

Research Working Paper Series

Designing an Investment Organization for Long-Term Investing

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Synopsis

We address how investment management organizations might be built to successfully pursue long-term investing. A variety of recommendations and suggestions are put forward that address four building blocks: organizational; incentives; investment approach; and discretion over trading. A key message is the need to manage the principal-agency issues that occur across multi-layered operations, with the aim of building alignment with investing for the long run. Investment approaches should be focused around the drivers of long-term outcomes, rather than short-term price movements. We highlight the importance of commitment in terms of both funding, and towards those making the investment decisions; but note how commitment is associated with costs and trade-offs. An approach is presented for evaluating performance based on separating out the effects of long-term expected returns, changes in discount rates, and changes in expected long-term cash flows. Our discussions are illuminated by insights and examples drawn from the Future Fund.

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1. Introduction

This is the final paper in a series examining long-term investing from an institutional investor perspective. Long-term investors have access to a broader range of investment strategies, many of which relate to opportunities that stem from the actions or aversions of the shorter-term investors that can dominate markets. We address how to design an investment organization so it might successfully pursue these opportunities. The recommendations and suggestions that we put forward draw on an appreciation for the influences on investment horizon, ideas appearing in the literature, the experience of the Future Fund,¹ and a dollop of creative thinking. The first paper (Warren, 2014a; 'Paper 1') examines the nature and determinants of investment horizon, as well as the debate on short-termism versus long-term investing. The second paper (Warren, 2014b; 'Paper 2') outlines the benefits and pitfalls of long-term investing, highlighting the advantages held by long-term investors and investment strategies that they might pursue.

Our approach is to propose four building blocks that an institutional investor should address in pursuing long-term investing. These building blocks provide a structure under which practical recommendations and suggestions are offered. They are:

- (i) ***Orient the organization*** through building alignment with investing for the long term, supported by appropriate organizational settings and features.
- (ii) ***Set the right incentives***, such that progression towards achieving long-term objectives becomes what is measured and rewarded, and short-term outcomes are viewed as markers not destinations.
- (iii) ***Establish a long-term investment approach*** which sets the sights squarely on the drivers of long-term outcomes, such as long-term value and/or returns; while filtering out the short-term noise.
- (iv) ***Harbour discretion over trading*** by establishing fund structures that mitigate the risk of needing to trade purely due to fluctuations in funding or other influences.

Addressing all four building blocks should create an environment where attention is directed towards generating long-term outcomes, and the pressure to deliver short-term performance is limited. The building blocks provide a structure that not only underpins our recommendations and related discussions. They also amount to a checklist that might be used by fund boards and executives who are looking to foster long-term investing within their own organizations. While we make no public policy recommendations, policy makers may too find it useful to think in these terms if they want to promote a larger cohort of long-term investors operating within financial markets.

The central element of the first building block – *orienting the organization* – is to address the *principal-agency relations* that occur along the chain of delegations existing within multi-layered investment organizations. A key objective is to *build alignment* with investing for the long term. This alignment should ideally extend from end-investors and other stakeholders, through to the governing board, to internal management, and finally to external providers, such as investment managers. Alignment might be built through a process whereby the benefit of long-term investing is initially sold, expectations are managed, and then engagement and explanation occurs along the way. Organizational settings and features should be configured accordingly, including: guiding principles; culture; trust; governance and decision structures;

¹ The Future Fund is Australia's sovereign wealth fund, and was established in 2006 as a reserve to help offset the unfunded defined benefit pension liabilities of the Federal Government. With the exception of operating costs, the Future Fund Act (2006) prohibits withdrawal from the Fund before 2020 unless its balance exceeds the target asset level as specified under the Act in the interim. The Board of Guardians is also responsible for managing three Nation Building Funds – the Building Australia Fund (BAF), the Education Investment Fund (EIF), and the Health and Hospitals Fund (HHF) – and has been nominated to manage funds designated for the Disability Care Australia Fund, which is designed to provision for liabilities accruing to the National Disability Insurance Scheme. Furthermore, subject to legislative approval, the Board and Agency have been nominated to manage any funds designated for the Medical Research Future Fund (to include the remaining balance of the HHF) and Asset Recycling Fund (to comprise the remaining balances of the BAF and the EIF).

the type of people involved, as well as their tenure; and the basis of collaboration with any external managers. The aim is to create an environment where everybody concerned thinks and acts in terms of long-term outcomes.

The second building block – *setting the right incentives* – may be considered an important sub-feature of orienting the organization. Well-structured incentives can reinforce alignment, although they may not drive it in their own right. Desirable attributes include: co-investment where feasible; use of subjective bonus components as a tool to reinforce desired behaviours; de-emphasizing relative performance measures; and focusing evaluations on progress towards achieving long-term goals. In line with the latter, Appendix B presents an approach for evaluating performance that involves attributing returns into three components: initial expected return, changes in discount rates, and changes in expected long-term cash flows. The approach emphasizes the accuracy of long-term cash flow forecasts in performance evaluation; and aligns with a decision framework where assets are selected based on projected long-term expected returns. We also discuss extending the term over which performance remuneration is paid. Arrangements of particular interest involve accruing bonuses over shorter periods, which are then paid over an extended period conditional on subsequent outcomes. We put forward an idea for ‘performance bonds’, which vest conditionally on performance being sustained.

With the third building block – *establishing a long-term investment approach* – we avoid making prescriptive recommendations, as there exists a wide variety of investment philosophies and processes that might be considered to be long term. Nonetheless, the crucial element is adopting an approach that looks beyond the short term, towards the drivers of long-term outcomes. In many cases, this will involve focusing on long-term cash flows and expected returns, rather than short-term price fluctuations (see Paper 1). It may also entail identifying the path that maximizes long-term outcomes under a dynamic strategy. In any event, an ingrained focus on the long term is fundamental. We also note how long-term investors may perceive risk differently; for instance as shortfall versus long-term objectives, or permanent loss of value. A detailed account of the investment process of the Future Fund appears in Appendix C.

The fourth building block – *harbouring discretion over trading* – will be subject to varying levels of control across investors. For those with latitude to shape their funding arrangements, we put forward some suggestions to enhance security of funding. The strongest action is to offer products where funding is locked in. Two solutions include making use of closed-end vehicles; and providing investors with the ability to opt-out of their right to redeem on a voluntary basis. Other weaker actions include establishing the capacity to defer redemption (e.g. gates), and raising switching costs.

We also highlight the importance of *commitment* in fostering long-term investing. Commitment matters in two ways. First, commitment of funding underpins discretion over trading. Second, commitment to investment managers provides the confidence and encouragement to pursue long-term investment strategies. (Note: We use the term ‘manager’ in a general sense, as those responsible for making investment decisions and building portfolios, be they either internal or external to the organization.) To give the best chance of accessing the benefits of long-term investing, the threat should be minimized that the ‘principal’ might withdraw support through either removing funding, or holding the ‘agent’ to account for poor short-term performance. Rather, they should stand back and allow time for investments to come to fruition. This requires placing trust in the manager to deliver. However, *commitment involves costs* in the form of loss of liquidity, and heightened reliance on the manager and hence exposure to agency risk. These costs imply the existence of trade-offs. They also heighten the importance of designing the organization to manage agency issues and deliver security of funding as far as possible.

The paper is arranged as follows. In Section 2, we reinterpret the determinants of investment horizon that were identified in Paper 1, refocusing them towards the four building blocks. Section 2 also discusses commitment. In Section 3, we briefly recognize the ideas for fostering long-term investing that appear in the literature. Those seeking more detail on these ideas should refer to Appendix A. Section 4 translates the four building blocks into our recommendations and suggestions. Concluding comments appear in Section 5. Appendix B details the approach to performance evaluation based around attributing returns into three components. Appendix C describes the investment process of the Future Fund.

2. Determinants of Investment Horizon – A Reinterpretation

In this section, we build a bridge from the discussion of the determinants of investment horizon appearing in Paper 1, to our recommendations and suggestions. The determinants of investment horizon are distilled down to the four building blocks that should be addressed in designing an investment organization to pursue long-term investing. Figure 1 lists the twelve influences on investment horizon which we have drawn from the academic, industry and public policy literature and discuss at length in Paper 1. The extent to which each influence is controllable by an investor is noted. Controllable influences can be broadly arranged into four groups, giving rise to our building blocks. Two relate to *discretion over trading* and *investment approach*, which reflect the ‘indicators’ (i.e. characteristics, or markers) of a long-term investor, as proposed in Paper 1. The other two relate to *organizational settings* and *incentives*. While the latter two building blocks are closely related, we consider incentives as sufficiently important to be discussed in their own right.

Figure 1: Twelve Influences on Investment Horizon – A Reinterpretation

| Influences: | Controllable By Investors? | Building Block To Which Most Related: |
|--|-----------------------------------|--|
| <i>Related to investor circumstances:</i> | | |
| (i) Nature of funding or liabilities | Sometimes | Discretion Over Trading |
| (ii) Trade discretion and tolerance for illiquidity | Sometimes | Discretion Over Trading |
| <i>Related to design of investing environment:</i> | | |
| (iii) Organizational structures | Yes | Organizational |
| (iv) Performance evaluation and remuneration practices | Yes | Incentives |
| (v) Financial market structures and financial liberation | No | |
| <i>Related to investor choice:</i> | | |
| (vi) Investment philosophy and process | Yes | Investment Approach |
| (vii) Information sets employed | Yes | Investment Approach |
| (viii) Behavioural effects | (Mitigate) | Organizational |
| (ix) Decision-maker attributes | Yes | Organizational |
| <i>Other:</i> | | |
| (x) Cultural | In Part | Organizational |
| (xi) Limits to arbitrage | (For Noting) | |
| (xii) Diversification via alternative assets (push factor) | (For Noting) | |

Below we give an account of how our building blocks relate to the influences on investment horizon, as listed in Figure 1. As overlap exists, these building blocks provide a somewhat loose structure.

A) *Organizational* – Many of the influences on investment horizon relate to the organizational context within which investment decisions are made. As we discuss later, the management of principal-agent relationships is central. Organizations should be structured (item iii in Figure 1) to provide investment managers – both internal and external – with the license, support and incentive to pursue long-term investing. Long-term investing becomes harder to sustain if managers feel that they may not be backed in their efforts, or if organizational support crumbles when times get tough. The related discussion in Paper 1 identifies some of the organizational features that are conducive to longer horizons. They include: alignment throughout the decision chain; use of closed-end structures (overlap with item i); the manner in which behavioural effects are addressed (item viii); the type of people employed (item ix); and culture (item x).

- B) Incentives** – Decision makers must be able to pursue long-term investing in the expectation of being rewarded for doing so; and not be subject to the fear of potentially being punished if results are not immediately forthcoming. To a large extent, this will reflect the formal process of performance evaluation and remuneration (item iv). However, incentives go beyond just numerical measures and bonuses. Other features that matter include what is rewarded in terms of personal careers (including status); and what is viewed as ‘success’ or ‘failure’ within the organization (item iii). What is expected and acknowledged by the broader financial community can also have sway (items v, x); although this can be difficult for an individual organization² to influence.
- C) Investment approach** – The influences related to investment approach are mostly grouped under investor choice in Figure 1, and hence sit within the realm of what is controllable by the investor or investment organization. They include: the chosen investment philosophy and process (item vi); the information employed (item vii); and potentially the type of person making decisions (item ix). Behavioural influences (item viii) are also relevant in the sense that they may create barriers to sustaining a long-term perspective, and should be addressed accordingly. Overall, the aim is to build a process for making investment decisions that sets the sights towards the long term, and avoids being distracted by short-term developments.
- D) Discretion over trading** – Having discretion over trading (item ii) means that an investment manager is left unfettered in their pursuit of long-term investing. They are able to choose when they trade and at what price, without having to deal with external pressure, such as funding shifts. Discretion over trading is closely aligned with tolerance for illiquidity (see Paper 2), which underpins access to a broader range of investments, including unlisted assets. The nature of funding and liabilities (item i) is integral. Indeed, it may stipulate if an investor can even pursue long-term investing. Whether funding, and hence discretion over trading, are controllable depends on the circumstances. Long-term investing may be inadvisable or even impossible where there is an unavoidable undertaking to satisfy any claims at short notice, e.g. short-tail insurance; or products which investors may buy in part for liquidity, such as open-ended funds. In other situations, there might be latitude to design funding arrangements to protect discretion over trading, and henceforth engender a long-term approach.

We translate these insights into concrete recommendations and suggestions for investment management organizations in Section 4. Before doing so, we address two other issues. Immediately below we discuss the role of commitment. In Section 3, we briefly recognize the ideas for fostering long-term investing that appear in the literature.

Commitment and Trade-offs in Long-Term Investing

Successful pursuit of long-term investing requires *commitment*. However, commitment entails costs, henceforth giving rise to trade-offs. There are two main aspects:

- a) Commitment of funding is required to deliver discretion over trading. However, committing funds involves the cost that liquidity is reduced, if not forfeited.
- b) Commitment to investment managers (both internal and external) is needed in order for them to feel they have the license and support to execute long-term investment strategies. The manager must be confident that investments will be given ample time to come to fruition; and that they will not be called to account for failure to deliver over shorter horizons. However, the cost of committing to a manager is heightened exposure to agency risk. Providing a manager with enough rope places reliance on ‘trust’, and increases the dependence on the manager. It will often be difficult to distinguish between short-term underperformance that is attributable to a failure of investment strategy or its implementation, and hence the manager; or if the payoff has merely been deferred. These two eventualities are observationally equivalent; and distinguishing one from the other can be hampered by

² Funds might be able to exert considerable influence by acting collectively.

information asymmetry. Indeed, it is only possible to know if a long-term investment has actually worked over the long term.

The essence of the trade-off might be summed up as follows. The positive side of greater commitment is that it increases the chances of capturing the potential benefits of long-term investing. The negative side relates to the risk of becoming locked into a poor manager who makes errors that might only be fully revealed when it is too late.

Regarding this trade-off, substantial sections of the investment management industry seem configured for low commitment. Provision of immediate liquidity to investors is prevalent. There is wide use of open-ended structures offering redemption-at-call, e.g. member choice with 3-day portability in the Australian superannuation system. Commitment to managers is limited.³ Managers are often evaluated and rewarded on short-term performance, with little evidence of tolerance for underperformance extending beyond 2-3 years. Of course, the approach commonly seen in the investment industry does have certain benefits, including wide-ranging access to liquidity and close accountability for managers. However, this helps to breed short-term behaviours which can potentially have their own costs. These are discussed in Paper 1, and include: greater market inefficiency; excess volatility; procyclicality; less effective corporate monitoring; and less efficient intermediation due to additional costs. Provision of immediate liquidity has been shown to lead to lower returns, with some estimates placing the impost in excess of 1% pa (for example, see Edelen, 1999; Johnson, 2004). Further, discouraging long-term investing may itself entail an opportunity cost.

Nevertheless, we are talking about a trade-off. This suggests the need to choose a position along a spectrum. There are varying degrees of commitment. With respect to funding, partial solutions may be available such as commitment for defined periods,⁴ or the ability to defer redemptions under certain circumstances. We explore some related ideas later in this paper. Unconditional commitment to managers for the long term may not be necessary. There may be ways of evaluating the skill of a manager in implementing a long-term investment program, other than just monitoring the flow of returns. We also explore some ideas along these lines. Another interesting case is closed-end fund structures, which can secure commitment of funding from the manager's perspective while retaining liquidity for end-investors if a secondary market exists. However, as discussed by Stein (2005), closed-end funds do not solve the agency risk related to commitment to the manager. Indeed, agency risk may be exacerbated to the extent that mechanisms for disciplining the manager are weakened under closed-end structures.

Finally, long-term investing is subject to a number of potential pitfalls. These were discussed in Paper 2, and include:

- *Potential errors* – Long-term investing is exposed to errors in forming expectations about the long term, particularly mis-estimation of long-term value or expected returns. Scope for error is heightening by the difficulty of predicting the distant future.
- *Organizational, agency and alignment issues* – Key points of vulnerability relate to organizational and agency issues, including the need for alignment and a reliance on commitment and fortitude. Many of the recommendations and suggestions in this paper are aimed at addressing these vulnerabilities.
- *Constraints* – These may include constraints on the capacity to respond to opportunities; the notion that some strategies may be mutually exclusive; lack of access to shorting or leverage; and impacts on the portfolio arising from the cash flow effects of currency hedging.

Long-term investing is not all a one-way street. It involves costs and trade-offs. There are pitfalls to avoid. The challenge is to identify and manage towards a position that best suits the institutional investor in question, and provides the greatest prospect of success.

³ The global trend towards in-house management by large institutions might be interpreted as increasing the commitment to managers.

⁴ Private equity provides an example of commitment of funding over longer horizons (typically of 10 years or more); but also highlights the associated reliance on the manager and the consequent exposure to agency risk.

3. Ideas from the Literature

Before we put forward our own recommendations and suggestions, we recognize the many ideas for fostering long-term investing appearing in the literature. The literature contains various interesting and useful suggestions, some of which we draw on ourselves. Figure 2 lists sixteen categories of ideas. An overview of each may be found in Appendix A. The literature we summarize covers ideas for both the design of investment organizations and public policy recommendations; although we do not consider the latter in this paper. Figure A1 in Appendix A also categorizes each idea in terms of its relation to either our building blocks or public policy.

Figure 2: Sixteen Ideas for Extending Investment Horizons

- (i) Engineer the *organization* towards long-term investing
- (ii) Orient investment *mandates* towards the long term
- (iii) Improve manager *transparency and engagement* with investors
- (iv) Apply ideas from *behavioural and organizational change* theory
- (v) Employ the right *people*
- (vi) Alter how *performance* is evaluated
- (vii) Align *remuneration* structures
- (viii) Use *co-investment*
- (ix) Exploit *commitment* mechanisms
- (x) Raise *switching costs*
- (xi) Increase *information* on long-term value drivers
- (xii) Issue industry *practice guidance*
- (xiii) Re-jig the *regulation and policy* framework
- (xiv) *Education*
- (xv) *Reward* long-term holders
- (xvi) Impose *penalties* for excess trading

The above list of ideas lacks a unifying theory or framework (much like the determinants and benefits of long-term investing that are covered in Paper 1 and Paper 2, respectively). Part of our contribution is to provide a structure under which the main issues can be identified and tackled. This appears in the form of our four building blocks, which we have linked to the influences on investment horizon.

