Fundamentals

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Redemption Activity of Mutual Fund Owners

The length of time that the typical mutual fund shareholder owns shares in a fund has been the subject of recent discussion. Owing to the lack of direct evidence on holding periods of individual investors, the redemption rate for equity funds has been used to make inferences about investor behavior. This rate, which expresses annual equity fund redemptions as a percentage of average assets, is useful for comparing industry-level redemption activity at different points in time. It should not, however, be used to measure the holding period for the typical fund investor. A small number of shareholders can and likely do generate a disproportionate percentage of the total redemptions, thereby masking the activity of the typical investor.

This *Fundamentals* presents a hypothetical example to illustrate the shortcomings of using redemption rates to measure the holding period for the typical fund investor. It then examines empirical studies conducted during the past decade that cover mutual fund redemption activity. The cumulative weight of these studies provides indirect evidence that the typical equity fund shareholder redeems shares infrequently. This issue also considers reasons why shareholders make redemptions.

I. Redemption Rate and Shareholder Redemption Activity

In Investment Company Institute (ICI) statistical releases, mutual fund redemption rates are reported for 12-month periods. The redemption rate for a group of funds is computed as the sum of these funds' redemptions during a period divided by the average of their assets at the beginning and the end of a period.[1] Two forms of the measure are

figure 1

Redemption Rates and Holding Periods for Two Hypothetical Funds

	Fund A (All shareholders have a 7-year holding period)	Fund B (98% of shareholders have a 7-year holding period; 2% have a 1-month holding period)
Redemption Rate	14 percent	38 percent
Average Holding Period	7 years	6.9 years
Median Holding Period	7 years	7 years

Note: This example assumes that each investor holds the same amount of assets and that one-seventh of the assets of those investors with seven-year holding periods are redeemed each year. This example also assumes that redeemed assets are replaced by sales of new shares. See text footnote 3 for a description of the computation of the redemption rates in this example.

[1] Specifically, the redemption rate for the 12-month period ending in month t equals:

$$\frac{R_{t-11} + R_{t-10} + \ldots + R_t}{(A_{t-12} + A_t)/2}$$

where R_t is redemptions in month t and A_t is assets at the end of month t.

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calculated. A narrow one uses only regular redemptions, and a broad one includes regular redemptions and exchange redemptions, which are redemptions between two funds within a fund family.

These statistics are useful for comparing the turnover of fund shares from one year to the next. However, because a few high-turnover shareholders can push up a fund's redemption rate, this statistic should not be considered a measure of the average holding period for a fund investor.

A simple example illustrates this point. Fund A is held by shareholders who redeem all of their shares once every seven years. If the shareholders' redemptions are spread evenly over the seven-year period so that one-seventh of the fund's assets is redeemed each year, the fund will have an annual redemption rate of 14 percent (Figure 1).[2] Alternatively, Fund B has two groups of investors. Ninety-eight percent hold 98 percent of the assets and behave identically to the shareholders in Fund A. The other 2 percent actively trade shares, making 12 redemptions each year and turning their accounts over every month. These shareholders have an annual redemption rate of 1200 percent. When the redemptions of these shareholders are added to those of the long-term investors, the redemption rate for Fund B is 38 percent, more than double the redemption rate for Fund A.[3]

The redemption rate for Fund B gives the misleading impression that the typical account in this fund turns over in less than three years, even though the vast majority of its shareholders are long-term investors. The average holding period for shareholders in Fund A is 7 years, compared with owners of Fund B who hold the fund's shares 6.9 years on average.[4] Furthermore, the holding period for the median or typical shareholder in both funds is 7 years.

As this example demonstrates, the holding period cannot be computed, nor even approximated, from the redemption rate—except in the highly unlikely case that all shareholders of a fund hold their shares for approximately the same length of time. Indeed, the empirical data presented in the next two sections indicate that the redemption activity inside mutual funds is in all likelihood more akin to that in Fund B than in Fund A.[5] Consequently, the annual redemption rate is an inappropriate indicator of the redemption activity or holding period of the typical fund owner.

II. Research Findings on Redemption Activity by Equity Mutual Fund Shareholders

This section presents data on the redemption behavior of equity fund shareholders from the *Equity Ownership in America* survey conducted jointly by ICI and the Securities Industry Association.[6] The data indicate that the vast majority of equity fund investors did not make a single redemption during the 12-month period ending January 1999.[7] (Research that examines redemption behavior for all types of mutual fund owners is consistent with these findings, and is summarized in Section III).

