Inertia and retirement savings: Participant behavior in 2008

Volume 36

Vanguard Center for Retirement Research

April 2009

Executive summary. During the exceptional market volatility of 2008, the saving and investment behavior of defined contribution plan (DC) participants changed only marginally.

Trading behavior. During 2008, 16% of DC plan participants traded in their accounts while 84% did not. The proportion of participants trading was up slightly from prior years but was lower than during the bull market years of 2003–2004.

Trading direction. On a net basis, traders shifted 4% of assets to fixed income in 2008. However, on any given day, including peak periods of market volatility, participants were moving both into and out of equities. Most traders made small changes to their portfolios. Only 2% of all participants actually abandoned equities—that is, shifted from a portfolio with some equity exposure to an all-fixed-income portfolio.

Balances. The median participant account balance fell by 14%, reflecting the effects of both declining asset values and ongoing contributions. One in five participants suffered declines in their account balances of more than 30%; about one-third of participants saw account balances stay flat or rise.

Contributions. In 2008, 3.1% of active participants stopped elective contributions to their retirement savings plan, up slightly from 2.4% in 2007.

Access to assets. In 2008, the number of participants taking loans declined by 12%. Hardship withdrawals jumped by 8% in 2008; however, less than 2% of participants took these withdrawals. The number of participants terminating employment during 2008 and choosing a cash distribution rather than preserving their retirement assets rose by two percentage points in 2008.

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The authors would like to thank Jeffrey W. Clark and John A. Lamancusa for their support of the data analysis.

Implications. Participant behavior in 2008 again demonstrated that inertia plays a dominant role in retirement decision-making. Despite historic volatility in equity markets accompanied by a global financial crisis and a severe economic downturn, DC plan participants reacted only marginally in terms of trading, contribution, and distribution behavior. Indeed, the fact that only 2% of active participants abandoned equity holdings completely is strong evidence of a "stay-the-course" or "path-of-least-resistance" approach. Our results confirm that most participants maintained their retirement savings and investment programs during the downturn, and remain positioned to benefit from an upturn in stock prices when the current market decline reverses.

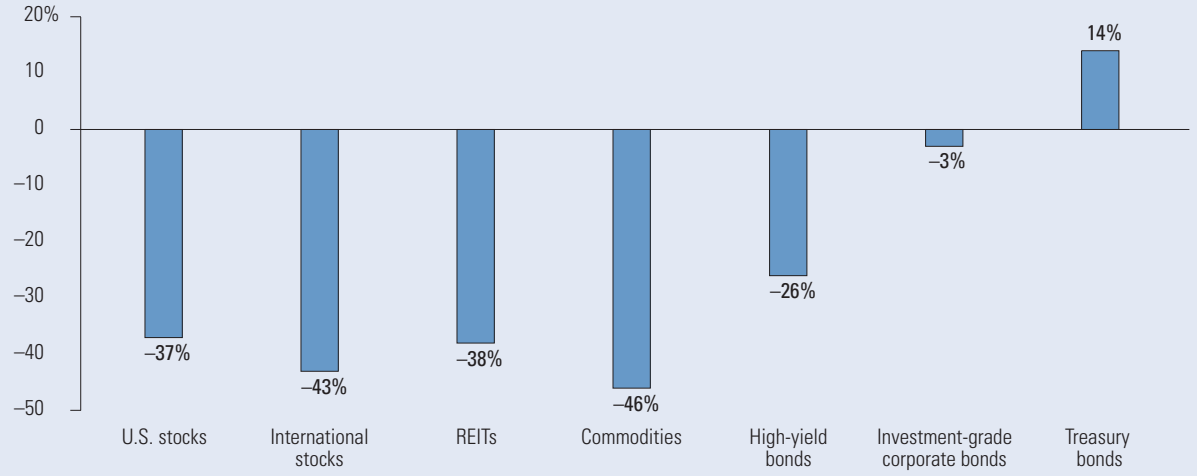
Background

In 2008, the U.S. stock market experienced its largest calendar-year decline since the 1930s, as the global credit bubble came to an end and a sharp economic recession arrived. The current market slump is similar to the bear markets of 1973–1974 and 2000–2003 in its severity. It has also evoked overstated comparisons with the Great Depression because of its underlying cause—a systemic banking crisis.

In this report, we examine the behavior of DC plan participants in reaction to the exceptional market volatility of 2008. DC plans are the prevalent form of retirement saving for private-sector workers. Our analysis is based on participant data from plans for which Vanguard provided recordkeeping services. We analyzed more than 3.2 million unique participants holding 3.5 million accounts in more than 2,200 DC plans.