4. Building Investment Organizations with Longer Horizons

We now present our recommendations and suggestions for how an institutional investment organization might be designed to successfully pursue long-term investing. Our discussion is arranged in four subsections, each dealing with the building blocks that were identified in Section 2. The building blocks should be viewed as an integrated and at times overlapping set, and not as independent items. All four should be addressed in unison. A roadmap for this section appears in Figure 3. In putting forward our recommendations and suggestions, we attempt to acknowledge any ideas proposed by other commentators. Our apologies to anybody we have inadvertently failed to acknowledge.

Figure 3: Roadmap of Our Recommendations and Suggestions

| Building Block | Recommendations and Suggestions |
|---|--|
| <p>(i) <i>Organizational</i></p> | <p><i>Key element: Manage principal-agency issues</i></p> <p><i>Specific areas to address:</i></p> <ul style="list-style-type: none"> (a) Strategies for building alignment (b) Guiding principles (mission, etc.) (c) Culture (d) Trust (e) Governance and decision structures: <ul style="list-style-type: none"> - Long-term objectives - Manage temporal trade-offs - Framing and presentation - Resist myopic loss aversion (f) People (g) Collaboration with external managers |
| <p>(ii) <i>Incentives</i></p> | <p><i>Key element: Reward progression towards long-term objectives</i></p> <ul style="list-style-type: none"> (a) Direct and co-investment (“skin in the game”) (b) Subjective components (c) Measuring performance: <ul style="list-style-type: none"> - De-emphasize relative performance - Focus on progress towards the ultimate goal - Three component attribution (d) Performance remuneration <ul style="list-style-type: none"> - Lengthen horizons as feasible - Performance bonds |
| <p>(iii) <i>Investment Approach</i></p> | <p><i>Key element: Focus on long-term outcomes</i></p> <p>(It is inappropriate to be prescriptive; although some potential differences in focus of long-term versus short-term investors are presented in Figure 4.)</p> |
| <p>(iv) <i>Discretion over Trading</i></p> | <p><i>Key element: Mitigate the possibility of being forced to trade</i></p> <p><i>Strong:</i></p> <ul style="list-style-type: none"> (a) Closed-end fund structures (b) Redemption opt-outs <p><i>Weak:</i></p> <ul style="list-style-type: none"> (c) Redemption deferrals (d) Switching costs |

(i) Orienting the Organization

We consider organizational characteristics as fundamental for creating an environment within which long-term investing can flourish. The objective is to build long-term investing into the organizational DNA, so that everybody concerned thinks and acts in terms of long-term outcomes. Long-term investing should be considered by all as ‘what we do’. This would be reinforced by incentive structures and manifest in the investment approach, which are our second and third building blocks. In this sub-section, we identify and discuss the key components of organizational design for orienting an investment organization towards the long term.

Managing various *principal-agent issues* is a central element: the goal should be to secure *alignment* with a long-term approach to investing from top-to-bottom. Most investment organizations are multi-layered. There can be many steps in the chain of delegation, extending from end-investors or other stakeholders; to the governing board or equivalent; to internal management (itself potentially with multiple levels); down to providers, including external investment managers. Each of these links entails a principal-agent relationship which needs to be managed. The challenge is to ensure all involved have a shared understanding of the mission; and are aligned in terms of principles, objectives, broad strategy, and how success is identified.

A key problem with long-term investing is investment outcomes can take a long time to become apparent. Nevertheless, ‘agents’ will inevitably be monitored and evaluated in the interim by the ‘principals’ that appoint them. It is important to avoid the flow of short-term results becoming the focus of monitoring and evaluation. Failing to do so can result in the agents pursuing short-term results, to the detriment of investing for the long term. Many of the suggestions appearing below are designed to reduce the risk of this occurring, by diluting the focus on short-term results and placing them in proper context. A key component is to build an *understanding* of investment decisions, and how they relate to actions taken and outcomes observed.

(a) *Strategies for Building Alignment*

Given the importance of alignment across all levels of the organization, we start with broad strategies for building alignment around long-term investing. There is one overarching recommendation: *communicate*. This could come in many forms: published materials, face-to-face presentations, and direct conversations between principals and agents. Key messages should be repeated often. While communication is important, pitching it correctly is a challenging task. Communicating too much information or too complex a message may cause confusion, and potentially undermine the additional credibility and trust it is intended to engender. The need to protect any competitive advantage can impose limits on what is prudent to disclose. There is a delicate balance to be found.

A foundation for alignment might be established through the following three steps:

Step 1: Sell the benefit – Convincing all stakeholders of the benefit of being a long-term investor is a good initial step towards building alignment. For instance, WEF (2011) and ISA (2014) call for promoting long-term investing, both in general and with regard to particular investments. Paper 2 specifically addresses the benefits of long-term investing, and may provide some ammunition. Mental time travel techniques (see Irving, 2009) may be useful in selling the benefit, and would suggest focusing the organizational vision towards long-term outcomes.

Step 2: Manage expectations – It is important to manage expectations about what long-term investing can and can’t achieve, in particular noting the potential pitfalls (see Paper 2) and the trade-offs (discussed above in Section 2). It is critical to gain acceptance that results may not be immediately forthcoming, and that patience is required. One aim is to ensure that support for long-term investing can withstand not only initial underperformance, but also any implementation errors. When mistakes are made, the reaction should be to learn and adjust, rather than discard a long-term approach altogether.

Step 3: Engage and explain along the way – Many commentators emphasize the significance of transparency and engagement with stakeholders: see point (iii) in Appendix A for a discussion. For example, Kay (2012) and Ambachtsheer et al. (2013) suggest that greater transparency helps engender trust (discussed under point (d) below). Mercer (2010) alludes to the need to be clear about investment horizon. There are also numerous calls for greater disclosure and accountability. Engaging and explaining is particularly relevant for long-term investing because the positions and strategies involved can be long in duration, opaque in nature, and uncertain in timing. In such situations, the best way to keep stakeholders on board is to explain the reasons for an investment and its progression. Affinity is built through understanding. The payoff is that stakeholders and the various principals in the chain of delegation should become less likely to monitor and judge agents purely on the flow of visible outcomes such as returns, and more likely to retain commitment.

The task of building alignment involves *lessening the distance from the decision making*. A number of commentators refer to a ‘lengthening of the chain’ between beneficial owners and those making the investment decisions as helping to foster a short-term culture (see WEF, 2011; Kay, 2012; and other authors cited in Paper 1, Section 4(v)). Distance encourages the monitoring and evaluation of agents based on the visible flow of short-term results. Accordingly, it is particularly important to build relationships based on *trust and understanding*, both across the chain of delegations and at the various links in the chain. *Engagement and transparency* are key strategies.

Relationships where it can be more challenging to build and maintain alignment are those where the distance is greatest. Often this is between the organization and the end-investor, and between the board and internal management. End-investors matter because they ultimately provide the funding, making alignment important for security of funding and hence discretion over trading. The relationship between the board and management matters because the board sets the terms by which management will be evaluated, such as objectives and benchmarks. If the board does not fully understand decisions, it may resort to managing strictly according to visible and measurable yardsticks, such as performance versus benchmark. Further, a strong board may start imposing its own will, rather than delegating to managers. Such governance practices can grate against the pursuit of long-term investing, partly because managers then begin to focus on managing the numbers or their relationship with the board, when they should be focusing on optimizing long-term investment outcomes.

The Future Fund has provided an account of how the relationship between the Australian Government, the Board of Guardians and management is structured. This appears in the hold-out box over the page.

The Future Fund:

Relationship between the Government, the Board of Guardians and Management

In the case of the Future Fund, the statutory governance arrangements are designed so as to provide clear delineation of roles and responsibilities for the Government, the Board of Guardians and management.

The Future Fund Act (2006), which establishes the statutory governance arrangements, provides the Government, through the responsible Ministers, with oversight of the Funds subject to the arrangements that establish the independence of the Board of Guardians. The Government's role includes the appointment of members of the Board of Guardians and the establishment of Investment Mandates for each of the Funds for which the Board of Guardians is responsible. Legislation also sets out the purpose, funding and withdrawal arrangements for the Funds, and mechanisms for reporting and accountability.

At the same time, the responsibility for making investment decisions is clearly allocated to the Board of Guardians. Moreover, the independence of the Board of Guardians in making these decisions is emphasized in a number of ways, including:

- the expenses of the organisation are met from the assets of the Funds, rather than from an appropriation through Parliament;
- the Board of Guardians must be consulted on the Investment Mandate directions, which themselves must be consistent with the requirements of the legislation; and
- Board members must be drawn from outside government, and meet the requirements of having substantial expertise and professional credibility in investing or managing financial assets or in corporate governance.

In parallel with the statutory arrangements establishing clear lines of responsibility and accountability, the Future Fund itself has placed significant emphasis on building tight alignment between the Board and the management team. This was a matter that was openly and deliberately addressed at an early stage. Significant effort was applied to putting in place processes and protocols to drive this alignment, and to identify and reduce any emerging gaps between the objectives and understanding of the Board and the management team. This included the development and periodic review of shared investment beliefs; and the deliberate creation of regular opportunities to review the entire portfolio, its positioning, and its consistency with the investment beliefs and the investment objectives.

(b) *Guiding Principles*

A base for alignment can be established through embedding long-term investing within the stated principles that guide the organization: its mission, purpose and beliefs. A number of commentators make suggestions to this effect, including Gray (2006), Atherton (2007c), Marathon (2007), WEF (2011, 2012) and Ambachtsheer (2014). Continuing with the antipodean examples, the Future Fund and the NZ Super Fund both explicitly refer to delivering returns over the long term within their mission statements (underlining added):

"We are a funds management business focused on delivering high, risk-adjusted returns over the long term on contributions to special purpose public funds. Operating independently from the government, we will tailor the management of each Fund to its unique mandate while delivering efficiency through common infrastructure."
The Future Fund, 'Annual Report 2012/13', p3

"Maximize the Fund's return over the long term, without undue risk, so as to reduce future New Zealanders' tax burden." New Zealand Super Fund, 'How We Invest', p8

As a point of contrast, some investment organizations view their purpose as relating to aspects such as delivering performance, or meeting investor needs. For instance, consider two of Australia's largest providers of investment products. AMP Capital refers to their "*commitment to delivering outstanding investment outcomes for our clients*" as being at the heart of everything they do. Colonial First State presents itself as offering "*An active management approach seeking to outperform ... Put simply, we aim to outperform the benchmark*". As a global example, Fidelity Worldwide states: "*Our fundamental mission is to help customers and clients achieve their financial objectives*". Whereas there is nothing at all wrong with any of these principles, they are not as

likely to be as effective as an expressed and pointed reference to the long term if the intention is to pursue long-term investing.

(c) *Culture*

Culture can provide the glue within an organization that might assist in building alignment and hence orienting it towards the long term. Much of the literature alludes to culture implicitly, if not explicitly, e.g. Lavery (2004). Culture is a somewhat nebulous concept. Indeed, the body of recommendations and suggestions appearing in this paper should all contribute to building a culture of long-term investment in some way. Nevertheless, there are two specific areas which we consider to be particularly relevant:

- *Leadership* – A number of commentators make the point that leadership matters for driving change and establishing a long-term culture, see: CFA (2006); Atherton et al. (2007c); Marathon (2007). Those in charge often have a strong influence over the tone in an organization. This influence arises through the examples they set; through what they choose to focus on and reward; and importantly through what actions and behaviours they are *not* willing to tolerate. It is worthwhile to continually *reinforce* a long-term culture through ongoing reminders of the guiding principles, objectives, and so on.
- *Capacity to adopt non-consensus positions* – A capacity to be non-consensus is important for maximizing the benefits from long-term investing, as many of the better long-term opportunities emerge from market extremes arising from the behaviour of the crowd (see Paper 2). The importance of being able to adopt non-consensus positions is recognized in the literature. For instance, Vaughan (1992) refers to willingness to ‘go against the crowd’; while Ang and Kjaer (2011) as well as Jones (2012) call for the capacity for contrarian and counter-cyclical behaviour to be institutionalized. WEF (2012) refers to the importance of protecting appropriate risk-taking and experimentation. Actions that might help encourage a non-consensus culture include: focusing discussions around ‘where the market could be wrong’; soliciting of non-mainstream opinions; and being very careful to ensure that radical views are not dismissed too quickly.

(d) *Trust*

We will deal with trust separately and specifically, although there is considerable overlap with alignment in terms of its relevance and how it may be built. Section 2 discussed how long-term investing requires commitment not only of funds, but also to the investment manager. Trust might be seen as a form of commitment (and accordingly entails similar costs and trade-offs to those discussed in Section 2). Trust requires placing faith in managers to do what is best over the long term, rather than managing them by the flow of numbers. Lavery (2004) states: “*Firms that establish climates of trust regarding such tradeoffs – that is, they protect individuals from having to constantly answer to short-term performance pressures that may be contrary to achieving long term success – are less likely to undervalue the long term*”. WEF (2012) also acknowledges the importance of trust. Along these lines, the suggestion made by both Kay (2012) and Ambachtsheer et al. (2013) to base engagement around relationships, rather than transactions, is partly made with a view to building trust and respect. Consistent with the previous discussion of alignment, these authors see a role for greater transparency in engendering trust. Trust is enhanced through engagement. It can be destroyed by calling investment managers to account too quickly.

(e) *Governance and Decision Structures*

Governance is critical in any investment organization. Here we limit the discussion to selected principles or techniques related to governance and decision-making structures that are specifically relevant for long-term investing. Aspects related to board composition are discussed under part (f), which deals with ‘people’.

- *Clear objectives, with a long-term focus* – Clear objectives are an important component in managing agency issues and ensuring alignment. Stated objectives should be evidently long-term in focus, and ideally singularly so in order to avoid temporal trade-offs (see next dot point). For instance, Marathon (2007)

recommends setting clear objectives with a horizon over a full cycle, e.g. 5-7 years. Dual objectives that refer to short-term outcomes should be avoided, e.g. a parallel objective to ‘outperform the peer group over 12-months’. Indeed, relative performance objectives should be avoided where possible, as they encourage herding and draw attention towards what other players are doing and hence away from maximizing long-term outcomes. Further comments on these matters appear under the discussion of performance evaluation in part (c) of Section 4(iv). An account of the Future Fund’s objectives, and how they are being interpreted, appears in the hold-out box at the bottom of the page. This is followed over the page by comments on the Future Fund’s governance and decision structures.

- *Identify and manage temporal trade-offs* – Lavery (2004) as well as Marginson and Mcaulay (2008) observe the role of ambiguity in encouraging short-term behaviour in organizations. Temporal ambiguity may occur where employees are asked to make poorly-defined inter-temporal choices between the short term and long term. This is to be avoided in the first instance. Where temporal trade-offs do exist, Irving (2009) recommends that they be identified, clear responsibility be assigned for their management, and that those responsible are not placed under undue stress. In the context of long-term investing, this means that fund managers should ideally be required to consider, and be expected to deliver, only long-term performance, and not be evaluated on short-term outcomes. Where this cannot be avoided, clear responsibility and guidance should be set for weighing short horizon versus long horizon objectives, lest short-term outcomes are afforded undue attention because they seem more pressing or tangible.
- *Framing and presentation* – A number of authors raise the importance of framing and presentation: an issue that is also relevant for incentives and the investment approach. The idea is to make the long term more salient. One approach is to focus attention on whether outcomes are on track to achieve long-term goals, rather than period-by-period returns (Denison, 2010). Performance would thus be reported in the context of some long-term target or broader objectives (Marathon, 2007; Jones, 2012; Kay, 2012; WEF 2012), such as capital protection or adequate income in retirement (Stewart, 2014).
- *Build resistance to myopic loss aversion* – The literature has identified a number of strategies to reduce the impact of myopic loss aversion that might be built into governance and decision processes. Many of these overlap and reinforce suggestions that we make at other points in this paper:
 - focus on long-term outcomes when reporting (Benartzi and Thaler, 1999);
 - establish less frequent feedback and less opportunities to take action (Fellner and Sutter, 2009);
 - encourage team decision-making (Sutter, 2007); and
 - require decisions to be explained (Vieider, 2011; Pahlke et al., 2012).

The Future Fund – Objectives and their Interpretation

The Future Fund Investment Mandate asks the Board of Guardians to generate a return of 4.5-5.5% above the Australian Consumer Price Index (CPI) over the long term, while taking ‘acceptable but not excessive risk’.

Early in the life of the Future Fund, the Board spent a considerable amount of time interpreting the Mandate, and qualifying the distinction between ‘acceptable’ and ‘excessive’ risk. The Board ultimately concluded that they should try to: i) maximize the value of the Future Fund over the long term, defined as rolling 10 year periods; and, ii) minimise the risk of significant capital losses along the path, with a particular focus on expected downside outcomes over rolling 3 and 10 year periods.

There is sometimes friction between these two objectives. So to guide its approach, the Board developed a set of investment beliefs that is consistent with its interpretation of the Mandate and its understanding of what constitutes acceptable risk. Given its particular belief that prospective risk and returns vary materially over time, the Board is cognisant that there could be periods when pursuing a real return of 4.5-5.5% ex-ante may not be achievable without embedding an ‘excessive’ level of risk in the Future Fund.

The Future Fund's Governance and Decision Structures

The Board of Guardians believes that portfolio management should be focused on the specific objectives and risk definitions of the Future Fund; and that investment portfolios are most efficiently managed as a whole, rather than as a collection of individual underlying sub-portfolios. The Board also believes that the risk profile of the Future Fund should be managed dynamically as conditions evolve; and that its unusually long horizon provides a competitive advantage to add value by pursuing a more countercyclical investment strategy than many other market participants.

This governing philosophy drives the manner in which investment opportunities are evaluated by the management team and the Board. A Manager Review Committee and an Asset Review Committee, each comprising of a representative cross-section of the investment team, assess investments on their individual merits. The Investment Committee, itself a diverse body drawn from the ranks of senior management, then determines whether these opportunities are complementary to overall portfolio construction before they proceed to the Board for final approval.

This approach motivates a holistic discussion on each investment opportunity considered by the Future Fund, with a principal focus on the expected risk-adjusted contribution to long-term portfolio return and achievement of the Investment Mandate.

(f) *People*

Human resources is another component in orienting an organization towards long-term investing, again because it can help limit the risk of misalignment and hence agency problems. There are three facets. The first is *employing the right people*. Vaughan (1992) and Gray (2006) recommend employing only people with affinity to long-term investing. WEF (2011, 2012) states similar sentiments; and extends the point by emphasizing the importance of a professional board that is capable of shrugging off short-term pressures. Barton and Wiseman (2014) also emphasize the importance of the board, stating that it should be: independent; professional; possess relevant expertise; have the time available to be engaged; and be committed to a long-term investment philosophy. Gray⁵ (2014) highlights the relevance of personality type for successful institutional investing.