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[2] This example assumes that redeemed assets are replaced by sales of new shares.

[3] The redemption rate for those with the seven-year holding period is 14 percent. The redemption rate for those with the one-month holding period is 1200 percent. The 38 percent redemption rate assumes that the redemptions of both groups are evenly distributed over time. Hence, 2 percent of the shareholders have a 1200 percent redemption rate and 98 percent have a 14 percent redemption rate, yielding a redemption rate of 38 percent: 38 percent = .02 (1200 percent) + .98(14.3 percent).

[4] The average holding period for Fund B is computed as follows: .98 (7.0 years) + .02 (0.0833 years) = 6.9 years.

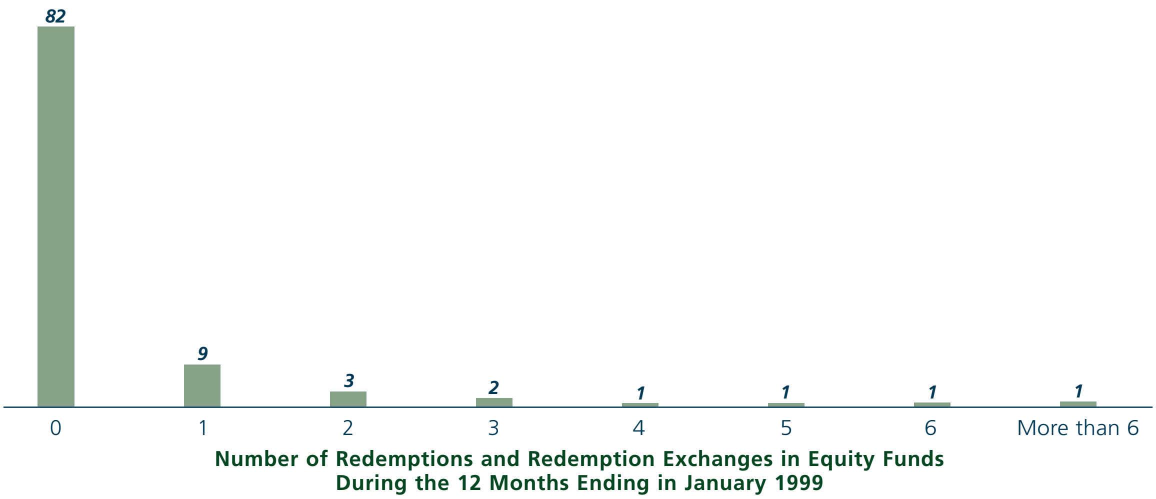
[5] Another reason that the redemption rate for a fund may not reflect the activity of underlying shareholders is that a large account, such as a 401(k) plan, may be closed. If a single account held 10 percent of the shares of a fund, for instance, closing this account would boost the redemption rate of this fund by 10 percentage points even though the fund's investors, in general, had not changed their redemption activity.

[6] Unpublished data from *Equity Ownership in America,* Investment Company Institute and the Securities Industry Association, Washington, DC, Fall 1999 (www.ici.org/pdf/rpt_equity_owners.pdf).

[7] Any transaction involving a shareholder selling shares of an equity fund was treated as a redemption, including exchanges between funds within the same fund family as well as partial redemptions of the shares in accounts.

figure 2

Percentage of Equity Fund Shareholders by Redemption Activity in 1998



Source: *Equity Ownership in America,* Investment Company Institute and Securities Industry Association, 1999

The *Equity Ownership in America* survey found that 82 percent of the households that owned equity funds had not redeemed any equity fund shares held inside or outside employer-sponsored retirement plans during the 12-month period ending in January 1999 (Figure 2).[8] Another 9 percent redeemed shares only once, and only 1 percent made more than six redemptions.

Among those who did redeem, few seemed to do so because they were actively trading in their equity fund accounts. About 43 percent of the investors who redeemed shares held outside retirement accounts spent some or all of the proceeds of their most recent redemption on a major purchase, such as a house or automobile down payment or to pay educational costs. Of those who reinvested the proceeds, 64 percent had made only one or two redemptions.

