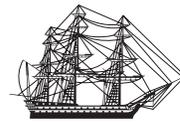


# Funds for Retirement: The 'Life-Cycle' Approach

Vanguard Investment Counseling & Research



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## Executive summary

Life-cycle funds have attracted increasing interest because they answer the desire of many plan participants for a single, professionally planned, comprehensive investment that requires little or no maintenance by the individual. For plan sponsors, too, life-cycle funds can be useful from a fiduciary perspective, particularly as default options.

In choosing a type of life-cycle fund, sponsors should consider the trade-offs involved, fund methodologies, and the unique characteristics of the participants in the plan.

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## Overview

Life-cycle funds provide a comprehensive investment solution delivered in a single vehicle. The life-cycle approach addresses several factors that can impede retirement planning for investors:

- **Investor motivation/desire for professional oversight.** Extensive observations of participant behavior have shown that many plan investors are not inclined to be actively engaged, yet most want to feel that they are benefiting from professional oversight.
- **Choice overload.** Investors overwhelmed by a choice of too many funds may make less-than-optimal decisions at best, no decisions at worst.
- **Investor knowledge.** Recent studies have shown that many retirement plan investors continue to have limited knowledge of basic investment concepts.
- **Investor attitudes.** Vanguard research has shown that many plan participants have limited interest in investment issues and simply are not interested in monitoring their investments.

There are two basic types of life-cycle funds:

- **Targeted-maturity funds.** These target a retirement year and then change their asset allocations from aggressive to conservative as that date approaches. The final allocation is intended to see the investor through retirement.
- **Static-allocation funds.** These funds maintain a defined asset allocation. They are typically offered in sets ranging from aggressive to conservative, with the investor determining which portfolio is appropriate for his or her circumstances at any given time.

Vanguard's research on life-cycle investors has produced two general conclusions that we believe should be reflected in the methodology used to create these funds:

- **Similarities to other retirement investors.** In analyzing life-cycle investors, we have not identified any significant systematic differences between these investors and other participants with respect to demographics, knowledge, or attitudes.
- **Aversion to risk.** Like other retirement investors, life-cycle investors tend to be risk-averse as a group. Fund methodology should address this reality by accounting for downside risk while remaining focused on the common goal of meeting retirement needs.

Each life-cycle approach involves a trade-off. Plan sponsors should be aware of the trade-offs and choose the approach that best matches their participants' needs:\*

- Targeted-maturity funds require the fewest decisions and least engagement from participants. The trade-off for this simplicity is a portfolio that reflects only one variable specific to the investor: his or her prospective retirement date. Such a portfolio may not meet a given investor's goals as well as one that reflects multiple variables, such as spending needs and risk tolerance.
- Static-allocation funds require slightly more involvement by the investor. Because asset allocation changes are not automatic, the investor must make a choice based largely on risk tolerance. As a result, a set of static-allocation funds will have an improved likelihood of meeting heterogeneous needs in terms of risk. The trade-off is the larger commitment of time and thought required from participants.

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\*Mutual funds, like all investments, are subject to risk. Targeted-maturity and static-allocation funds that are "funds of funds" are subject to the risks associated with the underlying funds they invest in. Diversification will not ensure a profit or protect against a loss in a declining market.

## The life-cycle solution

Life-cycle funds can remove key impediments to saving and meet investors' need for a "hands-off" solution that includes professional oversight.

### Investor motivation/desire for professional oversight

Experience has shown that a great many plan participants want simple, "automatic" investment solutions and the benefit of professional expertise. Many people want a professional to simply tell them what to do.

In general, participants tend to be minimally engaged in the investment decision-making process. In a recent study of participant behavior, researchers found that employees often follow the path of least resistance when it comes to their 401(k) investments (Choi et al., 2001). The authors examined the administrative records of several U.S. corporations and found that employees apparently leaned toward whatever decisions required the least effort. For example, participants' asset allocations were influenced by plan design: When the plan offered more equity choices, the participants' allocations were more heavily weighted toward equities.

Another study showed that if a plan provided for automatic enrollment, many participants remained in the employer-specified default fund, which was typically a cash or conservative bond fund (Madrian and Shea, 2001). They were not motivated to diversify toward a more suitable allocation. Yet, as has been shown by increased demand for investment advice, participants still want to benefit from professional expertise.

## Choice overload

Conventional wisdom has long held that more choice is always better. This assumption is at the foundation of classic free-market economic theory. It is supported by psychological research showing that individuals feel they are better off when they have at least some choices to make.

