Appendix: Complete Vanguard Research Publication

The following pages reproduce the complete, unmodified February 2019 Vanguard research paper, “Putting a Value on Your Value: Quantifying Vanguard Advisor’s Alpha®.” The preceding article is independently prepared educational material and is not authored or endorsed by Vanguard.

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Vanguard

Putting a value on your value: Quantifying Vanguard Advisor's Alpha®

Vanguard research

February 2019

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- The value proposition of advice is changing. The nature of what investors expect from advisors is changing. And fortunately, the resources available to advisors are evolving as well.
- In creating the Vanguard Advisor's Alpha concept in 2001, we outlined how advisors could add value, or alpha, through relationship-oriented services such as providing cogent wealth management through financial planning, discipline, and guidance, rather than by trying to outperform the market.[1]
- Since then, our work in support of the concept has continued. This paper takes the Advisor's Alpha framework further by attempting to quantify the benefits that advisors can add by providing these services, either individually or in combination.
- We believe implementing the Vanguard Advisor's Alpha framework can add about 3% in net returns for your clients and also allow you to differentiate your skills and practice. Like any approximation, the actual amount of value added may vary significantly, depending on clients' circumstances.

Acknowledgments: This is the most recent update of Vanguard research first published in 2014 under the same title. For additional information on the Vanguard Advisor's Alpha framework, see The Evolution of Vanguard Advisor's Alpha: From Portfolios to People *(2018) by Donald G. Bennyhoff, Francis M. Kinniry, Jr., and Michael A. DiJoseph. The authors thank Christopher Celusniak for his contributions to the latest version.*

1 As Ritholtz Wealth Management's Josh Brown has written, "Vanguard's whitepaper, *The Advisor's Alpha*, was the most seminal thing ever written about the ways in which financial advisors can add value to a client away from the fussing over asset management. I don't know a single serious person in our industry that hasn't read it, shared it and internalized it."

The value proposition for advisors has always been easier to describe than to define. Value is a subjective assessment that varies from individual to individual. The added value of some aspects of investment advice can be quantified, but at best this can only be estimated, because each is affected by the unique client and market environments to which it is applied.

As the industry continues to gravitate toward fee-based advice, there is a great temptation to define an advisor's value-add as an annualized number. In this way, fees deducted annually for the advisory relationship can be justified by the "annual value-add." However, although some of the strategies we describe here could be expected to yield an annual benefit—such as reducing expected investment costs or taxes—the most significant opportunities present themselves not consistently but intermittently, often during periods of either market duress or euphoria.

These opportunities can pique an investor's fear or greed, tempting him or her to abandon a well-thought-out investment plan. In such circumstances, the advisor may have the opportunity to add tens of percentage points of value-add, rather than mere basis points,[2] and may more than offset years of advisory fees. However, the difference in your clients' performance if they stay invested according to your plan, as opposed to abandoning it, does not show up on any client statement.

An infinite number of alternate histories might have happened had we made different decisions; yet, we only measure and/or monitor the implemented decision and outcome. For instance, most statements don't keep track of the benefits of talking your clients into "staying the course" in the midst of a bear market or convincing them to rebalance when it doesn't "feel" like the right thing to do at the time. But their value and impact on clients' wealth creation is very real.

The quantifications in this paper compare the projected results of a portfolio that is managed using well-known and accepted best practices for wealth management with those that are not. Obviously, results will vary significantly.

Believing *is* seeing

What makes one car with four doors and wheels worth $300,000 and another $30,000? The answer likely differs from person to person. Vanguard Advisor's Alpha is similarly difficult to define consistently. For some investors without the time, willingness, or ability to confidently handle their financial matters, working with an advisor may bring peace of mind. They may simply prefer to spend their time doing something—anything—else. Maybe they feel overwhelmed by product proliferation in the fund industry, where even the number of choices for the new product on the block—ETFs—exceeds 1,000.

The value of an advisor in this context is virtually impossible to quantify. Nonetheless, the overwhelming majority of mutual fund assets are advised, indicating that investors strongly value professional investment advice. We don't need to see oxygen to feel its benefits.

Investors who prepare their own tax returns have probably wondered whether an expert such as a CPA might do a better job. Might a CPA save them from paying more tax than necessary? If you believe an expert can add value, you see value, even if the value can't be well-quantified in advance.

The same reasoning applies to other household services that we pay for—such as painting, housecleaning, or landscaping. These can be considered "negative carry" services, in that we expect to recoup the fees we pay largely as emotional rather than financial benefits. You may well be able to wield a paintbrush, but you might want to spend your limited free time doing something else. Or you may suspect that a professional painter will do a better job. Value *is* in the eye of the beholder.

It is understandable that advisors would want a less abstract or subjective basis for their value proposition. Investment performance seems the obvious, quantifiable value-add. For advisors who promise better returns, the question is: Better than what? Those of a benchmark or "the market"? Not likely, as evidenced by the historical track record of active fund managers, who have regularly failed to consistently outperform benchmarks in pursuit

2 One basis point equals 1/100 of a percentage point.

of excess returns (see Rowley, Walker, and Ning, 2018). Better returns than those provided by an advisor or investor who doesn't use the value-added practices described here? Probably, as we discuss in the sections following.

Indeed, investors have already hinted at their thoughts on the value of market-beating returns. Over the 15 years ended 2018, cash flows into mutual funds have heavily favored broad-based index funds and ETFs rather than higher-cost, actively managed funds (Bennyhoff and Walker, 2016).[3] In essence, investors have chosen investments that are generally structured to match their benchmark's return, less management fees. They seem to feel there is great value in investing in funds whose expected returns trail rather than beat their benchmarks' returns.

Why would they do this? Ironically, their approach is sensible, even if "better performance" is the overall goal. Over the long term, index funds can be expected to better the return of the average mutual fund investor in their benchmark category, because of their lower average cost (Rowley, Walker, and Ning, 2018).

A similar logic can be applied to the value of advice: Paying a fee to a professional who uses the tools and tactics described here can add value in comparison to the average investor experience, currently advised or not. We are in no way suggesting that every advisor—charging any fee—can add value. Advisors can add value if they understand how they can best help investors.

Similarly, we cannot hope to define here every avenue for adding value. For example, charitable-giving strategies, key-person insurance, or business-continuation planning can all add tremendous value in the right circumstances, but they do not accurately reflect the "typical" investor experience. The framework for advice that we describe in this paper can serve as the foundation on which to construct an Advisor's Alpha.

Important: *The projections or other information generated by the Vanguard Capital Markets Model® regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. VCMM results will vary with each use and over time. These hypothetical data do not represent the returns on any particular investment. (See* ***Appendix 2****.)*

Notes on risk and performance data: All investments, including a portfolio's current and future holdings, are subject to risk, including the possible loss of the money you invest. Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. Diversification does not ensure a profit or protect against a loss in a declining market. There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income. Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account. Bond funds are subject to the risk that an issuer will fail to make payments on time and that bond prices will decline because of rising interest rates or negative perceptions of an issuer's ability to make payments. While U.S. Treasury or government-agency securities provide substantial protection against credit risk, they do not protect investors against price changes due to changing interest rates. U.S. government backing of Treasury or agency securities applies only to the underlying securities and does not prevent share-price fluctuations.

3 Based on calculations from the Vanguard Advisor's Alpha research team using data from Morningstar.

Figure 1 is a high-level summary (organized into the seven modules detailed in the "Vanguard Advisor's Alpha Quantification Modules" section, beginning on page 8) of the value we believe advisors can add by incorporating wealth-management best practices.

Based on our analysis, advisors can potentially add about 3% in net returns by using the Vanguard Advisor's Alpha framework. Because clients only get to keep, spend, or bequest net returns, the focus of wealth management should always be on maximizing net returns. We do not believe this potential 3% improvement can be expected annually; rather, it is likely to be very irregular. Further, the extent of the value will vary based on each client's unique circumstances and the way the assets are actually managed.

Obviously, our suggested strategies are not universally applicable. Our aim is to motivate advisors to adopt and embrace these best practices and to provide a framework for describing and differentiating their value propositions. This paper focuses on the most common tools for adding value, encompassing both investment and relationship-oriented strategies and services.

Vanguard Advisor's Alpha: Good for your clients and your practice

For many clients, entrusting their future to an advisor is both a financial and an emotional commitment. As they would when finding a new doctor or other professional service provider, they typically enter the relationship based on a referral or other due diligence. They put their trust in someone and assume he or she will keep their best interests in mind.

Yet, trust can be fragile. Typically, it is established when the relationship is new. Once it has been established and the investment policy has been implemented, we believe the key to asset retention is keeping that trust.

First and foremost, clients want to be treated as people, not portfolios. This is why beginning the client relationship with a financial plan is so essential. Not only does it promote complete disclosure about investments, but more important, it provides a perfect way for clients to share what is of most concern to them: their goals, feelings about risk, family, and charitable interests. All of this information is emotionally based, and a client's willingness to share it is crucial in building trust.

Another important aspect is delivering on your promises—which begs another question: How much control do you actually have over the services promised? At the start of the relationship, expectations are set regarding services, strategies, and performance. Some aspects, such as personality and service levels, are entirely within your control. Recent research suggests that clients want more contact and responsiveness from their advisors (Bennyhoff, Kinniry, and DiJoseph, 2018).

The research cited not being proactive in contacting clients and not returning phone calls or e-mails in a timely fashion as among the top reasons investors changed

Figure 1. The value-add of best practices in wealth management

Vanguard Advisor's Alpha strategy	Module	Benefit of moving from the scenario described to Vanguard Advisor's Alpha methodology Typical value added for client (basis points)
Suitable asset allocation using broadly diversified funds/ETFs	I	> 0*
Cost-effective implementation (expense ratios)	II	34
Rebalancing	III	26
Behavioral coaching	IV	150
Asset location	V	0 to 75
Spending strategy (withdrawal order)	VI	0 to 110
Total-return versus income investing	VII	> 0*
Range of potential value added (basis points)		**About 3% in net returns**

* Value is significant but too unique to each investor to quantify.

Notes: We believe implementing the Vanguard Advisor's Alpha framework can add about 3% in net returns for your clients and also allow you to differentiate your skills and practice. The actual amount of value added may vary significantly depending on client circumstances.

Source: Vanguard.

financial advisors. In a fee-based practice, an advisor is paid the same whether he or she makes a point of calling clients just to ask how they're doing or calls only when suggesting a change in their portfolio. A client's perceived value-add from the "hey, how are you doing?" call is likely to be far greater.

