

Vanguard[®]

Constructing a defined contribution investment lineup: Vanguard's five best practices

Vanguard commentary

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Executive summary. Market volatility, expanded investment options, and regulatory changes have dramatically transformed the attitudes and decisions of defined contribution (DC) plan sponsors and participants in recent years. As a result, more plan sponsors are taking a closer look at the effectiveness of their investment lineups. In this commentary, we present five lineup-construction best practices to help both plan sponsors and participants achieve their objectives.

Our discussion takes into account that some sponsors have well-diversified plan lineups with few gaps or overlaps, while others hold legacy plans with investment offerings borne through mergers or acquisitions. In other cases, plan sponsors have added investment options over the years without shedding duplicative offerings. Whether a plan's investment lineup needs a complete overhaul or a modest refresh, Vanguard believes these five best practices can help sponsors assess their lineups and effectively communicate their plans to participants:

- Focus on the investment fundamentals of asset allocation, diversification, and low costs.
- Offer professionally managed solutions, including target-date funds (TDFs) and managed accounts.
- Offer a core set of broad-market index funds.
- Make the plan lineup participant-friendly.
- Ensure active, ongoing oversight.

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Overview of retirement plan objectives

Plan sponsors and plan participants share many objectives, but, of course, have quite different roles and perspectives. Sponsors must act in a fiduciary capacity and seek to provide a valuable employee benefit. Participants are the end users and beneficiaries of a DC plan. Figure 1 shows the ways plan sponsors and participants share objectives but approach them from different perspectives.

These objectives are central to developing a DC plan investment lineup and the ongoing oversight required. Vanguard recommends the five best practices outlined in this paper to help plan sponsors create—and communicate—an effective plan lineup.

Figure 1. Retirement plan objectives: Contrasts and commonalities

Plan sponsors	Participants
Help participants create wealth, achieve retirement readiness	Seek to build a nest egg for retirement
Offer a plan lineup with exposure to the broad asset classes	Have access to investments in order to build a sound portfolio
Ensure participants understand the plan options	Desire simplicity, ease of use, and choice
Want good value	

Source: Vanguard.

1. Focus on the fundamentals: Asset allocation, diversification, low costs

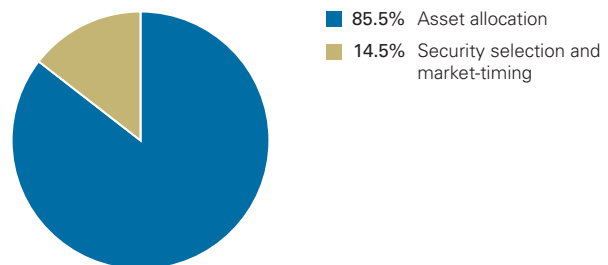
Three proven tenets of long-term investment success form a logical foundation for portfolio construction decisions: asset allocation, diversification, and low costs. As such, they should also serve as the foundation for an effective plan lineup. We'll address each component separately.

Asset allocation: When developing a portfolio to meet an identified objective, it's critical to enable participants to select a combination of assets that offers the best chance for meeting their objective, subject to the investor's circumstances. This "top-down" asset allocation decision largely determines the success or failure of meeting the objective. Assuming investors use broadly diversified investments, the mixture of those assets will determine both the returns and the variability of returns for their aggregate portfolio.

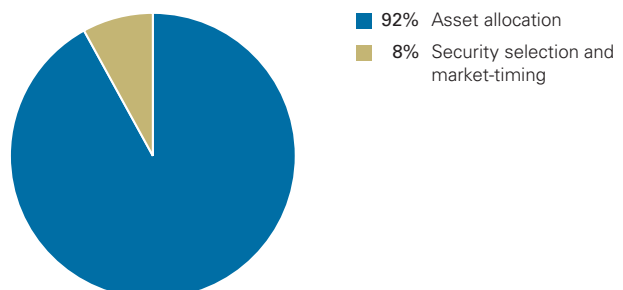
The vast majority of an investor's return over time is derived from asset allocation, as opposed to fund or security selection or market-timing, according to a landmark study on the determinants of portfolio

Figure 2. Investment success has been largely determined by long-term asset mix

Percentage of portfolio *returns* attributable to:



Percentage of portfolio *volatility* attributable to:



Source: Vanguard research: *The asset allocation debate: Provocative questions, enduring realities*, 2007.

performance (Brinson, Hood, Beebower, 1986). The Brinson study found that more than 90% of return variability is a result of asset allocation. Many additional studies, including Vanguard's research (Davis, Kinniry, Sheay, 2007), confirm the critical importance of asset allocation on returns. Figure 2 shows the powerful influence of asset allocation not only on total returns but also on the level of volatility a portfolio experiences.

Diversification: Diversification is a powerful strategy for managing traditional investment risks. For example, diversification across asset classes (stocks, bonds, and short-term reserves) reduces a portfolio's exposure to the risks common to a single asset class. Diversification within an asset class (U.S. and international stocks; market capitalization and style within stocks; credit quality and maturities within bonds) reduces a portfolio's exposure to risks associated with a particular company, sector, or segment.¹

In practice, diversification is a rigorously tested application of common sense: Markets and asset classes will often behave differently (sometimes marginally, sometimes greatly) from each other at any given point in time. Owning a portfolio with at least some exposure to many or all key market

components ensures the portfolio of some participation in stronger areas while also mitigating the impact of weaker areas. For example, Figure 3 shows historical annual returns for a variety of asset and sub-asset classes. Performance leadership has often been quick to change, and a portfolio that was well-diversified would have been less prone to extreme performance swings.

Costs: Minimizing costs is critical to achieving long-term investment success. Contrary to the typical economic relationship between price and value, higher costs don't necessarily lead to higher returns (see Philips, 2012; and Wallick, Bhatia, Clarke, Stern, 2011). Every dollar paid for management fees or trading commissions is a dollar less of potential return. The critical factor, however, is that costs, unlike market performance, are largely controllable.

