



Vanguard®

Putting a value on your value: Quantifying Vanguard Adviser's Alpha

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- The value proposition of advice is changing. The nature of what investors expect from advisers is changing. And, fortunately, the tools available to advisers are evolving as well.
- In creating the Vanguard Adviser's Alpha™ concept for the U.S. market in 2001, we outlined how advisers could add value, or alpha, through relationship-oriented services such as providing cogent wealth management via financial planning, discipline, and guidance, rather than by trying to outperform the market.
- Since then, our work in support of the concept has continued. This paper takes the Adviser's Alpha framework further by attempting to quantify the benefits that advisers can add in an Australian context relative to others who are not using such strategies. Each of these strategies can be used individually or in combination, depending on the strategy.
- We believe implementing the Vanguard Adviser's Alpha framework may add "about 3%" in net returns for your clients and also allows you to differentiate your skills and practice.

The value proposition for advisers has always been easier to describe than to define. In a sense, that is how it should be, as value is a subjective assessment and necessarily varies from individual to individual. However, some aspects of investment advice lend themselves to an objective quantification of their potential added value, albeit with a meaningful degree of conditionality. At best, we can only estimate the “value-add” of each tool, because each is affected by the specific client and market environments to which it is applied.

As the financial advice industry continues to gravitate toward fee-based advice, there is a great temptation to define an adviser’s value-add as an annualised number. Again, this may seem appropriate, as fees deducted annually for the advisory relationship could 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 to add value do not present themselves consistently, but intermittently over the years, and often during periods of either market duress or euphoria. These opportunities can pique an investor’s fear or greed, tempting them to abandon a well thought-out investment plan. In such circumstances, the adviser may have the opportunity to add tens of percentage points of value-add, rather than mere basis points,¹ and may more than offset years of advisory fees. And while the value of this wealth creation is certainly real, 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, even though the other histories were real alternatives. For instance, most client 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. We don’t measure and show these other outcomes, but their value and impact on clients’ wealth creation is very real, nonetheless.

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, the way assets are actually managed versus how they could have been managed will introduce significant variance in the results.

Believing *is* seeing

What makes one car with four doors and wheels worth \$300,000 and another \$30,000? Although we might all have an answer, that answer likely differs from person to person. Vanguard Adviser’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 adviser may be a matter of peace of mind: They may simply prefer to spend their time doing something—anything—else. Maybe they feel overwhelmed by product proliferation in the managed funds industry, with an increasing number of new options available, especially exchange traded funds (ETFs). While virtually impossible to quantify, in this context the value of an adviser is very real to clients. This aspect of an adviser’s value proposition, and our efforts here to measure it, should not be negatively affected by the inability to objectively quantify it. By virtue of the fact that the overwhelming majority of managed fund assets are advised, investors have already indicated that they strongly value professional investment advice. We don’t need to see oxygen to feel its benefits.

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.

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

Investors who prepare their own tax returns have probably wondered whether a tax expert might do a better job. Are you really saving money by doing your own tax, or might a tax expert save you from paying more tax than necessary? Would you not use a tax expert just because he or she couldn't tell you in advance how much you would save in taxes? 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, house cleaning, or landscaping; these can be considered “negative carry” services, in that we expect to recoup the fees we pay largely through emotional, rather than financial, means. You may well be able to wield a paint brush, but you might want to spend your limited free time doing something else. Or, maybe like many of us, you suspect that a professional painter will do a better job. Value *is* in the eye of the beholder.

It is understandable that advisers would want a less abstract or less subjective basis for their value proposition. Investment performance thus seems the obvious, quantifiable value-add to focus on. For advisers who promise better returns, the question is: Better returns than what? Better returns than those of a benchmark or “the market”? Not likely, as evidenced by the historical track record of active fund managers, who tend to have experience and resources well in excess of those of most advisers, yet have failed to consistently outperform benchmarks in pursuit of excess returns (see Steinfort and McIntosh, 2012). Better returns than those provided by an adviser 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 past five years, cash flows have been increasingly going into broad-based index funds and ETFs, rather than higher-cost actively managed funds. For example, over the five years ending June 2014, equity index penetration (incorporating indexed and ETFs) has increased to 19% (from 14% in June 2009). In essence, investors have on average chosen investments that are generally structured to match their benchmark's return, less management fees. In other words, investors seem to feel there is great value in investing in managed funds whose expected returns trail, rather than seek to outperform, their benchmarks' returns.

Why would they do this? Ironically, their approach is sensible, even if “better performance” is the overall goal. Better performance compared to what? Better than the average managed fund investor in comparable investment strategies. Although index funds should not be expected to beat their benchmark, over the long term they can be expected to better the return of the average managed fund investor in their benchmark category, because of their lower average cost (Steinfort and McIntosh, 2012).

A similar logic can be applied to the value of advice: Paying a fee for advice and guidance to a professional who uses the tools and tactics described here can add meaningful value compared to the average investor experience, currently advised or not. We are in no way suggesting that every adviser—charging any fee—can add value, but merely that advisers 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 given the right circumstances, but they certainly do not accurately reflect the “typical” investor experience. The framework for advice that we describe in this paper can serve as the foundation upon which an Adviser's Alpha can be constructed.

Figure 1 is a high-level summary of tools covering the range of value we believe advisers can add by incorporating wealth-management best practices. (These six modules are detailed in the section “Vanguard Adviser's Alpha Quantification Modules” starting on page 8.) Based on our analysis, advisers may potentially add “about 3%” in net returns by using the Vanguard Adviser's Alpha framework. Because clients only get to keep, spend, or bequeath net returns, the focus of wealth management should always be on maximising net returns. It is important to note that we do not believe this potential 3% improvement may be expected annually; rather, it is likely to be very lumpy. Further, although every adviser has the ability to add this value, the extent of the value will vary based on each client's unique circumstances and the way the assets are actually managed, versus how they could have been managed. Obviously, although our suggested strategies are universally available to advisers, they are not universally applicable to every client circumstance. Thus, our aim is to motivate advisers to adopt and embrace these best practices and to provide advisers with a reasonable framework for describing and differentiating their value proposition. With these considerations in mind, this paper

Figure 1: Vanguard quantifies the value-add of best practices in wealth management

Vanguard Adviser’s Alpha strategy modules	Module number	Value-add relative to “average” client experience (in basis points of return)
Suitable asset allocation using broadly diversified funds/ETFs	I	> 0 bps
Cost-effective implementation (expense ratios)	II	75 bps
Rebalancing	III	42 bps
Behavioural coaching	IV	150 bps
Tax efficient accumulation and distribution	V	> 0 bps
Total-return versus income investing	VI	> 0 bps
Potential value added		“About 3%”

Notes: Return value-add for Modules I, V and VI was deemed significant but too unique for each investor to quantify. See page 8 for detailed descriptions of each module. Also, for “Potential value added,” we did not sum the values because there can be interactions between the strategies. (bps = basis points).

Source: Vanguard Australia.

focuses on the most common tools for adding value, encompassing both investment-oriented and relationship-oriented strategies and services.

As stated, we provide a more comprehensive description of our analysis in the modules described in the latter part of this paper (see page 8). While quantifying your value-add for clients is certainly important, it’s equally crucial to understand how following a set of best practices for wealth management such as Vanguard Adviser’s Alpha can influence the success of your advisory practice.

Vanguard Adviser’s Alpha: Good for your clients and your practice

For many clients, entrusting their future to an adviser is not only a financial commitment but also an emotional commitment. Similar to finding a new doctor or other professional service provider, you typically enter the relationship based on a referral or other due diligence. You put your trust in someone and assume he or she will keep your best interests in mind—you trust that person until you have reason not to. The same is true with an adviser. Most investors in search of an adviser are looking for someone they can trust. Yet, trust can be fragile. Typically, trust is established as part of the “courting” process, in which your clients are getting to know you and you are getting to know them. Once the relationship has been established, and the investment policy has been implemented, we believe the key to asset retention is keeping that trust.

So how best can you keep the trust? First and foremost, clients want to be treated as people, not just as portfolios. This is why beginning the client relationship with a financial plan is so essential. Yes, a financial plan promotes more complete disclosure about clients’ investments, but more important, it provides a perfect way for clients to share with the adviser what is of most concern to them: their goals, feelings about risk, their family, and charitable interests. All of these topics are emotionally based, and a client’s willingness to share this information is crucial in building trust and deepening the relationship.