The second facet is *tenure*. Denison (2010) and WEF (2012) both suggest avoiding short tenures for trustees or management. Turnover of employees (including key board members) can create discontinuities in the commitment to seeing strategies through to their conclusion. New employees often want to put their own stamp on the direction that an organization takes. The risk of making inappropriate changes is exacerbated where an investment has initially performed below expectations. In this instance, new staff can be even more tempted to make changes because they lack 'ownership' of the position. Ellis (2011) warns against excessive turnover of board members, staff and investments managers. He suggests that 'best practice' is an average tenure for board members of 6-7 years, and around 10 years for managers. Arguably, longer-than-average tenures may be appropriate under long-term investing.

The third facet is *demonstrating commitment to employees*. This facet takes a broader perspective on the notion of commitment to fund managers, as was discussed earlier. Those working for the organization can only be relied on to pursue a long-term approach if they expect to be around for the long haul: the staff themselves should expect an extended career at the organization (Ellis, 2011). To help build such an expectation, the organization should set out to show that it is committed to its employees, and trust that they will reciprocate. Terminations should not be handed out lightly; and the messaging around commitment to staff in issuing termination notices should be considered. The discussion around the costs and trade-offs associated with commitment in Section 4 also applies to employees.

⁵ Jack Gray, in providing feedback on an earlier draft, pointed towards the benefit of learning from successful individuals or organizations who can act as role models for how to pursue a long-term approach. These might come from outside the investment industry. Furthermore, the learning is best done over a period of many years.

(g) Collaboration with External Managers

Finally, similar issues of alignment apply when external managers are involved. Again, the aim should be to manage the agency arrangement to ensure alignment and direct focus towards the long term. This will entail applying many of the ideas raised earlier when dealing with external managers. This includes affording them commitment, trust and engagement; as well as employing the right manager in the initial instance.⁶

The literature contains a number of useful ideas on how collaboration with external managers might be structured. Both Kay (2012) and Ambachtsheer et al. (2013) suggest the relationship between managers and investors should be made more characteristic of a *partnership*, built on mutual trust and respect. Establishing contracts with extended terms is a popular suggestion in the literature (see Hewitt, 2004; Atherton et al., 2007b, 2007c; Mercer, 2010; Croce, 2011; Ambachtsheer and Bauer, 2013). Some commentators raise the idea that contracts should be based on the presumption of continuity with termination clauses ‘like an employment contract’ (Hewitt; 2004; also Croce, 2011; Reid, 2013). Supposedly this would send a signal of the intention to maintain a long-lived relationship. Even though this may not prove to be the case, the main idea is to create an expectation *ex ante* that the manager will be employed for the long term. The hold-out box below describes how the Future Fund manages its relationships with external managers.

An alternative to relying on external managers is to invest directly. WEF (2011) suggests that internal management of assets may lead to better alignment with long-term investing, relative to what can be achieved using external managers. There are a range of positives and negatives around in-house management, which we leave for another time.

The Future Fund and External Managers

Since inception, the Future Fund’s investment team has endeavoured to remain as small and nimble as possible, and as large as is necessary to cover its investment universe. Of the Future Fund’s employees, almost half are investment professionals. Sector heads are tasked with forming their own investment views; as well as engaging regularly with managers to identify or critically evaluate opportunities, monitor performance, and assess asset divestment potential.

The model for accessing investments varies depending on the asset class and the nature of the opportunity.

In listed equities, debt and alternatives, the Future Fund will typically adopt an outsourced model, with the selection and execution of individual investments being fully outsourced to third party managers. Having said that, the internal team still actively monitors and manages the sub-sector strategic exposures – this is far from a typical ‘manager of managers’ approach.

In private markets, in addition to delegating management to external managers, the Future Fund may pursue co-investment opportunities, such as with private equity managers. Alternatively, if alignment issues are significant, it may choose to invest directly, and subsequently outsource management of the asset when the commercial position is such that alignment may be achieved (for example, in infrastructure).

The Future Fund prefers fewer and more meaningful external relationships. It selects managers for their ability to generate information and insight; their willingness to genuinely collaborate and share knowledge; and the breadth of their collective coverage. Indeed, an essential part of the Future Fund’s investment process is the feedback loop created to capture the views of external managers on markets, investing themes or specific opportunities..

The Future Fund has built a small number of deep relationships with external managers. This helps the Future Fund and its external managers understand each other better, while improving the exchange of ideas and information. It also gives the Future Fund the practical ability to move quickly on new opportunities.

The Future Fund’s focus on alignment and building relationships has enhanced the quality of investment opportunities available to it; and helped to make its integrated investment process more efficient.

⁶ One additional hurdle is that it may be difficult for some external managers to ring-fence a long-term portfolio from other shorter-term investment operations. Such issues reinforce the need to select appropriate managers.

(ii) Setting the Right Incentives

The central role of incentives in influencing investment horizon is widely recognized, as discussed in Paper 1. Most commentators on the short-term versus long-term investing debate recommend extending the time frame for performance evaluation and remuneration, if longer investment horizons are to be encouraged. We view incentives as an important facet of orienting the organization, and managing principal-agent relations. Nevertheless, incentives cannot guarantee alignment by themselves. However, they can destroy it if poorly structured. The main role of incentives is to avoid disrupting a long-term focus, and if possible, assist to cement it. Building alignment with long-term investing in the initial instance is the primary driver.

Extending the incentive time frame is not as easy as evaluating performance and paying bonuses only after an extended period (say, 5 or 10 years); and ignoring what happens along the way. Fund managers should ideally have their contribution in progressing towards long-term objectives evaluated on an ongoing basis, and accordingly be held accountable for their ‘performance’ in this sense. Ongoing evaluation can help to control the agency risk that accompanies the commitment to the manager that affords them the latitude and confidence to pursue long-term investing. Commitment need not be open-ended; but should be conditional on evidence that a manager is being diligent in pursuing a long-term approach.

In addition, it is often practically infeasible to award performance bonuses only after extended periods. The industry standard of yearly bonuses is hard to ignore in a competitive market for talent. Staff mobility also needs to be accommodated, given that fund managers may move on for a range of reasons, such as organizational change, promotion or personal reasons. It cannot be reasonably assumed that fund managers will be retained for long periods, notwithstanding an initial intention that this be the case. The problem is not so much ongoing evaluation *per se*, but rather evaluation and rewards based around short-term outcomes, such as yearly returns. The challenge is to design performance evaluation and remuneration systems that incentivise fund managers to adopt a long-term focus, and ideally remunerates for long-term outcomes; while still retaining the scope for ongoing review and reward. The scope to game the incentive system should also be minimized. Some recommendations and suggestions are provided below. The hold-out box on the next page presents the Future Fund’s account of how it has designed its performance evaluation and incentive systems in support of a long-term approach.

(a) Direct and Co-investment (‘Skin in the Game’)

There is nothing that motivates like skin in the game. For a large institution, direct, in-house management might help avoid some of the agency and alignment issues associated with external management (WEF, 2011). Otherwise, co-investment is perhaps one of the best ways to ensure alignment between managers and investors. Accordingly co-investment should be accommodated or even insisted on where-ever possible, ideally in quantities that are financially meaningful to the manager. Commentators who appeal for greater use of co-investment include Rappaport (2005), CFA (2006), Atherton et al. (2007b) and Marathon (2007). Nevertheless, co-investment does not necessarily encourage long-term investing in its own right. The environment under which it occurs needs to create an incentive to adopt a longer horizon. This will occur where the manager has a meaningful personal investment in a fund that will exist for the long term, and holds the expectation of a long management tenure.

Co-investment might come in a variety of forms. The act of purchasing a specific asset or investment alongside an existing manager or small group of like-minded investors may secure alignment and greatly reduce agency costs, if not eliminate them. For instance, WEF (2012) suggests that alignment of interests might be enhanced through ‘carried interest’ and parallel investment, as used in the private equity industry (albeit subject to other considerations such as how manager fees are structured). Co-investment may be secured through granting units to the manager, perhaps with funding provided. Another idea is to direct a portion of remuneration towards investment in the fund. For instance, the idea put forward by WEF (2011) of investing bonus payments into a ‘parallel portfolio’ is actually a form of co-investment. Finally, the potency of co-investment in encouraging a long-term approach would be enhanced if restrictions are imposed on the sale of units for an extended period.

Performance Evaluation and Incentives at the Future Fund

The experience of the Future Fund suggests that putting in place incentives to encourage long-term investing can only be part of the story – whether it be for external fund managers, or for staff within an institution. Establishing arrangements designed to drive a long-term perspective will not be successful if the nature of the organization or individual is inclined towards a shorter-term view. Long-term incentive arrangements are unlikely to change someone from being a short-term investor into being a long-term investor. It will, however, encourage an investor with some preference for, or interest in, the long term to exercise and prioritise that capacity.

This view leads the Future Fund to recognize the importance of identifying and selecting the right managers and people in the first place. This reinforces earlier comments about employing the right people; identifying and engaging investment managers with an orientation towards the long term; working on the aspects of culture, governance, trust, commitment and collaboration; and putting in place specific incentive structures that may draw on the suggestions provided.

The Future Fund structures its performance related payments to reflect both portfolio performance over three year periods, and assessment against role-specific goals and objectives. It applies this to all staff members as part of its focus on securing alignment across the organization.

The total portfolio performance component combines both an absolute return element, which measures the success of the investment strategy in achieving the Mandate's baseline target of CPI+4.5-5.5%; and a relative return element, which measures the skill of implementing the investment strategy against the policy portfolio implied by the Target Asset Allocation set by the Board of Guardians. The absolute return component is weighted more heavily in this framework, to ensure that the management team is incentivised to maximize real returns, rather than simply outperform the policy portfolio.

Incorporating assessment against role-specific goals and objectives means that, in addition to providing a direct link to the Future Fund's performance, variable remuneration can reward important contributions to qualitative factors that contribute to investment performance. In the Future Fund's case this includes, for example, the extent to which employees collaborate across the portfolio, constructively challenge accepted ideas and orthodoxies; or identify and establish productive relationships with other institutions. The inclusion of these qualitative factors also reflects a more fundamental element of the Future Fund's approach to recruitment. The organization seeks to hire people whose personal 'compass' is aligned toward achieving the Fund's long-term objective, rather than simply generating shorter-term returns. Put another way, the remuneration structure is designed to combine a focus on the portfolio's financial performance, with consideration of the quality and sustainability of how that performance is achieved.

While use of a three year period for total portfolio performance and an annual assessment against role-specific objectives does not align perfectly to the Fund's long-term horizon, it nonetheless provides some extension to the incentive horizon, while recognizing the realities of employment arrangements and the capacity for people to move to other organizations.

(b) Subjective Component

Including a subjective component in performance evaluation, and hence remuneration, can be particularly helpful for reinforcing incentives to pursue long-term investing. In essence, it can be used to encourage and reward behaviour that is deemed consistent with pursuit of a long-term approach. Subjective components provide a mechanism to deal with the difficulty of measuring the success of a long-term investment with confidence until sufficient time has passed. Consistent with these notions, Marathon (2007) and Ambachtsheer et al. (2013) recommend placing greater emphasis on qualitative reporting in order to deflect attention away from quantitative factors, as well as to engender greater transparency and trust in decision-making. WEF (2012) warns against relying solely on measures of return and risk with long-term investments, especially when unlisted assets are involved. As mentioned in the above hold-out box, a material component of performance-related remuneration at the Future Fund is informed by an assessment of how the employee has performed with reference to their individual responsibilities and behaviour.

(c) Measuring Performance

A range of ideas for how performance should be measured have been put forward in the literature. These are summarized in point (vi) of Appendix A. Many commentators call for the interval over which performance is evaluated to be extended, perhaps to as long as 10 years. While extending the performance measurement interval can play a role, it may not be appropriate in all circumstances. We aim to present more flexible solutions. We offer three suggestions.

- *De-emphasize relative performance* – We endorse the recommendation to de-emphasize relative performance measures, such as returns versus benchmark indices or peers, e.g. see Vaughan (1992); Denison (2010). Focusing on relative performance encourages short-term behaviour and herding, if it becomes the primary benchmark by which success is judged on an ongoing basis, and thus feeds into aspects such as remuneration, career prospects and fund inflows. Unfortunately, relative performance can sometimes be difficult to ignore altogether. People may be drawn to benchmark themselves against others due to competitive instincts, status concerns, or curiosity about the effectiveness of other approaches. Relative performance measures might also be appropriate under some individual asset class mandates, to the extent that the manager is employed to deliver asset class beta plus hopefully some alpha. In these instances, the aim is to ensure that short-term relative performance concerns do not sidetrack managers from focusing on the long term. This might be done by evaluating relative performance over longer periods; affording relative performance measures a low weighting; and supplementing evaluations with ongoing engagement with the manager. Nevertheless, it is far preferable to adopt a singular focus on long-term objectives where feasible. The appropriate long-term performance benchmark will depend on the situation,⁷ but in many cases will be based around absolute real returns.⁸
- *Measure performance in terms of progress towards ultimate goals* – The previous discussion of framing and presentation (see part (e) of Section 4(ii)) suggested that the organization at large should focus on whether outcomes are on track towards achieving long-term objectives, rather than period-by-period returns. The focus on progression towards long-term targets should be reinforced in the process of performance evaluation. Some points on the manner in which the Future Fund evaluates performance in light of its 10-year real return target can be found in the hold-out box over.

⁷ It might be a worthwhile exercise to discuss with managers how they believe their performance is best assessed, under the presumption of a long-term horizon.

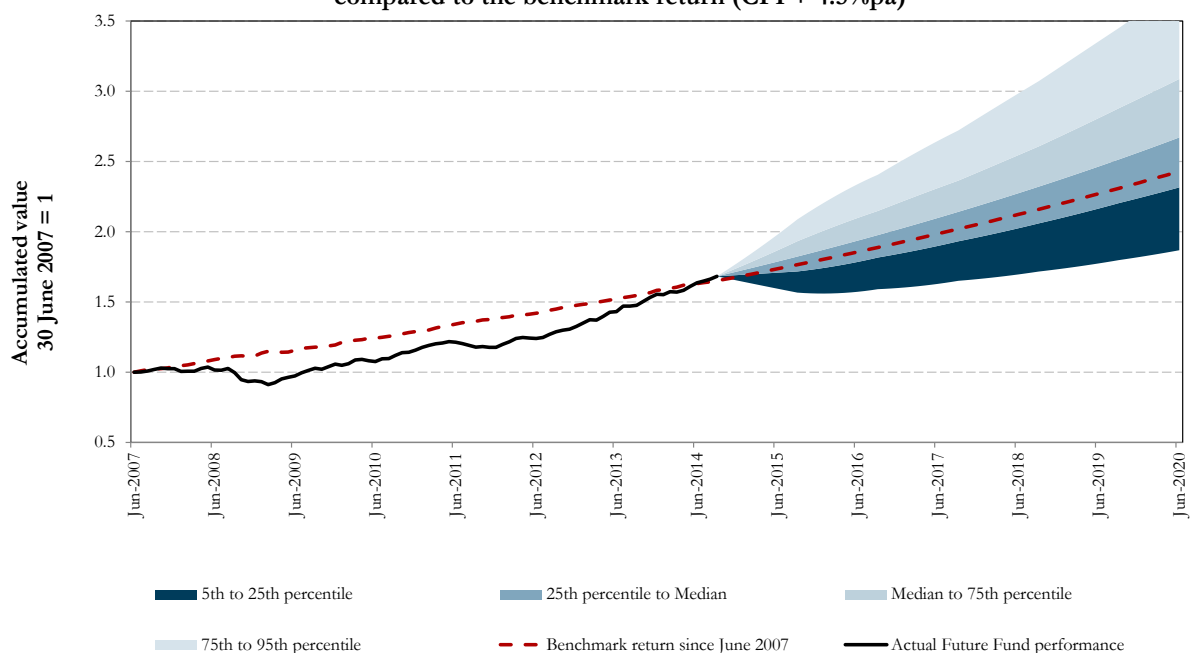
⁸ Evaluating the skill and contribution of an investment manager can be problematic under absolute return benchmarks, to the extent that outcomes may be dominated by factors over which the manager could have limited control – such as the overall performance of markets, and the scope of available opportunities.

The Future Fund and Progression Towards Long-Term Objectives

The philosophy of the Future Fund is primarily focussed on the ex-ante pursuit of an absolute return stream that is accretive to the achievement of its Investment Mandate. The Board and management also monitor how the Future Fund is progressing toward its long-term real return objective. Given the wide range of potential outcomes, the likelihood of fulfilling this objective over the period from inception to 2020 is also considered. The chart below provides a summary of this analysis as at 30 September 2014.

It is noted that the Board of Guardians of the Future Fund believes that peer group risk should not be used to shape strategy; and that the Future Fund Investment Mandate provides an unusually long-term investment horizon, which presents a competitive opportunity to add value.

Fan chart of the actual and forecast accumulated Future Fund return compared to the benchmark return (CPI + 4.5%pa)



- Recast performance attribution* – The basics for this idea are presented in Appendix B, which sets out an approach to evaluating performance where realized returns are broken down into three components: (1) the long-term expected return (discount rate) on which the investment was initially based; (2) changes in discount rates; and (3) changes in expected cash flows. The approach presented in Appendix B is designed to focus performance evaluation around the components that reflect the fundamental drivers of long-term investing that are emphasized in Paper 1 – long-term cash flows and expected returns – while abstracting from the impact of changes in discount rates on short-term price fluctuations. The latter is de-emphasized on the basis that changes in discount rates largely impact the path by which returns are realized, rather than the effective return that is ultimately achieved over the long run. The idea develops a suggestion made by WEF (2011). The Future Fund uses an extended version of the basic approach, which is described in the hold-out box over the page. The Future Fund approach also breaks down changes in (real) discount rates into real rates and risk premia; allows for currency effects; and contains a residual capturing other elements, such as alpha and return effects related to other idiosyncratic risks.