To see how costs can significantly reduce total returns, consider a scenario in which a 25-year-old investor each year contributes 9% of his or her annual salary to a portfolio that is invested 50% in stocks and 50% in bonds. (This analysis is based on salary assumptions using an adjusted Social Security Administration wage index starting with a salary of \$30,000 at age 25. See Bruno and Zilbering, 2011, for more details.)

Figure 3. Annual returns for selected investment categories, ranked in order of performance (best to worst)

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
35.18%	38.71%	43.09%	49.74%	14.03%	32.07%	48.54%	31.59%	25.55%	35.03%	32.67%	5.24%	37.21%	29.09%	8.29%
31.78%	20.00%	40.92%	26.36%	13.94%	10.26%	46.03%	22.25%	13.54%	26.34%	11.81%	-28.92%	34.47%	27.96%	7.84%
30.49%	15.63%	33.16%	22.83%	8.44%	3.81%	38.59%	20.25%	12.17%	23.48%	11.17%	-36.85%	31.78%	24.50%	2.64%
20.26%	8.69%	26.96%	11.63%	-5.59%	-11.43%	37.14%	17.28%	7.05%	22.25%	7.05%	-37.73%	27.99%	16.71%	0.39%
12.95%	1.23%	7.35%	7.01%	-9.23%	-15.52%	30.03%	16.49%	5.26%	13.35%	6.97%	-38.44%	20.58%	15.51%	-1.18%
9.65%	-6.45%	-0.82%	-14.17%	-20.42%	-15.94%	29.75%	14.31%	4.71%	9.07%	-0.17%	-38.54%	19.69%	9.03%	-2.91%
1.78%	-17.50%	-1.49%	-22.43%	-21.44%	-27.89%	20.72%	6.30%	4.15%	4.33%	-9.78%	-43.38%	13.49%	7.75%	-5.50%
-14.07%	-35.75%	-4.62%	-22.43%	-31.93%	-30.26%	4.10%	4.34%	2.43%	-15.09%	-15.70%	-46.49%	5.93%	6.54%	-12.14%

■ Russell 1000 Value	■ Russell 2000 Value	■ Russell 2000 Growth	■ Barclays Aggregate
■ Russell 1000 Growth	■ FTSE NAREIT	■ S&P GSCI Total Return	■ MSCI EAFE

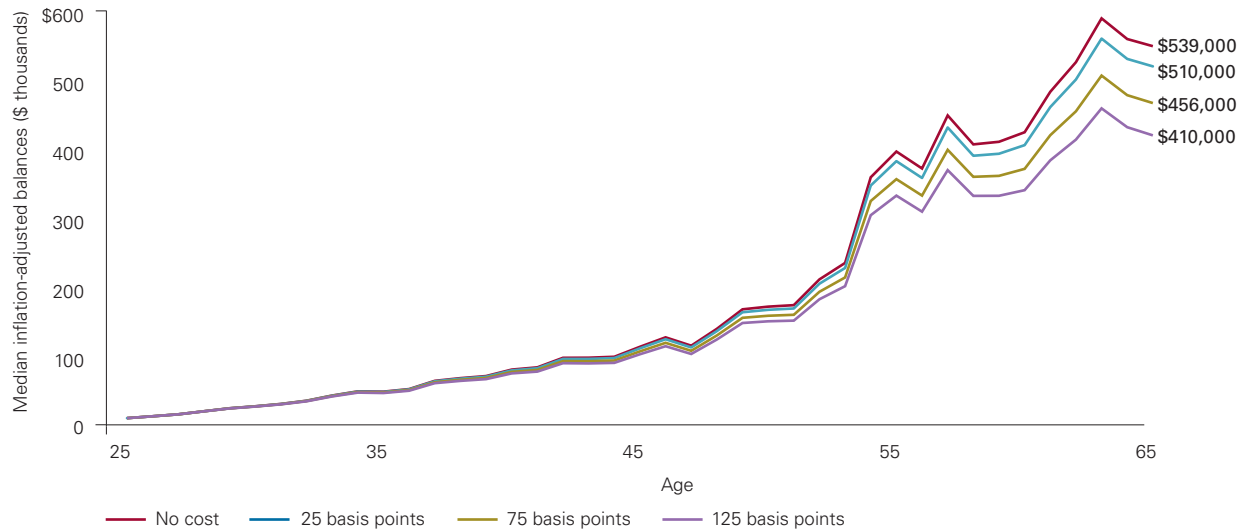
Note: Investment categories are represented by the following: Large-cap U.S. value stocks—Russell 1000 Value Index; large-cap U.S. growth stocks—Russell 1000 Growth Index; small-cap U.S. growth stocks—Russell 2000 Growth Index; small-cap U.S. value stocks—Russell 2000 Value Index; U.S. real estate investment trusts—FTSE NAREIT Equity REIT Index; U.S. bonds—Barclays U.S. Aggregate Bond Index; commodities—S&P GSCI Total Return Index; and international developed markets stocks—MSCI EAFE Index.

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

Source: Vanguard.

¹ Vanguard believes that if international bonds are to play an enduring role in a diversified portfolio, the currency exposure should be hedged. For additional perspective, including an analysis of the impact of currency on the return characteristics of foreign bonds, see Philips et al, 2012.

Figure 4. Long-term impact of investment costs on portfolio balances



Source: Vanguard.

Figure 4 illustrates a range of hypothetical portfolio balances at retirement, using benchmark returns as proxies for the asset class returns and, at first, assuming no costs. We then show the same scenario, adjusting for annual investment costs of 0.25%, 0.75%, and 1.25%. Over a 40-year savings period for this hypothetical investor, the costs have a striking potential impact on the portfolio balances at retirement. For instance, if this hypothetical investor were in a very high-cost investment at 1.25% versus a low-cost program at 0.25%, the difference in the median ending balance would be nearly \$100,000, or a loss of roughly 20% in the portfolio's value.