This report begins with a brief overview of the market events of 2008. We then analyze the incidence and direction of participant investment exchange or trading behavior. Next we examine changes in participant account balances and contribution behavior, as well as participant loan, withdrawal, and distribution decisions. We conclude with a discussion of the role of inertia in retirement decision-making.

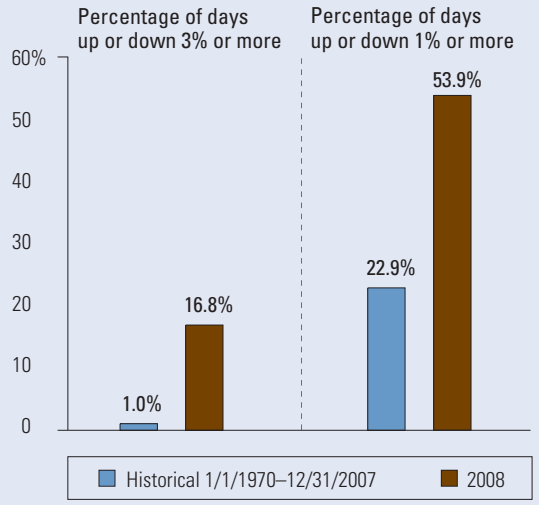
Figure 1. 2008 Asset class returns



Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Sources: U.S. stocks, MSCI US Broad Market Index; international stocks, MSCI EAFE Index; REITs, NAREIT Index; commodities, S&P GSCI Index; high-yield bonds, Barclays Capital High Yield Index; investment-grade corporate bonds, Barclays Capital U.S. Credit Index; Treasury bonds, Barclays Capital U.S. Treasury Index.

Figure 2. S&P 500 Index volatility



Source: Standard & Poors and Vanguard.

2008 market environment

The market environment in 2008 was exceptional in a number of ways. In response to worries about the economy and the financial system, no asset class except for Treasury securities yielded positive results (Figure 1). U.S. stocks fell by 37%; international stocks by 43%.

The negative calendar-year performance of the U.S. stock market was second only to 1930 (although cumulative market returns in the early 1930s were dramatically worse than those of today). Asset classes such as real estate investment trusts and commodities, which are intended to provide diversification benefits in volatile markets, failed to do so in 2008.

Not only did stock prices fall sharply in 2008, but they were also extraordinarily volatile throughout the year (Figure 2). Historically, 1% of stock market trading days—one out of every 80 days—results in a change in stock prices of plus or minus 3%. In 2008, 16.8% of trading days—or one out of six—experienced this level of volatility. In addition, the number of days with changes in stock prices of plus or minus 1% doubled over historic levels—from close to one-quarter to more than one-half of all trading days.

Participant trading activity

Despite the substantial market volatility of 2008, only 16% of participants made one or more portfolio trades or exchanges during the year (Figure 3, page 4).[1] Most, or 84%, did not trade. This level of trading is only slightly higher than the rates of the prior two years, and actually below trading levels of 2004–2005.

Another measure of trading, besides the percentage of participants trading, is the volume of dollars traded. We measure these dollar volume movements as a fraction of total recordkeeping assets in order to scale them to growth in assets (and to growth in the underlying recordkeeping business). The fraction of assets traded is, in effect, a measure of portfolio turnover. In 2008, traders exchanged the dollar equivalent of about 17% of average DC recordkeeping assets at Vanguard, up from about 15% of average assets traded in 2007 (Figure 4, page 4). On a net basis, 4% of assets were shifted from equities to fixed income, the largest net shift in more than ten years.

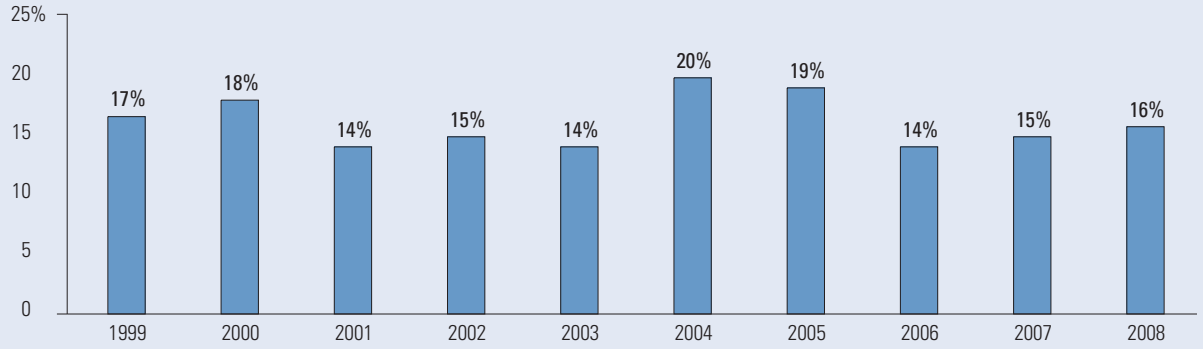
Over the past decade, dollar trading levels have generally declined, especially from the peak "high churn" year of 2000 (Figure 5, page 4). During this period, a series of rules designed to discourage frequent trading were implemented among recordkeepers and investment managers.[2] Since the adoption of these restrictions, the most notable spikes in dollars traded occurred in the months of January, September, and October 2008—periods of high market volatility.