The Future Fund – Return Attribution

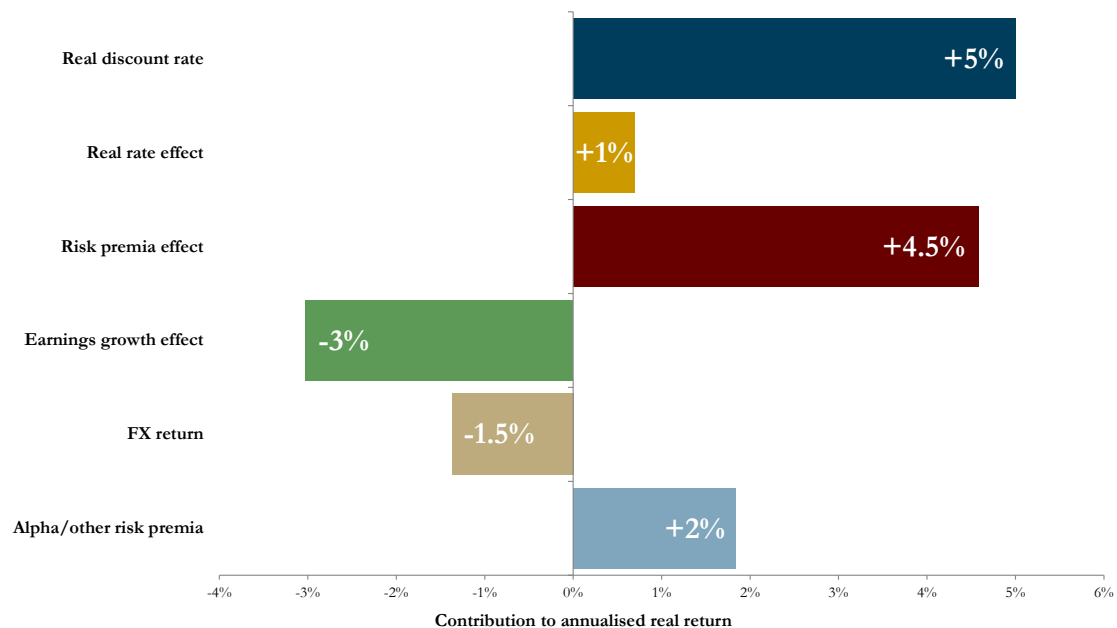
The Future Fund views the linkages between the macro-economy and markets through a lens that emphasizes the top-down evaluation of discounted cash-flows. This process takes into consideration how economic variables and broad market risk premia might evolve relative to expectations in the future and, based on an assessment of what is priced into markets at any given time, examines the potential impact on discount rates and cash-flow growth for investments held (or under consideration).

While this approach is forward-looking by design, The Future Fund has also developed an ex-post quantitative return attribution framework to examine the core drivers of real returns. This framework utilises return data to distinguish between:

- (1) Impact of ‘time zero’ real discount rates, i.e. expected real return at the start of the period;
- (2) Changes in the underlying constituents of real discount rates: real interest rates, and systematic risk premia;
- (3) Changes in earnings (i.e. cash-flows);
- (4) Influence of currency; and
- (5) Residual that captures alpha, and other idiosyncratic risk premia.

The Future Fund finds this information very useful for gauging the efficacy of its investment strategy and its implementation. The chart below provides a summary of this analysis as at 30 April 2014.

Attribution of total Future Fund annualised real return from 1 July 2009 to 30 April 2014



(d) Calculation of Performance Remuneration (Bonuses)

Consistent with calls for lengthening of the time frame over which performance is evaluated, many commentators also suggest only paying performance bonuses on results that are sustained over the long term. Some recommend the use of ratcheting effects with ceilings or caps, risk-controls and high water marks, e.g. Marathon (2007). While endorsing the general thrust of these recommendations, we see hurdles in implementing them. Deferring the award of bonuses until long-term performance can be measured may not be appropriate in all circumstances, for reasons discussed earlier. Further, basing bonuses on long-term performance with ratchets can have other unintended implications when a manager is lagging. For instance, it can encourage taking on more risk in order to catch up. Alternatively, lagging well behind in the performance required for a bonus can undermine incentives for effort, while creating an inducement to leave and set up shop elsewhere in order to reset the counter.

Nevertheless, the concept of paying bonuses conditional on performance being sustained for the long term is a worthy objective. The type of solutions we find of interest involve accruing bonuses on shorter-term performance, but only allowing them to vest conditionally over the long term – possibly even carrying into post-employment. This idea has been raised by a number of commentators, including: Hewitt (2004); Rappaport (2005); CFA (2006); Atherton (2007b); Waitzer (2009); G30 (2013); and Barton and Wiseman (2014). Indeed, G30 suggests vesting over 10 years, or even at retirement. Some advocate that bonuses be placed ‘at risk’ through claw-back provisions and the like, e.g. Hewitt (2004); Rappaport (2005); Waitzer (2009); WEF (2011, 2012). The WEF (2011) idea of investing bonuses in a ‘parallel portfolio’ that shadows the major fund is another way of placing awards at risk. These types of approach have the advantage that they reward only long-term performance, while still accommodating the industry norm of regular bonus awards. Deferred vesting also encourages the manager to remain with the organization, which helps cement commitment and provides additional incentive to adopt a long-term view.

We put forward a suggestion for the treatment of bonuses in the break-out box below. It is based around paying bonuses in the form of ‘performance bonds’, which pay out only if the gains underpinning the bonus are sustained over an extended period. This suggestion is a variation on an idea of the Squam Lake Group (2013) for structuring remuneration at systemically important financial institutions (SIFIs), whereby a portion of bonus remuneration is paid in the form a bond that vests after a period of time but is forfeited if the capital of the SIFI falls below a certain level. Our suggestion represents a translation of this idea into an investment management context. (Note: The performance bond idea is similar to placing bonuses in escrow, with claw-back provisions.)

Idea: Performance Bonds

This idea of the Squam Lake Group (2013) of linking bonuses to capital for systemically important financial institutions (SIFIs) could be translated into a fund management context by converting yearly performance bonuses into a ‘performance bond’. These bonds would vest over time (say 5 years), and would be forfeited if the fund unit price at the time of vesting falls below a reference point that relates back to the unit price at the time the bonus was awarded. The reference unit price might be escalated at some hurdle rate of return, such as the risk free rate, the risk-free rate plus a premium, or the return on a benchmark (i.e. relative return versus benchmark), as appropriate. Performance bonds would be held in trust and invested in a risk-free security.

The effect would be to pay a stream of bonuses which depend on (5-year) rolling performance, but are forfeited if the gains on which bonuses were accrued are subsequently handed back. This effectively creates a barrier put option written by the fund manager, equivalent to the value of the bonus.

The bonds should extend beyond any employment contract. This would create an incentive for the fund manager to only pursue gains that are considered sustainable; to retain their position with their fund in order to make sure that any bonuses are secured; and, if they do have to leave the organization, to ensure that the fund is passed into good hands.

A related alternative is to invest bonuses in a ‘parallel portfolio’, as suggested in WEF (2011). In this case the fund manager remains fully exposed to the performance of the portfolio until bonuses vest. The issue with this idea is that some bonus would still be paid even if performance is not sustained, albeit at a diminished level. For instance, say a fund manager takes a position that earns a 25% return that is subsequently wiped out by a 20% decline. The fund manager would still retain 80% of their bonus under a parallel portfolio; whereas the entire bonus would be forfeited under performance bonds. The parallel portfolio idea thus may not be as effective in circumventing the incentives to pursue short-term returns. WEF’s idea is like co-investment, whereas performance bonds, as well as the Squam Lake Group idea, are structured as options.

There are some problems with performance bonds. The fact that the fund manager remains exposed to a portfolio that they do not control after they have left cuts against the concept that people should be evaluated and remunerated for outcomes over which they have control. The option-like nature of the pay-offs will also create an incentive to de-risk (i.e. reduce volatility) after a big win in order to secure the bonus. This may not necessarily be a bad thing given the way markets can operate; but may not accord with the preferences of the end-investor. Nevertheless, these problems seem relatively minor relative to the benefit in terms of incentivizing fund managers to care about generating gains that are sustainable over the long term.

(iii) Establishing a Long-Term Investment Approach

It is difficult to be prescriptive about what entails a long-term investment approach. There are many contrasting types of investment philosophies and processes that might be considered ‘long term’. For example, both value and growth investment styles can be applied in a fashion that amounts to a long-term approach. Nonetheless, the crucial element is adopting an approach that looks beyond the short term towards the drivers of long-term outcomes.

Paper 1 discusses how a long-term investment approach will tend to have an investment philosophy, process and procedures that are directed primarily towards long-term value and/or expected return, rather than near-term price changes. Further, the information employed should be aimed towards identifying the drivers of long-term value. Taking into consideration the potential future evolution of expected returns for the purposes of implementing a dynamic strategy may also be consistent with a long-term approach. In this case, the distinguishing element would be the attempt to identify the optimal path towards meeting long-term objectives, as opposed to trying to pick the next market move (see discussion in Paper 1 and Paper 2). In any event, the key element is that a long-term perspective is ingrained within any analysis that is undertaken; items that are discussed by the investment team; and ultimately the investment signals that are used to identify trades. In other words, long-term approaches are distinguished by the perspective and horizon adopted.

Another distinguishing feature is how *risk* is viewed. The main risk for long-term investors is failure to achieve long-term objectives, i.e. *shortfall versus objectives*. This can take on a particular character under long-term investing. Events that lead to a *permanent loss of value* are likely to be of prime concern. This will often occur where an investment is made based on faulty estimates of long-term cash flows or expected returns: an aspect that was discussed in Paper 2 as a key pitfall for long-term investors to avoid. Poor estimates can arise for reasons ranging from analytical error, to failure to anticipate long-term forces. On the other hand, short-term fluctuations that are subsequently reversed – perhaps associated with changes in discount rates that ‘reorder’ the sequence by which long-term returns are accrued – are not primary risks for long-term investors. Such short-term volatility is typically the prime concern of short-term investors.

A basic example may provide some intuition about what constitutes a long-term investment approach. Consider a long-term equity market investor who takes positions solely based on the difference between share price and discounted cash flow (DCF) valuations based on projected free cash flows through to perpetuity. This would amount to a long-term approach to the extent that all analysis and internal discussion is directed towards the estimates of long-term cash flows. Further, any news would be discussed only in terms of the implications for future cash flows. Little heed would be paid to the immediate economic outlook, how results compare with consensus, what other investors are doing, and so on – except to the extent that they contain information relevant to the long-term forecasts. All other information would be considered short-term noise that should be filtered out. Risk in this context would relate to mis-estimating long-term cash flows. This is because any unanticipated decline in long-term cash flows could be associated with a sustained share price decline, and may amount to a permanent loss of value that may never be recovered.⁹

Figure 4 provides more substance by contrasting some of the likely points of focus under long-term versus short-term investing approaches. Not all items listed would always feature. Nevertheless, they may give some sense of the type of characteristics that a long-term investment approach might concentrate on, as well as those it should probably ignore.

⁹ The basic approach to performance evaluation set out in Appendix B suggests an investment process that closely aligns with the discussion in this paragraph.

Figure 4: Long-Term vs. Short Term Investment Approaches – Points of Focus

| <i>Long-term investors will tend to focus on:</i> | <i>Short-term investors will tend to focus on:</i> |
|---|---|
| <ul style="list-style-type: none"> • Long-term cash flows and returns | <ul style="list-style-type: none"> • Immediate price changes |
| <ul style="list-style-type: none"> • Risk premiums that accrue over long periods | <ul style="list-style-type: none"> • Actions of other investors |
| <ul style="list-style-type: none"> • Valuation, especially absolute value and NPV | <ul style="list-style-type: none"> • Momentum |
| <ul style="list-style-type: none"> • Mean reversion potential | <ul style="list-style-type: none"> • Catalysts for price adjustment |
| <ul style="list-style-type: none"> • Evidence of unsustainable market extremes | <ul style="list-style-type: none"> • News flow, and likely market reaction |
| <ul style="list-style-type: none"> • Long-term themes | <ul style="list-style-type: none"> • Current themes: what is the market trading on? |
| <ul style="list-style-type: none"> • Optimal path to future value (dynamic strategies) | <ul style="list-style-type: none"> • The next trade |
| <ul style="list-style-type: none"> • Whether to ‘sit out’ of the markets, i.e. cash up | <ul style="list-style-type: none"> • Delivering the best possible performance over the short-term (often in relative terms) |
| <ul style="list-style-type: none"> • Future opportunities: attractive investments; value-accretive use of cash flow; real options | <ul style="list-style-type: none"> • Current economic and market trends, e.g. state of the economic cycle; central bank actions |
| <ul style="list-style-type: none"> • Long-term cash flow generation potential, including: profitability / return on capital; competitive advantage; market structure; capital intensity; scalability; network effects; earnings announcements interpreted in terms of implications for long-term earning potential | <ul style="list-style-type: none"> • Flow of immediate results – how earnings might compare with market expectations; and the likely market reaction |
| <ul style="list-style-type: none"> • Stewardship <ul style="list-style-type: none"> - management capability and integrity - governance and alignment - universal ownership | <ul style="list-style-type: none"> • Stop losses, e.g. cutting losing positions; exercise the ‘Wall Street walk’ for wayward companies |
| <ul style="list-style-type: none"> • Demand/supply mismatch as a source of mispricing and hence opportunity | <ul style="list-style-type: none"> • Demand/supply mismatch as a motivator for near-term price movements |
| <ul style="list-style-type: none"> • Risk viewed as: <ul style="list-style-type: none"> - failure to achieve long-term objectives (shortfall) - permanent loss of value - mis-estimating long-term value / returns | <ul style="list-style-type: none"> • Risk viewed as: <ul style="list-style-type: none"> - volatility over shorter horizons - gains not occurring quickly (limits to arbitrage) - illiquidity: being forced to sell at the wrong time - underperformance vs. benchmark or peers (aligned with, but not inherently, short term) |

As an example of the approach taken by a long-term investor, a detailed account of the investment process employed by the Future Fund appears in Appendix C. A few comments are offered below to provide context for readers intending to read this appendix.

The Board of Guardians believes that the Future Fund Investment Mandate provides an unusually long term investment horizon, and that this presents a competitive opportunity to add value. It also believes that the single measure that embodies the goal of the Future Fund relates to achieving the mandated returns over rolling 10 year periods. In this context, the primary risk faced by the Future Fund is failing to meet this objective. As a consequence, the Board of Guardians believes that high quality governance of the investment process is critical to success. The likelihood of meeting investment goals is directly related to the time, expertise and organizational effectiveness applied to decisions by the Board and management.

(iv) Harboursing Discretion over Trading

The key to harbouring discretion over trading is to avoid placing investment managers in the position where they are forced to conduct trades they would not otherwise undertake. As discussed at length in Paper 1, the nature of funding and liabilities is integral. The need to liquidate due to withdrawal of funding is the most likely way in which discretion over trading may be lost; although directions or pressure to invest funds in a certain manner may also be relevant.

Steps that might be taken by an investment organization to avoid forcing managers to trade in response to funding shifts are the focal point of the discussion here. However, there is also a link between discretion over trading and some of the organizational settings that were discussed in Section 4(i). For instance, discretion over trading can be lost through withdrawal of support from the broader organization or its stakeholders. This may come in a number of forms, including covert pressure to take action to turn around performance, pointed directives, or even replacement of staff who fail to ‘behave as required’. Hence, potential impacts on discretion over trading need to be considered when designing the organization. The general aim is to insulate those making the investment decisions from any external pressures to trade, leaving them unfettered to focus on delivering long-term outcomes. The discussion on commitment to the manager is relevant here.

The nature of funding and liabilities will make some institutional investors more natural candidates for long-term investing than others. The ultimate situation would be for the funds to be committed for a very long period. Such situations are rare. Many *endowment and foundations* fit the bill in some respects. Nevertheless, expenditure and other commitments may limit the amount of discretion under some circumstances. The difficulties that the Harvard endowment fund encountered during 2008 (see Ang, 2011) is an example of how a supposedly long-term investor can run into a pressing need to deal with short-term cash flow problems. *Sovereign wealth funds* are another investor class that may be well suited to long-term investing, providing that the funds are committed. For example, the Future Fund is protected by legislation from withdrawals until 2020.¹⁰ Its New Zealand counterpart, the NZ Super Fund, is not expected to encounter withdrawals until 2029. *Defined benefit pension funds* can be potential candidates for long-term investing, as they tend to have security of funding plus relatively predictable cash flow needs to the extent that future liabilities are forecastable. The main issue faced by many defined benefit funds is pressure to respond to estimated funding deficits. Similar comments may be made with respect to *life insurance* and their solvency requirements.

At the other extreme, some institutional investors are inherently poorly suited to long-term investing due to the nature of their funding and liabilities. For instance, some investment vehicles are specifically designed and purchased to provide liquidity. Examples include *open-ended mutual funds*, which are bought by investors who value and need the liquidity they offer. Pursuit of long-term investing is more likely to fail in such situations.

Hence the need, scope and appropriate methods for harbouring discretion over trading will very much depend on the circumstances. Our main interest is institutional investors that sit in the middle ground, where investments are being made with a view towards long-term outcomes, yet funding may not be locked in. *Defined contribution pension funds* are most notable. Here the assets are typically being invested for a long-term purpose, yet providers can be required to provide portability to members in many jurisdictions. Below are four actions that should assist in harbouring discretion over trading by making funds ‘stickier’. Our suggestions are roughly arranged in descending order of potency, and broadly break down into two groups. The first two ideas – using closed-end fund structures and providing facilities for investors to opt-out of their right to redeem – might be considered ‘strong’ actions, as they guarantee security of funding up-front. The other two actions – establishing the capacity to defer redemptions (e.g. gates) and imposing switching costs – are weak, in the sense that they provide limited security of funding and can involve some problematic elements. Any solutions that lock investors into funds should be offered only to those who are sufficiently informed to appreciate the implications.

¹⁰ The Future Fund Act (2006) prohibits withdrawal from the Fund before 2020 unless its balance exceeds the target asset level as specified under the Act in the interim.

(a) *Use closed-end fund structures*

Closed-end funds are the most straightforward way to guarantee security of funding for the manager and hence harbour discretion over trading, albeit at the cost of enhanced agency risk (see Stein, 2005, Cherkes, 2012, and the discussion in Section 2). Furthermore, if a market is provided in a closed-end fund, then liquidity is made available to end-investors.

Closed-end fund structures may play a role in fostering long-term investment via two avenues. First is a structure under which some institutional investors might offer their own products. Many institutional investors could at least consider if their funds are suitable to be offered in closed-end form. For instance, a traditional balanced fund could conceptually be unitized and packaged as a closed-end fund under certain situations, possibly coupled with exchange listing and even controlled mechanisms for creation or retirement of units as investment demand fluctuates. This approach might be suitable for products that contain large exposures to unlisted assets, and are marketed to investors who desire such exposure. Some equity fund managers offer both open-end and closed-end products in parallel; and the same might be done in other forums, such as for pension funds or certain unlisted assets. The closed-end version could be sold on the basis of having greater latitude to pursue a long-term approach, including enhanced scope for exposure to illiquid and/or unlisted assets.