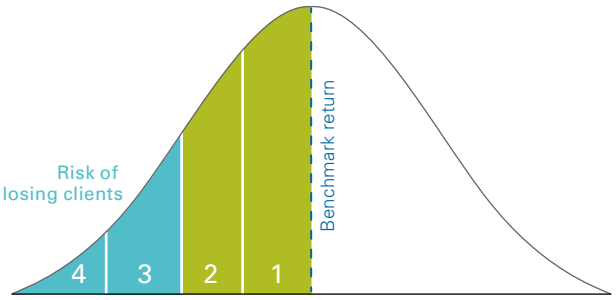
This is not to say that performance is unimportant. Although advisors cannot control performance, they can choose the strategies on which they build their practice. For example, they can decide how strategic or tactical they want to be with their investments or how far they are willing to deviate from a broad-market portfolio.

As part of this decision process, it's important to consider how committed you are to a strategy, why a counterparty may be willing to commit to the other side of the strategy, which party has more knowledge or information, and the holding period necessary to see the strategy through. For example, opting for an investment process that deviates significantly from the broad market may work extremely well when you are "right" but could be disastrous if your clients lack the patience to stick with it during difficult times.

Many people do not like change. They tend to have an affinity for inertia and, absent a compelling reason not to, are inclined to stick with the status quo. What would it take for a long-time client to leave your practice? The return distribution in **Figure 2** illustrates where, in our opinion, the risk of losing clients increases. Although outperformance of the market is possible, history suggests that underperformance is more probable.

Significantly tilting your clients' portfolios away from a market-capitalization weighting or engaging in large tactical moves can result in meaningful deviations from the benchmark return. As shown in Figure 2, the farther a portfolio return moves to the left—that is, the amount by which the return underperforms the benchmark return—the greater the likelihood that a client will remove assets from the advisory relationship.

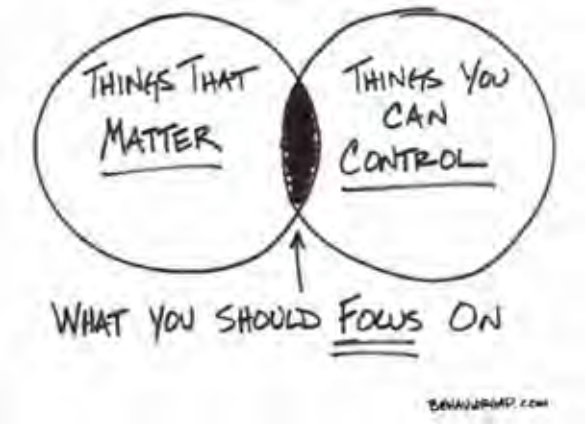
Figure 2. Hypothetical return distribution for portfolios that significantly deviate from a market-cap-weighted portfolio



1. Client asks questions
2. Client pulls some assets
3. Client pulls most assets
4. Client pulls all assets

Source: Vanguard.

Carl Richards, CFP®, a popular author and media figure in investor education, is known for creating illustrations that bring immediate clarity to complex financial issues. The sketch shown at right encapsulates not only the basic framework of Vanguard Advisor's Alpha but the essence of how we believe investors and advisors should view the entire investing process. Understand what's important, understand what you can control, and focus your time and resources accordingly.



Reproduced by permission of Carl Richards.

The markets are uncertain and cyclical—but your practice doesn't have to be. To take one example, an advisor may believe that a value-tilted stock portfolio will outperform over the long run. However, he or she will need to keep clients invested for this belief to have the possibility of paying off. Historically, there have been periods—sometimes protracted—in which value has trailed the broad market (see **Figure 3**).

It's reasonable to expect this type of cyclicality. But remember, your clients' trust is fragile. Even if you have a deep relationship with well-established trust, periods of large underperformance—such as the 12- and 60-month return differentials shown in Figure 3—can undermine this trust. (**Appendix 1** highlights performance differentials for market areas such as sectors, countries, size, duration, and credit.)

We are not suggesting that market deviations are unacceptable, but rather that you should carefully consider the size of those deviations, in light of the markets' cyclicality and investor behavior. As Figure 3 shows, there is a clear performance differential between allocating 50% versus 10% of a broad-market U.S. equity portfolio to value. As expected, the smaller the deviation from the broad market, the tighter the tracking error and performance differential. With this in mind, consider allocating a significant portion of your clients' portfolios to the "core," which we define as broadly diversified, low-cost, market-cap-weighted investments (see **Figure 4**). Limit the deviations to a level that aligns with average investor behavior and your comfort as an advisory practice.

For advisors in a fee-based practice, substantial deviations from a core approach to portfolio construction can have major implications and result in an asymmetric payoff. Because investors commonly report that they hold the majority of their investable assets with a primary advisor (Cogent Wealth Reports, 2015), the advisor has less to gain from outperformance than lose if the portfolio underperforms instead. Although the advisor might gain slightly more assets from success, he or she might lose some or even all of the client's assets in the event of a failure. So when considering deviations from the market, make sure your clients and practice are prepared for all the possible implications.

"Annuitizing" your practice to "infinity and beyond"

In a world of fee-based advice, assets reign. Why? Acquiring clients is expensive, requiring a large investment of your time, energy, and money. Developing a financial plan can take many hours and require multiple meetings. **Figure 5** demonstrates that these costs tend to be concentrated at the beginning of the relationship, if not before (in terms of the advisor's overhead and preparation), then moderate over time. In a transaction-fee world, this is where most revenues occur, more or less as a lump sum. However, in a fee-based practice, the same assets would need to remain with an advisor for several years to generate the same revenue. Hence, assets—and asset retention—are paramount.

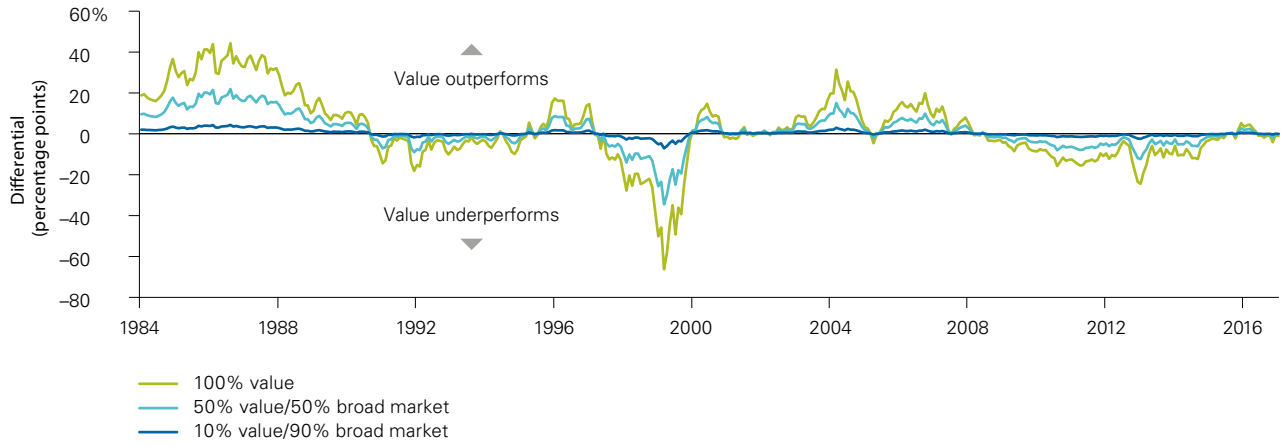
Conclusion

"Putting a value on your value" is as subjective and unique as each individual investor. For some, the value of working with an advisor is peace of mind. For others, we found that working with an advisor can add about 3% in net returns through following the Vanguard Advisor's Alpha framework for wealth management, particularly for taxable investors. This increase should not be viewed as an annual value-add, but is likely to be intermittent. Some of the best opportunities to add value occur during periods of market duress or euphoria when clients are tempted to abandon their well-thought-out investment plans.

Although the strategies discussed in this paper are available to every advisor, the applicability—and resulting value added—will vary by client circumstance (time horizon, risk tolerance, financial goals, portfolio composition, and marginal tax bracket, to name a few) and advisor implementation. Our analysis and conclusions are meant to motivate you to adopt and embrace these best practices as a framework for describing and differentiating your value proposition.

The Vanguard Advisor's Alpha framework is not only good for your clients but also good for your practice. With the compensation structure for advisors evolving from a commission- and transaction-based system to a fee-based asset management framework, assets—and asset retention—are paramount. Following this framework can provide you with additional time to spend communicating with your clients and can increase client retention by avoiding large deviations from the broad-market performance—thus taking your practice to "infinity and beyond."

Figure 3. Relative performance of value versus broad U.S. equity

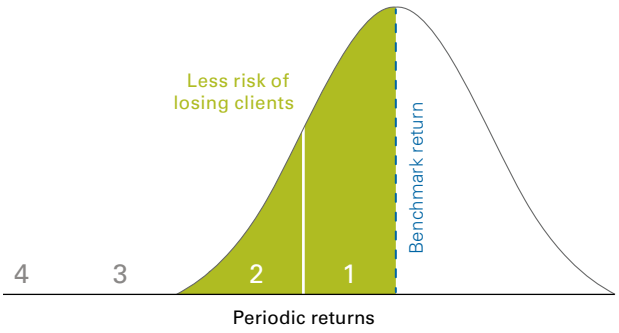


Largest performance differentials (in percentage points)	12 months Outperformed	12 months Underperformed	60 months Outperformed	60 months Underperformed
100% value	28.3%	–18.7%	44.4%	–66.6%
50% value/50% broad market	13.4%	–9.6%	22.0%	–34.7%
10% value/90% broad market	2.6%	–1.9%	4.4%	–7.2%

Notes: Broad U.S. equity is represented by the Dow Jones Wilshire 5000 Index through April 22, 2005; the MSCI US Broad Market Index from April 23, 2005, through June 2, 2013; and the CRSP US Total Market Index thereafter. Value U.S. equity is represented by the S&P 500/Barra Value Index through May 16, 2003; the MSCI US Prime Market Value Index from May 17, 2003, through April 16, 2013; and the CRSP US Large Cap Value Index thereafter.

Source: Vanguard calculations based on data from FactSet.

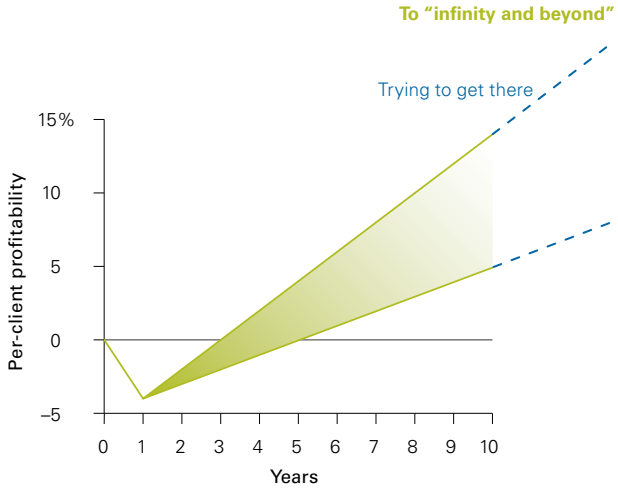
Figure 4. Hypothetical return distribution for portfolios that closely resemble a market-cap-weighted portfolio



1. Client asks questions
2. Client pulls some assets
3. Client pulls most assets
4. Client pulls all assets

Source: Vanguard.

