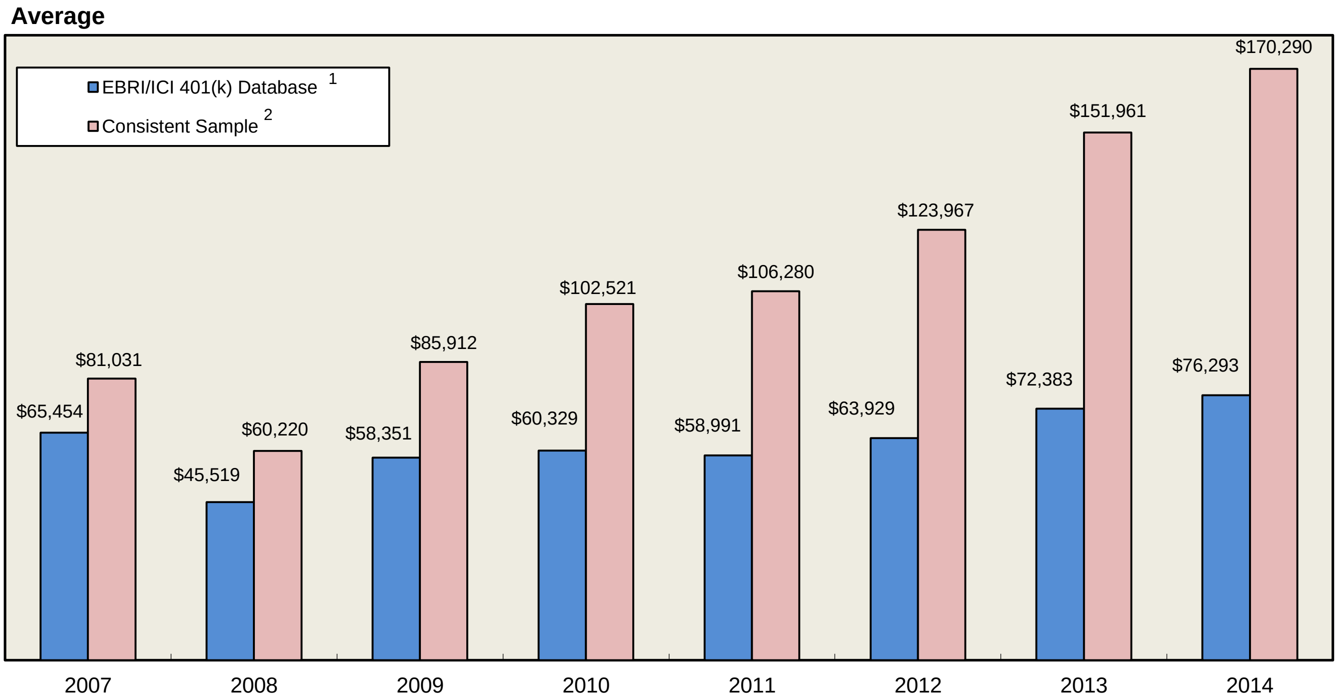
- New contributions by the participant (+), the employer (+), or both;
- Withdrawals (-), borrowing (-), and loan repayments (+); and
- Total investment return on account balances (+/-), which depends on the performance of financial markets and on the allocation of assets in an individual's account.