Shareholders seem somewhat less likely to redeem from equity funds held inside defined contribution plans than from funds held outside such plans, even though redemptions conducted through retirement plans are not taxable. Eighty-nine percent of the shareholders who owned equity funds inside defined contributions plans made no redemptions from these equity funds during the year covered by the survey (Figure 3), compared with 82 percent of all equity fund owners. Sixty-eight percent of those who sold shares held in pension plans made only one redemption in 1998.

III. Other Research on Redemption Activity of Mutual Fund Owners

Data gathered from other ICI household surveys and several academic studies show that the typical mutual fund shareholder does not actively trade his or her mutual fund holdings. Taken as a whole, the evidence suggests that the typical mutual fund investor redeems shares infrequently and that the infrequency has not changed appreciably over the past decade. This section summarizes the findings from these studies.

Academic studies

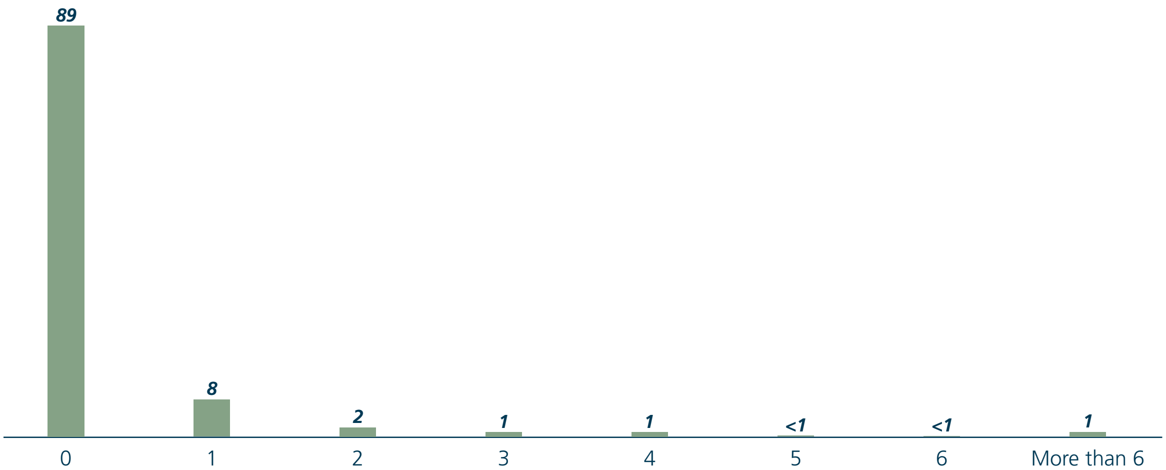
Two recent academic studies examine the redemption behavior of mutual fund shareholders in a variety of accounts, both taxable and tax-deferred. One study finds that at least 25 percent of the 31,000 households with mutual fund accounts at a large U.S. discount broker never sold fund shares during the 5½ year period examined.[9] Furthermore, half of the accounts had an annual redemption and exchange

[8] Unpublished data from *Equity Ownership in America*, 1999.

[9] Brad Barber, Terrance Odean, and Lu Zheng, “The Behavior of Mutual Fund Investors,” September 2000, unpublished working paper, Table 1.

figure 3

Percentage of Equity Fund Shareholders by Redemption Activity in Defined Contribution Plans[1] in 1998



Number of Redemptions and Redemption Exchanges in Equity Funds During the 12 Months Ending in January 1999

[1] The shareholder base excludes respondents not owning equity funds in defined contribution plans.

Note: Components do not add to 100 percent due to rounding.

Source: *Equity Ownership in America*, Investment Company Institute and Securities Industry Association, 1999

rate of less than 16 percent. A second study finds that the median investor in a large S&P 500 fund made one trade a year during a two-year period. Only 17 percent of the transactions in this fund were redemptions, suggesting that when the typical investor in this fund did make a trade, it was to purchase and not sell shares.[10] In addition, the mean turnover rate was higher than the median turnover rate, implying that some accounts have considerable activity even though the typical account does not.