Figure 5. Advisor's alpha "J" curve



Source: Vanguard.

Vanguard Advisor's Alpha Quantification Modules

This section includes our supporting analysis and a chart providing a high-level summary of wealth-management best-practice tools and their corresponding modules, together with the range of potential value we believe can be added by following these practices.

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The value-add of best practices in wealth management

		Benefit of moving from the scenario described to Vanguard Advisor's Alpha methodology
Vanguard Advisor's Alpha strategy	Module	Typical value added for client (basis points)
Suitable asset allocation using broadly diversified funds/ETFs	I	> 0 bps*
Cost-effective implementation (expense ratios)	II	34 bps
Rebalancing	III	26 bps
Behavioral coaching	IV	150 bps
Asset location	V	0 to 75 bps
Spending strategy (withdrawal order)	VI	0 to 110 bps
Total-return versus income investing	VII	> 0 bps*
Total potential value added		**About 3% in net returns**

* Value is significant but too unique to each investor to quantify.

Notes: We believe implementing the Vanguard Advisor's Alpha framework can add about 3% in net returns for your clients and also allow you to differentiate your skills and practice. The actual amount of value added may vary significantly, depending on client circumstances.

Source: Vanguard.

Module I. Asset allocation

Potential value-add: Value is significant but too unique to quantify, based on each investor's time horizon, risk tolerance, and financial goals.

Asset allocation refers to the percentages of a portfolio invested in various asset classes such as stocks, bonds, and cash investments, according to the investor's financial situation, risk tolerance, and time horizon. It is the most important determinant of the return variability and long-term performance of a broadly diversified portfolio that engages in limited market-timing (Davis, Kinniry, and Sheay, 2007).

We believe a sound investment plan begins with an individual's investment policy statement. This outlines financial objectives as well as any other pertinent information such as asset allocation, annual contributions, planned expenditures, and time horizon. Unfortunately, many ignore this critical effort, in part because it can be very time-consuming, detail-oriented, and tedious. But the financial plan is integral to success; it's the blueprint for a client's entire financial house and, done well, provides a firm foundation on which all else rests.

Starting with a well-thought-out plan can not only ensure that clients will be in the best position possible to meet their long-term financial goals but can also form the basis for future behavioral coaching. Whether the markets have been performing well or poorly, you can help your clients cut through the noise they hear suggesting that if they're not making changes in their investments, they're doing something wrong. Almost none of what investors hear pertains to their specific objectives: Market performance and headlines change far more often. Thus, not reacting to the ever-present noise and sticking to the plan can add tremendous value. The process sounds simple but has proven to be very difficult for investors and advisors alike.

Asset allocation and diversification are two of the most powerful tools advisors can use to help their clients achieve their financial goals and manage investment risk. Since the bear market in the United States from 2000 to 2002, many investors have embraced more complicated portfolios, with more asset classes, than in the past. This is often attributed to equities having two significant bear markets and a "lost decade," as well as very low yields on traditional high-grade bonds. What is often missed is that forward-return expectations should be proportional to forward-risk expectations. It is rare to expect higher returns without a commensurate increase in risk.

One way to demonstrate that a traditional long-only, highly liquid, investable portfolio can be competitive is to compare a portfolio of 60% stocks/ 40% bonds to the endowments studied by NACUBO-Commonfund (2017) as shown in Figure I-1. The institutions studied have incredibly talented professional staffs as well as unique access, so replicating or even coming close to their performance would be a tough task. And yet, a portfolio constructed using traditional asset classes—domestic and nondomestic stocks and bonds—held up quite well, outperforming the vast majority (90%) of these endowments.

Although the traditional 60% stock/40% bond portfolio may not hold as many asset classes as the endowments, it should not be viewed as unsophisticated. More often than not, these asset classes and the investable index funds and ETFs that track them are perfectly suitable. For example, a diversified portfolio using broad-market index funds gives an investor exposure to more than 9,000 individual stocks and almost 12,000 individual bonds—representing more than 99% and 83% of market-cap coverage, respectively. Better yet, the tools for implementation, such as mutual funds and ETFs, can be very efficient—broadly diversified, low-cost, tax-efficient, and readily available.

Taking advantage of these strengths, assets can be allocated using only a small number of funds. Too simple to charge a fee for, some advisors say, but simple isn't simplistic. A portfolio that provides broad asset-class diversification, low costs, and return transparency can enable most investors to adopt the investment strategy with confidence and better endure the inevitable ups and downs in the markets. Complexity is not necessarily sophisticated; it's just complex.

Simple is a strength, not a weakness, and can be used to promote better understanding of asset allocation and of how returns are derived. When incorporating index funds or ETFs as the portfolio's core, simplicity and transparency are enhanced, as the risk of portfolio tilts (a source of substantial return uncertainty) is minimized. These features can be used to anchor expectations and help keep clients invested when headlines and emotions tempt them to abandon the investment plan.

Figure I-1. Performance comparison of endowments and a traditional 60% stock/40% bond portfolio

	Small endowments (44% of endowments)	Medium endowments (44% of endowments)	Large endowments (12% of endowments)	60% stock/ 40% bond portfolio
1 year	11.80%	12.60%	12.90%	11.40%
3 years	3.95%	3.96%	4.93%	5.19%
5 years	7.64%	7.76%	8.49%	8.55%
10 years	4.18%	4.24%	5.03%	5.64%
15 years	6.04%	6.79%	7.99%	7.27%
30 years	7.38%	8.27%	9.73%	8.02%

Notes: Data are as of June 30 for each year through June 30, 2017. For the 60% stock/40% bond portfolio, domestic equity (42%) is represented by the Dow Jones Wilshire 5000 Index through April 22, 2005, and the MSCI US Broad Market Index thereafter. Non-U.S. equity (18%) is represented by the MSCI World ex USA through December 1987 and the MSCI All Country World Index ex USA thereafter. Bonds (40%) are represented by the Bloomberg Barclays U.S. Aggregate Bond Index. Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Sources: Vanguard and NACUBO-Commonfund Study of Endowments.

Module II. Cost-effective implementation

Potential value-add: 34 bps annually, by moving to low-cost funds. This is the difference between the average investor experience, measured by the asset-weighted expense ratio of the entire mutual fund and ETF industry, and the lowest-cost of these funds. This value could be larger if compared with higher-cost funds.

Cost-effective implementation is a critical component of every advisor's tool kit and is based on simple math: Gross return minus costs (expense ratios, trading or frictional costs, and taxes) equals net return. Every dollar paid for management fees, trading costs, and taxes is a dollar less of potential return for clients. And, for fee-based advisors, this equates to lower growth for their assets under management, the base from which their fee revenues are calculated. As a result, cost-effective implementation is a "win-win" for clients and advisors alike.

If low costs are associated with better investment performance (and research has repeatedly shown this to be true), then costs should play a role in an advisor's investment selection process. With the recent expansion of the ETF marketplace, advisors now have many more investments to choose from—and ETF costs tend to be among the lowest in the mutual fund industry.

Expanding on Vanguard's previous research,[4] which examines the link between net expense ratios and net cash inflows over the past decade through 2017, we found that an investor could save from 26 bps to 34 bps annually by moving to low-cost funds, as shown in **Figure II-1**. By measuring the asset-weighted expense ratio of the entire mutual fund and ETF industry, we found that, depending on asset allocation, the average investor pays between 32 bps annually for an all-bond portfolio and 44 bps annually for an all-stock portfolio, while the average investor in the lowest quartile of the lowest-cost funds can expect annually to pay between 7 bps (all-bond portfolio) and 10 bps (all-stock portfolio). This includes only the explicit carrying cost (ER) and is extremely conservative when taking into account total investment costs, which often include sales commissions and 12b-1 fees.

This value-add has nothing to do with market performance. When you pay less, you keep more, regardless of whether the markets are up or down. In fact, in a low-return environment, costs are even more important because the lower the returns, the higher the proportion that is assumed by fund expenses. In comparison to higher-cost funds than the asset-weighted average shown in Figure II-1 (32 bps to 44 bps), the increase in value could be even higher than stated here.

Figure II-1. Asset-weighted expense ratios versus "low-cost" investing

Stocks/Bonds	100%/0%	80%/20%	60%/40%	50%/50%	40%/60%	20%/80%	0%/100%
Asset-weighted expense ratio	0.44%	0.42%	0.33%	0.38%	0.37%	0.35%	0.32%
"Lowest of the low"	0.10	0.09	0.09	0.08	0.08	0.07	0.07
Cost-effective implementation (expense ratio bps)	0.34	0.32	0.24	0.30	0.29	0.27	0.26

Note: "Lowest of the low" category includes funds whose expense ratios ranked in approximately the lowest 7% of funds in our universe by fund count.

Source: Vanguard calculations based on data from Morningstar, Inc., as of December 31, 2017.

4 See the Vanguard research paper *Investors Are "Voting With Their Feet" on Costs* (Bennyhoff and Walker, 2016).

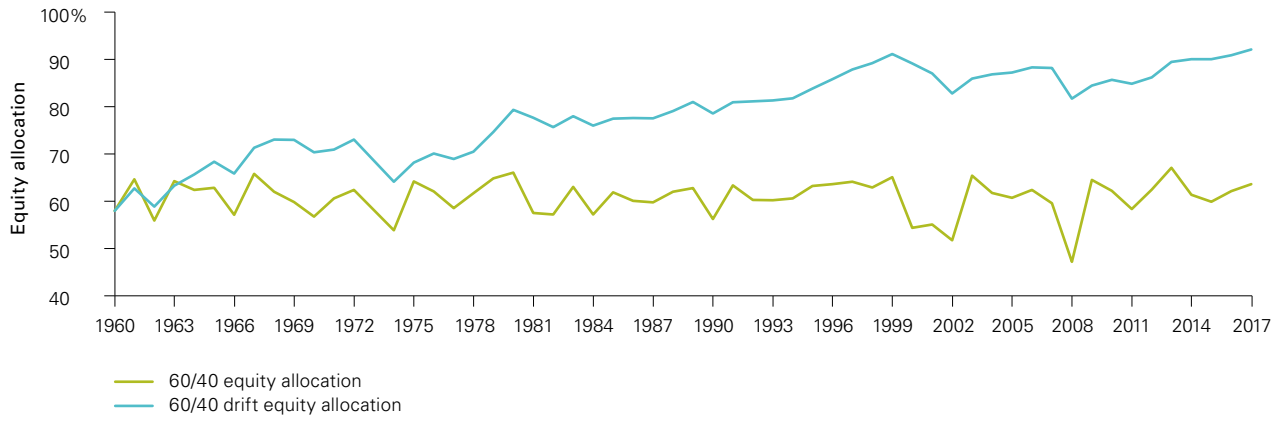
Module III. Rebalancing

Potential value-add: Up to 26 bps when risk-adjusting a 60% stock/40% bond portfolio that is rebalanced annually versus the same portfolio that is not rebalanced (and thus drifts).