Recent consumer behavior studies, however, have led researchers to challenge the notion that more is better and to pose the question: "How much choice is *too much* choice?" The more choices people have, the more comparisons they need to make and the more information they have to process. Particularly in investing, more choices may require additional expertise and subtler decision-making skills. At some point, as the number of choices increases, individuals can become overwhelmed and find it difficult to make any decision at all. At that point, having choices becomes demotivating, rather than enabling. This is the phenomenon of "choice overload." Research of consumer behavior has shown that choice overload can hinder or even derail the decision-making process.

The theory behind choice overload can be applied to retirement savings plans. Participants overwhelmed by investment options may simply choose to not choose—i.e., not participate. A Columbia University study tested this notion using recordkeeping data supplied by Vanguard. After controlling for a number of variables known to affect participation, researchers found that for every ten investment choices, predicted participation rates dropped by an average of 2% (Iyengar, Jiang, and Huberman, 2003).

This impact, though modest, does indicate that some retirement plan participants are demotivated by too many choices. The finding is particularly important given the recent trend toward increasing the number of investment options in employer-sponsored plans. At Vanguard, the typical defined contribution plan in 2005 offered 19 investment options, up from 13 in 2000. Despite the additional options, 57% of participants invested in 3 or fewer funds, and the average for all participants was 3.6.

#### **Investor knowledge**

Despite increased levels of advice and education, many people today have a relatively low level of understanding about investments. Indeed, investors generally recognize how little they know. In the Vanguard 2003 Participant Relationship Study, 28% of respondents fully agreed with the statement "A lot of financial information is confusing to me." A 2002 John Hancock survey, *Insight into Participant Investment Knowledge and Behavior*, found that 40% of retirement plan participants believed money market funds include stocks; just 8% knew that money market funds contain only short-term securities. Investors who fit this profile may assume unintended risk, construct poorly diversified portfolios, and fail to save adequately for retirement.

#### **Investor attitudes**

Ideally, every participant would be motivated to plan for his or her retirement. In reality, this is not the case. In a multiphase research program from 1999 to 2001, Vanguard conducted an attitudinal segmentation study on retirement plan communications. Attitudinal segmentation is a method of defining an audience in terms of its psychological characteristics. In the study, Vanguard found 20% of its retirement plan population to be "secure doers" and 14% to be "live-for-today avoiders." Both groups—amounting to a third of all participants in plans administered by Vanguard—exhibit little interest in planning for retirement and low involvement in money matters.

In addition, Vanguard found 19% of its retirement plan population to be "stressed avoiders." These are people who find financial matters to be a source of anxiety and confusion and so tend to avoid dealing with them whenever possible. Such an attitude obviously can affect savings behavior.

For participants overwhelmed by choice, intimidated by investment decisions, or simply not interested in monitoring their retirement portfolios, life-cycle funds provide a solution that is both simple and consistent with sound investment theory. Well-designed life-cycle funds combine ease of investing with professional management of a well-diversified portfolio.

**Table 1. Comparison of targeted-maturity and static-allocation life-cycle funds**

	<b>Targeted maturity</b>	<b>Static allocation</b>
<b>Risk profile</b>	This approach assumes that investors who share a retirement date have similar objectives and risk tolerance.	Investors typically assess their own risk tolerance by responding to a questionnaire.
<b>Asset allocation shifts</b>	The fund's advisor automatically changes the asset allocation over time to make the portfolio increasingly conservative as the target date approaches.	The fund is periodically rebalanced to maintain its stated allocation. The investor decides when and how to shift to a more conservatively allocated fund as retirement draws nearer.
<b>Allocation monitoring</b>	All asset allocation changes occur within the fund, eliminating the need for the investor to rebalance. As with any other investment, however, a change in personal time horizon or investment objective warrants a review of the portfolio.	Periodic monitoring by the investor is necessary to ascertain whether the fund's asset allocation still matches his or her risk profile through the stages of accumulation, transition, and retirement.
<b>Time horizon</b>	The time horizon is predetermined, based on the fund's target date.	The time horizon is not predetermined. Investors have flexibility to change their asset allocations based on their changing time horizon.

#### **Targeted maturity versus static allocation**

All life-cycle funds share a common foundation:

- They are based on two fundamental tenets of investing: Diversify to reduce risk, and invest for a particular time horizon.
- They are driven by top-down asset allocation methodologies rooted in acceptance of the proposition that asset allocation is the most important decision in portfolio construction. Most life-cycle vehicles use a fund-of-funds approach to achieve the required level of diversification.