1 An exchange, or trade, is the movement of existing account assets from one plan investment option to another. This transaction is distinct from a contribution allocation decision, in which participants decide how future contributions to the plan should be invested. Exchange activity is a proxy for a participant's holding period for investments, as well as a measure of the participant's risk tolerance—that is, their willingness to hold or change their portfolio in response to market volatility.

2 The rules included: 90- and then 60-day limits on roundtrip trades, and redemption fees on international funds designed to discourage international arbitrage.

Figure 3. Percentage of participants trading

Vanguard defined contribution plans



Source: Vanguard, 2009.

Figure 4. Dollars traded

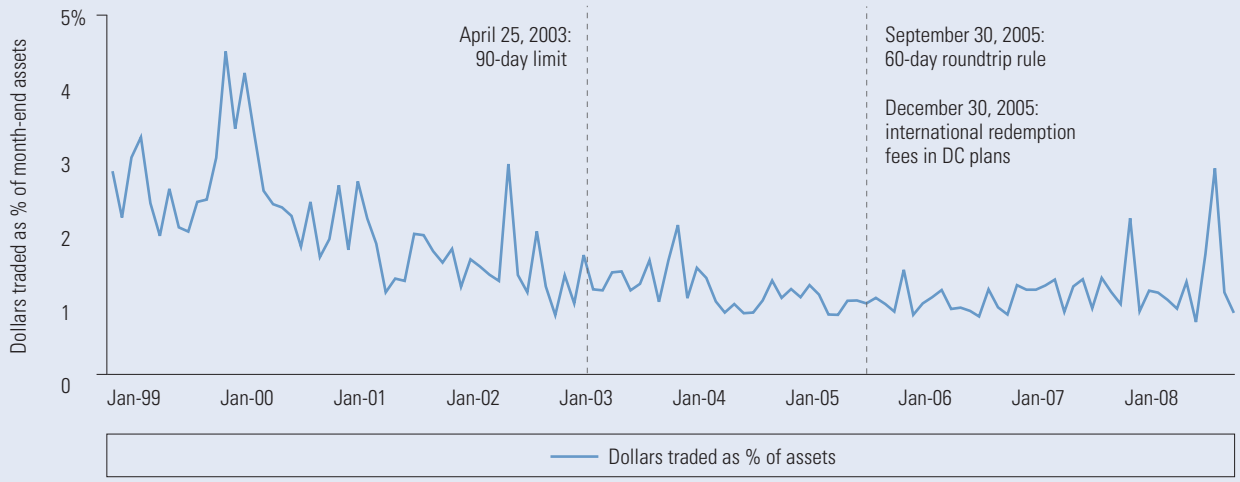
Vanguard defined contribution plans

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Percentage of average recordkeeping assets										
Percentage traded	30.4%	32.6%	22.4%	18.9%	16.5%	14.6%	13.0%	12.7%	14.7%	16.6%
Percentage moved to equities (fixed income)	–0.8	0.9	–2.4	–2.7	0.4	–0.2	–0.7	–0.6	–1.5	–3.9
Dollar flows (in billions)										
Dollars traded	$29.9	$38.0	$26.4	$22.3	$21.0	$22.5	$23.6	$27.0	$36.2	$39.7
Dollars moved to equities (fixed income)	(0.9)	1.1	(2.8)	(3.2)	0.5	(0.3)	(1.3)	(1.3)	(3.7)	(9.3)

Source: Vanguard, 2009.