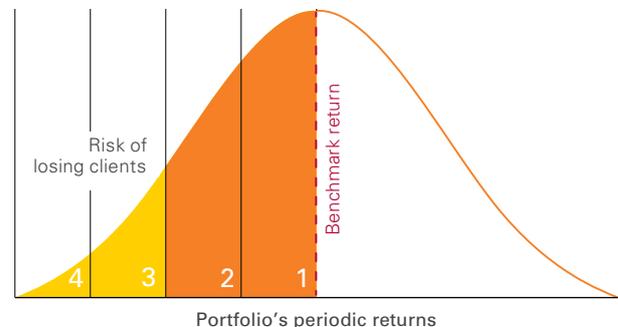
Another important aspect of trust is delivering on your promises—which raises another question: How much control do you actually have over the services promised? At the start of the client relationship, expectations are set regarding the services, strategies, and performance that the client should anticipate from you. Some aspects, such as client contact and meetings, are entirely within your control, which is a good thing: Recent surveys suggest that clients want more contact and responsiveness from their advisers. For example, not being proactive in contacting clients and not returning phone calls or e-mails in a timely fashion are among the top reasons for changing financial advisers (Littlechild, 2014). Consider that in a fee-based practice, an adviser 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. That said, 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 to clients. Here, advisers have some control, but not total control. Although advisers choose the strategies upon which to build their practices, they cannot control performance. For example, advisers decide how strategic or tactical they want to be with their investments, or how far they are willing to deviate from the 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 and which party has more knowledge or information, as well as 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 to your clients and practice if your clients lack the patience to stick with the strategy during difficult times.

Human behaviour is such that many individuals 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. Thus, significantly tilting your clients' portfolios away from a market-capitalisation-weighted portfolio or engaging in large tactical moves can result in meaningful deviations from the market benchmark return. The further a client's portfolio return moves to the left (in **Figure 2**)—that is, the amount by which the client's return underperforms their benchmark return—the greater the likelihood that a client will remove assets from the advisory relationship.

Do you really want the performance of your client base (and your revenue stream) to be moving in and out of favour all at the same time? The markets are uncertain

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



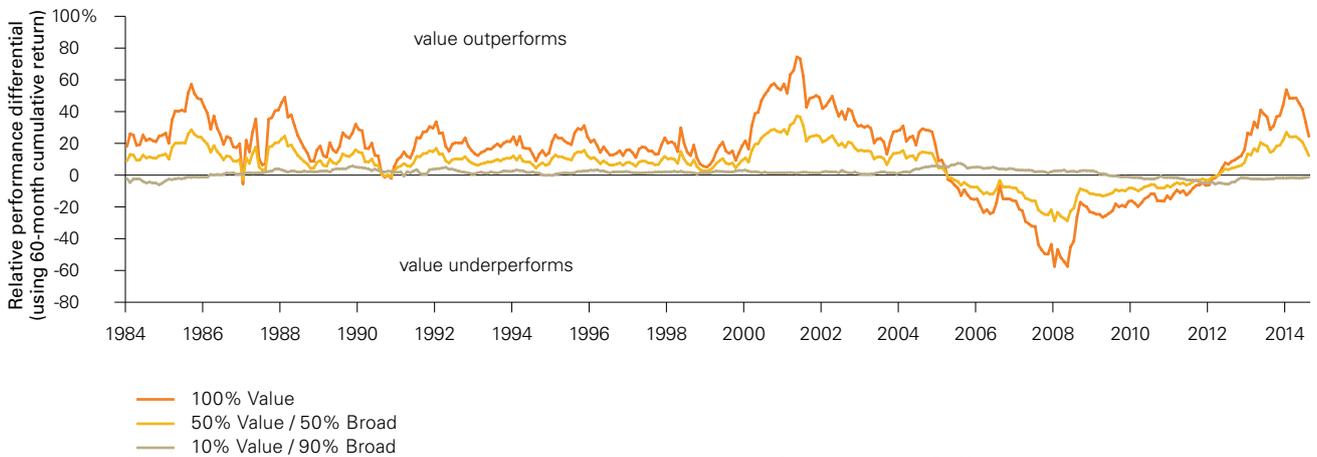
1. Client asks questions
2. Client pulls some assets
3. Client pulls most assets
4. Client pulls all assets

Source: Vanguard.

and cyclical—but your practice doesn't have to be. To take one example, an adviser may believe that a portfolio tilted toward value oriented equities² will outperform over the long run; however, the adviser will need to keep clients invested over the long run for this belief to even have the possibility of paying off. Historically, there have been periods—sometimes protracted ones—in which value has significantly underperformed the broad market (see **Figure 3**). Looking forward, it's reasonable to expect this type of cyclicality in some way. Recall, however: Your clients' trust is fragile, and even if you have a deep client relationship with well-established trust, periods of significant underperformance—such as the cumulative return differentials for 12- and 60-month periods shown in **Figure 3**—can undermine this trust. The same holds true for other segments of the market such as sectors, countries, size, duration, and credit, to name a few. (**Appendix 1** highlights performance differentials for some of these other market segments.)

² We choose to use a portfolio with a value profile as our example because this characteristic is typically associated with alternative weighted indices, popularly known as "smart beta".

Figure 3: Cumulative relative performance of value versus the broad Australian equities market



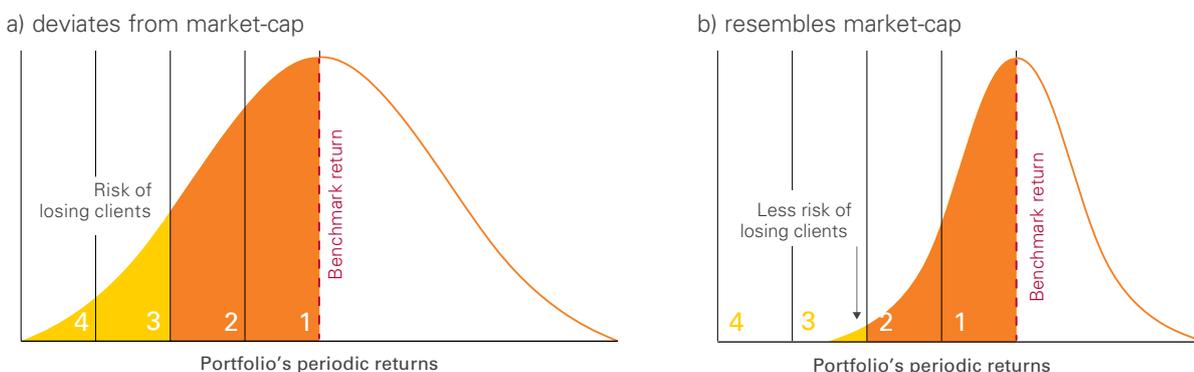
Weights		Largest Performance Differential			
Value	Broad Market	12-month Cumulative		60-month Cumulative	
		Out	Under	Out	Under
100%	0%	29%	-21%	74%	-60%
50%	50%	14%	-10%	37%	-30%
10%	90%	3%	-2%	7%	-6%

Notes: Broad Australian equity is represented by the S&P/ASX 300 Index (Total Return) from May 1992 to Sep 2014 and the All Ordinaries Index (Total Return) from Jan 1980 to Apr 1992. Value is represented by the MSCI Australia Value Index. Net dividends have been assumed to have been reinvested into the index. Brokerage, commissions and tax implications are not reflected in this analysis.

We are not suggesting that market deviations are unacceptable, but rather that you should carefully consider the size of those deviations, given markets' cyclicity and investor behaviour. As Figure 3 shows, there is a significant performance differential between allocating 50% of a global equity portfolio to value versus allocating 10% of it to value. As expected, the

smaller the deviation from the broad market, the tighter the tracking error and performance differential versus the market. 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).

Figure 4: Hypothetical return distribution for portfolios that a) deviates from (left hand side) and b) closely resembles (right hand side) 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.

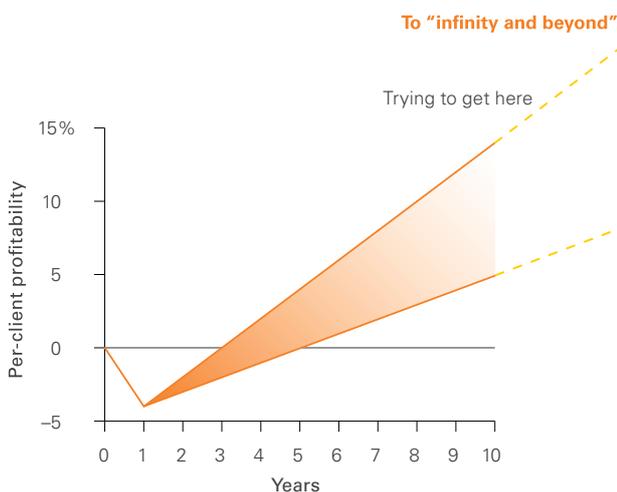
This core allocation limits the portfolios' deviations to a level aligning with average investor behaviour and your comfort as an advisory practice.

