Final Report - Review of the Guardians of New Zealand Superannuation

Prepared for

The New Zealand Treasury

15 August 2014

PROMONTORY

Contents

Abbreviations

AP	Access Point
ART	Active Risk Tool
ASX	Australian Securities Exchange
CCM	Counterparty Creditworthiness Monitor
CDS	Credit Default Swap
CEO	Chief Executive Officer
CRO	Chief Risk Officer
EFP	Exchange for physical
EM	Emerging Markets
EMIP	Externally Managed Investments Policy
EMV	Extreme Market Volatility
EPRC	Employment Policy and Remuneration Committee
ESG	Environmental, Social and Governance
ETF	Exchange traded funds
FTG	Funding and Treasury Group
FX	Foreign Exchange
GFC	Global Financial Crisis
GM	General Manager
HR	Human Resources
HWI	How We Invest
IIM	Internal Investment Mandate
IMA	Investment Management Agreement
IRAP	Investment Risk Allocation Policy
ISDA	International Swaps and Derivatives Association
IWG	International Working Group of Sovereign Wealth Funds
IC	Investment Committee
IT	Information Technology
KPI	Key Performance Indicator

LRS	Liquidity Replenishment System
MLR	Minimum Liquidity Requirement
NAV	Net asset value
NIGEL	New Investment Implementation Group
NZ	New Zealand
NZD	New Zealand Dollar
ODD	Operations Due Diligence
ORA	Operational Risk Assessment
PCIMSP	Portfolio Completion and Internally Managed Securities Policy
PFE	Potential Future Exposure
RAP	Risk Allocation Process
RAS	Risk Appetite Statement
RC	Risk Committee
RI	Responsible Investment
RMP	Risk Management Policy
SIPSP	Statement of Investment Policies, Standards and Procedures
SLA	Service Level Agreement
SOI	Statement of Intent
VWG	Valuation Working Group
UNPRI	United Nations Principles for Responsible Investment

Preamble

This Report is the main deliverable under the Contract dated May 23, 2014 between Promontory Financial Group Australasia, LLP and the New Zealand Treasury.

1. The Report completes the project for Promontory to assist the Treasury to review the performance of the Guardians of New Zealand Superannuation.

2. The Report meets the Terms of Reference for the project.

3. We wish to thank the staff and officials of the Guardians who provided helpful assistance and gave freely of their time and views.

Dr. Jeffrey Carmichael
Chief Executive Officer
Promontory Financial Group Australasia, LLP

15 August 2014

Executive Summary

Background

The New Zealand Superannuation and Retirement Income Act 2001 (the Act) establishes the New Zealand Superannuation Fund (the Fund), as a pool of assets on the Government's balance sheet, and the Guardians of New Zealand Superannuation (the Guardians) as a Crown agency charged with managing the Fund.[1] The Fund was established to provide pensions in retirement to New Zealanders.

In accordance with Section 71 of the Act, the Guardians' performance must be reviewed by an independent person, at least every five years. The objective of the review is to assess how effectively and efficiently the Guardians are performing their functions. Promontory Financial Group Australasia, LLP (Promontory) was engaged by the New Zealand Treasury (Treasury) to conduct such a review.

In the course of conducting our review, it became clear that the Guardians have undergone significant changes since the last review in 2009. A new Investment Framework has been implemented with the insourcing of many active investments and the development of a new benchmark approach in the Reference Portfolio. The organisational structure has also changed in response to these new approaches with a new Target Operating Model and a doubling of staff numbers. Our review summarises the salient features of the Guardians' changed structure and operations, and offers recommendations and suggestions where we see potential for improvement in line with best practice.

The Fund is currently over $26 billion[2] and is expected to grow to $285 billion by 2050 according to Treasury modelling. With this expected growth, it is crucial that the Guardians' approach to investment and their supporting operations remain in line with best practice to ensure the Fund is able to meet its objectives in the future.

[1] Throughout this Report we will use the term 'Guardians' in the plural. Any references in the singular should also be read as plural and vice versa.

[2] Latest figure from Guardians' website is $26.14 billion as at 31 May 2014 (unaudited)

Summary of Findings and Recommendations

Promontory's overall assessment is that the Guardians run a very professional operation. The Board is strong and the quality of professional staff is impressive, especially for a small market such as New Zealand. The Guardians' approach to investing the Fund is intellectually sophisticated, consistent, and disciplined. The Guardians have implemented appropriate investment strategies, as well as sound systems and controls to manage risk and reduce costs. Perhaps most importantly, the Guardians have added substantial value above their benchmark to the Fund. The Guardians have joined a minority of global professional fund managers who have delivered returns in excess of widely-used benchmarks over a sustained period of time.

In our view, the Guardians have raised the overall standard of their investment activities and governance materially since the previous review by Mercer in 2009. In the investment world, however, where past success does not necessarily guarantee future success, the Guardians are aware of the importance of maintaining the high standards they have set.

We note that, in achieving what they have, the Guardians have made a number of significant changes in a short period of time. Changes include implementing a new Investment Framework (with insourcing of many previously outsourced active investments) and developing a new performance benchmark in the form of the Reference Portfolio. The Guardians' organisational structure has also changed in response to these new approaches, with a new Target Operating Model and a doubling of staff numbers. We support these changes and view them as providing a strong foundation for the future. Change, however, inevitably puts pressures on staff and systems. Some of our recommendations relate to these pressures and the potential benefits of allowing the changes to be fully absorbed by the organisation before the Guardians contemplate further material changes.

We emphasise that Promontory's recommendations should not be misinterpreted as identifying fundamental weaknesses. On the contrary, we believe many aspects of the Guardians' operations are 'best in class'. As with any organisation, however, there are always areas where improvements can be made.

We also note that, while we make recommendations in areas where we believe the Guardians can strengthen their operations, we also make a number of minor 'housekeeping' suggestions where the importance of the changes is less material or where further consideration may be warranted. We have highlighted the lower priority of the latter issues by labelling them as 'Suggestions', rather than as 'Recommendations'.

Finally, we note that, in a number of cases where we have made recommendations or suggestions, the Guardians have informed us that they are aware of the issues and have already commenced actions to address them. Where we are aware of that work, we acknowledge it in our Report. At the same time, we note that our Report reflects a point-in-time assessment and needs to be read in that context.

For the purposes of this Executive Summary, we focus our comments on just three areas: organisational evolution; use of derivatives; and remuneration.

Organisational evolution

As noted above, the Guardians have undergone a period of intense change. Also as noted above, that change has been positive. It nevertheless creates two dynamics. First, change puts pressure on staff and systems. In any period of rapid change, it is normal for different parts of the organisation to adapt quicker than others. In our review, we observed that the Guardians' documentation and support functions have lagged behind the front office investment functions in adapting to change. In particular, we found that the documentation of investment procedures was below the level of best practice. We note that our observation relates to the documentation of the procedures, not to the procedures themselves, which were, by and large, adequate (if a little uneven between areas).

Second, as an organisation grows, it is common to outgrow certain streamlined functions that work well while the organisation is small and lean. More formal structures are often viewed as bureaucratic and inefficient, but other factors drive their implementation in larger organisations. As the Guardians move into the next five years, they need to adopt a more formal level of independent oversight of risk (i.e. oversight by individuals or groups within the Management Team who have no vested interest in the outcome of investment decisions) than has been customary in the past.

In this respect, Promontory notes that, while the Guardians endorse the three-lines-of-defence model of risk governance, they currently implement what might best be described as a two, or two-and-a-half, lines-of-defence model, in that:

- investment risk assessments are considered primarily by the Investment Committee (which also makes recommendations for investment decisions), rather than by the Risk Committee (while the Risk Committee has responsibility for enterprise-wide risk, its focus is primarily on non-investment risks);
- the Board, while well informed about investment decisions, including their risks, is not required to be directly engaged in investment decisions unless the investment is greater than 2% of the net asset value of the Fund (while we agree that the Board should not be involved in smaller investment decisions, this removes the Board as a source of independent challenge and oversight for all but the largest investments); and
- there is no separate, independent risk function, or any single group, with line-of-sight over all risks faced by the Guardians.

In view of the size of funds under management and the number of staff members involved, we believe it is now appropriate for the Guardians to appoint a Chief Risk Officer (CRO) and, in view of the range of compliance issues faced by the Guardians, to support the CRO with a Compliance Officer (again, with line-of-sight over all internal and external compliance matters).

We emphasise that the CRO should not take responsibility for any risk decisions. We believe the Guardians correctly recognise that this is a first-line responsibility. The CRO's role is to provide an independent source of enterprise-wide risk oversight, to ensure that all risk policies and procedures are kept current, and to be a source of independent advice to the Board and management on risk issues (a source of healthy challenge).

With respect to organisational evolution we make the following recommendations.

Recommendation 1 – Period of organisational consolidation

We recommend that the Guardians consolidate the changes that have been made in the past few years and put a temporary pause on any further major changes, either in investment approach or organisational structure, until such time as all previous changes have been fully absorbed across the entire organisation.

Recommendation 3 – A single coherent policies and procedures manual

We recommend that the Guardians consolidate their investment policies and procedures framework into a single authoritative reference point for understanding the investment philosophy and practices employed by the Guardians in managing the Fund. The procedures should set out the way in which various issues are addressed (both in principle and in technical detail), and the detailed steps and controls involved in implementing the investment philosophy.

Recommendation 4 – Appointment of a Chief Risk Officer

We recommend that the Guardians appoint a Chief Risk Officer to: (1) provide organisation-wide and independent oversight of risk; (2) maintain the Guardians' risk infrastructure (including ensuring that all policies, procedures and controls are up to date and adequate); and (3) provide assurance to the Board and management on these matters.

Recommendation 5 – Mandate of the Risk Committee

We recommend that the Guardians broaden the mandate of the Risk Committee to clarify that it has independent oversight of the measurement of all risks, including investment risks.

Recommendation 7 – Appointment of a Compliance Officer

We recommend that the Guardians appoint a Compliance Officer, as part of the CRO's team, to ensure effective oversight of compliance risks across the organisation. The Compliance Officer would not take responsibilities currently performed by the General Counsel and various operational teams, but would work with these groups to coordinate compliance activities and provide line-of-sight over all compliance obligations.

Use of derivatives

The use of derivatives products by financial institutions is controversial. In the case of the Guardians, their use of derivatives is governed by the Act and by guidance from the Minister. We observed that the Guardians were conscious of their responsibilities in this area and have gone to considerable lengths to ensure compliance with the Act and the Minister's guidance. The way in which the Guardians implement compliance, however, is not adequately documented or reported, either to the Board or to the Minister.

The fact that derivatives are sufficiently important to warranted attention in the Act and Ministerial clarifications suggests to us that they also warrant a separate policy that addresses these considerations and makes clear how the Guardians use derivatives.

With respect to derivatives we make the following recommendation.

Recommendation 2 – Derivatives

We recommend that the Guardians develop:

- *a separate and comprehensive 'Derivatives Policy' and also detailed associated 'Derivatives Procedures' setting out the legislative context in which derivatives can be used in managing the Fund, the constraints on their use, and the mechanics of how the Guardians ensure that they are used within the intended limits; and*
- *an additional report for the Board, and also for annual reporting to the Minister, that confirms that the use of derivatives complies with the Act and the Minister's guidance.*

Remuneration

Overall, the remuneration policies of the Guardians are in line with industry practice (although documentation of these policies falls below the level of best practice). There are some areas, nevertheless, where improvements could be made to the approach to and structures of remuneration.

First, we note that the level of remuneration for the Board is well below what we expect for similar organisations and for the skills and commitment required of a Board of this type. The risk of under-remunerating Board members is that it will make it increasingly difficult to attract and retain properly qualified members.

The second issue relates to the linking of the bonus scheme to Fund performance. The Guardians follow best practice in linking the bonuses of front-office staff, but not of back-office staff, to Fund performance. The performance of the actual Fund is measured relative to the performance of the Reference Portfolio. In the latter calculation, the Guardians impute a cost of 30 basis points for management. Our inquiries suggest that this may need review. We note that the Guardians have shifted their benchmark for performance from the return on the 90-day Treasury bill to the return on a Reference Portfolio that seeks to match the legislated long-term objective of the Fund. The measure of performance for bonus purposes, however, is a hybrid of the two. We understand the concerns that may have driven this decision (and suggest ways of dealing with them), but believe that aligning bonus computations with the Reference Portfolio is important to establishing the appropriate investment incentives.

With respect to remuneration, we offer the following recommendations.

Recommendation 6 – Imputed cost of managing the Reference Portfolio

We recommend that the Guardians regularly refresh the current methodology underlying the cost of managing the Reference Portfolio and sample the market at a minimum every three years to recalibrate the cost assigned of managing it.

Recommendation 8 – Board remuneration

We recommend that the Minister increase the remuneration levels of the Board members to align with industry best practice and to ensure that the Board is able to retain the necessary knowledge and skills to discharge its duties effectively.

Recommendation 9 – Guardians' remuneration arrangements

We recommend that the Guardians:

- *improve the documentation of their bonus programme, to cover both eligibility to the programme and the bonus allocations;*
- *commission an external review of the maximum bonus rates allocated to front office and senior management against industry benchmarks in New Zealand and Australia, as well as comparable sovereign wealth funds in developed countries. The objective should be to keep the Guardians' remuneration levels competitive. Reviews should be carried out at least every three years, or more frequently if staff turnover becomes a concern;*
- *review the basis for calculating Fund performance for bonus purposes, with a view to linking them more closely with the performance of the actual portfolio relative to the Reference Portfolio.*

Concluding comment

We congratulate the Guardians on what they have achieved. We believe that the Guardians will continue to add value to the New Zealand superannuation scheme in the years to come. We encourage the Guardians to remain receptive both to innovations in investment methodology and to suggestions about ways in which they can strengthen their governance structures. We also congratulate the New Zealand Government for having had the vision to establish the Fund.

1 Introduction

The New Zealand Superannuation and Retirement Income Act 2001 (the Act) establishes the New Zealand Superannuation Fund (the Fund), as a pool of assets on the Government's balance sheet, and the Guardians as a Crown agency charged with managing the Fund.

The Fund was established to provide pensions in retirement to New Zealanders. In a nation, such as New Zealand, with an aging population, the burden of funding a pay-as-you go national pension scheme falls on a shrinking group of working-age citizens. The prime motivation for introducing the Fund was to address the inherent intergenerational inequity of such a configuration. More generally, funding pension obligations is sound public management and a well-established way of increasing national savings and capital accumulation.

The Guardians are governed by the Act and by their Mission. Section 58(2) of the Act requires the Guardians to:

> *"invest the Fund on a prudent, commercial basis and, in doing so, ... manage and administer the Fund in a manner consistent with –*
>
> *(a) best-practice portfolio management; and*
>
> *(b) maximising return without undue risk to the Fund as a whole; and*
>
> *(c) avoiding prejudice to New Zealand's reputation as a responsible member of the world community."*

In accordance with Section 71 of the Act, the Guardians' performance must be reviewed at least every five years. The objective of the review is to assess how effectively and efficiently the Guardians are performing their functions. The review must be conducted by an independent person appointed by the Minister, and the subsequent report must be presented to the House of Representatives. Prior reviews were conducted in 2004 and 2009 (the Mercer review).[3]

The Minister must set the terms of reference for the review. The outcome sought from the review is an assessment as to whether the Guardians are complying with best practice across all aspects of their operations. In making this assessment, the reviewer is expected to:

- Form an opinion about whether or not the investment policies, standards and procedures established by the Guardians are appropriate for the Fund; and whether or not the investment policies, standards and procedures established by the Guardians have been complied with in all material respects;

[3] Mercer, *Review of the Guardians of New Zealand Superannuation*, (October 2009).

- Form an opinion as to whether the Guardians' operations across all aspects of the organisation are consistent with best practice, as appropriate given the size and nature of the Fund;
- Form an opinion on the investment performance of the Fund to date;
- Form an opinion on whether the Guardians are satisfactorily positioned to meet the objectives for the Fund under its legislation in the future; and
- Identify anything else considered relevant to the performance of the Fund.

We should clarify from the outset what we mean when we refer to 'best practice'. There is no single reference point for best practice. While various international bodies define best practice in certain areas it is, in many areas, a matter of practical judgement. In our case, we reference practices against what Promontory sees in the institutions we review. Since most of the major financial institutions in the world are Promontory clients, we have a broad perspective on practices that support positive outcomes and those that fail to do so. We acknowledge that some of these are less relevant than others to a sovereign wealth fund. We also acknowledge that there is always room for debate on what constitutes best practice.

In addition to these broad areas of assessment, the terms of reference listed specific questions to be addressed in a range of areas. We have addressed these questions in this report with specific questions provided at the start of the relevant sections. While we have addressed the questions raised by the terms of reference, we have not conducted a detailed performance analysis of each individual asset class, nor reviewed every aspect of the Guardians' approach and operations. Over the past five years, the Guardians' operations have been reviewed and benchmarked by external parties in a number of focus areas, including Responsible Investment (RI) practices, transparency, governance standards and cost effectiveness.[4] In all of these reviews, the Guardians achieved very positive results. While we have attempted to not duplicate these other reviews, we have drawn on them where relevant.

Promontory's approach to this review involved analysis of a broad range of documentation, onsite meetings with the leadership team and selected employees, and a meeting with the Guardians' Board. In the course of conducting our review, it became clear that the Guardians have undergone significant changes since the last review in 2009. A new Investment Framework

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[4] External reports include, for example, *The Santiago Compliance Index 2013, Rating governance standards of sovereign wealth funds*, GeoEconomica Benchmarking Series January 2013; Investment *Cost Effectiveness Analysis*, CEM Benchmarking, for the 5 years to 31 December 2012; *Linaburg-Maduell Transparency Index*, Sovereign Wealth Fund Institute, 2nd quarter 2014; *Petersen Institute Sovereign Wealth Fund transparency scorecard,* Peterson Institute for International Economics, 2011; *Global Reporting Initiative Index 2012/13*; *RI Transparency Report 2013/14*, PRI Principles for Responsible Investment; *Individual Feedback Report 2011*, UNPRI. These external reports have been supplemented by Internal Audit reviews on topics such as manager monitoring, investment tools, performance reporting, liquidity management, legislative compliance, HR processes, responsible investment screening and complex derivatives.

has been implemented with the insourcing of many active investments and the development of a new benchmark approach in the Reference Portfolio. The organisational structure has also changed in response to these new approaches with a new Target Operating Model and a doubling of staff numbers. Our review summarises the salient features of the Guardians' changed structure and operations, and offers recommendations and suggestions where we see potential for improvement in line with best practice.

The Fund is currently over $26 billion and is expected to grow to $285 billion by 2050 according to Treasury modelling (even with Government contributions to the Fund not resuming until 2019/20 and withdrawals from the Fund not due to begin until 2030). With this expected growth, it is crucial that the Guardians' approach to investment and their supporting operations remain in line with best practice to ensure the Fund is able to meet its objectives in the future.

Against that background, our Report is structured around the following main Chapters:

- Chapter 2 on the investment framework – examines the Guardians' investment philosophy and approach to investing the Fund's assets;
- Chapter 3 on risk management – reviews the approach to measuring and managing risk;
- Chapter 4 on performance and reporting – focuses on measurement of the performance of the Fund and the quality of reporting, both internally and to external stakeholders;
- Chapter 5 on governance – considers the internal governance framework; and
- Chapter 6 on operations – examines the supporting operating environment.

Given the amount of change in the Guardians' operations over the past five years, we thought it timely to summarise the Guardians' current approach as well as provide opinions as required by the terms of reference. Each Chapter contains a summary of the current approach, an assessment of this approach (including observations directly addressing the specific questions listed in the terms of reference) and where applicable, recommendations and suggestions for improvement.

In order to prioritise the issues raised, Promontory makes 'recommendations' where we believe the issue is of reasonable significance and makes 'suggestions' where the issue is either largely of a housekeeping nature, or where we do not feel the issue is as important. Where an issue runs over several Chapters or sections (e.g. documentation), we consolidated recommendations into the most relevant of those Chapters, where consolidation made sense.

Finally, we note that the terms of reference for this project listed a wide range of questions. Answering those questions directly would have resulted in quite a disjointed Report. Instead, we have allocated the questions to the relevant chapters and used them to inform the discussion, rather than following a strict question and answer format. We believe this provides a more coherent narrative about the way in which the Guardians meet their responsibilities.

2 Investment Framework

2.1 The Guardians' Approach to Investments

The Investment Framework adopted by the Guardians has undergone a major shift in focus since the previous review by Mercer in 2009.[5] Central to that shift were material reassessments of:

- the appropriate performance benchmark;
- the capacity of the Guardians to add value to the benchmark by adopting a more active investment strategy; and
- the ability to better manage costs by taking certain functions inside the organisation, rather than outsourcing them.

The following sub-sections summarise the key features of the Guardians' approach to investments and the thinking behind the shift in their approach over the past half decade. While we have treated the changes as though they occurred since the previous review, in practice the changes were at least partly evolutionary and, in many cases, elements of change had begun to evolve well before 2009.

2.1.1 The performance benchmark

Virtually every investment fund, whether private or public, measures its performance against the performance of a benchmark portfolio of one form or another. Constructing a relevant benchmark is more art than science. The benchmark is essentially a theoretical construct rather than a physical portfolio, although the measured performance of the benchmark usually includes an estimate of the transactions and management costs that would be involved in maintaining such a portfolio in physical form. Typically it comprises a low-cost, passive portfolio consistent with the long-run objective of the fund.

Consistent with the Act, the Guardians have adopted a Mission Statement that articulates their investment objective in terms of "*maximising the Fund's return over the long term, without undue risk, so as to reduce future New Zealanders' tax burden*".[6] While some of the terms in the

[5] The Guardians' Investment Framework is set out in a number of documents, including the *How we Invest* guide, Responsible Investment Framework (February 2014), the Statement of Investment Policies, Standards and Procedures (18 June 2013), the supporting policies (all publicly available) and the internal paper for the Investment Committee – *Our Investment Framework,* February 2011.

[6] Section 58(2) of the Act.

Mission Statement, such as 'maximising' return and doing so without 'undue risk' are inherently vague, the key aspect of the Mission Statement, in our view, is its long-term time horizon. It is a characteristic of financial markets that short-term movements in price contain high levels of noise. The longevity of the Fund allows the Guardians flexibility to undertake investments with longer-term return characteristics. It also means that the Fund can be more tolerant than other investment managers of short-term market volatility, thereby enhancing the Guardians' ability to endure market cycles.

An appropriate benchmark portfolio for the Guardians should reflect this long-term focus. As noted by the Mercer report, the Guardians initially specified the return objective of the Fund in terms of exceeding (after New Zealand tax) the return on 90-day Treasury bills over a 20-year period. In 2007 the Guardians implemented a strategic asset allocation designed to better capture the long-run investment objective in the Act, plus a variety of active investment strategies to add value to that benchmark. From the strategic asset allocation (which corresponded to roughly 80% growth assets and 20% fixed income), the Guardians 'backed out' the implied long-run risk premium over the risk-free rate (which was approximately 2.5%). While the strategic asset allocation replaced the Treasury bill rate as the shorter-term 'target' for assessing performance, the long-run link between the strategic asset allocation and the risk-free rate was used to express a second performance metric. Specifically, if the Fund achieved its short-run objectives of exceeding the return on the strategic asset allocation benchmark, it also should be expected to exceed the return on the 90-day Treasury bill plus the risk premium (2.5%) over long periods of time (taken to be rolling periods of 20 years).

While not explicitly rejecting the earlier benchmark(s), the Mercer Review recommended:[7]

- Clarifying with stakeholders their understanding of the investment objective of exceeding the 90-day Treasury bill by at least 2.5%; and
- The Crown consider whether to establish, in conjunction with the Guardians, an actual target investment rate of return reflecting the levels of risk undertaken by the Fund.

Subsequent to the Mercer review, the approach to the benchmark shifted. The Guardians developed a new benchmark to replace the strategic asset allocation, referred to as the 'Reference Portfolio'. The Reference Portfolio represents a diverse set of asset classes that aligns with the Fund's statutory objectives. It is a passive portfolio that assumes asset prices are in equilibrium. The Reference Portfolio chosen by the Guardians has the following design features:[8]

- It should be a passive portfolio that the Guardians could invest in with minimal cost (i.e., the assets in the portfolio should be liquid and tradeable at low cost).

[7] Recommendations 3.1 and 3.2, Mercer, *op. cit.* p.34

[8] 2010 Reference Portfolio Review, September 2010, p.5.

- It should be diversified (i.e., it should include international and New Zealand assets across a range of categories including listed equities, listed property, listed infrastructure, and listed commodities).
- It should reflect an appropriate risk profile for the Fund, given its objectives as mandated in the Act.
- It should be relevant to a New Zealand-based investor.
- It should be an equilibrium construct.

The single most important decision in constructing the Reference Portfolio was the mix between growth assets and income yielding assets. In the case of the former (e.g. equities), the return from such investments derives primarily from their accretion in value over time. In the case of the latter (e.g. debt instruments), the return derives primarily from sharing in stable and predictable cash flows in the form of interest payments. The higher risk associated with growth assets is typically reflected in a higher expected return. A higher weight on growth assets in the Reference Portfolio would align with a higher expected return, but also a higher volatility of returns, especially over short periods.

We understand that the Guardians considered a series of portfolios that met the requirements above and analysed them against various criteria. From the universe of such portfolios a composition of 80% growth assets and 20% income yielding assets was chosen as best aligning with the long-term objectives of the Fund as stated in the Act. This was consistent with the earlier work on the strategic asset allocation. Unlike the strategic asset allocation, the Reference Portfolio does not require granular decisions on the sub-asset classes of the benchmark. Within the growth asset segment, asset classes are limited to: global equities; New Zealand equities; and global listed property. A summary of the Reference Portfolio as implemented in July 2010 and maintained since that time is provided in Table 1, along with the benchmark indices used for each asset class.

Table 1: Guardians Reference Portfolio

Asset Classes	Percentage	Benchmark Index
Global equities	70%	MSCI All Country World Investable Market Index
New Zealand equities	5%	NZX50 Capped Index
Global listed property	5%	FTSE EPRA/NAREIT Developed Index (listed property)
Total Growth	**80%**	
Total Fixed Interest	**20%**	Customised Barclays Index comprising market cap weights of: • Barclays Capital Global

Asset Classes	Percentage	Benchmark Index
		Aggregate • Barclays Capital Global High Yield Index • Barclays Capital Global Inflation-Linked Index (Series-L)
Net unhedged foreign currency exposure	0%	(i.e. all indices are hedged back to NZ Dollars)

Source: Investment Risk Allocation Policy, 13 September 2013, Schedule 2

The structure of the Reference Portfolio is based on the Guardians' assumptions about the long-term characteristics of the asset classes considered. The Reference Portfolio may be changed if those assumptions change, the objectives of the Fund change, or a wider or narrower set of exposures can be accessed passively at low cost (e.g. if certain asset classes not currently listed were to become available through listed securities). Notwithstanding the potential for change, it is our understanding that the structure of the Reference Portfolio has remained static since its introduction in 2010. We also understand that the structure of the Reference Portfolio will be reviewed in 2015.

In constructing the Reference Portfolio for performance measurement purposes, we understand that a management and administration cost of 30 basis points is imputed to the benchmark. Thus the Guardians aim to achieve a return on the actual portfolio that is in excess of the return on the Reference Portfolio minus 30 basis points. Reflecting the long-term nature of the Fund, the Guardians assess their performance against the Reference Portfolio annually, in rolling five-year time periods and also on a cumulative basis over time.

While the Reference Portfolio has become the primary benchmark for assessing the Guardians' active investment performance, the link to the return on 90-day Treasury bills has been retained as a long-run expectation, as it was under the previous strategic asset allocation. The Guardians report their cumulative performance against the return on 90-day Treasury bills and also against this return plus 2.5%. Since the Fund has not yet been in existence for 20 years, the full alignment against this long-run expectation will not occur for a few years yet. In describing the role of the Treasury bill return, the Guardians emphasise that it is not a target against which the performance of the active investment strategies of the Guardians should be judged.

2.1.2 Strategies to add value through active investment

As observed by the Guardians, in practice, most fund managers do not deviate materially from their benchmarks, regardless of their investment beliefs.[9] In part, this may reflect the inherent

[9] Brake, S., Drew A., and Iverson, D., (2009) *Governance, Investment Beliefs and Dynamic Asset Allocation*, paper prepared for joint

conservatism of funds managers (the risk, in terms of losing investors, of performing significantly below the benchmark in any one period is often perceived to outweigh the benefits of a symmetric outperformance). It may also reflect, in part, the reputational difficulty of holding a losing position for a long period, even when the *ex ante* strategy is logical and likely to provide value if held for long enough.

The Guardians employ an active management strategy based on their beliefs that pricing in some markets or sectors can remain out of equilibrium for extended periods, thereby offering opportunities to add value relative to the passive Reference Portfolio, and that investors with a long-term horizon can outperform more short-term focused investors over the long-run.

Their active 'value-adding' activities take three forms:

- Strategic tilting;
- Capturing active returns; and
- Portfolio completion (the way in which trades and strategies are executed).

The objective of these value-adding activities is to add value, after costs, to the Reference Portfolio returns. While elements of these three strategies were already present in the Guardians' approach to investment prior to the previous review by Mercer, the coherence of the strategies was increased greatly by the introduction of the Reference Portfolio in 2010 and subsequent refinement of the strategies and, importantly, in the approach to limiting the overall risk of the strategies.

2.1.2.1 Strategic Tilting[10]

The Reference Portfolio is based on an 'equilibrium' assumption. That is, it is based on assumptions made by the Guardians about the average long-term value of various asset classes over long periods, regardless of market conditions at any point in time. Strategic tilting normally involves adjusting the composition of the actual portfolio around the reference with a view to capturing perceived deviations between current market values and equilibrium values of different asset classes in the Reference Portfolio. Tilting is an 'overlay' strategy that is used to add value to a portfolio in either a short-term or a long-term context.

Strategic tilting policy was first introduced in December 2008. Under the Strategic Tilting Policy, the Guardians "*have the ability to temporarily adjust – 'tilt' – the Fund's balance of growth and*

BIS/ECB/World Bank Public Investors Conference.

[10] The Guardians' approach to Strategic Tilting is set out in reasonable detail in Schedule 3 of the Strategic Tilting Policy. A more academic presentation can be found in Iverson, D. and Staub, R., (2013), Allocating Risk Capital: The Case of the New Zealand Superannuation Fund, Rotman International Journal of Pension Management, Fall 2013. See also Brake, S., Drew A., and Iverson, D., (2009) Governance, Investment Beliefs and Dynamic Asset Allocation, paper prepared for joint BIS/ECB/World Bank Public Investors Conference.

income assets".[11] According to the policy, the following "*types of decisions can be thought of as strategic tilts:*[12]

- *Adjusting a fund's risk profile. Where expected returns have (say) fallen across the board, a response may be to reduce the Fund's absolute risk, i.e. tilt away from growth risk premia to cash.*
- *Making tilts between asset classes. Reallocations of risk between equity, real estate, duration or credit might be thought of as this form.*
- *Making tilts within listed asset classes, such as equities. Examples of such tilts include growth versus value, small versus large, emerging versus developed, regional or country tilts, etc.*"

For tilting to be viewed as an effective way of adding value to a static reference portfolio, it is necessary that the investment manager has:

- firm beliefs about the disequilibrium behaviour of asset prices; and
- a systematic and disciplined approach to implementing those beliefs.

Beliefs

The Guardians have both of these (beliefs and approach noted above). Their tilting strategy is based on the belief that expected returns are at least partly predictable within asset classes, and that these returns are subject to a mean reversion process from short-run disequilibrium.[13] The Guardians' fundamental investment philosophy is that mean reversion is a reliable principle over long periods.

Strategic tilting is a 'contrarian' strategy that may produce an extended period of losses relative to the Reference Portfolio. Being underweight in an asset class in a bull market or overweight in a bear market can bring enormous pressure to unwind the strategy. In this respect, the long-run horizon of the Fund and the commitment of the Guardians' Board to the strategy are critical.

There are many examples in financial history of the excess returns that can accrue to holding contrarian strategies through to their logical conclusion, rather than abandoning a position when short-term, mark-to-market valuations show losses. The Reserve Bank of Australia has employed this strategy successfully in its currency interventions over the past several decades.

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[11] *How We Invest*, p.19.

[12] *Strategic Tilting Policy*, Schedule 3, p.9.

[13] The empirical evidence on mean reversion is mixed. Drew, A., Frogley, R., Hayward, T., and Sethi, R., (2008) *Strategic Tilting around the SAA benchmark*, paper prepared for joint BIS/ECB/World Bank Conference on Strategic Asset Allocation for Central Banks and Sovereign Wealth Managers, reviews the evidence and provides simulations to support the Guardians' approach.

Similarly, the returns to those few market participants who bet against sub-prime securities from as early as 2005, despite mounting short-term losses, were substantial.[14]

Discipline

The Guardians' systematic approach to exploiting disequilibrium pricing is built on two foundations. The first is the use of valuation models to forecast long-run returns and a measure of deviation from equilibrium.[15] This gap is constructed for each asset class along with a measure of the confidence that the Guardians' hold about the extent of the deviation. The Guardians have developed an active risk tool (ART), which formalises the process and provides a mechanism for translating valuation signals into asset-class and market allocations. The aim of the tool is to ensure discipline in allocating to asset classes and markets. While the approach is relatively objective, it also provides room for judgement.[16]

The second source of discipline is the imposition by the Board of an overall risk tolerance limit on the aggregate of all deviations from the Reference Portfolio due to tilting, as well as limits on each category of tilt. Unlike the second value-adding strategy of capturing active returns, tilting necessarily involves changing (either increasing or decreasing) the risk profile of the actual portfolio relative to the reference.

The total risk of the portfolio is measured by its overall volatility. Active risk taken by the Guardians is measured by the tracking error of the actual portfolio relative to the Reference Portfolio (tracking error is a measure of relative volatility). The tolerance for active risk is set in terms of the measured tracking error.[17]

Risk is managed by an overall risk budget (an agreement on the average risk of the portfolio over time and how this is allocated) as well as active risk limits that apply to particular strategies. For example, the Strategic Tilting Mandate sets rebalancing limits for individual tilting positions.

The discipline introduced by this approach is that it imposes a limit on the aggregate risk-weighted amount of tilting. This, in turn, requires the Guardians to rank all possible tilts and to implement those that have the best risk/return characteristics. In practice, the Guardians employ response rules that tend to invest progressively into an asset class that is perceived to be in substantial disequilibrium as the disequilibrium gap increases. This reflects their observation that short-term disequilibria are often amplified as markets trend in one direction or another. The tilt limit is reached when the disequilibrium is sufficiently extreme (generally taken to be 2.5

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[14] The challenges facing the hardy few who took a contrarian position against the U.S. sub-prime debt market is documented in Michael Lewis, *The Big Short*, 2010.

[15] The Guardians' approach to valuation is based on fundamental value, using a combination of external value models and internal judgment (see Iverson and Staub (2013), *op cit* p.69.

[16] A description of the calibration of ART and the analytic processes involved can be found in Iverson and Staub, (2013) *op. cit.*

[17] The use of tracking error as a risk measure and its recent development into the concept of risk budgets is taken up further in Chapter 3, which looks more closely at risk management.

standard deviations above the trend signal).[18]

Other Characteristics of the Tilting Strategy

There are two additional characteristics of the Guardian's approach to tilting that warrant comment. The first is that tilts are executed entirely through derivatives (although the choice of execution mode is determined not by the tilting decision so much as by the portfolio completion decision). This is in line with industry practice. Tilting is ideally suited to derivatives, especially where the Reference Portfolio is composed of broad asset classes for which there are liquid derivatives instruments available.

The second characteristic is that the tilting strategy has evolved over time. The initial tilting programme was based around the strategic asset allocation weights and asset classes. Since that time, the strategic asset allocation has been replaced by the Reference Portfolio as the fulcrum around which tilts are made. Further, under the initial approach, a 'signal' to tilt an exposure was only generated when the models suggest valuation levels that were statistically extreme (implying that tilts were applied only infrequently for any given asset class or market). Over time, as the Guardians have increased their capability, they have also increased the scope of tilting across the spectrum of valuation signals.

Tilts have been done in equities (global large-cap and emerging markets), fixed interest (global credit risk and global duration risk), and global listed property. Tilts have been executed using approved derivatives contracts including: interest rate futures; equity index futures; total return swaps referenced to credit default swap indices; and forward foreign exchange contracts.

2.1.2.2 Capturing Active Returns

The capturing active returns strategy refers to the broad class of activities undertaken because the Guardians believe that, over the long-term, they will produce excess returns relative to the Reference Portfolio. This can involve investing in asset classes not in the Reference Portfolio (such as direct arbitrage); or investing in asset classes that are in the Reference Portfolio, but doing so actively (such as through an investment manager) rather than passively. To distinguish these investments from tilts, they are referred to broadly as 'opportunities'.

Of particular importance in this category are direct investments, such as investments in timber and dairy farms. These investments are fundamentally different from investments in the Reference Portfolio in that they are often highly illiquid and can require a much closer involvement in their management compared with listed and other actively traded investments. Indeed, capturing the illiquidity premium in these investments is one of the main attractions to the Guardians, an attraction that is consistent with the fact that the Fund has a long investment horizon and is unleveraged (thereby reducing the likelihood that illiquid assets will have to be

[18] See Drew et al. *Strategic Tilting around the SAA benchmark*, p.11

liquidated to cover cash flows). The inclusion of direct investments highlights the fact that the Reference Portfolio, by its restriction to tradeable asset classes, represents a portfolio on the 'constrained' efficient frontier (i.e. constrained in the growth area to listed securities). Direct investments should enable the Guardians to attain a superior risk-return combination on a broader efficient frontier.[19]

While the mechanics of analysing opportunities are quite different, especially where direct investments are involved, the underlying principles are very similar. That is, all value-adding strategies must improve the risk/return profile of the Fund. For practical purposes, the measure of risk/return applied to the Fund is the Sharpe Ratio, which expresses the ratio of the Fund's expected total excess return (relative to cash) to its expected risk. For an individual opportunity to be value adding, it must improve the portfolio's Sharpe Ratio. As with tilting, the focus on the marginal impact of all opportunities on the Fund's Sharpe Ratio provides a discipline for approaching and choosing among the universe of potential opportunities. Opportunities are also subject to limits, as well as the overall discipline of the risk budget framework (see Chapter 3).

Identifying and selecting opportunities

Early-stage ideas about potential opportunities can come from anywhere within the Guardians or from outside sources (e.g. from advisors and other funds). Potential opportunities are then subjected to a culling process that includes:

- High-level screening to assess the strength of the opportunity and the confidence that the Guardians have in the opportunity;
- Prioritising attractive opportunities for review by the Analysis Team, which–
  - classifies them according to the source/basis of the opportunity (e.g. diversification, market-level mispricing, or asset-specific mispricing);
  - identifies the marginal contributions of the opportunities to both risk and return (the marginal risk and return contributions relative to the risk and return already present in the portfolio);
  - assesses whether the pricing of the opportunity offers sufficient marginal return to compensate for the marginal risk and any additional costs;
  - ranks opportunities on the basis of confidence, attractiveness and consistency with investment style using the Risk Allocation Process (RAP) (see Chapter 3); and
  - monitors opportunities using dashboards.

[19] See *Our Investment Framework*, paper prepared for the Investment Committee, February 2011, pp.5-9.

In assessing opportunities, the Guardians evaluate four main considerations:

- the extent to which they improve the Fund's Sharpe Ratio;
- its confidence in the underlying investment thesis and analysis;
- whether the opportunity is consistent with the Guardians' desired investment style; and
- whether or not the Guardians have the necessary internal operational capability to manage the strategy (while the demand on operational capability is reduced by outsourcing the investment, it does not obviate it entirely as due diligence and ongoing monitoring are still needed on the external manager).

The range of opportunities has expanded over time. The list of currently approved opportunities includes:

- Active Collateral;
- Commodities long/short;
- Active Emerging Market Equities;
- Active NZ Equities;
- Opportunistic NZ and International;
- Volatility long/short;
- Buyout;
- Convertible Arbitrage;
- Cross-currency basis;
- Direct Arbitrage;
- Distressed Credit;
- Energy (Alternative);
- Energy (Shale);
- Expansion Capital (NZ and International);
- Global Macro;
- Infrastructure (Core);
- Infrastructure (Core Plus);

- Life Settlements;
- Natural Catastrophe Reinsurance;
- Non-market Cap;
- Real Estate (Prime);
- Real Estate (Development);
- Real Estate (Secondary);
- Regulatory Capital;
- Rural Land;
- Timber; and
- Variance Swaps.

While the range of opportunities is very wide, the range of actual investments in opportunities at any point in time can be considerably narrower than the range available.

Proxies

The key practical distinction between investments undertaken under the strategic tilting strategy and those undertaken under the capturing active returns strategy is that the former explicitly change the risk profile of the actual portfolio relative to the reference, while the latter are intended to be risk neutral. The mechanism for implementing risk neutrality is known as the Proxy System.

The Proxy System starts from the proposition that each investment into an opportunity must be funded by ‘selling down’ part of the Reference Portfolio. The proxies are a combination of weights for the growth and fixed interest components of the funding. The proxies, in turn, are calibrated so as to replicate (as closely as possible) the risk profile of the opportunity. Thus, for example, if an opportunity is more aggressive than the Reference Portfolio, the proxies for that opportunity would have a funding weight on growth higher than the Reference Portfolio’s 80% and a funding weight on fixed interest of less than the Reference Portfolio’s 20%. The principle underlying capturing the active return from an opportunity is that the opportunity itself represents a position on the efficient frontier that is immediately north of the Reference Portfolio. The Proxy System is designed to replicate that position in terms of risk-return combinations.

Proxies are estimated based on correlations between the returns on the opportunity and the indices in the Reference Portfolio. The current standing default proxies used by the Guardians are shown in Table 2 below.

Table 2: Default proxies

Asset Class	Growth Weighting	Fixed-interest Weighting
Private Equity	110%	-10%
Infrastructure	60%	40%
Timber	30%	70%
Unlisted property	40%	60%
Other	10%	90%
Volatility	Variable	Variable

Source: Investment Risk Allocation Policy, Schedule 6.