Figure 5. Trading activity over the past decade

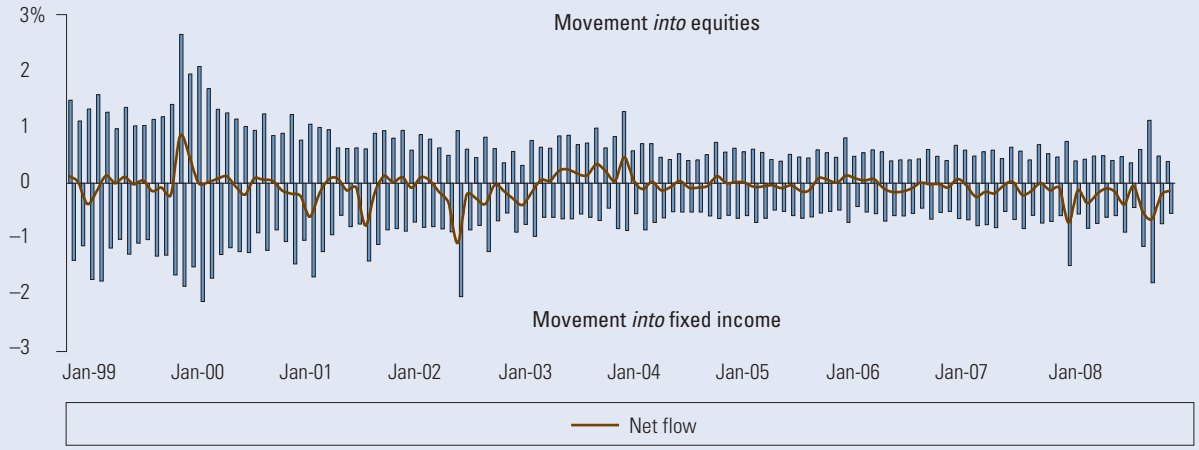
Vanguard defined contribution participants



Source: Vanguard, 2009.

Figure 6. Direction of money movement over last decade

Vanguard defined contribution participants making exchanges



Source: Vanguard, 2009.

Direction of money movement

Summary statistics may sometimes give the misleading impression that all participant trading is in one particular direction. However, in any given month, participants are trading meaningful dollar amounts both into and out of equities (Figure 6). In both tranquil and volatile markets, even as some traders shift their portfolios toward fixed income assets, there are others who shift toward equities.

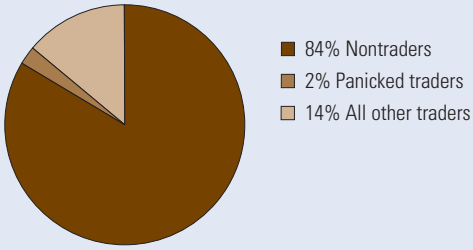
Overall, during the past decade, now encompassing two severe bear markets, the net movement of money among traders has been generally toward fixed income investments. Nonetheless, even at the height of market volatility during 2008, there were significant gross flows toward equities among some participants.

Types of trading activity

Overall in 2008, the 16% of participants who made trades shifted assets into fixed income investments on a net basis. Yet despite this statistic, it is a mistake to assume that most participants were trading completely out of equities in response to market volatility. Among all Vanguard participants, only 2% of participants abandoned equities entirely during 2008 (Figure 7).[3] The remaining 14% of participants

Figure 7. Participant trading decisions in 2008

Vanguard defined contribution participants



Source: Vanguard, 2009.

Categories	Participants	Traders
Nontrader	84%	n/a
Traded to 100% fixed income	2%	9%
Decreased equities by less than 10 percentage points	3%	22%
Traded with no change in allocation	2%	12%
Rebalancer shifted allocation by less than 10 percentage points	6%	37%
Multiple trades with an allocation change of less than 10 percentage points	0%	4%
Increased equities by 10 percentage points or more	2%	13%
Traded to 100% equities	1%	3%
Total	**100%**	**100%**

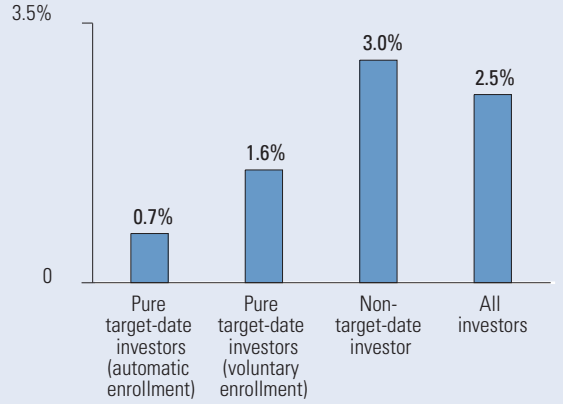
3 A participant who abandoned equities is one who shifted his or her entire portfolio into fixed income investments during the year. Only participants with some equity exposure in their portfolio who shifted to all fixed income assets during 2008 are included in this category.

engaged in a variety of other portfolio changes. For example, at one extreme, 3% reduced their equity exposure by more than ten percentage points (but not to zero), while at the other extreme, 1% of participants—whom we refer to as opportunists—shifted to an all-equity portfolio.

