Review of the Government Superannuation Fund Authority

Prepared for the New Zealand Treasury

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Introduction

Willis Towers Watson is delighted to have been selected by the Treasury to conduct this Independent Review of the Government Superannuation Fund Authority (GSFA) and the Government Superannuation Fund (the Fund). In carrying out the review, we have addressed the specific terms of reference outlined by the Treasury. We have also sought to provide views and comments that are useful to the GSFA in its drive towards organisational efficiency and best practice

We are very appreciative of the level and quality of engagement that we have had with Management and the Board of GSFA. They have been extremely helpful; their enthusiasm and support for the review process has been very impressive.

In the **Introduction** to this report we provide a brief background to GSFA, the Terms of Reference for this review and our interpretation and approach to undertaking the review. The remainder of the report is then structured as follows:

Introduction: background

Terminology	▪ We are conscious that in reports such as this there is a tendency towards organisational or industry specific jargon. To the extent possible we have tried to avoid this but it is impossible to do so completely. To assist readers, we provide a glossary of terms used in Appendix 1.
GSFA, the Fund and Annuitas	▪ The Government Superannuation Fund Authority ("GSFA") is an autonomous Crown entity established under the Government Superannuation Fund Act 1956 ("the Act") to manage and administer the Government Superannuation Fund ("the Fund") and the schemes in accordance with the Act. ▪ GSFA is responsible for investing the Fund on a prudent, commercial basis and, in doing so, must 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. ▪ As at 31 March 2021 the Fund had approximately $5.0 billion in assets. The Fund has been closed to new entrants since 1992 and the assets are expected to decline gradually over time. ▪ Through a joint venture arrangement, GSFA and the Board of the National Provident Fund established Annuitas Management Limited (Annuitas) to provide the executive resources necessary to run both funds. In this report, when we refer to the internal investment team, we are referring to the Annuitas team.
This Independent Review	▪ The Act requires that an independent performance review of GSFA be carried out at no more than 5-yearly intervals. The last independent review was carried out by PwC in 2016. ▪ The Terms of Reference for this review require us to: 1. Assess the appropriateness and compliance of the Statement of Investment Policies, Standards and Procedures (SIPSP) of the Authority. • In assessing appropriateness of the SIPSP, we are asked to focus on any changes to it since the date of the last statutory review, and to consider the appropriateness of the GSFA's responses to any recommendations made on the SIPSP in that review. • Where there have been any material changes or additions to the SIPSP, we are asked to opine on whether those are appropriate and complete both in relation to GSFA's capabilities, including human and technology needs, and with regard to GSFA meeting its requirements to invest the Fund as set out above. • In assessing whether the SIPSP has been complied with, we are asked to focus on testing this since the date of the last statutory review and to leverage off existing assurance inputs. *Continued on next page*

Introduction: background and interpretation

This Independent Review *(continued)*	2. Evaluate GSFA's ethical investment framework in relation to "avoiding prejudice to New Zealand's reputation as a responsible member of the world community", as well as in the context of international best practice standards. • We are asked to include consideration of GSFA's approach to considering, and reporting on, climate change as part of the ethical investment framework. • We are asked to opine as to whether GSFA is compliant with the requirements stipulated in the Act, and make recommendations, where appropriate. 3. Evaluate the ex-post performance of the Fund since inception. This is expected to incorporate a time period analysis, including performance since the last statutory review. • We are asked to form an opinion on the drivers of these returns over these time periods, commenting on appropriateness of the contribution from these drivers relative to the risk taken. ▪ In the process of undertaking this we should be satisfied as to the effectiveness and efficiency of GSFA in undertaking its functions in relation to the above terms of reference. ▪ We should also make general observations on the review; noting the engagement and transparency of GSFA towards the statutory review process
Our interpretation of the Terms of Reference for this review	We interpret the review's terms of reference in the following way: ▪ The "appropriateness" aspect is tied principally to the Act's requirements to invest the Fund on a prudent, commercial basis consistent with best-practice portfolio management; maximising return without undue risk to the Fund as a whole; avoiding prejudice to New Zealand's reputation as a responsible member of the world community. ▪ We define "best practice" as a state where an organisation functions *with a margin of safety* over meeting its mission and benchmarks and compares *very well* by reference to peers (a combination of the best asset owners globally) in strong performance and enablers of good practice. The concept of best practice is not an objectively assessable one and involves judgment. We have specialised in providing best practice reviews by maintaining detailed knowledge about leading asset owners. ▪ Best practice is not a static view, as the state of practice at leading asset owners evolves through competition and innovation. It is a stronger state than a "fit-for-purpose" state, where the organisation merely functions *in line with* meeting its mission and benchmarks and compares *adequately* by reference to peers. ▪ As discussed in various research (see, in particular, Clark and Urwin, 2007) asset owners succeed best not by mimicking others' best practice, but by building a version of their own best practice and by reinforcing and refining good features. When evaluating best practice, therefore, it is critical to take into account the context of the fund. ▪ We view "performance" as both longer term investment results, allowing for risks, and also as other outcomes implied in the mission, including reputation, which is how the stakeholders' view of the organisation compares with the standards expected of it.