Two other academic studies focus on shareholder redemption behavior in employer-sponsored retirement plans. Both find that shareholders in these plans sold shares infrequently. One study examines the trading behavior of mutual fund shareholders in two large 401(k) plans. More than half of the participants in the sample never made a trade during the three-year period covered.[11] Researchers in the other study find that 73 percent of participants in a large employer-sponsored retirement plan made no changes in their asset allocations over the ten-year period covered by the study. Only 3 percent of participants made six or more transactions during the sample period.[12]

ICI surveys

In eight surveys since 1992, ICI has examined household redemption activity. Three of the surveys were part of a series that broadly profiled mutual fund shareholders throughout the decade and included specific questions about household redemption activity.[13] Two other surveys, in addition to the *Equity Ownership in America* survey discussed earlier, targeted specific groups of shareholders and contained questions about purchases and sales of mutual fund shares. The 1998 *401(k) Plan Participants: Characteristics, Contributions, and*

[10] William Goetzmann and Massimo Massa, "Daily Momentum and Contrarian Behavior of Index Fund Investors," December 1999, Yale International Center for Finance, Working Paper No. 99-13, p. 7.

[11] James Choi, David Laibson, and Andrew Metrick, "Does the Internet Increase Trading? Evidence from Investor Behavior in 401(k) Plans," September 2000, NBER Working Paper 7878, p. 33.

[12] John Ameriks and Stephen Zeldes, "How Do Household Portfolio Shares Vary with Age?" September 2000, unpublished working paper, p 29.

[13] *Profiles of Mutual Fund Shareholders,* Investment Company Institute, Washington DC, Fall 1992; *Mutual Fund Shareholders: The People Behind the Growth*, Investment Company Institute, Washington, DC, Spring 1996 (www.ici.org/pdf/rpt_peoplegrowth.pdf); and *1998 Profile of Mutual Fund Shareholders,* Investment Company Institute, Washington, DC, Summer 1999 (www.ici.org/pdf/rpt_profile99.pdf).

Account Activity survey[14] focused on owners of mutual funds in employer-sponsored retirement accounts, and "Mutual Fund Shareholders' Use of the Internet"[15] gathered information from all mutual fund owners and contained specific questions about their Internet usage.

In addition to these six surveys, the Institute devoted two surveys to households that had redeemed shares from long-term mutual funds. One study examined shareholder redemption activity in 1991, and another analyzed shareholder redemptions from 1994 through late 1996. In both studies, households were asked to provide detailed information about the number of redemptions and the reasons for them.

Redemption behavior outside employer-sponsored retirement plans

The three surveys profiling mutual fund investors and the survey of mutual fund owners and their Internet usage provide snapshots of mutual fund redemption behavior outside employer-sponsored retirement plans during the 1990s.[16] In each survey, about three-quarters of the respondents reported that they had not redeemed shares from any mutual fund held outside retirement plans during the previous 12 months (Figure 4). The percentage of mutual fund shareholders not selling shares from any of their funds is lower than the percentage not redeeming from equity funds alone, suggesting that shareholders are more likely to sell shares of bond and money market funds than equity funds.

In the most recent of these four surveys, those fund owners who sold shares were asked about the number of times that they made redemptions. Among these households, 11 percent of shareholders made only one redemption from any of their mutual funds in the 12 months ending March 2000, whereas 3 percent made more than six redemptions (Figure 5).[17]

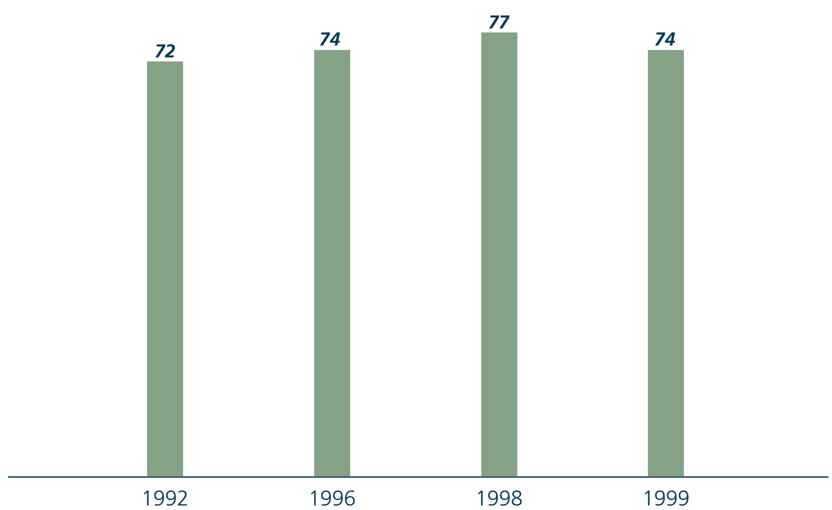
Redemption behavior inside employer-sponsored retirement plans