Given the importance of selecting an asset allocation, it's also vital to maintain that allocation. As investments produce different returns over time, the portfolio likely drifts from its target allocation, acquiring new risk-and-return characteristics that may be inconsistent with your client's original preferences. ***Note that the goal of a rebalancing strategy is to minimize risk, rather than maximize return.*** An investor wishing to maximize returns, with no concern for the inherent risks, should allocate his or her portfolio to 100% equity to best capitalize on the equity risk premium. Investments that are not rebalanced but drift with the markets have experienced higher volatility.

In a balanced portfolio this equity risk premium tends to result in stocks becoming overweighted relative to a lower risk–return asset class such as bonds. Although failing to rebalance may help long-term returns as the weighting of equities rises, the true benefit of rebalancing is in controlling risk. A portfolio overweighted to equities is more vulnerable to equity-market corrections, putting it at risk of larger losses compared with the 60% stock/40% bond target portfolio, as shown in **Figure III-1**.

Figure III-1. Equity allocation of 60% stock/40% bond portfolio, rebalanced and non-rebalanced, 1960 through 2017



Notes: Stocks are represented by the Standard & Poor's 500 Index from 1960 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; the MSCI US Broad Market Index from April 23, 2005, through June 2, 2013; and the CRSP US Total Market Index thereafter. Bonds are represented by the S&P High Grade Corporate Index from 1960 through 1968; the Citigroup High Grade Index from 1969 through 1972; the Bloomberg Barclays U.S. Long Credit AA Bond Index from 1973 through 1975; the Bloomberg Barclays U.S. Aggregate Bond Index from 1976 through 2009; and the Bloomberg Barclays U.S. Aggregate Float Adjusted Index thereafter.

Source: Vanguard calculations based on data from FactSet.

During this period (1960–2017), a 60% stock/40% bond portfolio that was rebalanced annually provided a marginally lower return (9.05% versus 9.45%) with significantly lower risk (11.09% versus 13.76%) than a 60% stock/40% bond portfolio that was not rebalanced (drift), as shown in Figure III-2.

Vanguard believes that the goal of rebalancing is to minimize risk, not maximize return. However, to assign a return value for this quantification exercise, we searched over the same time period for a rebalanced portfolio that exhibited risk similar to that of the non-rebalanced portfolio. We found that an 80% stock/20% bond portfolio provided similar risk as measured by standard deviation (13.78% versus 13.76%) with a higher average annualized return (9.71% versus 9.45%), as shown in Figures III-2 and III-3.

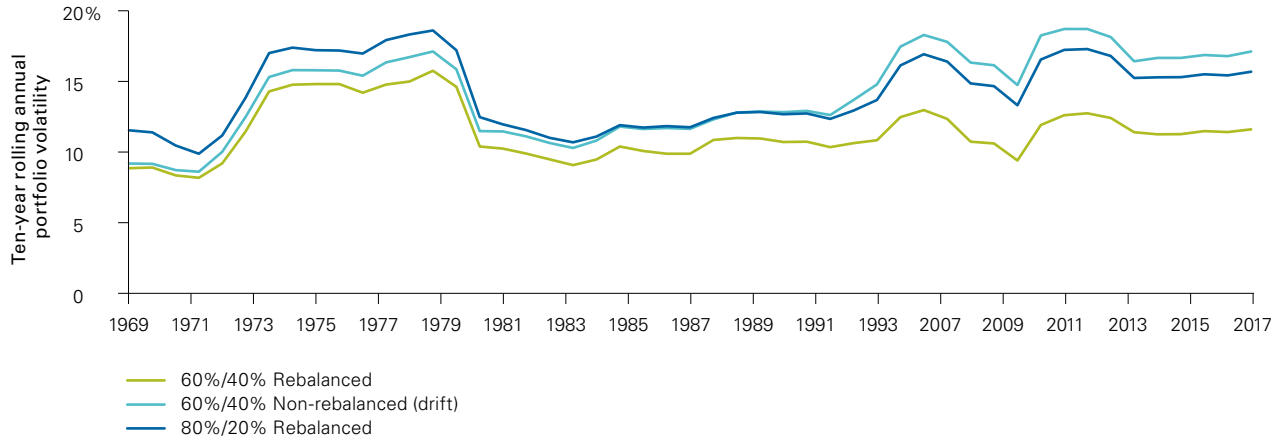
Figure III-2. Portfolio returns and risk, rebalanced and non-rebalanced, 1960 through 2017

	60% stocks/40% bonds	60% stocks/40% bonds (drift)	80% stocks/20% bonds
Average annualized return	9.05%	9.45%	9.71%
Average annual standard deviation	11.09%	13.76%	13.78%
Sharpe ratio	0.38	0.33	0.35

Notes: Stocks are represented by the Standard & Poor's 500 Index from 1960 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; the MSCI US Broad Market Index from April 23, 2005, through June 2, 2013; and the CRSP US Total Market Index thereafter. Bonds are represented by the S&P High Grade Corporate Index from 1960 through 1968; the Citigroup High Grade Index from 1969 through 1972; the Bloomberg Barclays U.S. Long Credit AA Bond Index from 1973 through 1975; the Bloomberg Barclays U.S. Aggregate Bond Index from 1976 through 2009; and the Bloomberg Barclays U.S. Aggregate Float Adjusted Index thereafter.

Source: Vanguard calculations based on data from FactSet.

Figure III-3. Looking backward, the non-rebalanced (drift) portfolio exhibited risk similar to that of a rebalanced 80% stock/20% bond portfolio



Notes: Stocks are represented by the Standard & Poor's 500 Index from 1969 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; the MSCI US Broad Market Index from April 23, 2005, through June 2, 2013; and the CRSP US Total Market Index thereafter. Bonds are represented by the S&P High Grade Corporate Index from 1960 through 1968; the Citigroup High Grade Index from 1969 through 1972; the Bloomberg Barclays U.S. Long Credit AA Bond Index from 1973 through 1975; the Bloomberg Barclays U.S. Aggregate Bond Index from 1976 through 2009; and the Bloomberg Barclays U.S. Aggregate Float Adjusted Index thereafter.

Source: Vanguard calculations based on data from FactSet.

Looking forward, we would not expect the risk of a 60% stock/40% bond portfolio that drifts to match the risk of an 80% stock/20% bond portfolio. However, we believe the equity risk premium will persist and that investments that are not rebalanced over long time periods will have higher returns and higher risk than the target portfolio. An investor comfortable with higher risk should simply select the higher equity allocation from inception and rebalance to that allocation through time.

Helping investors stay committed to their asset allocation strategy and remain invested increases the probability of their meeting their goals. But the task of rebalancing is often an emotional challenge. Historically, rebalancing opportunities have occurred when there has been a wide dispersion between the returns of different asset classes (such as stocks and bonds). Whether in bull or bear markets, reallocating assets from the better-performing asset classes to the worse-performing ones feels counterintuitive. An advisor can provide the discipline to rebalance when it is needed most, which is often when it involves a very uncomfortable leap of faith.

Keep in mind, too, that rebalancing is not necessarily free. Associated costs can include taxes and transaction costs, as well as time and labor on the part of advisors. These could all potentially reduce a client's return. An advisor can add value by balancing these trade-offs, thus potentially minimizing costs. For example, a portfolio can be rebalanced with cash flows by directing dividends, interest payments, realized capital gains, and/or new contributions to the most underweighted asset class. This can keep the client's asset allocation closer to its target and also trim costs.

An advisor can furthermore determine whether to rebalance to the target or to an intermediate allocation based on the type of costs. When trading costs are mainly fixed and independent of the size of the trade—the cost of time, for example—rebalancing to the target allocation is optimal because it reduces the need for further transactions. When trading costs are mainly proportional to the size of the trade—as with commissions or taxes—rebalancing to the closest boundary is optimal, minimizing the size of the transaction.[5]

Advisors who can systematically direct investor cash flows into the most underweighted asset class and/or rebalance to the most appropriate boundary are likely to reduce rebalancing costs and thereby increase the returns their clients keep.

5 See the Vanguard research paper *Best Practices for Portfolio Rebalancing* (Jaconetti, Kinniry, and Zilbering, 2010).

Module IV. Behavioral coaching

Potential value-add: Vanguard research and other academic studies have concluded that behavioral coaching may add 1% to 2% in net return. Providing discipline and guidance could be the largest potential value-add of the tools available to advisors.

Because investing evokes emotion, advisors need to help their clients maintain a long-term perspective and a disciplined approach. ***This can add a large amount of potential value.*** Most investors are aware of these time-tested principles; the hard part is sticking to them in the best and worst of times. Having emotions isn't a "rational or irrational investor" issue; it's a human issue. It's normal for people to be swayed by the opinions voiced by those considered experts—the talking heads or news headlines that often recommend change. Abandoning a well-planned investment strategy can be costly, and research has shown that some of the most significant challenges are behavioral.

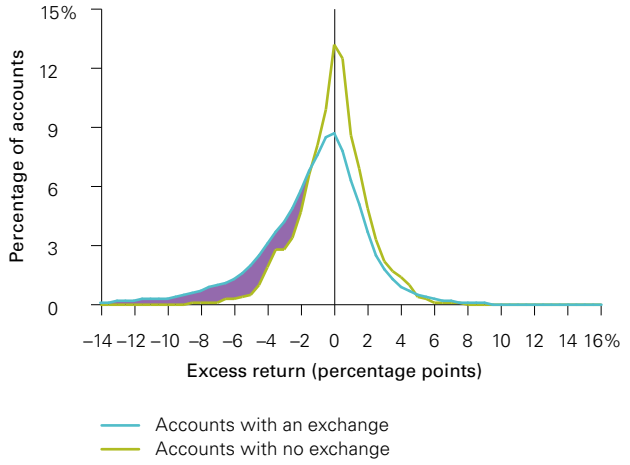
That is where you, as a behavioral coach, can earn your fees and then some. Recognizing that, to some clients, factors that affect their wealth are almost as serious as those affecting their health and providing emotional detachment is one of the most overlooked benefits you can provide.