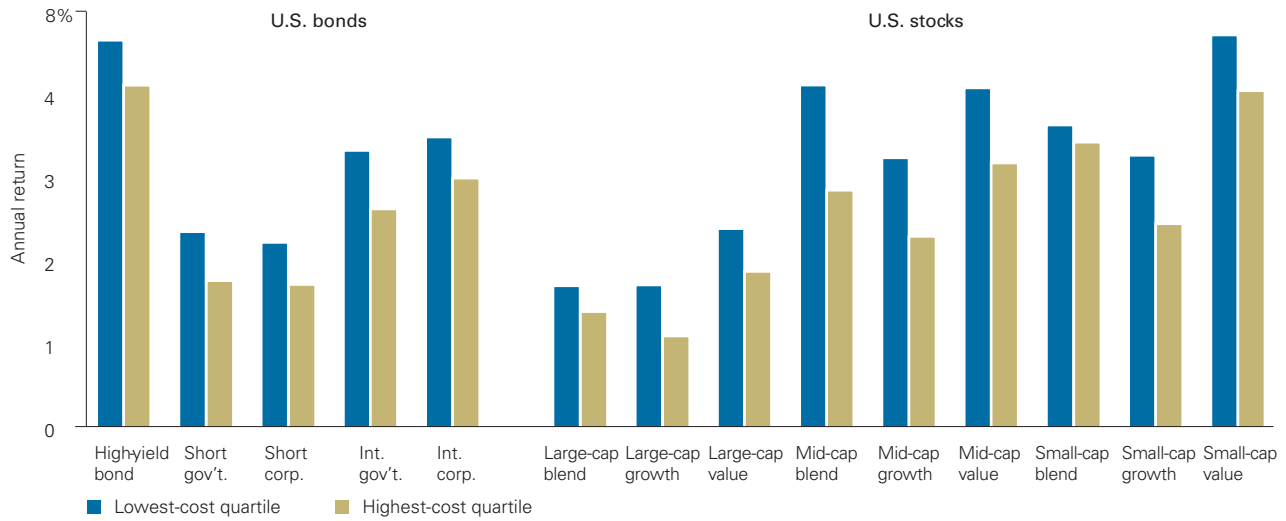
Furthermore, research shows that funds with lower costs have generally outperformed their higher-cost counterparts. Figure 5 compares the performance of the median funds in two groups: the 25% of funds with the lowest expense ratios and the 25% with the highest. In every category we evaluated, the low-cost

funds outperformed. Recently, regulators have weighed in on the issue of costs and passed new fee disclosure rules aimed at increasing fee transparency for participants. Many believe that new fee disclosure rules will bring to the surface the issue of costs for participants and plan sponsors, which may lead to more cost-conscious investment lineup construction at the plan level and portfolio construction at the participant level.

Clearly, the fundamentals of asset allocation, diversification, and low costs are crucial investment decisions for any portfolio. As such, it is critical for plan sponsors to ensure that their plan lineup is well-grounded in these three investment tenets.

Figure 5. Lower costs have meant higher net returns

10-year annualized return by cost quartile: As of 12/31/2011



Source: Vanguard, using data from Morningstar.

2. Offer professionally managed solutions, including TDFs and managed accounts

One strategy for delivering a sound portfolio built on the principles of asset allocation, diversification, and low costs is through professionally managed solutions such as TDFs and managed accounts.

Over the last decade, many positive developments have surfaced to improve participant portfolio decisions: more education, more user-friendly formats, web-based education, online tools, autoenrollment (participants are automatically enrolled in the plan with the ability to opt out), autoescalation (participant deferral rates are automatically increased by a certain amount each year with the ability to opt out), managed account offerings (personalized portfolio recommendations), and TDFs.

Plan sponsors have been quick to react as evidenced by the adoption of autoenrollment/ autoescalation and the addition of TDFs to lineups. Among Vanguard-recordkept plans, plans offering TDFs jumped from 43% in 2006 to 82% in 2011 (Vanguard, 2012a). A logical outgrowth of this trend is the projected growth in the percentage of DC assets invested in TDFs, projected to be in the 35%–40% range, according to McKinsey & Company (2010).

TDFs, along with target-risk funds, traditional balanced funds, and managed accounts, are well-documented as having helped participants own well-diversified portfolios. We define these investment options as “professionally managed allocation funds,” or funds that allow participants to delegate asset allocation and other investment decisions to portfolio managers. Indeed, by offering both types of professionally managed allocations, a plan sponsor is able to offer the ease of TDFs complemented by the personalization that a managed account offers.

The broad use of professionally managed allocations has risen dramatically, mostly fueled by TDFs. Combined with automation, we expect the use of professionally managed allocations will continue to rise in the coming years. Vanguard estimates that by 2016, as many as 55% of participants will be invested in a professionally managed allocation. (See Figure 6.)

Investments in target-date funds are subject to the risks of their underlying funds. The year in the fund name refers to the approximate year (the target date) when an investor in the fund would retire and leave the workforce. The fund will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. An investment in a target-date fund is not guaranteed at any time, including on or after the target date.

The impact of professionally managed allocations on participant asset allocation and risk/return profiles is meaningful. Professionally managed allocation portfolios provide a more controlled set of outcomes when compared with participant portfolios that aren't fully invested in a single professionally managed allocation portfolio.

As shown in Figures 7a and 7b, the range of risk/return outcomes for TDF investors and managed account investors is far more concentrated when compared with Figure 7c, which reflects the outcomes of participants who are not invested in a single professionally managed allocation.