For advisers in a fee-based practice, substantial deviations from a core approach to portfolio construction can have major practice-management implications and can result in an asymmetric payoff when significant deviations from the market portfolio are employed. Because investors commonly hold the majority of their investable assets with a primary adviser, even if their hoped-for outperformance is realised, the adviser has less to gain than lose if the portfolio underperforms instead. Although the adviser might gain a little more in assets from the client with a success, the adviser might lose some or even all of the client's assets in the event of a failure. So when considering significant deviations from the market, make sure your clients and practice are prepared for all the possible implications.

'Annuitising' your practice to 'infinity and beyond'

In a world of fee-based advice, assets reign. Why? Acquiring clients is expensive, requiring significant investment of your time, energy, and money. Developing a financial plan for a client can take many hours and require multiple meetings, before any investments are implemented. Figure 5 demonstrates that these client costs tend to be concentrated at the beginning of the relationship, if not actually before (in terms of adviser's overhead and preparation), then moderate significantly over time. In a transaction-fee world, this is where most client-relationship revenues occur, more or less as a "lump sum." However, in a fee-based practice, the same

Figure 5: Adviser's alpha "J" curve, range of per client profitability on a time-horizon basis



Source: Vanguard.

assets would need to remain with an adviser for several years to generate the same revenue. Hence, assets—and asset retention—are paramount: the ability to improve the Adviser's alpha "J" curve trajectory rests with the adviser and the design of their business model.

Conclusion

"Putting a value on your value" is as subjective and unique as each individual investor. For some investors, the value of working with an adviser is peace of mind. Although this value does not lend itself to objective quantification, it is very real nonetheless. For others, we found that working with an adviser may add "about 3%" in net returns when following the Vanguard Adviser's Alpha framework for wealth management. And these potential gains can accrue to low net wealth investors who may need guidance on how to exploit all of their tax-free allowances as well as to high net-wealth investors who may already have exhausted these tax free allowances. This 3% increase in potential net returns should not be viewed as an annual value-add, but is likely to be intermittent, as some of the most significant opportunities to add value occur during periods of market duress or euphoria when clients are tempted to abandon their well-thought-out investment plan.

It is important to note that the strategies discussed in this paper are available to every adviser; however, the applicability—and resulting value added—will vary by client circumstance (based on each client's time horizon, risk tolerance, financial goals, portfolio composition, and marginal tax bracket, to name a few) as well as implementation on the part of the adviser. Our analysis and conclusions are meant to motivate you as an adviser to adopt and embrace these best practices as a reasonable framework for describing and differentiating your value proposition.

The Vanguard's Adviser's Alpha framework is not only good for your clients but also good for your practice. With the compensation structure for advisers 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 significant deviations from the broad-market performance—thus taking your practice to "infinity and beyond."

Vanguard Adviser's Alpha™ Quantification Modules

For accessibility, our supporting analysis is included here as a separate section. Also for easy reference, we have reproduced below our 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.

Module I.	Asset allocation	page 09
Module II.	Cost-effective implementation	page 11
Module III.	Rebalancing	page 12
Module IV.	Behavioural coaching	page 15
Module V.	Tax efficient accumulation and distribution	page 17
Module VI.	Total-return versus income investing	page 18

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Potential value added		"About 3%"

Notes: Return value-add for Modules I, V and VI was deemed significant but too unique for each investor to quantify. For the "Potential value added" line in this table, we did not sum the values because there can be interactions between the strategies.

Source: Vanguard Australia.

Module I. Asset allocation

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

Asset allocation³ is the primary determinant of a portfolio's return variability and long-term performance. Davis, Kinniry, and Sheay (2007) show this allocation importance for a broadly diversified portfolio that engages in limited market-timing.

We believe a sound investment plan begins with an individual's investment policy statement (IPS). The IPS outlines the financial objectives for the portfolio, along with other pertinent information including the investor's asset allocation, annual portfolio contributions, planned expenditures, and time horizon. Unfortunately, many ignore this critical effort, in part, because like our previous painting analogy, it can be very time-consuming, detail-oriented, and tedious. But unlike house painting, which is primarily decorative, the financial plan is integral to a client's investment success; it's the blueprint for a client's entire financial house and, done well, provides a firm foundation on which all else rests.

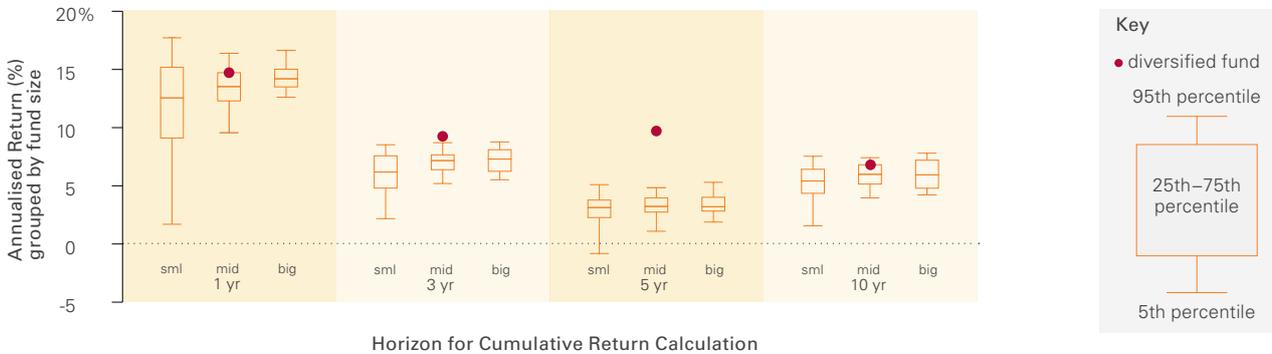
Starting your client relationships with a well-thought-out plan can not only ensure that clients will be in the best position possible to meet their long-term financial goals but can also form the basis for future behavioural coaching. Whether the markets have been performing well or poorly, you can help your clients cut through the noise they hear on a regular basis, noise that often suggests to them that if they're not making changes in their investments, they're doing something wrong. The

problem is, almost none of what investors are hearing pertains to their specific objectives: Market performance and headlines change far more often than do clients' objectives. Thus, not reacting to the ever-present noise and sticking to the plan can add tremendous value over the course of your relationship. The process sounds simple, but adhering to an investment plan, given the wide cyclicality in the market and its segments, has proven to be very difficult for investors and advisers alike.

Asset allocation and diversification are two of the most powerful tools advisers can use to help their clients achieve their financial goals and manage investment risk in the process. Since the turbulent dot.com years, many investors globally have embraced more complicated portfolios, with more asset classes and more investment strategies. This complexity is often attributed to equities having two significant bear markets, as well as falling yields on traditional high-grade bonds. What is often missed in this 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. Perhaps a way to demonstrate that a traditional long-only, highly liquid, investable portfolio can be competitive is to compare a portfolio of 70% equities and 30% bonds (composed of Australian and global equities, listed property securities, and Australian and global bonds) to the performance of Australian superannuation funds, as shown in **Figure I-1**. The funds studied employ incredibly

³ The portfolio fractions invested in various asset classes such as equities, bonds, and cash investments.

Figure I-1: Comparing performance of superannuation funds and diversified portfolio



Note: Distributions of annualised returns for Australian superannuation funds grouped by fund size. Fraction of funds categorised as small, mid, and big were respectively 50%, 40%, and 10% of funds. Diversified fund returns represent a hypothetical growth fund, constructed using indices, with growth and income exposures of respectively 70% and 30%. Returns on superannuation funds include operating expenses but exclude fees and commissions. Time period ends Jun 2013.

Source: Vanguard and “*Superannuation Fund-level Profiles and Financial Performance*” published by Australian Prudential Regulation Authority (Jan 2014): <http://www.apra.gov.au/Super/Publications/Pages/superannuation-fund-level-publications.aspx>.

talented professionals with unique access to information, so the expectation of replicating or even coming close to their performance would be considered a tough task. And yet, a portfolio constructed using traditional asset classes—domestic and international equities and bonds—held up quite well, outperforming the vast majority (83% for the 10-year horizon) of these superannuation funds.