But while the two life-cycle approaches share a basic philosophy, they involve very different investment strategies. The targeted-maturity strategy asks an investor to identify his or her probable year of retirement and then select the fund that “matures” at that date. Once the fund

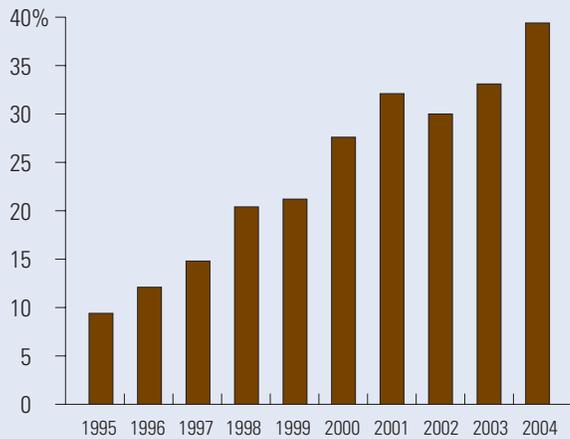
is selected, the investor need do nothing more. The fund’s manager adjusts the asset allocation through the years to become increasingly conservative as the retirement date nears.

The static-allocation strategy presents an investor with a set of portfolios that invest different proportions of assets in underlying mutual funds. The asset mixes have different risk and return characteristics, typically ranging from conservative to aggressive as measured by the exposure to equities. The investor chooses a single portfolio that best fits his or her time horizon and risk tolerance. If these factors change over the years, the investor may move from portfolio to portfolio within the set. For example, an investor under age 30 might start with a portfolio that has a high allocation to stocks and then move to one with a more conservative mix as he or she enters middle age.

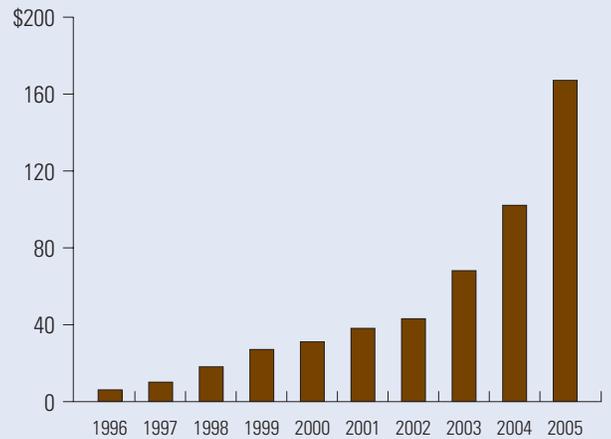
Table 1 compares the two types of life-cycle funds.

**Figure 1. Life-cycle funds assume a major role in retirement plans**

*1a. Percentage of profit-sharing and 401(k) plans offering life-cycle funds*



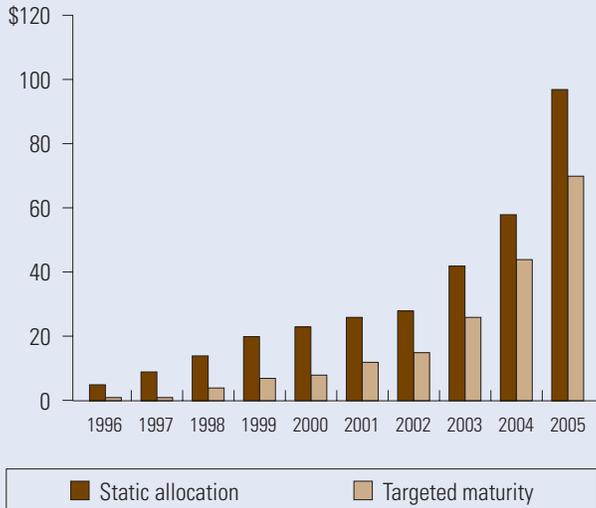
*1b. Life-cycle fund assets (\$ billions)*



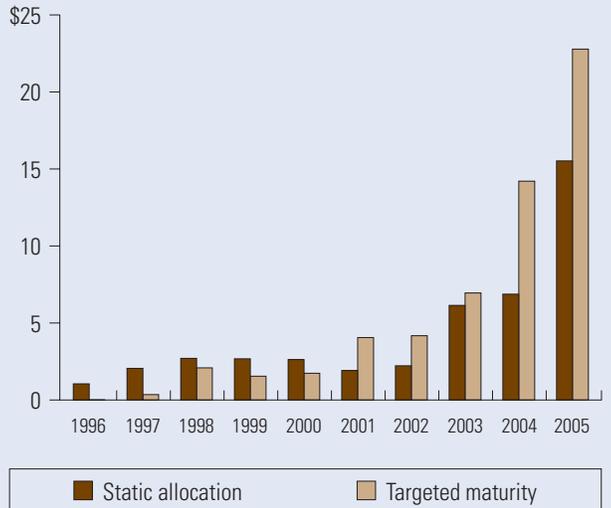
Sources: For Figure 1a, data are from the Profit Sharing/401(k) Council of America; for Figure 1b, data are from the Investment Company Institute's *2006 Investment Company Fact Book* (data for 1996 and 1997 are preliminary).