As one would expect:

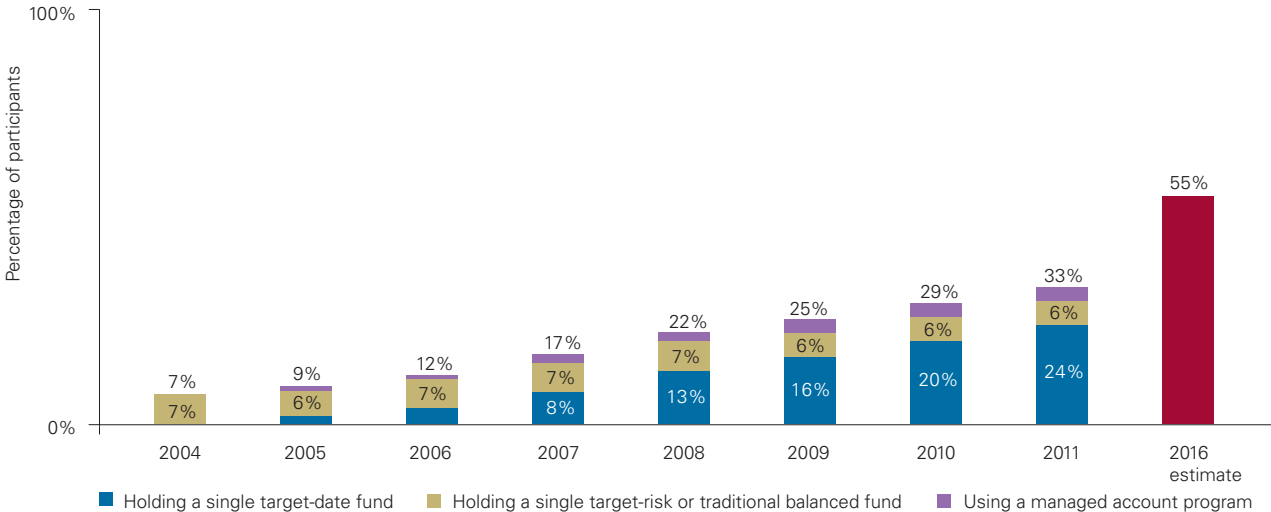
- TDFs have produced a logical sequence of returns that corresponded with the shifting asset allocation of the full suite of funds.
- Managed accounts have shown greater dispersion because of the customization element of portfolio construction.
- The greatest dispersion of results is among participants who aren't 100% invested in a professionally managed allocation, with some portfolios showing poor risk/return profiles.

Enhancing the plan lineup by offering both a suite of TDFs and a managed account is one way for plan sponsors to help their participants build sound portfolios. They serve as complements to each other—while a TDF offers sophisticated portfolio management through an all-in-one fund option, a managed account offers the opportunity for more personalized portfolio management for participants who desire that level of advice.

In addition, some sponsors “reenroll” participants into a TDF as a way to improve portfolio diversification rapidly across some or all of the participant base. This involves transferring current participants’ holdings into a qualified default investment alternative (QDIA), subject to the right to opt out. A recent

Figure 6. Professionally managed allocations are on the rise

55% of participants expected to use a professionally managed allocation option by 2016

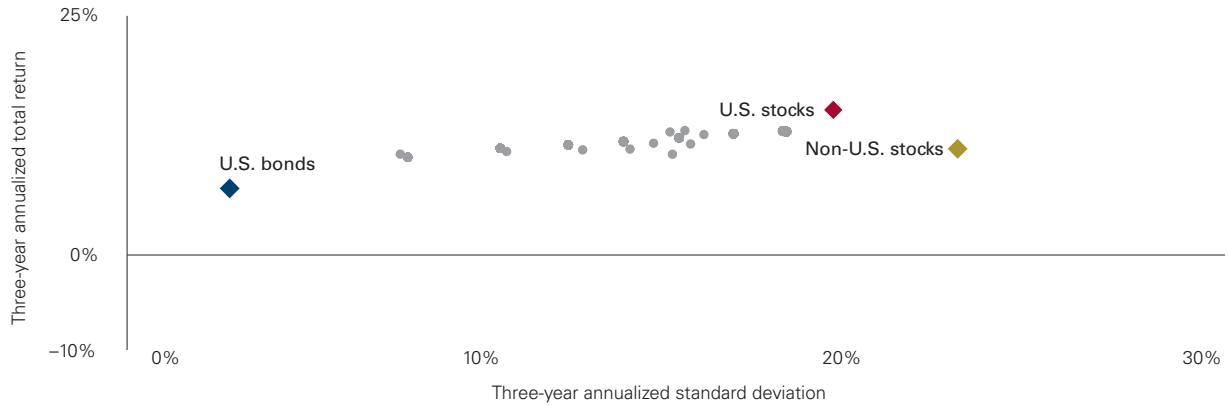


Source: Vanguard.

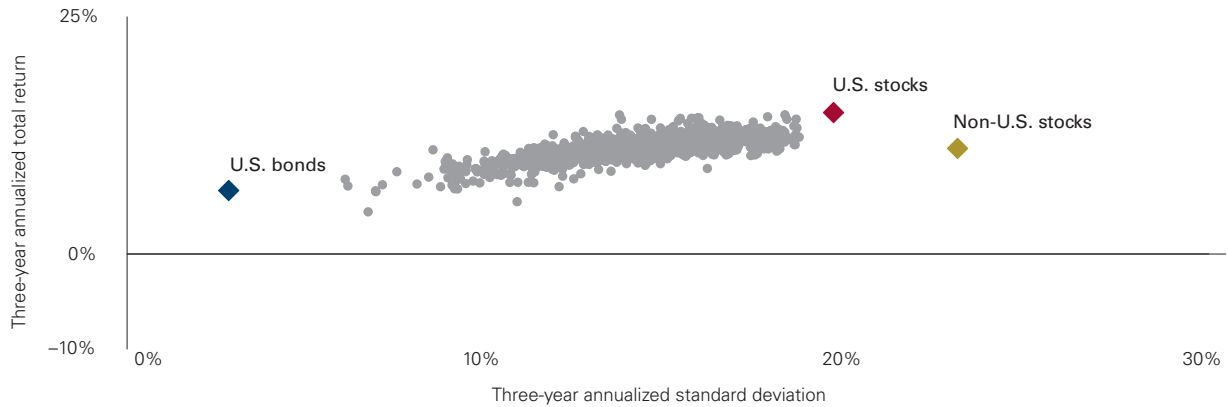
Figure 7. Risk and return characteristics with benchmarks