Introduction: our approach

Our approach to undertaking this review

- Whilst the primary scope for this review is to assess the appropriateness of, and compliance with, the SIPSP, it is important to evaluate how well the SIPSP is implemented and whether GSFA has the capacity, capability and effectiveness to carry out its processes effectively .
- The idea of an independent review represents strong governance in its own right. Such a process supports accountability of the organisation and enables more valuable feedback to emerge to help with its development.
- This review provides an opportunity to deliver significant value to both the Treasury and to GSFA about future development pathways. The fundamental premise is that feedback can arise from such analysis to help adjust course, particularly in circumstances of fast-moving change.
- We therefore discuss two key concepts in this review (1) whether GSFA has met the standards necessary to comply with prudent standards and, (2) an assessment of the organisational effectiveness of the GSFA in the context of meeting its specific mandate and mission. This is a function of the quality and coherence of the organisation and its policies, standards and procedures. The first of these two elements is relatively straightforward. The second involves considerably more judgment.
- Assessment of an asset owner organisation resembles the creation of a “mosaic”. That is, an asset owner’s practice is made up of a number of small things that together add up to the “whole”. This mosaic building process involves the collection and processing of a large number of small pieces of information – time consuming, but ultimately necessary. In this evaluation, the decision-making processes are critical, in which the component parts are: a sound process; well thought through analysis; sound and pragmatic policies; and efficient implementation.
- We use the concept of different “Models” as a convenient way to break an organisation into its constituent parts in order to evaluate organisational effectiveness. Each model has its own constituent parts, the principal ones of which are as follows:
  - **Governance model** – resources, structures, processes and practices
  - **Investment model** – beliefs, investment framework, risk model, portfolio construction and implementation
  - **People model** – resources, responsibilities, capabilities and culture
  - **Operating model** – process, tools and data to support decision making
- While models can be discussed in isolation, in an organisational context they are heavily interdependent. Individual components in one model connect with components in other models. Breaking the whole into its constituent parts allows us to more easily map these interdependencies.
- Our review has used several sources of information including document review, on-site and teleconference meetings, our own analysis, and comparison with the practices of leading asset owners of the world. As required by the Terms of Reference, we have also had regard to the previous independent review, annual SIPSP compliance assessments provided by GSFA’s independent investment advisor and a 2020 independent review commissioned by GSFA’s Board.

1. Executive summary

Executive Summary: overview of findings

Opening observations	GSFA is a small, but relatively sophisticated organisation managing what is, in global terms, a modest sized fund. Despite its size, GSFA has many strengths and positive attributes, of which Board and staff alike should be extremely proud. It has laid solid foundations for investing the Fund and addresses its investment approach in some depth. As is common though, in a world of rapidly evolving practices, there are also several development areas that GSFA could explore to further enhance its governance and investment arrangements. We provide findings relating to both the relative strengths GSFA should maintain, and potential development areas it could progress, in its ambition to manage the Fund in a manner consistent with best practice.
Review scope	The review has the following key elements: 1. Our assessment of the appropriateness of, and compliance with, GSFA's Statement of Investment Policies, Standards and Procedures (SIPSP). This includes our evaluation of: a) whether GSFA has met the best practice standard and b) whether GSFA has the capacity, capability and effectiveness to carry out its processes effectively 2. Our assessment of any material changes or additions to the SIPSP, specifically whether they are appropriate and complete 3. Our assessment of the appropriateness of the GSFA's responses to any recommendations made on the SIPSP in the previous Independent Review 4. Our assessment of GSFA's ethical investment framework, including consideration of GSFA's approach to consider, and report on, climate change as part of that framework 5. Evaluation of the ex-post performance of the Fund, together with our opinion on the drivers of return and the appropriateness of return contribution relative to the risk taken.
GSFA meets its statutory obligations	With respect to its statutory obligations and the Terms of Reference of this review, GSFA has: ✓ subject to design comments that follow, developed a SIPSP that is appropriate give the Fund's context ✓ complied with the SIPSP in all material respects and has fit for purpose processes to measure ongoing compliance ✓ subject to minor comments that follow, appropriately considered and implemented the recommendations made on the SIPSP in the previous Independent Review ✓ developed and complied with an ethical investment framework that is fit for purpose and meets its statutory obligations ✓ given due consideration to climate change as part of its ethical investment framework ✓ generated a return for the Fund that adequately rewards it given the risk profile adopted