Most equity fund shareholders own fund shares in employer-sponsored retirement plans.[18] The redemption behavior of shareholders who own mutual funds in retirement plans is similar to the behavior of those who own them outside such plans. Data gathered in the 401(k) participant survey referenced earlier provide the most detailed information about transaction activity in mutual funds as well as other assets held in employer-sponsored retirement plans. Among the 401(k) plan participants surveyed, more than three-quarters had *never* changed their asset allocations (which includes redemptions from mutual funds) in their current plans (Figure 6). Among the

figure 4

Mutual Fund Owners Who Did Not Redeem Shares, Selected Years

(percent of owners not redeeming in the 12 months preceding the survey)



Source: *Profiles of Mutual Fund Shareholders*, Investment Company Institute, 1992; *Mutual Fund Shareholders: The People Behind the Growth,* Investment Company Institute, 1996; *Profile of Mutual Fund Shareholders,* Investment Company Institute, 1999; "Mutual Fund Shareholders' Use of the Internet," *Fundamentals,* Investment Company Institute, 2000

[14] *401(k) Plan Participants: Characteristics, Contributions, and Account Activity,* Investment Company Institute, Washington, DC, Spring 2000 (www.ici.org/pdf/rpt_401k_planp.pdf).

[15] See "Mutual Fund Shareholders' Use of the Internet," *Fundamentals,* Vol. 9, No. 3, July 2000, Investment Company Institute (www.ici.org/pdf/fm-v9n3.pdf), for a discussion of the survey methodology.

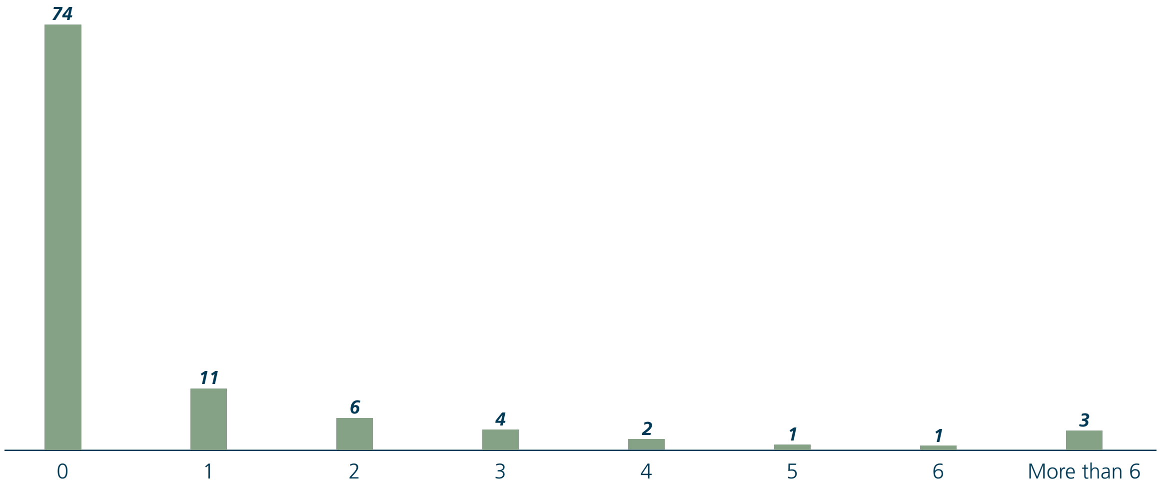
[16] *Profiles of Mutual Fund Shareholders,* 1992; *Mutual Fund Shareholders: The People Behind the Growth*, 1996; *1998 Profile of Mutual Fund Shareholders*, 1999; and "Mutual Fund Shareholders' Use of the Internet," 2000.

[17] It is difficult to determine if the Internet has affected shareholders' willingness to redeem. Those shareholders who used the Internet either to gather information about their funds or to sell shares in 1999 were somewhat more likely to redeem than those not using the Internet. Thirty-two percent of the shareholders who used the Internet made at least one redemption, compared with 26 percent of all investors. However, the direction of causation is unclear: rather than the Internet causing more redemptions, shareholders who redeem may simply be relying on the Internet when gathering information or conducting the transaction, activities perhaps previously conducted through other means.