DC plan participants for the three-year period ended December 31, 2011

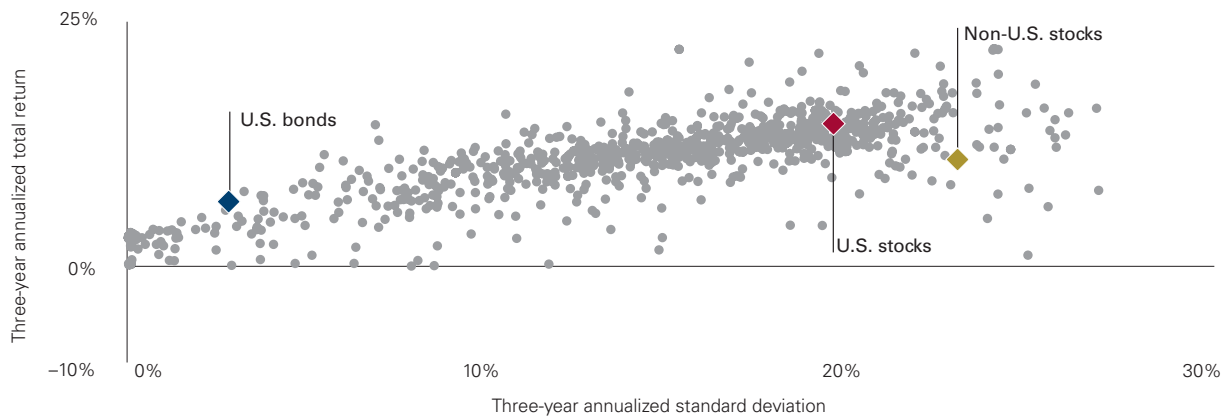
a. Portfolio outcomes: Single-TDF investors



b. Portfolio outcomes: Managed account investors



c. Portfolio outcomes: All other investors



● Participants

Note: Includes 1,000 random participant accounts drawn from respective samples for single target-date, managed account, and all other participants. ("All other participants" excludes participants invested in single TDFs, managed accounts, and single balanced funds.) Excludes 0.5% top and 0.5% bottom outliers for both risk and return, for a net sample of 980 observations.

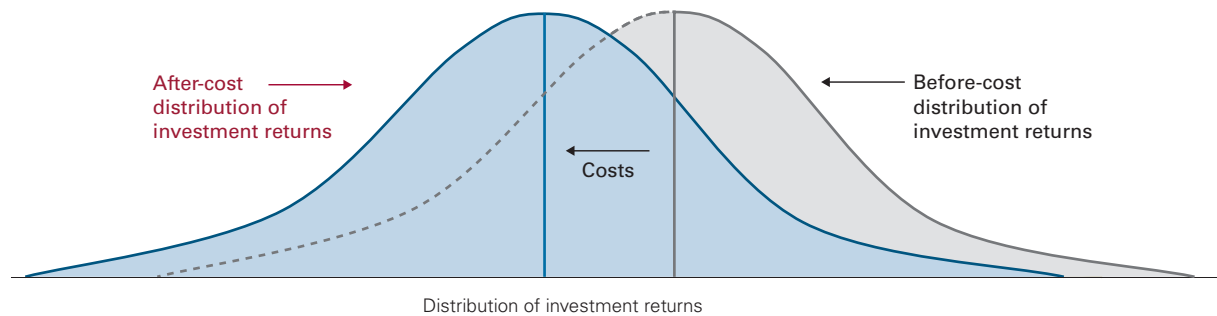
The period covered is from December 2008 through December 2011.

U.S. bonds=Barclays US Aggregate Bond Index; U.S. stocks=MSCI US Broad Market Index; non-U.S. stocks=MSCI AC World Index ex US.

Past performance is not a guarantee of future results. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Source: Vanguard.

Figure 8. The impact of costs on investor returns



Source: Vanguard.

Most index funds underperform their benchmarks due to fees.

Vanguard paper, *Improving plan diversification through reenrollment in a QDIA*, discusses this strategy in more detail.

3. Offer a core set of broad-market index funds

For participants who want to build their own portfolios, plan sponsors should consider offering a menu of broad-market index funds that covers the major asset classes. Indexing's potential to increase shareholder wealth rests primarily on four attributes:

- *Efficiency:* Portfolio turnover is limited to additions and deletions from an index, mergers and acquisitions, or other corporate actions. To maintain tight tracking, rebalancing is continuous since security weights should reflect the market weight.
- *Transparency:* Because an index fund holds all or a robust representation of the securities in a given benchmark at the same weights as the benchmark, investors can always determine what securities constitute their portfolio and how they performed.
- *Diversification:* Index funds tracking broad benchmarks hold all or most of the securities that compose that benchmark. Investors benefit from the mitigation of security and sector selection risk.
- *Low costs:* Index funds typically have low management fees, coupled with low operating costs.

Why does indexing work?

All investors are bound by the zero-sum game: For every buyer of a security, there must be a seller; that is, for every belief that a security will outperform, there is a counterview that it will underperform. At every moment, an index reflects all of these beliefs, trades, and positions. But after accounting for the constant drag of higher transaction, management, and other costs, a majority of actively managed portfolios fall to the losing side of the benchmark (shown in Figure 8).

Low-cost, risk-controlled, broad-market index funds attempt to track the benchmark return with minimal tracking error.

By tracking an index’s return at low cost, an indexed portfolio can provide competitive performance. If low costs are associated with better performance, costs should play a large role in helping investors select investments. In general, index funds’ costs are among the lowest. The higher expenses for actively managed funds often result from both the research process and the generally higher turnover associated with the attempt to outperform a benchmark. Furthermore, a recent Morningstar report supported Vanguard research concluding that low costs are a better predictor of future returns than their proprietary star ranking (see Philips and Kinniry, 2010; Morningstar, 2012).

Figure 9 shows the average asset-weighted expense ratios for actively managed equity and bond mutual funds as well as index funds. In all categories, index funds offered lower expenses (sometimes significantly lower) than their actively managed counterparts.