Prior to 2011, any private opportunity was assigned a default proxy. In 2011, the Board delegated to management authority to apply proxies more flexibly. Since the 2011 delegation, management has the flexibility to adjust any of the default proxies to better approximate the risk of an investment. The proxies must still add to 100% and are still expressed in terms of growth assets and fixed income assets.

As noted by the Guardians, the proxy system is only approximate.[20] Although the absolute risk of the actual portfolio is held steady by the proxy system, some active risk is still introduced into the actual portfolio relative to the Reference Portfolio by buying a private investment and selling proxies.

The sources of active risk in the actual portfolio after the introduction of the private investment and the sale of the proxies are: (1) the mismatch between the proxy and the 'true' correlated component of the private investment's risk; (2) the uncorrelated risk inherent in any asset class; and (3) any other uncorrelated risks associated with a specific investment, e.g. the manager's specific activities.

Hurdle Rates

A hurdle rate is calculated for each opportunity. The hurdle is the Fund's cost of capital for that investment, taking account of relevant risks (market risk, credit risk, etc.[21]) and penalties (illiquidity, concentration, etc.). Consistent with the Sharpe Ratio framework, the core component of the hurdle rate is calculated from the betas of the opportunity and the actual portfolio. This is then adjusted for the penalties noted above.

The hurdle rate is the minimum return that compensates the Guardians for all the risks of undertaking that investment. If the expected return on the opportunity does not exceed the

[20] *Our Investment Framework*, Paper prepared for the Investment Committee, February 2011.

[21] We understand from discussions that operational risk has not yet been included in this calculation of hurdle rates.

hurdle rate, it would be value-depleting to undertake that investment. Alternatively, if the expected return exceeds its hurdle rate, the opportunity should add value. Opportunities with low correlation with the market (i.e. offer strong diversification benefits) will have lower hurdle rates than opportunities that offer limited diversification benefits. These will often be attractive, provided the benefits are not reflected fully in a correspondingly lower expected return.[22]

Consolidation

During 2011/12, the Guardians developed a new Target Operating Model to build on the Investment Framework developed in 2010/11. The model has simpler investment processes with a focus on an active investment portfolio and fewer, but deeper, external manager relationships (refer to Section 5.1.3 for further information). In implementing the Target Operating Model, the Guardians ‘paused’ a number of their activities in order to consider their current investments and complete a significant internal restructure that cut across silos with a view to ensuring that all key areas are involved with investment decisions in some way. The new Target Operating Model requires all opportunities to be reviewed individually for scalability, directness, capability and consistency with the Guardians’ philosophy. In the process, every existing opportunity was reviewed. As a result, a significant number of investments were terminated and others increased. The net effect was a reduction in both the range of active opportunities and a reduction in the total investment in opportunities. The current portfolio of opportunities is characterised as having a materially higher ‘conviction’ level than it had before the review.

2.1.2.3 Portfolio Completion

Portfolio Completion refers to the actual transactions that are executed internally to implement any of the investment strategies. The rationale for separating these from the strategies themselves is to focus the execution stage on cost effectiveness. Once a particular opportunity has been identified, analysed (including for potential access points) and approved for implementation, the overall value of the strategy can be affected by the way in which it is executed.

For example, a decision to invest in emerging market debt might be executed through an external fund manager, internally, or through a derivative transaction. Portfolio Completion is responsible for all transactions that are controlled directly by the Guardians. Note that, even where an external manager is the optimal access point, Portfolio Completion is still responsible for funding the external manager.

It is important to recognise that different access points have different cost and implementation risk profiles. For example, executing a substantial equity or derivative transaction in a small market (e.g. New Zealand equities) can result in shifting the market if it is not executed carefully.

[22] This aspect of low correlation was a prime consideration, for example, in the case that was proposed for including Life Settlements as an opportunity.

The role of the Portfolio Completion Team is to find the most cost effective way of implementing all strategies. As noted in Section 2.1.3 below, the decision to insource execution was driven primarily by a desire to better manage these transactions costs.

While it is tempting to think of Portfolio Completion activities as increasing return (by lowering cost) without adding risk, in fact there are many risks embedded in the completion process. For example, a decision to execute a strategy synthetically through a derivative, rather than a physical exposure, introduces counterparty credit risk with the derivative counterparty. Likewise, physical execution through an external manager introduces risk to the manager itself (including to the manager's skills, operational capacity, compliance and regulatory controls, etc.), while an internally managed access point could raise internal operational, compliance and skill risks. These risks and their implied costs all need to be factored into the hurdle rate computation and the Guardians do so.

In many ways the activities of Portfolio Completion are very similar those of a conventional Treasury operation of a financial institution, with the major difference being in the area of funding, where Portfolio Completion is not required to raise funds externally by issuing securities.[23]

At any point in time, Portfolio Completion has the task of executing every transaction required to rebalance the portfolio in line with the net of all investment transactions (from tilting and investing in opportunities) and any calls on liquidity (such as margin payments on derivatives exposures). In particular, all internal decisions involving derivatives transactions are made by Portfolio Completion.

Liquidity Management

Given the extensive use of derivatives (including for managing the foreign currency hedge), liquidity management is one of the key tasks of Portfolio Completion. The liquidity challenge arises both because derivatives contracts can require cash for margin payments (thereby creating a demand for liquidity), and because the way in which derivative positions are managed by the Guardians means that they must be backed by cash (thereby generating a supply of liquidity).[24]

The liquidity management framework has undergone several changes over time, most recently in April 2013. At that time, the previous Liquidity Pool Mandate (established in June 2010) was replaced by a Cash Mandate and an Active Collateral Mandate. The proposal for the change noted that the new mandate would have lower risk and lower return relative to the current Liquidity Pool mandate. While the guidelines for the securities that can be purchased under the

[23] We note that Minister has given permission for the Guardians to borrow under certain very limited circumstances but expect that this would only arise under extreme conditions.
[24] See Section 2.1.4.2 below.

new mandate are wider, the amount of risk that can be taken under the new mandates is less due to additional hedging requirements.

The policy on liquidity states that the objective of managing liquidity is to be implemented while minimising the direct and indirect costs of meeting the objective. The indirect costs include the opportunity cost of holding collateral in liquid form when it does not need to be held that way. To manage that opportunity cost, the Guardians set a minimum liquid buffer (defined as investments that can be liquidated within nine days) for the portfolio equal to twice the loss in liquidity that would be sustained in an Extreme Market Volatility (EMV) event (an EMV is defined as a market movement worse than 99.9% of historic three-day movements over the past 30 years). In normal market conditions, the Guardians target a level of liquidity well in excess of this minimum. Stress tests are used to model additional liquidity required for unexpected demands on liquidity. Allowances are also made for illiquid investments by operating a liquidity replenishment system.

The Active Collateral Mandate is run concurrently with the Cash Mandate, with the overriding objective to have sufficient available liquidity to comply with the Fund's liquidity policy and framework. The Cash Mandate is a passive mandate and the Active Collateral Mandate is an active return strategy. Cash is often a poorly defined term. To investors, 'cash' is the essentially risk-free asset. There is, however, disagreement as to precisely which assets should be included in cash. The terms cash and cash equivalents generally include: cash, money market accounts, and short-term, highly liquid investments with a maturity of three months or less at the time of purchase, such as Treasury bills and commercial paper.

The Guardians define liquid assets in Schedule 2 of the PCIMSP and narrow the range of approved liquid assets in the relevant mandates. Schedule 2 defines liquid assets as any investment which can be liquidated within nine days. It also defines a sub-set of highly liquid assets as those that can be liquidated within one to two days.

The set of Approved Products for the Cash Mandate are specified explicitly as:

- Sovereigns denominated in NZ Dollars (NZD);
- NZD bank debt securities with approved counterparties; and
- Overnight cash in any currency with approved counterparties.

The range of investments eligible for the Active Collateral Mandate is broader than that in the Cash Mandate and includes cash and a wide range of other liquid investments, including New Zealand and global sovereign and bank fixed-interest securities, plus certain corporate securities that are eligible for central bank repurchase. The framework allows the Guardians to both borrow and lend securities for liquidity management purposes. We understand, however, that the securities lending program was terminated in 2009.

The Active Collateral Mandate was identified as an opportunity involving the following elements:

- **Funding conditions.** Exploiting illiquidity risks involved with short-term fixed-interest assets such as Credit Default Swaps (CDS) bond basis, and debt that carries a government guarantee versus government-issued debt.
- **Regulatory vs. Economic cost.** Exploiting opportunities that arise due to regulatory pressures faced by regulated entities such as banks and insurance companies, for example, funding trades where the Fund is able to buy a bond and simultaneously enter into a total return swap removing any market exposure to that bond.
- **Relative value.** Exploiting situations where the debt of a single issuer, issued in different currencies, exhibits attractive price differences from time to time.
- **New issue premium.** Exploiting opportunities offered to the Fund in size and at attractive prices, because of the Fund's status in the market.
- **Opportunistic.** This catch-all category covers a heterogeneous range of credit-related opportunities, such as where the Fund is offered an attractive price on a security with the opportunity to hedge out all risks except those related to the specific issue.

The two liquidity pools are required to meet the Fund's calculated Minimum Liquidity Requirement (MLR), under which a certain percentage of the combined Liquidity Pools is to be available same day, through to T+2. The MLR is calculated as maximum two-day liquidity drawdown from the Fund's derivatives position, where the maximum is based on the historical extreme market volatility experience. Each asset class has its own extreme market multiplier that is constructed to cover 99.99% of two-day movements. There have been ongoing reviews of the costs and benefits of different approaches to setting the MLR limits. As recently as May 2014 a new measure was adopted under which a broader range of instruments is included in meeting the MLR (including corporate and mortgage-backed securities and passive equities and longer-dated fixed-interest securities), but subject to haircuts (of up to 50%). The instruments eligible for meeting the MLR are also subject to conditions (e.g. corporate mortgage-backed securities must be eligible for central bank repo and the passive equities are restricted to short settlement contracts (T+2), and so on).

In adding to the Liquidity Management Framework, the Guardians also operate a Liquidity Replenishment System (LRS). The LRS has been designed to manage the Fund's exposure to Value Adding Activities that are illiquid and/or require liquid assets. The LRS governance system ensures monitoring of liquidity risk, informed decisions, and appropriate reporting.

2.1.3 Insourcing

At the time of the previous review, the Guardians were observed by Mercer to be outsourcing most of its investment activities. At the same time, Mercer observed that, with respect to services, the Guardians had built deep expertise within its internal management with a view to achieving greater flexibility and control in activities. Mercer went on to recommend that the Guardians regularly assess "*the economics of managing activities internally relative to* *outsourcing. A prudent approach would be to undertake a business case assessment to determine the most optimal option for the Fund in respect of sourcing different activities. Ongoing development of the internal cost/capital allocation model would provide greater rigour in allocating staff resources commensurately with the allocation of the risk budget and financial/operating budget*."[25]

While the Guardians have complied with the Mercer recommendation, the extent to which they have outsourced investment activity has decreased steadily over time. At the same time, the range of opportunities into which the Guardians have invested has increased materially.

One of the recent decisions to insource was in relation to NZ equities. Prior to this decision, NZ equities were being managed externally, with a mixture of passive and active management. Based on research, the Guardians developed a strong preference for active management of NZ equities due to the potential to improve performance relative to passive management. However, there were difficulties in achieving the desired exposure to active management using external managers (due to the small number of managers offering an active NZ equity product, low manager conviction scores and the managers' capacity constraints). Internal active management was then pursued with an initial presentation to the Leadership Team in January 2010 and recommendations to the Investment Committee (IC) and Leadership Team in Q3 2011. While the decision to insource active management was under consideration, there were continuous and sizeable allocations to the Fund's NZX50 internal passive portfolio (due to issues with structure, resourcing and conviction of external management).

A paper was presented to the Board in December 2011 setting out a business case addressing:

- reasons why the New Zealand market was conducive for active management;
- issues with active external management and their preferred model for a mix of internal and external management;
- expected active returns and costs;
- ability to source an internal active team;
- controls needed to ensure effective internal governance (particularly in relation to securities trading restrictions);
- impacts on the remainder of the organisation (an Operational Risk Assessment (ORA) was completed to assess the impact of the decision on the organisation);
- integrating responsible investing; and

[25] Mercer, *op. cit.* p.102.

- risks and communications with stakeholders.

Following Board approval, an Internal Investment Mandate (IIM) was developed along with a paper setting out the philosophy and approach to active internal management (including the research and portfolio construction approaches, both in transitioning from a passive to active portfolio and for ongoing business-as-usual activity). At steady state, it is expected that up-to-date research views will need to be maintained for around 25 – 30 companies, with about half of that number active in the portfolio.

The Internal Active Equities Team went live in November 2013 with the transition period expected to run to the end of 2014. The Internal Active Equities Team is in addition to three external active managers. Interaction between the Guardians' teams remains significant, with execution by the Portfolio Completion Team to achieve the target portfolio (with oversight of liquidity issues) as well as interaction with the Responsible Investment, Direct and other investment teams. Cross-functional benefits were expected with the research conducted by the Internal Team a useful resource for other teams. At May 2014, approximately $526m were managed by the internal team (a part of this has been managed passively and a part actively, with the actively managed part increasing steadily over time), with a further $890m by the three external managers (representing approximately 5% of the Fund and around 2.4% of the NZX50 index capitalisation).

The impact on the organisation of the decision to insource a portion of active NZ equities management was expected to be slight, since much of the infrastructure required to manage the portfolio was already in place. The main impacts were additional headcount and fixed cost base, greater emphasis on internal controls, and the need for a stakeholder communications plan.

The new Investment Framework and accompanying organisational structure were designed around a number of key assumptions, including the need to build an operation that is agile and scalable (with the expected resumption of Crown contributions in the coming years). In 2013, a review was requested by the Audit Committee to ensure the framework for managing the valuation process and the potential impact to the Guardians from the increasing complexity of investments is robust and scalable. The impact of making more complex investments is often most felt on operational areas (such as legal, finance in terms of valuations, communications, and operations areas). Processes have been implemented to track the cumulative estimated impact on resourcing when on-boarding a new investment. The implemented tool tracks the cumulative impact of each new investment (in terms of ongoing workload) in a single source document that is circulated quarterly to the Risk Committee (RC). This document captures investments reviewed as part of the ORA process, as well as investments or divestments that do not go through the ORA process. A review of the investment operations group was conducted in 2013/14 in conjunction with an external consulting firm. In addition, a capacity forecasting model has been implemented for the operations team to capture tasks and model future staffing requirements and the scalability of certain tasks.[26] These processes and tools allow the Guardians to track the impact of new and complex investments (either insourced or managed externally) on the operational areas to ensure that the resources in these areas keep pace with the developments in the Fund's investments.

2.1.4 Other relevant features of the Guardians' Model

In addition to the changes that have taken place since the Mercer Review, some important characteristics of the Fund and the Guardians' approach to investments warrant explanation, if only for completeness.

2.1.4.1 Responsible investing constraints

Responsible investing (RI) is typically understood to include two aspects: the integration of environmental, social, and governance (ESG) considerations into investment analysis, opportunity selection and active ownership practices; and responsible exercising of voting rights with a view to strengthening good governance and business practices, and encouraging outcomes consistent with ESG principles.[27]

The Act requires the Guardians to observe both aspects:

- Section 61(d) refers to – "*ethical investment, including policies, standards, or procedures for avoiding prejudice to New Zealand's reputation as a responsible member of the world community*"; and
- Section 61(i) refers to – "*the retention, exercise or delegation of voting rights acquired through investments*".

The Guardians have an RI Policy and an RI Framework, which are based largely on the United Nations Principles for Responsible Investment (UNPRI) 6 Principles.[28] The policy addresses investment, engagement, voting, exclusion and/or divestment. As founding members of and active participants in the UNPRI, the Guardians provide strong support for the development of international best practice in RI.

In addition to the UNPRI, international standards and initiatives against which the Guardians are measured include the International Forum of Sovereign Wealth Funds; Santiago Principles; and the Sovereign Wealth Fund Institute Transparency Index. The Guardians are also participants in the Carbon Disclosure Project; the Investor Group on Climate Change Australia/New Zealand;

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[26] The impact on staff resources is explored further in Chapters 5 and 6.

[27] In this report we will use the terms RI and ESG interchangeably.

[28] See Section 5 of *Statement of Investment Policies, Standards and Procedures*, and *Responsible Investment Framework*, (February 2014).

the International Corporate Governance Network; and the Responsible Investment Association Australia.

Investment, Engagement and Divestment

The Guardians' framework for managing ESG explicitly excludes companies that are directly involved in:

- the manufacture of cluster munitions;
- the manufacture or testing of nuclear explosive devices;
- the manufacture of anti-personnel mines;
- the manufacture of tobacco;
- the processing of whale meat; and
- other companies that materially breach the Guardians' RI standards.

The Guardians use specialist screening agencies (such as MSCI) to identify companies involved in the above activities. These agencies monitor companies against international best practice standards (e.g. the UN Global Compact) to determine if they breach ESG standards, and the nature of those risks or breaches.

Screening of companies in the MSCI World Index is provided by the agency services. Companies outside the index are considered on a case-by-case basis using other relevant sources of information. Additional in-house analysis is also conducted as required.

ESG factors are considered explicitly with each investment, not only at the time of the initial decision but also on an ongoing basis.

Where companies are found to have breached RI standards they are reviewed by the Guardians, along with any remedial actions being undertaken. Where companies have not responded sufficiently to engagement, or engagement is unlikely to be effective, the Guardians decide whether or not to exclude the company from the investment set.

In making these decisions the Guardians take account of New Zealand and other national laws, international conventions to which New Zealand is a signatory, significant policy positions of the New Zealand Government, the likely impact of exclusion on expected Fund returns, actions of peer sovereign wealth funds, and the severity of the breach.

Excluded companies are listed on the Guardians' website. As of 31 December 2013, the Guardians listed over 160 excluded companies. These companies are excluded from both internal and external investment mandates to the extent that it is commercially feasible to do so. During 2012/13, the Guardians conducted a review of its external manager ESG practices with a focus on the assessment of each manager's ability to identify, manage and report on ESG risks and opportunities. ESG considerations are incorporated into the search and selection of external managers, built into fund mandates and monitored on an ongoing basis and through an annual RI conviction review.[29] The investment mandates require the manager to integrate ESG issues into its investment decisions and to regularly report on this integration. The Guardians identify each company and security that is to be excluded from both external and internal mandates and require the Fund's custodians to monitor all positions for compliance with these exclusions (and verify internally).[30] This approach is in line with international best practice in terms of managing the reputational risk of the Fund that could otherwise arise from a failure to meet its own standards.

Voting

Meeting the requirements of the Act extend beyond responsible investing. Voting rights are also important as a means for maintaining shareholder oversight and influencing the behaviour of directors, boards, and company policies. The Guardians exercise voting rights globally across the Fund's segregated equity portfolio.

Consistent with their commitment to transparency, the Guardians publish their proxy voting reports on their website on a semi-annual basis.

For all overseas equity holdings the Guardians instruct their external investment managers that they must vote the Guardians' holdings, either in line with the Guardians' voting guidelines, that manager's own internal voting guidelines, or through their proxy voting agency (ISS). The Guardians' broad principles to guide voting address transparency, board alignment with shareholder interests, remuneration, business ethics, and maintaining voting rights. These guidelines were developed with reference to global corporate governance principles, and codes adopted by the Financial Markets Authority, New Zealand Stock Exchange, the Australian Securities Exchange Corporate Governance Council, and other international agencies and investor funds.

When voting its New Zealand equity holdings, the Guardians consider the recommendations of both ISS and their New Zealand investment managers. The final voting decisions, however, are made by the Guardians.

External Reviews

The extent to which the Guardians have complied with their legislated objectives with respect to responsible investing has been the subject of a number of external reviews:

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[29] See Guardians' Annual Report, 2013, p. 59 and following, and How We Invest, p.29.

[30] We note that Northern Trust is only able to do this on a matched ISIN basis. The Guardians replicate the check internally given the potential negative reputational impact of an undetected breach.

- In 2005, in response to a petition for the New Zealand Parliament to inquire into the activities of the Fund with respect to socially and environmentally responsible investing, the Commerce Committee concluded that they were "*impressed with the activities of the Guardians as responsible investors*".[31]
- In 2009 the way in which the Guardians had sought to influence the private equity industry to integrate ESG criteria into the decision-making processes was published by the UNPRI as one of nine case studies.
- The 2009 Mercer Report devoted considerable space to the Guardians' approach to responsible investing. They found that the Guardians performed well, against a peer group of 12 sovereign wealth funds and other comparable funds, across a range of criteria used to compare RI practices. They also found that the Fund improved its relative performance against all six UNPRI Principles between 2007 and 2008 and that it improved to first or second quartile for Principles two to six.
- In 2010 and 2011 the Guardians again participated in a UNPRI survey. The results of that survey (see Table 3 below) found that, in 2011, the Guardians scored between 78% and 100% on the six Principles, were above the median of respondents on all six, and ranked in the top quartile on every Principle. The further improvement from the time of the Mercer Report has been commendable.

Table 3: Fund's Performance Against UNPRI Principles

	2010			2011		
	Your score per Principle	Median score: All AOs	Your quartile rank	Your score per Principle (↑ ↓ from 2010)	Median score: All AOs	Your quartile rank
GPS	96%	74%	1	91% (↓)	76%	1
Principle 1*	72%	30%	1	78% (↑)	39%	1
Principle 2	100%	63%	1	100% (-)	67%	1
Principle 3	80%	72%	2	93% (↑)	75%	1
Principle 4	88%	57%	1	81% (↓)	59%	1
Principle 5	100%	71%	1	100% (-)	75%	1
Principle 6	96%	47%	1	96% (-)	52%	1
No. of peers		168			198	

Top quartile 1 (green), quartile 2 (yellow), quartile 3 (orange), bottom quartile 4 (red)

Source: Reproduced from Individual Feedback Report: New Zealand Superannuation Fund, UNPRI, 2011.

2.1.4.2 Use of derivatives

The use of derivatives has increased materially since the Fund was established, with the current

[31] Petition 2005/133 of Dr. Russel Norman and 800 Others, Report of the Commerce Committee, 2005, p.1.

total notional derivative exposure being roughly one and a half times the size of the Fund.[32] Not only has the volume of derivative positions increased markedly, so too has the range of derivatives instruments used.

The use of derivatives is addressed indirectly in the Act and more specifically in approvals from the Minister. Section 50 of the Act states that–

> *(1) The Guardians may not, except with the approval of the Minister of Finance—*
>
> *(a) borrow money (in respect of the Fund); nor*
> *(b) mortgage or charge any of the real or personal property of the Fund, whether present or future, as security; nor*
> *(c) hold any financial instrument that places or may place a liability or a contingent liability on the Fund, or the Crown.*
>
> *(2) The Minister's approval may be given for any class of transactions in subsection (1)(a) to (c).*

The Act clearly contemplates that derivatives may be used by the Guardians where it states, in section 61(g), that the Guardians must have a Statement of Investment Polices Standards and Procedures that covers, *inter alia*, the "*use of options, futures and other derivative financial instruments*".[33]

Since derivatives can involve a contingent liability for margin payments and can also be interpreted as involving borrowing in some instances, the exact relationship between sections 50(1) and 60(g) is not entirely clear. To provide some clarity, on 10 March 2009[34] the Minister exercised his powers under section 50(2) to provide the following consolidated approvals[35]–

- *"the Guardians may, and may permit its investment managers, transition managers, currency managers and its custodians to enter into foreign exchange and other derivative contracts in relation to the Fund (s.50(1)(c));*

- *the Guardians may and may permit its investment managers, transition managers, currency managers and its custodians to enter into derivatives transactions, and to enter into securities lending transactions requiring the posting of collateral by that party in*

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[32]Since derivative positions may be either long or short and since offsetting exchange traded derivatives contracts are not typically offset, gross notional exposure can materially overstate the extent to which the portfolio is exposed to derivative positions.

[33]Section 61(g) of the Act.

[34]The 2009 approvals consolidated and expanded on approvals given earlier on 29 September 2003, 5 July 2004, and 3 May 2007.

[35]At the same time, the Minister also gave permission for the Guardians to: enter into short-term borrowing arrangements with its custodians, brokers and clearing houses to cover certain operational shortfalls; borrow from the Crown to meet foreign exchange commitments in the event that there is disruption in those markets; and enter into certain joint venture arrangements.

relation to the Fund, or the receipt, holding and return of collateral or margin (in whole or in part, whether or not in cash) by that party in relation to the Fund (s.50(1)(a),(b) and (c)); and

- *the Guardians, in relation to the Fund, may and may permit its investment managers, transition managers, currency managers and its custodians to enter into agreements and other arrangements with brokers, clearing houses, and other service providers to have a charge or lien over funds or securities that are from time to time held by that service provider on behalf of that party to secure that party's obligations under the agreement, provided such charges or liens are standard industry practice*."

In his annual Letter of Expectation dated 25 March 2013, the Minister provided further guidance to the Guardians on the use of derivatives. In that Letter he noted that:

> *"it is my expectation that CFIs should use derivatives judiciously and that, where relevant, there is a strong case for their use relative to equivalent physical exposures."*[36]

The Guardians' policy on derivatives (reproduced in full in Appendix 1) provides some general constraints on the use of derivatives, short selling and securities lending (as noted earlier, the Guardians no longer engage in securities lending). This policy has some key links to other documents. According to the Statement of Investment Policies, Standards and Procedures (SIPSP):

- Procedures relating to the use of derivatives are found in Part 2 Section B of How We Invest (HWI);
- The Funds Rebalancing Target is spelled out in Section 6 of the Portfolio Completion and Internally Managed Securities Policy (PCIMSP);
- The process for approving derivative products is set out in Section 8 (Product Approval) and Section 9 (Counterparty, Portfolio Completion Agent, and Non-Master Custodian Selection and Exposure Management) of the PCIMSP; and
- Standards relating to the competency of external managers to use derivatives are set out in Schedule 2 of the Externally Managed Investments Policy (EMIP).

A schedule of approved derivatives products is included in Schedule 5A of the PCIMSP.[37] These are:

- Foreign exchange forwards;

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[36] CFIs are Crown Financial Institutions.

[37] Note that this list is from the more current version of the PCIMS dated 13 February 2014. The version available on the website is dated 20 September 2013 and contains different information in Schedule 5A to that listed above.

- Swaps;
- Forward rate agreements;
- Futures;
- Options;
- Exchange traded funds (ETFs); and
- Exchange for physicals (EFPs).

From discussions with staff, we understand that the Guardians apply a rigorous process around derivatives designed to ensure that the combination of derivatives and physical positions must be such that the portfolio's net effective exposure to any particular underlying risk (e.g. the emerging market equities index) is no greater than would be created if the portfolio were invested only in the relevant physical securities.

The clearest statement of this principle that we were able to find was in an investment mandate to an external manager (which is included in a large proportion of the external manager mandates), which stated that:

> *"The Manager must not use derivative contracts, physical securities or any combination of the two to produce financial exposures that would result in leveraging the Portfolio. Leveraging the Portfolio means in this Agreement where the Portfolio's net effective exposure to investment markets is greater than would be created if the Portfolio was only invested in physical securities and the Manager was in compliance with the restrictions set out in this Agreement. Derivative Contracts must only be used to produce financial exposures which match or closely resemble those exposures otherwise obtainable through the use of Equity Securities in the absence of leverage.*
>
> *The Manager must not use Derivative Contracts, physical securities or any combination of the two to produce financial exposures that would be effective net short positions unless a corresponding long position is taken and maintained in respect of the same security. For this purpose, an effective net short position is the taking and maintenance of a position in respect of one asset or asset class whereby the value of the Portfolio will be enhanced if the price of that asset falls. Where an effective short position is taken over more than one asset, as in the case of a basket or index derivative, the corresponding long exposure may be a basket of physical Derivative Contracts which could reasonably be considered as a proxy for those assets."*

Our understanding of the way in which this principle is implemented is essentially by holding an appropriate amount in liquid assets (cash) to offset the derivative position.

An important aspect of using derivatives is the need to manage liquidity for margin calls and collateral. As outlined in Section 2.1.2.3, the Guardians have a well-established framework for managing liquidity through the portfolio completion process.

2.1.4.3 Documentation

The Guardians have documented their investment policies in a series of papers (refer to Appendix 2 for a complete list of the Guardians' policies).[38] Section 61 of the Act requires the Guardians to publish an overarching Statement of Investment Policies, Standards, and Procedures (SIPSP). Beneath the SIPSP there are five main policy documents and a general document that provides an overview of the investment framework that is also the primary reference point for procedures. These documents are:

- Investment Risk Allocation Policy (IRAP);
- EMIP;
- PCIMSP;
- Strategic Tilting Policy (STP);
- Direct Investment Policy (DIP); and
- HWI.

The SIPSP is a very high-level document. In view of the focus of the Review on derivatives products, the policy and related procedures for derivatives are reproduced in full, by way of example, in Appendix 1.[39]

Further details about the Guardians' approach to investments can also be found in any number of other places. For example:

- The Guardians' website has a comprehensive summary of most elements of their approach to investing;[40]
- The Guardians provide regular information on the principles and practices behind their investment strategies in papers to the Committees and Board;[41]
- The Guardians have responded to a wide range of requests for briefings on the role and

[38] Note: risk policies are addressed in Chapter 3 and other policies in Chapter 5.

[39] Statement of Investment Policies, Standards and Procedures, p.p. 17 and 18.

[40] See, for example, HWI, SIPSP and all Investment Policies, Responsible Investment Framework, Investment beliefs and themes, Reference Portfolio Review (September 2010), Added value activities, Investing in NZ, Appointing and reviewing investment managers.

[41] We were provided with a wide range of papers prepared for Management committees and the Board.

performance of the Fund;[42] and

- The Guardians have also sought to share their experiences through active participation in professional conferences and to publish professional papers on their work.[43]

2.2 Observations and Recommendations

The overall investment framework is arguably the single most important aspect of the operations of the Guardians. In the absence of appropriate objectives, strategies and performance benchmarks the Guardians are unlikely to meet the Government's objective for establishing the Fund; namely, to fund future superannuation obligations. In assessing the investment framework, we have been guided partly, although not entirely, by the series of questions raised in the terms of reference for the review. This section offers our observations about the appropriateness of the investment framework and, in so doing, provides responses to the specific questions raised by the terms of reference and some additional questions and focus areas raised by Treasury directly.

2.2.1 Observation 1 - Appropriateness and clarity of philosophy and approach

The terms of reference raises the following specific questions with respect to the objectives and philosophy adopted by the Guardians in designing their investment framework.

Question: Have the Guardians set clear and suitable investment objectives?

Question: Do the Guardians follow an appropriately thorough process in determining their asset allocation and investment objectives?

Question: Is the investment strategy and asset allocation appropriate given the purpose and long term nature (i.e. first withdrawals not expected until 2030) of the Fund?

Observations

We would characterise the Guardians' investment philosophy in the following summary terms:

- The Guardians have selected a risk-return profile for the Fund that is consistent with the long-run objectives set down in legislation.[44] This profile defines the Reference Portfolio

[42] See, for example, Response to Commission for Financial Literacy and Retirement Incomes (April 2013), Submissions to Finance and Expenditure Select Committee (May 2014, Nov 2010) and Commerce Select Committee (Feb 2013, Dec 2009) and Submission to the Savings Working Group (Sept 2010).

[43] See for example, *Allocating Risk Capital – the Case of the NZSF* (Rotman International Journal of Pension Management, Vol 6, No. 2, Fall 2013), and *Governance, Investment Beliefs and Dynamic Asset Allocation* (Nov 2009, prepared for the joint BIS/ECB/ World Bank Public Investors Conference 2009) .

[44] See Section 2.2.2 below for further comment on the benchmark.

that serves both as the long-run objective of the Fund and as a benchmark against which to measure the performance of the investment strategies of the Guardians.

- The Guardians believe that asset classes in traded markets can become disconnected from their fundamental earnings determinants for potentially protracted periods, but are prone to reversion to their equilibrium values over time.
- The Guardians believe that value can be added by a long-term investor by capturing the illiquidity premia embedded in certain direct investments and by arbitraging the deviations in relative value that can arise across a wide range of investments.
- In addition to the two main investment strategies, the Guardians also believe that they can reduce the cost of implementing their strategies by managing a wide range of transactions in-house, rather than outsourcing these.
- The Guardians have developed an approach to assessing opportunities within the two main strategies that involves using conventional statistical analysis of historical data, combined with scenario analysis and judgement, to construct the marginal risk and return characteristics of potential tilts and opportunities. This approach is used to rank the attractiveness of alternative investments.
- The selection of actual investments within the universe of possibilities is constrained by a coherent risk framework that is applied to individual investments as well as to the portfolio overall.[45]
- The development of these strategies and their implementation is governed by a rigorous framework of controls and approvals, not only to ensure that they are consistent with the framework but also to ensure that they meet the responsible investing requirements of the Fund.[46]

At the time of the Mercer Report in 2009 several of the strategies outlined above were still in the early stages of development. Mercer made a number of recommendations aimed at strengthening the discipline around the Guardians' approach to investments. In our assessment, the Guardians have not only responded positively to the Mercer recommendations, they have gone well beyond them in many respects.[47]

There is no unique best way to approach investments. Regardless of how diligently a portfolio

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[45] The risk framework is reviewed further in Chapter 3.

[46] The governance framework is reviewed further in Chapter 5.

[47] In total there were 31 recommendations in the Mercer Report, 24 of which were noted as endorsing actions already underway. The Guardians provided a progress report on the implementation of each recommendation. At June 2010, 16 recommendations had been fully implemented while 12 were either partly implemented or subject to ongoing implementation. There were only three recommendations where no action was taken by the Guardians (one of which was a matter for the Government).

manager applies historical data and experience in making investment decisions, each new period has a way of introducing unforseen events and producing outcomes that contradict history. The best any investment manager can strive for is to implement a practical approach that blends history and judgement and, most importantly, applies a logical and disciplined framework to all deviations from a properly specified benchmark.

In our view, the Guardians have developed one of the most intellectually rigorous, consistent and disciplined frameworks that we have encountered. The objectives and strategies employed are entirely appropriate for the long-term nature of the Fund and the processes they employ are thorough, intellectually sound, and professional. The strategies have been through a steady process of development, improvement and refinement. In our view, compared with the early years of the Fund, the coherence and soundness of the overall investment framework has been strengthened materially. We may have minor differences of opinion with some elements within the framework (see below), but our differences are second order when considered against the bigger picture of what the Guardians have achieved.

While there is no certainty in the world of investment, the approach employed by the Guardians has added value relative to the Reference Portfolio to date and we believe it has the potential to continue to do so.

The following sections add colour to these overall observations.

2.2.2 Observation 2 - Appropriateness of the benchmark

The terms of reference for this Review raise the following specific questions with respect to the benchmark portfolio.

Question: The investment objective has been restated as a Fund Expectation; being the New Zealand Treasury bill rate plus at least 2.5% over rolling 20-year periods. Is it in line with best practice to have a Fund Expectation in place of an investment objective?

Question: Is this expectation appropriate for the Fund, after taking into account factors such as the long horizon before initial expected withdrawals and the asset mix of the Fund? Is 2.5% a sufficient risk premium?

Question: Empirical evidence indicates asset allocation drives over 90% of variation in returns; therefore the asset mix of the Reference Portfolio is a vital factor in creating an appropriate hurdle for active management. Is the asset allocation for the Reference Portfolio appropriate?

Observations

As noted in Section 2.1.1, the Guardians have changed the primary benchmark against which they assess their active performance, from the 90-day Treasury bill return to a Reference Portfolio based on a strategic allocation of tradeable asset classes. While the 90-day Treasury bill return no longer defines the investment objective of the Fund, it is still relevant in that it establishes the long-run 'expected' return on the Reference Portfolio (which is the risk-free rate plus a risk premium of 2.5%). Given the way in which the Reference Portfolio and the risk-free rate are linked, if the actual portfolio outperforms the Reference Portfolio over a long period, it should also outperform the 90-day Treasury bill (plus 2.5%). However, it should be emphasised that, the Reference Portfolio, and not the Treasury bill return, is the relevant benchmark against which the active investment strategies of the Guardians should be judged over short- and even medium-term periods of time. The restatement of the link to the Treasury bill return as an 'expectation', rather than as a 'target' or 'objective' is, in our view, logical and reasonable given the shift in focus to the Reference Portfolio.

As noted in the Mercer Report, there is no common formulation of benchmarks for Sovereign Wealth funds. In practice, these range from fixed return expectations (specified in either real or nominal terms) to adding a minimum marginal return over a benchmark portfolio (consisting of either a fixed-rate reference or a combination of major assets classes). The Mercer Report recognised the absence of precision in the legislated mandate and the need to better clarify the Fund's performance objective. That Report recommended that "*the Crown gives consideration to whether an actual investment rate of return or risk target would provide a clearer benchmark against which to judge the Guardians' performance over the medium term, rather than the current expectation to exceed 90-day Treasury bills plus 2.5% p.a. over rolling 20 year periods*."[48]

While there may be no common agreement as to the best formulation of a benchmark for sovereign wealth funds, there are certain logical criteria that a benchmark should meet. The most important of these is that it should establish incentives that are consistent with the objectives of the Fund. As noted earlier, in the case of the Fund, the key characteristic of its objectives is its long-term horizon. Thus, an appropriate benchmark should encourage sound long-term investment behaviour.

While the Reference Portfolio and the 90-day Treasury bill plus 2.5% may yield the same long-run outcome, they can produce very different outcomes in the short term. The key to the change of benchmark is that the Reference Portfolio (and the strategic asset allocation before it), unlike the Treasury bill benchmark, moves in the short run in line with general movements in market conditions. Thus for example, in 2008, while the Treasury bill benchmark return remained positive, the return on the Reference Portfolio went strongly negative, along with the drop in global equities markets in that period. While the returns on the Reference Portfolio may be volatile in the short-term, its *ex ante* expectations remain better linked (than the return on fixed-interest securities) to the long-run objective of the Fund. This reduces the pressure that can otherwise emerge to adjust the actual portfolio back towards cash – at the very time that long-term investors should arguably be taking a position contrary to the normal loss-reducing reaction of short-term investors.

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[48] Recommendation 3.2 in Mercer, *op. cit.* p.34.

A second advantage of the shift to the Reference Portfolio is that it better separates the value-adding active investment strategies of the Guardians from the strategic asset allocation decision.[49] Under the previous benchmark structure, the performance measure of the Guardians' activities combined the strategic asset allocation decision and value-adding (or tactical) decisions – both measured relative to the benchmark of 90-day Treasury bills. By effectively absorbing the strategic asset allocation component into the Reference Portfolio, the Guardians have concentrated the measurement of their performance into the tactical realm. Given that, as noted in the terms of reference, the vast majority of variation in management returns of portfolio managers is attributable to the strategic asset allocation decision, the new performance benchmark is considerably more challenging for the Guardians than the original benchmark linked to the 90-day Treasury bill return.

It is possible to argue over the particular strategic allocation selected in the Reference Portfolio. For example, a higher allocation to growth assets (and a corresponding lower weight allocated to fixed interest) would have yielded a higher benchmark return over the past five years than the Reference Portfolio as constructed. Such an assessment, however, benefits from the advantage of hindsight. In a falling market the reverse would likely be true. The relevant question in this respect is not whether a particular re-weighting of the Reference Portfolio would have outperformed the selected Reference Portfolio over any particular period *ex post* but, rather, is any particular re-weighting of the Reference Portfolio clearly superior *ex ante* to the weights selected by the Guardians in terms of aligning it with the statutory objectives of the Fund?

As noted above, the Guardians first determined the Reference Portfolio that they assessed as best representing their legislated objectives. The Guardians then solved for the risk premium implicit in the Reference Portfolio, using historical data and conventional statistical techniques. Using the same methodology as that employed by the Guardians, a higher weight on growth assets would yield a higher *ex ante* margin over Treasury bills, while a lower weight on growth assets would yield a lower *ex ante* margin over Treasury bills. Whether a different portfolio mix would be more appropriate is impossible to assess without greater clarity in the Act.

In our view, the Guardians have approached the selection of the Reference Portfolio in a completely objective and professional manner. In the absence of greater clarity in the Act, we can think of no obvious change in methodology or philosophy that would produce a superior outcome.

The only area in which we might take issue about the way in which the Reference Portfolio is constructed for performance measurement purposes is the assumed cost of 30 basis points for passively managing the Reference Portfolio. This point is taken up in Chapter 4 below.

[49] To the extent that the structure of the Reference Portfolio is largely a Board decision, while active investments are largely management decisions, the new framework also better separates the decisions of the Board from those of management.

2.2.3 Observation 3 - Approaches to adding value

Observations

As spelled out in Section 2.1.2, the Guardians take three approaches to adding value: strategic tilting, capturing active returns, and portfolio completion. In this section, we offer a few general observations about these approaches.

Our main (positive) observation is that, in all three cases, the Guardians employ essentially the same consistent, logical, and disciplined approach to selecting investments. The overall approach is, in our view, at least consistent with best practice by international sovereign wealth funds. Our following observations should be read against the backdrop of this overall assessment.

Independent oversight of Opportunities

As noted in Section 2.1.2.2, the range of opportunities approved for investment by the Guardians has increased materially over time, even though the opportunities actually pursued may have narrowed somewhat in the past five years. As well as having the potential to stretch operational support, the wider the range of opportunities considered, the greater the demand on front office management to bring the necessary skills to bear across a wider range of investment fronts. We also note that the range of opportunities includes a number of complex, non-mainstream investments (such as catastrophe bonds, life settlements, and distressed credit).

While nothing in the material we saw, or interviews we held, left us with the perception that the Guardians lack the skills needed to pursue these investment opportunities successfully, we note that the level of independent oversight of opportunities is relatively narrow, compared to best practice.[50] The oversight in place at present consists of the following:

- A strong horizontal engagement in investment assessment (both risk and expected return) under the new Target Operating Model;
- Delegation for approval of new opportunities to the Chief Executive, on advice from the IC (who are responsible for reviewing staff assessments of both risk and expected return);
- Board approval of asset classes; and
- Board approval of large investments (according to Schedule 7 of the IRAP, the investment in a single asset is restricted to 2% of the Fund's Net Asset Value (NAV), and this constraint must not be exceeded without Board approval).