Although a diversified 70% growth and 30% income portfolio may not hold as many asset classes as the superannuation funds, it should not be viewed as unsophisticated. More often than not, these asset classes and the investable managed index funds and ETFs that track them are perfectly suitable for the investor’s situation. For example, a diversified global portfolio using broad-market index managed funds gives an investor exposure to more than 7,000 individual equities and 12,000 individual bonds.⁴ It would be difficult to argue that a portfolio such as this is undiversified, lacking in sophistication, or inadequate. Better yet, the tools for implementation, such as managed funds and ETFs, can be very efficient—that is, broadly diversified, low-cost, tax-efficient, and readily available. Taking advantage of these strengths, an asset allocation can be implemented using only a small number of funds.

Too simple to charge a fee for, some advisers say, but simple isn’t simplistic. For many, if not most, investors, a portfolio that provides the simplicity of broad asset-class diversification, low-costs, and return transparency can enable the investor to comfortably adopt the investment strategy, embrace it with confidence, and better endure the inevitable ups and downs in the markets. Complexity is not necessarily sophisticated—it’s just complex.

Simplicity is thus a strength, not a weakness, and can be used to promote better client understanding of the asset allocation and of how returns are derived. When incorporating index managed funds or ETFs as the portfolio’s “core”, the simplicity and transparency are enhanced, as the risk of portfolio tilts (a source of substantial return uncertainty) is minimised. These features can be used to anchor expectations and to help keep clients invested when headlines and emotions tempt them to abandon the investment plan. The value-add from asset allocation and diversification may be difficult to quantify, but is real and important, nonetheless.

⁴ During the 2000-2009 decade, Australian equities (S&P/ASX 300 Index TR) outperformed International equities (MSCI World ex-Australia Index TR in A\$) by 12.1%. Australian equities’ performance during this period of 8.9% p.a. does not include the effect of franking credits (estimated at around 1.6% p.a., per FTSE). Relying solely on quantitative measures using this selective or recent data would imply focusing on Australian equities. Broad diversification over extended periods yields benefits, and the aforementioned result underlines the value of combining quantitative and qualitative approaches to portfolio construction. See Aliaga-Diaz, Chin and Murik (2013) and Philips, Kinniry and Donaldson (2012) for analysis involving the trade-off between franking credits (tailwinds) and potential loss of diversification benefits (headwinds).

Module II. Cost-effective implementation

Potential value-add: Up to 75 bps annually by moving to low-cost funds, depending on asset allocation. This value-add is the difference between the average investor experience, measured by the asset-weighted indirect cost ratio of the entire managed fund and ETF industry, and the lowest-cost funds within the universe. This value could be larger if using higher-cost funds than the asset-weighted averages.

Cost-effective implementation is a critical component of every adviser's tool kit and is based on simple arithmetic: Gross return minus costs⁵ equals net return. Every dollar paid for management fees, trading costs, and taxes is a dollar less of potential return for clients. For fee-for-service-based advisers, this reduced return 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 advisers 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 adviser's investment selection process. With the recent expansion of the ETF marketplace, advisers now have many more investments to choose from—and ETF costs tend to be among the lowest in the managed fund industry.

Expanding on Vanguard's previous research,⁶ when analysing the universe of managed funds available in the Morningstar database, we found that an investor could save from 25 bps to 75 bps annually by moving to low-cost funds, as shown in Figure II-1. By measuring the

asset-weighted expense ratio of the entire managed fund industry across various investment categories, we found that, depending on the asset allocation, the average investor annually pays between 44 bps (for an all-bond portfolio) and 103 bps (for an all-equity portfolio). In contrast, the average investor in the bottom 7% of funds by indirect cost ratio (i.e. "lowest of the low" as shown in Figure II-1) can expect annually to pay between 19 bps (for an all-bond portfolio) and 28 bps (for an all-equity portfolio). This includes only the explicit carrying cost (namely, the indirect cost ratio) and is extremely conservative when taking into account total investment costs.

It's important to note, too, that 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 consumed by fund expenses. If you are using higher-cost funds than the asset-weighted average shown in Figure II-1 (25 bps to 75 bps), the increase in value could be even higher than stated here.

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

Equities/Bonds	100%/0%	80%/20%	60%/40%	50%/50%	40%/60%	20%/80%	0%/100%
Asset-weighted indirect cost ratio (ICR)	1.03%	0.92%	0.80%	0.74%	0.68%	0.56%	0.44%
"Lowest of the low"	0.28	0.26	0.24	0.24	0.23	0.21	0.19
Cost-effective implementation (ICR bps)	0.75	0.65	0.55	0.50	0.45	0.35	0.25

Note: "Lowest of the low" category (or the first quartile within Quartile 1) is the funds whose indirect cost ratios (ICR) ranked in approximately the lowest 7% of funds in our universe by fund count.

Sources: Vanguard calculations, based on data from Morningstar, Inc., as of 31 December, 2013. Sources: Vanguard calculations, based on data from Morningstar, Inc., as of 30 December 2013.

⁵ These costs include expense ratios, or indirect cost ratios (ICRs), trading or frictional costs, and taxes.

⁶ See the Vanguard research paper "Costs Matter: Are Fund Investors Voting with Their Feet?" (Kinniry, Bennyhoff, and Zilbering, 2013).

Module III. Rebalancing

Potential value-add: Value is difficult to quantify in terms of higher expected returns. Up to 42 bps when risk-adjusting a 70% equity / 30% bond portfolio that is rebalanced annually versus the same portfolio that is not rebalanced (and thus drifts).

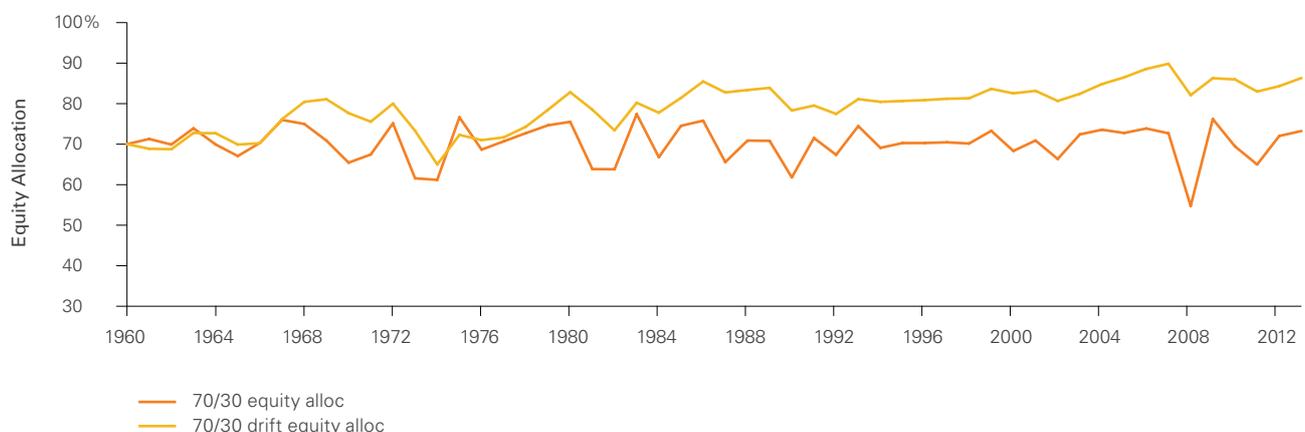
Given the importance of selecting an asset allocation, it's also vital to maintain that allocation through time. As a portfolio's investments produce different returns over time, the portfolio likely drifts from its target allocation, acquiring new risk-and-return characteristics that may be inconsistent with your client's original preferences. Note that the goal of a rebalancing strategy is to maintain the designed or preferred risk profile, rather than maximise return. An investor wishing to maximise returns, with no concern for the inherent risks, should allocate their portfolio to 100% shares to best capitalise on the equity risk premium. The bottom line is that an investment strategy that does not rebalance, but drifts with the markets has experienced in the past and is expected to experience in the future, higher volatility. An investor should expect a risk premium for any investment or strategy that has higher volatility.

In a portfolio that is more evenly balanced between equities and bonds, this equity risk premium tends to result in equities becoming over-weighted relative to a lower risk–return asset class such as bonds – thus the need to rebalance. Although failing to rebalance may

enhance the expected long-term returns of portfolios (due to the expected risk premium on the higher weighted asset, namely equities, than in the original allocation), the true benefit of rebalancing is realised in the form of controlling risk. If the portfolio is not rebalanced, the likely result is a portfolio that is over-weighted to equities and therefore more vulnerable to equity market corrections, putting a client's portfolio at risk of larger losses compared with the 70% equity/30% bond target portfolio, as shown in **Figure III-1**.