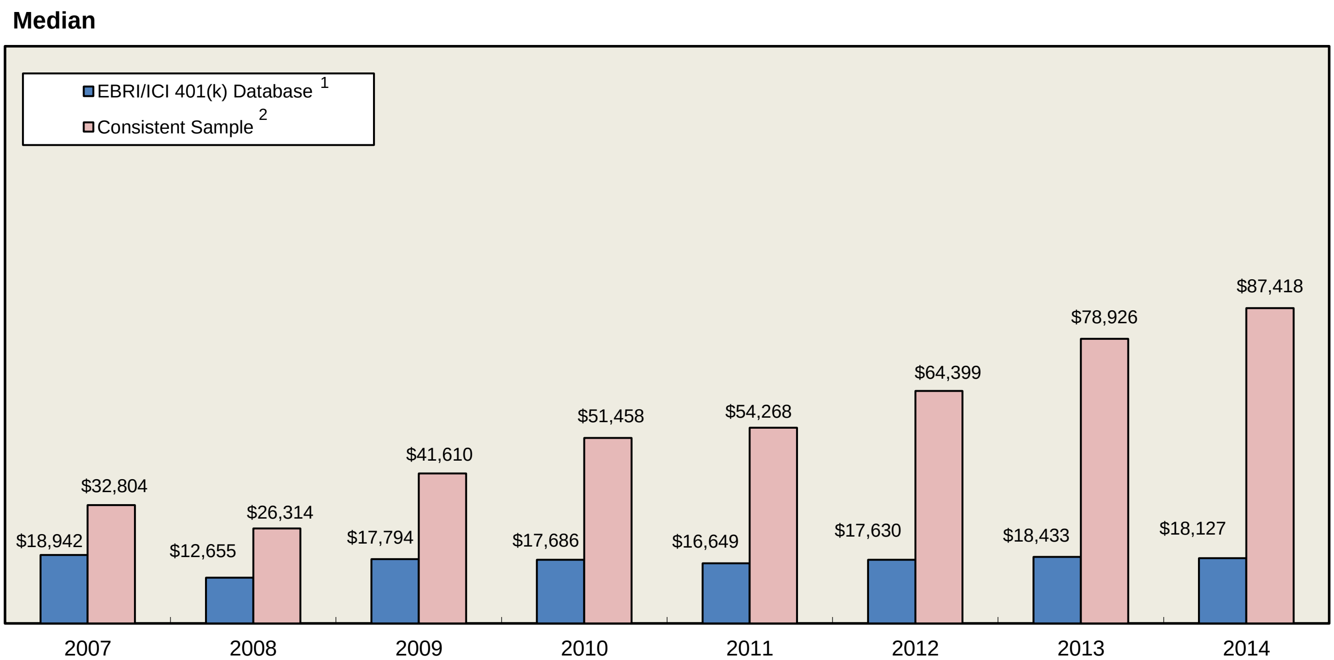
The change in any individual participant's 401(k) plan account balance is influenced by the magnitudes of these three factors relative to the starting account balance. For example, a contribution of a given dollar amount produces a larger growth rate when added to a smaller account than it would if added 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 2014, the average 401(k) plan account balance among the 2007–2014 group of consistent participants increased by 110 percent, rising from $81,031 at year-end 2007 to $170,290 at year-end 2014 (Figures A4 and A5). This translates into a compound annual average growth rate of 11.2 percent over the seven-year period. The median account balance among this consistent group also grew, more than doubling from $32,804 in 2007 to $87,418 in 2014 (a compound annual average growth rate of 15.0 percent) (Figure A3).

In addition to contributions, withdrawals, and loan activity, the changes in 401(k) participant account balances also reflect changes in asset values during the seven-year period. 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 2014, 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,[25] and company stock—represented about two-thirds of 401(k) plan participants' assets (Figure A6, lower panel).[26] 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 11) tended to pull 401(k) plan account balances lower, although diversified portfolios and ongoing contributions[27] 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 A4 and A5).

Figure A4
Consistent 401(k) Participants Accumulate Significant Balances





Source: Tabulations from the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project.
[1] The number of 401(k) plan participants varies from year to year in the EBRI/ICI 401(k) dataase. The year-end 2014 EBRI/ICI 401(k) database represents 24.9 million 401(k) plan participants.
[2] Participants include the 3.5 million 401(k) plan participants with account balances at the end of each year from 2007 through 2014.
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 A5

401(k) Plan Account Balances Among Consistent 401(k) Participants from 2007 Through 2014

Average 401(k) plan balance for consistent 401(k) participants by age and tenure, year-end 2007–2014