[50] Independent oversight in this context refers to oversight by individuals who are not directly involved with investment decisions and who have no remuneration incentives linked to the outcome of investment decisions.

With respect to this last characteristic we note that, with the Fund at its current size of approximately $26 billion, a 2% approval requirement translates to an investment size of roughly $500 million before Board approval is required. While this may seem not excessive, as the Fund grows in coming years this value will also increase to levels that may represent very large individual investments in dollar terms.

We make no recommendation on this observation at this stage but will return to it in some later sections and recommendations.

The Pace of Change

As noted in Section 2.1.2.2, the Guardians have undergone considerable organisational change, as well as change in their approach to investments, over the past five years. All of these changes have, in our view, been positive. Had the Guardians not recently been through the review of their Target Operating Model in the way they have, we would have recommended a pause in new investments while such a stocktake took place. In view of the investment review that has taken place, we are comfortable with measured advancement into new opportunities. Change nonetheless puts strains on staff and, in particular, on support service areas (refer to Section 2.2.4 below).[51] Any institution has limits on the pace at which it can absorb change and this may be a good time for a period of organisational consolidation at the Guardians.

Against this observation we make the following recommendation.

Recommendation 1 – Period of organisational consolidation

> *We recommend that the Guardians consolidate the changes that have been made in the past few years and put a temporary pause on any further major changes, either in investment approach or organisational structure, until such time as all previous changes have been fully absorbed across the entire organisation.*

2.2.4 Observation 4 – Shift to greater reliance on in-house expertise

The terms of reference for this Review raise the following specific questions with respect to in-house investments.

Question: How well placed are the Guardians to manage the Fund's increased size and complexity, both at the organisational level and also in terms of investment strategy?

Question: Is a high-conviction portfolio appropriate given the size of funds under management and the size of the New Zealand equity market? How are capacity constraints mitigated? Can the mandate add value (after expenses) relative to a passive strategy?

[51] The impact on operational support is considered further in Chapter 6.

Question: Is the in-house NZ equities team in a position to value-add given the high concentration on a small number of stocks and the high value relative to the NZ market?

Observations

We agree with the observation made by Mercer that insourcing investment activities is very demanding on internal resources, especially in the area of operations, where the demand on staff skills increases more than proportionally with the range of investments undertaken.

In relation to the decision to bring a portion of the active NZ equities management in-house, the Guardians considered the impact on other parts of the organisation in the business case that went to the Board for approval and by completing an ORA. Key areas were addressed by the development of specific action plans (e.g. securities trading, RI and communications). The impact on other areas was expected to be slight (with the project team contributing to the business case including representatives from Operations, Information Technology (IT), Human Resources (HR), RI, Legal, Finance, and Risk).

In our view, the business case and the philosophy/process outline included well-considered arguments and was well documented. The transition from passive to active management is being implemented by way of a gradual approach. Progress on the strategy is included in the monthly Dashboard report that is provided to the Board with more detailed analysis on performance a six-monthly basis with reporting on ESG integration on a quarterly basis. The limits contained in the IIM are monitored on an ongoing basis and reported at least monthly.

Based on our review, we saw no reason to suggest that the in-house NZ active equities mandate should not add value relative to the passive mandate. We were also reassured that there are adequate processes in place to monitor and manage these investments.

As noted in Section 2.1.3, the Guardians have developed techniques to address the issue of the cumulative effect on resources from managing complex investments and managing these issues. As noted later in Chapter 6, we are of the opinion that the resources allocated to operational support are in need of expansion. We also note that the need for this expansion has been recognised and provided for by the Guardians.

2.2.5 Observation 5 - Use of derivatives

The terms of reference for this Review raise the following specific questions with respect to the use of derivatives.

Question: The fund has increased in complexity. There is a need to look at the use of derivatives, including the investment of collateral and consistency (or inconsistency) with the direction from the Minister.

Question: How do the Guardians ensure that the use of cash collateral is consistent with approvals given by the Minister of Finance under section 50 of the Act?

Observations

In the public's perceptions, derivative products have been tainted somewhat in recent years by a series of worldwide scandals in which end users have incurred huge losses by failing to fully understand the risks involved. The ability of investors to use derivatives to leverage their positions and to take outright gambles (e.g. by using derivatives to short-sell exposures rather than to hedge risks) has understandably made boards cautious about their use. Derivative products nevertheless can play a perfectly valid role in hedging risks and lowering the cost of taking desired strategic exposures. In our view, provided the risks involved are well understood and their use is tightly controlled, there is no reason that derivatives should not play a central role in managing a portfolio such as the Fund.

As noted in Section 2.1.4.2, the use of derivatives is governed by the Act and Ministerial approval and guidance. While the Guardians have implemented a rigorous methodology for complying with these requirements, the methodology was not evident in any of the documentation we reviewed in relation to derivatives. More generally, we note that derivatives are sufficiently important that they warranted attention in the Act and Ministerial clarifications. This suggests to us that they also warrant a separate policy that addresses the political considerations and makes clear how the Guardians comply with them.

We recognise that reporting to the Board by the Guardians on their use of derivatives is extensive and generally very helpful. We nevertheless believe it could be strengthened further by including at least some periodic statement as to the way in which the Guardians have complied with the Act and Ministerial guidance. That statement should make clear the way in which the Guardians have interpreted the Act and Ministerial guidance, as well as the mechanisms and controls through which the Guardians implement compliance.

Another area in which we believe the reporting of derivatives could be strengthened relates to an analysis of the non-linear impact of options on risk. We recognise that the use of options by the Guardians is, at present, very minor. It is nevertheless a good discipline to include the analysis of options as a regular item, especially given that the approvals already in place could result in an increase in their use at a later time. We also noted that the regular reporting to the Board on derivative use was limited to their use by internal managers.

With respect to derivatives we make the following recommendations.

Recommendation 2 – Derivatives

We recommend that the Guardians develop:

- *a separate and comprehensive 'Derivatives Policy' and also detailed associated 'Derivatives Procedures' setting out the legislative context in which derivatives can be used in managing the Fund, the constraints on their use, and the mechanics of how the Guardians ensure that they are used within the intended limits; and*

- *an additional report for the Board, and also for annual reporting to the Minister, that confirms that the use of derivatives complies with the Act and the Minister's guidance.*

Suggestion 1 – Board reporting on use of derivatives

We suggest that the Guardians include in their reporting to the Board on the use of derivatives, an analysis of the non-linear impact of options on the risk profile of the Fund and the use of derivatives by external managers.

2.2.6 Observation 6 – Documentation[52]

The terms of reference for this Review raise the following specific questions with respect to documentation.

Question: Is the process documented sufficiently (i.e. asset allocation and investment objectives)?

Observations

The documentation provided by the Guardians presented us with a paradox. On the one hand, the Guardians are highly transparent about their activities. They have multiple public documents that outline their approach to various aspects of managing the Fund. They have also participated actively in academic conferences and workshops on sovereign wealth management. The paradox was that, despite the extraordinary lengths to which the Guardians have gone to provide transparency, it was difficult to build a coherent picture of the more complex parts of their investment processes.

At the policy level, the story was reasonably coherent, although in certain key areas (such as the use of derivatives) the policy did not, in our view, adequately address the key issues. Where the documentation was much less informative was at the level of procedures. In the bulk of cases, the policies refer the reader to the HWI document for procedures. The HWI, however, is a very high-level document that gives a useful overview of the approach taken by the Guardians, but contains almost nothing that we would describe as procedures.

The guiding principles for 'Policies and Procedures' are that they should enable new staff members to understand:

- the underlying philosophy of the area being covered (e.g. why proxies are used in the strategy for capturing active returns, how they are constructed and what they are

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[52] Comments in this section relate to the documentation of the investment framework. Further comments on other areas of documentation can be found in Chapter 3 on risk management and Chapter 5 on governance.

intended to achieve);

- the main elements of the area and how various issues are addressed;
- a detailed set of procedural steps for implementing the policy (a comprehensive 'how to' for executing the strategies); and
- the controls that apply to the area.

In most cases, we were able to find many of the ingredients of a comprehensive policy and procedures framework. Several areas had excellent process maps that set out controls and procedures in great detail. In only a few cases did we fail to find what we were looking for – the use of derivatives being the most notable exception. The problem was that we typically had to search through a range of documents to piece the important components together. For example, we were often directed to philosophy, decisions or techniques that were set out in papers prepared for the IC, a steering committee or the Board. In most cases, we found the detail included in these papers to be comprehensive. However, we do not believe that documentation in committee or Board papers is adequate as permanent documentation. Once presented to the Board or committee, the details set out in the papers should be included in the relevant internal document (policy or procedure).

With respect to procedures, we found that staff understood what was involved in implementing the various policies. That, however, is not sufficient when new members of staff are introduced and where public accountability is involved. We understand the magnitude of the task involved in rebuilding investment documentation, but believe that the long-run benefits of doing so far outweigh the cost involved. We should be clear that we are not suggesting that the HWI be expanded to include actual procedures (the HWI is better left as a higher-level public document). What is needed is a single document or location in which all policies and procedures can be found. These should consolidate the various pieces of information currently scattered through multiple documents and should be maintained current at all times. Good policies and procedures should be the single authoritative reference point for any questions about how the Guardians manage the Fund.

Thus we make the following recommendation.

Recommendation 3 – A single coherent policies and procedures manual

We recommend that the Guardians consolidate their investment policies and procedures framework into a single authoritative reference point for understanding the investment philosophy and practices employed by the Guardians in managing the Fund. The procedures should set out the way in which various issues are addressed (both in principle and in technical detail), and the detailed steps and controls involved in implementing the investment philosophy.

3 Risk Management

3.1 The Guardians' Approach to Risk

Section 58(2)(b) of the Act requires the Fund to be invested in a manner consistent with "*maximising return without undue risk to the Fund as a whole*". The Guardians' approach to managing all aspects of risk is therefore critical to being able to meet the Fund's objectives. Some aspects of the risk management framework were covered in Chapter 2. The remaining aspects are covered below.

3.1.1 Board's Risk Appetite Statement

The starting point for any analysis of risk is the Board's Risk Appetite Statement (RAS). This can be found in Schedule 2 of the Guardians' Risk Management Policy (RMP), which sets out the Board's investment risk and business risk constraints.[53] The main investment risk components of the current RAS are the following:[54]

- Risk Budget (see below) – "*We expect long term equilibrium volatility of the Fund to around 13.3%*";
- Absolute Risk Limit – "*We expect the Fund to be managed within a range of +/- 0.60% of the Risk Budget*";
- Active Manager Limit – "*No single manager will have more than 0.25% of the Fund's Total Risk Budget*"; and
- Strategic Tilting Active Risk – "*The maximum active risk of strategic tilting is 6.90%"*.

The full statement also includes risk limits for particular time periods and single exposures of different types. The key features of this RAS are: its limitation on total investment risk; its specification of tolerances for particular sub-risks; and its overall quantitative orientation and detail.

3.1.2 Identifying risks

The Guardians define risk as "*any internal or external factor which poses an actual or potential*

[53] RMP (last updated September 2012).

[54] RMP, *ibid*., Schedule 2, pp.14-17.

threat to the ability of the Fund to fulfil its purpose".[55] The RMP provides an overview of the five major (investment and non-investment) risk categories that have been identified by the Guardians. These are highlighted in Table 4 below.

Table 4: Risk definitions

Risk	Guardians' Definition	Executive Oversight
Investment Risk	The standard deviation of expected return	IC and the Funding and Treasury Group (FTG)
Operational Risk	Risk of loss from inadequate or failed internal processes, people and systems or from external events	RC
Legislative and Regulatory Risk	Risk of loss due to non-compliance with laws, rules and regulations and prescribed industry practice	RC and General Counsel
Strategic Risk	Risk of making inappropriate strategic choices or unable to successfully implement selected strategies	Leadership Team
Reputation Risk	Risk of loss of reputation or credibility sufficient to have a commercial or other practical impact due to internal or external factors	Leadership Team

Source: RMP, p.4-5.

Investment Risk

Investment risk is fundamental to meeting the objectives of the Fund. To enable the Fund to generate returns through its active investment strategies, it is exposed to investment risk. Investment risk takes various forms depending on the particular securities, derivatives, direct investments or other types of investments involved. It arises from simple exposures (e.g. exposure to movements in market prices), as well as from more complex exposures involving structured debt products or direct investments into industries such as energy.

Investment risk is identified and managed at two levels by the Guardians. At the highest level the Board sets an overall risk budget (defined in terms of the expected long-term equilibrium

[55] RMP, Section 1.3, p.4.

volatility or ‘active risk’[56]) consistent with its risk appetite[57] and has recently approved an overall limit to the risk budget. In addition to this overall risk limit, Board constraints and investment mandates set a series of more granular risk limits. Categories of risk subject to these limits include concentration risk, market risk, counterparty credit risk, liquidity risk and overall exposure to various strategies.[58]

Operational Risk

Operational risk is inherent in all business activities, processes and systems, and can range from a simple input error, with minimal consequences, to a natural disaster than could have significant impact across the organisation. Given the scope of operational risk, its effective management is a fundamental element of any organisation’s risk management framework. The Guardians have recognised the importance of being able to understand, manage and, in some cases, mitigate operational risk. This risk management process is described further below. The outputs, including the description and assessment of the various identified operational risks, are documented in business unit Risk Registers and higher-level Risk Records.[59] Separate standards have also been developed in specialist areas such as fraud, business continuity and security.

Legislative and Regulatory Risk

In order for the Guardians to manage legislative and regulatory risk (also known as compliance risk), they first identify all existing legislative obligations of the Fund and ensure these are embodied within the various policies. The General Counsel monitors for changes to these obligations through various means, including the use of internal staff and external legal advisers. Monitoring of compliance with policies, and by extension, legislative obligations, is performed through a periodic certification by all staff. The certification covers compliance with all policies relevant to their business activities. In addition to the certification process, the Guardians also aim to provide ongoing assurance on specific aspects of policies through a number of business-as-usual processes and reviews.

Strategic Risk

Risks to the Guardians’ strategy are identified and discussed as part of the strategic planning and implementation processes. This process involves the Leadership Team, the Board and selected external parties. The approved strategy is translated into operational terms through business unit plans and individual performance management plans. Progress against the

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[56] See discussion of the Sharpe Ratio in Chapter 2.

[57] Further details about the risk budgeting process are provided in Section 3.1.5 below.

[58] Further details about market risk and credit risk are provided in Sections 3.1.5. Further details about the measurement and management of liquidity risk can be found in Chapter 2.

[59] Further details about Risk Registers and Records are provided in see Section 3.1.4 below.

Strategic Plan is monitored by the Board on a quarterly basis through the Board's Dashboard Report. Alignment with the Guardians' strategies is also taken into consideration as part of the process of assessing new opportunities. Strategic risk is also assessed by the Guardians' formal risk management process (described below).

Reputational Risk

The Guardians have taken a proactive approach to identifying and managing potential reputational impacts. Each of the eleven Risk Records of the Guardians identifies the potential for reputational impacts should any of the risks identified (within each Risk Record) materialise. Reputational risk is also managed through the Guardians' Communications Policy and RI constraints. One of the key objectives of the Communication Policy is to preserve and enhance the reputation of the Guardians through a managed process covering external communications, information (both internal and public), speaking with media and at events, and approach to sponsorships. The Guardians' RI Framework also works to protect the Guardians' (and more broadly New Zealand's) reputation by ensuring that ESG aspects are considered across all investments.[60]

3.1.3 Assessing risk

To assess the various types of risks, the Guardians have developed a structured four-stage approach to risk assessment. We note that, although not explicitly stated in the Guardians' policy, the approach below is largely limited to the assessment of non-investment risks. The management of investment risk is discussed in Section 3.1.5. The approach can be summarised as follows:

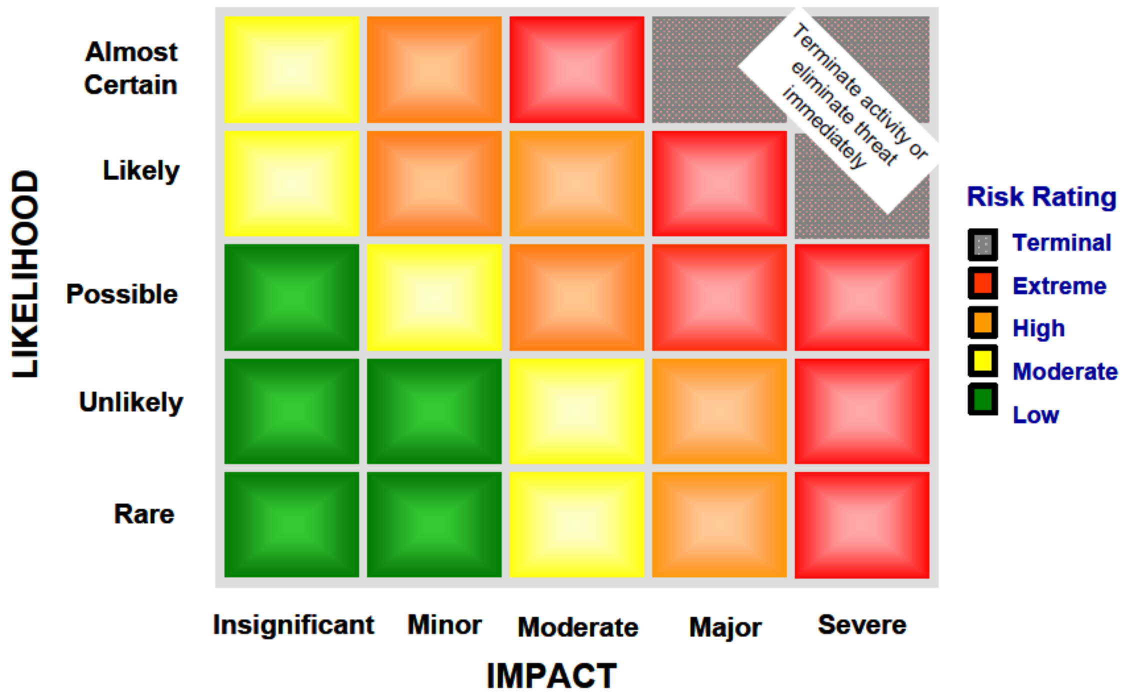
- ***Stage 1: Risk Identification*** – The strategic plan, business plans, business activities and external/environmental activities are all considered in order to arrive at a comprehensive list of events that can negatively impact the Guardians' objectives.
- ***Stage 2: Risk Analysis*** – The likelihood and impact of each event are rated subjectively using five buckets to arrive at an overall inherent risk rating. The likelihood buckets range from 'almost certain' (95% chance of occurring in the next 12 months) to 'rare' (4% chance of occurring in the next 12 months). The impact buckets range from severe to insignificant. Each impact bucket has guiding levels of severity based on investment performance (both relative to the Reference Portfolio and from an absolute perspective), operational loss or reputational impact. For example, the highest impact bucket, 'severe' represents a variation of three standard deviations from the Reference Portfolio, an absolute loss of 25% of the fund's value over one year, an operational impact that is greater than 10 basis points of the fund's NAV or an independent review (publicly

[60] Further details about the Guardians' approach to responsible investing can be found in Chapter 2.

released) that brings into question the Guardians' competence and/or integrity.

- ***Stage 3: Control Effectiveness*** – The Guardians analyse existing controls that mitigate the inherent risk and perform a formal annual assessment of the control effectiveness. The control effectiveness assessment is challenged by external and internal audits and any relevant incidents that have occurred in the past.
- ***Stage 4: Residual Risk Analysis*** – Residual risk is defined as the level of risk remaining for each identified risk after consideration of inherent risk and controls. A risk rating for residual risk is also assessed on a likelihood and impact basis and then compared to a target risk rating. Actions for each residual risk are decided which may include accepting the risk, minimising the likelihood or impact, transferring the risk (e.g. through insurance) or eliminating the risk (e.g. exit the specific activity). The likelihood and impact scale are ranked on a 'heat map' as illustrated in Figure 1 below.

Figure 1: Risk Ratings by Likelihood and Impact



Source: RMP, Schedule 4, p.32

All non-investment risks, their assessments and response actions are documented in each business unit's Risk Register.[61] If there are any transaction-specific risks, they are recorded in

[61] For further details about Risk Registers and Risk Records, see Section 3.1.4 below.

an ORA, which is performed for all new types of transactions or opportunities. Similarly, project-specific risks are recorded in Project Plans for any major project initiatives. Any risks rated with an inherent risk of High, or above, are also recorded in the relevant Risk Record (see below), which is reviewed by the RC and the Board. The RC provides a challenge role to the Risk Records by identifying any missing risks and ensuring that risks are treated consistently across the organisation.

In order to track actual events that have occurred, the Guardians have designed an internal incident process which tracks and reports any failure of process or breaches of policy that has or may result in financial loss/gain, reputational damage, or theft of assets/information.[62]

3.1.4 Risk Registers and Records

The Guardians' underlying philosophy is that risk must be clearly understood, defined by the Board, managed by the team and reported through the use of Risk Registers and Risk Records. The Risk Registers and Records effectively represent the output of the four-stage risk assessment process described above.

Risk Registers

Risk Registers were created in December 2011 to provide a view of risks across each business unit. The risks recorded in the Registers are granular and specific to the business unit (e.g. the risk that malware may be installed undetected on a users' computer is a single register entry in the IT division of the Operations Team). Since the same risk may occur in multiple business units, the number of risks in the overall Register can be very large.

Each risk in the Register includes a brief description, an assessment of the inherent risk rating (including likelihood and impact), a list of controls, a residual risk rating and a target risk rating. As at 10 July 2014, there were 286 risks recorded in the organisation-wide Risk Register. Of those, one has been assessed as Extreme on a residual risk basis; this was the risk of a Southern Cross cable failure resulting in loss of Internet connectivity. A further 58 risks were rated as High, 120 were rated Moderate, and the remaining 107 were rated as Low risk. In comparing the residual risk ratings to the target risk ratings, 27 risks were rated higher (i.e. riskier) than their target; in most instances, action plans have been recorded in order to align the residual risk to the target risk rating.

Risk Records

Risk Records were created in 2007 to categorise, assess and report on the various granular risks contained in Risk Registers. Whereas Registers catalogue risks by business unit, Records are aimed aggregating those risks across the organisation. Only risks that have an inherent risk

[62] Human resource and other issues (e.g. custodial errors) are managed through separate incident processes – see Chapter 5.

rating of High or above are included in Risk Records. Each Risk Record has a Risk Sponsor who is a member of the Leadership Team. Each Risk Record provides some context to the risks within its scope, potential causes and impacts (with particular emphasis placed on reputational impacts), controls and action plans. The Records also measure the inherent, residual and target risk rating of the relevant risk. To enable cross-referencing, each Risk Record also specifies the relevant business units to which the Record applies, and references the associated strategic objectives, polices and risks.[63]

There are currently 11 Risk Records, which are reviewed every two years. In between the review dates, the RC assesses any changes to the risk profile and identifies any associated Risk Records that should be prioritised for review. An overview of each Risk Record is provided in Table 5 below.

Table 5: Risk Records

Number	Title	High-level Description
1	Alignment	Misalignment of the Guardians' objectives with key external stakeholders (e.g. Minister, Treasury) leading to stakeholders opposing or not supporting these objectives. Misalignment between Board and Management on risk and return expectations.
2	Major Supplier	Failure of a major contract/supplier (>$200K p.a. spend) could have a major impact on business as usual activities of the fund. This could be from a supplier not meeting SLAs or due to supplier business failure.
3	Skills and Capability	Risk of key individuals or teams leaving the Fund. Aim to provide an attractive work environment and reinforce target culture
4	Mindset	Risk on not being able to bring together team members to work in a cohesive and integrated way. Risk that an environment is not conducive to evaluate investments and their risks in an objective manner.
5	Governance	Risk that a clear and consistent direction from the Board and Management is not provided
6	Models and data	Risk that models are used inappropriately or the data feeding models is not of sufficient quality
7	Legal and regulatory	Failure to comply with laws, regulations and/or internal policy and procedures. Includes the risk of breaching a contract
8	Business Services and	Risk to the Fund's physical and information data assets (including from theft or sabotage)

[63] Of all the risks contained in Risk Registers, only those with an inherent risk rating of 'High' or 'Extreme' are directly referenced in Risk Records.

Number	Title	High-level Description
	IT Infrastructure	
9	Execution and process management	Risk of execution or processing errors. Includes missing documents or documents that are incomplete.
10	Fraud and Ethics	Risk of illegal (e.g. rogue trading) or unethical (failure to disclose conflicts) acts occurring.
11	Investments – Value-add strategies	Risk that the Guardians do not achieve a rate of return in line with the level of risk taken.

Source: Risk Records

As noted above, the Guardians have linked the relevant Risk Records to various business risk constraints that form part of the Board's RAS. There are six business unit constraints covering a range of operational and compliance aspects. These are provided in Table 6 below.

Table 6: Business Risk Constraints as per the RAS

Title	Constraint	Associated Risk Record
Health and safety	Will have no serious harm injuries	#8 Building Services & IT Infrastructure
Compliance failure for internal mandates	Expect there will be no active compliance failures	#11 Investments – Value Add Strategies
Loss of data / IT services	Will recover IT services within 30 minutes of a localised event	#2 Major Supplier #8 Building Services & IT Infrastructure
Reputation	Will have no instances of regulatory non-compliance	#7 Legal and Regulatory
Fraud (both internal and external)	Will have no instances of fraud	#10 Fraud and Ethics
Fund Reporting	Will not need to restate Fund reporting due to error or manipulation	#9 Execution and Process Management

Source: RAS, Schedule 2, RMP.

3.1.5 Measuring and allocating investment risk

The process for measuring risk across all of the Guardians' activities can generally be divided into investment risk and non-investment risk components. The non-investment risks are identified and measured using the risk assessment process described above. In this section we focus on the Guardians' approach to measuring and constraining investment risk. Whereas the general approach to risk is covered in the RMP, investment risk is addressed separately in the IRAP.

Central to the Guardians' approach to managing investment risk is the principle that front-line management are responsible for managing investment risk. All investment decisions are therefore framed in terms of their risk/return characteristics and contributions to the overall risk/return characteristics of the Fund portfolio.

3.1.5.1 Evolution of the Risk Allocation Process

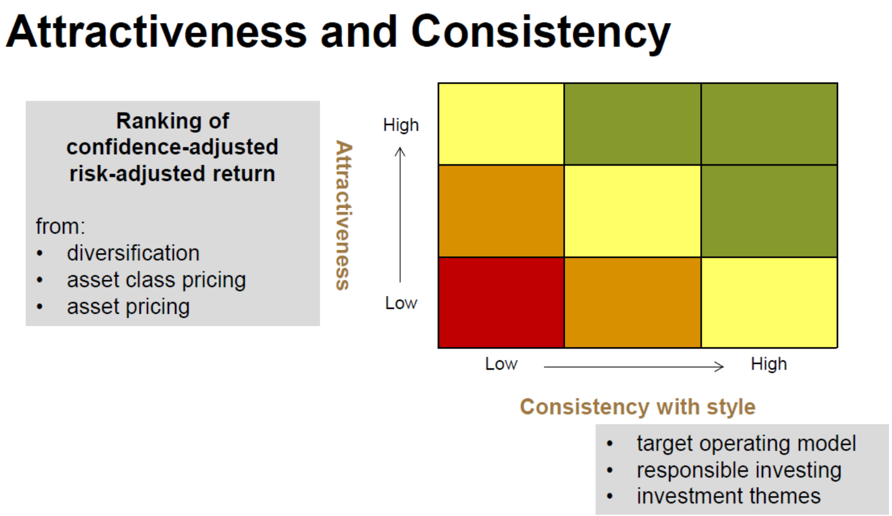
In 2010 the Guardians moved from a strategic asset allocation approach to a Reference Portfolio approach. To support the new approach, the Guardians introduced a RAP to assist in choosing among value-adding strategies. The RAP provides a process for decomposing the risks and rewards in any particular opportunity relative to the Reference Portfolio. Under the RAP, the Guardians rank risk-return characteristics of opportunities using two dimensions: 1) attractiveness given the risk-adjusted returns including any diversification benefits[64] (which are then confidence adjusted[65]); and 2) consistency with the Guardians' style. The confidence adjustment is a central feature of the Guardians' approach in that it raises considerations about the extent to which the Guardians understand the drivers of the disequilibrium pricing, whether or not they have particular expertise in the opportunity, and whether or not the long-run nature of the Fund is relevant.

Each of the two components, attractiveness and consistency, is then rated Low, Medium, or High. The two components are combined in a manner as shown below in Figure 2 in order to provide an overall rating, which is then used to rank opportunities.

[64] Risk adjusted return is measured in terms of the Sharpe Ratio as summarised in Chapter 2.

[65] The confidence adjustment is a function of diversification, confidence in asset class pricing, and confidence in the individual asset pricing.

Figure 2: Ranking of Opportunities



Source: reproduced from presentation titled, 'Risk allocation with the Fund – Session 2: Risk allocation process', January 2013, pp.3

Overall, the RAP process provides a common framework and metric for assessing diverse investment opportunities and is integral to the prioritisation of opportunities.

A recent Internal Audit review of the RAP process was positive about the framework but identified several areas for improvement, including:[66]

- further education to ensure that as new staff members join the Fund there is sufficient continuity of understanding of the process;
- periodic review of the underlying assumptions and design; and
- greater transparency (especially of the assumptions) around the outputs used for investment decisions.

3.1.5.2 Risk Budgeting

In April 2014 the Guardians took the RAP process to another level when they obtained Board in-principle approval to introduce 'Risk Budgeting', which provides a coherent overall framework for allocating risk among all active investments.[67] The implementation date is tentatively scheduled for September 2014 once the relevant systems are in place. The key objective of the risk budget approach is to impose a transparent and structured approach to allocating risk to the various value-adding strategies analysed by the Guardians. The risk budgeting framework is intended to

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[66] Risk Allocation Process, Internal Audit Memorandum, (May 2014).

[67] A risk budgeting approach had been in operation for strategic tilting before this generalisation of the approach.

provide the right incentives in the use of active risk when investments are favourable relative to the risks they incur. [68]

At the centre of the risk budgeting model is measurement of active risk (also known as tracking error), which measures the risk that the actual portfolio returns will deviate from the Reference Portfolio return. In order to measure active risk, various assumptions need to be made about the volatility of the Reference Portfolio and each opportunity. Volatility represents the expected annualised standard deviation of returns. In general, each asset class is assigned a volatility measure based on expected behaviour. These measures, together with various correlation assumptions are used to construct the expected volatility for the Reference Portfolio (currently 13.2%). Volatility for each internally assessed opportunity is calculated by applying the Guardians' proxy system to the asset class volatility measures. Volatility for externally managed assets (both segregated mandates and collective investment pools) is assumed to align with the manager's target volatility measure as stated in each individual mandate.

The implementation of Risk Budgets is a natural progression from the RAP process in that it provides a more rigorous mechanism for sizing each opportunity identified by the RAP. The RAP provides management with information on the relative attractiveness of the opportunity given its impact on the Sharpe Ratio. The risk budget on the other hand provides information on the relative sizing of the opportunity.

The overall risk budget for the Fund represents the average level of active risk that will be available for allocation to value-adding strategies (although the risk budget does not always have to be fully utilised). The Guardians also define an active risk limit, which represents the maximum level of active risk for the Fund at any point in time. A risk budget of 4% and an active risk limit of 8% were approved by the Board in April 2014. At that time, the level of active risk across the Fund was 3.5%. Furthermore, a total volatility limit of 17% was also approved, in line with the Board's absolute risk tolerance limit.

In order to protect the fund against an overconcentration in any one opportunity, the risk budget of 4% is allocated to five risk baskets, with each basket comprising similar opportunities. The baskets are the following:

1. Diversification (examples include timber rural, life settlements, and natural catastrophe reinsurance);
2. Market Pricing – Real Assets (examples include infrastructure, real estate, and energy);
3. Market Pricing – Broad Markets (examples include tilting and variance swaps);

[68] We note that the Guardians use the expression "allocating risk capital" to describe their investment decision process. We find the use of the term "capital" a little unusual in this context, in the sense that the Fund is unleveraged and so there is no sense in which capital is allocated to protect the Fund from insolvency. In most cases we will simply refer to the decision process as allocating funds or allocating investments.

4. Market Pricing – Arbitrage, Credit, & Funding (examples include active collateral, convertible arbitrage and distressed credit); and
5. Asset Selection (examples include active NZ equities and commodities).

The opportunities within each basket compete with each other (on an active risk versus active return basis) for the specific risk budget allocated to that basket. The allocation of risk within each basket is also calibrated by the budget teams to ensure that a single opportunity does not utilise the entire risk budget for the basket.

The introduction of the Risk Budgeting approach has also led to some changes in the investment process. Under the new process, once an opportunity is approved by the IC, the opportunity is allocated to one of the existing risk baskets without any change to the risk budget allocated to that basket. In rare circumstances, the opportunity may be accompanied by a recommendation to re-allocate the risk budget across baskets. It is expected that only in the most exceptional circumstances would a new basket be recommended.

3.1.5.3 Granular risk limits

As noted earlier, in addition to the limits imposed by the risk budgeting process there are various limits imposed on the different forms of investment risk. These limits are set out in Schedule 7 of the IRAP. At a high level, different types of investment risks are measured and constrained in different ways. These include:

- Concentration Risk – The various measures track the NAV exposures to a single asset or manager;
- Exposure for Active returns – The level of NAV exposure attributable to each active return opportunity;[69]
- Exposure for Strategic Tilting – The amount of NAV adjustment to the Fund’s exposures given the implementation of strategic tilts;
- Market Risk for Strategic Tilting – Absolute and relative volatility measures of the portfolio attributable to strategic tilting;
- Market Risk for Rebalancing – Compares the volatility of the of the actual portfolio to that of the rebalancing target;
- Counterparty Credit Risk – Measures the exposures to one counterparty or to a group of counterparties (e.g. banks and low rated credits); and

[69] With the introduction of Risk Budgets, the Guardians are replacing the current asset class NAV limits of 10% and the current NAV limit for Infrastructure of 15% with a generic NAV limit of 10% for any opportunity.

- Liquidity Risk – Measures the amount of liquid assets needed under extreme market events.

Schedule 7 of the IRAP provides details of the individual limits and the scope of their application. For example, the limit on emerging markets equity tilts is expressed as +/- 7.5% of NAV.

3.1.5.4 Monitoring risks

Each opportunity is assessed and reviewed on a semi-annual basis through a detailed ‘Opportunity Dashboard’. The Dashboard provides a summary of the opportunity, recent activities, current actions being performed and actions that are on hold pending approval. With the introduction of risk budgets, key investment risk measures associated with each opportunity are also included in the Dashboard, including size (percentage of NAV), absolute risk contribution and the active risk measure used as part of the risk budget. The Dashboard provides a relatively comprehensive snapshot of risks at any point in time.

3.1.5.5 Counterparty credit risk

In view of the extensive use of derivatives products, counterparty credit risk is a key consideration for the Guardians. The Guardians use a Counterparty Creditworthiness Monitor (CCM) Framework to monitor and manage the creditworthiness of the Fund’s counterparties. The Guardians use traffic lights (green, orange, and red) to highlight the CCM status for each individual counterparty. Green indicates no restrictions on using the counterparty, orange indicates no new business unless an exception is provided by the General Manager (GM) Operations (on the recommendation of the Funding and Treasury Group (FTG)), and red indicates no new business with a view to winding down the positions.

In order to arrive at the CCM status, a model is used that applies specific rules to available data about an individual counterparty. Data sources may include S&P probability of defaults, credit ratings, CDS spreads and equity price movements. For each data set, specific rules are applied that determine whether the counterparty is shifted from one zone to another.

When a CCM status of red has been assigned, Portfolio Completion prepares a detailed report listing all open positions. All positions are then reduced as soon as possible unless a recommendation (from the Portfolio Completion team) is made for a partial reduction. Any such recommendation must be presented to the FTG and approved by the GM Operations.

In addition to the traffic light system, the Guardians also establish a Potential Future Exposure (PFE) for each product. The PFE is used in the measurement of counterparty exposures and counterparty exposures are constrained through various exposure limits. These limits are broader than the counterparty limits contained in the RAS and limits reported as part of the Board Dashboard. We note that only direct counterparty exposures are constrained by policy limits (i.e. exposures through external managers are excluded). Although total counterparty exposure (i.e. both direct and from external managers) is not subject to specific limits, the Guardians still measure, monitor, and report on total counterparty exposures, provided the external managers provide the level of transparency needed.

New counterparties may be introduced as long as they meet all the conditions in Schedule 6 of the PCIMSP. This includes conditions on ratings, competence, International Swaps and Derivatives Association (ISDA) agreements and Credit Support Annex (CSA).

3.1.5.6 Liquidity risk

Cash collateral is invested in accordance with Internally Managed Collateral Pool consisting of the Cash Mandate and Active Collateral Mandate of the Fund (see Chapter 2).

3.1.5.7 Risk in Investment Mandates

Risk limits are also expressed in IIMs, which apply to portfolio completion (six mandates), active return activities (four mandates) and strategic tilting (one mandate). The rules within these investment mandates are structured to take into consideration the nature of the risks given the specified objectives of each mandate. The mandates also specify the expected return above the specified benchmark.

In addition to the broader limits specified in Schedule 7 of the IRAP, mandates apply several additional restrictions depending on the scope involved. Examples of additional constraints include additional active risk limits, minimum liquid assets, weighted-average interest rate duration limits, credit and maturity constraints, and restrictions on authorised investments.

As noted in Chapter 2, the Guardians frequently use external investment managers where they believe that to be the most effective and efficient way to access a market. External managers are selected based on their ability to generate active returns and satisfy various due diligence hurdles. Each external manager must either be contracted under a segregated Investment Management Agreement (IMA)[70] or through a collective investment pool.[71] Like any internal investment, the risks associated with external managers are individually constrained within the various external IMAs.

Promontory reviewed one segregated IMA during the review. Examples of limits and restrictions from that sample include an authorised list of investments, limitations on deviation from the benchmark index, a maximum on the amount of derivative exposure allowed, and portfolio value limits on listed equity by geography, unlisted equity, and cash.

3.1.6 The role of risk in decision making

Each proposed new investment (either via an externally managed investment or a direct

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[70] The manager will run a portfolio of assets specific to the Guardians and under the guidelines set by the Guardians.

[71] The Guardians invest alongside other investors according to guidelines specified by the manager,

investment) undergoes an assessment process before it is submitted for approval by the IC. The assessment process follows two separate streams, one that focuses on investment risks and the other that focuses on non-investment risks.

The assessment of the investment risks covers the expected risks and return, costs and the best access points for the investment. The assessment of risk versus return evaluates the additional investment risk that will be introduced in comparison to the Reference Portfolio (see Chapter 2). The analysis of expected return also assesses how sensitive those returns are under various scenarios and assumptions. The final recommendation to the investment committee takes into consideration a number of factors including the risk-adjusted expected return, the degree of confidence in the investment proposed, similarity to other investments of the portfolio, the level of diversification the investment provides, and impact on the Fund's risk limits.

Separate from the investment risk assessment, each business unit of the Guardians is provided with an opportunity to scrutinise and assess non-investment aspects through an ORA. The ORA's objective is to highlight any initial and ongoing management impacts (i.e. the capability of the Guardians to ensure that the investment will be appropriately managed and monitored over time) as well as material non-investment risks associated with the proposed investment. The RC reviews each ORA and advises the IC of any major concerns. Each risk identified as part of the ORA is given a rating of Low, Medium, or High and a status of Active (not mitigated), Mitigated, Accepted (including GM comments on the acceptance), or withdrawn. The complexity and ongoing workload impact is also assessed. Each business unit provides its overall traffic light of Green (no further work), Orange (further work required), or Red (do not proceed).

As noted in Section 2.1.3, the Guardians have reviewed the framework for managing the impact on operational support from the increasing complexity of investments (through the ORA process and otherwise). The Guardians have implemented a tool to track the cumulative impact of each new investment as well as a capacity forecasting model for the Operations team (see Chapter 6 for additional detail).

3.1.7 Risk governance

The Board has the overall responsibility and ownership for risk although, as noted earlier, responsibility for risk is integrated throughout the organisation. Mangers are responsible for managing risk within their own operations. All staff have a responsibility to report any observed policy breaches or potential procedure or control issues in line with the Fund's Internal Incident Process. Furthermore, all staff provide a semi-annual certification of their compliance with relevant policies.

The formal risk governance framework falls mainly under two management committees. The IC has oversight of investment risks. The RC has oversight of the enterprise risk management framework, with primary focus on operational and other risks.

3.1.7.1 The Investment Committee

The IC generally meets fortnightly and comprises key personnel from the Investments and Portfolio Completion Teams, as well as the CEO. This committee is responsible for the investment risk and performance of the Fund, including considering and endorsing investment-related activities to be undertaken by the Guardians. The Delegations Policy does not provide for authority to be delegated to the IC. However, the Board has delegated certain authority to the CEO, who may sub-delegate various investment decision responsibilities to a specific senior executive. This delegated authority can only be exercised on the recommendation of the IC and this sub-delegation does not absolve or replace the responsibility of the CEO.

As an example, although the Board approves the Strategic Tilting Policy, the ranges for target positions and the reporting framework, the Board has delegated authority to set strategic tilting positions to the CEO, who has sub-delegated to the Head of Strategic Tilting (on the recommendation of the IC and with specific reporting requirements to the Board and IC).[72] Other investment decisions, such as making a material direct investment, have been delegated to the CEO[73] who acts on the recommendation of the IC and must report to the Board (after an investment has been made) and the RC (following the investment decision). In relation to value-adding strategies, the Board approves the strategies, but delegates authority to decide the value-adding sub-strategies (or opportunities) to the CEO, again on the recommendation of the IC.