As shown in **Figure III-2**, between 1960 and 2013 the annually rebalanced portfolio provided a marginally higher return with significantly lower risk than the drift (non-rebalanced) portfolio. More specifically, the rebalanced and drift versions of the 70% equity/30% bond portfolios had returns of 10.67% and 10.32% and volatilities of 15.99% and 17.87%, respectively. Unexpectedly, the rebalanced portfolio had a marginally higher return than the drift portfolio – this is a function of the data being time-window dependent. Going forward, given the lower risk, we would anticipate the rebalanced portfolio to have a lower return.

Figure III-1. Equity allocation of 70% equity/30% bond portfolio: Rebalanced and drift (non rebalanced), 1960 through 2013



Notes: Historical equity and bond returns are from Brailsford et al. (2012). Equities are represented by S&P/ASX All Ordinaries Index from 1980 and Bonds are represented by Bloomberg AusBond Composite 0+ Year Index from 1990 (formerly the UBS Composite Bond Index™ until 29 Sep 2014).

Sources: Vanguard calculations, based on data from Morningstar Direct, FactSet, and Brailsford et al. (2012).

Figure III-2. Portfolio returns and risk: Rebalanced and non-rebalanced, 1960 through 2013

	Rebalanced 70/30	Drift 70/30	Risk-Equiv. 79/21
Average annualised return	10.67%	10.32%	10.74%
Standard deviation of annual returns	15.99%	17.87%	17.87%
Sharpe ratio	0.21	0.17	0.19

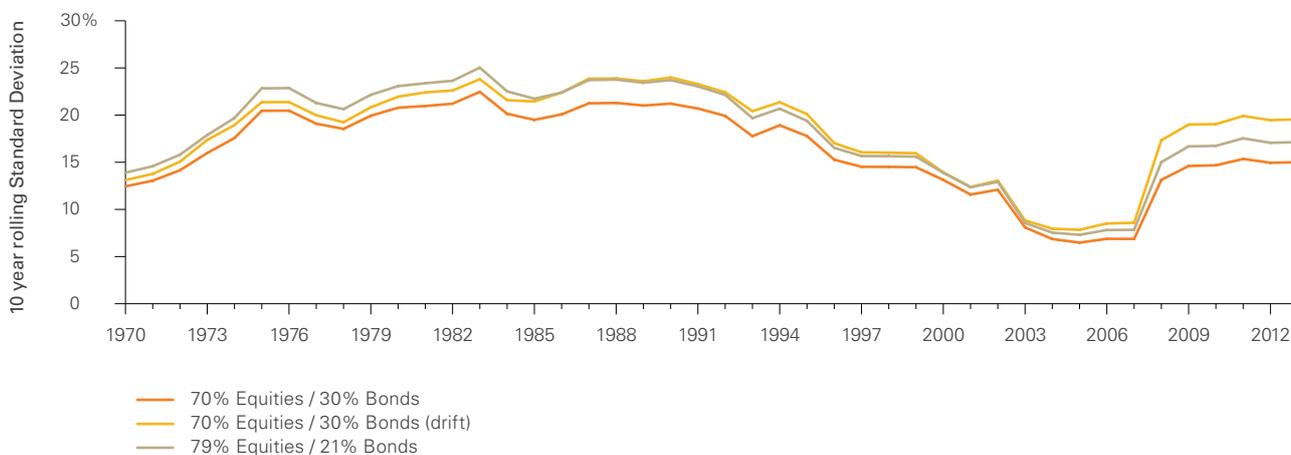
Notes: Historical Equities and bond returns are from Brailsford et al. (2012). Equities are represented by S&P/ASX All Ordinaries Index from 1980 and Bonds are represented by Bloomberg AusBond Composite 0+ Year Index from 1990 (formerly the UBS Composite Bond Index™ until 29 Sep 2014).

Sources: Vanguard calculations, based on data from Morningstar Direct, FactSet, and Brailsford et al. (2012).

A simplistic comparison would determine that the value added from rebalancing was 35 bps, calculated as the difference between the rebalance portfolio and drift portfolio returns, which were respectively 10.67% and 10.32%. But we think this simplistic approach is a misleading measure of the true value added because of the rebalanced portfolio's lower volatility. Perhaps more importantly, Vanguard believes that the goal of rebalancing is to minimise risk, not maximise return. So if we wanted to try to assign a return value to that benefit, we can search over the same time period for a rebalanced portfolio that exhibited similar risk (as measured by standard deviation) as the drift portfolio. We found that an approximately 80% equity/20% bond portfolio (which we term the 'risk-equivalent' portfolio) provided the same risk as the drift portfolio, see Figures III-2 and III-3. Using this fairer comparison, an adviser who recommended rebalancing could add 42 bps of value to their clients' portfolios. This value-add was calculated as the difference between the risk-equivalent portfolio and drift portfolio returns, which were respectively 10.74% and 10.32%.

Looking forward, we would not expect the risk of a 70% equity/30% bond portfolio that drifts to match the risk of a 80% equity/20% bond portfolio. However, we believe the equity risk premium will persist, and that investors who do not rebalance over long time periods will have higher returns than the target portfolio, and as such, higher risk. One could argue that if an investor is comfortable with the higher risk of the non-rebalanced portfolio, he or she should simply select the higher equity allocation from inception and rebalance to that allocation through time. So in this example, the additional value to rebalancing would be worth around 42 bps. Since this potential additional return accrues because a portfolio is being allowed to drift away from the risk profile originally chosen by the investor, we do not think it is appropriate to include this in the overall quantification exercise but it is included here to illustrate the value of rebalancing for an investor.

Figure III-3. Looking backward, the non-rebalanced (drift) portfolio exhibited the same risk as the rebalanced 79% equity/21% bond (risk-equivalent) portfolio



Notes: Historical equity and bond returns are from Brailsford et al. (2012). Equities are represented by S&P/ASX All Ordinaries Index from 1980 and Bonds are represented by Bloomberg AusBond Composite 0+ Year Index from 1990 (formerly the UBS Composite Bond Index™ until 29 Sep 2014).

Sources: Vanguard calculations, based on data from Morningstar Direct, FactSet, and Brailsford et al. (2012).

An adviser can increase the probability of clients meeting their investment goals by helping them (1) stay committed to their asset allocation strategy and (2) remain invested in markets. However, 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 equities and bonds). Whether in bull or bear markets, reallocating assets from the better-performing asset classes to the worse-performing ones feels counterintuitive to the “average” investor. An adviser can provide the discipline to rebalance when rebalancing is needed most, which is often when the thought of rebalancing is a very uncomfortable leap of faith.

Keep in mind, too, that rebalancing is not necessarily free: There are costs associated with any rebalancing strategy, including taxes and transaction costs, as well as the adviser’s time and labour. These costs could all potentially reduce your client’s return. An adviser can add value for clients by balancing these trade-offs, thus potentially

minimising the associated costs. For example, a portfolio can be rebalanced with cash flows by directing dividends, interest payments, realised capital gains, and/or new contributions to the most underweight asset class. This not only can keep the client’s asset allocation closer to its target but can also trim the costs of rebalancing. An adviser can furthermore determine whether to rebalance to the target asset allocation or to an intermediate allocation, based on the type of rebalancing 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, for example—rebalancing to the closest rebalancing boundary is optimal, minimising the size of the transaction.⁷ Advisers 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 their clients’ rebalancing costs and thereby increase the returns their clients keep.

⁷ See the Vanguard research paper “*Best Practices for Portfolio Rebalancing*” (Jaconetti, Kinniry, and Zilbering, 2010).

Module IV. Behavioural coaching

Potential value-add: Vanguard research and other academic studies have concluded that behavioural coaching may add 1% to 2% in net return. This suggests that the discipline and guidance that an adviser might provide through behavioural coaching could be the largest potential value-add of the tools available to advisers.

Because investing evokes emotion, advisers need to help their clients maintain a long-term perspective and a disciplined approach—*the amount of potential value an adviser can add here is large*. Most investors are aware of these time-tested principles, but the hard part of investing is sticking to them in the best and worst of times—that is where you, as a behavioural coach to your clients, can earn your fees and then some. Abandoning a planned investment strategy can be costly, and research has shown that some of the most significant derailleurs are behavioural: the allure of market-timing and the temptation to chase performance.