The second avenue is to use closed-end funds as a vehicle when outsourcing to external managers. Closed-end funds are already widely used in the unlisted asset space, with private equity, REITs and some property syndicates being notable examples. Institutional investors could establish a preference for closed-end over open-end funds on the basis that it fosters a long-term approach by the manager through offering discretion over trading and demonstrating commitment. (An alternative approach is direct engagement with external managers, which we discussed under Section 4(i).)

(b) *Redemption opt-outs*

Evidence exists that investors may be openly willing to enter into commitment arrangements if they are made available, see Thaler and Benartzi (2004); Sourdin (2008). Hence an approach might be to offer a product that provides investors with the capacity to commit by permitting them to opt-out of their right to redeem on a voluntary basis. Redemption opt-out products might even exist alongside comparable liquid versions which provide redemption facilities for those who need it, thus presenting investors with a choice. One incentive to adopt the redemption opt-out product could be the promise of access to a broader range of investments and strategies, including greater exposure to illiquid assets. If this is considered too nebulous and not well understood by many investors, more mundane but tangible rewards might be considered, such as lower fees, perhaps tied to the absence of costs associated with providing redemption facilities. An idea that accords with that being discussed here was put forward by Industry Super Australia (see ISA, 2014) in a submission to Australia's Financial System Inquiry (FSI) of 2014.

(c) *Capacity to defer redemption*

Another solution is to establish the capacity to defer redemption under certain conditions, with the explicit intention of protecting the fund from having to sell assets in response to unexpected loss of funding. This mechanism is well-established in the unlisted asset arena, where it comes in the form of extended redemption notices, set redemption periods, and the ability to impose a 'gate' under more extreme circumstances. We note that the Association of Superannuation Funds of Australia (see ASFA, 2014) recommended that consideration be given to lengthening the redemption terms for Australian superannuation funds in a submission to the FSI. The FSI also called for more information on easing the portability rules in its Interim Report.

Extending redemption represents only a partial solution to providing security of funding, and entails a number of problems. While capacity to defer redemptions may help manage around the worst effects of needing to liquidate assets, it does not remove the requirement for eventual liquidation, which can operate as a constant overhang. Gates can be particularly problematic. When utilized, they can impose unexpected costs or hardship on investors. Furthermore, they may have negative connotations for the investment

organization involved. Hence gating is typically considered an undesirable event to be avoided. For these reasons, possessing a capacity to defer redemption may not remove all the wariness over investing in illiquid assets or other long-term investments. While it may assist an institutional investor in pursuing long-term investment, it is weaker than approaches where funding is locked in.

(d) *Raise switching costs*

The academic literature presents evidence that switching costs may assist in increasing commitment and discouraging unnecessary churning by investors (see references detailed under point (x) in Appendix A). This is simple economics. If it costs to switch, less switching is to be expected. Also, investors that do not expect to switch may self-select into funds with high switching costs. In addition to the expense that it imposes on investors, another problem with raising switching costs is that they do not assure ongoing security of funding for the institution. It is hence a weak and, at best, partial solution.

One mechanism might be to impose switching fees within pooled vehicles that comprise two components: a cost-recovery charge related to the expense incurred by the fund provider to undertake the transaction, plus an excess charge that reflects the cost imposed by switching activity on other investors within the pool. The second component would be paid into the pool to be shared. The effect is that those redeeming units would not only incur the direct costs imposed on the fund as a consequence of the transaction, but they would also be effectively selling at a discount to their co-investors. The latter may seem like a wealth transfer; but this need not be the case to the extent that redemption activity can impose externalities on other investors. The literature demonstrates that liquidity-driven transactions can reduce returns for the remaining investors in pooled vehicles, as a consequence of market impact; see Edelen (1999) and Johnson (2004), amongst others. Further, redemption activity also imposes an opportunity cost to the extent that it inhibits long-term investing and investment in illiquid assets. Viewed in this way, an 'excess' switching charge might be considered a mechanism by which those who withdraw funding more fully bear the costs of the externalities they create.

5. Conclusion

We have considered how an investment organization might be designed to successfully pursue long-term investing. We put forward a variety of recommendations and suggestions. These are presented as actions that address four building blocks: orienting the organization, setting the right incentives, establishing a long-term investment approach, and harbouring discretion over trading. The discussion has been illuminated by insights and examples drawn from the Future Fund.

A number of key themes arise. Addressing the agency issues associated with multi-layered investment organizations is central. The aim is to ensure alignment. All involved should remain focused on long-term outcomes; and success should be appraised in these terms. It is critical that the organization is designed to foster this alignment, which in turn is reinforced in the processes by which outcomes are evaluated and rewarded. We highlight the importance of commitment; both in terms of funding, and the latitude provided to investment managers to follow their strategies through. Inevitably commitment entails costs, including the forfeiting of liquidity and increased exposure to agency risk, and henceforth trade-offs. We note the need to avoid making judgments based on the flow of short-term results, and how an element of trust is required, in order to give fund managers the encouragement and confidence to be long-term investors. Another key theme is the requirement for an investment approach that focuses on the long term. The investment philosophy, process and information used should all look beyond near-term market prospects, and address what will maximize long-term outcomes. In sum, long-term investing is about perspective and horizon: the sights should be squarely directed towards the long run.

APPENDICES

Appendix A: Ideas from the Literature

A plethora of ideas have been put forward for encouraging a lengthening of investment horizons in financial markets. This Appendix collects and summarizes these ideas under the 16 categories listed in Figure A1. This literature arises from public policy, industry and academic circles. Figure A1 identifies whether the idea in question relates to one of our building blocks, or to public policy. Our aim in this Appendix is to create a record, including setting out any related debate where appropriate. Needless to say, most commentators put forward a range of ideas that are often viewed as self-reinforcing. There is no ‘silver bullet’.

Figure A1: Sixteen Ideas for Extending Investment Horizons

| <i>Idea:</i> | <i>Primarily Related to:</i> |
|---|------------------------------|
| (i) Engineer the organization towards long-term investing | Organization / Approach |
| (ii) Orient investment mandates towards the long term | Organization / Approach |
| (iii) Improve manager transparency and engagement with investors | Organization |
| (iv) Apply ideas from behavioural and organizational change theory | Organization |
| (v) Employ the right people | Organization |
| (vi) Alter how performance is evaluated | Organization / Incentives |
| (vii) Align remuneration structures | Incentives |
| (viii) Use co-investment | Incentives |
| (ix) Exploit commitment mechanisms | Discretion Over Trading |
| (x) Raise switching costs | Discretion Over Trading |
| (xi) Increase information on long-term value drivers | Investment Approach |
| (xii) Issue industry practice guidance | Policy |
| (xiii) Re-jig the regulation and policy framework | Policy |
| (xiv) Education | Policy |
| (xv) Reward long-term holders | Incentives / Policy |
| (xvi) Impose penalties for excess trading | Policy |

(i) Engineer the Organization Towards Long-Term Investing

A core recommendation of many commentators is that investment management organizations should concentrate efforts on creating an environment to enable and support long-term investing. This entails orienting the whole organization towards long-term investing, including its mission, culture, governance, investment philosophy, investment processes, information sets and reward structures. Many commentators consider a capacity for contrarian investing to be an important component. Commentary along these lines is listed below.

- Gray (2006) says that *long-term thinking* needs to be embedded into the organization via its *mission and purpose*. He recommends only discussing long-term trend performance, and filtering out *information* to focus on that which is relevant to the longer term. Also, the *bias towards action should be removed* by ensuring that committees have the option to do nothing.
- Marathon (2007) specifically focuses on *governance*. The group recommends articulating *investment beliefs*, and setting *clear objectives with horizon over a full cycle*, e.g. 5-7 years. Atherton (2007c) also recommends that funds should set *guiding principles*.
- Another theme is the need to build organizational *resolve to 'go against the crowd'*. This is suggested by Vaughan (1992); while Ang and Kjaer (2011) recommend that contrarian behaviour be institutionalized.
- Denison (2010) proposes that *governance be configured* to avoid focusing on short-term performance and peer comparisons; to build organizational understanding of long horizon valuations and risk; and to avoid short tenures for trustees or management. He recommends that the investment process should incorporate *long horizon valuation factors*.
- Much of the discussion in WEF (2011) focuses on the importance of *institutional design*, including the role of investment *beliefs*, institutional *risk appetite*, and various aspects of the *decision-making structure*. WEF (2011) also suggests that *internal management* of investments may assist with long-term investing, by improving alignment relative to what can be achieved using external managers.
- In a follow-up report, WEF (2012) considers *governance* in the context of long-term investing, and its links with *measurement* of value, performance and risk. Emphasis is placed on organizational *commitment* to a long-term investment program, supported by appropriate measurement that helps *protect the organization from short-term pressures* and is linked to remuneration. Other notable points include the central role for a *professional board*; the merit of *stable teams*; the value of a *critical perspective*; and the importance of *culture* and placing *trust* in those making investment decisions.
- Kay (2012) asserts that a *focus on the 'right' information* is needed. He suggests that the aim is to 'reduce the value discovery horizon', while increasing the performance horizon.
- Jones (2012) argues for *institutionalizing counter-cyclical behaviour* through decision and risk-management processes in the following ways:
 - managing communication and transparency, including anticipating loss periods (i.e. occasional draw-downs along the way) and reporting results in a long-term perspective;
 - using valuation-based rebalancing rules (in order to capture mean reversion);
 - building processes that distinguish long-term valuation or fundamental risks from short-term volatility; and,
 - being willing to hold cash when appropriate.
- Ambachtsheer (2014) maintains that institutions should act as *fiduciaries* with long horizons. He alludes to the importance of having a *clear stance* on investment goals and how they will be achieved; *autonomy* to act; and having a quality *board and management*. It is also important to *balance conviction and humility*.

- Barton and Wiseman (2014) emphasize the need to define long-term objectives including risk appetite; and that governance should be structured to support a long-term approach.
- Some commentators make an *appeal for equity fund managers to change how they operate*. Porter (1992) asks that investment managers place more weight on fundamental earnings power when selecting companies, take larger stakes, and decrease turnover. A panel at a Mercer conference (Reid, 2013) called for managers to modify their investment approach towards the long-term by increasing holding periods and engagement with companies.
- Some commentators state that *leadership* matters for driving change and establishing a long-term culture, see: CFA (2006); Atherton et al. (2007c); Marathon (2007).

(ii) Orient Investment Mandates Towards the Long Term

Many commentators see the investment mandate as a prime vehicle for establishing a principal-agent relationship that is better aligned with long-term investing. For instance, Papaioannou et al. (2013) call for a focus on mandates and associated incentives; while Drew (2009) sees the setting of investment mandates as a potential catalyst for change. PRI (2014) has issued a discussion paper that sets down six principles for long-term investment mandates, along with a request for further input. Listed below are some of the more specific ideas around how mandates might be designed in order to foster adoption of a longer horizon. While these ideas are formulated with external managers in mind, some are also relevant for the delegation of authority from the board to internal management.

- **Conceptual basis** – Both Kay (2012) and Ambachtsheer et al. (2013) suggest the relationship between managers and investors should be made more characteristic of a *partnership*, built on mutual trust and respect. Ang and Kjaer (2011) also mention creating alignment between asset owners and managers, but place more emphasis on *contract design*. Jones (2012) suggests contracts should focus mandates towards minimizing principal-agent *time inconsistencies*.
- **Longer contracts** – Establishing contracts with extended terms is a popular suggestion, see: Hewitt (2004); Atherton et al. (2007b, 2007c); Mercer (2010); Croce (2011); Ambachtsheer and Bauer (2013). Some even raise the idea that contracts should be based on the presumption of continuity, with termination clauses ‘like an employment contract’ (Hewitt, 2004; also Croce, 2011 and Reid, 2013). The aim is to send a signal of intention to maintain a long-lived relationship.
- **Suggestions arising from a competition** – Hewitt, Bacon & Woodrow conducted a competition for designing long-term mandates (see Hewitt, 2004). Notable ideas included adopting a focus on preservation of capital, use of inflation-plus absolute return targets, and writing restraints on turnover into the mandate.
- **Manager selection** – Some commentators direct attention towards the importance of selecting managers with long-term investment philosophies and alignment with the investor (e.g. Marathon, 2007). A recommendation appearing in Hewitt (2004) is to favour managers with a value investing philosophy, and to encourage more concentrated positions (also see Ambachtsheer and Bauer, 2013).

(iii) Improve Manager Transparency and Engagement with Investors

The concept behind increasing transparency and the level of engagement with investors is that it builds a deeper appreciation for decisions, which in turn can deflect attention from aspects that might encourage short-term actions. For instance, findings by researchers such as Lettau (1997), Sirri and Tufano (1998) and Huang et al. (2007) are consistent with the concept that increasing the scope of information provided can dent the propensity of investors to respond to short-term performance and marketing efforts. The basic idea is that managers should *explain* what they are doing and why. Stakeholders (principals) are more likely to stay along for the ride if they understand and buy into the decision processes, with the side-effect being that managers (agents) will feel more secure in pursuing a long-term approach. Observations and recommendations in line with this general theme are relayed below.

- Kay (2012) and Ambachtsheer et al. (2013) suggest that engagement should be based on *relationships*, rather than transactions, with an emphasis on building *trust and respect*. They suggest that greater *transparency* will help engender this trust.
- Almost all managers interviewed by Mercer (2010) suggested the *need to be clear about investment horizon* with investors.
- WEF (2011) calls for *better communication* with stakeholders, including promoting the understanding of long-term investing and stating clear investment beliefs both privately and publically. WEF (2012) signals out the board as potentially playing a role in sheltering the organization from external pressures to react during times of underperformance.
- Aspen Institute (2009) recommends a *higher level of accountability and disclosure* on aspects like remuneration, trading, holdings and proxy voting. This should assist in building relationships and trust. WEF (2011) also argues for greater accountability.
- ISA (2014) suggests that funds should *disclose* their long-term investments, along with *putting forward the case* for how they will benefit investors.

(iv) Apply Ideas from Behavioural and Organizational Change Theory

A number of commentators draw on the behavioural and organizational change literature for ideas on how to develop an environment conducive to long-term investing.

- Irving (2009) discusses how some of the findings from *behavioural research* may assist in organizational design through *building conscious barriers to opportunistic behaviour*. One tactic is to identify where temporal trade-offs are being made; setting clear responsibility for managing these trade-offs; and ensure those responsible are not placed under undue stress. Framing and presentation is another consideration. For instance, query theory suggests that the onus should be placed on justifying ‘why should we be acting now?’, rather than ‘why should we be patient?’ Mental time travel techniques may be useful in some instances, by focusing the organizational vision towards long-term outcomes.
- A number of suggestions arising from the *myopic loss aversion literature* are listed below. Many of the points overlap with suggestions for performance measurement; but also have implications for the design of governance:
 - focus on long-term outcomes when reporting (Benartzi and Thaler, 1999)
 - establish less frequent feedback and less opportunities to take action (Fellner and Sutter, 2009)
 - encourage team decision-making (Sutter, 2007)
 - require decisions to be explained (Vieider, 2011; Pahlke et al., 2012)
- Lavery (1996, 2004) and Marginson and Mcaulay (2008) provide pointers on how organizations can help foster a long-term focus through *building cultures and processes* that achieve the following:
 - establishment of a long-term vision;
 - reduced the degree of ambiguity, which can be achieved through avoiding asking employees to make poorly-defined inter-temporal choices between the short and long term;
 - improved information flow on progress towards long-term outcomes;
 - build trust that outcomes achieved over time will remain the main focus, and that the employee will not have to constantly answer for short-term results;
 - individuals should be encouraged to understand future opportunities, including viewing strategies as options.
- Thaler and Shefrin (1981) suggest that *imposing rules or limiting the range of discretion to make decisions* may help overcome the tendency for lack of self-control to result in near-sighted actions.

- Curran and Chapple (2010) refer to Thaler and Sunstein's '*nudge*' concept as an approach to influencing change, through identifying the values and frames that should be directly addressed.

(v) **Employ the Right People**

Vaughan (1992), Gray (2006) and Ambachtsheer (2014) all recommend employing people that have an affinity with or commitment to long-term investing. WEF (2011) states similar sentiments. WEF (2012) explicitly mentions the benefit of a professional, skilled board and talented well-staffed teams; and that both should ideally remain stable over time, through long tenures. Barton and Wiseman (2014) emphasize the importance of the board, stating that it should be independent, professional, possess relevant expertise, have the time available to be engaged, and be committed to a long-term investment philosophy. Gray (2014) emphasizes the importance of personality type for successful institutional investing.

(vi) **Alter How Performance is Evaluated**

Performance evaluation and remuneration practices are a prime focus across the literature. This section deals with performance evaluation. Remuneration practices are addressed separately in Section (vii).

- ***Lengthening of evaluation periods*** – A widely-offered recommendation is to lengthen the evaluation period, including the period over which performance is either reported and/or reviewed. However, there is an absence of consistency around what is considered to be an appropriate period. A panel at a Mercer conference in Melbourne (see Reid, 2013) recommended changing manager measurement periods from monthly or quarterly to yearly.¹¹ Jones (2012) suggests yearly, if not longer; but emphasizes the importance of placing results in context (see below). G30 (2013) recommend conditioning bonuses on a performance measurement period of 'no less than three years'; Rappaport (2005) suggests evaluation over three-five years; both Atherton et al. (2007b) and Ambachtsheer et al. (2013) suggest five year rolling periods; while WEF (2011, 2012) mentions either three, five, seven, or even ten years periods. ISA (2014) recommends considering reporting performance once every 6 months, while focusing on moving averages over 5-year or even 10-years. They also suggest devising a long-term risk measure with which performance evaluation may be coupled.
- ***Report progress towards long-term goals*** – Another idea is to change the focus when presenting performance towards reporting whether outcomes are on track to achieve long-term goals, rather than period-by-period returns. Performance would thus be reported in the context of some long-term target or broader objectives (Marathon, 2007; Jones, 2012; Kay, 2012), such as capital protection or adequate income in retirement (Chee and Cahill, 2014; Stewart, 2014). These ideas in part aim to address behavioural framing effects.¹²
- ***Emphasize absolute over relative performance*** – Vaughan (1992) and Denison (2010) recommend that absolute performance should be emphasized over relative performance.
- ***Focus on changes in fundamentals rather than prices*** – WEF (2011) puts forward the idea of focusing on whether reported returns link to changes in underlying fundamentals or short-term price fluctuations. This idea very much aligns with our own discussion of the information set as presented in Paper 1 of this series, i.e. how long-term investor should be concerned with the drivers of long-term cash flows and returns, rather than short-term price changes. One variation proposed by WEF (2011) is to focus on concurrent changes in dividends or income. Another variation is to perform what they call 'impairment estimates', aimed at establishing whether the assumptions underpinning the investment remain valid. While WEF admit that such assessments are not clear-cut, they point out that they encourage a balance between promoting a long-term perspective and ensuring ongoing accountability. The three-component attribution appearing in Appendix B extends on these concepts.