3.1.7.2 The Risk Committee

The RC comprises executives from the non-investment teams (GM Finance, GM Operations, Head of Internal Audit, General Counsel, and Head of Portfolio Risk and Compliance). There are no members on both the IC and the RC, although there is coordination and dialogue between the two committees.[74] According to its terms of reference, the roles of the RC are as a risk oversight body, to focus on frameworks and processes and to 'add value'. The RC meets monthly and has the authority to make recommendations to the CEO or IC, request preparation of reports, and agree on final draft wording of policies and Risk Records. The responsibilities of the RC include:

- ensuring ORAs are completed for new or terminated investments;
- making recommendations to the IC concerning the operational risk of any new investment or product;

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[72] Refer to section 2.1.2.1 in Chapter 2 on strategic tilting.

[73] The CEO may sub-delegate to the Chief Investment Officer (CIO, formerly the GM Investments) and to the GM Portfolio Completion.

[74] This separation does not appear to be mandated, although it is observed in practice.

- ensuring new and emerging risks are reviewed by business units;
- ensuring biennial review of Risk Records and annual review of Risk Registers;
- monitoring progress towards closing the gap between current and target risk;
- ensuring exposure to investments and products is consistent with Board/IC limits;
- ensuring review of the policy framework and monitoring material changes to policies;
- monitoring adherence to policies; and
- conducting periodic reviews (including legislative changes, custodian, control frameworks, models, or other special reviews).

A review of the role of the RC was conducted in 2013. In order to drive efficiency and improve the performance of the key committees, a number of roles previously conducted by the RC in relation to investment activity were passed to the IC. For example, various reports on fund and manager performance, manager conviction status, counterparty, and liquidity are now provided to the IC directly without the need for review by the RC.

3.1.7.3 Lines of defence

The Guardians adhere to a ‘multiple lines of defence’ model with a decentralised approach to risk management which, according to the RMP:

> *“ensures that day to day responsibility for risk management is at the business unit level, where risk is seen as part of the overall business process and a robust framework of identification, evaluation, monitoring and control exists.”*

The first-line business units (referred to as the ‘Doers’) ‘own’ and manage the risks. In this they are supported by management controls, and a number of working groups (see Chapter 5). Second-line ‘Reviewers’, who oversee risk management, include the RC, IC, Portfolio Risk and Compliance Team, and Legislative Compliance. The role of the Reviewers is to help build and monitor first-line-of-defence controls, including implementation of effective risk management and compliance with laws and regulations.

Third-line assurance is provided by the internal and external audit functions. The Guardians have appointed an in-house Internal Auditor who reports to the Audit Committee. External firms are also engaged to assist with the internal audit process due to resource constraints and due to the technical nature of many of the reviews. Roughly half of the reviews are completed by the Internal Auditor. The audit programme is approved by the Board’s Audit Committee.

In line with the fraud risk framework (set out in Schedule 7 to the RMP), the Head of Internal Audit is responsible for collating information with a report of findings provided to the CEO and Audit Committee. The fraud risk assessment is reviewed by the Head of Internal Audit on an annual basis. In line with the internal incident process, issues logged by the business (via the Outlook form) are reviewed by the Head of Internal Audit who rates the incidents and records them in the Incident Log for reporting to the Audit Committee.

3.2 Observations and Recommendations

3.2.1 Observation 7 - Adequacy of the investment risk framework

The terms of reference raise the following specific questions with respect to the adequacy of the investment risk framework.

Question: Do the Guardians have a thorough process for identifying and responding to investment risks?

Question: Have the Guardians identified the significant investment risks they are exposed to?

Question: Are there any investment risks that appear to be unmanaged by the Guardians?

Question: Is the risk budgeting process established by the Guardians in line with best practice? Is using a Sharpe Ratio as a measure within the RAP framework an adequate measure of risk, given the complex nature of the Fund (e.g. extent of derivatives use, incorporation of asset classes where valuation methodology may not capture)?

Question: The Guardians have in place a relatively complex investment strategy including a derivatives programme. How well do the Guardians manage risk, in situations where volatility (measured as standard deviation) is an incomplete measure?

Question: How well placed are the Guardians to deal with any future tail risk event (e.g. a repeat of the Global Financial Crisis, a severe liquidity crunch resulting in counterparty failure) on the Fund?

Question: How do the Guardians consider the impact of their investment positions on total risk and expected return distribution?

Question: Risk Reporting – Are risks being adequately captured and reported to the Board? In particular, are black-swan events being considered?

Question: How are risks not captured by volatility measures (e.g. credit risk, counterparty risk) captured in their risk management models and have they been captured appropriately?

Question: How is concentration of counterparty risk managed and how is the Fund exposed to this?

Question: How is cash collateral invested and what is the resulting credit risk exposure to the Fund? Is this appropriately managed?

Observations

3.2.1.1 The overall approach

The Guardians' approach to measuring, monitoring, and managing investment risk has evolved materially over the past five years since the Mercer Report. The most significant evolution has been the introduction of a risk budgeting framework that applies greater discipline over investment decisions and applies a common investment risk metric to all investments. As noted in Chapter 2, there are no perfect, or even universally agreed-upon, best practices in terms of metrics for measuring investment risk. In that sense, we would rate the approach of the Guardians to identifying, measuring, and monitoring risks is broadly consistent with what we consider to be 'good industry practice', although there are some areas in which we believe the framework could be strengthened further.

The risk budgeting approach itself is parallel to the allocation of risk capital in banking and is intellectually sound and widely used in the finance industry. We believe it will materially strengthen the coherence and discipline of the Guardians' approach to investments. Among its positive characteristics, the approach:

- can be applied consistently to all potential investments;
- links each potential investment back to its marginal impact on the risk-return profile of the overall portfolio;
- applies a rigorous discipline to investment decisions; and
- makes good horizontal use of different parts of the organisation to reduce the potential for bias in decisions.

The risk budgeting process is supported by a series of constraints that limit exposure to certain risks and strategies. These limits are quite granular and correspond broadly to the way in which other sophisticated financial institutions allocate their overall risk budget to individual investments and groups of investments.

In our view there are no major investment risks that have not been identified by the Guardians. For the most part we were also comfortable with the approach the Guardians have taken to managing those risks.

3.2.1.2 Active risk

We understand that *ex ante* measures of active risk have been a component of the Guardians' approach to managing investment risk for a number of years. This is the case for strategic tilting and rebalancing activities where active risk constraints form part of the Guardians' RAS. With the introduction of the risk budgeting framework, the importance and scope of active risk will increase.

Although this is not a concern *per se*, we highlight that the methodology used to calculate active risk across the various investments of the Fund is based on a number of assumptions. Examples include the expected volatility of returns associated with specific asset classes, the active risk that external managers will be taking at any point in time, the various correlation measures used in the calculations and assumptions underlying the Guardians' Proxy system (which is used in the construction of the active risk measures for some investments).

Given the growing importance of active risk, we suggest that the Guardians could benefit from greater transparency and independent challenge around the key assumptions that provide the backbone for these methodologies:

- Transparency – We were advised that the investment assumptions and the calculation methodologies are documented and internally transparent. We reviewed various papers prepared for the IC, and papers prepared by the Risk Budget Project Team, which contained much of the information we would expect to see in these respects. As noted in Section 2.2.6, this documentation often provides key insights into particular investments and would usefully be incorporated as part of the information trail (e.g. as an attachment to the procedures for a particular opportunity) on investments. The relevant documentation should also set out the review cycle, the level and type of challenge undertaken, and highlight key assumptions and potential consequences (for future review).[75]
- Challenge – While we understand that external reviews are conducted on the Reference Portfolio and that the cross-team approach to investments results in significant internal challenge and discussion, we did not see much evidence of independent challenge of the construction of active risk or whether these were included with the scope of any model reviews.[76] As per our expectation on models and their components (see Chapter 6), we would expect the various aspects of active risk, such as the calculations, assumptions, limitations and outputs to be sufficiently challenged. Back-testing volatility assumptions, as well as providing some sensitivity analysis, for example, would assist in justifying the underlying assumptions and data used.

We do not offer a specific recommendation or suggestion on this topic at this stage, but link it together with some related considerations later in the Report.

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[75] For example, we observed that active risk for an external manger is based on the average active risk expected as per the manager's mandate. At any point in time, however, this may be higher or lower than the actual active risk that the manager has decided to run. This could be highlighted and included as part of any *ex post* review.

[76] For further information on the management of model risk refer to Chapter 6.

3.2.1.3 Counterparty credit risk

As we have noted, counterparty credit risk is assessed at two levels. At one level, it is our understanding that a statistical measure of credit risk is incorporated into the calculation of risk used in the investment decision. However, in the investment proposals we reviewed there was no evidence of any material contribution from credit risk into the analysis.

At the second level, ongoing credit exposures are monitored and managed through a limit system consisting of the following elements:

- The CCM Framework that measures and monitors the creditworthiness of the Fund's exposure to counterparties.
- Measuring the PFE for any OTC derivative counterparty exposures and using this to determine the overall exposure to a particular counterparty (which includes cash, debt, and equity exposures as well as external manager exposures if known).
- Use of counterparty exposure limits. These limits are more granular than those presented in the RAS and those reported in the Board Dashboard.
- Assessing new counterparties under the framework specified in Schedule 6 of the PCIMSP. This includes conditions on ratings, competence, ISDA agreements and Credit Support Annex.[77]
- Counterparty reports are provided on a weekly basis to the FTG and monthly to the Leadership team, IC, and the Board.
- Exchange of collateral with counterparties as agreed under ISDA agreements to minimise the exposure to counterparties from price movements.

Overall, our view is that the methodologies employed by the Guardians to manage counterparty credit risk are in line with its peers and are appropriate for the exposures of the Fund.

3.2.1.4 Cash collateral management

Cash collateral is invested in accordance with Internally Managed Collateral Pool consisting of the Cash Mandate and Active Collateral Mandate of the Fund (see Chapter 2). This framework incorporates the credit risk exposures generated by transactions in derivatives products. From a cash and collateral management perspective we believe the Guardians' approach to be consistent with industry best practice.

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[77] We note that with the exception of the New Zealand Debt Management Office (NZDMO), all ISDAs for OTC derivatives must be accompanied by a Credit Support Annex.

3.2.1.5 Tail risk

The one risk area in which we were least comfortable with the adequacy of the framework was with respect to extreme events. The core measure of risk used by the Guardians is based on active risk, otherwise known as tracking error (which, in turn, is a measure of relative value-at-risk). Underlying this approach to measuring risk is the assumption that distributions are predictable and stable. Given this assumption, risk can be reasonably measured in terms of standard deviation. This approach to measuring risk was industry best practice worldwide prior to 2008 and was adopted by the international standard-setting bodies such as the Basel Committee on Banking Supervision.

As exposed in 2008, by focusing on the core of the distribution, this mainstream approach to risk measurement tended to overlook tail risks, also known as 'black swan' events. Despite its diminished credibility during the 2008 crisis, the industry has not totally rejected the value-at-risk measure of risk or its variations. Instead, there have been attempts to augment the approach by adding analysis of tail risk events through various forms of stress testing. We believe this reaction is sound and superior to alternatives available at this time.

There is no single approach to assessing extreme events that is guaranteed to capture all possible black-swan events – or, more pertinently, the particular black swan that is most likely to emerge next. Experience during the 2008 Global Financial Crisis (GFC) provided a good reminder that even highly rated assets (e.g. AAA-rated CDOs) and cash substitutes (Lehman short-term paper) can be anything but what they are thought to be when markets become seriously disconnected. As time has passed, memories have faded and many of the complex structured products that failed in 2008 have re-emerged into the market. As the Guardians have expanded their investment range into increasingly complex products there needs to be even greater attention to the types of events that could cause these products to implode.

We reviewed a number of investment proposals. From what we saw, the Guardians put a lot of effort into assessing risks at the time of investment. Their assessment processes are comprehensive, thorough and disciplined. In addition to stress testing assumptions when considering a new investment opportunity, the Guardians conduct the following stress tests:

- quarterly stresses of the collateral pools;
- macroeconomic stress tests (eight high-level scenarios were developed and presented to the IC and Board to illustrate the portfolio's economic risk exposures); and
- stress tests on the option included as part of the Direct Arbitrage Strategy Mandate.

The scenario analyses appear to be a recent innovation. We applaud that initiative. We are nonetheless of the view that the analysis of tail risks can be developed further. In particular, the regular stress tests could extend beyond liquidity (which appears to be the main focus at present) and the analysis of broad macroeconomic scenarios should be carried out on a regular cycle. This may be the intention, although the fact that these have only just commenced leaves us unsure as to the intent. In addition, tail risk could be separately identified as a category of risk. We also believe there would be merit in integrating tail risks and possible strategies to respond to particular events into the regular risk reporting to the Board (neither the Opportunity Dashboard nor the risk reports to the Board that we reviewed provided much analysis of tail risks - beyond 'fat tails' in distributions).

Best practice in this area is still evolving. Against that background it would be unfair to be overly critical of the Guardians' analysis of tail risk. We therefore offer the following as a suggestion, noting that the Guardians' approach is also evolving

Suggestion 2 – Analysis of tail risks

> *We suggest that the Guardians identify tail risk as a specific risk category and continue to develop their approach to conducting regular, dynamic stress analyses of the portfolio under a range of potential tail risk events and report these to the Board. The analysis could include proposals on early warning signals and exit strategies (or entry strategies where appropriate).*

3.2.2 Observation 8 - Adequacy of the non-investment risk framework

The terms of reference do not raise any specific questions with respect to the management of non-investment risks. We nevertheless offer the following observations.

Observations

The first observation we offer in respect of the Guardians' framework for managing non-investment risks is that it is quite strongly segmented from the framework for managing investment risks. For example, the approach to identification, inherent risk analysis, control, and residual analysis outlined in Section 3.1.3 appears to apply only to non-investment risks. Similarly, the Risk Registers and Risk Records outlined in Section 3.1.4 appear to apply only to non-investment risks. One caveat on this second observation is that Risk Record #11 refers to 'Investments – Value add Strategies'. However, the details in that Record relate more to operational issues than to investment risk *per se*.

This type of risk segregation is reasonably common in the finance industry, for the simple reason that investment risks are much better suited to statistical measures of risk than are most non-investment risks.[78] At this point we simply note the strong separation. Further comment will be made later.

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[78] The main exception to this statement is for operational risk, where the statistical foundations have been established through banking practice and regulations, although these are not as well developed or accepted as the measures for investment and credit risk.

In terms of their overall approach to non-investment risks, the Guardians' processes for identifying, analysing and controlling risks are consistent with good industry practices. The use of Risk Registers and Risk Records is normal industry practice and is a good way of adding granularity to the five broad risk categories adopted by the Guardians. We also endorse strongly the practice of assigning 'owners' to risk categories.

While we endorse the overall approach, we have some comments on the way in which the framework has been implemented.

3.2.2.1 Risk Registers

We undertook a high-level review of the Risk Registers to better understand their scope, potential impacts, controls, and risk ratings. The Risk Registers generally reflect the types of registers we see in other financial and non-financial institutions. The 'art' in designing a Risk Register is to 'disaggregate' risk down to a level that is both meaningful to individuals in the workplace and controllable. The key to an effective Register in our experience is practicality. While we might quibble about the relevance of some of the risks in the Guardians' Register, we accept their judgement as to the level of granularity and detail that is most practical in the context of their business.

As well as cataloguing the risks in each business unit, the Register should also be presented in a form that is user-friendly and conducive to managing the risks identified. In this respect we suggest there are some improvements that could be made to the Registers. In terms of the information contained in the Registers we offer the following observations:

- Risks versus causes – We found the Registers unhelpful in understanding the separation between causes, risks, and possible impacts. The risk description should clearly describe the risk event, e.g. 'an unauthorised payment is made to a third party'. Further information should then be provided to assist with the assessment of impacts and controls, e.g. 'third party is located offshore which may lead to difficulties in recovering the funds'. We observed that some of the risk descriptions included information on the underlying causes but little about the risk events themselves.[79] In general, it is difficult to make subjective assessments of likelihood and impact based solely on causes or 'drivers of risk'.

- Justifications and assumptions – Subjective assessments should be supported by reasonable justifications and clear statement of any assumptions involved. This is especially important in instances where multiple factors can drive the likelihood and impact of the risk. We note that, under the Guardians' impact rating approach, the impact assessment is driven by the impact on either investment performance, a loss from an

[79] See for example, "Fund website ineffective / dated" and "The Ops DD process is flawed". In other cases there was a good statement of the risk event, but little information about the causes.

operational event, or reputation. The difference in the impact criteria across the three categories for a particular rating can be significant. For example, for an impact to be assessed as 'Major', the 'investment performance' criterion requires an estimate of loss of between 15-25% of the Fund's value over one year. The equivalent assessment from an operational event only requires a 5-10 basis point impact. While we recognise that risk categories have different characteristics, and that the appetite for risk from the different sources may be different, the differences we observed were large enough in our view to warrant review by the Guardians.

- Target Risk – There is no explanation of how each target risk rating is determined and how each rating relates back to the objectives and/or risk appetite of the Fund. We suggest an appropriate justification should be provided and that it be made clear whether the residual risk has been accepted and/or specific actions are being implemented. We note that justification is often subjective and need not be statistically based to be useful.
- Controls – The Guardians' control outcomes are not transparent in the Registers. We suggest identifying key controls (to minimise the resources needed) and assessing these controls on both a design-effectiveness and operating-effectives basis. Ideally there should also be some independent sample testing of the controls to ensure the accuracy of the assessments made.
- Other risk indicators – Risk assessments become more valuable when an organisation can track all indicators and components using a common base structure. For example, the Guardians may want to consider linking any incidents and audit issues back to the relevant risks within the Risk Registers. This may prompt the business unit to take a more proactive approach in re-assessing risks.

Against these observations we offer the following suggestion.

Suggestion 3 – Risk Registers

We suggest that the Guardians review the process, justifications, and documentation of the Risk Registers, with the objective of making the Registers a more dynamic tool for use by business units. We suggest the documentation should include: separating more clearly the causes, risks, and impacts; providing justifications and assumptions underlying each of the likelihood and impact ratings and reasons for material differences between them; and a control framework that assesses controls on a design and performance basis.

3.2.2.2 Risk Records

We undertook a high-level review of the 11 Risk Records to better understand their scope, potential impacts, controls, and risk ratings. While we support the intent of aggregating the granular risks in the Risk Registers into a more enterprise-wide set of risks, we found the classifications used by the Guardians unintuitive and confusing.

In our experience, Risk Records (or their equivalent) are essentially the risk 'families' to which the granular risks in the Registers belong. These are usually the same risk categories identified at the enterprise level. In the case of the Guardians we expected these to be the group of risks in Table 4; namely, investment risk, operational risk, legislative and regulatory risk, strategic risk, and reputational risk (although, as we note above, the risks in the Risk Registers appear to exclude investment risks). We suggest that the mapping of the granular risks into these major risk families would be quite straightforward, whereas the mapping to the 11 categories in Table 5 seemed, at times, to be a little contrived.[80] More importantly, it was not clear to us what value was added by introducing a 'parallel universe' of risk categories such as those in the Risk Records. Along the same lines, we found the mapping of the 11 Risk Record categories to the Board's risk appetite to be no less confusing.

As with the Risk Registers, the ultimate value of any aggregate risk architecture is that it is practical and able to be implemented easily by staff. We found the Guardians' Risk Record structure to be the opposite, but do not rule out the possibility that it was structured in this way because this is the way the staff of the Guardians viewed risks.

We understand that the Guardians are currently reviewing their approach to Risk Records and the risk reporting framework. We encourage any changes that will improve the visibility and reporting of risk and suggest that the review incorporate our suggestions in relation to Risk Registers and Records where appropriate.

Suggestion 4 – Risk Records

> *We suggest that, as the Guardians review their Risk Records architecture, they seek to simplify it and better link it to the major risk categories identified at the enterprise level.*

3.2.3 Observation 9 - Control framework

The terms of reference raise the following specific questions with respect to the control framework.

Question: Are processes in place within the Guardians to ensure that the investment strategy and asset allocations remain appropriate in changing market conditions?

Question: Do the Guardians' processes adapt appropriately to address growing funds under management?

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[80] For example, the 'risk of undetected malware on a computer' would map from the IT group of the Operations business unit (and any other business unit that shares that risk) to the operational risk family whereas, under the Guardians' structure it maps to Major Supplier.

Observations

The Guardians recognise that there will always be changing market conditions that will necessitate ongoing monitoring and review of investments across the Fund and also at a granular level. Various processes are employed to cater to this including:

- Monitoring and discussion of opportunities through the Opportunity Dashboards. The Dashboard for each opportunity specifically describes the changing market conditions since the last update and actions to be taken as a result of these changes. It also displays graphical information to assist in understanding how the underlying drivers of the market are shifting over a period of time.

- Performance monitoring through the Guardians' PEARL system. Fund performance is reported on a daily basis. Performance is reported at the overall Fund level and for the Reference Portfolio. It is also reported for each individual opportunity and at the security level (where available).

- Board monitoring of its strategic objectives against various metrics, which measure the extent to which specific objectives have been met. Detrimental movement in any of these metrics is an indicator that market conditions may have changed in a way that could affect the objectives of the Fund.

- Monitoring all Board expectations and constraints. These are reported to the IC and the Board (as a component of the Board Dashboard) on a monthly basis.

- Monitoring compliance with IIMs and external segregated investment mandates. Breaches are reported immediately by the respective manager and by the Custodian (although custodian reporting can be delayed by several days due to processing timeframes and time zone differences).

To the extent negative market conditions are observed through the processes above or by any other means, the Guardians report to the IC and recommend taking appropriate mitigating actions. As an example, in 2013, the IC reviewed the Natural Catastrophe Reinsurance investment opportunity. The Dashboard showed that spreads were at an all-time low (it also highlighted the contributing factors) with a recommendation to decrease the relevant exposure.

As discussed in Section 3.1.3, each new opportunity undergoes an assessment before being submitted to the IC for approval. A component of this assessment includes completing an ORA, which focuses on whether the Guardians' processes, systems, and capabilities are sufficient in the context of the new investment. Each business unit identifies new risks as a result of the opportunity and documents any mitigating actions as needed.

Overall, we were comfortable that the Guardians are conscious of the need to adapt to both changing market conditions and to the scale of the Fund.

3.2.4 Observation 10 – The role and oversight of risk

The terms of reference do not raise any specific questions with respect to the governance of risks. We nevertheless offer the following observations.

Observations

3.2.4.1 Risk governance

Two key bodies oversee risk within the Guardians, the IC and the RC. On our reading of the documentation, the former focuses primarily on investment risks and the latter focuses primarily on non-investment risks. While the RC technically has responsibility for enterprise-wide risk frameworks, it appeared to us that the involvement of the RC in investment risk was largely by way of *ex post* review. Among other things, the RC has responsibility for reviewing Risk Records and Risk Registers, making recommendations to the IC on operational risks associated with any new investment or product, and oversight of the policy and risk frameworks (including monitoring adherence with these). Risk oversight is also performed by the Portfolio Risk and Compliance Team (in the Operations area) in relation to compliance with internal investment policies and limits (including both pre- and post-trade monitoring). The RC supports the IC, which reviews all investment activities and their associated risks as part of its oversight role, including the basket-level risk budgets and limits.

A key question in assessing the roles of the two committees is – which committee reviews the risk assigned to a particular investment proposal before the investment is made. Put differently - which committee is responsible for adjusting the risk rating of an investment before it is made, if it judges the risk assessment to be inappropriate. Our understanding is that this responsibility falls to the IC rather than the RC. We will come back to this point shortly, but first we turn to the organisation and role of risk oversight below the committee level.

3.2.4.2 Three lines of defence

The Guardians essentially employ a three-lines-of-defence model for overseeing risk (they refer to it as a 'multiple-lines-of-defence' model). This model is universally regarded as best practice in the finance industry and has been endorsed by the Basel Committee on Banking Supervision, as well as by financial sector regulators worldwide. While the model is regarded as best practice, there have been many misinterpretations of its intent, in some cases with adverse consequences.

Arguably the key principle underlying the three-lines-of-defence model is that the first line must take responsibility for risk. This principle has been embraced by the Guardians. There is no doubt in our minds that, within the Guardians, risk is 'owned' by the front-line and that risk and return are viewed as two sides of the same coin. We strongly endorse this approach. Our concern is that the principle may have been taken further than is intended by the three-lines-of-defence model.

In their 2009 Report, Mercer recommended appointing a Chief Risk Officer (CRO) to "*assume an organisation-wide responsibility for risk management and to establish a regular internal review, assessment and testing process.*"[81] This was one of the few recommendations in the Mercer Report that the Guardians did not adopt.[82] Their rationale for not appointing a CRO was their observation that they wanted to ensure "*responsibility and focus at the source of risk origination*".[83] During our on-site discussions, the Guardians further indicated that in several other sovereign wealth funds, where CROs had been appointed, the first-line investment managers had tended to view risk as no longer their responsibility. While we share the Guardians' concerns about the prospect of such an outcome, we suggest that the failing is more one of the way in which the model was implemented, than of the model itself.

To understand the benefits of the three-lines-of-defence model it is necessary to understand the role intended for the second-line risk function. It should not be the role of second-line risk to veto investments (other than in very extreme situations). The role of risk is to provide an independent assessment of the risks involved and to ensure that these risks are adequately factored into decision-making. The ultimate decision must still reside with the first line, which must weigh up the risk and return characteristics of alternatives (as is currently done very effectively by the first line at the Guardians). The value of having the second line assess the risk is in its independence. The second line has no inherent conflict of interest in assessing risk. For example, a first-line manager who believes a new opportunity has material upside price potential could potentially be biased in assessing the downside risk. The second line may, by taking a broader and more dispassionate view of risk, assess the risk more accurately.

A key characteristic of an effective independent second-line risk function is its capacity to view risk from an enterprise-wide perspective. The Guardians see the RC and IC (possibly to a lesser extent) as the second line of defence. As noted above, the Guardians have adopted a slightly unusual division of risk between the IC and RC. Although the RC is charged with the oversight of risk focusing on an '*enterprise-wide holistic and governance view of the organisation*',[84] we believe that, as a result of partitioning investment risk in the way the Guardians have, the RC has insufficient line-of-sight over all risk activities. One possible result of this division of risk is that, whereas investment risks are measured and analysed in a holistic manner, non-investment risks are generally treated as 'gateways'. Thus, for example, the ORA assesses whether the Guardians have the operational capacity to invest in a particular opportunity and if there are any non-investment risks associated with the proposed investment. Provided the ORA does not block the investment, the concept of operational risk does not appear to play any further role in

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[81] Recommendation 9.3, Mercer Report, *op. cit.*, p.103.

[82] At the time of the 2009 review, the Board 'Audit and Risk Committee' provided organisation-wide risk management oversight, but since this time, the Board committees have been restructured such that there is now an Audit Committee that no longer has general risk oversight responsibilities – this is now the responsibility of the full Board.

[83] Guardians' response to (Mercer) independent review, Response to recommendation 9.3, pp. 11

[84] Risk Committee Terms of Reference.

either the investment decision or the ongoing assessment of risk.

The Guardians are not alone in treating non-price risks in this way. The banking sector has arguably progressed further than other sectors in the finance industry in terms of quantifying credit and operational risks and also of developing enterprise-wide measures of risk.[85] Our observation is not so much that the Guardians should necessarily be pushing the frontiers of integrated risk measurement at this stage but rather that, by isolating non-investment risks from investment risks in the way they do, there is less incentive to take an enterprise-wide view of risk and less likelihood of developing an integrated measure of risk that incorporates all relevant factors into the investment decision and the ongoing assessment of risk.

The second role of an independent risk function is to maintain the risk infrastructure, including ensuring that all policies, procedures and controls are up to date and adequate. Our observation that this is a weakness in the otherwise strong Guardians' investment framework reinforces our view that the Guardians would benefit from a stronger second-line risk function.

The third role of an independent second-line risk function is to monitor the first line's risk-taking activities. Again, independence is regarded as critical to being able to provide an effective monitoring function. With respect to investment risks this role is played by the IC, which we do not regard as independent. With respect to non-investment risks, this role is currently spread among several functions.

Finally, as noted in Observation 3 in section 2.2.3, we noted that the Board has delegated approval of new opportunities to the Chief Executive, on advice from the IC, unless an individual investment exceeds 2% of the Fund's NAV.

In combination, these considerations suggest to us that there is not an effective independent second line of defence at the Guardians. To an extent this is mitigated by a very strong first-line responsibility for risk but that is not, in our view, sufficient.

There are several ways in which this might be approached:

- It would be possible to engage the Board more in approving investment decisions;
- It would be possible to restructure the IC and RC to shift investment risk oversight to the RC; and
- It would be possible to address the oversight by appointing a CRO.

While these approaches could be used in combination, we recognise the limitations of the first approach. The Board comprises part-time members and meets infrequently. By the nature of

[85] While complex mathematical models are available for integrating different risk distributions, we are conscious of the argument that the sophistication of the techniques may outstrip the reliability of the data and the distributions on which they rely.

their appointments as non-executives, members often have conflicts that reduce the size of the board available to consider certain investment prospects. Requiring Board members to play a more active role in investment decisions would require reconsideration of the nature of the Board, and we see little merit in that.

We also recognise that the division of responsibilities between the IC and the RC was only recently decided and that there were sound reasons for that division.

That leaves the appointment of a CRO as the most efficient way of providing independent oversight of all risks. Even with a CRO there should be some reconsideration of the responsibilities of the IC and RC. In particular, the RC should play an independent oversight role with respect to the measurement of risk, before investments are considered by the IC. In that role it should not have the power to veto any investment on the grounds of risk, but should have the mandate to add a risk loading to any proposed risk assessment that is considered to be either overly optimistic or to have insufficiently addressed relevant risks. The decision to invest should still reside with the CEO on the recommendation of the IC.

On the basis of these considerations we recommend below appointing a CRO. We note that, if this recommendation is not adopted, one of the alternative approaches to providing independent oversight of enterprise-wide risks should be considered.

In terms of the responsibilities of the CRO, we stress very strongly that the CRO should not take responsibility for risk. That should remain firmly with the first line, as it does at present.

Our final note on this topic is that we see merit in the requirement that the Board must approve large investments. The linking of Board approval to a percentage of NAV, however, has the potential for the concept of 'large' to drift upwards quickly as the portfolio grows. We suggest to the Board that it considers recalibrating the measure of 'large' to a dollar amount, or at least that the scale required for investment approval by the Board be reviewed on a regular basis. The CRO would provide line-of-sight and independent challenge over all risks, would chair the RC and be responsible for risk documentation (possibly with a small support staff to assist with the substantial task contained in Recommendation 3). It is not the responsibility of the CRO to write all policies and procedures relating to risk. Rather, it is the responsibility of those who implement the policies to develop the processes and document their roles. The CRO should provide expertise to, and oversight of, that process. It is also the CRO's role to ensure that policies and procedures are consistent in style, content and detail. The CRO provides assurance to the Board and management that the risk framework is appropriate for the risks involved, is consistent with the risk appetite and operating as intended.

Against these considerations we make the following recommendations:

Recommendation 4 – Appointment of a Chief Risk Officer

We recommend that the Guardians appoint a Chief Risk Officer to: (1) provide organisation-wide and independent oversight of risk; (2) maintain the Guardians' risk infrastructure (including ensuring that all policies, procedures and controls are up to date and adequate); and (3) provide assurance to the Board and management on these matters.

Recommendation 5 – Mandate of the Risk Committee

We recommend that the Guardians broaden the mandate of the Risk Committee to clarify that it has independent oversight of the measurement of all risks, including investment risks.

Appointing a CRO should increase the profile of risk throughout the organisation and contribute to the further development of an effective risk culture. The CRO should encourage business units to maintain dynamic Risk Registers that are reviewed on an ongoing basis, rather than as part of a risk review cycle.

As noted in Section 5.2.4.2, due to the increase in Fund size and complexity, we are of the view that more resources may be required in the operations and risk areas. We understand that resources issues in Operations and IT teams are currently being addressed (refer to Chapter 6). However, we suggest that the CRO should also be responsible for reviewing the current levels of risk resources and ensuring that these risk resources are adequate throughout the organisation on an ongoing basis.

4 Performance and Reporting

4.1 The Guardians' Approach to Performance and Reporting

4.1.1 Investment performance[86]

Consistent with the Act, the Guardians' Mission Statement is to '*maximise the Fund's return over the long term, without undue risk, so as to reduce future New Zealanders' tax burden*'. When assessing the performance of the Fund, it is important to remember its long-term purpose, around which the investment framework for the Fund has been designed.

We note from the outset of this chapter that we have taken a high-level view of performance only and have not sought to dissect the performance of every sub-sector of the Guardians' portfolio and to compare them against different comparator groups. We have taken this approach for several reasons. First, since we are not specialist funds managers or advisors, we do not have access to the vast commercial performance databases that make such analyses possible (we believe we bring other skills and perspectives to this review). Second, the Guardians have, in their various public reports, provided sufficient performance information about their own investment activities, that to replicate their work in this area would not be efficient. Third, and possibly the most pertinent consideration, the Guardians have moved to a relevant and difficult-to-beat benchmark that we believe is entirely appropriate as a benchmark against which to judge their value-adding performance. While disaggregated attribution analysis is interesting (and we do consider some performance metrics on the different value-adding strategies below), it is more relevant to the Guardians internally as they reassess the allocation of their scarce investment resources over time. From the perspective of the New Zealand people the most relevant measure by far is how the Fund has performed relative to the appropriate benchmark.

We make this comment against the background of the Guardians' two-pillar philosophy; namely, that markets can be out of equilibrium and that a shrewd long-term investor should be able to capitalize on short-term market disequilibrium to generate a dividend over and above a passive (but relevant) long-term strategy. There is little disagreement in the investment world about the Guardians' first pillar proposition that markets can be in disequilibrium for extended periods. There is much less agreement over their second, that a shrewd long-term investor should be able to add value (after costs) over an appropriate passive strategy. To quote two recent observations on this point:

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[86] This Section provides a high-level summary of Fund performance based largely on information drawn from the Guardians' Annual Reports. For further detail on matters such asset composition, value and composition of NZ investments and countries in which the Guardians invest, see Guardians' Annual Reports for the past few years.

- A recent study by Vanguard notes that "*considerable research shows that, on average, actively managed equity mutual funds underperform their respective benchmarks*."[87] Vanguard's research supports prior research by finding that only a minority of active managers (approximately 18%) outperform relevant benchmarks. Importantly, they find it to be extremely unusual for an active managers to beat the market over an extended period of time, or even a few years consecutively.
- In a similar study, Standard & Poor's found that 69% of all domestic equity funds were outperformed after expenses by their benchmarks over the prior five years.[88]

With the adoption by the Guardians of the Reference Portfolio as the relevant performance benchmark for judging the active investment strategies, we are comfortable focusing this section on their performance relative to their own objectives.

Based on the Guardians' official audited figures, the Fund has returned 8.84% p.a. (before tax and after costs) for the period from inception (September 2003) to 30 June 2013,[89] This rate compares with the risk-free return over the same period of 4.94% p.a. (Treasury bill return) and the return on the Reference Portfolio of 7.70% p.a. The excess return, since inception, relative to the Treasury bill return is 3.90% p.a. (compared with the target of beating the Treasury Bill return by 2.5%) while the excess return relative to the Reference Portfolio is 1.14% p.a. (this latter measure is the more relevant indicator of the value added by the Guardians from their active management strategies).

The performance of the Fund over the past five years has been even more impressive.[90] The actual return on the Fund over this period was 7.43% p.a., with an excess return over the Reference Portfolio of 1.67% p.a. The value added has been 4.58% p.a. and 7.36% p.a. for the past three years and past year respectively (refer to Table 7 below). While we are restricting our comments to official figures, there is every indication in what we have seen from recent Board reporting that performance during the past year to June 2014 will be broadly in line with the performance of the preceding period.[91]

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[87] *The Bumpy Road to Outperformance*, Vanguard, July 2013.

[88] S&P Indices Versus Active Funds Scorecard, 2013.

[89] As the Fund value is only accurately provided at year-end, throughout this section we have used data to 30 June 2013. Unless otherwise stated, returns are provided before tax but after costs.

[90] As noted in the Mercer report, the Fund's cumulative performance to end 2008 was below the cumulative performance on the benchmark at the time based on 90-day Treasury bills. Since that time, the Guardians have covered the earlier losses and moved well ahead of both the Treasury bill reference and the new Reference Portfolio benchmark. See Mercer Report, p.141.

[91] As noted below, however, intra-year performance figures are not nearly as reliable as year-end figures.

Table 7: Fund returns

As at 30 June 2013	Fund size: NZD22.97 billion before tax			
Returns	One year	Three years	Five years	Since inception
Actual Fund Return (before tax, after costs)	25.83%	16.76% p.a.	7.43% p.a.	8.84% p.a.
Value added by Guardians (compared to Reference Portfolio)	7.36% (NZD1.34b)	4.58% p.a. (NZD2.63b)	1.67% p.a. (NZD1.77b)	1.14% p.a. (NZD2.22b)
Net Return (returns over and above the Treasury Bill return – the Government's cost of debt)	23.42% (NZD4.33b)	14.18% p.a. (NZD7.56b)	4.27% p.a. (NZD4.93b)	3.90% p.a. (NZD5.91b)

Source: Annual Report 2013, page 3

Annual Fund performance relative to the Treasury bill return and the Reference Portfolio since inception is provided in Table 8 below. During the decade since its inception the Guardians experienced the GFC in 2008, which saw a generalised collapse of asset values across the globe. The negative absolute returns over the period 2007 – 2009 were indicative of returns experienced by similar funds during this period all over the world. With fortuitous timing, the Guardians were, at that time, in the process of constructing their tilting strategy and looking to increase their insourcing of active investments. The Fund took on active positions at a time when global prices were deflated and, as a result, the returns over the few years following the GFC were outstanding, even when benchmarked against the Reference portfolio.

Table 8: Annual Fund performance

FINANCIAL YEAR	FUND RETURN	RISK FREE RETURN (TREASURY BILLS)	EXCESS RETURN RELATIVE TO TREASURY BILLS	REFERENCE PORTFOLIO RETURN	VALUE ADDED RELATIVE TO REFERENCE PORTFOLIO
2003/04	7.69%	3.93%	3.76%	8.07%	–0.38%
2004/05	14.13%	6.33%	7.80%	13.88%	0.25%
2005/06	19.21%	6.77%	12.43%	17.56%	1.65%
2006/07	14.58%	7.21%	7.37%	13.07%	1.51%
2007/08	–4.92%	7.97%	–12.89%	–4.73%	–0.18%
2008/09	–22.14%	5.49%	–27.63%	–18.25%	–3.89%
2009/10	15.45%	2.60%	12.85%	14.62%	0.83%
2010/11	25.05%	2.89%	22.16%	19.48%	5.58%
2011/12	1.21%	2.45%	–1.24%	–0.23%	1.44%
2012/13	25.83%	2.41%	23.42%	18.47%	7.36%
Since inception	**8.84% p.a.**	**4.94% p.a.**	**3.90% p.a.**	**7.70% p.a.**	**1.14% p.a.**

Source: Annual Report 2013, page 32

These performance figures highlight the importance for both the Fund and its stakeholders to maintain a long-run focus and to accept a certain level of short-term volatility in performance. In that respect, the 5-year and 10-year relative performance figures are much more pertinent than those for any individual year.

In dollar terms, the Fund has provided $2.2 billion of added value since its inception (see Table 9 below). Over the past five years, the Fund has earned $1.8 billion relative to the Reference Portfolio. The Fund is an income tax payer with tax payments of over $3 billion provided to the Crown since inception ($1.5 billion over the past five years).

Table 9: Performance summary

	ONE YEAR	THREE YEARS	FIVE YEARS	SINCE INCEPTION (30 SEPTEMBER 2003)
Actual Fund Returns (before tax, after costs)	25.83%	16.76% p.a.	7.43% p.a.	8.84% p.a.
Reference Portfolio Return	18.47%	12.18% p.a.	5.76% p.a.	7.70% p.a.
Value-Added (Actual Return – Reference Portfolio Return)	7.36%	4.58% p.a.	1.67% p.a.	1.14% p.a.
Estimated $ earned relative to Reference Portfolio	$1,343 million	$2,633 million	$1,768 million	$2,222 million
NZ income tax paid	$861 million	$1,616 million	$1,502 million	$3,044 million
NZ Treasury Bill (T-Bill) Return	2.41%	2.58% p.a.	3.16% p.a.	4.94% p.a.
Net Return (Actual Return – T-Bill Return)	23.42%	14.18% p.a.	4.27% p.a.	3.90% p.a.
Estimated $ earned relative to T-Bills	$4,332 million	$7,560 million	$4,926 million	$5,908 million
$ change in net asset position*	$3,975 million	$7,345 million	$8,842 million	$22,971 million

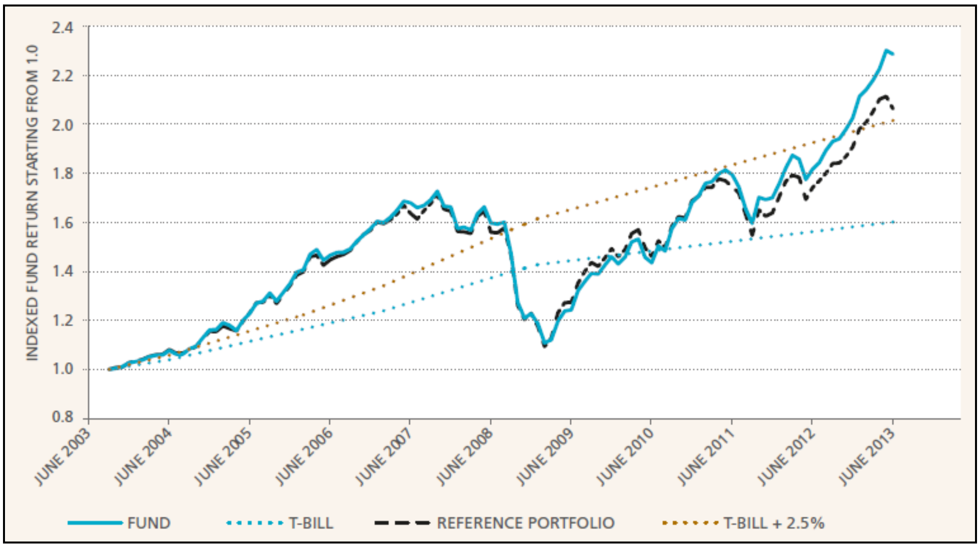
* Excludes provisions for New Zealand tax.