These findings confirm that participant trading behavior is quite heterogeneous. In any given month, dollars do not flow in one direction; participants are moving money into and out of equities, even in periods of extraordinary stock market volatility. Also, it seems that an increase in market volatility triggers a small group of participants—those trading—to reconsider their risk exposure. Most are making changes to their risk profile, either raising or lowering equity exposure, but not eliminating it. Only a small fraction of participants chooses to abandon equity holdings altogether.

Figure 8. Equity abandonment rates by type of investor

Percentage of participants moving to all fixed income portfolio



Note: This analysis includes only those participants with some equity holdings.

Source: Vanguard, 2009.

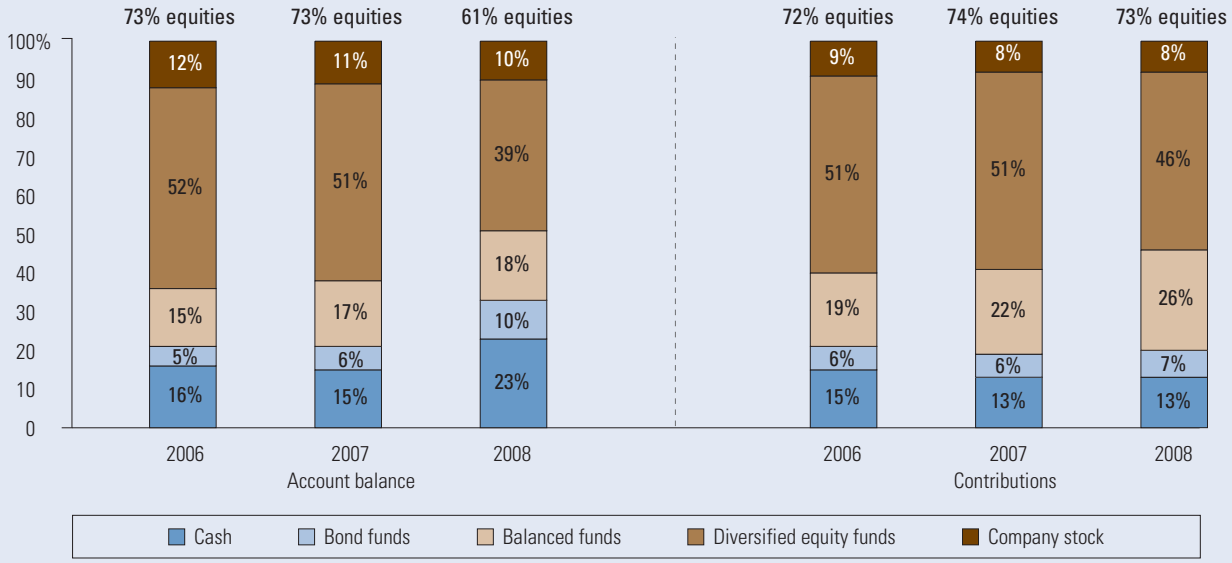
Trading and target-date funds

One unique DC plan feature worth examining during this market decline is the growing use of target-date funds and automatic enrollment as a plan design strategy. In 2008, participants automatically enrolled into a target-date fund were the least likely to abandon equities and shift to an all-fixed-income portfolio (Figure 8). Participants who invested in target-date funds on their own were somewhat more likely to abandon equities, while participants not investing in target-date funds at all were the most likely to do so.

A separate Vanguard research note discusses this development in more detail.[4]

Figure 9. Asset and contribution allocations

Vanguard defined contribution participants



Source: Vanguard, 2009.

4 See Vanguard, 2009b.

Asset and contribution allocations

As a result of the market decline and participant trading activity, the percentage of plan assets invested in equities declined from 73% in 2007 to 61% in 2008, a shift of 12 percentage points (Figure 9). We estimate that approximately one-third of this movement, or 4 points, was from traders shifting assets to fixed income holdings on a net basis; the remaining 8 points came largely from declining stock prices.

While account holdings of equities fell in 2008, participant contributions to equities remained essentially unchanged from 2007 at 73% of contributions. Both asset and contribution allocations reflect growing holdings of balanced funds, which include increasingly popular target-date funds.

Account balances

As a result of declining markets, median account balances for Vanguard participants fell by 31% for 2008 as compared with 2007; average balances fell by 29% (Figure 10, top).[5]

However, the change in overall median or average balances is a misleading indicator of the change in account balance experienced by the typical (median) participant.[6] When we examine continuous participants—those with an account balance at both the beginning and end of 2008—the median account balance fell by just 14% (Figure 10, bottom). Results for individuals varied around this median. More than one-third of these participants saw their balances rise or stay flat because of conservative asset allocations, the effect of ongoing contributions, or both. Another one-quarter of participants saw their account balances fall by between 1% and 20%—substantially less than the decline in the stock market. Approximately one-fifth of participants experienced losses of more than 30%.