¹¹ Voting by conference attendees on a range of ideas revealed this proposal as a clear favourite for "easiest to implement" and second for "most impact", but also the least likely to happen.

¹² Paper 1 discussed the behavioural influences on investment horizon.

- **Greater emphasis on qualitative reporting and evaluation** – Another direction is to deflect attention away from quantitative factors by placing greater emphasis on qualitative reporting, with the aim of engendering more transparency and trust in decision-making and how it links to outcomes (e.g. Marathon, 2007; Ambachtsheer et al., 2013). This relates to the manner in which managers engage with investors, which was discussed under point (iii) above.

(vii) **Align Remuneration Structures**

Many commentators advocate designing incentive structures that are better aligned with the long-term interests of beneficial owners and long-term value creation, see: Hewitt (2004); CFA (2006); Gray (2006); Aspen (2007; Haldane (2010); Croce et al. (2011); Curran and Chapple (2011); WEF (2011, 2012); Kay (2012). A broad range of specific ideas have been put forward on how this might be achieved:

- **Basis of incentive component of remuneration** – Some commentators recommend that bonuses be based purely on long-term performance, e.g. Aspen Institute (2009); Kay (2012). Some suggest that manager fees be structured as a base intended to cover operating costs, plus a performance component that is aligned with the long-term benefit accruing to investors, see: Hewitt (2004); Marathon (2007). The latter further recommends that performance fees should involve ratcheting effects with ceilings or caps, risk-controls, and the use of high water marks.
- **Long-term vesting** – An alternative to basing bonuses on long-term performance involves accruing bonuses based on shorter-term performance, but only allowing them to vest conditionally over the long-term – possibly even carrying over into the post-employment period, see: Hewitt (2004); Rappaport (2005); CFA (2006); Atherton (2007b); Waitzer (2009); G30 (2013); Barton and Wiseman (2014). Indeed, G30 suggests vesting over 10 years, or even at retirement. Some advocate placing bonuses ‘at risk’ through claw-back provisions and the like, e.g. Hewitt (2004); Rappaport (2005); Waitzer (2009); WEF (2011). In addition, WEF (2011) notes that one way of placing bonus payments at risk is to invest them in a ‘parallel portfolio’ that shadows the major fund; while WEF (2012) mentions claw-backs and hold-backs.
- **Interesting variation on long-term vesting of accrued bonuses** – Seven eminent professors called the Squam Lake Group (2013) put forward an idea for structuring remuneration at systemically important financial institutions (SIFIs). This idea might be transferred with modification to an institutional investing context: refer Section 4(ii). Their idea involves paying a portion of bonus remuneration (e.g. 20%) in the form a bond that vests after a period of time (say 5 years), but is forfeited if the capital of the SIFI falls below a certain level.
- **Reward for fund or business success** – Some commentators suggest rewarding managers based on the success of the fund or business, in order to achieve better alignment. One idea is to pay bonuses in the form of a stake in the fund, see: Hewitt (2004); Kay (2012). Some managers interviewed by Mercer (2010) mentioned tying bonuses to organizational success rather than short-term returns, e.g. assets under management or team performance. We note that the notion of rewarding employees based on the success of fund management business may be questioned, as success at this level is not always aligned with the investor nor is it necessarily likely to lead to adopting a long horizon. Specifically, the success of a fund management business is more tied to assets under management, which in turn is only loosely connected to sustained, long-term performance.
- **Non-pecuniary benefits matter also** – WEF (2012) notes that some talented investment managers can be motivated by non-financial rewards such as alignment with the organizational mission, team ethos, shared sense of purpose, and scope for learning.

It is worth observing that **performance bonuses raise their own issues**. Rappaport (2005) queries whether performance fee components may have the consequence of encouraging managers to take on unacceptable risk. We also add that basing bonuses on long-term performance with ratchets can have unintended implications when a manager is lagging. For instance, it can encourage taking on more risk to catch up. Alternatively, being well behind may undermine incentive for effort; while creating an

inducement to leave and set up shop elsewhere, to reset the counter. These types of considerations mean that while altering the structure of performance incentives may help, it is no panacea.

(viii) Use Co-investment

Co-investment is perhaps one of the best ways to ensure alignment between managers and investors. Commentators who appeal for greater use of co-investment include Rappaport (2005), CFA (2006), Atherton et al. (2007b) and Marathon (2007). The WEF (2011) idea of investing bonus payments in a ‘parallel portfolio’ is also a form of co-investment. WEF (2012) points to the benefits of ‘carried interest’ and parallel investment as used in private equity. The finding by Cella et al. (2013) that churn ratios were significantly lower when a founder is present within the fund’s management is suggestive of the concept that managers with skin in the game might be more inclined to adopt a long-term perspective.

(ix) Exploit Commitment Mechanisms

Commitment mechanisms (Strotz, 1956) can have implications for two of the drivers of investment horizon that were discussed in Paper 1. First, by providing self-discipline, commitment can over-ride some of the behavioural tendencies towards short-termism (see Thaler and Shefrin, 1981). Second, commitment can assist with securing funding sources. Henceforth, it may give managers greater discretion over trading, and thus latitude to focus on long-term. The potential role for commitment mechanisms is mentioned by Haldane (2010). The basis on which they might work has been established by a number of commentators:

- ***Locking the funds away*** – Laibson (1997) discusses the role of ‘golden egg’ investments, where the payoffs are delayed and cannot be readily accessed in the interim. He notes that by acting as a commitment mechanism, such investments can overcome a lack of self-control and counter the effects of hyperbolic discounting. Getting investors to commit for the long term has the effect of requiring them to adopt a long-term perspective.
- ***Offering commitment may suffice*** – Evidence exists that investors may be openly willing to enter into commitment arrangements if they are made available. Sourdin (2008) finds that sophisticated households which demonstrate time-inconsistency are more likely to favour illiquid superannuation investments, which aligns with the view that they value commitment. Thaler and Benartzi (2004) report on the pilot for a savings commitment plan, where workers pre-committed to allocate their wage increases towards retirement savings. Many workers opted to take up the scheme, and increased their savings over time as a consequence. Few opted out, despite the fact that they could readily do so.
- ***Form of commitment mechanisms*** – In an institutional investing context, commitment mechanisms can take the form of either *investments* or *fund structures* where the money is locked away for an extended period and cannot be accessed except at significant cost. Sourdin (2008) suggests that *illiquid assets* play this role to some degree, implying that if investors committed to more illiquid assets then horizons would increase by necessity. A more obvious solution is to make greater use of *closed-end structures* (see Stein, 2005; Cherkes, 2012). Another alternative is to place greater *constraints on the ability to redeem funds* in circumstances where immediate liquidity is not germane to the investment being made. For instance, any watering down of member investment choice or portability in the case of superannuation funds might be seen as a commitment mechanism. A solution put forward by ASFA (2014) is to explicitly lengthen redemption terms. Similarly, ISA (2014) suggests establishing investment options that members are unable to redeem for some years, perhaps with some reward attached. ISA envisages that these options could exist alongside liquid accounts which provide redemption facilities for those who need it.

While commitment mechanisms may assist in extending investment horizons, they come at a cost. First, investors would be forfeiting liquidity which is valuable. Second, it may heighten exposure to agency risk. Commitment to the manager – for better or for worse – is required to foster a long-term focus. Any such commitment leaves the investor exposed to the risk of being stuck with a poor manager. This issue was discussed in Section 2, and arises in the literature on open-end versus closed-end funds.

Both Rappaport (2005) and Stein (2005) note the concern with closed-end funds of being locked into a bad manager, with the only recourse being to sell at a steep discount to NTA. This risk may be partly responsible for the closed-end fund discount. Rappaport sees the challenge for closed end funds is to develop incentives that will attract the best managers.

A variation on commitment is to combine it with co-investment. The aim here would be to address the agency risk associated with committing to a manager for the long run. Although this would not guarantee that the manager will be skilled, it at least will help ensure that they are aligned and properly incentivised to generate long-term value for investors. Related fund structures include long-term capital funds or partnerships with managers (Hewitt, 2004; CFA, 2013).

(x) **Raise Switching Costs**

If full commitment is not possible, then imposing switching costs may help to generate 'stickier' funds. Nanda et al. (2000) suggest that skilled managers might charge an exit fee to attract investors with low liquidity needs, and hence limit the expected costs of meeting redemptions. Johnson (2004) suggests considering utilizing loads, redemption fees or transaction fees to help inhibit the switching activities of mutual fund investors. Chordia (1996) also argues that loads facilitate more illiquid holdings and by implication long-term investing, by discouraging redemption and attracting investors that are less likely to redeem in the initial instance. The notion that switching costs can have an influence on fund flows is consistent with the findings of Huang et al. (2007).

(xi) **Increase Information on Long-Term Value Drivers**

Some commentators take the stance that long-term investing may be encouraged through the type of company information that is made available. The assumption is that more long-term information will influence the manner in which investments are evaluated. One idea is to shift the emphasis towards providing more information on long-term value drivers. This idea aligns with the concept raised in Paper 1 that investment horizon is closely related to the information sets employed. While typically discussed in the context of listed companies, the concept is a general one with broader implications that could apply across asset classes. Listed below are some of the comments and recommendations relating to this theme.

- ***Companies should provide more information on strategy and long-term drivers of value*** – This concept is raised by Vaughan (1992), Atherton et al. (2007b, 2007c), Aspen (2007), and Curran and Chapple (2010). It was also raised at a symposium run by the CFA Institute (CFA, 2006). Rappaport (2005) and Atherton et al. (2007b, 2007c) appeal for enhanced disclosure of both non-financial information and earnings drivers.
- ***De-emphasize quarterly earnings*** – Various calls have been made to limit the tendency to concentrate on quarterly earnings reports. Ambachtsheer and Bauer (2013) report that one of the recommendations arising from a pension executive workshop was to shift the focus from quarterly to yearly earnings. Kay (2012) suggests that companies should de-emphasize quarterly reporting, and that quarterly reporting should be optional, rather than mandatory. However, not all commentators agree that removing quarterly reporting requirements would be beneficial. For instance, Porter (1992) and Vaughan (1992) contend that eliminating quarterly reporting will make investors less informed.
- ***Encourage more long-term research from analysts*** – Atherton et al. (2007b, 2007c) propose finding a way to make more long-term research available from company analysts; although they acknowledge that a supportive business model is required to encourage this type of research. Another idea is an enhanced analytic initiative, which involves creating a pool to fund long-term research.
- ***Too much information*** – Kay (2012) discusses the quantum of information in some depth, warning that more data can increase cognitive biases such as optimism bias, anchoring and loss aversion by increasing noise. Kay raises this more as an observation than a recommendation to reduce information flow. Kay's main recommendations are around reduced use of quarterly earnings, plus a plea for more informative, narrative-based reporting. WEF (2012) notes the dangers of making too much

information available, and recommends focusing on a limited number of metrics needed for decisions. On the other hand, care needs to be taken in limiting the information that is made available, as this may result in elimination of relevant information. (It may be better to filter.)

(xii) Issue Industry Practice Guidance

Some commentators recommend making an attempt to overtly shift industry practice guidance towards the long-term. G30 (2013) make the general comment that *industry guidelines* may play a role, while noting that the impact is less certain than changes in public policy. Specific ideas include:

- Establish *codes of conduct* that emphasize stewardship over speculation, see: Atherton et al. (2007b, 2007c); Kay (2012); Reid (2013); Woolley (2013). Ambachtsheer et al. (2012) refer to the introduction of stewardship codes in the UK and Europe during 2012. Japan issued a stewardship code modeled on the UK version in February 2014.
- Ambachtsheer and Bauer (2013) recommend the establishment of a '*model investment mandate*'. PRI (2014) is developing principles for long-term investment mandates.
- Atherton et al. (2007b, 2007c) suggest developing *accreditation schemes*.

(xiii) Re-jig the Regulation and Policy Framework

There are various proposals for changes to the regulatory framework to help foster longer-term investing. In particular, Croce et al. (2011) highlight a number of steps that authorities may take globally:

- Address the bias towards procyclicality and short-term risk management in *solvency and funding regulations* (also suggested by WEF, 2011; G30, 2013; Papaioannou et al., 2013). In addition, WEF (2011) puts forward the idea of perhaps differentiating how the regulations are applied, depending on whether the related liability is short-term or long-term in nature;
- Promote *professionalism and expertise in governance* of institutions;
- *Encourage resource pooling to support scale* in investment management, thus permitting smaller investors to access a wider range of (long-term) investments;
- Provide a 'nudge' by *changing the focus of regulatory investigations* towards aspects like turnover, mandates, fees structures, voting behaviour, and so on;¹³
- *Support investing in long-term assets through policy planning*, making assets available, providing tax incentives, and fostering of risk-transfer opportunities (also suggested by Haldane, 2010).

In *Australia*, calls have emerged to reconsider the requirements related to liquidity and portability, which are viewed as combining with member investment choice to act as a barrier to long-term investing by superannuation funds. Point (ix) observed that ASFA (2014) recommends explicitly lengthening redemption terms; while ISA (2014) calls for permitting investment options that members are unable to redeem for some years. ASFA (2014) also recommends reassessing the ways in which pooled funds are required to manage illiquidity risk, including relaxing liquidity requirements for products invested in by younger investors and setting liquidity limits based on historical assessment of investor redemption behaviour. ISA (2014) further proposes adjusting fair-value accounting methods to accommodate valuing assets in a manner more consistent with long-term value. The underlying notion is that a disconnect can exist between fundamental value and market prices, with the latter potentially being distorted to the extent that they are sentiment-based and volatile. ISA also offers the idea of establishing industry-wide dates at which switching between investment options is permitted to occur.

ISA (2014) further float the related idea of establishing a *public liquidity facility*. ISA argue that the evaluation of liquidity by regulators on a fund or even investment option basis leads to excessive liquid

¹³ Kay (2012) recommends that regulators be less prescriptive and exercise more informed judgment.

asset holdings across the entire system, and acts to restrict the capacity of funds to hold illiquid, long-term assets. They suggest that a public liquidity facility (similar to repo transactions) may help reduce this barrier to long-term investment.

In **Europe**, a number of recent regulatory developments are worth noting that are aimed at influencing investment horizons (see KPMG, 2014):

- Under *UCITS V*, at least 50% of variable remuneration must be paid in shares of the managed UCTIS funds; while 40% (and up to 60% for large amounts) must be deferred for at least three years;
- Under the *Alternative Investment Fund Managers Directive (AIFMD)*, assessment of performance should occur over a number of years as appropriate to the fund lifecycle; and the variable remuneration component is subject to equivalent requirements as those specified under UCITS V;
- The European Commission is examining the establishment of *European Long-Term Investment Funds (ELTIFs)*, a new framework where funds are committed to companies or projects for the long term.

(xiv) **Education**

Some commentators call for education of investors, new industry employees, and the media to assist in developing a long-term focus and culture, see: CFA (2006); Atherton et al. (2007b, 2007c); Croce et al. (2011). Ang and Kjaer (2011) argue that upgrading the investment competence of owners may help foster alignment between asset owners and managers.

(xv) **Reward Long-Term Holders**

Some participants in the debate over the link between investor short-termism and corporate myopia have proposed incentives for investors to retain their shares for longer periods. Ideas include rewarding long-term holders with either loyalty shares, additional dividends and/or voting power, see: Atherton et al. (2007b, 2007c); Aspen Institute (2009); Gore and Blood (2012); Bolton (2013); ISA (2014). Arguments for and against loyalty dividends are discussed by Duruigbo (2011).

(xvi) **Impose Penalties for Excess Trading**

Another idea is to impose some kind of penalty on excess trading. Specific suggestions include:

- *Transaction taxes* (see Mercer, 2010; Reid, 2013);
- *Differential short-term capital gains taxes* (Atherton et al., 2007b; Aspen Institute, 2009.) ISA (2014) extends this idea by suggesting a sliding scale for capital gain tax rates as a function of holding period, as well as potentially applying differential rates to pure financial instruments versus provision of capital for real economic investment;
- *Holding period levies* (Haldane, 2010);
- *Direct trading restrictions and/or penalties* for excess trading (see Hewitt, 2004; Atherton et al., 2007b; Woolley, 2013);
- *Restrict hedge fund trading* (suggested by some managers interviewed by Mercer, 2010);
- *Monitor manager holding periods* (Hewitt, 2004; Croce et al., 2011), which should be supported by reporting of turnover levels (WEF, 2011; ISA, 2014), and might be viewed as an implied penalty.

The efficacy of imposing penalties on trading is disputed. For instance, Porter (1992) suggests that taxing transactions could make markets less efficient. Duruigbo (2011) further discusses the arguments for and against penalties on trading.

Appendix B: NPV-Based Performance Evaluation

This Appendix presents an approach to performance evaluation that disentangles the effect of cash flows and discount rates on realized returns. Although our primary focus is performance attribution, the approach also implies a decision-making structure whereby the projection of long-term cash flows and expected returns is unbundled from asset selection, and each may be performed as separate functions. Under the approach, long-term cash flow projections are formed that lead to estimates of long-term expected returns as the internal rate of return equating future cash flows with price. Expected cash flows and expected returns then form the benchmark against which subsequent returns are attributed into cash flow and discount rate effects. Asset selection is based on comparing estimated expected returns with the required return. Our approach facilitates long-term investing by placing long-term cash flows and expected returns at the centre of both the investment process and subsequent performance evaluation, abstracting from short-term price fluctuations that arise from the impact of discount rate changes.

The attribution approach entails dividing realized return over a period into three components:

- (1) Expected return at the commencement of the period
- (2) Changes in expected returns, or discount rates
- (3) Changes in expectations for future cash flows

After providing some initial background, we formally set out the approach. It is then illustrated with a worked example. This is followed by a closing discussion which sets out the potential links to investment process, highlights some implementation issues; and observes certain problems with the approach.