Age Group	Tenure (years)	2007	2008	2009	2010	2011	2012	2013	2014
20s	All	$2,688	$3,931	$8,507	$12,882	$15,287	$20,484	$25,332	$30,896
	>5 to 10	2,218	3,644	8,394	12,914	15,591	21,065	25,931	31,843
30s	All	19,703	17,020	28,987	38,633	42,236	53,067	68,991	81,133
	>5 to 10	9,234	10,259	20,886	30,041	34,449	45,105	60,285	73,220
	>10 to 20	30,558	24,165	38,410	49,108	52,332	64,095	81,714	94,291
40s	All	57,385	42,686	64,823	80,020	83,852	100,684	127,675	145,860
	>5 to 10	19,008	18,297	34,416	47,474	53,150	67,745	89,213	107,570
	>10 to 20	60,492	44,360	68,008	83,631	87,395	104,912	133,120	151,930
	>20 to 30	100,109	70,831	100,535	118,973	122,087	142,476	176,608	197,106
50s	All	106,137	77,341	109,249	129,343	133,706	155,546	190,991	214,612
	>5 to 10	23,717	22,430	40,077	54,214	60,863	76,532	99,288	120,451
	>10 to 20	74,029	54,733	81,941	99,432	104,296	123,978	154,910	176,959
	>20 to 30	148,880	105,024	146,598	169,928	173,194	199,527	243,267	271,764
	>30	188,406	135,923	181,871	210,051	215,337	243,742	291,711	318,777
60s	All	128,475	96,202	129,354	148,667	151,459	169,183	195,852	209,479
	>5 to 10	24,833	24,312	41,472	54,942	61,850	75,784	94,001	110,268
	>10 to 20	75,347	57,828	83,592	99,852	104,251	120,272	143,065	157,348
	>20 to 30	155,186	113,521	153,067	173,766	175,642	195,596	224,711	240,475
	>30	232,129	170,756	220,948	247,209	248,102	270,309	306,459	319,106
All	All	81,031	60,220	85,912	102,521	106,280	123,967	151,961	170,290

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

Note: The analysis is based on a sample of 3.5 million 401(k) plan participants with account balances at the end of each year from 2007 through 2014. Age and tenure groups are based on participant age and tenure at year-end 2014. 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 A6

Changes in 401(k) Plan Account Balances Among Consistent 401(k) Participants from 2007 Through 2014

Percent change in average 401(k) plan account balance among consistent 401(k) participants by age and tenure, 2007–2014

Age Group	Tenure (years)	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2007-2014	Compound Annual Average Growth Rate, 2007–2014
20s	All	46.2%	116.4%	51.4%	18.7%	34.0%	23.7%	22.0%	1049.4%	41.7%
	>5 to 10	64.3%	130.3%	53.9%	20.7%	35.1%	23.1%	22.8%	1335.7%	46.3%
30s	All	-13.6%	70.3%	33.3%	9.3%	25.6%	30.0%	17.6%	311.8%	22.4%
	>5 to 10	11.1%	103.6%	43.8%	14.7%	30.9%	33.7%	21.5%	692.9%	34.4%
	>10 to 20	-20.9%	58.9%	27.9%	6.6%	22.5%	27.5%	15.4%	208.6%	17.5%
40s	All	-25.6%	51.9%	23.4%	4.8%	20.1%	26.8%	14.2%	154.2%	14.2%
	>5 to 10	-3.7%	88.1%	37.9%	12.0%	27.5%	31.7%	20.6%	465.9%	28.1%
	>10 to 20	-26.7%	53.3%	23.0%	4.5%	20.0%	26.9%	14.1%	151.2%	14.1%
	>20 to 30	-29.2%	41.9%	18.3%	2.6%	16.7%	24.0%	11.6%	96.9%	10.2%
50s	All	-27.1%	41.3%	18.4%	3.4%	16.3%	22.8%	12.4%	102.2%	10.6%
	>5 to 10	-5.4%	78.7%	35.3%	12.3%	25.7%	29.7%	21.3%	407.9%	26.1%
	>10 to 20	-26.1%	49.7%	21.3%	4.9%	18.9%	25.0%	14.2%	139.0%	13.3%
	>20 to 30	-29.5%	39.6%	15.9%	1.9%	15.2%	21.9%	11.7%	82.5%	9.0%
	>30	-27.9%	33.8%	15.5%	2.5%	13.2%	19.7%	9.3%	69.2%	7.8%
60s	All	-25.1%	34.5%	14.9%	1.9%	11.7%	15.8%	7.0%	63.1%	7.2%
	>5 to 10	-2.1%	70.6%	32.5%	12.6%	22.5%	24.0%	17.3%	344.0%	23.7%
	>10 to 20	-23.3%	44.6%	19.5%	4.4%	15.4%	19.0%	10.0%	108.8%	11.1%
	>20 to 30	-26.8%	34.8%	13.5%	1.1%	11.4%	14.9%	7.0%	55.0%	6.5%
	>30	-26.4%	29.4%	11.9%	0.4%	9.0%	13.4%	4.1%	37.5%	4.6%
All	All	-25.7%	42.7%	19.3%	3.7%	16.6%	22.6%	12.1%	110.2%	11.2%