Source: Annual Report 2013, page 33

The Fund's cumulative performance since inception is shown in Figure 3 below. This Figure clearly shows the effect of the GFC, the recovery of the Fund in the subsequent years, and the effect of the subsequent Eurozone uncertainty in 2011. The gap between the Fund and the Reference Portfolio highlights the value that the Guardians' active investment strategies have added since inception. In recent years, the gap between the two has widened significantly, with the Fund's returns moving comfortably ahead of the Reference Portfolio returns.

Figure 3 again highlights the greater relevance of the Reference Portfolio as a long-term benchmark against which to judge the Guardians' performance. Not only does the Reference Portfolio provide better long-run tracking of the Fund's performance, it removed the noise that is inevitably introduced when a growth portfolio is benchmarked against fixed-interest securities.

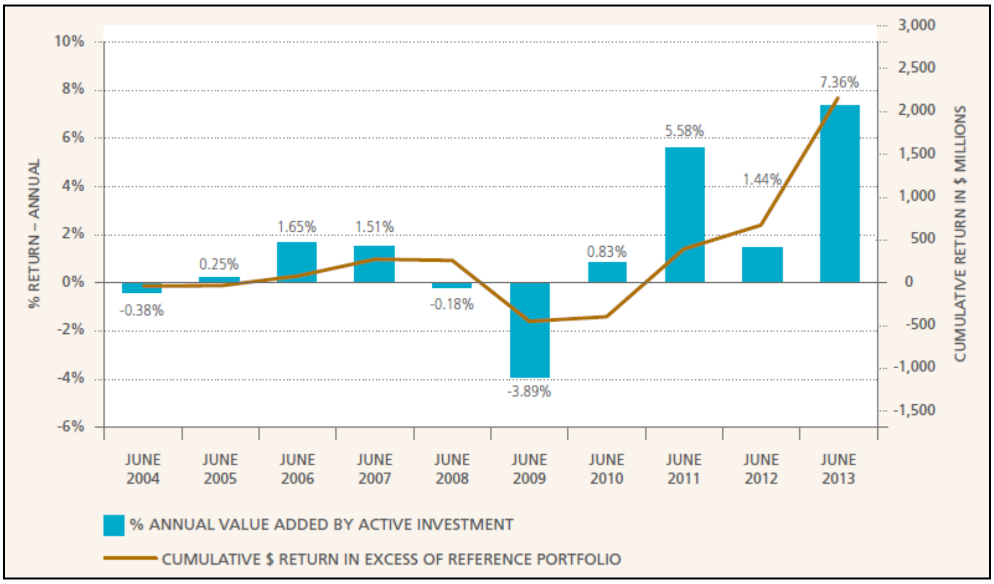
Figure 3: Cumulative Fund returns since inception



Source: Annual Report 2013, page 36

The Fund's annual performance relative to the Reference Portfolio is shown graphically in Figure 4 below, with the absolute and relative annual excess return over the Reference Portfolio (i.e. value added) shown along with the cumulative dollar return. The active investment approach of the Fund since 2009 has resulted in a steady increase in the cumulative dollar return in excess of the Reference Portfolio. The fact that the Reference Portfolio is not a 'soft' benchmark is reflected in the fact that in three of the past ten years the Actual Portfolio has underperformed the Reference.

Figure 4: Annual Fund performance relative to Reference Portfolio



Source: Annual Report 2013, page 39

When considering the success of the Guardians' active investment strategies, it is useful to consider the contributions from the three individual value-adding activities (i.e. capturing active returns, strategic tilting, and portfolio completion). Table 10 below provides the contribution to excess return over the Reference Portfolio for each of the past four years for the key individual activities. For example, in 2011/12 the actual portfolio outperformed the Reference Portfolio by a total of 1.39 percentage points. From Table 10, strategic tilting, for example, contributed 1.79 percentage points. In other words, the other strategies combined (i.e. capturing active returns and portfolio completion), underperformed the Reference Portfolio. In 2010/11 strategic tilting underperformed the Reference Portfolio, but this was more than offset by a strong contribution from capturing active returns.

It is clear from Table 10 that there are significant differences in the performance of individual activities from year to year. Although there is considerable (and expected) variation from year to year among the different value-adding strategies, they have all contributed materially to the performance of the Fund over the longer period.

Table 10: Annual value added over the four years to June 2013

<table>
<tr><th>Key Activities</th><th>2012/2013</th><th>2011/2012</th><th>2010/2011</th><th>2009/2010</th></tr>
<tr><td colspan="4">Capturing active returns – total</td><td></td></tr>
<tr><td>Active investment managers</td><td>-0.12%</td><td>-0.36%</td><td>1.56%</td><td>0.53%</td></tr>
<tr><td>Private markets relative to public markets</td><td>0.96%</td><td>0.13%</td><td>3.94%</td><td>-1.12%</td></tr>
<tr><td>Internally executed arbitrage</td><td>0.20%</td><td>0.21%</td><td>0.11%</td><td>0.09%</td></tr>
<tr><td>Strategic tilting</td><td>4.79%</td><td>1.79%</td><td>-1.55%</td><td>0.77%</td></tr>
<tr><td colspan="4">Portfolio completion</td><td></td></tr>
<tr><td>Portfolio completion (treasury)</td><td>1.22%</td><td>0.24%</td><td>0.75%</td><td rowspan="2">0.29%</td></tr>
<tr><td>Currency hedging</td><td>0.06%</td><td>-0.62%</td><td>0.83%</td></tr>
</table>

Source: Annual Report 2013, page 40 and Annual Report 2010, Page 23

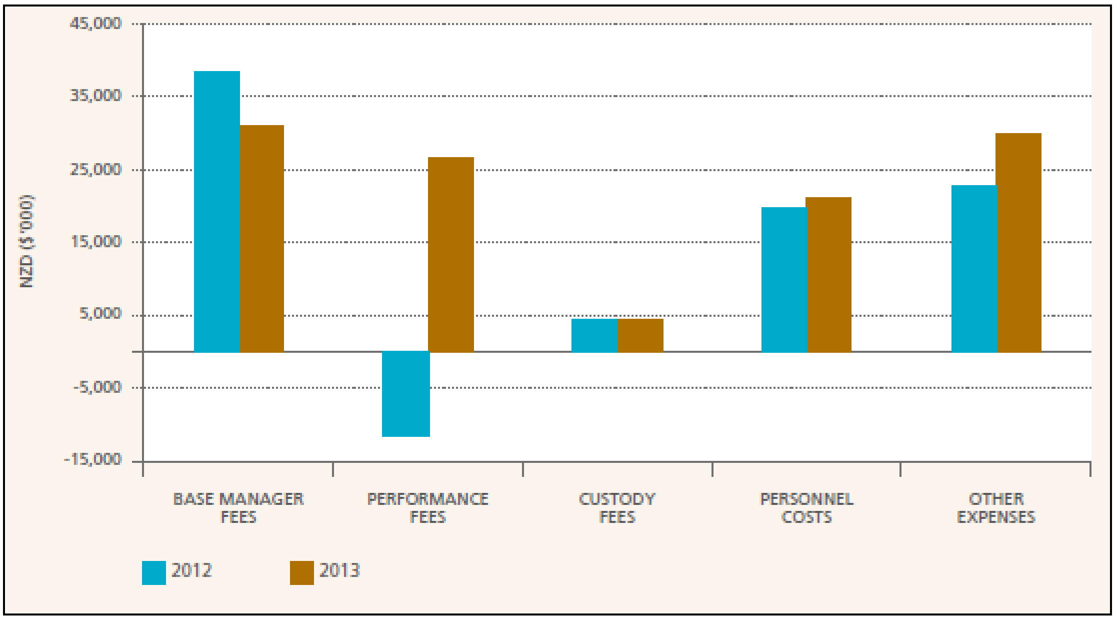
4.1.2 Fees and expenses

Fees are a material contributor to fund performance and the Guardians' Annual Report provides considerable detail describing the impact of fees on fund performance.[92] For example, the Annual Report for 30 June 2013 provides a decomposition of expenses in the following categories for the years 2012 and 2013: base manager fees, performance fees, custody fees, personnel costs, and other operating expenses. The Annual Report also includes a section detailing 'Fund Expenditure as a Percentage of Funds Under Management' for the past 10 years

[92] Fees paid to external managers are also addressed in Chapter 6.

(since inception of the Fund). These are shown in Figure 5 below, in which we note the substantial increase in Performance Fees in 2013 – almost equalling base manager fees paid in 2013.

Figure 5: Expense analysis 2012/13

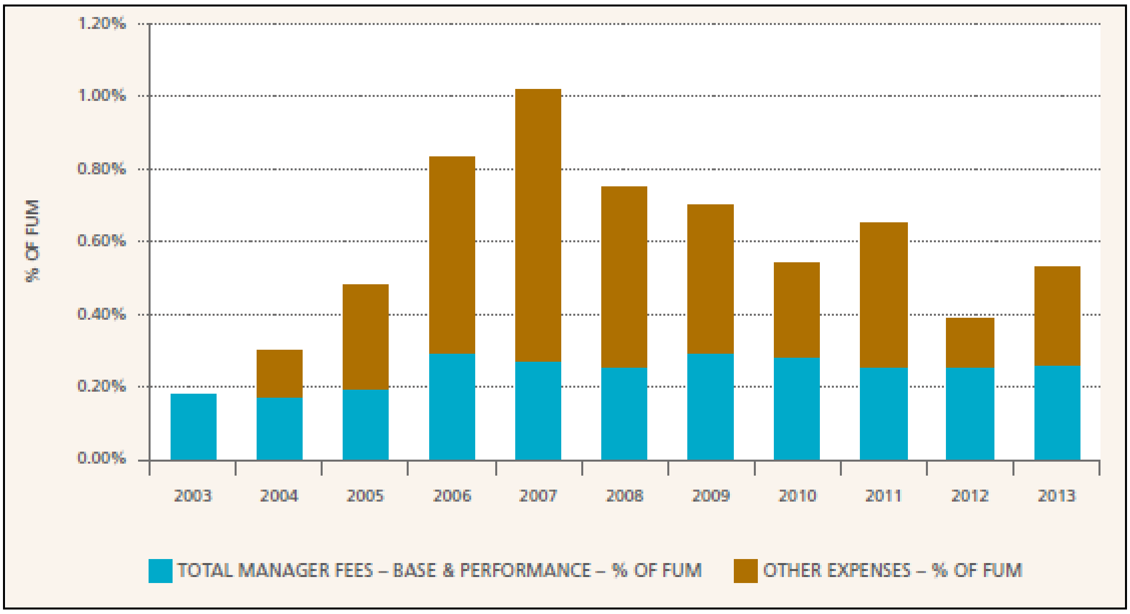


Source: Annual Report 2013, page 72

Figure 6 provides a longer-run picture of fees and other expenses. The main feature of Figure 6 is the effective containment of other expenses since 2007. This containment of expenses over the past five years has been in a period where staff numbers almost doubled and the complexity of Fund operations significantly increased. We note that, as a percentage of funds under management, as the Fund grows the expenses (if maintained) will decrease as a percentage of assets. However, the Fund has also done well in our view to contain expenses in dollar terms given the amount of change over the past five years. In the broader funds management industry, expenses of actively managed funds, and index equity funds have been trending downward for more than a decade, reflecting the strongly competitive nature of the industry as well as gains in assets, which, through economies of scale, helped lower fund expense ratios.[93]

[93] Investment Company Institute (2014), *Trends in the Expenses and Fees of Mutual Funds*, 2013, ICI Research Perspective Vol. 20, No.2, May 2014.

Figure 6: Fund expenditure as a percentage of Funds under Management (FUM)



Source: Annual Report 2013, page 72

With respect to costs more broadly, the Guardians participate in a cost benchmarking survey conducted by CEM Benchmarking that analyses cost structures for 300 international pension funds, with a customised peer group of 20 funds with similar fund size, risk profiles, and investment strategies. Whilst caution must be exercised in comparing cost structures in individual cost categories, on a total basis, the Fund was rated as ‘normal’ cost with a total excess cost of 0.8 basis points, placing the Guardians in the positive-value-added, low-cost quadrant of the cost effectiveness scale.

In relation to internal cost benchmarking, the Guardians use an internal reporting process (Cost Allocation Tool) that tracks staff data in terms of hours spent on various projects and activities. Reports produced include time spent on projects (such as new investment opportunities), project actual and budgeted costs, and tracking internal resource time spent in various business units. Outliers are readily identified from these reports.

4.1.3 Data quality

4.1.3.1 Implementation of the PEARL performance management system

The Guardians recognise the critical need for accurate and timely reporting of data across the organisation. Performance data are a key output and accurate reporting is a significant risk for any asset manager. In its 2009 report, Mercer recommended that the Guardians undertake several enhancements to performance attribution reporting and that performance attribution and other data be included in regular reporting to the Board. The Guardians have implemented, and in many areas have exceeded, those recommendations, particularly in the area of Board reporting.

In 2012, Internal Audit engaged an external consultant to review the calculation of investment performance measures to provide comfort that the performance calculations set out in the Board's reporting Dashboard can be relied upon by the Board. In that review the consultant assessed, among other things, the processes and controls in place to agree the monthly performance numbers that were provided by Northern Trust at that time, and the methodology and completeness of data used to calculate rates of return. In making several relatively minor recommendations for enhancement, the consultant provided comfort that the elements underlying performance attribution were appropriate.

Since 2012, the Guardians' approach to Fund performance measurement and reporting has undergone substantial change. Prior to that time, the Guardians had outsourced performance measurement and reporting to the Fund's custodian, Northern Trust. As the Guardians had moved to a more complex investment management operation they sought more flexibility in the capture, analysis and reporting of performance data. The Guardians developed a business case for insourcing performance management from Northern Trust by implementing a performance monitoring and measurement system to monitor the performance of the Fund and the individual strategies and portfolios within the Fund.

The project had two goals: a) to replace the performance reporting provided by Northern Trust; and b) to enhance their data reporting functionality. As part of the vendor selection process, the Guardians reached out to other funds and enlisted a U.S.-based advisor to assist with the vendor shortlisting process. Eight of ten vendors responded to the request and five vendors were shortlisted to tender. Following the tender and internal approval processes, the Guardians selected the PEARL Performance Reporting system developed and hosted by ORTEC Finance (based in the Netherlands).

A definition study was conducted in late 2012 with project implementation originally expected in July 2013. There have been some delays in the project timelines with configuration and testing conducted in March 2014 (we note that, despite delays, neither the costs nor the objectives of the project were adversely affected). The Guardians acknowledge that they underestimated the scope and complexity of migrating unique, key historical data to the PEARL platform from a sole source provider. As part of the normal project management closure process, the Guardians have conducted an internal post-implementation review of the project as well as commissioning an external consultant to review the performance measurement operation.

4.1.3.2 Data flows

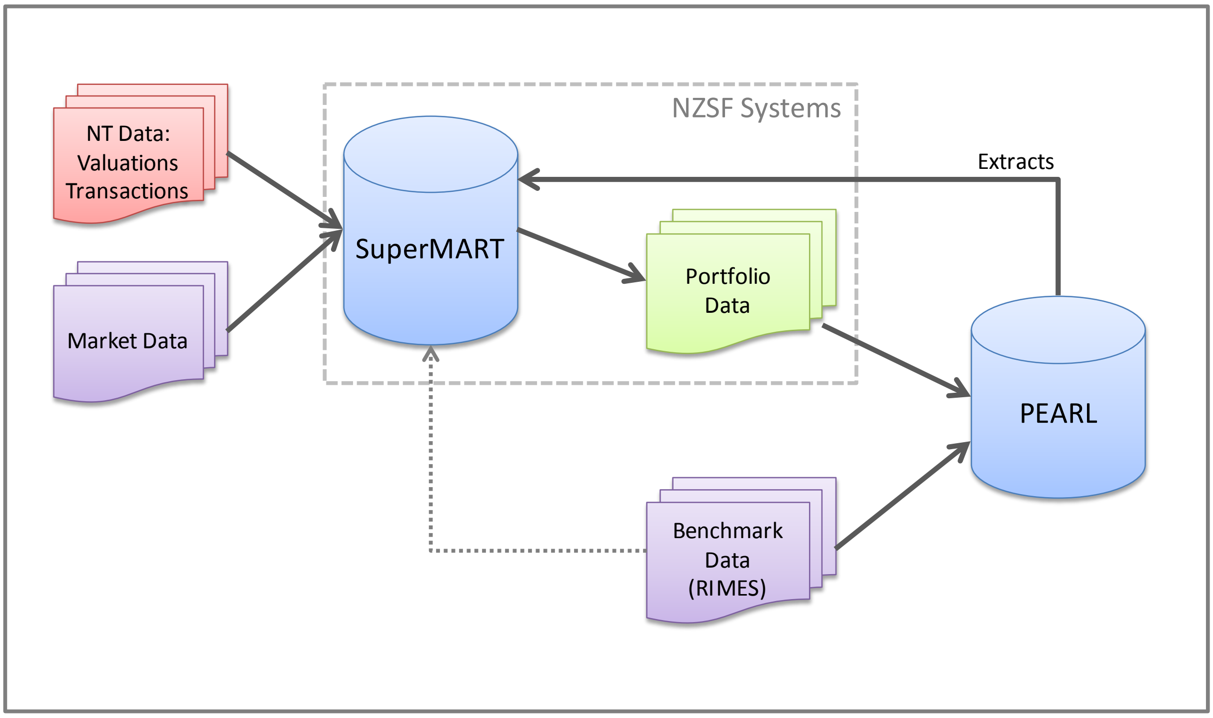
The daily flow of data from the custodian to the PEARL system can be summarised as follows–

- Northern Trust collates all Fund data including valuations and transactions. Northern Trust captures data from internal investments as well as from external investment managers (the latter may be in aggregate form in the case of collective investment funds such as hedge funds). Selected data are provided to Northern Trust by the Guardians, for example, valuations of direct investments.

- Data are transferred from Northern Trust to the Guardians' data warehouse (SuperMART). Also transferred to SuperMART are market data sourced from external providers.
- Following validation, the data from SuperMART are transferred into PEARL.
- The other primary source of data flowing into PEARL is benchmark data from RIMES, a third-party data management provider/aggregator (including the benchmark indices such as MSCI, Barclays, etc.).

The Guardians have mapped data sources in this high-level summary as follows:

Figure 7: Flow of data



Source: PEARL Data Delivery Guide. Overview of the Delivery of Data to the PEARL Performance Reporting System (undated)

We note that, by design, PEARL is simply a calculation engine - it provides no valuations (as this function is already performed by the custodian).

SuperMART has been in place since 2010 and the processes to load and verify Northern Trust data are well established and operational issues are minimal. There are more than 20 checks in place on the integrity of SuperMART data with checks performed by the Operations and IT teams (some automated and some manual). Data flows between Northern Trust and

SuperMART are fully encrypted.

In addition to the daily data flows, an end-of-month process is also conducted after accounts have been closed for the month end. Any changes to the data during the month, such as backdated dividend payments or backdated transfers to cover overdrafts, are not picked up in transaction files until month end when all the transaction files are re-generated, although the relevant entries are posted and accounts are re-run as soon as back-dated entries are detected (there are a number of automated checks in place for this). Performance results are therefore only indicative until the month end. For example, if the May transactions are subsequently found to be in error after the end-May processing run, these errors may not be identified until the end of June reports have been run. There is currently one senior performance analyst who runs daily performance checks. The analyst does not have a backup.

Regarding valuation data, the Guardians seek to achieve an accurate NAV on a daily (business day) basis. Northern Trust must stand behind this daily NAV value (and is liable for any errors). The Guardians concede that providing a daily NAV is not necessary for performance considerations (given the long-run horizon of the Fund) but believe that it is important that errors are discovered as quickly as possible and a daily valuation discipline assists in meeting this aim. Further, daily NAVs are generated to support trading, hedging, and fund rebalancing activities, which are conducted on a daily basis.

It is broadly recognised, however, that Fund valuations struck during the reporting year are only estimates and could be inaccurate. The only official accurate valuation of the Fund is as of 30 June each year. Changes to valuations of illiquid direct investments (such as farms, timber assets, and infrastructure investments) are usually identified only at year-end. Annual valuation of certain direct investments is an appropriate approach given the difficulty and expense associated with valuing these investments, and that the value of these investments does not tend to fluctuate on a day-to-day basis.

Oversight of the valuation of all assets, but particularly unlisted assets, rests with the Valuation Working Group (VWG). The VWG reviews methodologies, practices and polices relating to the valuation of assets and makes recommendations on the valuations the Guardians should adopt in respect of a small number of assets. It reports to the Audit Committee with a summary of annual asset valuations for the year-end figures. There is a robust process for end-of-year signoff, including review by the external auditor.

Northern Trust accounts for all assets (and values most assets on an independent basis), but the Guardian maintains and provides to Northern Trust a list setting out client-supplied pricing (where the Guardians provide the actual price of the asset) and client supplied pricing (where the Guardians provide a pricing rule to calculate a price) for a small number of assets.

For large directly managed unlisted assets (such as farms and timber assets), an independent external valuation is required at year-end, with the valuer appointed by the VWG (or decided jointly with other investors where the Guardians are not the sole investor). Intra-year values may be updated quarterly during the year for capital movements, operating profits reported and movements in any listed share components. However, the values are generally unlikely to change materially from quarter to quarter unless there is a significant event (e.g. divestment or impairment event), in which case the Guardians would consider revising the value between balance dates.

For private equity funds, the manager's valuation is typically used, but the VWG reviews (and challenges where required) the valuation policies of the investment managers. Intra-year values are updated from the most recent statement from the manager (usually quarterly).

For international venture capital investments, the year-end valuation is derived from the latest capital raising (provided it is less than 12 months old). If there has been no recent capital raising, an independent valuation is obtained (if the investment is more than a specified value). Intra-year valuations are updated for new capital raisings as they occur.

The Guardians also maintain internal valuation models as a check on the valuation figures and to internally inform and analyse. Any discrepancies are analysed and discussed with the valuer. Although the Guardians have considered whether internal models could be used to update valuations intra-year, they have decided that these models will only be used for comparative purposes and not for financial reporting purposes.

Certain data lags exist in the Guardians' data environment due to:

- the nuances of running a global fund from an NZ time-zone perspective;
- the input and processing time taken by Northern Trust, (global) investment managers, and the Guardians; and
- the overnight processing by PEARL (due to having the system hosted in the Netherlands).

For example, data reported as at close-of-business Monday would not be able to be viewed by the Guardians until Wednesday morning (i.e. T+2 basis), or Thursday morning (T+3) for PEARL output. Signoff for month-end is T+6 or 7 and year-end is T + several weeks. To compensate for these data lags, the T-2 market data fed into SuperMART is enhanced to take account of T and T-1 cash flows, and T-1 interest and exchange rates, and thus used to estimate aggregate current positions to be used by various internal business processes and tools (such as the Currency Hedge Tool and the Rebalancing Tool).

All staff members have access to the PEARL system, which allows them to run a suite of standard reports that have been developed specifically for the Guardians. PEARL contains three types of reports (called Investment Decision Processes (IDPs)), which can be run in the following formats:

- Total Fund IDP;

- Detailed Fund IDP - reports such as attribution, currency, returns, and added value, can be run at either a portfolio level (e.g. Portfolio Completion, Active Returns) or security level; and
- Reference Portfolio IDP.

PEARL data also feed into other key reports, such as the monthly Dashboard Report provided to the Board; this includes performance data, providing returns and attributions.

The Guardians acknowledge a sole source/supplier reliance on ORTEC, which hosts the application. As back up, the Guardians own their own version of the source code. The PEARL source code is held in escrow and can be accessed under certain circumstances.

4.1.3.3 PEARL documentation

The Guardians have developed good documentation on many aspects of the PEARL system and processes surrounding the use of PEARL. These documents provide detail on the data flows, process diagrams for each of the key activities (including allocation of responsibilities for the various steps to be completed as part of the process), timelines of data flows, lists of risks and controls, and a summary of key reports. Although some are documented, we were unable to find evidence of all the validation and integrity checks that are undertaken to verify the data.

4.1.3.4 External review of the PEARL system

An external review of the PEARL system was recently conducted. The review was undertaken in line with the Board-approved Internal Audit plan to review the Fund's performance environment every two years. The consultant's report provides good insight into the Fund's current data and reporting environment.

According to its report, the external consultant reviewed the Fund's performance measurement operation with the objectives of:

1. Gaining comfort around the information flows, to ensure the numbers presented are sensible and not corrupted;
2. Making sure any changes or enhancements to the numbers are appropriate and properly handled;
3. Gaining comfort with any manual processes and adjustments that are currently in place;
4. Understanding how benchmarks are set up and adjusted;
5. Understanding what types of procedures and documentation are needed to ensure a consistent approach;
6. Identifying and minimising 'key person' risks and other exposures;

7. Ensuring that performance calculations make sense as well as exploring alternative methods that could add value to the organisation;

8. Ensuring that processes are transparent, and that appropriate controls are in place; and

9. Ensuring that performance attribution methodology employed is in line with 'best practice'.

At the time of writing our Report, the report on PEARL from the consultant was still under consideration and had not yet gone to the Guardians' Board. Under the circumstances it would be unreasonable for us to rely on, or quote, the report, other than in very general terms.

Subject to that caveat, we note just three conclusions of that report, since they reinforce conclusions that we had reached independently:

- First, the report observes that the performance measurement process and control environment around PEARL were, in their opinion, sufficient (they also validated the Guardians' choice of the ORTEC system as a good provider of performance reporting information);

- Second, there appears to be a material 'key person' risk exposure in that the performance reporting analyst position does not have a backup; and

- Third, while some daily data are critical, not all are - since daily data include a material estimated component, management should consider reviewing the cost-benefit equation of the resources allocated to the daily return process, and consider whether to shift that focus and resourcing more to month-end data.

4.1.4 Reporting to the Board and external stakeholders

4.1.4.1 Reporting to the Minister and Parliament

As a Crown entity, the Guardians must meet a range of reporting obligations in respect of the Guardians and the Fund under the Act and the Crown Entities Act. The following reports must be provided to the Minister and presented by the Minister to the House of Representatives:

- Annual Statement of Intent (SOI) forecasting Fund performance and the Guardians' key strategic objectives and activities over a five-year period. Note that a recent amendment to the Crown Entities Act will result in the SOI being provided at least once in every three-year period (instead of annually) and relating to the forthcoming year and at least the three following financial years.[94] However, an annual Statement of Performance

[94] Section 139 of the Crown Entities Act and Section 65 of the Act

Expectations will still be required.[95]

- Annual report including information on operations, statement of performance, annual financial statements and audit report.[96] The Fund's performance against the SOI is reviewed each year in the Annual Report.

To help the Guardians plan for their SOI, the Minister provides the Guardians with an annual Letter of Expectation setting out the priority expectations for all Crown Financial Institutions as well as specific expectations for the Guardians. The Guardians prepare a response to this letter on an annual basis, providing any specific responses requested from the Minister or otherwise providing supporting information. One of the general expectations set out in each of the Annual Letter of Expectation we reviewed was the 'no surprises' policy which requires the Guardians to inform the Minister "*well in advance of any material or significant events, transactions and other issues that could be considered contentious or attract wide public interest, whether positive or negative*".[97]

In line with the Minister's 'no surprises policy', the Guardians maintain regular interaction with the Treasury and the Minister's office with regular informal conversations and visits as well as formal reporting. In addition, the Guardians must report to the Minister on the Fund as required with the Guardians currently providing quarterly reports including detail on Fund performance, key decisions and any important developments at the Guardians.[98] The Guardians also report to a Select Committee annually or upon request.

4.1.4.2 Reporting to other external stakeholders

The Guardians have a strong focus on transparency about the management and performance of the Fund. A wide range of detailed information is available on the Guardians' website including:

- Annual Reports, SOIs, Letters of Expectation from the Minister and the Guardians' responses, and presentations to Select Committees;
- monthly performance and portfolio reports;
- full suite of policies (with sensitive sections redacted) and the Board Charter;
- documents detailing the investment philosophy and framework;
- external reviews of the Fund, including the five-year Independent Review report and reports benchmarking the Fund against various external criteria; and

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[95] Section 149C of the Crown Entities Act

[96] Required form and content set out in Section 151 of the Crown Entities Act and Section 68 of the Act

[97] Annual Letter of Expectation from Minister to Chair of Guardians' Board, 12 March 2014

[98] Section 69 of the Act and Annual Report 2013

- detail on how the Fund is meeting its ‘responsible investment’ and its ‘investing in New Zealand’ mandates.

The annual reports, in particular, contain a vast array of comprehensive information outlining material factors contributing to Fund performance, in addition to the financial statements. They include:

- extensive analysis on the performance of the Fund (over multiple time periods, including since inception, and comparing returns to the benchmarks);
- how the Fund is progressing against the various external benchmarks (e.g. RI, governance, transparency and cost effectiveness);
- narrative disclosures that explain material factors underlying financial results (e.g. 10-year financial summary containing a high level summary of how the Fund’s finances have changed over the past decade and explanations of material ‘drivers’ of the financial reports);
- explanations of the key parts of the investment framework such as the Reference Portfolio and the value-adding activities; and
- narrative reports in specific areas, including ‘Case Studies’ outlining the Guardians’ investment strategies and individual investments.

4.1.4.3 Reporting to the Board

The Guardians have a comprehensive reporting framework for reports to the Board, Board committees, and management committees. Within each policy, a schedule sets out the reports required, the frequency and target of reporting, and the minimum information required. Some of the key reports are:

- Monthly report to the Board, including a Dashboard report on Fund performance, risk limits, progress on value-add activities, Fund and Guardians’ financials, HR issues and compliance. The quarterly report that aligns to the Board meeting contains more detailed information (such as derivatives activity, liquidity and collateral management).
- Full suite of papers for each Board meeting (including the relevant monthly Dashboard).
- Reports to the RC on a wide range of matters, including material changes to policy, policy breaches and incidents, appointment/termination of external manager/counterparty/PCA, changes to IMAs, changes to terms of appointment of counterparty/PCA, new IIMs, new approved products or opportunities, new or material changes to the terms of investments, review of updates of business unit Risk Registers, acceptance of risks, deviation from normal rebalancing thresholds, and model reviews.
- Reports to the IC on a wide range of investment matters, including the liquidity

replenishment system, counterparty reporting, performance of direct investments, manager performance, manager conviction assessments, performance of value-adding strategies and the RP, review of IIM performance and investment activity, deviation from normal rebalancing thresholds, and strategic tilting exceptions.

- Reports on new investment opportunities – report to the NIGEL, then to the RC, and then to the IC for approval.
- Quarterly report on incidents to Leadership Team and Audit Committee.
- Semi-annual compliance certifications to the Audit Committee.

4.2 Observations and Recommendations

4.2.1 Observation 11 – Fund performance

The Fund has performed exceptionally well relative to its benchmarks. Most importantly, it has added material value against the performance of the Reference Portfolio. Although there has been considerable variation from year to year in the overall value added by the Guardians' active investment strategy, as well as in the value added by the individual strategies, this is to be expected. Importantly, the increasingly complex strategies employed over the past five years since the Mercer report appear to have yielded a robust dividend to New Zealand's superannuation system.

Over the period since its inception and, particularly in the past five years, it is our view that the incremental return achieved has more than justified the increasingly complex investment strategy adopted by the Guardians. We recognise, of course, that past performance is not always an infallible indicator of future performance, but see no reason why the Guardians should not continue to add value over time.

4.2.2 Observation 12 – Data issues and PEARL

The terms of reference raise the following specific questions with respect to data issues and the PEARL system.

Question: Are the information management and documentation procedures adopted by the Guardians thorough and prudent?

Question: In particular, the review is to place emphasis on the way in which the Guardians' performance information system (PEARL) has been implemented.

Observations

The Guardians recognise the critical need for accurate and timely reporting of data across the organisation. Data integrity (in terms of consistency, accuracy, and correctness of the data) is a key dependency for any organisation. The bar has been raised across the global financial services industry with expectations of dynamic analytics and accurate information that, together, provide a detailed view of portfolios and performance. As the complexity of the Guardians' investment process increases over time, so too will their critical data needs grow.

4.2.2.1 PEARL documentation

In relation to the system documentation adopted by the Guardians for PEARL, we note that the procedures we reviewed were generally thorough and consistent with best practice. We understand that a documentation process is currently underway in relation to the IT data validation and further system documentation, and we recognise that the PEARL system has only recently been operationalised. We encourage the Guardians to continue the process of ensuring that procedures and documentation in relation to PEARL are updated to reflect new and actual operating practices. We suggest that all validation and integrity checks be documented and, given that this is the first reporting cycle of the PEARL system, the Guardians consider developing and implementing a performance reporting testing program to ensure ongoing data accuracy and integrity.

4.2.2.2 PEARL implementation

As noted above, the Guardians candidly acknowledge that they underestimated the scope and complexity of the PEARL project. They undertook a significant migration of key data from a sole-source, third-party provider and undertook to transfer the data in house – at considerable risk. The fact that the recently completed external review did not find gaps or weaknesses in the control environment is a strong positive. The post-implementation report, currently under development, is likely to provide the Guardians with some key lessons learned in relation to implementing large projects, as well as providing lessons for the ongoing development of the PEARL system.

Since the external review has been conducted in parallel with our own, and has focused specifically on the implementation of PEARL, we see no value in duplicating their analysis. With the exception of the few issues raised above and some suggestions that overlap with broader issues in this report (see Chapters 5 and 6), we make no further observations related to the PEARL system in this chapter.

4.2.3 Observation 13 – Benchmarking expenses

The terms of reference raise the following specific questions with respect to benchmarking expenses.

Question: Is CEM Benchmarking the best source of peer comparison analytics for performance and cost? Are there suitable peer comparison alternatives?

Question: Do the Guardians use benchmarking internally as a means to assess internal costs and pinpoint outliers?

Question: Reference Portfolio – The Guardians allocate a cost of managing the reference portfolio of 30 basis points – is this realistic? And is it reasonable for use in bonus measurement?

Observations

4.2.3.1 Expense benchmarking

As noted in Section 4.1.2, the Guardians participate in a cost benchmarking survey conducted by CEM Benchmarking. The Guardians are aware of shortcomings in the CEM benchmarking process and are currently working with CEM to ensure that costs are defined and categorised more consistently across peers and that the portfolio mix information is based on both physical holdings and derivative exposure (currently only physical holdings are included).

The Guardians observe that:[99]

> *"One issue we expect will continue is that CEM do not calculate and assign costs to the implementation of passive portfolios. We do calculate and assign costs to our Reference Portfolio (which is our passive portfolio) in order to make a true assessment of the value contributed by more expensive, active investments. Because CEM does not calculate a cost to the implementation of passive portfolios, their results will tend to understate our value-add by that amount. Nevertheless, because every fund is compared on the same basis, the CEM survey is a useful basis for benchmarking and comparison."*

According to the Guardians, the CEM benchmarking process is the only product currently used by peer funds and is the only source of peer comparison analytics for performance and cost. Although there are no viable alternatives at present, the Guardians are continuously monitoring for new cost benchmarking products.

In relation to internal cost benchmarking, the Guardians use an internal reporting process appears to be appropriately designed for internal benchmarking of costs.

4.2.3.2 The role of cost in performance benchmarking

As noted in Chapter 2, in Sections 2.1.1 and 2.2.2, the Guardians attribute a management cost of 30 basis points to the Reference Portfolio, which seemed to us to be on the high side. We privately sampled a number of funds managers to assess where the market might be for managing a relatively straightforward, passive portfolio of indices such as those that comprise the Reference Portfolio. The responses suggested that on average, the large funds managers would entertain charging around 10 to 15 basis points for such an exercise, although the range was relatively wide and does not include costs of hedging activity. We recognise, of course, that

[99] Guardians' website on Cost Effectiveness.

it is difficult to sample the price of such a service without having a genuine business proposition to ensure an “apples to apples” comparison.

We note that the Guardians review this calculation every few years, with the last review having been done in 2011. Given that the Reference Portfolio is critical to both the measurement of the Guardians’ overall performance and for bonus payments (see Chapter 5) we make the following recommendation.

Recommendation 6 – Imputed cost of managing the Reference Portfolio

> *We recommend that the Guardians regularly refresh the current methodology underlying the cost of managing the Reference Portfolio and sample the market at a minimum every three years to recalibrate the cost assigned of managing it.*

4.2.4 Observation 14 – Quality of reporting

The terms of reference raise the following specific questions with respect to the quality of reporting.

Question: Do performance attribution analytics/outputs generated by the Guardians’ performance reporting system adequately explain performance? Is calculation methodology of performance attribution in line with best practice?

Question: Is the Board kept informed of all matters that require its attention?

Observations

4.2.4.1 Reporting to the Minister

Reporting to the Minister is extensive, providing detailed information in the SOI about the strategic objectives and activities of the Guardians, as well as Fund performance and expectations. In nearly all respects this reporting is excellent. As noted in Recommendation 2, however, one area where we believe the Guardians could expand their reporting to the Minister is in relation to the use of derivatives. Reporting to the Minister should confirm that the use of derivatives is compliant with the Act and the Minister’s expectation by explaining how the Guardians interpret these considerations and explaining in detail the mechanics of how they ensure compliance with their interpretation.

4.2.4.2 Reporting to other external stakeholders

As a general comment, the Guardians are to be congratulated on the level of transparency they have embraced about their activities and the performance of the Fund. The public information available on the website covers all material aspects of managing the Fund.

Overall we find that the Guardians’ performance reporting environment provides comprehensive and robust performance information that allows Fund stakeholders to understand and assess the material factors underlying the Fund's performance and assessing that performance against its benchmarks. In addition, the scope and depth of information provided – attribution for appropriate years, material factors impacting performance, among many other elements – provide an excellent qualitative and quantitative mix of investment and performance information for the Fund's stakeholders. Our observations and suggestions that follow should be read with this overall assessment in mind.

Notwithstanding the high standard of reporting relative to the Reference Portfolio, we suggest that reporting could be strengthened in the following areas.

- Sub-indices of the Reference Portfolio - we found little information reported by the Guardians about the performance of the sub-indices underlying the Reference Portfolio (for a list of these indices see Table 1 in Section 2.1.1). Post the GFC, investor appetite for enhanced transparency around indices used to benchmark performance has risen significantly and we believe that providing greater transparency about the underlying indices and their performance relative to the Fund would enhance the current mix of information provided.

- Another area in which stakeholders may take an interest is the fees paid to external investment managers. For example, in the 30 June 2013 Annual Report we note that performance fees paid to external investment managers increased substantially during the reporting period. The Report outlines that the fee increases were due to the strong performance of the external managers but provides no further guide as to the link between performance and fees. For example, if accurate, disclosure could be included that states to the effect that hedge funds typically charge an annual asset management fee of 1% to 2% of assets as well as a performance fee of up to 20% of a hedge fund's profit. These fees are typically higher than the fees charged by an institutional fund. A performance fee could motivate a hedge fund manager to take greater risks in the hope of generating a larger return. We recognise the potential sensitivity of disclosing details about individual contracts but suggest that some aggregated information could be disclosed that would increase the transparency of this type of information.

- As noted in Chapter 2, while the 90-day Treasury bill return is no longer the primary benchmark, it is still relevant in that it establishes the long-run expected return on the Reference Portfolio. The Reference Portfolio, on the other hand, is the relevant benchmark against which the Guardians wish to have their active investment strategies judged over short- and even medium-term periods of time. The performance section of the website reports excess returns of the Fund over the 90-day Treasury bill return only, rather than the return on the Reference Portfolio. The monthly performance reports on the website provide summary performance information relative to both the Treasury bill benchmark and the Reference Portfolio benchmark but, in our view, the return in excess of the Treasury bill return is highlighted over the excess over the Reference Portfolio. We understand that reporting against the 90-day Treasury bill return may be a stakeholder requirement, but suggest that the Guardians should be proactive in helping stakeholders to realign their thinking with that of the Guardians. We are not suggesting that the Treasury bill rate be dropped from reporting, but that the information reported aligns better with the different roles of the two benchmarks.

We note that the Guardians address the disclosure of information in Section 6.1 of the Communications Policy where it is noted that information must be disclosed "*proactively, factually, accurately and consistent with legislative requirements unless there is a good, disclosed, reason for not doing so*". We believe this could be expanded to include the requirement that, as a matter of good policy, all disclosures are balanced and not inadvertently misleading. Given the importance of the benchmarks, we also suggest that the policy should specifically refer to the need to ensure that performance against both benchmarks is highlighted and that the different roles of the two benchmarks are appropriately highlighted.

Suggestion 5 – Disclosure policy

We suggest that the Guardians consider, as a matter of good practice, adopting and implementing a disclosure policy (or modify the existing Communications Policy) to highlight the need for all disclosures issued by the Fund to be fair, balanced and not inadvertently misleading. The Guardians should also consider broadening the range of disclosures to include aggregated information about external management fee arrangements and the performance of sub-indices within the Reference Portfolio.

Suggestion 6 – Alignment of performance reporting

We suggest that the Guardians take a proactive approach to shifting the primary focus of all their performance reporting to align with the performance of the Reference Portfolio.

4.2.4.3 Frequency and accuracy of performance reporting

We view the performance attribution analytics/outputs generated by the Guardians performance reporting system as in line with best practice in explaining performance. There appear to be sufficient controls in place (including annual external audit review) to ensure accurate reporting of portfolio positions at year end and, to a lesser extent, at month end (see comments below). Also, consistent with the conclusion of the report from the external review, we assessed the calculation methodology of performance attribution to be in line with best practice.