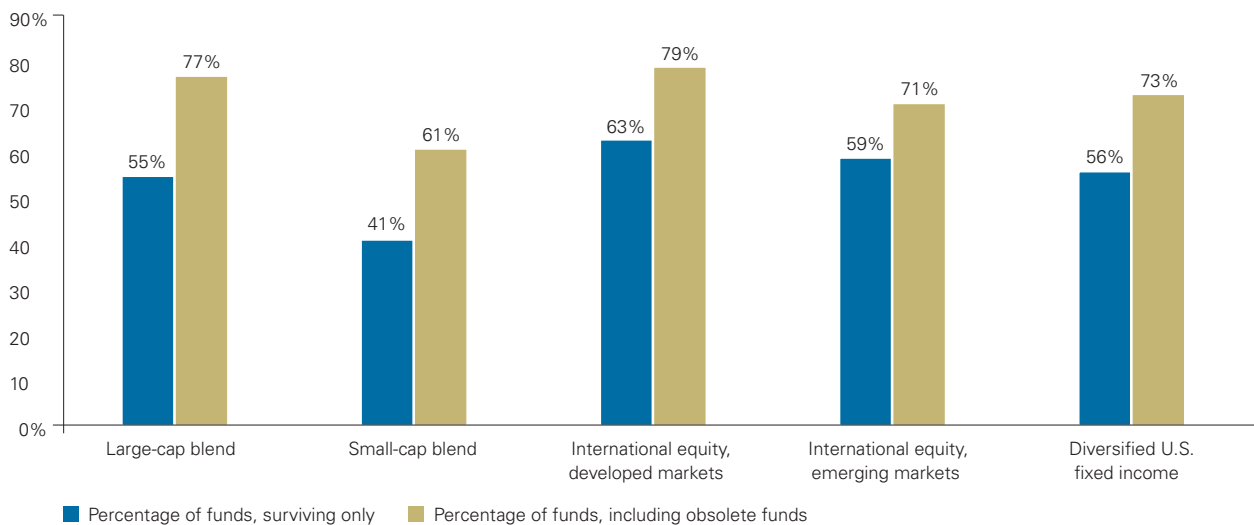
There is much data to support the outperformance of index strategies, especially over the long term and across various asset classes and sub-asset classes.

Figure 9. Asset-weighted expense ratios of active and passive investments

	Actively managed funds (%)	Index funds (%)
Large-cap U.S.	0.84	0.13
Mid-cap U.S.	1.01	0.22
Small-cap U.S.	1.09	0.25
U.S. sector	0.98	0.50
U.S. real estate	0.97	0.14
International developed	0.93	0.21
International emerging	1.19	0.24
U.S. corporate bond	0.61	0.14
U.S. government bond	0.52	0.18

Source: Vanguard calculations, using data from Morningstar, Inc. Data as of 12/31/2011.

Figure 10. Percentage of active funds underperforming the average of low-cost index funds



For the ten years ended December 31, 2011. Wherever possible, we used the average index fund returns from BlackRock, Fidelity, Northern, Schwab, State Street, and Vanguard—the six firms that manage the vast majority of U.S. mutual fund assets and have the lowest-cost products. We used Investor Share classes for all comparisons.

Source: Vanguard.

Figure 10 shows index fund outperformance across the common asset classes and sub-asset classes when compared with the index funds' actively managed counterparts. The chart shows how difficult it can be for active managers to outperform their indexed peers, especially when accounting for funds that were closed or merged during the ten-year period examined. More research shows that low costs, inherent in passive investing, are the key driver in index portfolio outperformance (Philips, 2012).

At the major asset-class level, this can be achieved with just a few broadly diversified, low-cost index options, as well as a short-term reserves option:

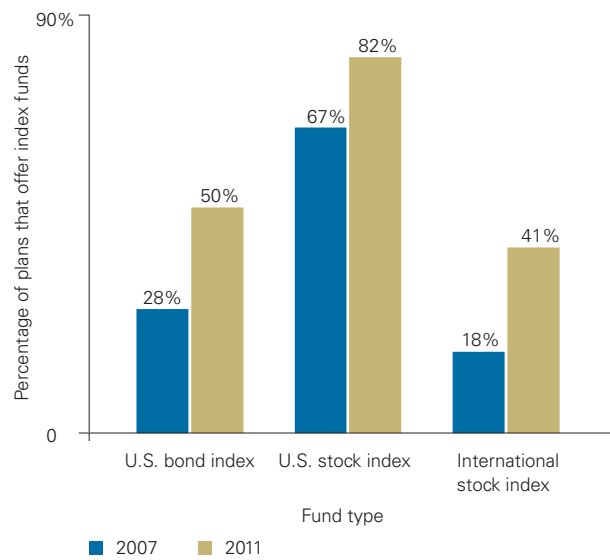
- A total U.S. stock market fund.
- A total international stock market fund.
- A total U.S. bond market fund.
- Cash/Short-term reserves.

These investment options, combined with strategic asset allocation and a long-term approach, offer a straightforward, yet truly efficient approach to portfolio construction.

Understanding the benefits of indexing, sponsors have been adding more index or passive investment options to their lineups. As of December 2011, 44% of Vanguard-recordkept DC plans offered a full suite of core index funds, granting access to 63% of the participant population (Vanguard, 2012a). The trend is apparent in the industry as well. Figure 11 shows the percentage of plans that offered index funds in 2007 and in 2011. Over the five-year period there was a meaningful increase in the number of plans that offered index funds.