Persuading investors not to abandon the markets when performance has been poor or dissuading them from chasing the next “hot” investment—this is where you need to remind your clients of the plan you created before emotions were involved. This is where the faith and trust that clients have in an adviser is key: Strong relationships need to be established before the bull- and bear-market periods that challenge investors’ confidence in the plan detailed for them. Thankfully, as stated earlier, these potentially disruptive markets tend to occur only sporadically. Advisers, as behavioural coaches, can act as emotional circuit breakers by circumventing clients’ tendencies to chase returns or run for cover in emotionally charged markets. In the process, advisers may save their clients from significant wealth destruction and also add percentage points—rather than basis

points—of value. A single client intervention, such as we’ve just described, could more than offset years of advisory fees. The following example from the most recent period of “fear and greed” can provide context in quantifying this point. Academic studies have concluded that behavioural coaching can add up to approximately 200 basis points per year. For example, a well-reported U.S. study by Maymin and Fisher (2011) investigates how the aggregated timing of buying and selling by mutual fund investors affects their average returns. Using monthly returns and assets for approximately 25,000 mutual funds over the period November 1995 to October 2010, the average fund investor sacrifices about 1.9% annually to poor market timing.

A common method of analysing managed fund investor behaviour is to compare investor returns (internal rates of returns, IRRs) to fund returns (time-weighted returns, TWRs) over time. Although all mandates should expect a return drag versus the benchmark over longer periods due to more money continually coming into a growing managed fund market and a rising market, larger differences can be a sign of performance-chasing. Using the IRR–TWR method, we note that history suggests that investors commonly receive much lower returns from the funds they invest in, since cash flows tend to be attracted by, rather than precede, higher returns (see **Figure IV-1**).

Figure IV-1. Australian investor returns versus fund returns: Ten years ended 31 December 2013

	Number of funds	AUM coverage	Investor (IRR)	Fund (TWR)	Return difference
Equity Australia Large	138	92%	4.2%	9.4%	-5.2%
Equity Australia Mid/Small	35	95%	2.3%	10.2%	-7.9%
Equity World Large	73	90%	3.3%	4.8%	-1.4%
Equity World Mid/Small	8	99%	6.0%	7.4%	-1.4%
Multisector	198	85%	4.7%	6.4%	-1.7%

Notes: The time-weighted returns (TWRs) 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 (IRR) function is used, which 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.

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

History also shows that, on average, the drag is significantly more pronounced in managed funds that are more concentrated, narrow, or different from the overall and is much less pronounced for broad index managed funds, especially multisector index funds. The Vanguard Adviser's Alpha framework was constructed with a firm awareness of these behavioural tendencies. Its foundation is built upon having a significant allocation to the "core" portfolio, which is broadly diversified, low-cost, and market-cap weighted, while limiting the satellite allocation to a level that is appropriate for each investor and practice.

So, how much Adviser's Alpha can you add in this way? Academic studies suggest that behavioural coaching may add between 100 and 200 basis points per year.

Meanwhile, the IRR-TWR approach gives varying answers by market but the values are in a similar range. When we examine the multisector fund category, the IRR – TWR difference is 1.7% (which falls in the 100 to 200 basis point realm). Notably, the value could be even greater when comparing to more concentrated, active, or riskier strategies (which are evident in categories such as large and mid/small cap categories). This actual performance is time period and region specific; going forward, the expectation is that an advisor may add 150 bps or more by acting as a behavioral coach for their clients.

Module V. Tax Efficient Accumulation and Distribution

Potential value-add: the value is deemed significant but too unique to each investor to quantify, based on each investor's varying time horizon, risk tolerance, financial goals, portfolio composition, between (at a high level) non-superannuation and superannuation accounts, and tax bracket.

When it comes to tax efficient accumulation, advisers can not only formulate a savings strategy to ensure their clients are making the most of tax-advantaged savings opportunities, they can also implement those plans in a tax sensitive manner. The superannuation (super) system in Australia was introduced by the government as a way for people to save for their retirement. Employers must contribute 9.5% of a person's salary to super,⁸ but in addition, the tax-attractive structure of super encourages people to make further contributions.⁹

Given the tax advantages of super, many investors would benefit from holding all, or a majority of their assets there. However, there are various reasons¹⁰ for why this is not an option for many investors (primarily high net worth) with surplus after-tax income who have reached their concessional contribution cap and wish to retain access to their money.

An asset-location strategy can help clients to understand the tax trade-offs between certain investments. Tax-inefficient funds can be sheltered in tax-advantaged accounts, while using tax-efficient funds in taxable accounts. Compared to actively managed funds, index funds tend to have lower turnover (that is, they buy and sell securities relatively infrequently) and can reduce the capital gains liability, improving their after-tax returns.

Additionally, Australian shares offer the lowest effective tax rate of all the asset classes due to the dividend imputation system. Some Australian share funds target companies with high franking levels, which can help offset the amount of taxes paid on dividends, although this comes with increased concentration risk. Implementing a savings strategy can have a significant effect on an investor's portfolio value at retirement.

Once retired, investors who depend on their portfolios to meet their spending needs face many challenges such as: how much can they spend from their portfolio, where or from which account should they spend, and how will taxes impact these decisions. Advisers can help investors set realistic and flexible annual spending amounts and then implement those plans using informed withdrawal location strategies to minimise the total taxes paid over the course of their retirement; thereby, increasing an investor's ending wealth values and the longevity of their portfolios.

⁸ The compulsory contribution by employers will increase to 12% by 2025. Withdrawals from super are permitted only after age 65 or retiring from work after the preservation age. For more information on Australia's superannuation system see, for example, the government website "*How Super Works*".

⁹ These additional contributions are classified as either concessional (before-tax income, for example, salary sacrificing) or non-concessional (after-tax income, for example, spouse contributions).

¹⁰ For instance, the consideration of regulatory risk and the caps on concessional contributions.

Module VI. Total-return versus income investing

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

With yields on balanced and fixed income portfolios at historically low levels, and with the anticipation that yields will remain low for the immediate future, the value of advice has never been more critical for retirees. It is evident from superannuation market data that an income-only strategy is clearly favoured by many retirees, with income derived from interest earned on bonds and dividends earned on equities. Such an approach carries the risk, though, of the higher volatility associated with equities. 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 of their spending needs: They can (1) spend less, (2) reallocate their portfolios to higher-yielding investments, or (3) spend from the total return on their portfolio, which includes not only the income or yield but also the capital appreciation.¹¹

As your clients’ adviser, you can help them make the right choice for their situation. Be aware that for many investors, moving away from a broadly diversified portfolio could actually put their portfolio’s principal value at higher risk than spending from it. **Figure VI-1** outlines several common techniques for increasing a portfolio’s yield, along with the impact on the portfolio. These are detailed further in the paragraphs following.

1. Employing perceived higher yield defensive instruments (term deposits, hybrids)

Employing so-called defensive instruments that offer higher yields (such as term deposits or hybrids) can increase a portfolio’s yield. These are not without additional (and sometimes disproportionate) levels of risk, which need to be properly assessed.

Upon maturity, investors using term deposits as a single, undiversified investment are exposed to the prevailing market yields of the day. This may not be as attractive as when initially invested, resulting in lower ongoing yields compared to a broadly diversified strategy.

In the case of holding hybrids, the question needs to be asked about whether a portfolio is adequately compensated for the associated investment risks.

Many hybrids, for instance:

- blend some of the features of both debt and equity,
- can have potentially long time frames for maturity,
- can see their ongoing payments halted if a financial situation materially deteriorates,
- can be subject to early termination, and
- can be variously subject to market price volatility.

Figure VI-1. Income-only strategies and corresponding potential portfolio impact

Income-only strategy	Impact on a portfolio (compared with market-cap-weighted portfolio at the sub-asset class level)
1. Employing perceived defensive but higher yield instruments (term deposits, hybrids).	Decreases diversification of the income (defensive) portfolio component; increases the portfolio's exposure to interest rate changes and potentially credit risk (for hybrids).
2. Overweighting of longer-term bonds (extending the duration).	Increases portfolio's exposure to changes in interest rates.
3. Overweighting of high-yield bonds and/or underweighting of sovereign bonds.	Increases portfolio's credit risk and raises portfolio's overall volatility.
4. Increasing the portfolio's exposure to dividend-centric equity.	Decreases diversification of equity portfolio by overweighting certain sectors and/or increases portfolio's overall volatility and risk of loss if the strategy reduces the bond portfolio.