We were nonetheless left with some concern about the reliability of more granular reporting. As noted in the report from the external consultant, and independently verified by our review, intra-month and even monthly performance reports can be inaccurate. The main source of inaccuracy is the valuation of direct investments, which are generally only valued independently at the end of each fiscal year (due to the difficulty and expense of valuing these types of assets). As noted above, however, daily data are subject to reporting lags (due to time-zone and processing timings) and delayed correction of errors and adjustments, and even monthly figures may be subject to delays in error correction. The Guardians are aware of and include a disclaimer on the Fund's website that "*The figures outlined in the monthly performance updates have not been* *audited and are subject to change. The return for the full financial year is reviewed as part of the annual audit programme*." The monthly Performance and Portfolio Reports published on the Guardians' website also note that "*Fund returns are unaudited*" and that "*shifts in value from month to month must be seen in the context of the Fund's long-term purpose and performance*". We note that the website page providing the links to the individual monthly performance reports does not contain any disclosures.

We are of the opinion that the disclosures on the website, and those in the monthly reports, should clarify further than the only truly accurate performance information is that produced at each year's end and that monthly and intra-monthly performance information is only estimated.

Suggestion 7 – Reassess disclosures about accuracy of data

> *We suggest that the Guardians conduct a disclosure risk assessment of information provided to all stakeholders to ensure that information is fairly presented with appropriate safeguards and balancing disclosures where appropriate.*

Related to this point, we question (as does the report from the external review) the attention the Guardians give to producing daily NAV data. As noted several times during this Report, the Fund managed by the Guardians is a long-term investment portfolio. While regular reporting is useful, it does not occupy centre stage the way it does for a fund that is taking significant daily additions and withdrawals. Partly as a result of its nature, the Fund contains some assets that are difficult and costly to value more than once a year.

However, the Guardians are committed to a daily NAV as being essential to good trading, daily hedging and rebalancing as well as assisting to discover any errors as quickly as possible. They estimate that around 0.5 FTE is needed to ensure the validity and integrity of the data, with most internal processes being automated and the custodian responsible for the majority of the processing.

Given that the Fund does not take investments from the public and has a long-term investment horizon, we suggest that the Guardians periodically reassess the need to run a daily valuation process and whether this could be achieved in a more cost-effective way. In making this observation we are drawing a distinction between accurate daily recording of positions (which is important) and accurate daily valuation of those positions (which we believe to be considerably less so).

We understand that the Guardians will need to consider their response to the report from the external review and also recognise the complexities involved. Consequently, we do not offer a recommendation as such but encourage the Guardians to weigh all elements and alternatives.

4.2.4.4 Board Reporting

In terms of reporting, we believe that the Board is generally kept well informed of all matters that require its attention. The one exception is in relation to reporting of derivatives exposures, where we have recommended an expansion of reporting (see Recommendation 2 in Chapter 2).

The Board meets six times per year for regular meetings and is provided with a comprehensive suite of papers, some requiring Board approval and others for the information of the Board to ensure it is kept abreast of Guardians' activities. The papers are distributed a week or two before the meeting to ensure the Board has time to digest the information prior to attending the meeting. We have reviewed the complete suite of papers provided to the Board for its April 2014 meeting. The topics of the papers included operational matters, review of Risk Records and the risk framework, RI, strategic activities, Ministerial and Treasury correspondence, and investment performance and activity (including a Dashboard report).

We found the level of detail provided sufficiently comprehensive, without drowning the Board in excessive detail. As part of our review, we met with the full Board to gauge their level of satisfaction with the quality and quantity of reporting they receive from the Guardians. The unanimous view of the Board was that the reporting has evolved over the past 18 months to be at an exceptionally high level, with detailed information well supported by thoughtful analysis. The Board receives the Dashboard report on a monthly basis and is kept informed of other material matters by email circulars as they occur (e.g. material breaches where a full report is also sent to the Audit Committee). In addition, the chair of the Board meets with the CEO of the Guardians on a weekly basis, where any material changes to the Fund or its risk profile are discussed.

In our view, the information provided to the Board (other than in relation to derivatives) is of a very high standard, which allows it to maintain effective oversight of management.

The quality of the Guardians' reporting across the organisation appears sufficient to meet the Fund's current reporting needs, particularly at the Board level. As the Fund transitions to a more complex operating environment, the need for more robust reporting will continue to emerge. We note several opportunities where the Guardians could enhance their reporting of investment risks, including in particular, risks associated with derivative positions (see Recommendation 2 and Suggestion 1).

In addition to these specific areas we suggest that a periodic review, or look-back, of assumptions and forecasts made at the time of key strategic investments could be of interest to the Board. We recognise that, while assumptions can be overtaken by events in both a positive and a negative direction, it is nevertheless important to reflect on those key assumptions and the factors that may have affected the evolution of the actual outcomes over time.

Suggestion 8 – Review of forecasts and assumptions

> *We suggest that the Guardians provide a semi-annual look-back analysis to the Board of historical outcomes against assumptions and forecasts made at the time of key investment decisions.*

5 Governance

5.1 Guardians' Approach to Governance

5.1.1 Role of the Board and committees

Many of the governance requirements that apply to the Guardians are set out in the Act as well as in the Crown Entities Act (2004). As an autonomous Crown entity the Guardians are legally separate from the Crown and operate at 'double-arm's-length'. The first 'arm' of independence applies in the appointment of Board Members. An Independent Nominating Committee (established by the Minister) identifies candidates for the Board. The Minister then selects Board representatives from this pool of candidates. Section 55 of the Act requires Board members to have substantial experience, training and expertise in the management of financial investments.

The second 'arm' of independence is that the Board is the governing body of the Guardians and all decisions relating to its operation must be made by or under the authority of the Board.

Notwithstanding these arms of independence, the Guardians are responsible to the Minister of Finance, with the Treasury responsible for monitoring the Guardians and assisting the Minister to carry out his/her role. The Minister also has the power to give directions to the Guardians (under Section 64 of the Act) regarding the Government's expectations as to the Fund's performance, including expectations as to risk and return. The Guardians must notify the Minister about how they propose to respond to any direction so made, and the Guardians are required to have regard to the direction. There has been one Ministerial direction provided in 2009 in relation to the extent of New Zealand assets in the Fund.

In line with the Minister's 'no surprises policy', the Guardians maintain regular interaction with the Treasury and the Minister's office with regular informal conversations and visits as well as formal reporting.

The Guardians have established a formal Board Charter which sets out its:

- governance framework;
- role and responsibilities of the Board;
- committees of the Board;
- performance evaluations; and
- behavioural expectations.

The Board meets six times per year, along with an extra annual Board Strategy Day. Due to the complex nature of much of the Guardians' investment activities, a formal Board education framework (including an education calendar) has been implemented to ensure the Board members have the skills and expertise needed to discharge their responsibilities.

The Board Charter requires clear separation between the Board and management. The Board, through its governance framework, establishes a clear framework for oversight and management of the Guardians' operations and for defining the respective roles and responsibilities of the Board and management. The Board is responsible for:

- supervising the management of the Guardians and the investment of the Fund;
- establishing the Guardians' objectives, corporate strategy for achieving those objectives and the overall policy framework within which the business of the Guardians is conducted, and monitors management's performance with respect to these matters;
- ensuring the Fund's assets and the Guardians' assets are maintained under effective stewardship; and
- ensuring that decision-making authorities within the Guardians are clearly defined, that all applicable laws are complied with, and that the Guardians are well managed.

The Board is responsible for the affairs and activities of the Guardians. The CEO and other executives are charged with the day-to-day leadership and management by way of delegation from the Board. A formal set of delegated authorities is provided by the Delegations Policy, which clearly defines the responsibilities delegated to the CEO or a Board Committee (as well as sub-delegations) and those retained by the Board. These delegated authorities are Board approved and subject to periodic review. Certain authorities and functions are prohibited by law from being delegated (including the power to appoint an investment manager or a custodian).[100]

The Board approves all policies, the delegated authorities and reporting framework for each policy. Each policy also has a suite of additional Schedules, some of which require Board approval[101] and some of which are approved by the CEO. The Board is also responsible for approving the annual strategy and budget, certain expenditures, and CEO appointment and remuneration as part of the governance and accounting authorities.

The Charter is supported by a Board Code of Conduct. One of the key aspects of this Code is the management of conflicts of interest. In line with the Code (and Sections 62 – 72 of the Crown Entities Act) Board members are required to disclose any conflicts of interest, and there are certain consequences of having an interest and failing to disclose it. The Guardians must

[100] A Bill is currently before Parliament, which would repeal these delegation prohibitions.

[101] For example, the Reference Portfolio, the Proxy system, asset classes, the asset allocation constraints and strategic tilting ranges (all addressed in Chapter 2), and the risk appetite, risk framework and risk limits (addressed in Chapter 3) all require Board approval.

maintain a register of interests.

Oversight of the Guardians' operations is shared between a number of Board and management committees. The Board has two standing committees, the Audit Committee and the Employee Policy and Remuneration Committee (EPRC); the terms of references for these committees are included in the Board Charter. The objective of the Audit Committee is to assist the Board in meeting its financial reporting obligations and to provide assurance on financial reporting and the Guardians' risk, control, and compliance framework. The objectives of the EPRC are to:

- ensure that the Human Resources policies and practices of the organisation are appropriate and consistent with its statutory obligations;
- manage the Board's employment relationship with the CEO;
- ensure that the recruitment policies of the organisation are designed to attract and retain quality staff whilst providing appropriate accountability for performance; and
- ensure that the employment costs of the organization remain within agreed budgetary guidelines.

The terms of references set out the objectives, scope, membership and responsibilities of each committee. All members of these committees are Board members with membership approved by the Board. Both committees meet four times per year with formal agendas and minutes.

5.1.2 Management committees

As noted in Chapter 3, there are two management committees, the IC and the RC, in addition to the Leadership Team (comprising General Managers). Both management committees operate under a terms of reference, and meetings have formal agendas and decisions are minuted.

In addition to these two committees, the Guardians have a number of less-formal working groups such as the Valuation Working Group (VWG), FTG, and the NIGEL. As noted in Section 4.1.3.2, the VWG is concerned with the valuation of Fund assets (in particular, the valuation of unlisted assets). It reviews the methodologies, practices and policies, and reports its findings and recommendations to the Audit Committee. The FTG is tasked with oversight of activities relating to funding, portfolio rebalancing, liquidity and counterparty management. Both the VWG and FTG have formal terms of reference and produce formal minutes and papers.

The NIGEL is a coordination and information-sharing forum in relation to implementing and on-boarding new investment opportunities. The group is intentionally less formal that the VWG and FTG, with no terms of reference (although minutes record key outcomes and discussions). Membership comes from all functional areas and the group reports to the RC and presents as needed to the IC.

5.1.3 Organisational structure

In 2011/2012, the Guardians implemented a new Target Operating Model, which resulted in changes to the organisational structure. The new model was based on a number of key assumptions, including a commitment to active investment management, and on the need to build an operation that is agile and scalable (with the expected resumption of Crown contributions in the coming years). The operating model was to have:

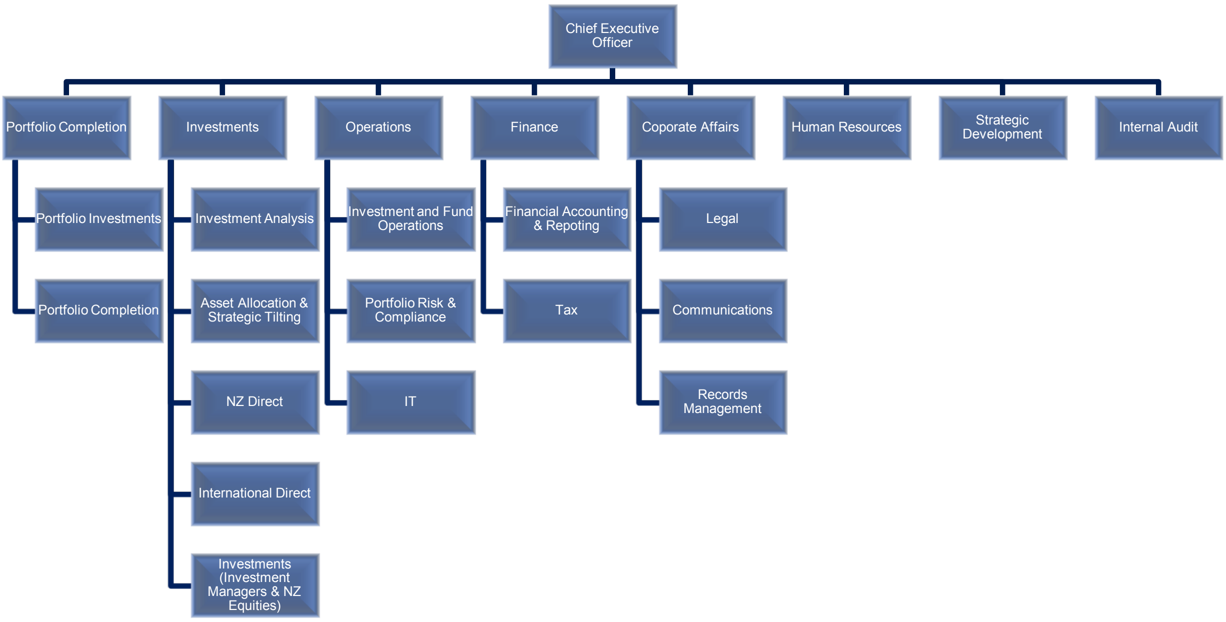
- simpler investment processes to enhance the ability to consistently rank investment opportunities and prioritise effort;
- greater influence over the allocation of capital to different investment risks;
- fewer, but deeper, external manager and advisor relationships, based on more of a partnership approach; and
- a more concentrated, active investment portfolio (in opportunities where there is high confidence).

Changes to the organisational structure were made (and continue to be made) to align team member roles to the new investment direction, and to improve teamwork in the identification, analysis and implementation of investments. Changes have included:

- shifting the Responsible Investment Team to the Investments Team;
- splitting the Investments Team into two teams with responsibilities for 'opportunities' and 'access points', respectively;
- expanding the Direct teams (and a split between NZ Direct and International Direct); and
- Establishing new teams for Portfolio Completion (with the treasury function moving from the Operations area) and Strategic Tilting.

The current organisational structure is set out in Figure 8 below. The Portfolio Completion team has responsibility for treasury operations (including cash management and portfolio rebalancing) as well as portfolio investments.

Figure 8: Organisational Structure



5.1.4 Policies

The Guardians have a well-defined policy framework (refer to Appendix 2 for a complete list of the Guardians' policies). As discussed in Chapter 2, the SIPSP is the overarching policy document that establishes the framework set by the Guardians for the governance and investment of the Fund. It is supported by a number of specialised policies. In addition to the investment policies discussed in Chapter 2 and the risk management policy discussed in Chapter 3, the Guardians have additional policies governing delegations, procurement and outsourcing, human resources, communications, and travel and sensitive expenditure.

In 2010/11, the Guardians conducted a full review of the policy framework, carried out jointly by the Board and management. This resulted in a significant consolidation of polices (at the time of the Mercer review there were 42 policies, compared with 12 at present). The policies are Board-approved and have a consistent format. Each policy is assigned a 'policy owner' who is responsible for reviewing the policy and certifying that it is up to date. The Act requires the SIPSP to be reviewed annually. Authority to approve changes is highlighted in each policy, often with material changes required to be approved by the Board. All changes are reviewed by the General Counsel.

The full suite of policies is available on the Guardians' website (with sensitive sections redacted). As noted in Chapter 2, the SIPSP notes that procedures are described in the HWI document.

5.1.5 Legislative compliance framework

In addition to the Act and Crown Entities Act, the Guardians must comply with a comprehensive list of legislative obligations (including obligations relating to investments, transactions, contracts, employment, health and safety, tax, and accounting). A Legislative Compliance Framework is set out in Schedule 11 of the RMP. The compliance programme has the following components:

- operational policies and procedures;
- identification; and
- monitoring, assessment, changes, and reporting.

A Risk Register of legislative compliance risks is maintained by the General Counsel, who is also responsible for identifying changes and working with the business units affected by those changes. The General Counsel is assisted by external professional legal advisers in monitoring legislative changes. A report on legislative change is provided to the RC every six months. The legislative requirements applying to various activities and business units are embedded in the relevant policies, although this summary is very high level (typically just a listing of relevant pieces of legislation). Appendix A to the Legislative Compliance Framework provides a mapping of the legislative obligations to the relevant policies.

Compliance with legal and regulatory obligations is operationalised via the requirements included in the various policies. Monitoring of compliance with policies and, by extension, legislative obligations, is performed through a semi-annual attestation by all staff that they comply with the relevant policies (and individual obligations within policies) that apply to them, as well as complying with any delegated authorities and the Code of Conduct. There is a process in place for escalating incidents of non-compliance with policy where the breach of policy has or could result in financial loss/gain, reputational damage or theft of Guardians' assets or information. This process includes an incident logging and monitoring process, with escalation and reporting processes based on the risk assessment of the incident provided by the Internal Auditor.

The General Counsel maintains a Risk Record (#7) on Legal and Regulatory Risk. This Risk Record is an aggregation of the legal and regulatory risks on the business unit Risk Registers. There are a number of risks on the various business unit or business activity Registers relating to legal and regulatory risk. For example: the Human Resources Risk Register includes a risk that employment agreements do not meet legislative requirements; the Finance Register includes a risk that tax compliance obligations are not met; and the Responsible Investment Register includes a risk of a breach of exclusions on segregated portfolios. The Corporate Affairs Risk Register (in the activity of Records and Policy Management) also includes a risk with the description 'Breach of Guardians Policies' which is included in Risk Record (#7). The business unit Risk Registers include an inherent, residual and target risk rating as well as a listing of key controls. Risks rated High or above are listed on the Risk Record (#7).

The overall inherent risk of Risk Record #7 is assessed as 'Extreme'.[102] Current key controls include:

- the Legislative Compliance Framework;
- securities trading procedures; and
- Code of Conduct with staff attestation, employment contracts, due diligence of contracts and external managers, conflicts of interest registers, IT protocols, training and education, and limitation of liability by way of insurance.

The current risk assessment, after consideration of controls is rated 'Moderate' (the same as the target risk assessment).

The RMP provides the Board-approved RAS as Schedule 2. There are a number of compliance aspects in the Risk Appetite that are rated as 'Zero Tolerance Risks'. These include Reputation (no instances of regulatory non-compliance), Fraud (no instances of fraud) and Compliance failure in internally managed mandates (no active compliance failures).

The Legal Team is closely involved with the business units by way of participation in the NIGEL meetings, contributing to the completion of Operational Risk Assessments (ORAs), as well as review of legal contracts and involvement in legal negotiations. All legal issues are brought to the attention of the NIGEL.

Assurance over the legislative compliance framework and processes is conducted every two years by the Internal Audit function (or by an external firm by arrangement). The most recent review, conducted in 2013, found only minor areas in need of improvement. Overall, the review found the Legal Compliance policies, practices, and conformance to be well aligned to the risk level and size of the Guardians. The Legal Compliance Framework appears to fit effectively within the broader governance, board oversight, risk management, legal team, and attestation and monitoring structures.

The 2013 review found that the quarterly Securities Trading certifications were designed and operating well; that the role played by the Legal Team was working well; and that there was full Board oversight and reporting over legal compliance. The only minor recommendations for improvement were to provide a risk ranking for all specific pieces of legislation and to enhance the Legal Compliance Attestation process based on this ranking such that evidence is provided to support the high risk areas. Management response was that they are satisfied with current risk assessments and processes.

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[102] In fact its inherent risk rating is ambiguous, since it is rated as Extreme in the section after consideration of cause and impacts, but High in the Risk Assessment Summary table.

5.1.6 Other compliance responsibilities

The General Counsel, who has responsibility for legislative compliance oversight, is supported by other areas within the organisation in relation to compliance more generally (some first-line and some second-line oversight). The Portfolio Risk and Compliance Team oversees compliance with internal investment policies and limits, as well as compliance by external investment managers. The team is responsible for:

- pre- and post-trade compliance monitoring in relation to internal investment mandates;
- monitoring the compliance (including RI) of external managers with investment mandates (in conjunction with Northern Trust);
- monitoring counterparty creditworthiness and counterparty limits (in line with limits set out in the PCIMSP); and
- monitoring compliance with liquidity requirements.

Breach reports are monitored daily, with actual breaches leading to reporting requirements (including quarterly reporting to the Audit Committee) and activation of incident management processes.

Other areas of compliance oversight include:

- Operations Team monitors compliance with service agreements by Northern Trust and other service providers;
- Operations Team monitors compliance with internal requirements in relation to Fund operations and internal investment management;
- Investment Team monitors compliance with mandates by external managers;
- Direct Investment Teams monitor compliance with agreements and legislative obligations for direct investments (e.g. rural, timber assets and infrastructure) - in some cases, this monitoring is done in conjunction with an operations manager (e.g. rural and timber), where health and safety is one of the biggest risks; and
- Responsible Investments monitors compliance with the ESG principles set out in the Responsible Investments framework.

5.1.7 Remuneration and incentives

Board remuneration

The remuneration of the Board is set by the Minister of Finance operating in accordance with the Fees Framework for Members of Statutory and Other Bodies Appointed by the Crown. Effective from 1 January 2008, the cabinet increased the Crown Financial Institution Board fees with the following levels applying to the Guardians' Board:[103]

- Chair - $54,000 (was previously $37,400);
- Deputy Chair - $33,750 (was previously $23,375); and
- Member - $27,000 (was previously $18,700).

The fees paid to Board members have not increased since 2008.

Staff remuneration

Although there is no separate remuneration policy, the Human Resources Policy sets out broad requirements for annual performance reviews, links to remuneration and participation in the discretionary bonus programme. The bonus payable to an employee under the programme is based on the whole-of-Fund performance (if applicable) and the employee's individual performance against a set of objectives and competencies. Employees are provided with details about their target bonus and personal objectives in the form of a letter at the start of the financial year. A bonus programme briefing was provided to all staff setting out the principles and changes to the programme effective June 2013. Details about the bonus programme are also recorded as part of staff employment contracts and in the Annual Report (which provides some details about the components of bonus payments, maximum percentages paid, and total and average dollar payments for the various business categories).

All bonus payments are at the discretion of the Board. The Human Resources Policy does not include any detail on the calculation of bonus payments. The only reference to the calculation of the bonus is in Section 4.2 of Schedule 4 of the HR policy which provides that "*any bonus payable to employees under the programme is based on the performance of the Fund where applicable, and the employee's performance against a set of objectives and competencies agreed in writing between the employee and the relevant GM*".

For all staff, the amount of bonus is expressed as a percentage of base remuneration and is variable up to a maximum amount. For front-office and leadership staff, there are two potential components - a bonus linked to individual objectives and a bonus linked to the performance of the Fund relative to its benchmarks. For back office staff, the bonus is linked to individual objectives only (they are not eligible for a bonus linked to Fund performance). The Fund performance component for the front-office and leadership groups are measured on a whole-of-fund average basis over a rolling four-year period and comprise performance relative to the 90-day Treasury bill return plus 2.5% (the measure of outperformance is capped at 4%) and performance relative to the Fund's Reference Portfolio benchmark minus 30 basis points for

[103] Letter to Chair of the Guardians' Board (David May) from the Minister of Finance (Hon Dr Michael Cullen), 19 May 2008.

management costs (in this case, outperformance is capped at 0.75%). The CEO, Leadership Team and front-office staff in the Investments and Portfolio Completion teams account for roughly half the staff by numbers.

The structure of the bonus programme was modified in mid-2010 to incorporate individual stretch Key Performance Indicators (KPIs), to change the component weightings and to modify the eligibility for the fund performance component (previously all staff were eligible). The current bonus programme allocates a maximum potential bonus payment of 30% of base salary to front-office staff based on individual objectives, compared with 20% for back-office staff, the CEO and other members of the Leadership team.

Maximum potential bonus payments are show in Table 11 below.

Table 11: Bonus Scheme Structure

Business Unit	**Maximum Potential Bonus as a % of Base Remuneration**	
	Individual Objectives	**Fund Performance**
Corporate (back-office) Staff	20%	0
Front office (Investments and Portfolio Completion)	30%	30%
CEO and remaining members of Leadership Team	20%	20%

Source: Bonus Programme Briefing, 30 June 2013

In order to qualify for the discretionary bonus programme as outline above, all employees must also pass behavioural and competence standards. Each employee's performance is rated as either 'Above Target', 'On Target', or 'Below Target', based on how well they have met performance objectives and their behaviour (in terms of work ethic, cultural issues and collaborative approach, etc.). Any employee rated as 'Below Target' is not eligible for participation in the discretionary bonus programme. Results are provided mid-year and at the end of the year, so employees positioned as 'Below Target' on a mid-year basis have an opportunity to improve their rating over the last six months of the year.

Changes are currently proposed to provide more granularity to the performance ratings scales and to change the bonus programme to be based more on how people work, rather than whether objectives are achieved.

For the 2012/13 year, the total amount of incentives paid was $4.6 million with 74% of individual stretch targets achieved. The total payments and average payment for each broad area is provided in Table 12 below. The CEO's total remuneration for 2012/13 was $667,102, being base remuneration of approximately $477,684 and bonus payment of $189,418 (where 44% of the bonus was for individual stretch targets, 21% for fund performance for the current year and 35% for fund performance for prior years).

Table 12: 2012/13 Bonus Payments

	Total Payments $000	Average Payment $000
Corporate Staff	$992	$22
Front office (Investments and Portfolio Completion)	$3,095	$84
CEO and remaining members of Leadership Team	$477	$79
Total	$4,564	$51

Source: 2012/13 Annual Report

5.2 Observations and Recommendations

5.2.1 Observation 15 – Governance arrangements

The terms of reference raise the following specific questions with respect to the Guardians' governance arrangements.

Question: Are the governance arrangements practiced within the Guardians in accordance with best practice?

Question: Is there a clear separation of responsibilities between the Board and management?

Question: Is the Board kept informed of all matters that require its attention?

Question: Are the decision-making processes within the Guardians' management and Board prudent?

Question: Are the decisions made by the Board and management appropriately documented, given their accountability as a Crown entity?

Question: Are the Board and Management delegations appropriate?

Observations

5.2.1.1 General governance principles

There is no one set of international corporate governance principles or guidelines that readily applies to sovereign wealth funds such as the Guardians. Many of the published best practice guidelines apply more readily to listed entities with shareholders (e.g. OECD Principles of

Corporate Governance[104]) or to complex banking institutions (e.g. Basel Committee on Banking Supervision Principles).[105]

The Financial Markets Authority (FMA) published *Corporate Governance in New Zealand Principles and Guidelines* in 2004 (as the Securities Commission) setting out nine principles of corporate governance for application to a broad range of entities. The principles were intended to contribute to high standards of corporate governance in New Zealand entities. The nine principles are:

1. Directors should observe and foster high ethical standards.
2. There should be a balance of independence, skills, knowledge, experience, and perspectives among directors so that the board works effectively.
3. The Board should use committees where this would enhance its effectiveness in key areas while retaining board responsibility.
4. The Board should demand integrity both in financial reporting and in the timeliness and balance of disclosures on entity affairs.
5. The remuneration of directors and executives should be transparent, fair, and reasonable.
6. The Board should regularly verify that the entity has appropriate processes that identify and manage potential and relevant risks.
7. The Board should ensure the quality and independence of the external audit process.
8. The Board should foster constructive relationships with shareholders that encourage them to engage with the entity.
9. The Board should respect the interests of stakeholders within the context of the entity's ownership type and its fundamental purpose.

Each year in their annual report, the Guardians provide a self-assessment of their compliance with the FMA governance principles, with supporting evidence provided for observance of each of the principles.

The Santiago Principles[106] that set out Generally Accepted Principles and Practices (GAPP) for sovereign wealth funds (SWFs) provide some guidance in the areas of legislative and

[104] Organisation for Economic Co-operation and Development (OECD). OECD Principles of Corporate Governance. 2004.
[105] Basel Committee on Banking Supervision BCBS176. *Principles for enhancing corporate governance*. Oct 2010.
[106] International Working Group of Sovereign Wealth Funds. Generally Accepted Principles and Practices (GAPP) - Santiago Principles. Oct 2008.

institutional framework, governance and risk management. Relevant governance principles are:

- GAPP 6 - The governance framework for the SWF should be sound and establish a clear and effective division of roles and responsibilities in order to facilitate accountability and operational independence in the management of the SWF to pursue its objectives.
- GAPP 8 - The governing body(ies) should act in the best interests of the SWF, and have a clear mandate and adequate authority and competency to carry out its functions.
- GAPP 9 - The operational management of the SWF should implement the SWF's strategies in an independent manner and in accordance with clearly defined responsibilities.
- GAPP 10 - The accountability framework for the SWF's operations should be clearly defined in the relevant legislation, charter, other constitutive documents, or management agreement.
- GAPP 11 - An annual report and accompanying financial statements on the SWF's operations and performance should be prepared in a timely fashion and in accordance with recognized international or national accounting standards in a consistent manner.
- GAPP 12 - The SWF's operations and financial statements should be audited annually in accordance with recognized international or national auditing standards in a consistent manner.
- GAPP 13 - Professional and ethical standards should be clearly defined and made known to the members of the SWF's governing body(ies), management, and staff.
- GAPP 16 - The governance framework and objectives, as well as the manner in which the SWF's management is operationally independent from the owner, should be publicly disclosed.
- GAPP 22 - The SWF should have a framework that identifies, assesses, and manages the risks of its operations

The Santiago Compliance Index (conducted on an annual basis by GeoEconomica), rates SWFs against the standards set by the Santiago Principles based on an assessment of publicly available information. According to the latest benchmarking exercise,[107] the Guardians rate extremely well in terms of compliance with the overall set of principles (second highest on the index with a score of 92%).

In our view, the governance arrangements practiced by the Guardians are largely in accordance

[107] GeoEconomica, *The Santiago Compliance Index 2013*, Benchmarking Series, January 2014.

with best practice. Our views are supported by a number of specific observations.

5.2.1.2 Operational independence

The Guardians enjoy a strong level of operational independence from the Government. While they are accountable to the Minister of Finance, the Guardians operate at 'double-arm's-length' from the Government, with the Board acting as the governing body of the Guardians and with Board candidates selected by an independent Nominating Committee. The Minister has the power to give a direction to the Guardians and Guardians must give regard to such a direction. However, there has only been one direction to date, namely that the Guardians should 'consider' NZ investments. We consider that the Guardians have adequate operational independence from the Government.

In relation to Board expertise, the Act requires all Board members to have 'substantial expertise' in the management of financial investments and the Guardians have implemented a Board education programme to ensure the Board maintains the necessary skills to discharge their responsibilities. Refer to Section 5.2.4 for further detail on organisational capacity.

The roles and responsibilities of the Board, Board Committees, senior management, and management committees are clearly and formally documented in the Board Charter, Delegations Policy, and Terms of Reference documents for the IC and RC. In our view there appears to be sufficient separation of responsibilities between the Board and management, with the CEO and management charged with the day-to-day leadership and management by way of delegation from the Board.

The Delegations Policy provides detailed delegations in relation to each policy, investment activity and operational activity. The Delegated Authorities are generally appropriate, with the Board responsible for higher-level policy, frameworks, and limits, and the CEO (and senior management, by way of sub-delegation where relevant) responsible for implementation within the Board-approved boundaries. In relation to oversight of adherence to the delegation framework, all staff must complete a semi-annual attestation that they have complied with relevant policies and delegated authorities. A report on these attestations is provided to the Audit Committee. The RC also provides an oversight role in relation to ensuring exposures to investments and products are consistent with Board/IC limits.

5.2.1.3 Decision-making processes

In relation to decision-making processes, our view is that there are clear processes in place with various stages of approval by management committees, senior management and the Board. We selected a recent investment to review in detail and tracked the decision-making process from initial analysis of the potential opportunity, to the selection of access points, through to final investment approval. The process was collaborative, with involvement from all business teams, management committees and the Board. Papers presented to senior management, IC and RC were comprehensive at key decision points and there was evidence of robust discussion and challenge, particularly by the IC (where a number of additional questions were raised with documented responses). A comprehensive due diligence process was conducted, including an onsite visit to potential overseas access points. A range of risks were considered by the RC and documented in the ORA (with input from communications, legal, finance, RI, IT, operations, and risk and compliance teams). Key decisions and discussions throughout the process were documented in detailed minutes, with a final document execution process that ensured the necessary approvals were received. There was evidence of a number of touch points, with multiple verbal updates and papers to the IC. Approvals were made in line with the delegated authorities by the IC and the Board. In summary, the decisions made for this investment by the Board and management were part of a prudent process and were appropriately documented.

For the case study considered, Board approval was received on the key terms and conditions of the investment mandate (since the Board cannot delegate the approval of an investment manager). A Bill is currently before Parliament to remove this restriction. If passed, this change would remove the need for Board approval for an investment similar to the one considered in the case study (it would merely require noting by the Board post-implementation). Under the proposed change, the Board would receive a report on the approval by the CEO/IC of a new opportunity at the next regular Board meeting, giving the Board a chance to voice any concerns in relation to the new opportunity.

In practice, in line with the 'no surprises policy', the Board is kept well informed of new opportunities, particularly in areas which are complex or involve different skill sets or specialised knowledge. These issues may not be presented to the Board for formal approval, but the Board has the opportunity to discuss and advise in the lead-up to the investment being on-boarded. The CEO and Chairman of the Board meet weekly to discuss any material events or changes in the risk profile. A new complicated, or unusual, investment would be discussed in these meetings.

5.2.2 Observation 16 – The role of compliance

The terms of reference raise the following specific questions with respect to the Guardians' compliance arrangements.

Question: Do the Guardians have appropriate processes in place to ensure that all their requirements under the New Zealand Superannuation and Retirement Income Act are complied with?

Question: Do the Guardians have appropriate processes in place to ensure that all their requirements under other relevant legislation (for example, tax legislation) are complied with?

Observations

The Guardians maintain a Legislative Compliance framework for the identification, risk assessment, monitoring and reporting of legislative compliance risks. This framework addresses compliance with the Act, the Crown Entities Act (as the two key pieces of legislation) as well as a range of other legal obligations (including legislation relating to investments, transactions, contracts, employment, health and safety, tax and accounting, and so on). Although specific legal obligations are not risk rated as such, compliance risk assessments are comprehensive, with associated controls to mitigate the inherent risk. This framework has been recently reviewed by the Internal Audit function with policies and practices being rated as well-aligned to the risk level and size of the Guardians and only minor areas identified as needing improvement.

In general, the processes in place to ensure that the Guardians meet the legislative requirements set out in the Act and other legal obligations are in line with best practice.

One minor area where we see opportunity for improvement is in relation to the compliance risk appetite and the absence of links between the risk appetite statements and the compliance risk assessments. As part of the section on business risks in the RAS, there are a number of 'Zero Tolerance' statements in relation to compliance risk. For example, in relation to reputational risk, the risk appetite statement provides that '*we will have no instances of regulatory non-compliance*' and that, although risk preferences are not formally articulated, there is a '*preference evidenced in Low target rating*'. While the risk assessment process for compliance risks refers to 'Target Risk', there is no explicit linkage between the target and the level of risk articulated in the risk appetite statement. When deciding whether the residual risk assessment, after the consideration of controls, is acceptable, there should be consideration of the risk appetite limits approved by the Board.

Suggestion 9 – Realign compliance risk statements

We suggest that the compliance risk assessments be better aligned to the RAS.

Although the legislative compliance framework is robust in terms of compliance with external legal and regulatory obligations, we consider that there is some room for improvement in relation to compliance responsibilities more generally. It is not clear to us whether compliance with all internal policies and procedures is fully captured within the legislative compliance framework. We note the risk 'Breach of Guardians Policies' is in the Corporate Affairs Risk Register which is included in the 'Legal and Regulatory' Risk Record (#7). There is also a semi-annual attestation by staff as to their compliance with internal policies and the Code of Conduct, with oversight responsibility by the General Counsel.

The framework documented in Schedule 11 to the RMP (and the terminology of 'legislative' compliance) would seem to indicate that only compliance with external legal and regulatory obligations are included.

As noted in Section 5.1.6, there are many other compliance roles within the Guardians' operations, both in terms of compliance with external obligations, internal policies and procedures, and in terms of monitoring compliance by managers and service providers. In particular, the Portfolio Risk and Compliance Team has responsibility for compliance oversight in relation to internal investment policies and limits as well as investment manager monitoring. Reporting of the compliance outcomes for these roles vary across the organisation. However, there is no single view of the compliance activities across the organisation.

Best practice compliance frameworks are sufficiently broad to capture compliance with external obligations (often termed big ‘C’ Compliance) as well as compliance with internal policies, procedures and limits (little ‘c’ compliance). Well-designed policies and procedures often capture all external legal and regulatory obligations as part of internal obligations. Regardless of whether this is achieved, it is important than the compliance framework is sufficiently broad. We believe that further clarity and improved oversight and reporting channels are warranted to ensure that both management and the Board has clear oversight of both external and internal compliance practices and outcomes.

We have recommended in Section 3.2.4.2 (see Recommendation 4) that the Guardians appoint a CRO to provide organisation-wide and independent oversight of risk. The CRO’s oversight should extend to compliance risk (both external and internal) to ensure that the Board has line-of-sight over the level of compliance across the organisation. We recommend that the CRO’s team should include a Compliance Officer to have carriage of this responsibility. The Compliance Officer would ensure monitoring and consolidated reporting of compliance risks and activities to management and the Board.

Recommendation 7 – Appointment of a Compliance Officer

> *We recommend that the Guardians appoint a Compliance Officer, as part of the CRO’s team, to ensure effective oversight of compliance risks across the organisation. The Compliance Officer would not take responsibilities currently performed by the General Counsel and various operational teams, but would work with these groups to coordinate compliance activities and provide line-of-sight over all compliance obligations.*

5.2.3 Observation 17 – Organisational structure

The terms of reference raise the following specific question with respect to the Guardians’ organisational structure.

Question: Is the organisational structure of the Guardians appropriate for the outputs the organisation is trying to achieve?

Observations

The Guardians’ team has grown significantly, almost doubling in the past five years (from 55 in mid-2009 to the current number of approximately 100). Over that period, the focus of the Guardians’ activities has also changed from a predominantly outsourced model, to a team that realises the benefits of insourcing where appropriate, in line with fund endowments and investment beliefs. Reflecting the new investment framework, organisation restructures have separated the analysis of investment opportunities from the selection of access points.

After several years of implementing change, the organisational structure is now in a reasonably steady state. While new staff appointments are expected over coming years (approximately 20), the structure is not expected to undergo any further significant change in the near future.

A potential concern with separating the investment team is that silos can be created, affecting the extent of effective communication between investment teams. The Guardians are cognisant of this risk and have implemented an effective cross-team approach to ensure the teams work collaboratively and constructively. Each staff member in the Investment Analysis Teams is paired with a staff member from the AP Teams (NZ Direct, International Direct, Portfolio Completion and Investments), as well as having significant interaction with the Asset Allocation Team. Within the Investment Teams responsible for external investment managers, a lead investment professional and secondary investment professional have been assigned (and the assignments documented) for each manager. There is also overlap with responsibility for investment models with a number of individuals with sufficient knowledge to operate each model. This integrated approach is evidenced in the process for on-boarding new investments, in that there are numerous opportunities for team discussion and knowledge sharing in project team meetings, the NIGEL and investment forums. Ideas for investment opportunities are welcomed from all areas and are documented and collated for further review. There is also movement of staff across teams to further enforce the integrated approach and ensure knowledge sharing in all areas. This approach reduces ‘key-person’ risk (see Section 5.2.7 for further detail).

There have been some teething problems in implementing this cross-team approach given the wide range of investments undertaken by Guardians (including investment with external managers, internal investments, and derivatives, as well as investments in forests, farms, infrastructure, energy, and NZ equities) and the wide range of approaches to analysing and managing these vastly different investments. A common language and framework needed to be developed and its implementation resulted in some cultural issues, including staff frustration, turf protection and passive-aggressive responses. These cultural issues are being monitored and addressed by the Leadership Team in consultation with Human Resources (HR). HR conducts cultural surveys in conjunction with external providers. An extensive survey is conducted for all staff every two years with a shorter engagement survey in the intervening years. All business teams identified cultural issues with priorities and action plans agreed to remedy any shortcomings. HR regularly meets with the relevant general managers to discuss progress. Our impression is that the Leadership Team takes the cultural issues seriously and is committed to improving results and team effectiveness.

There is also support from the Board for improving the culture. Some of the final bonus allocations for 2013 were adjusted (either increased or decreased) by the Board due to outcomes identified in the cultural survey. This action was to ensure the right messages were promulgated in relation to the importance of culture. There is a small danger that future cultural surveys will be ‘gamed’ to avoid having bonus allocations affected, although we believe this risk is acceptable relative to sending the right messages. While cultural transformation is an ongoing process and is likely to take years to fully embed, there has been evidence of improvements over the past 12 months, with the majority of staff focused on cultivating an effective team culture.

Generally, we believe that the new organisational structure and the cross-team collaborative approach are effective and appropriate for the Guardians' operations, subject to continued improvement in cultural issues.

5.2.4 Observation 18 – Organisational capacity

The terms of reference raise the following specific questions with respect to the Guardians' organisational capacity.

Question: Are there adequate processes to ensure the Board has, and will continue to have, the balance of skills and experience required for its tasks?

Question: How well-placed are the Guardians to manage the Fund's increased size and complexity, both at the organisational level and also in terms of investment strategy?

Question: Are the knowledge and skills of staff appropriate for their responsibilities?

Question: Are the Guardians employing consultants for advice that could be adequately provided in-house?

Observations

5.2.4.1 Board experience and skills

In relation to Board expertise, there are three layers of process to ensure that the Board has the necessary experience and skills to discharge their responsibilities effectively. The first layer is the requirement in the Act for the Board to have 'substantial expertise' in the management of financial investments and the mechanisms for appointing independent Board members. The second layer is the intensive induction programme for new Board members, including onsite education sessions at the Guardians' office, one-on-one sessions with the Leadership Team and review of comprehensive suite of papers.