Background

The foundation of our approach is the proposition of Paper 1 that the basis of long-term investing is prediction of long-term cash flows and expected returns, and not near-term price fluctuations. The approach recognizes that variations in discount rates are an important driver of short-term price fluctuations; yet are less important than long-term cash flow generation when investing over long horizons (see analysis in Paper 1). Our approach aligns with and builds on a recommendation made by WEF (2011), who state: “*Long-term investors looking to evaluate investments in the interim can look for indications of potential future performance that are not based solely on the current market price. For example, some investors track the dividend payments and income of an investment to determine if a change in the market price reflects a more fundamental change in the economic value of the asset.*”

Division of returns into cash flow and discount rate components has been a feature in the asset pricing literature for some time, with Campbell and Shiller (1998) providing a seminal contribution. Two notable examples include Campbell and Vuolteenaho (2004), who re-examine the capital asset pricing model by dividing beta into ‘cash flow beta’ and ‘discount rate beta’; and Hecht and Vuolteenaho (2006), who analyze stock returns by estimating the same three components as listed above. Cochrane (2011), in his Presidential Address to the American Finance Association, acknowledges the value of delineating returns into cash flow and discount rate components, arguing that fluctuations in discount rates may be able to explain many asset pricing relations. Hence explaining realized returns as a consequence of the combination of fluctuations in the numerator (i.e. expected cash flows) and the denominator (i.e. discount rates) in the net present value (NPV) equation has ample precedent and is soundly based in the theory of finance.

In an important and related contribution, Cochrane (2014) develops a model of asset pricing¹⁴ and portfolio construction where assets are represented as a claim over a stream of expected long-term cash

¹⁴ Cochrane assumes preferences over mean and variance (i.e. quadratic utility) in order to derive asset pricing relations in closed form.

flows. Cochrane argues that there is considerable benefit in abstracting from the complications of dynamic portfolio strategy by separating out and focusing on payoffs (i.e. cash flows) alone. His underlying argument is that dynamic optimization is computationally hard, poorly understood and rarely used. Focusing on payoffs is a convenient way to simplify the problem. Cochrane’s approach amounts to a long-term multi-period analysis. It takes a step away from the usual practice of examining single-period returns. Dynamic strategies in response to time-variation in expected returns and hedging of the changes in the investment opportunity set do not appear under Cochrane’s specification; although he notes that dynamic strategies might be analyzed as a separate payoff stream. The performance evaluation method presented here may be considered the attribution analysis counterpart of Cochrane’s approach, where expectations for future cash flows (i.e. payoffs) form the fundamental basis for investment.

The objective of attribution analysis (see Bodie et al., 2014, pp864-870) is to identify the contributions to active portfolio returns, usually relative to a benchmark. The typical focus is on isolating the contribution from aspects such as asset allocation, sector and security selection, or market timing. Our approach is a form of attribution analysis that aims to estimate the contribution from three components of opening expected return, changes in discount rates and changes in expected cash flows. It is motivated by, and consistent with, the body of literature on cash flows versus discount rate effects referred to above. Nevertheless, the approach can still accommodate the estimation of contributions along asset, sector or security lines through simply summing along these dimensions.

Under our attribution approach, the first component of expected return at the beginning of a period forms a reference point. The other components capture the two ways in which return realizations may differ from the expected return: changes in expected cash flows, and changes in discount rates. The presumption is that changes in cash flows are of primary interest under long-term investing. Revisions to cash flow projections represent a fundamental change in value, and hence the returns that are achievable from an investment held over the long-term. If the entire future cash flow stream changes by 10%, then underlying value changes by 10%, and this flows into long-term returns. Cash flow changes are intimately related to the notion of risk as a ‘permanent loss of wealth’; and the discussion in Paper 2 that identifies mis-estimation of long-term value and expected returns as a key pitfall in long-term investing.

While changes in discount rates also influence realized returns, from the perspective of a long-term investor they can be viewed as a ‘re-ordering’ of the sequence in which the returns are earned. If the discount rate goes up, a capital loss is incurred initially, but higher returns are subsequently earned off the lower price base. The equivalent happens when a (zero cash flow risk) sovereign bond is held to maturity, but bond yields fluctuate along the way. Although the return through to maturity is given at the time of purchase, fluctuations in bond yields in the interim impact on the market price of the bond. Nevertheless, the total return earned to maturity remains the same. Only the pattern of returns over time has changed.¹⁵

Derivation

We now formally derive our return attribution measures. While the derivation is with respect to a single asset, it is straightforward to aggregate across a portfolio and sub-groups of assets by applying asset weightings. This will be demonstrated in the worked example.

The starting point for our derivation is equation (A1), which is an expression for the realized return on an asset during period t . For convenience, ‘cash flow’ (CF) – which might be thought of as the distributable free cash flow generated by the asset over the period – is folded back into the total value at the end of the period (V). Implicitly this assumes “dividend irrelevance” (see Miller and Modigliani, 1961).

$$R_t = \frac{P_t + CF_t}{P_{t-1}} - 1 = \frac{V_t}{P_{t-1}} - 1 \quad (\text{A1})$$

¹⁵ Of course, fluctuations in bond yields and prices are not necessarily totally irrelevant, as they may imply an opportunity cost (or benefit) in timing of purchases. This relates to dynamic strategies, which were discussed in Paper 1 and Paper 2.

Where:

R = Return

P = Price

CF = Cash flow

V_t = Value of investment at the end of period t

t = Time subscript

Equations (A2), (A3) and (A4) establish the link between value and the NPV equation. Equation (A2) is in the form of a standard NPV equation, except that for our purposes the discount rate (DR_0) is estimated conditional on P_{t-1} (i.e. asset price) and expected future cash flows at $t-1$. Effectively DR_0 is the internal rate of return (IRR) which equates future expected cash flows with price at the beginning of period t . It is a measure of the long-term expected return at that time.¹⁶ Equation (A3) is the equivalent for the end of period t , in which case DR_t is the IRR conditional on expected cash flows that may have been revised during period t . Note that the exponent on the denominator in equation (A3) is $t-1$, which has the effect of reducing the discount rate applied to each cash flow term, including applying a discount rate of 1 to CF_t .¹⁷ Equation (A4) represents the expectation at period $t-1$ for value at the end of period t , under the assumption that neither cash flow expectations nor the discount rate change. This equals the price at the beginning of the period multiplied by one plus the discount rate. The key takeaway is that realized return will equal the discount rate in the absence of any changes in expected cash flows or the discount rate.¹⁸

$$P_{t-1} = \sum_{t=1}^{\infty} \frac{E_0[CF_t]}{(1+DR_0)^t} \quad (A2)$$

$$V_t = \sum_{t=1}^{\infty} \frac{E_1[CF_t]}{(1+DR_1)^{t-1}} \quad (A3)$$

$$E_0[V_t] = \sum_{t=1}^{\infty} \frac{E_0[CF_t]}{(1+DR_0)^{t-1}} = V_{t-1}(1 + DR_0) \quad (A4)$$

Where:

DR = Discount rate = internal rate of return (IRR)

$0, 1$ = Indicator for beginning and end of period t , where 0 = period $t-1$ and 1 = period t

$E[.]$ = Expectations operator

Having established the framework, we now restate the return during period t (R_t) into our three components. The first step is a recasting of equation (A1) by incorporating two offsetting terms in the numerator for expected value at the end of the period:

$$R_1 = \frac{E_0[V_t] + V_t - E_0[V_t]}{P_{t-1}} - 1 \quad (A5)$$

¹⁶ Two points to note about IRR estimated in this manner. First, IRR implicitly assumes reinvestment of cash flows at the discount rate. Second, no allowance is made for expected time-variation in discount rates, i.e. any term structure for expected returns. The main implication is that IRR may vary from expected effective returns to the extent that an investor anticipates reinvesting cash flows at a different rate to the IRR. This issue is of limited consequence for the attribution analysis, which is being applied over a single period, during which reinvestment of cash flows is likely to be a minor influence on realized returns. However, it may be more of an issue for the integrity of the long-term expected return estimates, if these are to be used in asset selection. Nevertheless, while IRRs have potential to distort the magnitude of expected effective return to the extent that the reinvestment rate varies from the discount rate, it should leave the ranking of assets by expected return unaffected.

¹⁷ Although CF_t (i.e. CF_t) is known at the end of period t , we nevertheless retain the expectations operator to simplify the presentation.

¹⁸ This also assumes that any cash flows are reinvested at the discount rate, DR_0 .

Substituting equations (A2), (A3) and (A4) into (A5) produces equation (A6):


$$R_1 = \frac{P_{t-1}(1+DR_0) + \sum_{t=1}^{\infty} \frac{E_1[CF_t]}{(1+DR_1)^{t-1}} - \sum_{t=1}^{\infty} \frac{E_0[CF_t]}{(1+DR_0)^{t-1}}}{P_{t-1}} - 1 \quad (A6)$$

Rearranging:


$$R_1 = \frac{P_{t-1}(1+DR_0)}{P_{t-1}} - 1 + \frac{\sum_{t=1}^{\infty} \frac{E_1[CF_t] - E_0[CF_t] + E_0[CF_t]}{(1+DR_1)^{t-1}} - \sum_{t=1}^{\infty} \frac{E_0[CF_t]}{(1+DR_0)^{t-1}}}{P_{t-1}} \quad (A7)$$

Finally, collecting terms and defining $E_0[R_1] = DR_0$ as the expected return over period 1, leads to equation (A8). This is our attribution equation and key result:


$$R_1 = E_0[R_1] + \frac{\sum_{t=1}^{\infty} \left(\frac{E_0[CF_t]}{(1+DR_1)^{t-1}} - \frac{E_0[CF_t]}{(1+DR_0)^{t-1}} \right)}{P_{t-1}} + \frac{\sum_{t=1}^{\infty} \frac{E_1[CF_t] - E_0[CF_t]}{(1+DR_1)^{t-1}}}{P_{t-1}} \quad (A8)$$




*Realized
Return*



*Expected
Return*



*Effect of Change
in Discount Rate*



*Effect of Change in
Expected Cash Flows*

In equation (A8), the first term is the ‘expected return’, which equals the discount rate or IRR applying at period 0 (i.e. beginning of period 1). $E_0[R_1]$ is the return that would be forthcoming under conditions where neither the discount rate nor expected cash flows are revised. The second term captures the contribution from revisions to the discount rate or the IRR. It is estimated as the change in present value at the end of period 1 that arises from the discount rate moving from DR_0 to DR_1 , based the cash flows as expected at the end of period 0. The third term captures the contribution from revisions to expected cash flows, incorporating the realized cash flow for period 1. It is estimated as the impact of cash flow revisions on present value at the end of period 1, evaluated using the prevailing discount rate at the time, DR_1 . The second and third terms are both scaled by the opening price, P_{t-1} . The three components sum to realized returns by construction.

Worked Example

Figure B1 provides a worked example. The asset universe comprises five assets: three ‘risky’ assets with uncertain cash flows, a government bond and cash. Items are numbered (1) through (15) in the table for reference. Under item (6) are the forecasts for expected cash flows as at period 0 (panel A) and period 1 (panel B). We provide forecasts over 5 periods, with a continuing value (CV) at the end of period 5. The latter is estimated for the three risky assets using a standard constant growth discount model, the assumptions for which are listed under item (7). The government bond is assumed to mature at the end of period 5. With regard to cash, the cash flows reflect the expectations for the returns from investing in cash on a ‘roll-over basis’ (see Warren, 2007) over the horizon. Cash is something of a special case because it has no price risk, and its treatment will be explained as we proceed.

Item (2) is the discount rate (DR) or IRR conditional on the cash flow forecasts and the observed price. The calculation is straightforward for all assets except cash. For cash, DR equals the average expected return from holding cash over the forecast horizon. Note that the reported DR_0 for cash of 3.0% varies from the 2.5% cash rate over period 1. The DR estimates perform two functions. First, DR_0 is the long-term expected return at the beginning of period 0, which is the first of the three components in our attribution. Second, DR can support asset selection in the manner explained in the next paragraph.

Figure B1: Three Component Attribution

| A) PERIOD 0 | (1) | (2) | (3) | (4)=(2)-(3) | (5) | (6) | | | | | (7) | | |
|----------------------------------|-------------------------------|---|--------------------------|------------------------------|---|--------------------------------------|---------------|---------------|---------------|---------------|--|-------------------------|-------------------------|
| | Weight for Period 1 | DR_0 (IRR_0) | Required Return, RR | Excess Return $DR_0 - RR$ | Price P_0 | Expected Cash Flows per Period | | | | | Continuing Value at end-Year 5 | | |
| | | | | | | <u>1(E)</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | <u>CV</u> | LT Growth | DR_0 |
| Risky Asset 1 | 35% | 12.3% | 10% | 2.3% | 250 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 371 | 6% | 10% |
| Risky Asset 2 | 35% | 9.4% | 8% | 1.4% | 200 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 247 | 3% | 8% |
| Risky Asset 3 | 0% | 9.3% | 12% | -2.7% | 400 | 10.0 | 12.0 | 14.0 | 17.0 | 20.0 | 540 | 8% | 12% |
| Government Bond | 20% | 4.0% | 4.0% | 0.0% | 100 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 100 | | |
| Cash | 10% | 3.0% | 3.0% | 0.0% | 100 | 2.5 | 2.5 | 3.0 | 3.5 | 3.5 | 100 | | |
| Portfolio Total (per \$1) | 1.00 | 8.7% | 7.4% | 1.3% | 1.000 | 0.042 | 0.044 | 0.047 | 0.050 | 0.052 | 1.252 | | |
| Risky Assets (per \$1) | 70% | 10.8% | 9.0% | 1.8% | 0.700 | 0.032 | 0.034 | 0.036 | 0.038 | 0.041 | 0.952 | | |
| B) PERIOD 1 | | | | | | | | | | | | | |
| | Weight for Period 2 | DR_1 (IRR_1) | Required Return, RR | Excess Return $DR_1 - RR$ | Price P_1 | Expected Cash Flows per Period | | | | | Continuing Value at end-Year 5 | | |
| | | | | | | <u>1(A)</u> | <u>2(E)</u> | <u>3</u> | <u>4</u> | <u>5</u> | <u>CV</u> | LT Growth | DR_1 |
| Risky Asset 1 | 35% | 16.3% | 10% | 6.3% | 220 | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 345 | 6% | 10% |
| Risky Asset 2 | 0% | 5.4% | 8% | -2.6% | 250 | 10.2 | 10.8 | 11.5 | 12.0 | 12.5 | 258 | 3% | 8% |
| Risky Asset 3 | 35% | 20.0% | 12% | 8.0% | 300 | 10.0 | 12.0 | 14.0 | 17.0 | 20.0 | 540 | 8% | 12% |
| Government Bond | 10% | 2.7% | 4.0% | -1.3% | 105 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 100 | | |
| Cash | 20% | 2.9% | 3.0% | -0.1% | 100 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 100 | | |
| Portfolio Total (per \$1) | 1.00 | 13.5% | 8.7% | 4.8% | 1.000 | 0.035 | 0.039 | 0.044 | 0.049 | 0.054 | 1.473 | | |
| Risky Assets (per \$1) | 70% | 18.1% | 11.0% | 7.1% | 0.700 | 0.026 | 0.030 | 0.034 | 0.039 | 0.044 | 1.178 | | |
| C) ATTRIBUTION | | | | | | | | | | | | | |
| | (8) Return for Period 1 | (9) Attribution of Return for Period 1 $E[R]$ | (10) ΔDR | (11) $\Delta E[CF]$ | (12)=(9)+(11)-(3) $E[R] + \Delta E[CF]$ less RR | (13) Change in Expected Cash Flow | | | | | (14) (15) Δ Value End-Period 1 Due To: | | |
| | | | | | | <u>1(A)</u> | <u>2(E)</u> | <u>3</u> | <u>4</u> | <u>5</u> | <u>CV</u> | ΔDR $E_0(CF)$ | $\Delta E[CF]$ DR_1 |
| Risky Asset 1 | -8.4% | 12.3% | -13.4% | -7.3% | -5.0% | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -26.5 | -33.4 | -18.3 |
| Risky Asset 2 | 30.1% | 9.4% | 15.7% | 5.1% | 6.4% | 0.2 | 0.3 | 0.5 | 0.5 | 0.5 | 10.3 | 31.3 | 10.1 |
| Risky Asset 3 | -22.5% | 9.3% | -31.8% | 0.0% | -2.7% | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -127.4 | 0.0 |
| Government Bond | 9.0% | 4.0% | 5.0% | 0.0% | | | | | | | | 5.0 | |
| Cash | 2.5% | 3.0% | 0.4% | 0.0% | | | | | | | | 0.4 | |
| Portfolio Total (per \$1) | 9.6% | 8.7% | 1.8% | -0.8% | 0.5% | -0.001 | -0.001 | -0.001 | -0.001 | -0.001 | -0.019 | 0.018 | -0.008 |
| Risky Assets (per \$1) | 10.9% | 10.8% | 1.1% | -1.1% | 0.7% | -0.002 | -0.001 | -0.001 | -0.001 | -0.001 | -0.027 | 0.011 | -0.011 |

To facilitate asset selection, a required return is specified for each asset: these appear under Item (3). Item (4) is the difference between the expected return (i.e. *DR*) and the required return. This measures the extent to which an asset offers a long-term excess expected return. The portfolio manager would form their portfolio with reference to these excess returns. Item (1) provides some notional portfolio weights. For period 1, the portfolio manager has decided on a weighting of 35% in risky asset 1 and 35% in risky asset 2, but 0% in risky asset 3 which offers a negative excess expected return. Bonds and cash offer returns in line with required returns, and are allocated 20% and 10% respectively. The asset allocation for period 1 provides the weights by which the asset attributions are aggregated. By the end of period 2, changes in prices and expected cash flows result in risky asset 2 and bonds becoming less attractive, while risky asset 3 now offers attractive excess returns following a sell-off. The portfolio manager responds by adjusting the portfolio weights for period 2 to reflect the updated long-term return expectations, switching from risky asset 2 to risky asset 3 and transferring some funds from bonds to cash.