**Figure 2. Targeted-maturity fund assets and cash flows have risen**

*2a. Life-cycle fund assets (\$ billions)*



*2b. Life-cycle fund cash flows (\$ billions)*



Sources: For Figure 2a, data are from the Investment Company Institute's *2006 Investment Company Fact Book*; for Figure 1b, data are from Strategic Insight.

### Growing demand for life-cycle funds

Interest in life-cycle funds has risen in tandem with the dramatic changes in the retirement-funding landscape over the past 30 years. Today, fewer people are covered by traditional defined benefit plans, and many more have had to assume personal responsibility for managing their assets via defined contribution plans. This, of course, means that responsibility for determining how much investment risk to take has been transferred from the sponsoring company to the individual.<sup>1</sup>

Increasing recognition of this risk among both participants and plan sponsors drew heightened attention to life-cycle investments, which gave employees access to expert financial thinking. Although one can argue that balanced funds, many of which date from the early decades of the 20th century, were the first life-cycle vehicles, the concept took on a new level of sophistication about 15 years ago. As available options increased, more and more employers began to include life-cycle investments in their plans, and the assets in such options swelled (see Figure 1).

In recent years, asset growth has been stronger for targeted-maturity funds than for static-allocation funds. The trend for both is generally upward; however, cash flows have been significantly greater for targeted-maturity funds during the 1996–2005 period (see Figure 2). This may indicate a growing preference for simplicity among investors who choose life-cycle funds.

### Life-cycle funds as default options: Considerations for fiduciaries

The table below shows default investment options for defined contribution plans administered by Vanguard in December 2000 and December 2004. As of the end of 2004, only 16% of these plans were using life-cycle or balanced funds for their default options, up about 2% from 2000. Nearly 80% of plan sponsors instead chose a conservative, fixed-dollar default investment option.

As ERISA fiduciaries, plan sponsors must conform to the “prudent investor” standard when choosing plan investment options. Choosing a life-cycle fund, particularly a targeted-maturity fund, for the default option might be more consistent with two widely accepted investment principles: the existence of a positive equity-risk premium and the inverse relationship between age and risk-taking ability. For a full discussion of plan default options, including the benefits of using targeted-maturity funds, see *Selecting a Default Fund for a Defined Contribution Plan* (Vanguard Center for Retirement Research, 2005a).

**Table 2. Default options in plans administered by Vanguard: 2000 and 2004**

	2000	2004	Change
<b>Number of plans</b>	1,309	1,889	
<b>Default option:</b>			
Money market fund	65%	53%	–12%
Investment contract pool	19%	27%	+8%
Bond fund	1%	1%	—
<b>Balanced or life-cycle fund</b>	<b>14%</b>	<b>16%</b>	<b>+2%</b>
Company stock or equity	1%	3%	+2%

Source: Vanguard Center for Retirement Research, 2005a.

<sup>1</sup> This risk can be assessed from several perspectives. Unlike the payout provided by a defined benefit plan, an individual's results from a defined contribution plan are determined by the performance of the markets before and during his or her retirement. Idiosyncratic factors are at work as well: The individual's investment allocations, contribution rate, and age at the time of joining the plan are key variables. Another variable is knowledge, because participants in defined contribution plans must take some responsibility for educating themselves about the financial markets. Finally, there is the chance that a poor decision will substantially reduce a participant's assets and thus impair the quality of his or her retirement. Note that life-cycle funds are designed to help the participant meet the last two of these risks by relying on financial experts for investment knowledge and decision-making.

## Investment considerations

In choosing a life-cycle fund provider, plan sponsors should evaluate the investment methodology employed in constructing the funds. Although life-cycle funds share the same basic premise, there can be significant differences in how they are constructed.

### Asset allocations

In general, asset allocation is the most important determinant of total return and risk for a broadly diversified portfolio over the long term. In choosing life-cycle funds, plan sponsors should review the allocations carefully to make sure they reflect sound methodology. It is important that the allocations attain an appropriate balance between maximizing long-term growth and managing risk. Too much emphasis on return may subject the portfolio to considerable swings in value. Too much emphasis on controlling swings may limit growth.

For providers, the difficulty in determining asset allocations for life-cycle funds is that it often must be done with little or no information about the risk tolerance of investors in these funds. How fund companies tackle this problem varies.