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

Note: The analysis is based on a sample of 3.5 million 401(k) plan participants with account balances at the end of each year from 2007 through 2014. Age and tenure groups are based on participant age and tenure at year-end 2014. 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.

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Endnotes

[1] For example, as of December 31, 2014, the EBRI/ICI 401(k) database included statistical information on 24.9 million 401(k) plan participants, in 81,139 employer-sponsored 401(k) plans, holding $1.9 trillion in assets (see VanDerhei et al. 2016). Using National Compensation Survey data and historical relationships and trends evident in the Form 5500 data, EBRI and ICI estimate the number of active 401(k) participants to be about 55 million in 2014 and the number of 401(k) plans to be about 535,000 (see note 2 in VanDerhei et al. 2016; and U.S. Department of Labor, Employee Benefits Security Administration 2015). At year-end 2014, 401(k) plan assets were $4.6 trillion (see Investment Company Institute 2016). The 2014 EBRI/ICI database covers 45 percent of the universe of 401(k) plan participants, 15 percent of plans, and 42 percent of 401(k) plan assets.

[2] 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.

[3] Account balances are net of unpaid loan balances.

[4] Available online at http://www.ebri.org/pdf/briefspdf/EBRI_IB_423.Apr16.401k-Update.pdf and https://www.ici.org/pdf/per22-03.pdf

[5] 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.

[6] For the report on the year-end 2010 EBRI/ICI 401(k) database, see VanDerhei et al. 2011.

[7] 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.

[8] 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 VanDerhei et al. 2016.

[9] 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 59½ or older, constitute a majority of all withdrawals (see Utkus and Young 2016).

[10] At year-end 2014, 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 Index.

[11] For a description of the investment options, see page 13.

[12] Data from the ICI Survey of Defined Contribution Plan Recordkeepers find that DC plan participants generally stayed the course through the financial crisis and ensuing years. During each year from 2011 through 2014, fewer than 3 percent of DC plan participants stopped contributing to their 401(k) plan accounts. Some of these participants may have stopped contributions because they reached the contribution limit. See Holden and Schrass 2016 for DC plan participants' annual activities between 2008 and 2015.

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.

[13] See Holden and Schrass 2016.

[14] For the complete update from the year-end 2014 EBRI/ICI 401(k) database, see VanDerhei et al. 2016.

[15] 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.

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

[17] 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 2015 indicates that in 2014, the average number of investment fund options available for participant contributions was 19 among the nearly 600 plans surveyed. 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 2015 report an average of 27 investment options in 2013, and an average of 21 investment options when a target-date fund suite is counted as a single investment option.

[18] 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.

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

[20] 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.

[21] 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.

[22] This analysis updates the longitudinal sample covered in the prior update (2007–2013) in VanDerhei et al. 2015.

[23] 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.