Who was most affected by the downturn? Those suffering the largest losses were more likely to have large equity allocations (Figure 11, page 8). To some extent, those with the largest losses also were somewhat older and longer-tenured, with higher incomes and balances. But large losses, as well as positive gains, were widely distributed across many demographic groups.

One particular group of interest is pre-retirees—participants ages 55 to 64. One-fifth of this group saw their account balances fall by more than 30%. At the other extreme, however, 29% saw their account balances grow or stay flat, and another 12% experienced losses of just 1% to 10%. These findings underscore that account balance changes varied across the demographic spectrum and were not uniformly negative or positive for all participants.

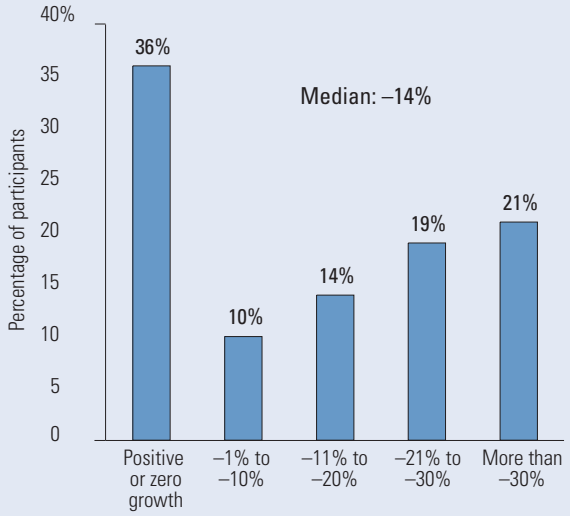
Figure 10. Change in account balances

Vanguard defined contribution participants

A. Median and average account balances

	2006	2007	2008
Median	$25,953	$25,196	$17,399
Percentage change		–3%	–31%
Average	$75,791	$78,411	$56,030
Percentage change		3%	–29%

B. Change in account balances in 2008 for participants with an account balance at year-end 2007 and 2008



Source: Vanguard, 2009.

4 See Vanguard, 2009b.

5 The median reflects the 50th percentile or mid-point of accounts; the average is skewed by large accounts and is more reflective of the experience of the top quartile of accountholders.

6 Account balance statistics are weighted by participant dollars, and so larger accounts, which are less influenced by ongoing contributions and more by market performance, shifted means and medians sharply lower in 2008. Individual participant statistics are weighted by individuals, and so smaller accounts are on a more equal footing with larger accounts. Also, the balance statistics include varying cross-sections at the end of each year, while the participant statistics assume continuous participants throughout the period.

Figure 11. 2008 Account balance change by demographic factors

Vanguard defined contribution plans; percentage of participants with an account balance at year-end 2007 and 2008

	Account balance change					
	Positive or 0%	–1% to –10%	–11% to –20%	–21% to –30%	More than –30%	Median increase (decrease)
All	**36%**	**10%**	**14%**	**19%**	**21%**	**–14%**
Median equity allocation	51	52	63	73	92	
Mean equity allocation	46	51	61	73	82	
Household income						
Less than $30,000	44%	10%	13%	14%	19%	–5%
$30,000–$49,999	41	10	14	16	19	–9
$50,000–$74,999	36	10	15	19	20	–13
$75,000–$99,999	32	10	16	21	21	–16
$100,000+	27	9	16	23	25	–19
Age						
Under 25	80%	3%	3%	4%	10%	10%
25–34	53	9	10	11	17	4
35–44	34	9	10	20	24	–16
45–54	29	10	16	23	22	–18
55–64	29	12	18	21	20	–16
65+	27	15	17	16	25	–15
Gender						
Male	34%	9%	15%	20%	22%	–16%
Female	38	10	14	18	20	–13
Job tenure (years)						
0–1	63%	3%	5%	9%	20%	54%
2–3	62	6	7	9	15	14
4–6	40	12	15	14	19	–9
7–9	28	11	18	22	21	–17
10+	21	11	18	26	24	–21
Account balance						
Less than $10,000	56%	6%	7%	9%	22%	4%
$10,000–$24,999	43	11	12	14	20	–7
$25,000–$49,999	28	12	18	21	21	–16
$50,000–$99,999	17	12	20	29	22	–21
$100,000–$249,999	14	10	20	33	23	–22
$250,000+	13	12	24	30	21	–21

Source: Vanguard, 2009.