Source: Vanguard.

¹¹ Australia’s domestic bond market has the opportunity to expand and further develop compared to other markets (such as the U.S.): this position means that broadly across the industry, an appreciation for more advanced bond strategies (over Australian cash vehicles and term deposits which remain relatively high against other developed markets) may not be so prevalent.

2. Overweighting of longer-term bonds (extending duration)

Extending the duration of the bond portfolio will likely increase the current yield on the portfolio, but it will also increase the portfolio's 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 price gain when interest rates fall).

3. Overweighting of credit bonds

Another strategy investors or their advisers can use to increase the yield on the portfolio is to increase the allocation to higher-yielding bonds or hybrid instruments exposed to marginal or even significant credit risk. The risk is that credit risk tends to be correlated with equity risk, and this risk tends to be magnified when investors move into riskier bonds at the expense of sovereign bonds, a proven diversifier during periods of equity-market duress, when diversification is needed the most. For portfolios with significant exposures to hybrid securities, risks can extend into liquidity and complexity. This liquidity is where holdings cannot be liquidated at the desired price and time, whilst potential instrument mispricing can stem from misunderstanding the complex structure. In short, hybrid instruments possess different defensive and capital preservation qualities as compared to diversified fixed income.

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 bps 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 certainly sacrificing diversification benefits in hopes of receiving higher current income from the portfolio.

4. Increasing the portfolio's 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 equities. But, equities are not bonds. At the end of the day, equities will perform like equities—that is, they have higher volatility and the potential for greater losses.

Moreover, dividend equities are correlated with equities in general, whereas bonds show little to no correlation to either securities in general or dividend paying equities. If you view fixed income as not just providing yield but also diversification, dividend-paying securities fall well short as a substitute.

A second approach investors may take is to shift from broad-market equity to dividend- or income-focused equity. However, these investors may be inadvertently changing the risk profile of their portfolio, because dividend-focused equities tend to display a significant bias toward "value equities."¹⁴ Although value securities are generally considered to be a less risky subset of the broader equity market,¹⁵ the risks nevertheless can be substantial, owing to the fact that portfolios focused on dividend-paying equities tend to be overly concentrated in certain individual equities and sectors.

Benefits of a total-return approach to investing

In pursuing the preceding income strategies, some may feel they will be rewarded with a more certain return and therefore less risk. But in reality, this is increasing the portfolio's risk as it becomes too concentrated in certain sectors, which may result in a higher chance of retirees falling short of their long-term financial goals. As a result, Vanguard believes in maintaining a broadly diversified portfolio and following a total-return approach, which considers both components of total return: income plus capital appreciation. The total-return approach has the following potential advantages over an income-only method:

- **Less risk.** A total-return approach allows better diversification, instead of concentrating on certain securities, market segments, or industry sectors to increase yield.
- **Potentially longer lifespan for the portfolio,** stemming from the previous factors.

Certainly, to employ a tax-efficient, total-return strategy in which the investor requires specific cash flows to meet their spending needs involves substantial analysis, experience, and transactions. To do this well is not easy, and this alone could also represent the entire value proposition of an advisory relationship.

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 equities should have a risk-adjusted return similar to that of the broad equity market, unless there are risks that are not recognised in traditional volatility metrics.

Modules conclusion

So 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 meet their goals and objectives, given their time horizon and risk tolerance.
- Implementing the asset allocation using low-cost investments and, to the extent possible, using asset-allocation guidelines.
- Limiting the deviations from the market portfolio, which will benefit your clients and your practice.
- Concentrating on behavioural coaching and spending time communicating with your clients.

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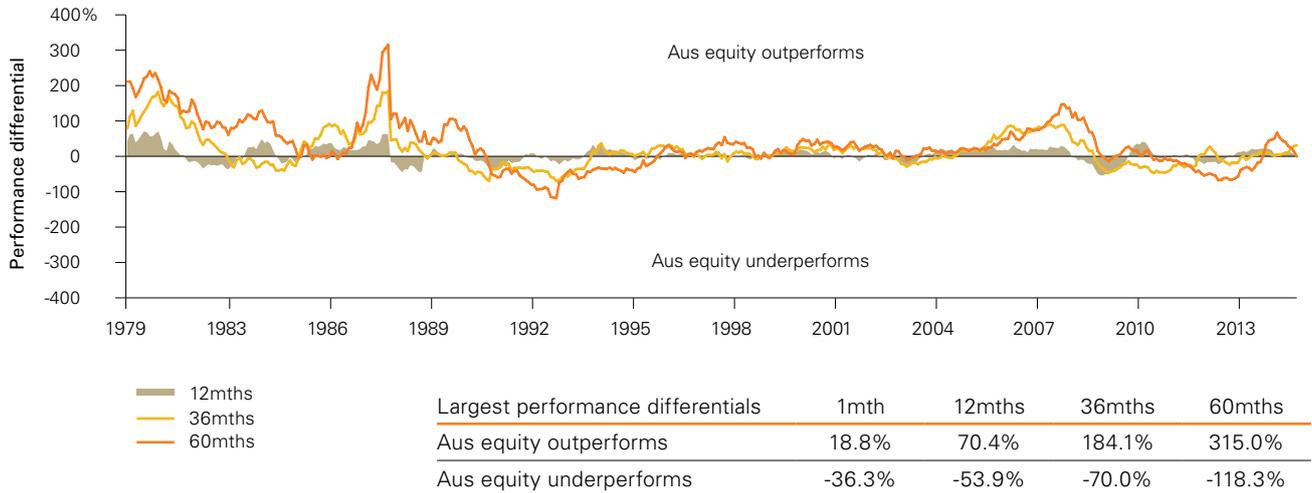
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Appendix 1. Relative performance charts

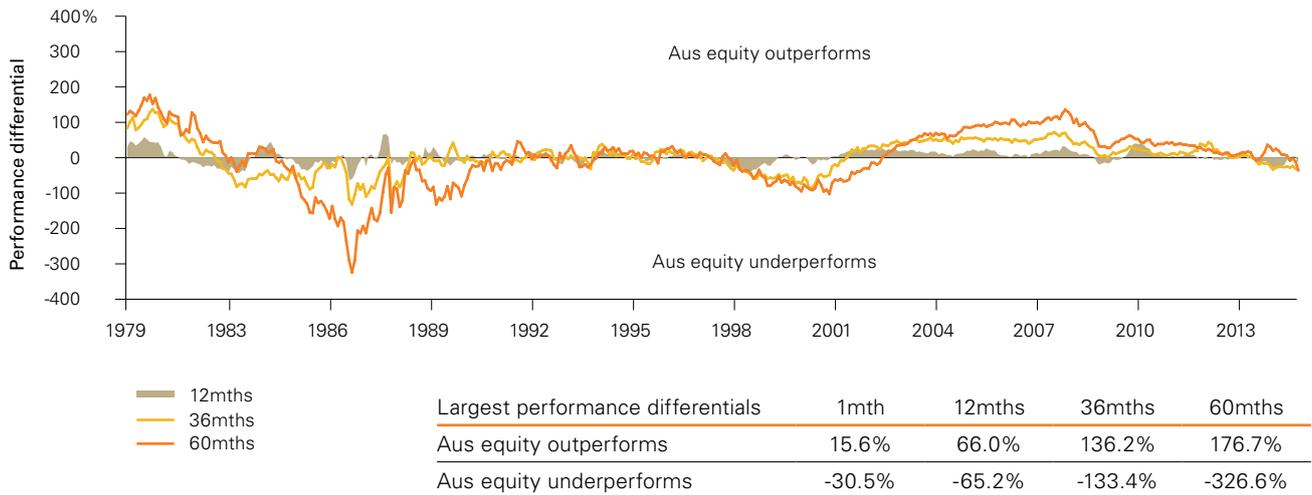
Figure A-1. Cumulative relative performance of Australian equities and Australian bonds



Notes: Australian equity is represented by the S&P/ASX 300 Index (Total Return) from May 1992 to Sep 2014 and the All Ordinaries Index (Total Return) from Jan 1980 to Apr 1992. Australian fixed income is represented by the UBS Composite Bond Index from Sep 1989 to Sep 2014. From 29 Sep 2014, Australian fixed income is represented by the Bloomberg AusBond Composite 0+ Yr Index (formerly the UBS Composite Bond Index™ until 29 Sep 2014). Net dividends and coupons have been assumed to have been reinvested into the index. Brokerage, commissions and tax implications are not reflected in this analysis.