Panel C presents the attribution of returns for period 1. Item (8) reports the realized returns for each asset and the portfolio. Our three component attribution appears as items (9), (10) and (11). It reveals that portfolio returns were boosted by changes in discount rates, which contributed +1.8% to total portfolio return and +1.1% to the return in the risky asset component of the portfolio. The effect of changes in discount rates on asset values is reported under item (14). (Note: The deviation of cash returns over the period from the expected long-term return on cash is treated as a discount rate effect.) By contrast, changes in expected cash flows subtract -0.8% from total portfolio return, and -1.1% from the return on the risky asset component. Changes in expected cash flows for each asset are reported under item (13), and the total effect on asset values is summarized under item (15). Large downward revisions to cash flows for risky asset 1 more than offset the modest upward revisions for risky asset 2.

Item (12) compares the difference between the sum of the contribution from expected return and changes in expected cash flow, and the required return. This represents the excess return realized over the period, abstracting from the effect of changes in discount rate. It is the key measure of the generation of long-term excess returns. On this measure, the total portfolio generates a positive increment of 0.5% over the required return for the period. Although this is lower than the 1.3% excess return that was expected at the beginning of the period (see item (4)), it is nevertheless positive. This indicates that value has still been added, albeit less than expected at the outset, and less than suggested by the total portfolio return. Hence the portfolio manager may still deserve a bonus, but a lesser one than would be implied by traditional return-based performance evaluation. Ideally item (12) would be examined over multiple periods, after which there should be greater visibility on whether expected cash flow forecasts are actually achievable.

The attribution analysis reveals that the portfolio generated returns that benefited from fortuitous price fluctuations arising from reductions in discount rates. Meanwhile, the risky assets that were selected – most notably risky asset 1 – suffered a substantial downward revision in expected cash flows and hence attenuation of the long-term return that may be eventually realized. To the extent that the aim is to reward managers of long-term investment funds for correctly forecasting long-term return potential rather than short-term price fluctuations, any bonus might be calibrated accordingly.

Discussion

The derivation and worked example provide a general sense for not only how the approach feeds into performance evaluation, but also how it may form part of a long-term investment process. In terms of the latter, the analysis points towards two separate functions. The first function involves forming long-term cash flow projections, which in turn provide the basis for estimating long-term expected returns. This could be performed by analysts, with oversight by portfolio managers. The second function entails

constructing portfolios with reference to the long-term expected excess returns. This task should fall to the portfolio manager exclusively. Analysts might be rewarded based on the accuracy of their cash flow forecasts across the asset universe of interest. The portfolio manager would be held accountable for the accuracy of the cash flow forecasts for the assets they include in the portfolio; and as well as the effectiveness by which they form portfolios to meet long-term objectives. The latter would include the extent to which they build portfolios which exceed return targets over the long term. This would be measured by the difference between the sum of expected returns and changes in expected cash flows and required returns, i.e. item (12) in Figure B1. Evaluation of portfolio managers would probably also involve a subjective component, in part to work around the potential shortcomings of the approach as discussed further below.

Our approach is designed to place the projection of long-term cash flows and expected returns at the centre of performance evaluation, and potentially portfolio construction. Analysts are rewarded for the accuracy of their long-term projections. Portfolio managers are rewarded for identifying investments that offer attractive long-term expected returns based on plausible if not conservative cash flow forecasts. Portfolio managers should be interested in ensuring that cash flow forecasts are attainable, because they are penalized for buying assets that may appear to offer excess returns but where long-term cash flow expectations are subsequently revised downwards. That is, a ‘margin for error’ should be valued and appreciated. In sum, the attribution approach encourages a favour for assets that offer attractive long-term expected returns, which are in turn based on conservative forecasts.

Two implementation issues are worth acknowledging:

- **Setting required returns** – Required returns would be set in accordance with considerations such as objectives; the associated risk attached to each asset given those objectives; and perhaps the opportunity set of asset returns available in the market at the time. Required returns might be determined by reference to an asset pricing model. The process for establishing required returns would not be left up to the portfolio manager, given that they would have an incentive to reduce the hurdle. It could be subject to agreement with other stakeholders such as the governing board or investment committee, the CEO or the CIO. For individual asset classes, a minimum expected return hurdle might be specified for portfolio managers, be they either internal or external. Failure to identify assets that reach the minimum return hurdle would indicate to the portfolio manager that they should either be investing in cash, or returning the funds.
- **Time dimension** - The interval over which evaluation is performed might align with the cycle of cash flow forecast revision and portfolio review, possibly quarterly. However, longer review intervals such as a year should be feasible. One complication with longer intervals is that accounting for the effect of transactions and cash flows becomes more difficult. In any event, emphasis should be placed on the attribution over an extended period by aggregating across time.

Any attribution system will have issues: none are perfect. A problem with this system is that it presumes a buy-and-hold mentality, with limited *anticipation* of the dynamic investment opportunities that may arise from changes in expected returns. (Dynamic strategies were discussed in both Paper 1 and Paper 2.) Nevertheless, it does accommodate a *reactive* dynamic element to the extent that it allows for asset realizations and redirection of the funds to other opportunities as long-term expected returns are revised. Cochrane (2014) intimates that the payoffs from dynamic strategies might be considered as ‘dividends’, suggesting that they may be analyzed as a separate activity that generates a stream of cash flows. This represents a potential future extension on the approach as it is presented here.

Another problem is the reliance on cash flow forecasts as the basis for the estimation of expected returns and the subsequent attribution. Portfolio managers are likely to have considerable influence

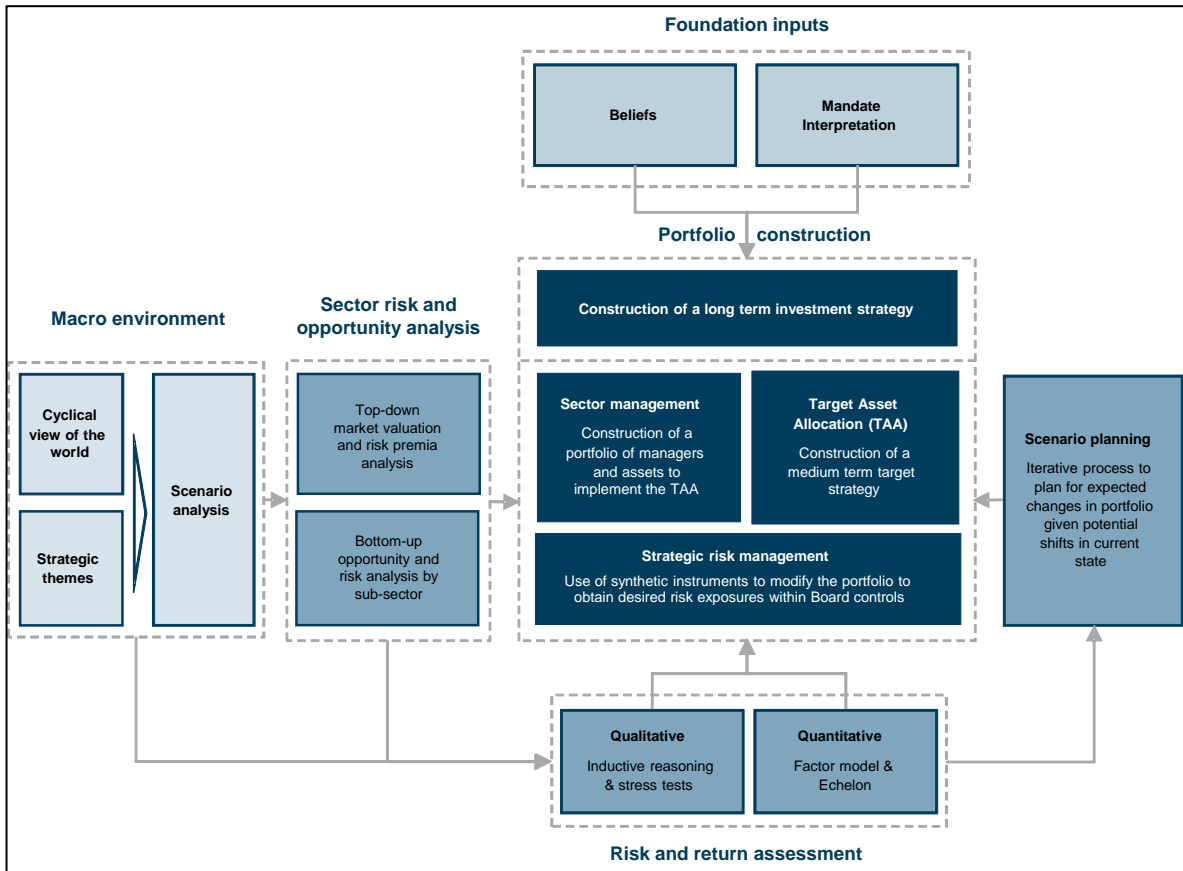
over cash flow forecasts, and may even be responsible for their formation. This may leave the decision process exposed to behavioural effects, such as optimism or confirmation biases, or provide opportunities and incentives to game the system. For instance, there could be a tendency to escalate cash flow projections to justify investments in the first instance. More importantly, after an investment is made, there would be an incentive to avoid reducing cash flow forecasts as this would subtract from the long-term return base. Independent checks on the plausibility of the cash flow forecasts would be necessary. For this reason, it would be advisable to reserve judgment until sufficient time has elapsed to evaluate the validity of the cash flow forecasts. For example, in the case of a greenfields infrastructure investment, cash flow projections might not be evaluated until after the project is completed and has been in operation for sufficient time to form an informed opinion about the cash flow generating capacity of the asset.

Nevertheless, arguably the most important consideration when designing a performance evaluation system is the behaviours that are encouraged *ex ante*. While the approach outlined here may be far from perfect, it should provide a much stronger incentive to pursue long-term investing than more traditional systems where outcomes are heavily influenced by short-term price fluctuations.

Appendix C: The Future Fund Investment Process

The Board of Guardians of the Future Fund has developed a set of investment beliefs to frame the approach to its mission, governance, and investment strategy. These beliefs are reviewed periodically, and along with its Mandate interpretation, are the foundation inputs to the investment process. Figure C1 is a diagram of this process.

Figure C1: The Future Fund Investment Process



Source: the Future Fund

Macroeconomic analysis is at the core of the investment process at the Future Fund. A set of forecasts for real GDP, inflation, cash rates and bond yields is developed for nine economic regions in a ‘Central Case’. These forecasts are then used to generate assumptions around the key long-term drivers of asset pricing – current cash flows, cash flow growth and discount rates. The latter includes real interest rates, inflation and risk premia.

To aid the forecasting process, the Future Fund has identified a non-exhaustive list of seven strategic investment themes – Debt and Deleveraging, Policy and Politics, Globalisation and Emerging Wealth, Resource Scarcity, Inflation, Demography and Technological Innovation. In considering the impact of these secular themes, the Future Fund employs a long-term structural approach to examine issues that impact on cash flows, growth rates and risk premia from a global economic perspective; as well as conditions that may be conducive to changing trends between countries and industries.

The strategic investment themes also deepen that analysis by helping to identify:

- System stresses that may disrupt existing paradigms and risks to assumptions on cash flows and growth rates; and
- Path dependencies, and limits to the evolution of an existing paradigm.

The Future Fund views the policy management of the deleveraging process in various parts of the developed world as the key driver of global economic outcomes at present. More than five years after the financial crisis, certain major developed economies are unable to achieve growth rates much above potential despite large output gaps, significant budget deficits and unprecedented levels of monetary stimulus. This is a strong signal that deeper structural forces are restraining growth.

Longer-term, demographic trends lead the Future Fund to have a very high conviction view that average growth rates over the next decade will be materially lower in developed economies in comparison to history. This is also likely to imply significantly lower 'neutral' cash rates and bond yields in the future.

The Future Fund also undertakes scenario analysis by shocking the key drivers of asset prices. A policy and economic backdrop is considered that would generate a plausible range of economic outcomes over the medium to long-term, the composition and probability distribution of which will vary over time. The logic of the scenario narratives provides a frame for the conditional future behaviour of core macroeconomic factors – growth, inflation, real interest rates and broad risk premia – in comparison to what is presently discounted by markets.

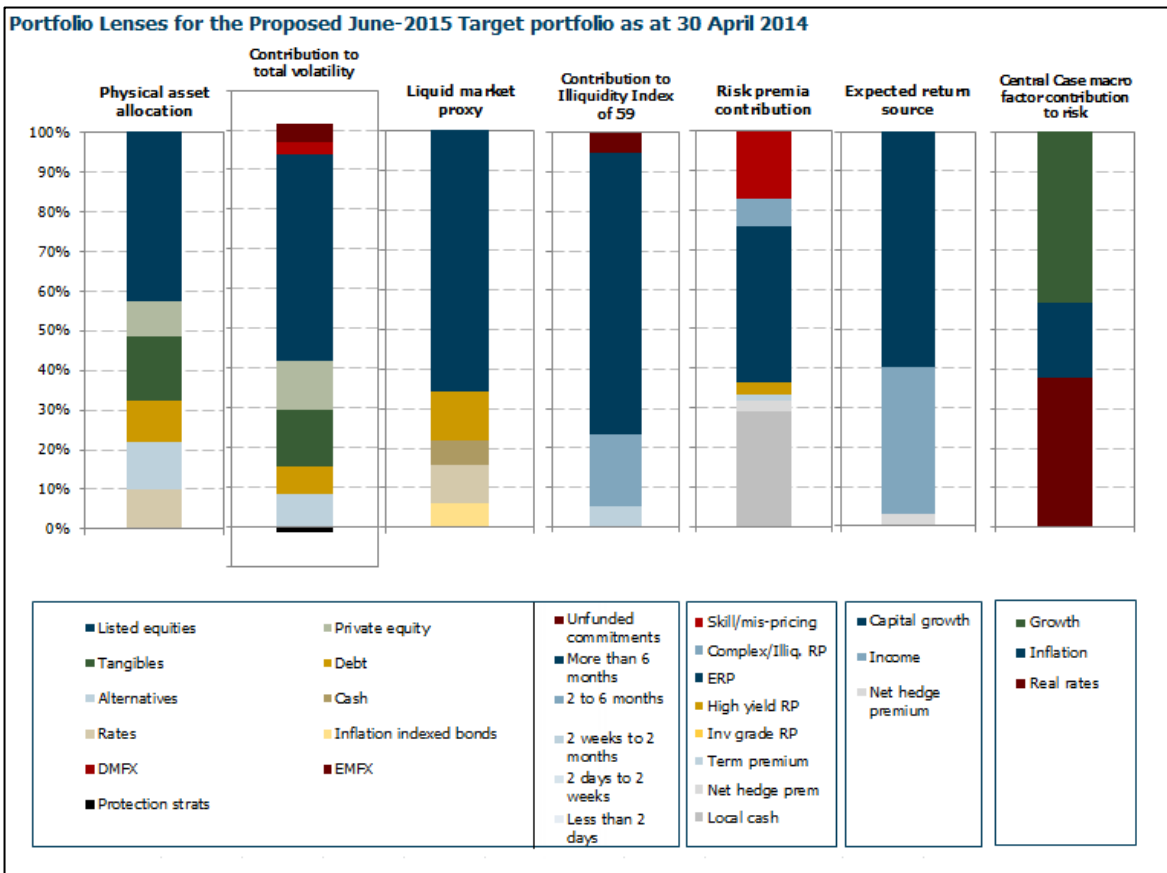
As part of the integrated investment process at the Future Fund, the investment team engages in a regular dialogue to reconcile the top-down outlook on the macro-economy and markets with opportunities and risks identified from the bottom-up. In particular, this involves integrating the bottom-up risk-adjusted analysis of opportunities driven by the capital market research and the domain expertise of the investment sector teams; with the top-down risk-adjusted valuation analysis that is informed by the economic and capital market research of the investment strategy and risk team.

Given the breadth and diversity of the Future Fund's portfolio, the synthesis of these views and the associated relative valuation analysis is not always simple or straightforward. However, it is the most crucial component of the portfolio design process that ultimately identifies the most accretive 'access points' for desirable risk exposures and investment themes.

The Board of Guardians believes that the single measure that embodies the goal of the Future Fund relates to achieving the mandated returns over rolling 10 year periods. In this context, the primary risk faced by the Future Fund is failing to meet this objective. While the Board believes that the amount of risk taken in the portfolio cannot be captured in one figure, it is best assessed by reference to downside outcomes over rolling 3 and 10 year periods.

More generally, the Future Fund believes that risk has many dimensions, all of which may vary through time in different ways. As a result, risk is too complex to be defined by a single number. Certain risks, like reputational or geopolitical risk for example, are not that easy to quantify at all. The Board of Guardians therefore believes that the assessment and management of risk should emphasize qualitative considerations, through a deep understanding of the investment environment and its potential impact on the portfolio. However, quantitative measurement is considered an important tool to both support and test this process. The Future Fund has developed a set of portfolio 'lenses' to better capture the broad range of risks to which the portfolio is exposed. Figure C2 provides a summary of this analysis as at 30 April 2014.

Figure C2: Portfolio ‘Lenses’ Analysis



Source: the Future Fund

The Future Fund has also developed a set of investment policies to help effectively implement its investment process by clearly defining what it considers an acceptable portfolio risk profile. As the Future Fund has matured, and its range of underlying investments has become more diverse, the demands on portfolio risk management have necessarily increased. The scope of its policies has broadened in response.

The investment risk management framework of the Future Fund is supported by the four primary investment policies described below:

- (i) A *Portfolio Risk Exposure Policy* sets an acceptable range for the broad market risk of the Future Fund. This is measured both by the expected sensitivity of the Future Fund’s performance to equities – the dominant source of market risk – and the expected capital loss in adverse investment conditions over medium to long term.
- (ii) A *Short-term Liquidity Risk Policy* is designed to ensure that the Future Fund holds enough cash (and/or other highly liquid securities) to meet its short-term cash flow obligations at all times. If the level of liquidity in the Future Fund is insufficient to pass a daily stress test, it must be replenished.
- (iii) A *Portfolio Illiquidity Policy* sets an acceptable upper threshold for the level of illiquid investment. The Future Fund has a greater tolerance for illiquidity than most other investors, and expects to be rewarded for well-chosen illiquid investments. However, very high levels of portfolio illiquidity

may limit the flexibility of the Future Fund to make new investments. Its appetite for illiquidity is also likely to gradually decrease as it approaches its drawdown phase beyond 2020.

- (iv) A *Currency Exposure Policy* sets an acceptable range for the currency exposure of the Future Fund. Along with equities, currency is one of the major drivers of portfolio risk, and is an important consideration in liquidity risk management.

These four 'pillars' of the Future Fund's investment policy platform are highly interdependent, and their interaction can often be quite complex and challenging to manage. However, the Future Fund believes it has developed a sufficiently holistic and flexible framework to effectively manage the risk of the portfolio.

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