One question for future research is to what extent ongoing contributions reduce the perceived riskiness of DC plans. Account balances are widely available on statements and websites and are often cited as participants' principal tool for monitoring investment results. Because of ongoing contributions, account balance changes will appear to be less negatively impacted during falling markets, which may mute participant concerns about market volatility.

Employee contributions

In times of economic distress, participants in DC plans may choose to end their plan contributions for a variety of reasons. Some may face rising financial obligations caused by a deteriorating economy; others may be concerned about the risk of unemployment and may prefer to accumulate liquid savings outside an employer plan.

In any given year, a small percentage of active participants stops making plan contributions; the economic and market downturn in 2008 appears to have raised that rate slightly. In 2006 and 2007—both relatively benign periods for the economy and for financial markets—approximately 2.5% of participants who were active contributors at the beginning of the year had ceased contributing to their DC plan by the end of the year, even though they remained active employees and eligible to save in the plan (Figure 12). In the tumultuous environment of 2008, the rate of those discontinuing contributions rose slightly to 3.1%.

A separate Vanguard research note discusses employee contributions in more detail.[7]

Access to plan assets

In difficult economic times, participants in DC plans may use a variety of mechanisms to access their retirement savings. Active participants can often borrow from their account balance, and may have the option of in-service or hardship withdrawals. Terminated participants have the option to spend all or part of their retirement plan assets. Loans and withdrawals are subject to a variety of limits, restrictions, and possible penalties imposed by the IRS.

Among Vanguard plans, the number of participants taking loans from their DC plan accounts declined

Figure 12. Percentage of participants quitting contributions

Vanguard defined contribution participants with a contribution in January

Source: Vanguard, 2009.

by 12% in 2008 (Figure 13, page 10). Loans generally follow a seasonal pattern, but the specific reasons for that pattern and the recent decline in loans are not well understood. We speculate that loan usage has fallen with the overall decline in consumer spending along with the decline in housing values and sales.

Nonhardship withdrawals were up a modest 1% in 2008. Certain plans allow active participants to take withdrawals unrelated to hardships, such as post-age-59½ in-service withdrawals. These withdrawals also have a seasonal pattern and often spike in the first quarter of the year. One possible explanation is that some plan sponsors permit participants to take annual profit-sharing contributions in cash from the plan.

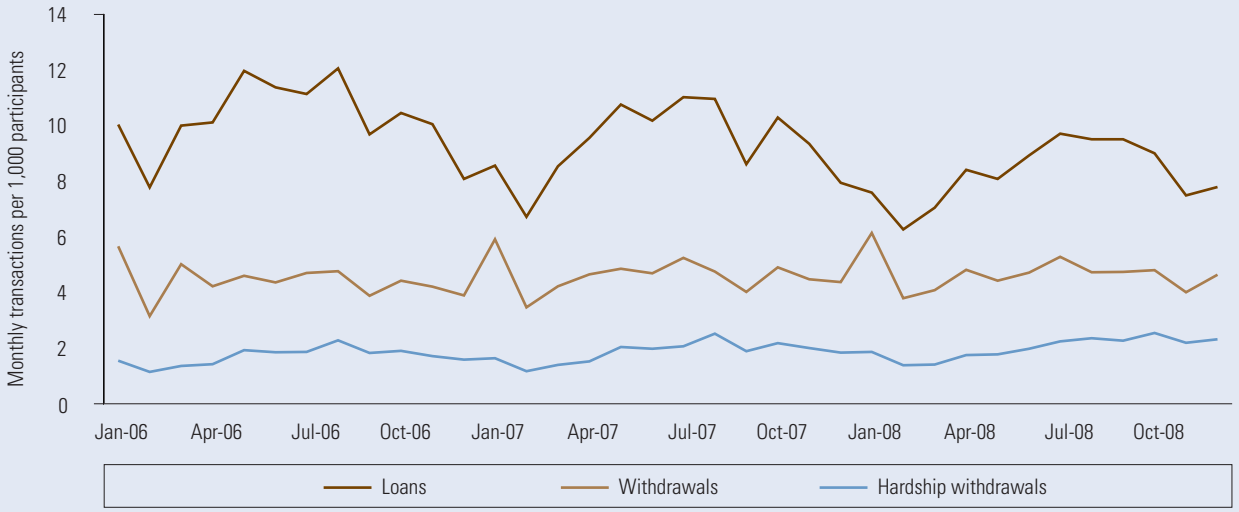
Hardship withdrawals were up 8% in 2008, although less than 2% of participants took a hardship withdrawal. One of the reasons a participant can take a hardship withdrawal is to avoid foreclosure on their home. We speculate that the recent surge in foreclosures may in part be driving this increase.