Source: Vanguard calculations, based on data from FactSet, Thompson Reuters Datastream and Bloomberg.

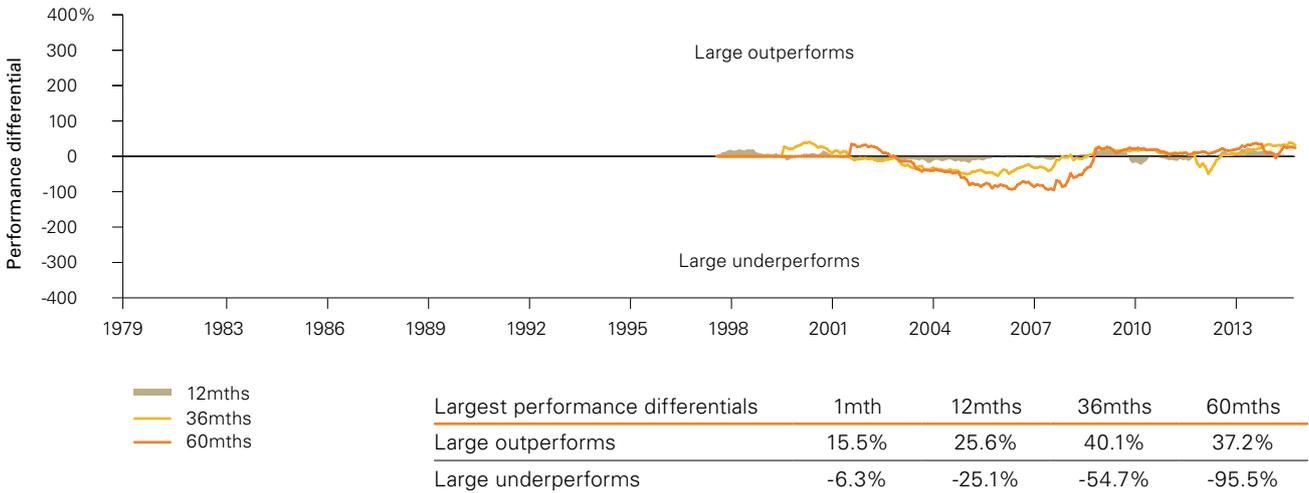
Figure A-2. Cumulative relative performance of Australian equities and International developed equities



Notes: Australian equity is represented by the S&P/ASX 300 Index (Total Return) from May 1992 to Sep 2014 and the All Ordinaries Index (Total Return) from Jan 1980 to Apr 1992. International equity developed markets are represented by the MSCI World ex-Aus in A\$ with net dividends reinvested. Net dividends have been assumed to have been reinvested into the index. Brokerage, commissions and tax implications are not reflected in this analysis.

Source: Vanguard calculations, based on data from FactSet and Thompson Reuters Datastream.

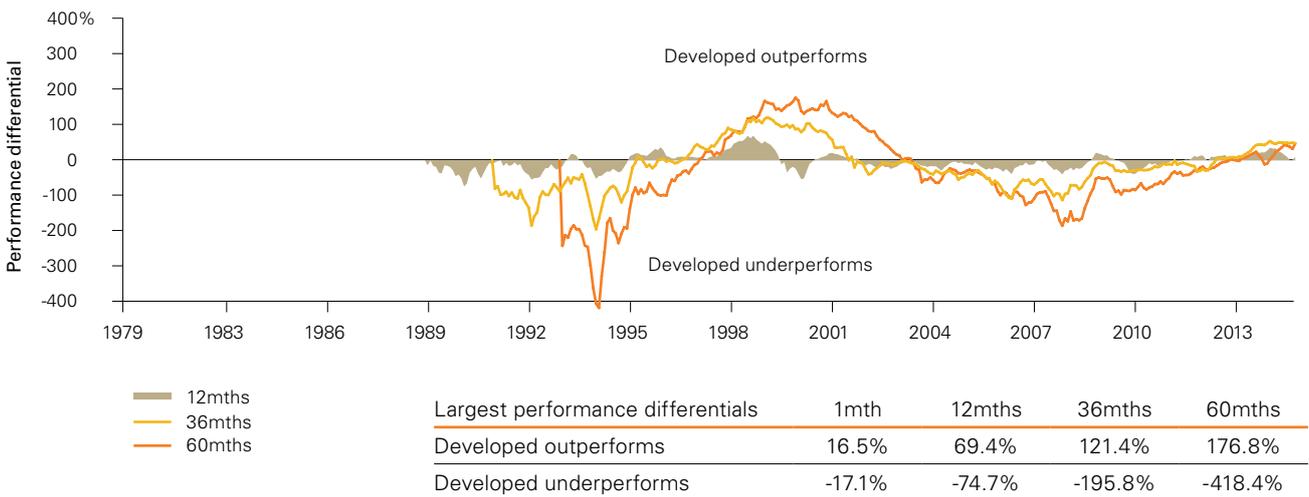
Figure A-3. Cumulative relative performance of Australian large cap and small cap equities



Notes: Australian equity large cap is represented by the MSCI Australia Equity Large Cap Index and Australian equity small cap is represented by the MSCI Australia Equity Small Cap Index from Mar 2000 to Sep 2014, and the Russell Australia Small Cap Index from Jul 1996 to Feb 2000. Net dividends and coupons have been assumed to have been reinvested into the index. Brokerage, commissions and tax implications are not reflected in this analysis.

Source: Vanguard calculations, based on data from FactSet and Thompson Reuters Datastream.

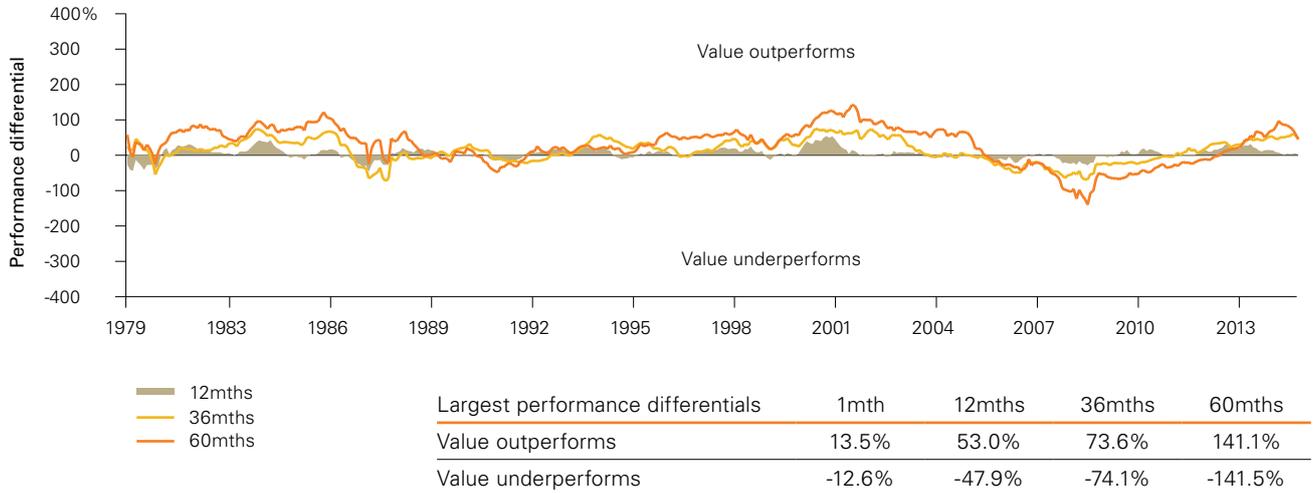
Figure A-4. Cumulative relative performance of International developed and emerging market equities



Notes: International equity developed markets are represented by the MSCI World ex-Aus in A\$ with net dividends reinvested and International equity emerging markets are represented by the MSCI Emerging Markets Index in A\$ with net dividends reinvested. Net dividends and coupons have been assumed to have been reinvested into the index. Brokerage, commissions and tax implications are not reflected in this analysis.

Source: Vanguard calculations, based on data from FactSet and Thompson Reuters Datastream.

Figure A-5. Cumulative relative performance of Australian equity value and growth



Notes: Australian equity value is represented by the MSCI Australia Value Index (total return) and Australian equity growth is represented by the MSCI Australia Growth Index (total return). Net dividends and coupons have been assumed to have been reinvested into the index. Brokerage, commissions and tax implications are not reflected in this analysis.

Source: Vanguard calculations, based on data from FactSet and Thomson Reuters Datastream.

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