**Model-based allocations.** Some providers choose to establish asset allocations reflecting the risk tolerance they believe investors *should* have at their respective ages. The goal is to obtain the “right” allocations based on a theory of what risk tolerance would be if people lacked the behavioral and other biases that keep them from making “correct” choices. The allocations are typically determined through a model optimization process. A potential weakness of this approach is that it is highly theory-dependent. Additionally, even if the basic ideas are correct, no purely theoretical approach can capture the full complexity and richness of individual situations. Thus such an approach can result in a portfolio that is far too risky or too conservative for a given employee.

**Behavior-based allocations.** Another approach is to design allocations based on investors’ observed behavior. This approach assumes that, on average, investors are able to choose appropriate portfolios, and that valid conclusions about risk tolerance can be derived by observing their choices over time.

There are problems here as well: First, investors’ behavior does not necessarily reflect changes in their risk tolerance over the life cycle, and second, it is often difficult to interpret what the observed data imply. In other words, investors may choose suboptimal allocations—ones that are age-inappropriate—because of biases or lack of motivation, and they may stick with those choices because of inertia. As a result, the behavioral approach can produce unsuitable allocations and may also produce portfolios with too much, or too little, shortfall risk.

We believe the best approach is something between those two extremes:

- Risk tolerance of plan participants should be estimated from what is known about risk tolerance among retirement investors broadly.
- Generally accepted principles of investment theory should also inform the analysis.

Figure 3 illustrates the risk-tolerance methodology spectrum.

Figure 3. Risk tolerance methodology

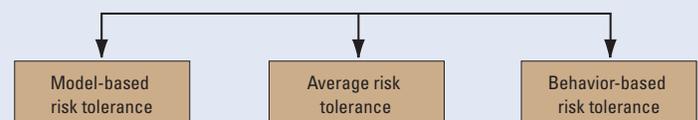


Table 3. Historical return and risk from alternative asset allocations: 1926–2005

Asset allocation using broad indexes	Historical average annual return	Real	Number of years with a loss	Standard deviation	Average loss in down year	Worst year	Worst 3 years	Bear-market cumulative returns		
		historical average annual return*						1/1/1973–12/31/1974	9/30/1987–12/31/1987	3/31/2000–9/30/2002
40% stocks/ 60% bonds	7.97%	4.78%	15 of 80	9.59%	-5.23%	-18.40%	-8.32%	-16.60%	-5.72%	-5.26%
50% stocks/ 50% bonds	8.47%	5.27%	16 of 80	11.17%	-6.61%	-22.50%	-11.18%	-21.07%	-8.61%	-12.71%
60% stocks/ 40% bonds	8.94%	5.72%	20 of 80	12.88%	-6.96%	-26.62%	-14.04%	-25.42%	-11.50%	-19.75%

\*Inflation adjustment based on Consumer Price Index.

Sources: For stocks, Standard & Poor's 500 Index, 1926–1970; Dow Jones Wilshire 5000 Composite Index, January 1, 1971–April 22, 2005; Morgan Stanley Capital International US Broad Market Index thereafter. For bonds, S&P High Grade Corporate Index, 1926–1968; Citigroup High Grade Index, 1969–1972; Lehman Brothers U.S. Government/Credit Bond Index thereafter.

Note: Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as it is not possible to invest directly in an index.

Given that retirement investors collectively—especially those who have reached retirement—are well known to be averse to risk of loss, life-cycle portfolios should be designed to keep this risk within tolerable limits. Although long-term returns and volatility statistics should be considered for each asset class, it is the market environment during the portfolio's lifetime—an uncontrollable factor—that will determine whether the investor's objective is met. Thus, the allocation should tip away from maximizing return and toward minimizing loss in these funds, albeit still with a goal of achieving both.

To implement this approach, asset allocations should be tested in historical "worst case" scenarios. For example, if a given portfolio had existed from 1926 onward, what would have been its worst one-year and three-year results? How did it actually perform in recent bear markets? Table 3 illustrates these risk measures for three portfolio allocations. As the table shows, a 10% variance in allocation can make a dramatic difference in downside risk.

## Reducing stock exposure: The theoretical basis

Perhaps the primary theoretical reason to decrease stock exposure with age is to offset the gradual reduction in the value of future work in an investor's "total portfolio." For most people, the value of future income from work represents a real asset that is initially far more valuable than their financial portfolio and will have return characteristics quite similar to those of a fixed income investment. Hence this asset should initially be balanced with a significant exposure to stocks. As investors age, the value of future income from work systematically declines as a fraction of their total portfolio. In order to maintain a relatively constant, balanced level of overall portfolio risk, the future-income asset should be gradually replaced by a financial investment with similar characteristics: bonds or other fixed income securities.