[24] The cross-sectional EBRI/ICI 401(k) database also shows that younger participants and those with shorter tenures tend to have lower 401(k) plan balances than those who are older or have longer tenures. See VanDerhei et al. 2016.

[25] At year-end 2014, 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 Index.

[26] For a description of the investment options, see page 13.

[27] 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 2016 for DC plan participants' annual activities between 2008 and 2015. 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 8 in 10 401(k) plan sponsors made contributions to their plans in 2013 (see BrightScope and Investment Company Institute 2015).

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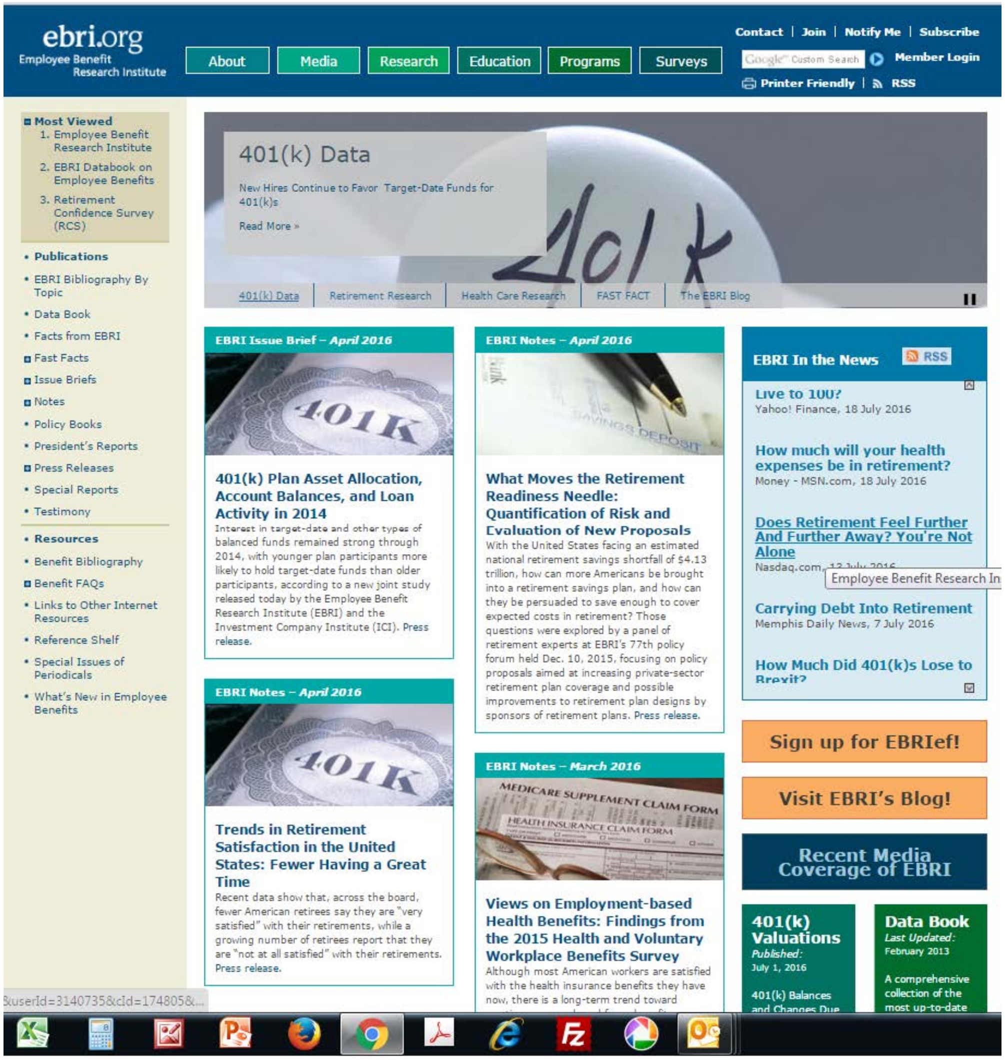

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