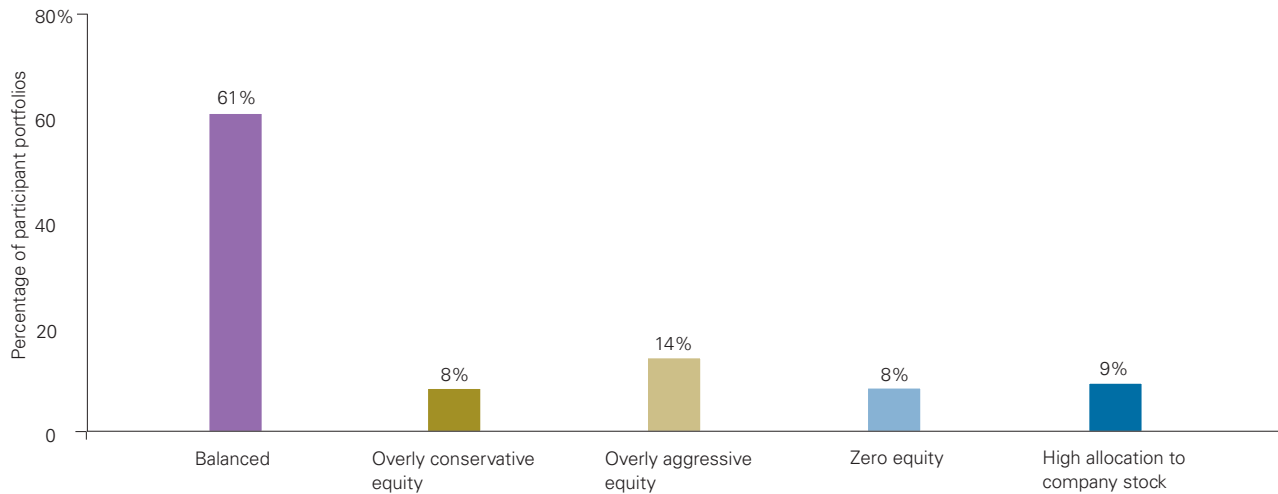
Adding a core of broad-market index funds to the plan lineup can clearly benefit both participants and plan sponsors. Offering an index tier (as we discuss in the next section) can provide benefits in a variety of ways, including a focus on diversification along with low costs and transparency. In addition, the task of fiduciary oversight of index funds is inherently less complicated when compared with the oversight of actively managed funds.

Figure 11. Increasing trend toward defined contribution plans offering index funds



Source: Plan Sponsor Council of America, *Annual survey of profit-sharing and 401(k) plans*, 50th and 54th editions.

Figure 12. Gauging the quality of participant portfolios



Source: Vanguard, 2012a.

4. Make the plan lineup participant-friendly

Most plan sponsors provide participants with a well-diversified investment lineup. A 2010 study found that most plans offer investment options that would allow participants to build an efficient portfolio (Tang, Mitchell, Mottola, and Utkus, 2010). The authors found that 94% of the plans are efficient, offering broad access to the major asset classes. The authors also noted that by offering carefully chosen, broad-based investment options, participants could construct an efficient portfolio with just a few funds.

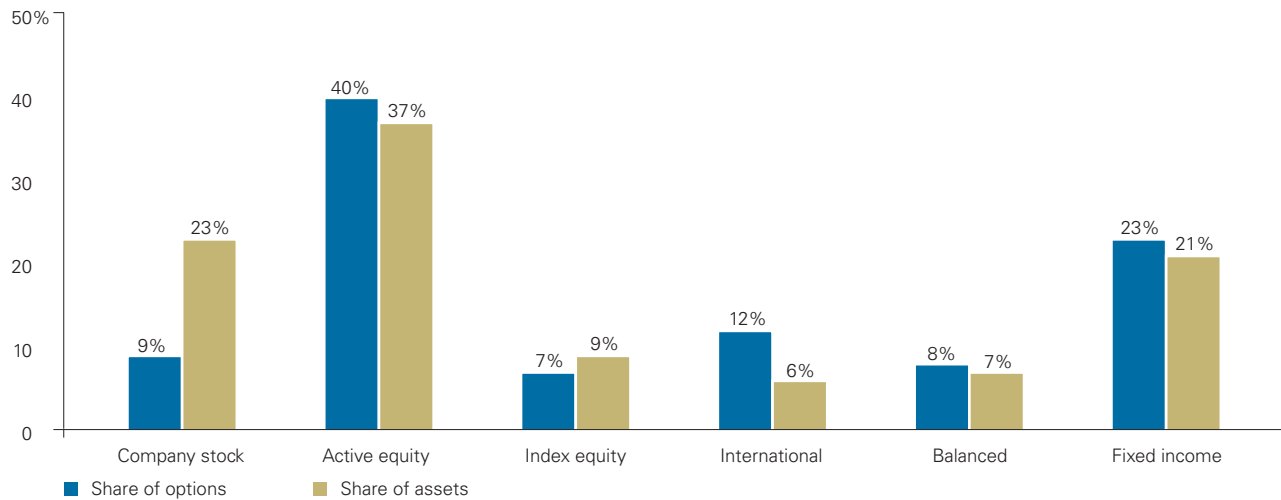
Yet, despite the industry’s best efforts to improve and enhance the participant education experience, as well as the fact that many plans offer good lineups, some participants continue to make poor choices when it comes to managing their DC plans.

The nature of participants’ portfolios varies greatly (see Figure 12). While the good news is that 61% of participants have balanced portfolios, 39% have room for improvement, including investors who have concentrated risks either through too much exposure to company stock (9%) or no equity exposure at all (8%).

Given these findings, how else can plan sponsors empower their participants to build better portfolios? Indeed, there are a few additional ways—including limiting the plan options to minimize choice overload and delivering the plan options through effective communication offered by tiering. We discuss the benefits of both approaches in more detail.

Avoiding choice overload: One trend consistently emerges in plan lineup analysis: The average number of options offered in plans has increased, but the number of options that participants actually use has remained quite stable. In 2002, the average number of funds offered in a plan lineup was 15; by 2011, that number jumped to 19. However, while the number of plan options was rising, the number of funds used by participants—three—held steady during that same time period (Vanguard, 2012a). So simply offering more fund options won’t necessarily drive better decision-making or better asset allocation by participants.

Figure 13. Share of investment options and assets by fund type



Source: Brown and Weisbenner, 2005.

That being said, the fund *types* that plan sponsors choose for their lineups also influence participant usage. For example, if a retirement plan has more active options in its lineup, participants are more likely to choose an active investment for their portfolios (see Figure 13).