When clients are tempted to abandon the markets because performance has been poor or to chase the next "hot" investment, you need to remind them of the plan you created before emotions were involved. The trust they have in you is key: Strong relationships need to be established before bull- and bear-market periods challenge their confidence.[6] Advisors can act as emotional circuit breakers by circumventing clients' tendencies to chase returns or run for cover in emotionally charged markets. In the process, they may prevent significant wealth destruction and also add percentage points—rather than basis points—of value. A single such intervention could more than offset years of advisory fees.

In a recent Vanguard study, we analyzed the personal performance of 58,168 self-directed Vanguard IRA® investors over the five years ended December 31, 2012—an extremely tumultuous period in the global markets. These investors' returns were compared to those of the applicable Vanguard Target Retirement Funds for the same period. For the purpose of our example, we assumed that Vanguard target-date funds offered some of the structure and guidance an advisor might have provided. The result was that a majority of investor returns trailed their target-date fund benchmark slightly, which might be expected based on the funds' expense ratios alone. However, investors who exchanged money between funds or into other funds fared considerably worse.

Figure IV-1 highlights the results of the study. The purple-shaded area illustrates the degree of underperformance of accounts that made exchanges compared with those that did not. The investor who made even one exchange over

Figure IV-1. Vanguard target-date fund benchmark comparison: 2008–2012



Notes: Average value with exchange, –1.50%; average value with no exchange, –0.19%.

Source: Vanguard.

Note: Investments in Target Retirement 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 Retirement Fund is not guaranteed at any time, including on or after the target date.

6 For more information, please see the Vanguard research papers *The Vanguard Advisor's Alpha Guide to Proactive Behavioral Coaching* (Bennyhoff, 2018) and *Reframing Investor Choices: Right Mindset, Wrong Market* (Kinniry et al., 2016).

the entire period trailed the applicable Vanguard target-date fund benchmark by 150 basis points. Investors who refrained from such activity lagged by only 19 basis points.

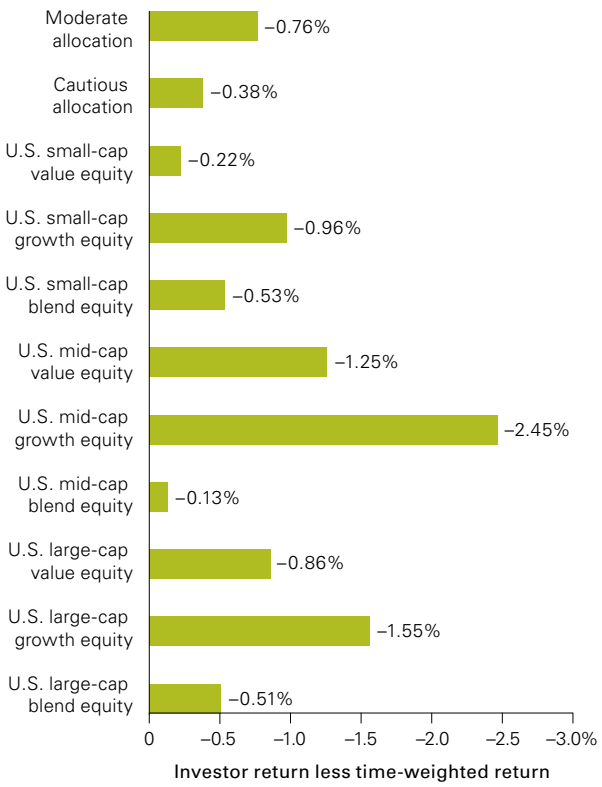
Another way to analyze managed fund investor behavior is to compare investor returns (internal rates of return, or IRRs) to a fund's reported total returns (time-weighted returns, or TWRs). Fund TWRs represent the performance of a mutual fund's assets under management for a defined period of time and are generally the industry standard for reporting returns. IRRs approximate the returns earned by the average dollar invested in the fund over the same period, rather than the result of any specific investor. The two results tend to differ to various degrees and in various directions. The IRR differs from the TWR because of cash flows in and out of the fund; absent any cash flows, the TWR and IRR should be the same. All managed funds should expect a return drag versus their benchmark over longer periods as money continually enters a rising market. However, larger differences can be a sign of performance-chasing (Kinniry and Zilbering, 2012).

Investors and the funds they invest in commonly receive much different returns (see **Figure IV-2**). For the ten-year period ending December 31, 2017, investors received lower returns than the funds they invested in, demonstrating that these funds' cash flows tended to be attracted rather than followed by higher returns. History suggests that, on average, this gap is most evident in fund categories that are more concentrated, narrow, or different from the overall market. It is less negative in the more broadly diversified categories, which typically include a varying mix of equity and fixed income. The Vanguard Advisor's Alpha framework was built with a significant allocation to a core portfolio that is broadly diversified, low-cost, and market-cap-weighted, with satellite allocations limited to levels appropriate for each investor and practice.

It is important to point out that such an evaluation is time-period dependent; results can look much different from one year to the next. The analysis is also limited by its reliance on the availability of industry assets under management and cash flow data. The lower number of funds, smaller base of assets, and fewer observations make it difficult to draw conclusive inferences. However, we expect the negative gaps between IRR and TWR to persist (see **Figure IV-3**).

Observing IRR-TWR gaps for more fund types, markets, and rolling time frames offers a more consistent perspective. When we exclude funds from Australia, the median difference ranges from –0.68% to –4.91% (for U.S. and Canadian equities, respectively) and –0.47% to –5.93% (for U.S. and Canadian fixed income). When we look at the distribution of gaps through time, we see that there are periods when investor returns are greater than fund total returns. We believe these outcomes are explained by quirks in the market's data set rather than by investors' superior skill set. Nonetheless, most of the observations, as well as the median, tend to be negative. This suggests a great opportunity for advisors to help their clients and add value by helping to close the gap.

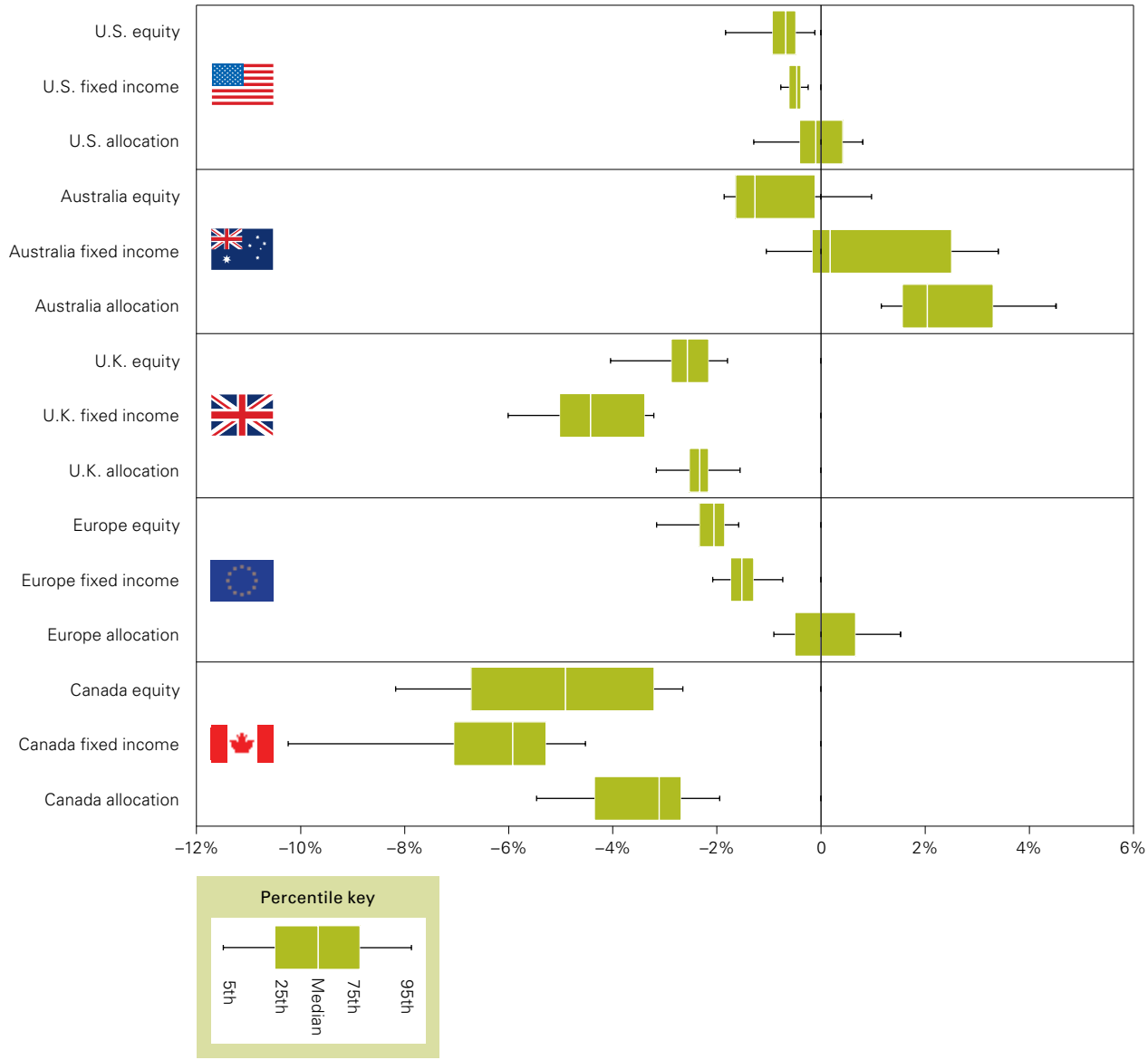
Figure IV-2. Investor returns versus fund returns: Ten years ended December 31, 2017



Notes: The time-weighted returns in this figure represent the average fund return in each category. Investor returns assume that the growth of a fund's total net assets for a given period is driven by market returns and investor cash flow. An internal rate-of-return function calculates the constant growth rate that links the beginning total net assets and periodic cash flows to the ending total net assets. Discrepancies in the return difference are due to rounding. Fund categories include fund-of-fund assets and cash flows to best capture investors' experience when that structure is common.

Source: Vanguard calculations based on data from Morningstar, Inc.