[18] Of the 32 million households that owned equity mutual funds in 1999 ("U.S. Household Ownership of Mutual Funds in 1999,"*Fundamentals,* Vol. 8, No. 5, September 1999, p. 2 (www.ici.org/pdf/fm-v8n5.pdf)), 29 million held equity funds in employer-sponsored retirement accounts (*Equity Ownership in America,* Investment Company Institute and Securities Industry Association, 1999, p. 52).

figure 5

Percentage of Mutual Fund Shareholders by Redemption Activity Outside Defined Contribution Plans[1]



[1]The shareholder base excludes respondents not owning funds in defined contribution plans.

Source: "Mutual Fund Shareholders' Use of the Internet," *Fundamentals,* Investment Company Institute, July 2000

shareholders who had made a change, less than half had done so in 1998, implying that roughly 90 percent of all 401(k) plan participants had not made a change that year.

Attributes of owners who sell shares

The research discussed in the previous sections provides considerable evidence that the typical mutual fund shareholder redeems fund shares infrequently. The two ICI surveys that gathered information from shareholders who sold shares of long-term funds confirm that the percentage of shareholders who actively trade their accounts is relatively small and that they often sell shares to make major purchases.

In the 1996 survey, investors were asked about mutual fund redemptions from the beginning of 1994 to late 1996.[19] During the nearly three-year period, about one-third of those who sold shares made only one redemption from any mutual fund outside employer-sponsored retirement plans and more than half made no more than two (Figure 7). Only about 4 percent of these shareholders redeemed frequently, selling shares more than 12 times during the three-year period.[20] These results, combined with those in a survey of shareholders of long-term funds who sold shares between May 1991 and May 1992, indicate that shareholder behavior did not change appreciably between the beginning and the middle of the 1990s. In the latter survey, two-thirds of those who sold shares made either one or two redemptions, and less than 10 percent made six or more redemptions.[21]

When mutual fund owners sold shares, redemptions tended to occur in funds held for some time. For instance, among shareholders who redeemed shares in 1994 or 1995, 40 percent reported that the largest redemption during the period came from a fund that had been purchased at least five years earlier (Figure 8). Only about one-