In addition to this motivation for reducing equity exposure over time, there is some (controversial) evidence suggesting the existence of long-term mean-reversion in stock returns. If such reversion does exist, it would imply in part that equity risk is generally lower for those with longer investment horizons, creating a "pure" horizon effect: All else equal, younger investors should hold more stocks than older investors.

Our view is that, while both theoretical arguments point in the same direction—the "optimal" equity allocation tends to fall with age—the human capital/future income theory constitutes a more compelling argument for reducing stock exposure as retirement nears.

## Asset-allocation transition

In targeted-maturity funds, asset allocations change over time, with equity exposure gradually declining as the investor ages. The transition from stocks to bonds is typically handled in one of two ways:

**"Glide path" approach.** This involves incremental changes that are prescribed from the start. The asset-allocation path does not vary; thus, the allocation is known in advance for any point in the transition toward the target date.

**Tactical approach.** Tactical asset allocation (TAA) approaches involve systematic market-timing to determine when allocation changes will occur. With a tactical approach, the asset-allocation path is not prescribed; it will vary with the manager's changing expectations.

One potential problem for a TAA approach is that investors may perceive a lack of transparency; another issue is the difficulty in implementation. Our research indicates that, while some TAA strategies have added value, on average these strategies have not produced statistically significant excess returns over all time periods (Tokat and Stockton, 2006). In our view, the additional risk of the tactical component is not justified by the likelihood of improved returns.

### Inflation protection

Life-cycle funds, like any other comprehensive investment, need to take inflation risk into account. A critical factor is how well a fund meets this risk for participants who are moving into the retirement stage, when assets accumulated in the plan may be an essential source of income to live on.

The best inflation protection depends on the investor's life-cycle phase. In the accumulation phase, stocks can provide adequate protection, because matching short-term fluctuations in consumer prices is not as critical as achieving long-term growth. Investors who are not yet spending from their portfolios can withstand the lagged response of equity prices to inflation, and they generally can tolerate short-term volatility better than older investors.

Once an investor is in retirement, however, inflation risk should be countered more directly, preferably through investment in inflation-protected securities. Retirees can no longer rely on their salaries, which provide inflation protection on a lagged basis; nor can they rely exclusively on equities, because stock returns historically have outpaced inflation only over long periods. Although some equity exposure may well be appropriate during retirement, the higher volatility of stocks makes them an unreliable source for inflation protection from year to year.

In contrast, inflation-protected securities provide an immediate hedge against rising prices. Because their principal is adjusted for changes in the Consumer Price Index, the income generated by these securities keeps pace with current inflation levels. Although inflation-protected securities cannot be expected to match the long-term returns from stocks, the inflation buffer they provide, together with their lower volatility, make them an appropriate investment for retirees.

### Fund management style

Fund management style is another factor to consider, particularly with regard to the underlying investments for the life-cycle fund. Major questions include:

- **Active or passive management?** For life-cycle funds, which are focused on retirement goals, index funds should be considered as underlying investments. Passively managed funds can offer predictability relative to a benchmark and control over manager risk, as well as desirable transparency.
- **Extent of diversification.** This is a key element of risk control. Broadly diversified indexed or actively managed funds keyed to broad market benchmarks, such as the Dow Jones Wilshire 5000 Index or the Lehman Brothers Aggregate Bond Index, can assure diversification across their markets.
- **Costs.** The cost to participants should always factor into a decision among investments. Unlike returns, costs are controllable. From a fiduciary perspective, a plan sponsor must be able to justify selecting a high-cost fund over lower-cost peers as an investment option for participants.

### Life-cycle investor profile

Vanguard has conducted studies of the characteristics and behavior of participants in defined-contribution plans that we administer. In analyzing life-cycle investors specifically, we have not identified any significant systematic differences between these investors and other participants with respect to demographics, knowledge, or attitudes.

Vanguard's Center for Retirement Research analyzed data related to adoption of life-cycle funds by both plan sponsors and participants in 401(k) plans. The analysis included a comparison of demographic data for participants who invested in life-cycle funds with data for those not invested in such funds. The results are shown in Table 4.

These data, representing more than 1,000 plans, show that, in aggregate, 401(k) participants who invest in life-cycle funds have somewhat shorter job tenures, slightly lower annual incomes, and smaller account balances than other participants. All of these factors are likely related to age: The life-cycle investors are somewhat younger than other participants.