Figure IV-3. Global distribution of investor returns versus fund returns: Rolling returns for various regions



Notes: The time-weighted returns in this figure represent the average fund return for each category. Investor returns assume that the growth of a fund's total net assets for a given period is driven by market returns and investor cash flow. An internal rate-of-return function is used to calculate the constant growth rate that links the beginning total net assets and periodic cash flows to the ending total net assets. Discrepancies in the return difference are due to rounding. Not every fund or ETF is included for each category because of limitations in available data. For allocation fund categories, we have included fund-of-fund assets and cash flows to best capture investors' experience when that structure is common. Data represent quarterly observations of rolling ten-year IRR-TWR differentials for funds and ETFs available for sale in the U.S., Australia, and Canada and five-year rolling observations for the U.K. and Europe, because of data limitations for those regions. Data availability starts in 1993 for the U.S., 2003 for Australia, 2008 for the U.K. and Europe, and 2002 for Canada.

Source: Vanguard calculations based on data from Morningstar.

Module V. Asset location

Potential value-add: 0 to 75 bps, depending on the investor's asset allocation and "bucket" size—the breakdown of assets between taxable and tax-advantaged accounts. Most of the benefits occur when the accounts are roughly equal in size, the target allocation is in a balanced portfolio, and the investor is in a high marginal tax bracket. If all of the assets are in one account type (that is, all taxable or all tax-advantaged), the value of asset location is 0 bps.

The allocation of assets between taxable and tax-advantaged accounts can add value each year that can compound through time.[7] From a tax perspective, optimal portfolio construction minimizes the impact of taxes by holding tax-efficient broad-market equity investments in taxable accounts and taxable bonds in tax-advantaged accounts. This arrangement takes maximum advantage of the yield spread between taxable and municipal bonds, which can generate a higher and more certain return premium. And those incremental differences have a powerful compounding effect over the long run.

Our research has shown that constructing the portfolio in this manner can add up to 75 bps of additional return in the first year, without increasing risk (see **Figure V-1**).

Investors or advisors who want to include active strategies—such as actively managed equity funds (or ETFs), REITs, or commodities—should purchase them in tax-advantaged accounts before taxable bonds because of their tax-inefficiency. However, this likely means giving up space in tax-advantaged accounts that would otherwise have been devoted to taxable bonds—thereby losing the extra return generated by the taxable–municipal spread.[8]

Figure V-1. Asset location can add up to 75 basis points of value annually to a portfolio

	Taxable accounts	Tax-deferred accounts	Pre-tax return	After-tax return	Relative to optimal (Row A)
A.	Index equity (50%)	Taxable bonds (40%) and equity (10%)	6.60%	6.38%	N.A.
B.	Taxable bonds (40%) and index equity (10%)	Equity (50%)	6.60%	6.11%	(0.27%)
C.	Municipal bonds (40%) and index equity (10%)	Equity (50%)	6.24%	6.19%	(0.19%)
D.	Active equity (50%)	Taxable bonds (40%) and equity (10%)	6.60%	5.64%	(0.74%)

Notes: Pre-tax and after-tax returns are based on the following assumptions: Taxable bond return, 3.00%; municipal bond return, 2.10%; index equity, 9.00% (1.80% for dividends, 0.45% for long-term capital gains, and 6.75% for unrealized gains); and active equity, 9.00% (1.80% for dividends, 1.80% for short-term capital gains, 4.50% for long-term capital gains, and 0.90% for unrealized gains). This analysis uses a marginal U.S. income tax rate of 39.6% for income and short-term capital gains and 20% for long-term capital gains. These values do not assume liquidation. See Jaconetti (2007) for more details.

Source: Vanguard.

7 Absent liquidity constraints, wealth-management best practices would dictate maximizing tax-advantaged savings opportunities.

8 The taxable–municipal spread is the difference between the yields on taxable bonds and municipal bonds.

Purchasing actively managed equities or taxable bonds in taxable accounts frequently results in higher taxes because your client will be subject to:

1. **Paying a federal marginal income tax rate on taxable bond income.** This could be as high as 37%. One could, of course, purchase municipal bonds, but the result would be to forgo the taxable–municipal income spread.
2. **Paying a long-term capital gains tax rate as high as 15% or 20%, depending on income, long-term capital gains/distributions, and the client's marginal income tax rate on short-term gains.** To the extent the portfolio includes actively managed equity funds, capital gains distributions are more likely.
3. **Paying a tax rate on qualified dividend income also as high as 15% or 20% from equities, depending on income.**

By contrast, purchasing tax-efficient broad-market equity funds or ETFs in taxable accounts will still be subject to points 2 and 3. However, the amount of income or capital gains distributions will likely be significantly lower.

Advisors may decide to incorporate active strategies in tax-advantaged accounts before fulfilling a client's strategic allocation to bonds for several reasons. First, the alternate investment can potentially generate an excess return large enough to offset not only the yield spread but also the higher costs associated with these investments.[9] Second, the alternate investments may bring sufficient benefits in other ways, such as risk reduction as a result of additional diversification. Although these outcomes are both possible, they are less probable than capturing the return premium offered by taxable bonds held in tax-advantaged registrations.

In addition, estate-planning benefits may result from placing broad-market equity index funds or ETFs in taxable accounts. Because broad-market equity investments usually provide more deferred capital appreciation than bonds over the long term, the taxable assets have the added advantage of a potentially larger step-up in cost basis for heirs.

9 See the Vanguard research paper *The Case for Low-Cost Index Fund Investing* (Rowley et al., 2018).

Module VI. Withdrawal order for client spending from portfolios

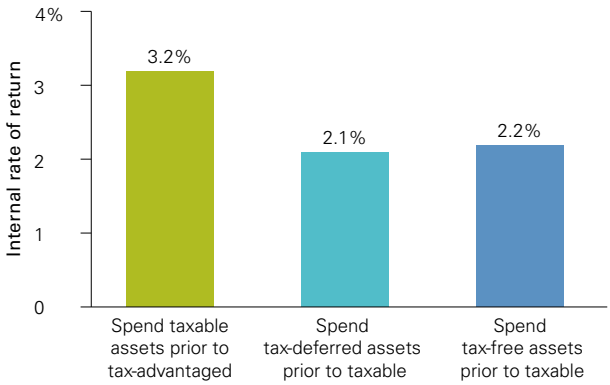
Potential value-add: Up to 110 bps, depending on the investor's bucket size—the breakdown of assets between taxable and tax-advantaged accounts—and marginal tax bracket. The greatest benefits occur when the accounts are roughly equal in size and the investor is in a high marginal tax bracket. If the assets are all in one account type (that is, all taxable or all tax-advantaged), or the investor is not currently spending from the portfolio, the value of the withdrawal order is 0 bps.

With the retiree population on the rise, an increasing number of clients are facing important decisions about how to spend from their portfolios. Complicating matters is the fact that many hold multiple account types, including taxable, tax-deferred (such as a traditional 401(k) or IRA), and/or tax-free (such as a Roth 401(k) or IRA). Advisors who implement informed withdrawal-order strategies can minimize the total taxes investors will pay over the course of retirement, thereby increasing their wealth and the longevity of their portfolios. This process alone could represent the entire value proposition for the fee-based advisor.

The impact of taxes can be minimized by spending from the portfolio in the following order: required minimum distributions (RMDs), if applicable, followed by cash flows on assets held in taxable accounts, taxable assets, and finally tax-advantaged assets (see **Figure VI-1a** and **Figure VI-1b** on the next page).[10] Our research has shown that this can add up to 110 basis points of average annualized value without any additional risk.[11]

To calculate this value, we compared the IRR of this spending order to that of two alternatives in which tax-advantaged assets were tapped first: (1) spending from tax-deferred assets before taxable assets and (2) spending from tax-free assets before taxable assets. Both cases resulted in lower terminal wealth.

Figure VI-1a. Average internal rate of return of different withdrawal-order strategies



Notes: These hypothetical data do not represent the returns on any particular investment. Each IRR is calculated by running the same 10,000 VCMM simulations through three separate models, each designed to replicate the stated withdrawal-order strategy.

Source: Vanguard.

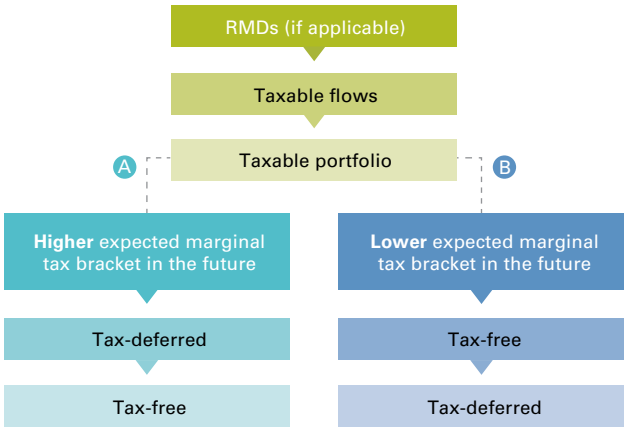
Assumptions for our analysis

Portfolio	50% stocks/50% bonds
Equity allocation	60/40 international
Fixed income allocation	70/30 international
Time horizon	35 years
Marginal U.S. income tax rate	37%
Long-term capital gains tax rate	20%

10 Tax-advantaged assets include both tax-deferred and tax-free (Roth) accounts.

11 Clearly, an investor's specific financial plan may warrant a different spending order, but this framework can serve as a prudent guideline for most investors. See *From Assets to Income: A Goals Based Approach to Retirement Spending* (Jaconetti et al., 2016) for a more detailed analysis.

Figure VI-1b. Detailed spending order and explanation



Source: Vanguard.

- RMDs are the first assets to spend because they are required by law for retired investors more than 70½ years old who own assets in tax-deferred accounts. For those who are not subject to RMDs or who need additional money, the next source should be cash flows from assets held in taxable accounts, including interest, dividends, and capital gains distributions, followed by assets held in taxable accounts.
- Investors should deplete their taxable assets before spending from their tax-deferred accounts because swapping the order would accelerate the payment of income taxes. Taxes on withdrawals from tax-deferred accounts will likely be higher than those on withdrawals from taxable accounts, for two reasons. First, the investor will pay ordinary income taxes on the entire withdrawal (assuming the contributions were made with pre-tax dollars), rather than just paying capital gains taxes on the capital appreciation.

  Second, ordinary income tax rates are currently higher than capital gains tax rates, so the investor would have to pay a higher tax rate if he or she spent from the tax-deferred accounts first. Over time, the acceleration of income taxes and the resulting loss of tax-deferred growth can negatively affect the portfolio, resulting in lower terminal wealth values and success rates.
- Investors should likewise consider spending from their taxable accounts before their tax-free accounts to maximize the long-term growth of their overall portfolio. Reducing the amount of assets with tax-free growth potential can result in lower terminal wealth values and success rates.
- Once the order of withdrawals has been determined, the next step is to specifically identify which asset or assets to sell to meet spending needs. Within the taxable portfolio, an investor should first spend his or her portfolio cash flows, because this money is taxed regardless of whether spent or reinvested. Reinvesting and then selling the assets later to meet spending needs could result in short-term capital gains, which are currently taxed at ordinary income tax rates.