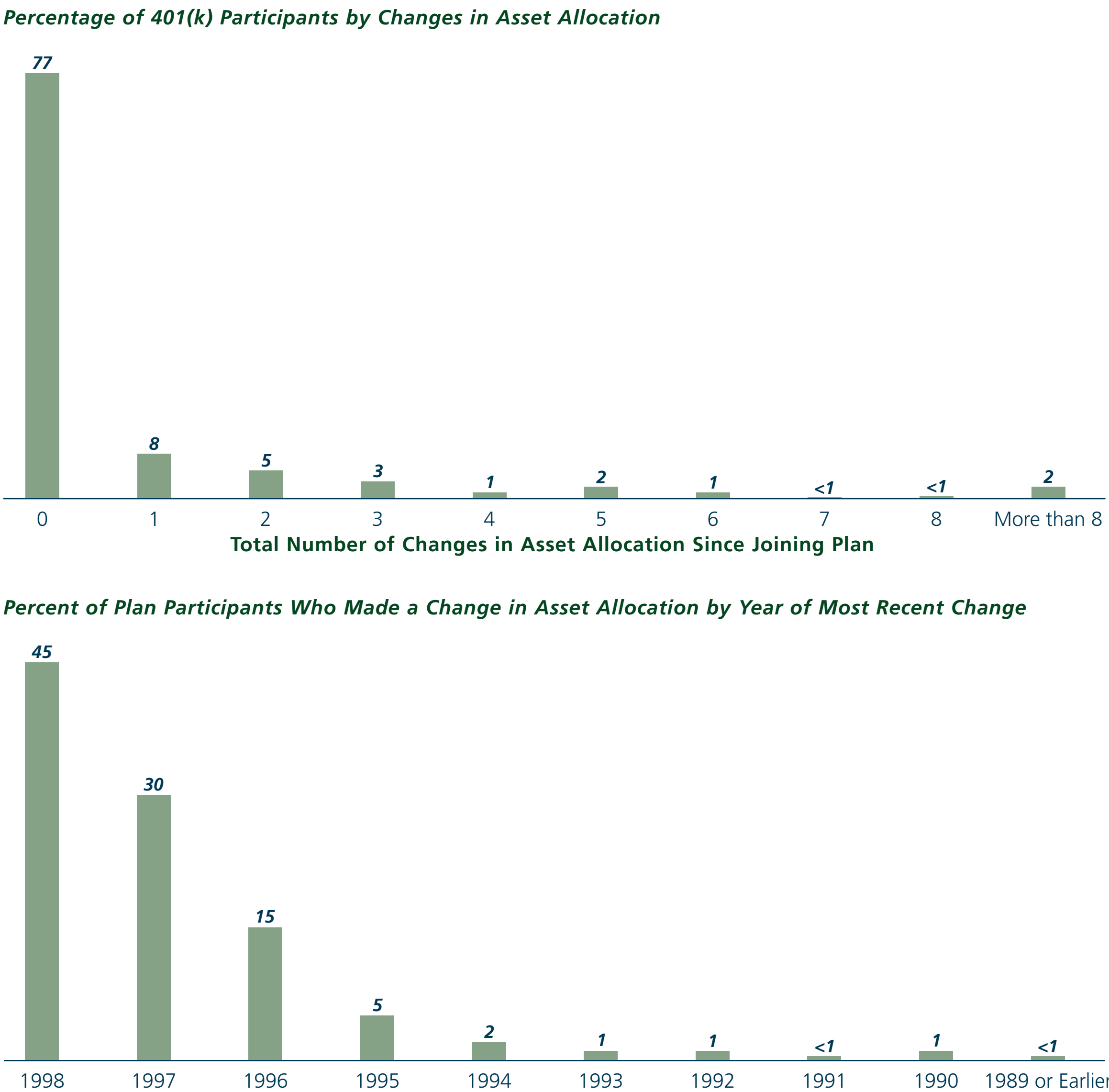
[19] These findings are drawn from an unpublished 1996 survey of 721 mutual fund shareholders who had sold shares. All respondents came from Market Facts' Consumer Mail Panel, which is weighted to reflect the U.S. population for selected variables. The findings from this survey are representative of shareholders who sold shares of long-term funds at approximately plus or minus 3.5 percent at the 95 percent confidence level.

[20] The number of redemptions may be understated somewhat for a few high-frequency sellers because the number of redemptions reported for 1996 was limited to the five largest. However, only 15 percent of the respondents reported five redemptions in 1996, suggesting that the number of investors for whom there was an undercount is small.

[21]Unpublished data from *Understanding Shareholder Redemption Decisions,* Investment Company Institute, Washington, DC, Winter 1993 (www.ici.org/pdf/rpt_redempt.pdf).

figure 6

Changes in Asset Allocation in 401(k) Plans



Note: Components do not add to 100 percent due to rounding.

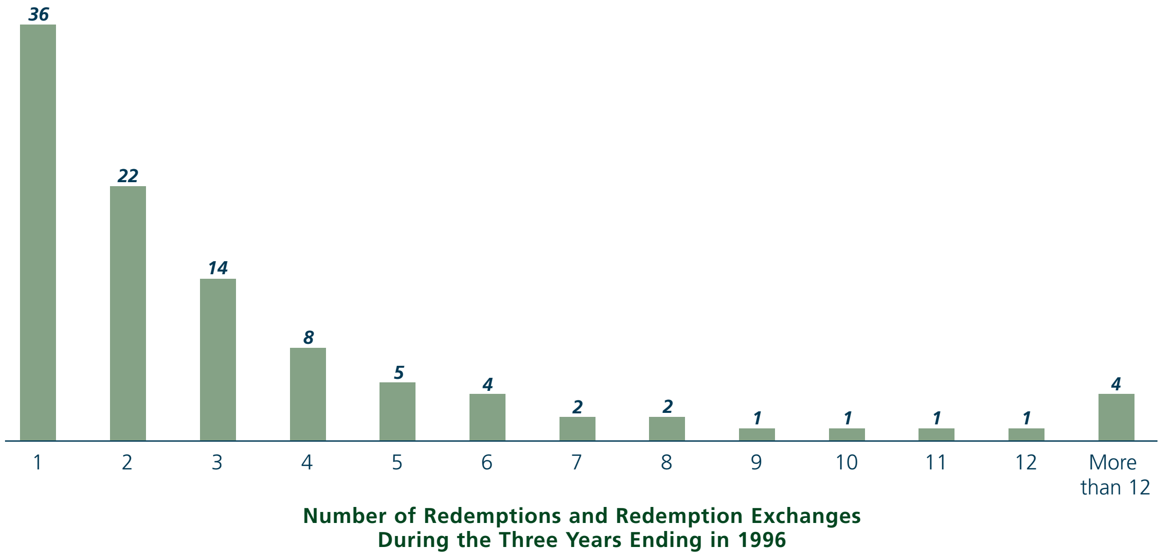
Source: *401(k) Plan Participants: Characteristics, Contributions, and Account Activity,* Investment Company Institute, 2000