**Table 4. Characteristics of participants in defined contribution plans offering life-cycle funds**

*Based on plans administered by Vanguard as of June 30, 2005*

	Life-cycle investors		Non-life-cycle investors
	Static-allocation	Targeted-maturity	
Percentage of participants	21%	5%	74%
<b>Average demographics</b>			
Age	42.9	41.4	44.8
Household income	\$98,153	\$106,656	\$100,837
Male/female (%)	58%/42%	58%/42%	62%/38%
Job tenure (years)	9.6	9.2	12.2
<b>Plan account balances</b>			
Mean balance	\$58,060	\$52,392	\$64,510
Median balance	\$17,974	\$19,662	\$24,109

Source: Vanguard Center for Retirement Research, 2005c.

Overall, however, the differences in demographics do not reveal much about the type of investor who chooses a life-cycle product. Many of the differences are not large. In addition, the age, salary and job-tenure demographics might simply reflect the relatively short period of life-cycle funds' existence. Vanguard began offering static-allocation funds in 1994 and targeted-maturity funds in 2003, so these funds have been plan options for only about 12 and 3 years, respectively. Their investors' relative youth thus may be simply an entry-date effect, given that the vast majority of investment choices in plans occur at the time of signup.<sup>2</sup> Vanguard research supports this intuition: In 2005, 42% of new enrollees in Vanguard-administered defined contribution plans adopted life-cycle funds, compared with 26% of existing participants (Vanguard Center for Retirement Research, 2005c).

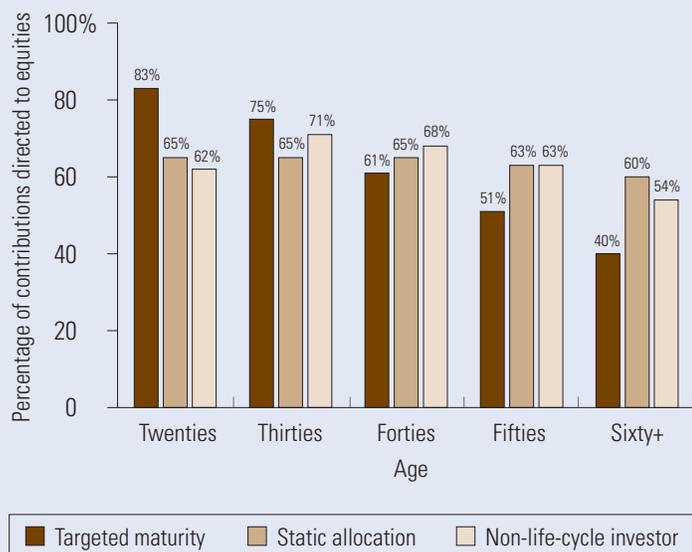
A review of other participant and plan characteristics produced similar results. For example, research showed that participants in certain industrial sectors adopted life-cycle funds at a higher rate than others, but we could not discern any factors, such as wages, systematically driving this occurrence. Vanguard found that participants from sectors with low-wage workforces were no more likely to adopt life-cycle funds than those from sectors with high-wage workforces (ibid, 2005).

In the same analysis, Vanguard compared the equity exposure represented in the contribution allocations of participants in the two types of life-cycle funds. One interesting finding was that the static-allocation investors, unlike the targeted-maturity investors, displayed very little variation in equity allocation by age. Because the targeted-maturity allocations are determined by anticipated retirement date, it is not surprising that younger investors in these funds have substantially higher equity allocations than older investors. That distinction all but disappears for investors in static funds, however.

<sup>2</sup> For example, in 2004, 80% of participants in Vanguard-administered plans had no account activity other than payroll contributions (Vanguard Center for Retirement Research, 2005b). That figure was down a bit from 86% in 2003 and from similar results in prior years.

As shown in Figure 4, among investors in static-allocation funds, equity exposure was nearly identical for investors in their 20s, 30s, and 40s in terms of contribution amounts. For static-fund investors in their 50s, the equity exposure was only 2% lower; for those in their 60s, it was 5% lower. The researchers noted that this uniformity could be driven by another behavioral bias, “extremeness aversion,” meaning the tendency among investors to choose a middle option when they lack strong preferences. Across all age levels, the overwhelming majority of participants contributing to Vanguard’s four static-allocation funds choose the two funds that fall in the middle in terms of risk.

Figure 4. Participant equity exposure by age and life-cycle fund usage



Source: Vanguard Investment Counseling & Research.

## Which to choose?

A life-cycle fund is an appropriate investment option for most participant populations. Plans should include only one type because both static-allocation and targeted-maturity funds meet the same participant need for a single-fund solution. Which of the two is more suitable for a particular plan and employee population can be determined in part by the trade-offs inherent in each approach.

To determine which life-cycle type to include, plan sponsors first must understand the target audience for each type. Then sponsors must assess their employee base to see which life-cycle type is the better fit.