When changing jobs or retiring, DC plan participants can preserve their savings for retirement by retaining them in the plan or rolling them over to an IRA or another DC plan. They also may take a cash lump

7 See Vanguard, 2009a.

Figure 13. Active participants accessing retirement savings

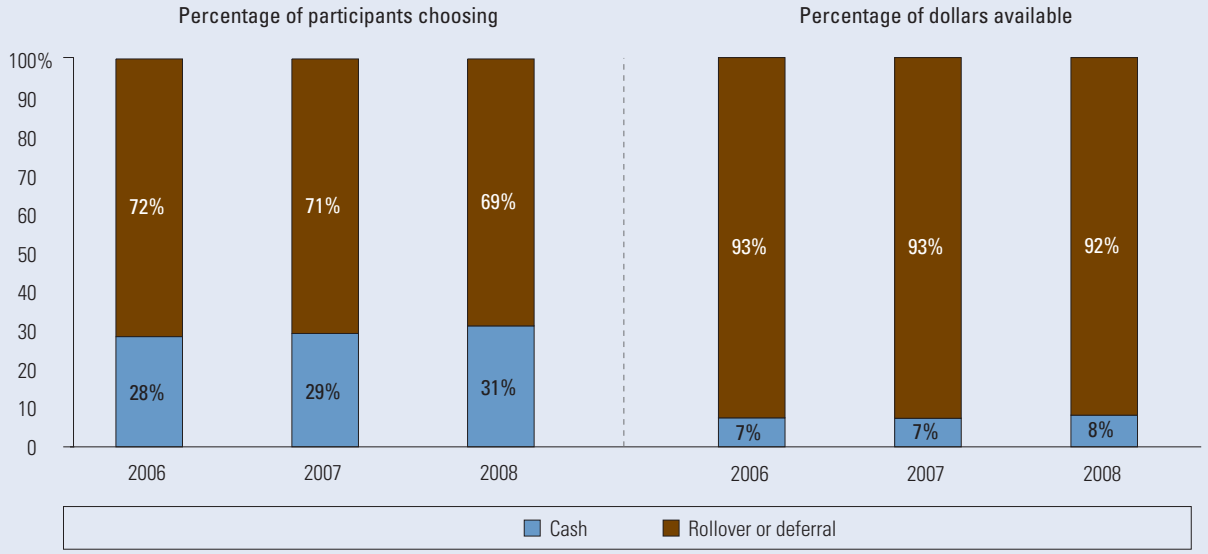
Vanguard defined contribution participants in plans offering



Source: Vanguard, 2009.

Figure 14. Plan distributions

Vanguard defined contribution plan participants with termination dates during the year



Source: Vanguard, 2009.

sum. In 2008, two-thirds of participants terminating employment preserved their assets and one-third took a cash distribution (Figure 14, page 10). However, the vast majority of assets available for distribution—92%—were preserved for retirement.

At the same time, there was a small increase in the percentage of participants choosing to take cash and presumably spend it—up from 29% in 2007 to 31% in 2008. Given the ongoing uncertainties in the employment market, we anticipate an increase in cash-outs in the near term, under the assumption that plan savings are sometimes used as a personal form of unemployment insurance.

Implications

2008 was an exceptional and, indeed, historic year in terms of stock market volatility. In many ways, DC plan participants' lack of response to the volatility is striking. There was a small uptick in the percentage of participants trading and dollars traded, in the number of active participants stopping contributions, and in the tendency toward cashing out distributions. However, only 2% of participants sold out of equities, and loan activity fell. The largest change in behavior, an 8% increase in hardship withdrawals, likely tied to the mortgage crisis, affected less than 2% of participants.

These findings again demonstrate the persistence of inertia as the dominant decision-making approach in retirement savings. In response to exceptional market circumstances, most participants chose the path of least resistance and did nothing in 2008. In some settings, inertia can make it difficult for participants to take action that will be to their long-term benefit. In other settings, it can be used to beneficial effect—as in the case of automatic enrollment and, in 2008, in the decision by participants not to overreact to market volatility.

Although inertia appears to be the dominant behavioral response of participants, we would encourage sponsors, recordkeepers, and others not to confuse inertia with the emotional state of participants. Although they may not be taking action, participants may still be worried or fearful about their retirement savings, the economic outlook, and the market environment. They can still benefit from reassurance in the form of frequent communications and outreach, even if their likely response is to do nothing. Many recordkeepers and investment firms (including Vanguard) created such communication programs during 2008. These programs, along with inertia, may be part of the reason participants exhibited such patience during 2008.

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