fifth had held their shares for one year or less. Shareholders who made redemptions in 1991 also indicated that they had held their funds for some time, with nearly 60 percent having made their first purchase at least five years earlier.

Other data gathered from long-term fund owners selling shares in the mid-1990s indicate that they often did so because they needed the money to make a large purchase (such as a home or automobile or to pay educational or other expenses). Among those who redeemed shares, approximately 45 percent cited needing the money as the reason for selling shares. Those who sold only a portion of their shares in a fund were more likely to have used the money for purchases or to pay expenses. Shareholders making these partial redemptions accounted for 57 percent of the respondents who sold shares. Among these shareholders, 59 percent cited needing the money as a reason for selling shares. ■

figure 7

Percentage of Mutual Fund Owners Who Redeemed Shares of Long-term Funds by Redemption Activity[1]



[1]For mutual funds held outside employer-sponsored retirement plans.

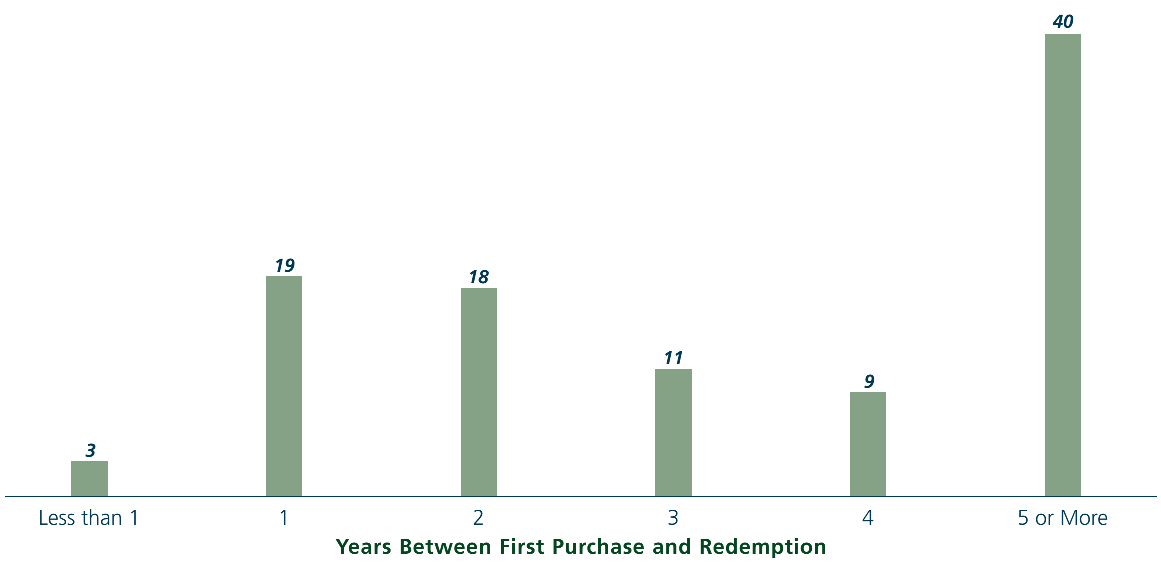
Note: Components do not add to 100 percent due to rounding.

Source: Unpublished survey of mutual fund shareholder redemption activity, Investment Company Institute, 1996

figure 8

Interval Between First Share Purchase and Redemption Among Those Who Sold Shares in 1994 or 1995[1]

(percent of owners who sold shares)



[1]For mutual funds held outside employer-sponsored retirement plans.

Source: Unpublished survey of mutual fund shareholder redemption activity, Investment Company Institute, 1996