## Defining target audiences

Investor needs and interests span a wide spectrum. Life-cycle funds focus on the passive end of this spectrum, serving people who want a simple, largely hands-off approach to their retirement investing. However, even within this group there is a range of needs, from those who want as little involvement as possible to those who require a more customized approach.

Static-allocation funds appeal to the latter—those participants who want to maintain greater control over their portfolios and who are willing to take responsibility for switching funds as their circumstances and risk tolerance change. These investors are willing to spend time reevaluating their changing risk tolerance, time horizon, and asset allocation in a disciplined fashion.

The targeted-maturity approach, on the other hand, appeals to participants who want to steer clear of almost all decision-making. These investors typically are either (1) novice investors who are looking for a simple, turnkey solution that requires nothing of them or (2) relatively knowledgeable investors who lack the time or desire to monitor their investments but want the benefits of professional management.

### **Assessing participants' knowledge and motivation**

In deciding whether to offer a static-allocation or a targeted-maturity fund, plan sponsors can look at much the same type of data used to decide on other investment options in a plan. The participant population should be examined to gauge investment knowledge and sophistication level. Employee demographics, such as average age and education level, can provide insight. The strongest indicator of overall knowledge and motivation is participants' past behavior. Critical questions include:

- Are participation rates low relative to the average?
- Are savings rates low relative to the average?
- Does plan asset allocation tend to move with market returns, indicating that participants do not rebalance?
- Are assets concentrated in the plan's default fund?
- Is the use of equity investments low?
- Do participants use only a narrow range of the investment options provided?
- Are participants typically unresponsive to education and advice programs? (For plans that offer online advice programs, a revealing statistic would be the percentage of participants who have actually used the program and acted on the advice.)

The answers to these questions will help sponsors assess the overall willingness and ability of their participants to be engaged in the investment process. If most answers are "yes," the plan's participants may be a relatively unsophisticated group for whom targeted-maturity funds could be more appropriate. A preponderance of "no" answers may imply a more sophisticated, engaged population for whom a lineup of static-allocation funds would be appropriate.

Sponsors should also consider their own goals concerning plan education. For example, if a plan offered a static-allocation fund, would it need to engage in substantial education to ensure that participants chose new portfolios as their risk tolerance and time horizon changed? Targeted-maturity funds would require fewer participant decisions and, therefore, less education, all else being equal.

### **Understanding the trade-off**

Plan sponsors should also recognize that there is a trade-off inherent in both life-cycle approaches. The trade-off arises from the same factor that can make these funds desirable to many participants—their hands-off nature. If a life-cycle investor fails to adjust portfolio allocations to reflect changing time horizons or spending needs at any stage of the retirement planning process (accumulation, transition, or retirement itself), that investor will incur a risk of not being able to meet spending goals during retirement. The degree of risk will depend on the specific allocation and the desired level of spending.

Of the two types of life-cycle funds, targeted-maturity funds require the least decision-making by investors and therefore may present a starker trade-off. Investors in these funds will have had little reason ever to think through the implications of asset allocation. By contrast, static-allocation funds require investors to do at least some decision-making over the years, and thus may leave them better prepared to consider how they will conserve their assets during retirement. Either approach, however, requires an education effort on the part of the plan sponsor.

## Conclusion

Plan sponsors have long recognized that life-cycle funds are appropriate for a substantial number of participants. In acknowledging the need for such funds, the financial services industry has taken two different paths to address it. Static-allocation funds require more engagement from participants and, in exchange, can improve their likelihood of meeting retirement goals. Targeted-maturity funds, by offering a one-decision approach, require minimal engagement, which can enhance participation and the selection of sensible asset allocations. The trade-off, however, may be a greater risk of not meeting retirement goals.

In choosing a particular life-cycle fund, plan sponsors should understand the methodology behind the fund allocations. We believe the best approach is one cognizant of retirement investors' needs and risk tolerances in general. It should focus on meeting retirement objectives while managing the risk of loss. In addition, the underlying investments should provide diversified exposure to the broad markets and transparency at a reasonable cost. As investors' income and time horizon decline, so should exposure to stocks. In retirement years, inflation-protected securities may provide the best inflation hedge. Finally, with respect to allocation changes over time, a systematic, prescribed approach may be the most prudent.

Life-cycle funds are appropriate for a segment of the participant population in most plans. Our results have shown that these funds have appealed to a broad base of participant types with respect to demographics, knowledge, and risk tolerance. In determining whether to offer static-allocation funds or targeted-maturity funds, plan sponsors must recognize the inherent trade-offs and decide which of the two better matches the unique needs of their participants.

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