  Next, the investor should consider selling the asset or assets that would produce the lowest taxable gain or realize a loss. This should continue until the spending need has been met or the taxable portfolio has been exhausted.
- Once an investor's taxable accounts have been depleted, he or she must decide whether to spend first from tax-deferred or tax-free (Roth) accounts. This decision should be based on future tax-rate expectations. If the future tax rate is expected to be higher than it is currently, spending from tax-deferred accounts should take priority. This allows the investor to lock in taxes on the tax-deferred withdrawals at the lower rate, rather than allowing the tax-deferred account to continue to grow and be subject to a higher future tax rate.

  Conversely, if an investor anticipates his or her future tax rate will be lower, spending from the tax-free assets should take priority. This will result in lower taxes over the entire investment horizon.

Module VII. Total-return versus income investing

Potential value-add: Value is significant but too unique to quantify, based on each investor's desired level of spending and portfolio composition.

With yields on balanced and fixed income portfolios at historically low levels and expected to remain low relative to past standards, the value of advice has never been more critical for retirees. Historically, retirees holding diversified equity and fixed income investments could have easily lived off the income generated by their portfolios. Unfortunately, that is no longer the case. Investors who wish to spend only the income generated by their portfolio, referred to here as the "income-only" approach, have three choices if their current cash flows fall short. They can spend less, they can reallocate to higher-yielding investments, or they can spend from the total return on their portfolio, which includes not only the income or yield but also the capital appreciation.

As your clients' advisor, you can help them make the right choice. For many investors, moving away from broad diversification could actually put their portfolio's principal value at higher risk than spending from it. **Figure VII-1** outlines several common techniques for increasing a portfolio's yield, along with their impacts.

1. **Overweighting longer-term bonds (extending the duration)**

   Extending the duration of the bond portfolio will likely increase the current yield but will also increase sensitivity to changes in interest rates. Generally speaking, the longer the bond portfolio's duration, the greater the decline in prices when interest rates rise (and the greater the gain when rates fall).

2. **Overweighting high-yield bonds**

   Another strategy to increase yield is to increase the allocation to higher-yielding bonds[12] exposed to marginal or even significant credit risk. However, credit risk tends to be correlated with equity risk, which tends to be magnified when investors move into riskier bonds at the expense of U.S. Treasury bonds. Treasury bonds are a proven diversifier during periods of equity-market duress, when diversification is needed the most.

Figure VII-1. Income-only strategies and potential portfolio impact

Strategy	Impact on a portfolio (compared with a market-cap-weighted portfolio at the sub-asset-class level)
1. Overweighting of longer-term bonds (extending the duration)	Increases exposure to changes in interest rates
2. Overweighting of high-yield bonds and/or underweighting of U.S. Treasury bonds	Increases credit risk and raises overall volatility
3. Increasing exposure to dividend-centric equity	Decreases diversification of equity portfolio by overweighting certain sectors and/or increases overall volatility and risk of loss if it reduces the bond portfolio

Source: Vanguard.

12 The term *high-yield bonds* refers to fixed income securities rated as below investment grade by the primary ratings agencies (Ba1 or lower by Moody's Investors Service; BB+ or lower by Standard & Poor's).

Vanguard research has shown that replacing existing fixed income holdings with high-yield bonds has historically increased the volatility of a balanced portfolio by an average of 78 basis points annually.[13] This is because high-yield bonds are more highly correlated with the equity markets and are more volatile than investment-grade bonds. Investors who employ such a strategy are sacrificing diversification benefits in hopes of receiving higher current income.

3. Increasing exposure to dividend-centric equity

An often-advocated equity approach to increase income is to shift some or all of a fixed income allocation into higher-yielding dividend-paying stocks. But stocks are not bonds. At the end of the day, they will perform like stocks—they have higher volatility and the potential for greater losses. Moreover, dividend stocks are correlated with stocks in general, whereas bonds show little to no correlation with either of these. If you view fixed income as providing not just yield but also diversification, dividend-paying stocks fall well short as a substitute.

A second approach is to shift from broad-market equity to dividend- or income-focused equity. However, this may inadvertently change the portfolio's risk profile, because dividend-focused equities tend to display a bias toward value stocks.[14] Although value stocks are generally considered to be a less risky subset of the broader equity market,[15] the risks nevertheless can be substantial. Portfolios focused on dividend-paying stocks tend to be overly concentrated in certain individual stocks and sectors.

In addition, in an income-only approach, asset location is typically driven by access to income at the expense of tax-efficiency. As a result, investors and advisors are more likely to purchase taxable bond funds and/or income-oriented stock funds in taxable accounts to gain access to their income (yield). This approach will most likely increase taxes, resulting in a direct reduction in spending.

Benefits of a total-return approach to investing

Some may feel that the income strategies described above will reward them with a more certain return and therefore less risk. But in reality, they will increase the portfolio's risk. It will become too concentrated in certain sectors, with less tax-efficiency and a higher chance of failing to provide for long-term financial goals.

Vanguard believes in a total-return approach, which considers both income and capital appreciation. It has the following potential advantages over an income-only method:

- **Less risk.** It allows better diversification, instead of concentrating on certain securities, market segments, or industry sectors to increase yield.
- **Better tax-efficiency.** It offers more tax-efficient asset locations (for clients who have both taxable and tax-advantaged accounts). An income approach focuses on access to income, resulting in the need to keep tax-inefficient assets in taxable accounts.
- **A potentially longer lifespan for the portfolio.**

Designing a tax-efficient, total-return strategy when an investor requires specific cash flows to meet his or her spending needs involves substantial analysis, experience, and transactions. To do this well is not easy and could well represent the entire value proposition of an advisory relationship.

Modules conclusion

Where should you begin? We believe you should focus on those areas in which you have control, at least to some extent, such as:

- Helping your clients select the asset allocation that is most appropriate to meeting their goals and objectives, given their time horizon and risk tolerance.
- Implementing the asset allocation using low-cost investments and, to the extent possible, asset-location guidelines.
- Limiting deviations from the market portfolio, which will benefit your clients and your practice.
- Concentrating on behavioral coaching and spending time communicating with your clients.

13 See the Vanguard research paper *Worth the Risk? The Appeal and Challenge of High-Yield Bonds* (Philips, 2012).

14 See the Vanguard research paper *Total-Return Investing: An Enduring Solution for Low Yields* (Jaconetti, Kinniry, and Zilbering, 2012).

15 "Less risky" should not be taken to mean "better." Going forward, value stocks should have a risk-adjusted return similar to that of the broad equity market, unless there are risks that are not recognized in traditional volatility metrics.

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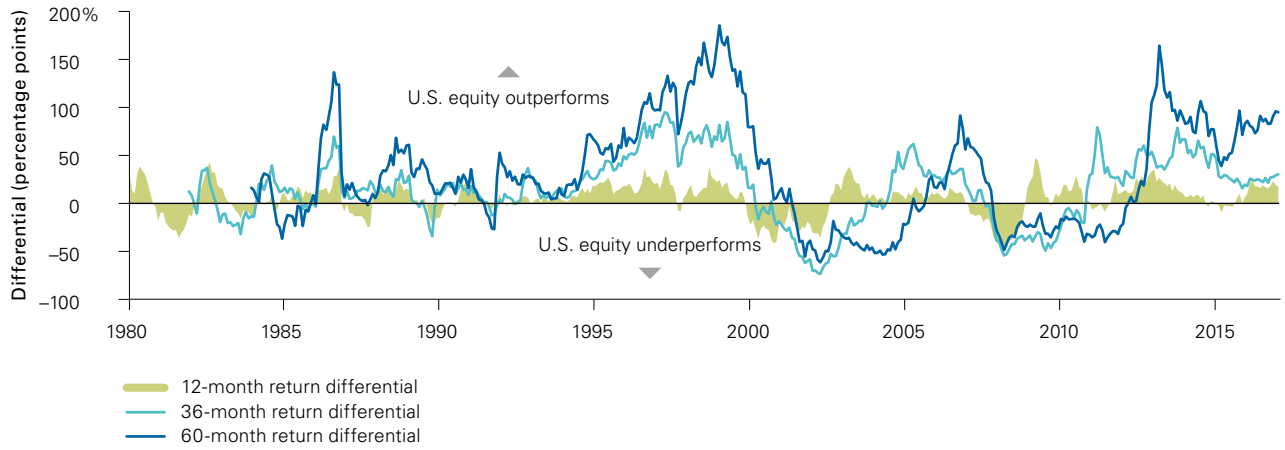
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Appendix 1. Relative performance charts

Figure A-1. Relative performance of U.S. equity and U.S. bonds



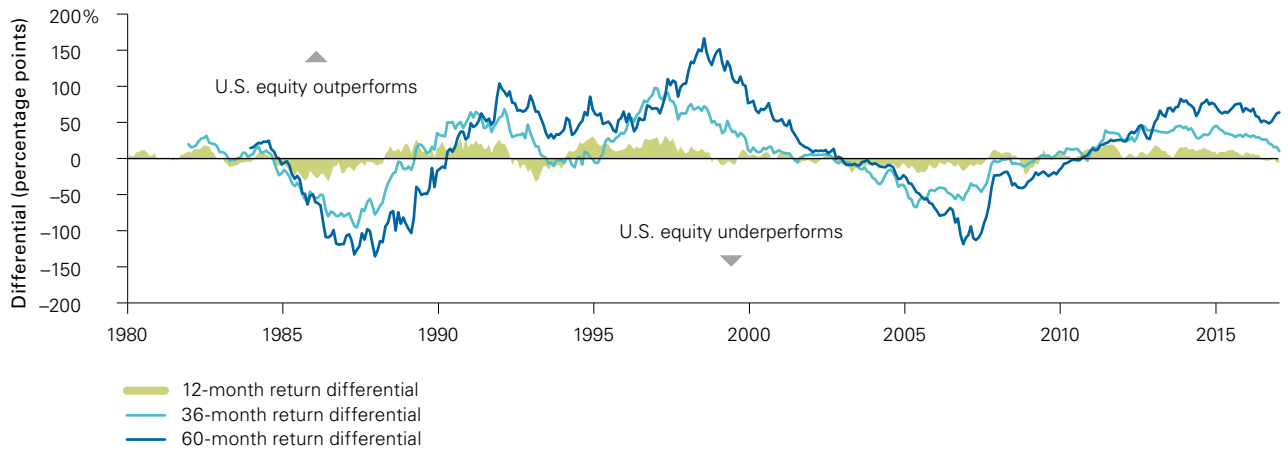
Largest performance differentials

(in percentage points)	1 month	12 months	36 months	60 months
U.S. equity outperformed	12.1%	47.1%	95.4%	186.0%
U.S. equity underperformed	–25.1%	–45.3%	–73.8%	–61.7%

Notes: U.S. bonds are represented by the Bloomberg Barclays U.S. Aggregate Bond Index. U.S. equity is represented by the Dow Jones Wilshire 5000 Index through April 22, 2005; the MSCI US Broad Market Index from April 23, 2005, through June 2, 2013; and the CRSP US Total Market Index thereafter.