Using a tiered lineup: Clearly, striking the right balance between choice and a manageable number of options is an ongoing challenge for plan sponsors. Fortunately, this can be addressed not only in the number of options offered but also in the presentation of the options in educational materials. One way to do this is to tier the plan lineup.

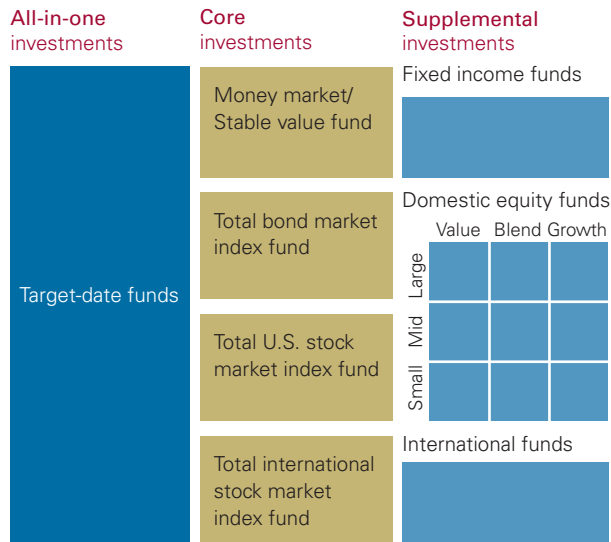
In a tiered structure (see Figure 14), a plan's investment options are organized in such a way that participants are provided with options in logical groupings rather than a long list of investment options, thus streamlining their decision-making.

Typically, the tiers are arranged in this way:

- Tier I: A suite of TDFs or another one-fund solution.
- Tier II: A set of broadly diversified index funds.
- Tier III: Other options such as active investments, niche index funds, or specialty funds.

There are numerous options for the third tier. Figure 14 provides a basic framework for structuring a tiered plan lineup.

Figure 14. Vanguard's basic tier framework



Tier I: Positioning TDFs in Tier I puts the all-in-one fund solution front and center for participants. Vanguard believes that the suite of TDFs offered in Tier I should employ indexing as well. This approach strengthens the plan's emphasis on low-cost, transparent, and risk-controlled investing.

Tier II: The second tier, the index tier, enables plan sponsors to provide a comprehensive set of index options and communicate them distinctly to participants. A minimalist approach to Tier II is to offer four investment options (as shown above)—a broadly diversified U.S. stock index fund, a non-U.S. stock index fund, a U.S. total bond market index fund, and a cash reserves option. An index tier constructed in this way can make available a highly efficient and simple

set of investment options for participants to use in building an efficient and personalized asset allocation.

Tier III: Many plan sponsors have expanded the number of investment options for those participants who want to tailor their portfolios to meet their individual preferences. As a result, one strategy may be to offer a third tier that has a selection of low-cost actively managed funds, or specialty index funds. This structure allows plan sponsors to communicate the benefits of indexing versus actively managed funds—one that might be lost were the options offered in a less structured list of funds. Some plan sponsors may even opt for a mutual fund or brokerage window in addition to, or instead of, Tier III.

Tiering an investment lineup can be beneficial for participants. And, as we discuss in the next section, tiering the plan lineup can be a good start to help with ongoing plan sponsor fiduciary oversight.

5. Ensure active, ongoing oversight

The investment, regulatory, and retirement industry landscapes are continuously shifting—and, in many cases, the organizations that plan sponsors serve are changing as well. Investment lineups require ongoing, diligent oversight.

In practice, the due diligence on investment lineups doesn't have to be overwhelming for plan sponsors. There are a few key steps:

- Establish clear goals and objectives for the plan's investment lineup.
- Ensure that the investment lineup facilitates the goals and objectives identified.
- Clearly document the criteria by which funds will be selected and evaluated.
- Maintain a disciplined process for hiring, evaluating, and terminating investment managers for the plan.
- Choose an appropriate default fund.
- Document all of the above in an investment policy statement and revisit the policy regularly with your investment committee.

Looking at the plan lineup through two lenses—a tiered approach and a traditional style-box approach—can help structure the discussion and process.

From a tiering standpoint, ensuring that Tiers I and II are adequately covered in the investment menu is one of the first steps a plan sponsor should undertake. This puts the focus on striving for economy and ease of use. More complexity can be introduced in Tier III for participants who desire more choice and flexibility.

Plan sponsors can evaluate their Tier III offerings through the traditional approach—that is, focusing on the style-box coverage within the asset classes—to help identify gaps, overlaps, and suitability concerns. For example, this can mean offering diversified, low-

cost, actively managed funds; funds that cover certain style boxes (such as large-cap value and large-cap growth within U.S. stocks); or narrower index funds. On the flip side, for those plan sponsors who offer a very complex set of offerings within Tier III, this can mean identifying—and removing—unnecessary fund overlaps or suitability concerns to streamline the plan lineup.

Understanding the importance of ongoing and rigorous evaluation for plan sponsors, Vanguard has developed a fund lineup tool that allows plan sponsors to evaluate their lineups using either a tiered or traditional style-box approach. The tool, which also offers a personalized PDF, is manager-neutral and helps identify gaps, overlaps, and suitability concerns in plan lineups. For more information on Vanguard's fund lineup analysis tool, see institutional.vanguard.com/fundlineup.

Conclusion

As fiduciaries, plan sponsors are duty-bound to put participant interests first. The best practices outlined in this paper provide a road map that plan sponsors can use to evaluate and improve the investment offerings in their DC plans. Just as important is continuously improving how plan sponsors communicate and educate participants, who rely on them for this portion of their retirement nest egg.

The best practices are rooted in proven investment fundamentals, well-documented participant behavior, technological advances in the retirement industry, the evolving regulatory environment, and participant education improvements. By adopting these five best practices, plan sponsors can offer robust investment lineups that suit their organizations, and provide participants with the right tools to make sound retirement portfolio decisions.

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