The third layer is the Board education programme for existing Board members. Every Board meeting has an education session from a Guardians employee on a relevant topic, in addition to comprehensive management papers and any external articles or papers of interest. Management regularly repeats messages to the Board to ensure they are aware of the often-complex investment topics. These messages are anchored back to the core beliefs and endowments of the Fund. In addition to regular Board meetings, the Board attends a full day of strategic planning each year.

The Board calendar for the year includes a Board Breakfast Education Series with a schedule of additional topics for the year, often conducted in a pre-Board session on the day of the Board meeting. These topics are a mix of internal matters (presented by senior management) and externally focused topics (often presented by external experts). The Board is involved in planning the education programme, nominating and approving topics to be covered in the sessions. Board members also attend conferences and visit international peer funds to compare organisational practices.

We believe that the processes put in place by the Guardians are excellent in terms of ensuring that the Board has, and will continue to have, the balance of skills, experience, and training required for its tasks.

5.2.4.2 Management and staff experience and skills

We have reviewed the CVs of the Leadership Team and have met with them all as part of our on-site visit (or by teleconference where necessary). We also met with a number of the 'Heads of' level within the organisational structure. Our view is that the senior management of the Guardians is a professional group of individuals with appropriate qualifications, experience and skills for their responsibilities. In relation to other staff, the Human Resources policy provides for an annual performance review process and individual development of skills where there is a capability gap or to enhance performance in the role.

The new investment framework and accompanying organisational structure was designed with a number of key assumptions, including the need to build an operation that is agile and scalable (with the expected resumption of Crown contributions in the coming years). As noted in Section 2.1.3, the Guardians have reviewed the potential impact from the increasing complexity of investments to ensure the framework is robust and scalable. Processes have been implemented to track the cumulative estimated impact on resourcing when on-boarding new investments and a capacity forecasting model for the Operations team.

In terms of managing the expected increase in Fund size and complexity in terms of organisational capacity, we are of the view that more resources may be required in the operations and risk areas. With the significant increase in internal investment activities (and related complexity) and the growth in staff numbers, we feel that the resource increases in the operations and IT areas have historically lagged behind resource increases in the investments areas. We understand the Guardians are currently addressing these issues. Further consideration on this aspect is made in Chapter 6.

5.2.4.3 Use of consultants

As noted in Section 4.2.3, the Guardians participate in a cost benchmarking survey conducted by CEM Benchmarking Inc. that rated the Guardians in the positive value-added, low-cost quadrant of the cost effectiveness scale.

A small part of the Guardians' cost base is attributable to consultants. The Guardians employ a limited range of consultants to assist in their operations and activities. In 2012/13, 13 external consultants and contractors were employed to provide a range of services including education modules, HR services, IT services and support, and business and project management advice. The total cost of these services was under $1 million. The use of consultants allows the Guardians to readily scale resources, leverage relationships and build intellectual property. We do not believe that the use of consultants is excessive or that the Guardians are employing consultants for advice that could adequately be provided in-house.

5.2.5 Observation 19 – Management of conflicts

The terms of reference raise the following specific questions with respect to the way in which the Guardians manage conflicts of interest.

Question: Are there sufficient registers to record conflicts of interest? Are they up to date?

Question: Are there exposures to stakeholders that would warrant monitoring of the Board's personal investments?

Observations

The Guardians have processes to manage both Board conflicts of interest and staff conflicts of interest. The requirements for disclosure and management of Board conflicts of interest are set out in the Board Code of Conduct and in the Crown Entities Act. A separate register is maintained for each Board member. From what we saw the register is kept updated. Board members are reminded at each meeting to disclose any conflicts and the register is sent out every six months to each Board member for review and confirmation. In the event of any conflicts, the relevant member must excuse himself/herself before discussion of the relevant agenda item. Subcommittees of the Board can be formed in the event of a number of conflicts. Although the Guardians are proactive in their review and updating of the register, the onus remains on the Board member to disclose relevant interests.

We reviewed all Board meetings for the past 12 months. At each meeting, the Board was reminded to disclose any interests at the start of the meeting and the minutes recorded any such disclosure. At various times in the meetings, Board members excused themselves from discussion of relevant topics.

Requirements for staff conflicts of interest are set out in the staff Code of Conduct. The Code notes that a perception of a conflict (including close personal relationships) must be disclosed as well as actual conflicts. Staff are encouraged to disclose if in doubt. The document management system used by the Guardians has the capacity to lock down access to documents and this is enforced in the event of a relevant disclosure.

In relation to securities trading, all staff are required to complete a Personal Statement on interests in securities or derivatives upon joining the Guardians and a Personal Transaction Report must be completed every three months. Staff complete a semi-annual attestation that they are complying with the Code of Conduct. A gifts and hospitality register must also be maintained (and is made available in the Guardians website).

There are sufficient registers to record conflicts and the practices in relation to the management and recording of conflicts of interest are in line with best practice.

5.2.6 Observation 20 – Appropriateness of the remuneration framework

The terms of reference raise the following specific questions with respect to the Guardians' remuneration framework.

Question: Are the remuneration policies adopted by the Guardians an appropriate balance between the Guardians' responsibilities as a Crown entity and its need to employ appropriately qualified and experienced staff?

Question: Do staff contracts contain appropriate performance objectives commensurate with each role?

Question: Is the way bonuses are structured with the link to Fund Expectation in line with best practice or industry norm? Does it present risk associated with creating conflicts of interest? For example, does it motivate fund managers to take on excess risk due to an asymmetric reward structure?

Observations

5.2.6.1 Documentation of remuneration

As noted in Section 5.1.7, there is no separate Guardians' remuneration policy. However, the HR policy sets out very broad requirements for annual performance reviews, links to remuneration and participation in the discretionary bonus programme. There is no detailed documentation within the HR policy about the discretionary bonus programme, the calculation of Fund performance incentives and the specific eligibility for participation in the bonus programme (in particular, how the performance is assessed and how subjectivity is be addressed in terms of calibration between business units).

We have reviewed the documentation provided to staff members and the detail in the Annual Report.[108] In our view, the document provided to staff has insufficient details (e.g. it does not mention the behavioural and competence standards that must be passed by each employee in order to be eligible for participation in the discretionary bonus programme). We can find no documentation (in this letter to staff or otherwise) of the weighting given to the two components of bonus related to Fund performance.

Documentation of the remuneration system is not at industry best practice. We suggest that documentation of the bonus programme could be improved to increase the transparency of the bonus payments. This documentation should cover both eligibility to the programme and detail on the bonus programme, including how components are calculated, the rationale for calculations, how performance is assessed and calibrated across business units, maximum

[108] Bonus Programme Briefing, 30 June 2013

percentage amounts, and the process followed as part of bonus determinations (e.g. signoff by staff of letter, performance review sessions, Board approval, etc.). The more detailed information might be best recorded in a procedures document, rather than in the HR policy.

However, we suggest that the HR policy could be expanded to include more detail, albeit at a higher level. We understand that changes are pending to the bonus programme. Once these changes have been finalised, it may be an opportune time to also review the documentation of the programme. We make a recommendation below on this matter.

5.2.6.2 Structure and level of remuneration

Staff remuneration

The bonus programme for front-office and management provides potential allocations based on both individual objectives and the performance of the Fund relative to its benchmarks. As noted in Section 5.1.7, the Fund performance bonus is based on the whole-of-Fund performance over rolling four-year periods, rather than the performance of individual business units. This approach (both in the use of whole-of-Fund approach and a longer term to measure performance) reduces the potential for staff in front-office roles to undertake higher-risk activities in search of increased business unit performance and hence higher bonuses. Conflicts of interest are therefore minimised and the approach contributes to the building of a collaborative team where all relevant business units must perform well in order to maximise potential bonus allocations. We endorse this general approach and regard it as consistent with industry best practice.[109] In our view, the Guardians have exceeded industry practice by not remunerating back-office staff in relation to Fund performance. Both the Canadian and Australian Funds provide some form of bonus based on the performance of the Fund to all staff.[110]

The appropriate levels and composition of base salary and bonus are driven largely by the need to remain competitive within the local labour market, as well as being able to attract highly-qualified New Zealand expatriates to return when needed. This is a much more challenging exercise in a small market such as New Zealand and the cost of losing key staff due to uncompetitive remuneration could be extremely high. To date, the evidence suggests that the Guardians have been effective both in attracting qualified local staff and in attracting high-quality expatriates back to New Zealand. This is a record that needs to be protected.

Other than a few high-level comments below, we do not offer any detailed comments on remuneration levels. This is a matter for specialised reviews, rather than a general review such as this one. At a general level we note the following:

- We agree with the principle that bonuses linked to Fund performance should not be paid

[109] This approach is also used by leading sovereign wealth funds such as the Canadian Pension Plan (see Appendix 3).
[110] See Appendix 3.

to back-office staff.

- The overall remuneration scales did not strike us as excessive. Indeed, by international standards, the senior remuneration packages are relatively modest.
- We were a little surprised by the low rate of maximum bonus for both individual objectives and Fund performance for the CEO and management, relative to front-office staff. We understand that the increase in the percentages for front-office staff was in order to attract and retain quality staff by matching market expectations for bonus allocations and have no objection that. The percentages for the CEO and management nevertheless seemed to us to be low by industry standards. For example, senior executive bonuses paid by the Australian Future Fund (possibly the closest comparator sovereign wealth fund) are considerably higher. The levels are also below the levels of other New Zealand Crown entities such as the ACC.[111]
- Finally, we note that maximum bonus rates have not changed since the prior review of the programme in 2010. The last major review of the bonus programme was in 2006/2007. As part of these deliberations, we understand that discussions and informal benchmarking was conducted against peer funds (particularly those in northern America). We understand that there has not been any recent formal benchmarking exercise. We suggest that the differential be reviewed at regular intervals to ensure that the Guardians' remuneration structure remains competitive.

Board remuneration

Based on our experience, admittedly outside New Zealand, the remuneration paid to the Board appears to us to be significantly below industry best practice and out of alignment with the responsibilities imposed on them. We note that the rates have not changed since January 2008. Since that time, the Fund has grown, both in size and complexity, as have the Guardians' operations. The demands on Board members are significant. They are required to have sufficient expertise to advise on, and approve, complex investment strategies and to ensure that the risk management practices of the Guardians keep pace with the Fund development. Active Board challenge is fundamental to good governance and the complexity of the Guardians' operations demands a high level of Board engagement.

We understand that a recent review of the Board remuneration resulted in no changes to the Board member fees. We strongly urge the Minister to reconsider in light of our comments above.

[111] See Appendix 3.

Recommendation 8 – Board remuneration

We recommend that the Minister increase the remuneration levels of the Board members to align with industry best practice and to ensure that the Board is able to retain the necessary knowledge and skills to discharge its duties effectively.

5.2.6.3 The role of Fund performance in bonus calculations

As noted in Section 5.1.7, the performance of the Fund is calculated as an average over a rolling four-year period benchmarked against the 90-day Treasury bill return plus 2.5% (capped at 4%) and the performance of the Fund's Reference Portfolio (minus 30 basis points and capped at 0.75%). We understand that the weighting for bonus allocation is one-third based on the performance against the Treasury bill return, and two-thirds on the performance against the Reference Portfolio.

Although the Guardians maintain two benchmarks, it is the Reference Portfolio, and not the Treasury bill return, that is the relevant benchmark against which the active investment strategies of the Guardians should be judged over short- and even medium-term periods of time. We see no merit in tying bonuses to a weighted-average of the two rates. In our view, this is likely to distort decision-making incentives. When markets are falling, the Treasury bill return is likely to outperform the Reference Portfolio, thereby potentially biasing investment decisions away from growth stocks, at the very time that the opportunities may be most attractive. When markets are bullish, the reverse could happen. In a strong market, even setting the actual portfolio equal to the Reference Portfolio and taking no positions would outperform the Treasury bill return and therefore the average of the two benchmarks.

We see no logic for retaining the Treasury bill return in the computation of bonuses. If the Reference Portfolio is to be the benchmark for Fund performance in relation to active investments, then it should also be the benchmark for individual bonuses.

If the Reference Portfolio is to be the sole benchmark for bonus calculations in respect of Fund performance, as we believe it should, there will be years where the Fund return exceeds the Reference Portfolio benchmark return and years where it will fall short. Since the bonus allocation is capped in years of strong outperformance, equity suggests that performance bonuses should still be considered in years of underperformance. We also recognise that there may be perception issues associated with paying substantial bonuses in years when the Fund loses value in absolute terms. Of course, the Board always has some flexibility in dealing with unusual situations (e.g. bonuses in loss years can be 'banked" for later periods when the portfolio returns to profitability). These considerations suggest to us that there is a need to conduct a comprehensive review of the bonus model.

5.2.6.4 The link between culture and performance

Incentives should balance risk and rewards in a manner that does not encourage employees to expose their institution to risks outside the stated risk appetite. They should also encourage staff to perform in a manner aligned to corporate values and aspirations. As noted above, the Guardians are currently addressing some cultural issues arising from implementation of the Investment Framework. Some bonus allocations in 2013 were reduced by the Board in response to shortcomings exposed in cultural survey results. We applaud this message from the Board; creating an effective risk culture must be supported by an appropriate ‘tone from the top’.

This ‘tone from the top’ must also be supported by practical actions to improve the culture at all levels throughout the organisation (such as increased risk training, constant and consistent communications, clear accountability, effective challenge mechanisms, and appropriate incentive structures). In relation to incentive structures, HR is reviewing the way that individual stretch objectives are evaluated, with the intention of increasing the focus on how’ the objectives are met, rather than simply ‘what’ was achieved.

We endorse this approach and encourage the Guardians to implement incentives aimed at improving the culture of the organisation and encouraging the collaborative approach that is key to the new investment framework.

The Guardians have recently redrafted job descriptions to require all staff to:

- comply with policies and procedures;
- demonstrate appropriate knowledge and use of all systems and processes; and
- champion the vision, values and constructive culture at all times.

Understanding of, and compliance with, risk management practices are considered as a fundamental BAU requirement and will be taken into account when determining whether an employee is eligible for bonus allocation. We suggest that any future review of individual stretch objectives further consider objectives relating to adherence to the risk and compliance frameworks.

Against the various considerations in Section 5.2.6 we offer the following recommendations relating to the Guardians’ remuneration arrangements.

Recommendation 9 – Guardians’ remuneration arrangements

We recommend that the Guardians:

- *improve the documentation of their bonus programme, to cover both eligibility to the programme and the bonus allocations;*
- *commission an external review of the maximum bonus rates allocated to front office and senior management against industry benchmarks in New Zealand and*

Australia, as well as comparable sovereign wealth funds in developed countries. The objective should be to keep the Guardians' remuneration levels competitive. Reviews should be carried out at least every three years, or more frequently if staff turnover becomes a concern;

- *review the basis for calculating Fund performance for bonus purposes, with a view to linking them more closely with the performance of the actual portfolio relative to the Reference Portfolio.*

5.2.7 Observation 21 – Key Person risk

The terms of reference raise the following specific question with respect to key person risk faced by the Guardians.

Question: How do the Fund's current governance requirements expose the Fund to "key-man" risk? Is this risk being managed appropriately? Examples of items placing demands on governance include the specialised skills and knowledge required to engage in the Fund's strategic tilting, derivatives use, risk management, and stock selection requiring sector specialist knowledge.

Observations

Key person risk is an important consideration for the Guardians due to the highly technical nature of many of the investment activities undertaken in relation to the Fund. The Guardians are aware of key person risk and are addressing it on two main fronts. A formal Leadership Team succession plan has been developed and presented to the EPRC. This plan assesses the key person risk for each Leadership Team member, with both internal (short and longer term) and external individuals identified for each position. This plan is to be monitored and reported to the EPRC on a semi-annual basis.

The other important mitigating factor for key person risk is the cross-team approach implemented as part of the new investment framework and Target Operating Model (as noted above in Section 5.2.3 on organisational structure). The pairing of staff between the investment analysis teams and access point teams, identification of primary and secondary managers in relation to external managers, movement of staff across teams and the significant team interaction increases the depth of knowledge in each area and effectively creates a back-up team for each key role, thereby mitigating to some extent their exposure to key person risk.

The only concern in relation to key person risk, as noted in Section 4.1.3.4, is the key person risk identified in relation to analytic support for the PEARL system (this observation was also made as part of the report from the external review). We understand that this risk is currently being addressed by the Guardians as a matter of priority and that additional resources will be allocated in the next few months.

5.2.8 Observation 22 – Documentation

The terms of reference raise the following specific question with respect to the Guardians' documentation.

Question: Are the information management and documentation procedures adopted by the Guardians thorough and prudent? Are those procedures being followed?

Observations

The documentation of policies and procedures was covered in some depth in Chapter 2 and Recommendation 3, and again in Section 4.2.2.1 with respect to the PEARL system documentation. This section focuses primarily on other aspects of documentation by the Guardians.

5.2.8.1 System for storing and retrieving documents

The Guardians maintain a Document and Records Management Framework for the capture, management and use of documents and records within the Guardians. It describes the processes implemented to ensure that information is maintained appropriately and that all documents and records are managed in compliance with legal and regulatory recordkeeping obligations. The framework sets out the high-level principles, roles and responsibilities, and procedures for creating documents, access and security, use of the record keeping system (SuperDocs), and document retention and disposal. A document classification system is used to ensure the appropriate level of confidentiality is maintained for each document. This system appeared to us to be robust and functional.

5.2.8.2 Documentation inconsistencies

As noted in Chapter 2, the Guardians have a well-defined policy framework comprising the high-level SIPSP, a suite of policies supporting the SIPSP and a range of policies addressing operational issues. While these policies have been well consolidated, are consistent in format and are very detailed, we noted some difficulties in finding certain key material and, in a number of cases, it was unclear as to which of several similar documents was the 'current' version.[112] In particular, we found the website not entirely reliable as a source of up-to-date information.[113]

While (subject to the caveats in Recommendations 2, 3, and 9) the level of documentation by the Guardians is generally sound, we found a number of inconsistencies that need to be addressed. These include:

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[112] For example, the list of current opportunities provided in Section 2.1.2.2, which is taken from a Board paper dated 8 April, 2014, is a materially different list and uses materially different language to the official list in Schedule 5 of the Risk Allocation Policy.

[113] For example, the PCIMS policy on the Guardians website is not the most current version (it was dated 20 September 2013 whereas the most recent is dated 13 February 2014).

- According to Section 4.1 of the RMP,[114] the risks that fall within the scope of the policy are strategic, operational and legislative/regulatory risk. It is noted that investment risk is addressed through the SIPSP and supporting policies. There are certain elements in the RMP, however, that we would expect to apply to all risks. For example, the Board approved RAS in Schedule 2 (that includes investment risk constraints and limits), the risk management framework (in Schedule 3) and the risk assessment framework (in Schedule 4). With investment risk out of scope for the RMP, it is unclear how the risk management framework applies to investment risk management.

- The incident management process set out in the flowchart in Schedule 9 of the RMP includes reporting to the Audit and Risk Committee (which became the Audit Committee in 2010). The role of reporting to the current RC is unclear in this flowchart and needs to align to the reporting set out in Schedule 12 of the Risk Management. We also suggest that there is a need to clarify the distinction between an ‘internal incident’ and a ‘policy breach’ and the management processes applying to each (it may not be apparent until the issue is investigated as to whether a policy breach has resulted in financial loss). According to Schedule 12, ‘internal incidents’ are reported to the CEO and Audit Committee and ‘policy breaches’ are reported to the RC and Board immediately if material (if not material, reporting is to the subsequent RC, Audit Committee, and Board). An internal incident is defined as a failure of process or a breach of policy that has or may result in loss, reputational damage or theft of assets or information. We understand that the incident management process does not capture business-as-usual incidents related to custodial[115] or treasury management (although we were advised that an incident resulting from a process failure would be captured). We would suggest a clearer incident management process where all incidents or policy breaches are captured within a single process. We also suggest that a second-line risk function would be more appropriate for reviewing and rating incidents than the internal auditor.

- There is an inconsistency within the Board Charter. Section 11.1 of the Charter notes that investment, strategic and reputational risk is approved and overseen by the Board, but that operational risk management and legislative risk is approved and overseen by the Audit Committee. We understand that this delegation no longer sits with the Audit Committee (as set out in the terms of reference in Schedule 1 of the Charter) and we suggest that Section 11.1 aligns to the responsibilities set out in the terms of reference.

- There are inconsistencies in the delegations set out in the IRAP and the Delegations Policy (in relation to the IRAP), including inconsistent terminology (opportunities vs sub-strategies in IR4b) and liquidity constraints not in the Delegations Policy. The document

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[114] We understand that the RMP is currently being reviewed.

[115] Custodial incidents are managed under a separate incident framework with the custodian and used as a management tool within the relationship.

histories notes that the Delegations Policy was last reviewed in October 2012,[116] with the IRAP more current (last reviewed in September 2013). To prevent such inconsistencies, we suggest that the Guardians consider removing the listing of delegations in each policy and consolidate them in the Delegations Policy.

- In relation to investment manager search and selection, Schedule 3 of the EMIP is titled 'Conviction' but contains detail on conviction as well as operational due diligence processes. The Schedule notes that operational due diligence is further detailed in Schedule 6, but this Schedule relates to ongoing monitoring only.
- As a general comment, we found some inconsistencies in the terminology used to describe investments. A range of terms can be found in policies as well being used by those we interviewed (from asset classes, strategies, sub-strategies, themes, opportunities, etc.). Such an inconsistency was noted in Section 2.1.2.2 in relation to approved opportunities.

The SIPSP provides the high-level overarching policy, with much of the detail included in the eight supporting policies (Section 1.4 of the SIPSP states that the required policies and standards described in Act are '*contained in one or more of the supporting policies')*. While the Act requires the SIPSP to be reviewed at least annually, the RC's Terms of Reference notes that all other policies are reviewed every two years.[117] It is possible that the small inconsistencies that we observed have arisen at least partly because of timing differences in the updating process.

In addition to these inconsistencies in policy documentation, we found a number of inconsistencies in the risk limit system when comparing the RAS (Schedule 2 of the RMP) and the Board-approved investment constraints (Schedule 7 of the IRAP). We also found some inconsistencies in how these limits are reported in the Board Dashboard report (e.g. the Report of June 2014). Inconsistencies that we found are highlighted in Table 13 below.

[116] We understand that this policy has recently been reviewed (in June 2014). Although not reviewed, we understand that all delegations are now included in the Delegations Policy only. We also note that the version on the website is the October 2012 version.

[117] Although the RMP also notes that policies are to be reviewed by the policy owner at least annually.

Table 13: Inconsistencies in Documented Risk Limits

Risk Type	Measure	Description	Limit	Location	Comments
Concentration	Single manager	The amount of funds allocated to a single manger across all of its mandates	≤20% of NAV	IRAP RAS BD*	The RAS applies this limit to only "public market managers" whereas the IRAP does not make this distinction.
Concentration	Single listed manager	The amount of volatility (of actual portfolio volatility) a single listed manager can utilise	≤0.25%	IRAP RAS BD*	The RAS and Board Dashboard refer to "active manager" (as opposed to a listed manager). We do not believe these terms should be used interchangeably. The Board Dashboard simply indicates "no breach" as opposed to showing the current utilisation.
Exposure – active returns	Private Equity	The amount funds invested in private equity.	≤10% of NAV	IRAP RAS BD*	To the extent the names of these active return measures are referring to one or more opportunities, we suggest consistent terminology is used. For example, it is unclear if "unlisted property" incorporates exposures from the Core RE, Development RE and Distressed RE opportunities.
Exposure adjustment – strategic tilting	Global large-cap equity tilt	Adjustment to the fund exposure attributable to the global large-cap equity tilt	±15% of NAV	IRAP	Not stated in the RAS and not monitored in the Board Dashboard.
Exposure adjustment – strategic tilting	Emerging markets tilt	Adjustment to the fund exposure attributable to the emerging market tilt	±7.5% of NAV	IRAP	Not stated in the RAS and not monitored in the Board Dashboard.
Exposure adjustment – strategic tilting	Global property tilt	Adjustment to the fund exposure attributable to the global property tilt	±5% of NAV	IRAP	Not stated in the RAS and not monitored in the Board Dashboard.
Exposure adjustment – strategic tilting	Global credit tilt	Adjustment to the fund exposure attributable to the global credit tilt	±20% of NAV	IRAP	Not stated in the RAS and not monitored in the Board Dashboard.
Exposure adjustment – strategic tilting	Global duration tilt	Adjustment to the fund exposure attributable to the global duration tilt	±20% of NAV	IRAP	Not stated in the RAS and not monitored in the Board Dashboard.
Exposure adjustment – strategic tilting	Commodities tilt	Adjustment to the fund exposure attributable to the commodities tilt	±10% of NAV	IRAP	Not stated in the RAS and not monitored in the Board Dashboard.
Exposure adjustment – strategic tilting	Foreign currency tilt	Adjustment to the fund exposure attributable to any FX tilts	+40% to - 20% of NAV	IRAP	Not stated in the RAS and not monitored in the Board Dashboard.
Market risk – strategic tilting	Absolute Return Volatility	Volatility of the tilted reference portfolio (i.e., the annualised standard deviation of expected return)	9% - 16%	IRAP BD*	Not stated in the RAS. Given this measure is labelled as a strategic tilting measure, we suggest further clarity is provided if the measure excludes the volatility attributable to other value adding strategies.

Market Risk	One year volatility	Volatility of the portfolio over one year	Target of 13%	RAS BD*	Not stated in the IRAP. The Board Dashboard specifies this target differently as 13.2%
Market Risk	Potential loss – one year	Measures the expected loss over one year with a 5% and 1% chance of occurring	5% chance of a return of -14% 1% chance of a return of -35%	RAS BD*	Not stated in the IRAP. Board Dashboard specifies these targets differently as -12% and -31% respectively. Board Dashboard implies that these expected outcomes only apply to the reference portfolio and not the actual portfolio. The outcome in the Board Dashboard specifies one figure. It is unclear whether this figure represents the expected loss with a 5% chance or 1% chance
Market Risk	Potential loss – three years	Measures the expected loss over three years with a 5% and 1% chance of occurring	5% chance of a return of -4% 1% chance of a return of -11%	RAS BD*	Not stated in the IRAP. Board Dashboard implies that these expected outcomes only apply to the reference portfolio and not the actual portfolio. The outcome in the Board Dashboard specifies one figure. It is unclear whether this figure represents the expected loss with a 5% chance or 1% chance
Market Risk	Long-term volatility	Long-term equilibrium volatility of the fund	around 13.3%	RAS	Not stated in the IRAP and not monitored in the Board Dashboard.
Market Risk	Performance attribution	Measures the amount of unreconciled "noise" in performance attribution	≤5bp in any one month ≤20bp in a FY	BD*	Not stated in the IRAP or RAS. The Board Dashboard indicates that the measure is "Not yet available". We suggest the report specify the expected date of availability.
Counterparty credit risk	Single counterparty	Measures the exposure to a single counterparty	≤2% of NAV	RAS BD*	Not stated in the IRAP. The Dashboard reports the measure as zero. Unclear why this is the case.
Counterparty credit risk	Single NZ bank	Measures the exposure to a NZ bank counterparty	≤5% of NAV	BD*	Not stated in the IRAP or RAS. The Dashboard reports the measure as zero. Unclear why this is the case.
Counterparty credit risk	Aggregate NZ banks	Measures the counterparty exposure to all NZ banks in aggregate	≤15% of NAV	BD*	Not stated in the IRAP or RAS.
Counterparty credit risk	Low rated counterparties	Measures the exposure to all BBB rated counterparties	≤6% of NAV	BD*	Not stated in the IRAP or RAS.

Liquidity	Liquid assets	Amount of liquid assets A holding is classified as liquid if it can be liquidated with "minimal" transaction costs within nine days. For the purposes of the limit, an Extreme Market Volatility (EMV) is defined as a movement of 12% in equities, 4% in fixed interest and a movement in the NZD of 7%.	Minimum set at 2 EMV Board Notification <3 EMV	IRAP RAS BD*	The RAS includes a different minimum liquid amount of 4 EMV. The Board Dashboard labels the 4 EMV measure as the "target liquidity". The outcome reported in the Board Dashboard provides one figure against the 4 EMV constraint. As presented, it is unclear if the amount represents the 4 EMV minimum level or the actual amount of liquid assets held by the fund. We suggest that both should be displayed in order for a comparison to be made.

*BD = Board Dashboard report

We understand that the RMP is currently under review (and that these issues will be addressed as part of this review process) and the Delegations Policy has just been reviewed. We note that many of the discrepancies (such as those in the table above) may be due to the policies being out of synchronisation. We believe that the potential for policies to be out of synchronisation strengthens the argument for a synchronised annual review of all policies. We have been advised that the policy Schedules are updated in real-time. However, many of the discrepancies we found were in the Schedules to the policies.[118]

Against the background of these observations we make the following suggestion.

Suggestion 10 – Alignment of policies

> *We suggest that the full suite of policies, including the SIPSP and all supporting policies, be refreshed annually to ensure that the policies are up to date, use consistent terminology and keep pace with the ongoing changes in the Guardians' operations. In line with the Guardians' transparency objectives, the policies listed on the website need to be the current versions.*

5.2.8.3 Documentation of procedures

In addition to the suite of formal policies, the Guardians maintain a range of procedure documents to provide more hands-on guidance for day-to-day tasks. The Act refers to the need for a Statement of Investment Policies, Standards and Procedures (which is addressed by the SIPSP). As noted in Chapter 2 the SIPSP refers to the HWI document for nearly all procedures. As noted in Chapter 2, the HWI document, while containing useful information, is very high-level and, in our view, aimed to provide guidance for external stakeholders, rather than internal employees.

[118] For example, although an alternative energy opportunity was approved in 2013, Schedule 5 of the IRAP does not currently list this opportunity.

The Guardians have a number of other procedure-like documents covering a range of operational areas. These documents assist employees in their day-to-day tasks and are often designed to be used to support on-the-job training of new employees. We reviewed a number of high-quality procedure documents for a number of processes (e.g. investment analysis and selection, manager search and selection, operational due diligence, investment on-boarding through the NIGEL and ORA completion, PEARL, operations processing, and records management). However, these documents vary widely in style and level of detail, and are not centrally located or catalogued (see Recommendation 3). There are other areas of the business where we struggled to find detailed procedure documents (e.g. remuneration procedures, derivatives activity, direct investment, portfolio completion, and strategic tilting activities) and other areas where documentation is currently underway (e.g. current project to document data management processes and validations).

Evidence from interviews was that core processes and activities are sufficiently documented and that the cross-team approach (where more than one person is aware of core processes) mitigates the need for detailed documentation in some cases. Further, some processes are highly bespoke, making procedures less of a priority as a different process is undertaken each time (e.g. direct investments). We are also aware of the cost/benefit analysis needing to be undertaken before significant precious resources are utilised in documenting endless procedures with little benefit to the business.

Notwithstanding these considerations our view is that the documentation of the Guardians' procedures needs to be improved in relation to the consistency between business units (in style, quantity and quality) and the access to the procedures (which should be centrally located, easy to find and clearly catalogued). Our views on this subject are adequately addressed in Recommendation 3 with respect to investment procedures. This will be a substantial project in its own right. Once that updating process has been completed we suggest that other non-investment related procedures also be reviewed.

6 Operations

6.1 The Guardians' Approach to Operations

6.1.1 Execution of strategies

The operations group within the Guardians comprises three main teams:

- Operations Team – responsible for fund and investment operations;
- Portfolio Risk and Compliance Team – responsible for due diligence analysis, portfolio risk analysis, and compliance monitoring (internal mandates and external investment managers);
- Information Technology Team – responsible for the Guardians IT infrastructure, information needs, IT service provider management and business strategy and initiatives.

The Operations Team provides back-office support for the Portfolio Completion Team, which executes all direct transactions for the Fund via an internal front office order management system. The Operations Team confirms positions and transactions (where this has not been automated) and valuations before data transfer to the custodian, as well as the accuracy and integrity of all data flowing back from the custodian, prior to transfer to the PEARL performance management system. The team has the following key responsibilities:

- NAV checks to ensure daily NAV integrity;
- approval of proper instructions; and
- checks of data feeds and output of rebalancing tool, currency hedge tool and cash management.

The Operations Team also has responsibility for managing and monitoring the relationship with the Guardians' custodian and outsourced collateral manager.

6.1.2 Selection of external managers

The new Investment Framework separates 'opportunities' from 'access points'. The four Access Point (AP) Teams are NZ Direct, International Direct, Portfolio Completion, and Investments. These AP teams are responsible for direct access as well as access through external managers. The latter are divided into Listed Mandates (e.g. hedge fund managers) and Unlisted Mandates (predominantly private equity and private equity real estate managers).

In the event that the review of a new investment opportunity suggests that an external manager is the most cost efficient way to access it, the AP team, in conjunction with the Investments Analysis Team, Asset Allocation Team, and Operational Due Diligence Teams identify and engage a specific manager. The main steps in the process are set out below.

Manager search

A wide net is cast for a potential manager. The starting position can be thousands of potential funds and their managers. External advisors are engaged to highlight the relevant manager universe and to provide database screening. Feedback is also obtained from peer funds and from existing managers with which the Guardians have prior experience. This initial list is reduced to approximately 10 to 15 managers. Preliminary meetings are conducted with this smaller sample of managers (some of which may already have been approached during the prior analysis stages).

Further screening criteria are applied to filter this smaller sample to a shortlist of potential managers. The screening criteria focus on strategic fit with the opportunity, investment style and focus, investment size and capacity, capabilities (in terms of business, people and competitive position) and the performance of the manager to date. One of the filters is to determine whether or not the manager can accommodate a separate, flexible mandate (as opposed to a collective mandate), since these give the Guardians additional investment freedom. A shortlist of two to three potential managers is recommended and approved by the Chief Investment Officer.

Manager selection

The shortlist of managers is assessed against the full selection criteria to determine the preferred manager. These criteria include revisiting the factors covered in the shortlisting assessment, as well as considering additional factors, including their internal processes (transparency, internal decision processes, and approaches to RI), alignment (in terms of ownership, financial incentives conflicts and related arrangements, and contractual terms) and potential to become a strategic partner (cultural fit and potential for adding value beyond the mandate). The final assessment is based on direct management discussions (including onsite visits), performance analysis, advisor recommendations and peer fund references. The Operational Due Diligence (ODD) Team is also involved in the initial assessment of the shortlisted managers and may also conduct an onsite visit with the potential manager. A recommendation is made to the Chief Investment Officer for approval of the preferred partner before undertaking the full diligence process. Managers are evaluated using two distinct due diligence processes, ‘conviction’ due diligence and ‘operational’ due diligence; these are conducted by separate teams.

Conviction due diligence

Conviction due diligence, which is conducted by the AP team, is an assessment of the Guardians’ confidence in the manager’s competence to execute the investment opportunity and the general quality and ‘fit’ of the manager. There are eight factors against which managers are assessed:

- opportunity consistency – whether the investment strategy fits with the opportunity the Guardians are targeting and whether the manager will execute as expected;
- viability – whether the manager is secure and stable (in terms of its finances, reputation and staff) as an organisation;
- structure and focus – whether the organisation's structure and the investment structure are aligned to the Guardians' interest and if there is any scope for conflicts;
- trust – whether the manager is likely to act in the Guardians' best interest;
- risk awareness and management – whether the Guardians can have sufficient confidence in the manager's identification, management and reporting of risks (investment and non-investment);
- people capability – whether the manager has competent people to execute the opportunity as expected;
- process capability – whether the manager has the necessary tools, systems, networks and processes; and
- performance – whether the manager is likely to perform as expected.

The conviction due diligence activities involve detailed data analysis, review of documentation, multiple onsite visits, interviews with managers, and reference calls with prior investors. Scores are applied to each factor and each factor has a weight (with some flexibility) to derive a total score, although the decision is ultimately a subjective assessment.[119] A collaborative approach is taken to scoring, with participation from Legal, Finance, Responsible Investment, and ODD teams.

Operational due diligence

In parallel with the conviction due diligence process the ODD Team conducts an operational due diligence process. This latter process considers the manager's regulatory, operational, organisational, and financial processes and procedures (IT, cash management, compliance, regulatory monitoring, and custodial arrangements).

As with the conviction process, the ODD assessment involves data and document analysis, usually an onsite visit and detailed analysis. Detailed checklists have been developed to guide the process, with a specific checklist for a number of investment types. The documentation of

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[119] We were not able to find any evidence that scores are monitored and reviewed if they breach a particular value, although the External Manager Policy refers to these processes.

ODD procedures was very extensive at an operational level. We reviewed a wide range of ODD checklists that were very detailed and contained comprehensive information relating to questions to ask, analysis to conduct and what should be included in the report for the various types of investments.

There is some overlap between the reviews for conviction and operations, with the ODD assessments assisting the conviction assessment of a number of factors. The two teams are closely involved.

Oversight by the NIGEL, RC, IC and Board

As the due diligence processes progress, the NIGEL is engaged to provide oversight. The due diligence reports feed into the ORA, which aims to ensure all operational risks are addressed. At the same time as the due diligence process, the terms of the investment are negotiated and the investment structure and documentation finalised. The investment is also confirmed against the original opportunity to ensure consistency with the Stage 2 paper and RAP analysis. The expected return is refined and the investment hurdle is finalised in conjunction with the IA team.

The ORA is reviewed by the RC with a recommendation then forwarded to the IC for final approval and signoff. Depending on the structure of the investment, the terms and conditions may need Board approval (e.g. for an IMA investment).

The Guardians' website contains a list of external investment managers with the year of appointment, the fund name and focus area and whether the fund is listed or unlisted. There are currently over 40 external managers.

6.1.3 Investment Fees

The investment decision and associated return must take into account the fees paid to external investment managers.[120] Cost efficiency is an important consideration in the choice of an investment manager. The Guardians maintain an investment manager fee evaluation framework that ensures the terms for investments are appropriate on an ongoing basis. As provided in the EMIP,[121] elements considered include:

- the standard terms of the specific investment strategy;
- the standard terms of similar strategies;
- the level of expected risk and expected return of the strategy:
- the size of the investment;

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[120] Management fees are also addressed in Chapter 4.

[121] Schedule 4

- the appropriate hurdle/benchmark for the strategy;
- the expected duration of the investment;
- payment of fees on the mark-to-market valuation of an investment versus its cash flows; and
- the optionality of an incentive component (if applicable).

Incentive fees apply to value-adding strategies, where the fee structure usually includes a base fee plus an incentive component based on performance (relative to an appropriate hurdle/benchmark). Passive managers tend to receive a base fee only, with no incentive component.

The fee structure is considered as part of the due diligence process and analysed in the Stage 3 paper reviewed by the IC in terms of the impact on the risk/return decision. Fees are negotiated with the selected manager before appointment as part of the negotiation of final terms of the investment mandate. In line with the new Target Operating Model and preference for flexible mandates, the Guardians' current preference is to negotiate fees on an 'invested capital' basis rather than a 'committed capital' basis (which is the traditional approach). The Guardians are currently working on a project to investigate ways to benchmark investment management fees.

6.1.4 Monitoring of investment managers

There are a number of processes in place to monitor external investment managers on an ongoing basis, through investment monitoring, compliance monitoring and operational monitoring.

6.1.4.1 Investment monitoring

Investment monitoring is conducted by the Investments Team, with a lead analyst appointed for each investment manager. On an annual basis, the analyst conducts a formal 'conviction process' in which all eight conviction factors are from the manager selection process are refreshed. A formal visit is made to each manager on an annual basis as part of the conviction assessment. In addition to this annual process, there are frequent touch points, which are documented in the Relationship Map for each manager (e.g. weekly update calls and quarterly reporting calls). The Relationship Map also sets out the involvement of the various teams (such as Investments, Finance, Communications, and ODD).

Performance is monitored on a monthly basis. Any updates or issues are included in the monthly Board Dashboard. Ongoing monitoring also includes speaking to peers and gathering general market intelligence. The conviction assessment is subject to continual assessment with any significant changes or issues advised to the IC. On a semi-annual basis, the IC is provided a conviction status review report listing all managers and current and prior conviction status.

6.1.4.2 Compliance monitoring

The compliance system of the manager is reviewed and verified by the ODD as part of the manager selection process. Once appointed, the custodian (Northern Trust) monitors the managers appointed under IMAs (on behalf of the Guardians) for compliance with the prescribed investment guidelines set out in the IMA. Northern Trust reviews for potential breaches on a daily basis and advises the Guardians of breaches once they have been verified with the manager; breaches are classified as active or passive. Most breaches are passive (e.g. having an exposure to a company that has moved out of the relevant index). Northern Trust provides the Guardians with a formal breach report on a monthly basis. This is reviewed by the Portfolio Risk and Compliance Team and reported to the Audit Committee on a quarterly basis. Any breach related to a process issue should be logged as an incident and addressed via the incident management process.

For external managers with collective funds, the same level of compliance monitoring is not possible due to the nature of the fund (i.e. there is no 'look through'). In these cases, Northern Trust does not monitor compliance. Instead, the manager is required to self-report any compliance issues directly to the Guardians. Northern Trust is also unable to monitor compliance with certain prudential limits (e.g. risk-based limits) where Northern Trust and the Guardians rely on the manager's own modelling.

In addition, managers are required to report any material adverse changes, either in line with reporting under the IMA or as a self-reporting process. Adverse event reporting should capture any issues with operational competency, investment personnel changes, integrity of investment or risk management processes, investigations or qualified audit opinions. The mandates require the manager to report immediately to the Guardians in the event of a material breach of the mandate.

6.1.4.3 Operational monitoring

Operational due diligence is also an ongoing process, with an annual operational due diligence review. Each manager is subject to regular onsite visits (usually on an annual basis to coincide with the annual review). However, the frequency of visits is driven by the risk assessment of the manager (e.g. a large passive manager may only be reviewed once every two years). The scope and intensity of the review depends on the extent of issues and the amount of environmental or operational change involved. As part of the review, the ODD team reviews (where available) the external audit report, internal controls review, the manager's certificates (such as insurance and risk management certificates), licences, and any amended policy documents.

6.1.5 Monitoring of the custodian

The custodian plays a vital role in the asset management process in terms of the safekeeping of the Fund's assets. Since June 2007, the Guardians' master custodian has been The Northern Trust Company (London branch) which operates under a formal Service Level Agreement (SLA).