Source: Vanguard calculations based on data from FactSet.

Figure A-2. Relative performance of U.S. equity and non-U.S. equity



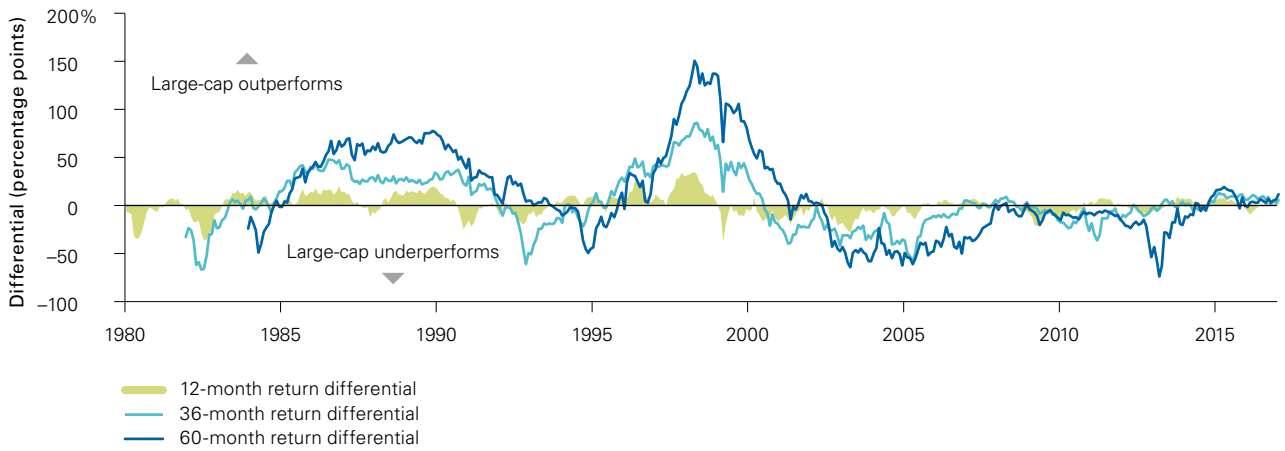
Largest performance differentials

(in percentage points)	1 month	12 months	36 months	60 months
U.S. outperformed	12.6%	31.5%	98.0%	167.1%
U.S. underperformed	–15.7%	–32.6%	–96.6%	–136.9%

Notes: U.S. equity is represented by the Dow Jones Wilshire 5000 Index through April 22, 2005; the MSCI US Broad Market Index from April 23, 2005, through June 2, 2013; and the CRSP US Total Market Index thereafter. Non-U.S. equity is represented by the MSCI World Index through December 31, 1987, and the MSCI AC World ex US Index thereafter.

Source: Vanguard calculations based on data from FactSet.

Figure A-3. Relative performance of large-cap and small-cap U.S. equity



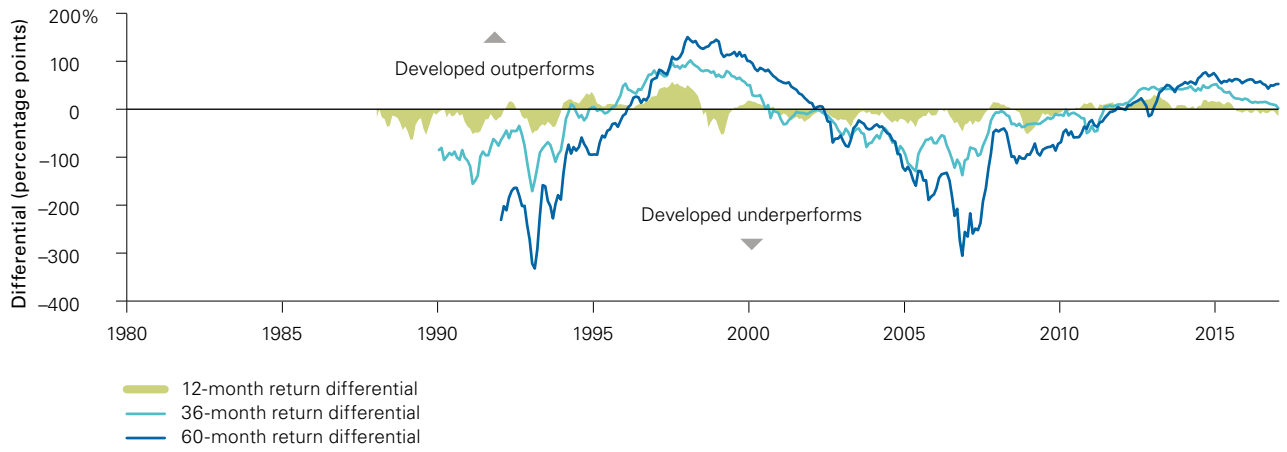
Largest performance differentials

(in percentage points)	1 month	12 months	36 months	60 months
Large-cap outperformed	16.4%	34.7%	85.8%	150.5%
Large-cap underperformed	–18.4%	–37.5%	–66.9%	–74.0%

Notes: Large-cap U.S. equity is represented by the S&P 500 Index through December 31, 1983; the MSCI US Prime Market 750 Index from January 1, 1984, through January 31, 2013; and the CRSP US Large Cap Index thereafter. Small-cap U.S. equity is represented by the Russell 2000 Index through May 16, 2003; the MSCI US Small Cap 1750 Index from May 17, 2003, through January 31, 2013; and the CRSP US Small Cap Index thereafter.

Source: Vanguard calculations based on data from FactSet.

Figure A-4. Relative performance of developed and emerging-market equity



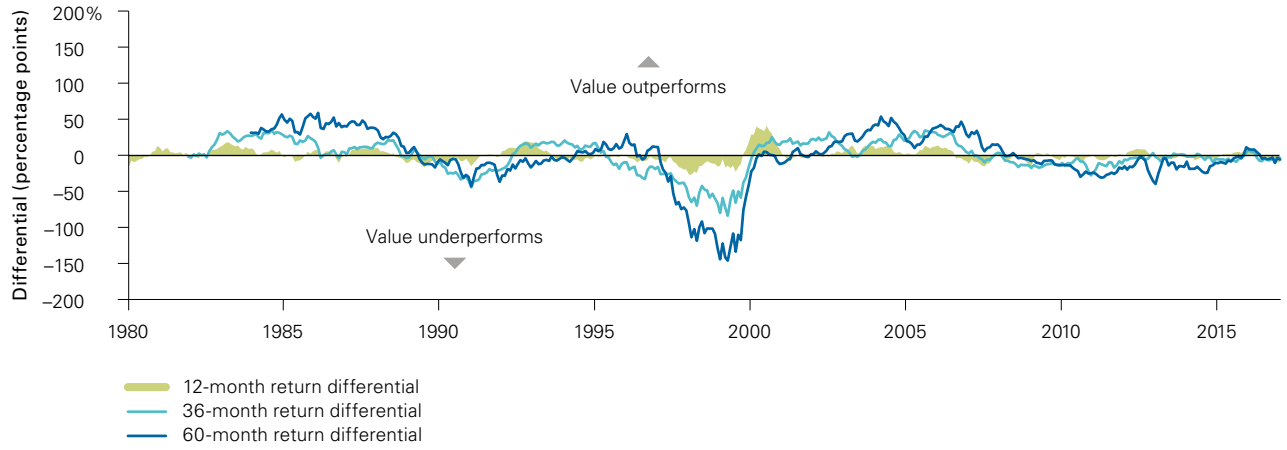
Largest performance differentials

(in percentage points)	1 month	12 months	36 months	60 months
Developed outperformed	15.6%	56.5%	101.7%	150.3%
Developed underperformed	–16.7%	–64.7%	–171.8%	–333.4%

Notes: Developed-market equity is represented by the MSCI World Index. Emerging-market equity is represented by the MSCI Emerging Markets Index.

Source: Vanguard calculations based on data from FactSet.

Figure A-5. Relative performance of value and growth: U.S. equity



Largest performance differentials

(in percentage points)	1 month	12 months	36 months	60 months
Value outperformed	9.7%	40.4%	35.0%	58.7%
Value underperformed	–12.0%	–27.5%	–84.7%	–147.3%

Notes: Value U.S. equity is represented by the S&P 500/Barra Value Index through May 16, 2003; the MSCI US Prime Market Value Index from May 17, 2003, through April 16, 2013; and the CRSP US Large Cap Value Index thereafter. Growth U.S. equity is represented by the S&P 500/Barra Growth Index through May 16, 2003; the MSCI US Prime Market Growth Index from May 17, 2003, through April 16, 2013; and the CRSP US Large Cap Growth Index thereafter.

Source: Vanguard calculations based on data from FactSet.

Appendix 2. About the Vanguard Capital Markets Model

The Vanguard Capital Markets Model (VCMM) is a proprietary financial simulation tool developed and maintained by Vanguard's Investment Strategy Group. Part of the tool is a dynamic module that employs vector autoregressive methods to simulate forward-looking return distributions on a wide array of broad asset classes, including stocks, taxable bonds, and cash. For the VCMM simulations in **Figure V-1,** we used market data available through June 30, 2013, for the U.S. Treasury spot yield curves. The VCMM then created projections based on historical relationships of past realizations among the interactions of several macroeconomic and financial variables, including the expectations for future conditions reflected in the U.S. term structure of interest rates. The projections were applied to the following Barclays U.S. bond indexes: 1–5 Year Treasury Index, 1–5 Year Credit Index, 5–10 Year Treasury Index, and 5–10 Year Credit Index. Important note: Taxes are not factored into the analysis.

Limitations: The projections are based on a statistical analysis of September 30, 2018, yield curves in the context of relationships observed in historical data for both yields and index returns, among other factors. Future returns may behave differently from the historical patterns captured in the distribution of returns generated by the VCMM. It is important to note that our model may be underestimating extreme scenarios that were unobserved in the historical data on which the model is based.

These hypothetical data do not represent the returns on any particular investment. The projections or other information generated by Vanguard Capital Markets Model® simulations regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Results from the model may vary with each use and over time.

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