Northern Trust collates all fund data including internal and external managers, although some valuations are provided by the Guardians to Northern Trust (such as unlisted assets or other assets which are unable to be priced by Northern Trust). These are set out in the Client Provided Pricing list, along with other assets where the Guardians specify a pricing-rule instead of the actual price (Client Specified Pricing). The Fund NAV is struck on a daily basis (with Northern Trust required to stand behind this NAV).

Northern Trust is monitored by the Guardians internally (by the Operations Team) in addition to subscribing to an external monitoring service. Reports received from this external monitoring service include:

- Annual fee benchmarking – transaction and safekeeping fees and all other charges (on an individual fee-type basis) are benchmarked globally against the universe of custody providers;
- Annual FX benchmarking - non-negotiated trades are evaluated against market trading ranges;
- Quarterly interest rate benchmarking of interest rates paid on various negotiated currencies;
- Quarterly operational benchmarking (e.g. of STP rates, failed trades, and income revision rates);
- Quarterly peer comparisons of key financial and credit indicators.

In addition to these reports, the Guardians maintain an open dialogue with the external monitoring service provider in relation to Northern Trust's performance on an absolute and relative basis. The Guardians also conduct peer networking with other Crown entities in Australia and New Zealand, as well as some peer funds globally, to discuss issues and developments in custodial practices.

Comprehensive internal monitoring is also conducted with a range of reviews and monitoring processes. The key reviews are the annual strategic review and a semi-annual service and operational review. This latter review was formerly conducted quarterly but a move to semi-annual reviews allowed a more thorough review process, albeit less frequently. Both reviews involve face-to-face meetings. The semi-annual review of Northern Trust involves allocating (weighted) conviction scores (rating from 1 to 5) for over 40 operational areas. The movement in these conviction scores is monitored and reported to Northern Trust as part of the review, along with an analysis of incidents and trends. Northern Trust provides an update on its performance and operations to the Guardians as part of this review process with minutes taken and action items agreed. A detailed internal report is compiled annually summarising fees, conviction ratings, Northern Trust performance, KPI reporting, incidents, projects completed, and contractual changes (if any).

Other elements of the internal monitoring process include:

- Monitoring of KPIs set out in the SLA – Northern Trust's service delivery is monitored in terms of delivery against KPIs, including KPIs relating to regular reporting (including monthly accounting reports and quarterly KPI report), data and system delivery, daily delivery of NAV, income and expenses, mandate compliance, incident management, FX execution, and instruction processing.
- Issue management – any issue arising from a periodic meeting or semi-annual review is logged, tracked and monitored by the Guardians to ensure delivery or completion of the action item. In addition, on a daily basis, any service issues are raised with Northern Trust and any process failures formally logged on a shared database and managed through to resolution with documented timeframes for resolution and escalation processes.
- Relationship model – key relationship touch points (at all levels, from managerial to business-as-usual) are documented for the various areas of operation;
- Regular contact – Northern Trust meets regularly with representatives of the Guardians (fortnightly, monthly, or quarterly depending on the particular topic). A formal meeting schedule is documented as part of the relationship model, with ad hoc meetings as needed in response to issues or incidents. In practice, there is effectively daily contact;
- On-site due diligence – in Singapore and Melbourne (annual), Chicago (periodic), and Bangalore every two years (where the majority of processing takes place).
- Staff secondments- regular programme of staff secondments, both to and from Northern Trust.

6.1.6 Selection and monitoring of other service providers

The Procurement and Outsourcing Policy provides the framework for the selection and management of outsourced service providers, including the master custodian, but excluding appointments of investment managers, counterparties, Portfolio Completion Agents, clearers, non-master custodians and sponsorship. The Procurement framework under this Policy sets out rules that apply to all procurement of material goods and services (materiality is defined as greater than $10,000 per annum) in the following areas:

- integrity in the procurement process;
- non-disclosure of confidential information;
- non-discrimination;
- origin of suppliers not relevant;

- offsets not allowed;
- probity assurance adviser; and
- non-avoidance of procurement rules.

Under the procurement framework, contracts are categorised into major (rated as 'high risk' or with an annual contract value more than $200,000) and minor (rated as 'low' risk, such as office supplies, travel, and recruitment), with different processes in place for each. High-risk contracts include outsourcing arrangements, core New Zealand tax and legal service providers and all investment advisors. A table of major contracts must be maintained as part of the Procurement and Outsourcing Policy.

The Outsourcing framework under this Policy involves the transfer of core day-to-day business operations, that the Guardians could reasonably undertake themselves, to an external service provider. Key outsourced service providers include:

- Northern Trust – master custodian;
- J.P. Morgan – collateral management;
- Bloomberg AIM – investment order management system, market data, swap execution facility;
- Datacom – IT infrastructure and support;
- ORTEC Finance – Software for performance reporting; and
- MSCI (Riskmetrics) – monitoring, screening and proxy voting for RI.

Selection of an outsourced supplier must follow the procurement framework for a major contract, with additional selection criteria. Consideration should also be given to any additional risk arising from concentrating key services with one supplier. A table of outsourced providers must be maintained as part of the policy. The outsourcing framework involves the following elements:

- preparation of a business case;
- a selection process with appropriate due diligence, including site visit and reference checking;
- a panel of Guardians team members, assembled to select the provider for large contracts;
- a monitoring framework, including designating a relationship owner, ongoing monitoring and a formal review (at a frequency determined by the relationship owner);
- a written agreement, including documenting any SLAs, with review of template by the legal team; and

- regular reporting to the Leadership Team and the Board.

The Board's involvement in outsourcing includes:

- approving the Outsourcing Policy;
- appointing or terminating the master custodian;
- approving the business case for outsourcing;
- approving any outsourcing decision that involves annual expenditure more than $200,000; and
- reviewing regular reports of all major contracts and outsourcing, and reports on reviews of outsourcing relationship.

6.1.7 Management of models

The Guardians use a number of highly technical models that are vital to the investment decisions and operational activities throughout the organisation. For investments, models are used to assist with decisions around portfolio rebalancing, strategic tilting, fund level hedging, asset valuations, and direct investments. Models are also used for financial forecasting for strategic planning bonus calculations and as inputs into Treasury modelling. Many of these models have been developed internally. When models are used in key business decisions, there is a risk of potential financial loss if the models are inaccurate or misused. Effective model risk management includes model validation, sound model development and implementation, and effective governance and control mechanisms.

The Guardians have recently developed a model-oversight process to ensure all models are operating as expected and to impose a periodic, systematic review. A register of models used throughout the organisation has been collated, including critical complex spreadsheets. For each model, the register includes the following information:

- purpose of the model and any interrelationships;
- owner and administrator;
- platform and data sources;
- classification as simple or complex;
- extent of documentation;
- detail on frequency and process for model verification;
- extent of change and version controls;

- number of staff with the knowledge to run the model and re-write the model; and
- business continuity processes.

Based on these descriptions, each model has been given an inherent risk assessment rating and a required review frequency (between two and five years) based on the risk assessment.[122] This risk assessment is conducted by the Head of Internal Audit, at the instigation of the RC. Internal Audit has used external third parties to review many of the key models, as well as reviewing some internally. The RC has oversight of model reviews with the model list to be updated annually, reviewed by business units and reported to the RC.

6.2 Observations and Recommendations

The terms of reference do not raise any specific questions with respect to the operational aspects of the Guardians' activities. We nevertheless offer the following observations.

6.2.1 Observation 23 – Operations

Effective, efficient, and risk-appropriate operations teams are critical partners for any private or sovereign wealth fund. With increasingly onerous business, investment, and regulatory burdens being placed on funds globally, the demands on operations teams are increasing dramatically. Against this backdrop, the Guardians Operations team's roles and responsibilities have broadened considerably as the Guardians have transitioned to a more complex investment model, particularly in the use of derivatives.

From our interviews with Operations and IT staff, we believe that these areas may be stretched in terms of resources.[123] We believe that the resource increases in the operations and IT areas have lagged behind resource increases in the investments areas. It is important that, as the Guardians continue to manage more complex investment activities in house, they scale their operational staff, processes, and technology appropriately to support that growth.

We understand that the Guardians recognise this need for resources and are currently planning to upgrade resourcing of these areas. A review of the investment operations group was conducted in 2013/14 in conjunction with an external consulting firm. In addition, a capacity forecasting model for the Operations team has been implemented to capture tasks and model future staffing requirements and the scalability of certain tasks. Although the majority of the transactions in the Operations area are automated, manual inputs remain in a number of areas not fully covered by internal systems. This is currently being reviewed with the goal of increasing the level of automation in key areas.

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[122] For details on the rating system used, refer to Section 3.1.3.

[123] We made a similar observation about the need to increase risk resources in Section 3.2.4.2.

The IT team has recently undergone a restructure with the creation of an IT Business Solutions Group to better support the business as well as improving prioritisation and capacity. BAU support is to be outsourced to enable the internal IT team to focus on project work.

As a result of this review, and as part of the strategic planning process, there are additional headcounts approved for both the Operations and IT teams. We encourage the Guardians to continue to review the capacity of the Operations and IT areas on an ongoing basis to ensure that the operations and IT support continue to keep pace with the Guardians' operational needs.

6.2.2 Observation 24 - Investment management selection

The terms of reference raise the following specific questions with respect to investment management selection.

Question: Is the investment manager selection process adopted by the Guardians rigorous and consistent with best practice?

Question: Do the Guardians aim to select an appropriate number of investment managers?

Question: Do the Guardians screen an appropriate number and range of fund managers?

Observations

Best practice surrounding the investment manager selection process globally has changed substantially since the GFC. With lessons learned from that disruption, sovereign wealth funds, pension funds and other institutional investors' expectations have risen substantially in an attempt to mitigate the risks from those lessons. As a result, the investment manager selection process from both a fund and investment adviser perspective has changed substantially and best practice continues to evolve.

In general, we view the investment manager selection process adopted by the Guardians as rigorous and consistent with best practice. The manager search, selection and appointment processes are appropriately designed for ultimately selecting and appointing value-adding investment partners. The numbers of potential managers considered and interviewed appear to us to be adequate. In particular, the 'wide net' cast for a potential manager under the new Investment Framework is a strong positive and the use of their internal resources, network and consultant advisers is a well-recognised practice that encourages the Fund and advisors to seek out appropriate investment manager candidates.

The documentation of due diligence procedures was very extensive on an operational level. Material risks appear to be sufficiently identified and vetted in the process through the policies, conviction and operational due diligence frameworks, and governance requirements with oversight by the NIGEL, the RC, IC, and Leadership Team. We reviewed a recent investment in a private equity energy mandate which gave a strong indication of best practice in their approach to selecting the manager.

Against these overall positive comments we offer the following minor observations. First, similar to our observation relating to the Operations Team, we question whether the Operations Due Diligence Team is sufficiently resourced to carry out its important due diligence function. During our interviews we learned that the ODD Team typically spends one (or part of a) day onsite during the due diligence review of a proposed manager. In our experience, this is close to the absolute minimum time needed to conduct rigorous due diligence in the post–GFC environment. We understand that the due diligence processes are risk-based, with more time spent onsite with higher-risk managers, or where executing higher-risk strategies. We also recognise that the appropriate level of due diligence can vary greatly with the size and complexity of the investment and consider this an area for review rather than making a specific recommendation.

We also note that some global fund managers have expressed concern that their operational due diligence exercises can sometimes be overly influenced by the views and preferences of the investment team. A number of global managers have begun developing a 'band of sceptics' (a small group of seasoned professionals who are independent of the process) who are empowered, at a late stage of due diligence, to review the proposed approval with a healthy degree of scepticism and report to senior management. We saw nothing in the files we reviewed to suggest that the Guardians' processes are subject to this type of pressure but, as the Fund size increases and staff number grow, there may be a case for considering this type of challenge function.

6.2.3 Observation 25 - Oversight and monitoring of investment managers and custodian

The terms of reference raise the following specific questions with respect to the oversight and monitoring of investment managers and custodians.

Question: Are the processes put in place to monitor the investment managers and the custodian thorough and consistent with best practice? Have appropriate benchmarks been identified? Are these processes being followed?

Question: What compliance functions do the Guardians have in place to ensure adherence to investment manager mandates?

Question: Are the investment manager fees paid by the Guardians reasonable and in line with those paid by comparable institutions?

6.2.3.1 Monitoring of external managers

We believe that the processes in place to monitor investment managers are generally consistent with best practice. For example, each investment manager is subject to investment monitoring (ongoing conviction assessments), compliance monitoring, and operational monitoring (ongoing ODD assessments). There is also significant interaction between the Guardians' teams. Together these provide confidence that issues in any of these areas would be raised and discussed.

The compliance functions that the Guardians have in place to ensure adherence to investment manager mandates, generally appear to be robust. Consistent with best practice, the Fund's custodian conducts daily monitoring of prudential limits where possible. In addition to the monitoring by Northern Trust, reporting on compliance is also made directly to the Guardians (with immediate notification of 'material breaches'). From our discussions and reading it was apparent that this reporting process seems to be functioning as intended.

Notwithstanding Northern Trust's active role, there are certain areas (such as collective investments and certain complex mandates) where Northern Trust is not able to provide monitoring and the investment manager is required to monitor and self-report any breaches of prudential limits. There is no simple way of checking self-assessments without a detailed investigation of the fund and adviser involved and we saw minimal self-reporting.

Against this positive overall assessment of the Guardians' monitoring programme we found the following minor areas in which we believe the framework could be strengthened:

- it appears that the concept of 'material', which is central to breach reporting, is not defined in either the policies or procedures or IMAs provided to us. We believe the Fund would benefit from including a clause in IMAs defining 'material' to document the Guardians' expectations and provide the Guardians contractual remedies if the manager does not report a material matter. Without a documented and well-understood definition, there is a risk of inconsistent reporting of material breaches.

- Northern Trust's monthly Compliance Reports provided to the Guardians during 2013 contained many potential compliance violations with durations of over three months. While we understand the reasons underlying the violations and the time frames necessary to resolve the violations, we suggest that the Board Dashboard should highlight 'material compliance breaches' that exceed a certain time period.

Suggestion 11 – Monitoring of external managers

> *We suggest that the Guardians formalise a definition of 'material' for breach reporting by external managers and standardise it across its external manager monitoring programme (considering revising IMA language accordingly) and add a category to the Board Dashboard to report on material compliance breaches by external managers that have not been resolved within an appropriate time period.*

6.2.3.2 Monitoring of the custodian

The internal monitoring program for oversight of Northern Trust (supported by the external monitoring service provider) is a robust process and consistent with industry best practice. The annual fee benchmarking reports provided by the external provider (that include annual foreign exchange benchmarking) are important sources of information upon which to manage the

Northern Trust relationship. In addition, the Guardians maintain a best-practice open dialogue with Northern Trust in relation to its performance on an absolute and relative basis. The Guardian's informal peer networking with other Crown entities in Australia and New Zealand (as well as some peer funds globally) supports their efforts.

The Guardians conduct comprehensive internal monitoring of Northern Trust with a range of strong reviews and monitoring processes. The strategic, service, and operational reviews reflect a robust monitoring effort and the Guardians' move to semi-annual reviews makes sense to us in that it allows for a more thorough, yet cost-effective review process. The KPIs set out in the Service Level Agreement are comprehensive and the detailed internal reporting of compliance with those KPIs (with conviction scores) is consistent with best practice.

An important indicator of effective manager and custodian oversight is a healthy dialogue in reporting and related communication. We observed such a dialogue in our review, which is a positive.

The Guardians rate Northern Trust with a high conviction score with the large majority of transactions processed without issue. While the Guardians' review processes are robust, the performance of Northern Trust should continue to be closely monitored given its importance to the Guardians' operations. The Guardians appear to remain committed to Northern Trust as a critical service provider and appear to have the processes in place to effectively monitor any issues with the quality of service provided. We suggest they remain vigilant.

6.2.3.3 Investment fees

As outlined in Section 4.1.2, the Guardians engage CEM Benchmarking, to provide regular benchmarking reviews of cost effectiveness, including review of the fees paid by the Guardians for external investment manager, custodian and other fees. The CEM report provides considerable supporting data from its comprehensive database and has found the Fund's costs to be 'normal' compared to its peers. In reaching this assessment of normality, the CEM review reveals that the Guardians pay more for certain services, which are offset by the Fund's lower cost implementation style.

While the fees paid by the Guardians appear high in relation to fees paid by other comparable funds, direct comparisons such as these are fraught with complexities. The Guardians use very few passive managers and make extensive use of specialised managers in areas they have targeted as opportunities. This automatically tends to bias their fees structure upwards relative to other, more conventional funds.

The main consideration by any fund manager is to remain active and vigilant in negotiating fees and searching for ways to contain costs. The decision to take certain investment functions in house (see Chapter 2) was driven by cost considerations. We also recognise that the Guardians have been increasingly looking to enter fee arrangements based on funds invested instead of funds committed, which could potentially reduce fees further. The Guardians are currently considering a project to investigate options for benchmarking of investment fees, given that external fees are a dominant component of the Fund's expenses. The results of this review will assist the Guardians in fee negotiations and ensure that fee arrangements are in line with best practice.

While there is always room for improvement, Figure 6 in Chapter 4 suggests that the Guardians have not only been conscious of containing costs, they have been successful in doing so over the past years.

6.2.4 Observation 26 - Oversight and monitoring of outsource providers

The Guardians' model relies considerably on services outsourced to third-party providers, with key outsource providers including custody services, collateral management, performance management, and IT infrastructure and support. The Guardians recognise the importance of oversight and monitoring of outsource providers and have in place a Procurement and Outsourcing Policy and Risk Record (#2) relating to Major Suppliers.

These policies and controls provide an appropriate framework for oversight of outsource providers and the Board's current level of engagement with outsourcing appears solid. We note, however, that the Board does not have authority to terminate outsource providers. As the Board is involved in approval of outsource provider contracts, we would normally expect the Board to also be involved in termination. We recognise that this is a judgement call given that termination may need to be addressed quickly between Board meetings.

We note further that another important element in best-practice, third-party service provider oversight programs is consideration of conflicts that can arise with related parties. Affiliation with the Fund should be a material factor in the vetting and approval process. It should also generate additional scrutiny in the oversight process to ensure that the relationship remains at arm's length.

We note that Guardians have an outsourcing arrangement with Datacom, a large New Zealand IT services provider, which is a major supplier of key IT services to the Guardians. In February 2013 the Fund purchased a 35% ownership interest in Datacom, thereby creating an affiliation between the Guardians and Datacom (the interest subsequently increased to 37.3%). We did not see any evidence that the affiliation has been a consideration in the ongoing oversight of Datacom. In its oversight of Datacom and any other affiliated provider, any indirect benefit or compensation received by Datacom or other affiliated provider should be identified and addressed.

Suggestion 12 – Oversight of affiliated external providers

> *We suggest that the Guardians consider enhancing its oversight of outsource providers to recognise and require additional due diligence and monitoring where the outsourced provider is a related party.*

6.2.5 Observation 27 - Oversight and monitoring of models

For many financial institutions like the Guardians, model risk management is a critical component of the overall management of risk. Model risk is normally defined as the risk of incurring a direct or indirect financial loss due to the incorrect design, use, or interpretation of a model and the results it produces. Failures in the way data are accepted, the way the model has been coded, or the way the output is interpreted can have significant impacts on performance, depending on the criticality of the model to the investment operations. To counter these risks, many organisations have developed formalised model risk polices which govern the development, independent validation, implementation, and maintenance of their critical models.

The Guardians have initiated several new processes to identify and manage model risk. The Guardians are in the process of creating a new 'Business Solutions Group' which will work with business units to ensure models are developed appropriately with adequate specifications. The Business Solutions Group will be required to be notified of any new models being proposed.

The Guardians have recently documented the framework for managing model risk, to be included as Schedule 11 of the RMP. This Schedule includes model definition, oversight, risk assessment (in accordance with the Risk Assessment Framework in the RMP), review frequency and approach (based on the risk assessment), and RC oversight.

The RC will have responsibility for the Guardians' model oversight process. All key models have been identified across the organisation. As described in Section 6.1.7, the Model Register includes summary information of each model and the risk rating and prioritisation of each model for review. We are of the view that, given the developments above, solid progress has been made in understand and minimising the Guardians' model risk, although we encourage the Guardians to continue to develop this framework. We suggest that future version of the Model Review Framework could address:

- model development (including software, methodology, assumptions and documentation);
- model control activities, segregation of duties and validation; and
- model risk monitoring activities and correcting deficiencies.

We highlight that ensuring a robust model validation and challenge process is vital to identifying weaknesses and responding in an appropriate timeframe. Documentation of what is expected as part of the validation process is particularly important when third parties are engaged to assist. Validation should be broad enough to cover the inputs, assumptions, theory, code, and outputs. It should also ensure that the results are presented in an appropriate manner in any reporting to minimise the risk that they could be misinterpreted. We note that, based on our reading of two reports covering model reviews,[124] some of these aspects were not covered.

We offer two other observations on the Guardians' current approach to managing models:

- Risk Records: The Guardians maintain a Risk Record called Models and Data. In some instances, it was unclear how the listed action would assist in minimising model risk.
- Model Register Ratings: When rating each model in the Model Register, we encourage users to include all possible sources of information, including from Risk Registers and any past incidents. We note that the likelihood rating for the rebalancing tool in the Model Register was classified as 'Rare', even though an incident with the model occurred recently in February 2013 as recorded in the Learning and Opportunities Register. We also observed that a number of the ratings in the Risk Registers (relating to specific models) did not align with the ratings shown in the Model Register.

[124] This included reviews covering the PD Tool (December 2013) and the review covering the Fund Forecast model (December 2013).

References

BCBS (2010), *Principles for enhancing corporate governance,* Basel Committee on Banking Supervision BCBS176. Oct 2010.

Brake, S., Drew A., and Iverson, D., (2009), *Governance, Investment Beliefs and Dynamic Asset Allocation*, paper prepared for joint BIS/ECB/World Bank Public Investors Conference, available on the Guardians website.

Canadian Pension Plan Investment Board (2014), *2014 Annual Report*, www.cppid.com.

CEM Benchmarking, (2012), *Investment Cost Effectiveness Analysis (for the 5 years to 31 December 2012), New Zealand Superannuation Fund*, 12 September 2013. available on the Guardians website.

Commerce Committee, (2005), *Petition 2005/133 of Dr. Russel Norman and 800 Others*, Report of the Commerce Committee, 2005, p.1, available on the Guardians website.

Drew, A., Frogley, R., Hayward, T., and Sethi, R., (2008), *Strategic Tilting around the SAA benchmark*, paper prepared for joint BIS/ECB/World Bank Conference on Strategic Asset Allocation for Central Banks and Sovereign Wealth Managers, available on the Guardians website.

Financial Markets Authority (2004), *Corporate Governance in New Zealand Principles and Guidelines (*formerly The Securities Commission), February 2004. www.fma.govt.nz

Future Fund (2013), *Annual Report 2012/2013*, www.futurefund.gov.au.

GeoEconomica, *The Santiago Compliance Index 2013 - Rating governance standards of sovereign wealth funds*, Benchmarking Series, January 2014, available on the Guardians website.

International Working Group of Sovereign Wealth Funds (IWG) (2008), *Sovereign Wealth Funds*, *Generally Accepted Principles and Practices (GAPP) - Santiago Principles*. Oct 2008, available on the Guardians website.

Investment Company Institute (2014), *Trends in the Expenses and Fees of Mutual Funds, 2013*, ICI Research Perspective Vol. 20, No.2, May 2014

Iverson, D. and Staub, R., (2013), *Allocating Risk Capital: The Case of the New Zealand Superannuation Fund*, Rotman International Journal of Pension Management, Fall 2013, available on the Guardians website

KPMG, (2013), *PD Tool Controls Review*, Prepared on behalf of the Guardians' Internal Audit function, 18 December 2013.

Lewis, M., (2010), *The Big Short: Inside the Doomsday Machine*, March 2010, Penguin Books.

Mercer, (2009), *Review of the Guardians of New Zealand Superannuation*, 28 October 2009, available on the Guardians website.

Minister of Finance (Hon Bill English), (2008), *Crown Financial Institution Board Fees Review*, Letter to Chairman of the Guardians, 19 May 2008

Minister of Finance (Hon Bill English), (2009), *Approvals Granted Pursuant to Section 50(2) of the New Zealand Superannuation and Retirement Income Act 2001*, Letter to Chairman of the Guardians, 10 March 2009.

Minister of Finance (Hon Bill English), (2013), *Annual Letter of Expectation*, Letter to Chairman of the Guardians, 25 March 2013, available on the Guardians website.

Minister of Finance (Hon Bill English), (2014), *Annual Letter of Expectation*, Letter to Chairman of the Guardians, 12 March 2014, available on the Guardians website.

Organisation for Economic Co-operation and Development (OECD) (2004), *OECD Principles of Corporate Governance*. 2004. www.oecd.org

PRI Association, (2011), *Principles for Responsible Investment*, *Individual Feedback Report 2011*, *New Zealand Superannuation Fund,* UNPRI, available on the Guardians website.

PRI Association, (2014), *RI Transparency Report 2013/14*, *New Zealand Superannuation Fund*, available on the Guardians website.

Reason, J., (1997), *Managing the Risks of Organizational Accidents*. Ashgate Publishing Limited.

S&P, (2013), *S&P Indices Versus Active Funds (SPIVA®) Scorecard,* Mid-year 2013, spindices.com.

Sovereign Wealth Fund Institute (SWF), (2014), *Linaburg-Maduell Transparency Index*, 2nd quarter 2014 LMTI ratings, available on the Guardians website.

Truman, E., (2012), *Sovereign Wealth Funds: Is Asia Different?*, Working Paper Series WP 11-12, Peterson Institute for International Economics, June 2011, available on the Guardians website.

Vanguard Group, (2013), *The bumpy road to outperformance*, Vanguard Research, July 2013, www.vanguard.com.

Ziegler, P., (1988), *The Sixth Great Power: Barings 1762–1929*. London: Collins.

Guardians Documents

Guardians, *How We Invest*, available on the Guardians website.

Guardians, *Responsible Investment Framework*, available on the Guardians website.

Guardians, *PEARL Data Delivery Guide. Overview of the Delivery of Data to the PEARL Performance Reporting System* (undated).

Guardians, *NZSF Models List, Appendix 1 (undated).*

Guardians, (2009), *Code of Conduct for Board Members,* 22 June 2009, available on the Guardians website.

Guardians, Submissions to Finance and Expenditure Select Committee (May 2014, Nov 2010) and Commerce Select Committee (Feb 2013, Dec 2009), available on the Guardians website.

Guardians, (2010), *Guardians' Response to Independent Review,* In response to the Mercer review, June 2010, available on the Guardians website.

Guardians, (2010), *2010 Reference Portfolio Review*, available on the Guardians website, September 2010.

Guardians, (2010), *Submission to the Savings Working Group, Guardians of New Zealand Superannuation,* September 2010, available on the Guardians website.

Guardians, (2011), *Our Investment Framework*, Paper to the Investment Committee, February 2011.

Guardians, (2012), *Board Charter,* February 2010 (as amended April 2012), available on the Guardians website.

Guardians, (2013), *The Role and Performance of the New Zealand Superannuation Fund,* Prepared by the Guardians of New Zealand Superannuation at the request of the Commission for Financial Literacy and Retirement Income, April 2013, available on the Guardians website.

Guardians, (2013), *Self-assessment of implementation of Santiago Principles*, available on the Guardians website.

Guardians, (2013), *GRI Content Index 2012/2013,* available on the Guardians website.

Guardians, (2013), *Bonus Programme Briefing*, 30 June 2013.

Guardians, (2013), *Annual Custodian Review*, 30 September 2013.

Guardians, (2013), *New Zealand Superannuation Fund Annual Report 2013*, available on the Guardians website.

Guardians, *Terms of Reference – Risk Committee*, Revised from December 2013 governance review.

Guardians. (2013). *Model Review – Fund Forecast*. December 2013.

Guardians, (2014), *Risk Allocation Process*, Internal Memorandum from the Head of Audit, 26 May 2014.

Appendix 1: Guardians' Derivatives Policy

8.1 (Derivatives) Policy

8.1.1 Derivative exposures, when considered together with other investments in the Fund, must be consistent with the exposures (in part or whole) specified in the Fund's Rebalancing Target (see section 6 of Portfolio Completion and Internally Managed Securities Policy).

8.1.2 We may permit external investment managers to use derivatives where we are satisfied the investment manager has the necessary controls in place to ensure their prudent use and such use is consistent with the investment guidelines given to the investment manager.

8.1.3 We may permit external investment managers to short sell securities where we are satisfied the investment manager has the necessary controls in place to ensure prudent use of that ability and such use is consistent with the investment guidelines given to the investment manager. We will not permit 'naked' short selling.

8.1.4 We may loan securities where we are satisfied with the credit quality of the counterparty who borrows the securities and that we are appropriately collateralised for the securities lent and the fee received is fair compensation for the use of our securities and the operational complexity involved.

8.1.5 Further policy statements relating to the use of derivatives can be found in section 8 (Product Approval) and section 9 (Counterparty, Portfolio Completion Agent and Non-Master Custodian Selection and Exposure Management) of the Portfolio Completion and Internally Managed Securities Policy.

Procedures relating to the use of derivatives can be found in Part 2 section b of the HWI document. Part II, Section D of HWI states that:[125]

When and how do we use derivatives?

Derivatives are financial instruments that replicate the behaviour and performance of certain types of investments. Typically, they are linked to:

- *individual securities such as equities*
- *indexes on bonds and equities, such as New Zealand's NZX50, which aggregate*

[125] HWI, pp. 22 and 23.

the performance of a group of securities

- *reference rates (such as an exchange rates or interest rates)*

There are many types of derivatives and many reasons to use them, including:

- *to manage risk and liquidity*
- *to lower transaction costs*
- *as added-value investments in their own right*

Using derivatives to manage risk and liquidity

The Reference Portfolio is generally 100% hedged back to New Zealand dollars. (We do this to get the benefits of New Zealand interest rates being higher than offshore interest rates. We are indifferent to fluctuations in the NZD relative to other currencies.) This reduces our risk exposure to fluctuations in foreign currencies versus the New Zealand dollar. Currency derivatives, such as forward contracts, allow us to manage this foreign currency risk in an efficient manner.

In addition, the actual portfolio tends to "drift" away from its target exposures through time due to differential performance of the various asset classes we own and also due to changes in exchange rates. In other words, the portfolio's actual risk can drift away from the desired risk. Derivatives are a convenient way of re-balancing the portfolio back to its targeted risk level.

Derivatives can also help us to manage our liquidity. When we enter into a derivative contract, we often are not required to make any deposit on this exposure. Where we are required to set aside a deposit, it is often a relatively small percentage of the underlying exposure. This means we hold a pool of collateral within the Fund, while maintaining the desired market exposures through the derivative. In instances where we require liquidity at short notice, closing the derivative position allows us to access an immediate source of cash.

Using derivatives to lower transaction costs

Derivatives can lower transaction costs in at least two ways:

- *index derivatives are often cheaper to buy than the individual physical securities making up the index*
- *commissions are generally negligible.*

Using derivatives to add value to investment

Derivatives allow us to add value to the Fund in some instances. For example, derivative *counterparties, such as investment banks, may offer attractive terms to the Fund for entering into certain types of derivative contracts. Total return swaps on global equities, for example, involves us contracting to receive the total return on the global equity index and to pay an interest rate back to the counterparty. The interest rate we pay, is to compensate the counterparty for the cost of funding the equity position.*

In some cases, the counterparty may quote us an interest rate below the market standard interest rate. In turn, we can generally earn a return on the cash collateral that we hold that is above the standard interest rate. The net effect of the swap transaction is for the Fund to receive the return on global equities plus an additional margin reflecting the difference between the relatively high interest rate we earn on our collateral and the relatively low interest rate we pay to the counterparty. The alternative way of obtaining global equity exposure, through physical purchase of the equities, generally involves the Fund generating the same return on the index but having to pay all the associated expenses of buying and managing the securities.

Are there any restrictions on the use of derivatives?

Our Act states that the Minister of Finance must approve us holding "any financial instrument that places or may place a contingent liability on the Guardians, the Fund or the Crown".

A derivative is a contract which at some stage must be paid out. So a contingent liability is implicit in derivatives. Our Board has therefore sought and received the Minister's approval to use derivatives, subject to conditions including that they are used only as part of an investment strategy and are consistent with the objectives of that strategy.

Appendix 2: List of Guardians' Policies

Policy Name	Content	Date of Last Review
Statement Of Investment Policies, Standards And Procedures	Establishes the framework set by the Guardians for the governance and investment of the Fund	18 June 2013
Policies supporting SIPSP		
Investment Risk Allocation Policy	Covers the asset classes invested in, the value adding strategies used, and the investment constraints applies	13 September 2013
Externally Managed Investments Policy	Covers how the Guardians invest with external investment managers	10 January 2013
Portfolio Completion and Internally Managed Securities Policy	Covers how the Guardians ensure the Fund meets their desired risk allocations and the related management of internal investment mandates	13 February 2014
Strategic Tilting Policy	Covers the value-adding strategy used to adjust the Fund's risk exposures in response to changes in expected returns	9 April 2013
Direct Investment Policy	Covers direct investments made in investments not covered by the Portfolio Completion and Internally Managed Securities Policy	9 April 2013
Risk Management Policy	Covers how operational risks for the Guardians are managed	10 September 2012

Procurement and Outsourcing Policy	Covers how major procurement contracts other than with external investment managers are entered into	9 April 2013
Delegations Policy	Covers how responsibilities are delegated from the Board to the CEO and to management	31 October 2012
Other Policies		
Human Resources Policy	Covers the general conditions if employment and expectations of employees' and contractors' behaviour	26 November 2013
Communications Policy	Covers external communications, managing information and website/intranet content, speaking to media and events and sponsorship	9 April 2013
Travel and Sensitive Expenditure Policy	Covers travel expenditure and sensitive expenditure (such as company credit cards, entertainment and staff functions)	28 May 2013

Appendix 3: Remuneration Comparisons

Canadian Pension Plan

The Canadian Pension Plan Investment Board (CPPIB) has a compensation framework with the following key elements:[126]

- There is a clear set of incentives that are consistent with the long-term investment strategy and investment risk limits, measurable against clear benchmarks, understood by management and transparent to stakeholders and employees.
- The Board can claw back or adjust all forms of incentive compensation.
- The program is driven by four-year investment performance and annual individual objectives (the mix of compensation elements is specific to each role).
- Investment performance incentive payments in a year are based on a four-year averaging methodology (this period is the norm for organizations similar to CPPIB and are consistent with industry-leading practices).
- All employees participate in the Short-term Incentive Plan (STIP) which includes two components: incentives based on annual individual performance and incentive based on the four-year investment performance of the whole Fund (relative to the CPP Reference Portfolio). For investment professionals, the performance incentive also reflects department and asset class performance relative to specified benchmarks.
- Senior management and the majority of the investment professionals also receive Long-Term Incentive Plan (LTIP) awards (which vest and are paid out at the end of the four-year performance period). Amounts are based on the return relative to benchmarks and then increased or decreased in accordance with the Fund's cumulative rate of return.
- Annual value-added performance calculations are subject to maximum caps, positive and negative, to ensure that no single year result has undue impact and that maximum achievement levels are appropriate.
- A significant portion of senior management and investment team compensation is deferred.

[126] 2014 Annual Report, CPP Investment Board, pages 74 - 77

The following table provide summary compensation for the CPPIB over the past three fiscal years for the named executive officers.

Table 14: Summary CPP Compensation

			Incentive Plan Compensation ($)						
				Four-year Investment Performance					
NAME AND POSITION	Year	Salary ($)	STIP Annual Individual Objectives[2]	STIP Investment Component[2]	LTIP[3]	SRFU[4]	Pension Value ($)[5]	All Other Compensation ($)[6]	Total Compensation ($)
Mark D. Wiseman[7]	**2014**	**505,000**	**562,400**	**1,249,900**	**1,248,100**	**–**	**59,955**	**14,148**	**3,639,503**
President and CEO	2013	490,000	620,100	843,000	734,700	–	57,431	12,019	2,757,250
	2012	400,000	409,500	1,170,000	984,200	–	46,219	8,264	3,018,183
Benita Warmbold[7,8]	**2014**	**340,000**	**360,000**	**535,500**	**999,500**	**–**	**37,723**	**10,515**	**2,283,239**
SVP and CFO	2013	330,000	381,200	361,300	629,700	–	36,480	8,353	1,747,033
	2012	315,000	394,100	347,800	469,200	–	34,812	7,612	1,568,524
Nicholas Zelenczuk[7,8]	**2014**	**351,700**	**473,900**	**553,900**	**799,500**	**–**	**39,568**	**10,875**	**2,229,342**
SVP and COO	2013	325,000	273,000	108,400	503,800	–	35,848	8,485	1,254,533
	2012	315,000	194,000	106,000	375,300	–	34,812	7,612	1,032,724
André Bourbonnais	**2014**	**365,000**	**574,900**	**1,067,600**	**1,422,600**	**–**	**41,055**	**10,515**	**3,481,670**
SVP Private Investments	2013	350,000	344,500	1,023,800	820,400	–	39,094	8,485	2,586,279
	2012	325,000	383,900	950,600	623,700	–	36,094	7,612	2,326,906
Graeme Eadie	**2014**	**360,000**	**396,900**	**1,053,000**	**1,491,400**	**–**	**40,423**	**10,515**	**3,352,239**
SVP Real Estate	2013	350,000	344,500	1,023,800	1,078,300	–	39,180	8,485	2,844,265
Investments	2012	335,000	369,300	914,600	645,600	–	37,485	7,612	2,309,597
Mark Machin[9]	**2014**	**498,015**	**666,700**	**425,200**	**–**	**1,241,000**	**44,821**	**168,549**	**3,044,286**
SVP and Head of	2013	444,981	750,900	0	–	980,200	34,944	145,003	2,356,028
International; President, CPPIB Asia Inc.	2012	16,579	196,621	0	–	–	0	6,906	220,106
Eric Wetlaufer[10]	**2014**	**367,500**	**405,200**	**1,074,900**	**1,087,100**	**–**	**41,436**	**16,274**	**2,992,410**
SVP Public Market	2013	357,500	512,800	925,000	–	821,900	40,258	11,692	2,669,150
Investments	2012	350,000	492,200	734,800	–	746,300	15,750	13,402	2,352,452

Source: 2014 Annual Report, CPPIB, page 81. Refer to the source for relevant table footnotes.

Australian Future Fund

The Australian Future Fund employs the following remuneration arrangements:[127]

- There are three components to remuneration: fixed salary, variable pay based on personal performance, and variable pay based on Fund performance.
- Actual 'variable pay based on personal performance' reflects performance against key performance indicators and the organisation's values.

[127] Annual Report 2012/2013, Future Fund, page 59

- Actual 'variable pay based on Fund performance' reflects average performance over three-year periods and is determined on fixed calculations once Fund performance results are audited and confirmed. It includes assessment against the Fund's absolute return against its mandated target as well as against the performance of the actual portfolio against the policy portfolio implied by the Target Asset Allocation.

The following table provides performance pay summary for the 2012/13 period for the Future Fund Management Agency (FFMA).

Table 15: Performance Pay Summary for the FFMA

FFMA Classification	Employees who received payments	Aggregated performance pay ($)	Minimum performance pay ($)	Maximum performance pay ($)	Average payment ($)
FFMA Band 1, 2 & 3	34	$347,418	$2,093	$37,054	$10,218
FFMA Band 4, 5 & 6	56	$7,850,741	$2,811	$633,216	$140,192
Total	**90**	**$8,198,159**	**–**	**–**	**$91,091**

The following table provides summary remuneration for the substantive senior executives of the FFMA for the year to 2013.

Table 16: Summary Remuneration for the Senior Executives of the FFMA

Average annual reportable remuneration	Senior Executives	Reportable salary[2]	Contributed superannuation[3]	Bonus paid 2011/12 year[4]	Bonus paid prior years[5]	Total
	2013					
	No.	$	$	$	$	$
Total remuneration:						
Below $180,000	1	58,456	4,985	–	–	63,441
$210,000 to $239,999	1	193,673	17,360	–	–	211,033
$390,000 to $419,000	1	284,646	25,000	81,761	–	391,407
$450,000 to $479,999	1	354,766	25,000	91,560	–	471,326
$630,000 to $659,999	1	445,080	16,484	182,700	–	644,264
$660,000 to $689,999	2	428,631	25,000	217,026	–	670,657
$690,000 to $719,999	2	314,008	16,685	372,210	–	702,903
$750,000 to $779,999	1	394,420	25,000	346,404	–	765,824
$870,000 to $899,999	2	434,924	20,742	416,232	–	871,898
$900,000 to $929,999	1	575,650	25,000	313,283	–	913,933
$1,110,000 to $1,139,999	1	548,595	25,000	536,760	–	1,110,355
Total	**14**					

Source: Annual Report 2012/2013, Future Fund, page 107. Refer to the source for relevant table footnotes.

Guardians

The following table provides bands for employee base salary and total remuneration paid in 2013 with the number of employees in each band for the Guardians.

Table 17: Summary Employee Remuneration for the Guardians

Base Remuneration Range NZ $000	Number of Employees 10.2013	Total Remuneration Range NZ $000	Number of Employees 2013
300 - 350	7	300 - 350	6
350 - 400	1	350 - 400	6
400 - 450	2	400 - 450	2
450 - 500	1	450 - 500	4

500 – 550	0	500 – 550	1
550 – 650	0	550 – 600	0
650 - 700	0	650 - 700	3

Source: 2013 Annual Report, page 188

New Zealand Accident Compensation Corporation (ACC)

Table 18: Summary Employee Remuneration for the ACC

Total Remuneration Range NZ $000	Number of Employees 2013	Number of Employees 2012
300 - 350	7	3
350 - 400	3	4
400 - 450	1	1
450 - 500	1	2
500 - 550	2	3
550 - 650	4	3
650 - 700	0	0
700 - 790	2	2

Source: 2013 Annual Report, page 100

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