Executive Summary: overview of findings

Appropriateness of SIPSP : GSFA capacity, capability and effectiveness *Areas of relative strength*	▪ We were impressed with the GSFA investment team who are experienced, prepared to challenge and can tell a holistic story about their approach to investing. We were impressed too with Board members who demonstrated a strong strategic focus and evidence of healthy challenge of the executive. ▪ GSFA has sound processes in place around a number of key governance elements, for example: role clarity; strategic focus of the Board; forward work planning; and good cross referencing of beliefs to investment activities. ▪ GSFA's use of a Reference Portfolio and the concept of risk budgeting, together with the general quality of investment analysis are positive traits for a fund of this size and governance. The dynamic asset allocation (DAA) process is an excellent example of good practice. ▪ The investment team thinks pragmatically about what it can do to add value, e.g., outsourcing certain elements; considering implementation options, including where active management adds the most value. ▪ GSFA’s operational processes, compliance and the control environment are fit for purpose. ▪ GSFA’s use of independent advice, including periodic independent strategic reviews (beyond the statutory review) is good practice.
GSFA capacity, capability and effectiveness *Potential development areas*	▪ There are some areas with scope for further development. On the following pages we highlight where GSFA could improve its overall investment and governance arrangements. We note that there are many interdependencies between these observations. ▪ Whilst we consider the ethical investment framework and performance analysis and attribution separately there are cross overs between those areas and our assessment of the investment and governance arrangements. For example, ongoing work on climate change is dependent on GSFA’s governance budget and the Fund’s performance is, in part, an outcome of the governance and investment arrangements GSFA has in place.
Responsible Investment (the Ethical Investment framework) *See pages 39-47*	▪ We note the concerted attention that GSFA pays to responsible investment issues, particularly climate change impacts, especially given its size and available governance budget. ▪ GSFA’s overall approach to responsible investment aligns with best practice standards in a number of areas. We regard its responsible (ethical) investment framework as consistent with the requirements, stipulated in the Act, to avoid prejudice to New Zealand’s reputation as a responsible member of the world community. ▪ We note though that the concept of best practice is evolving quickly in the area of responsible investment and GSFA will need to continue to evolve alongside peers, particularly in its approach to climate risk management. We identify potential development areas on the following pages and in body of the report.
Performance analysis and attribution *See pages 55-70*	▪ The Fund outperformed its NZ Government Bond benchmark by 5.5% p.a. over the period since the previous Independent Review. The Fund’s absolute level of return over this period provided was more than adequate compensation for the risk profile adopted. This reflects a period in which investors, on average, received higher than expected returns relative to the risk taken. ▪ The Fund underperformed its Reference Portfolio by 1.4% p.a. across the measurement period. Underperformance was most pronounced in 2019-2020 where the Fund underperformed the RP by 7.0% and 5.2% respectively. We note that underperformance of the Reference Portfolio does not imply poor investment decision making.

Executive Summary: potential development areas

Mismatch between portfolio complexity and governance budget *See pages 23-24*	The Fund differs from the simple Reference Portfolio with a number of complex elements added. This level of complexity is not well matched across the three key elements of GSFA's governance budget (the resources, skills and decision-making efficiency at its disposal) ▪ There are structural choices that could be made to better align the governance budget with portfolio complexity. Options include: more resourcing; more outsourcing; or portfolio simplification ▪ The investment team is under resourced relative to the Fund's complex elements – it is not clear the team has sufficient capacity to stay on top of everything they need to evaluate and monitor to the degree that portfolio elements warrant. We note too the added challenges of managing another fund and its board ▪ The Board (and particularly the Investment Committee) would benefit from access to additional investment expertise, whether through expanded membership or greater use of independent advice
Investment program continuity is fragile *See pages 23-27, 51*	The Fund has a long-term orientation, which is appropriate given underlying liabilities and GSFA's risk appetite. A long term orientation is, however, always at some risk from shorter term pressures, particularly when there are complex elements in the portfolio ▪ Keeping the Board abreast of, and comfortable with, all elements of the investment program is a challenge for any institution; more so when the majority of the Board do not come from investment backgrounds. In this light, an ongoing Board education program, comprising both internal and external elements, is critical ▪ The investment team is highly experienced, both in terms of domain competency and, importantly, GSFA's context. However, being small it is particularly vulnerable to breaks in continuity through the departure of any one of the senior team. We note that the need for succession planning is a recurring theme in strategic reviews of GSFA ▪ To aid continuity and institutional memory, more could be done to capture decision-making frameworks (how GSFA invests). This would aid onboarding of new Board members and staff while at the same time providing a good platform from which the Board can exercise active oversight of the Fund
Beliefs, conviction and investment strategy alignment *See pages 27, 32 and appendix 2*	Strong investment beliefs, with a high degree of alignment between the Board and the executive, are a cornerstone of good fund governance. This has been recognised by GSFA, particularly following recommendations in the Board's recently commissioned independent review. We caution that there is much work to be done here, perhaps more than is appreciated at the moment. ▪ We note a lack of 'edginess' (the 'so what?' factor) in the high-level beliefs developed so far. Planned development of sub-beliefs (or principles for application) will be critical as will the process with which these are socialised and 'settled' between the Board and executive. We note some existing areas of disconnect on beliefs (including, for example, the degree of active management) ▪ The sharp underperformance of the Fund relative to the Reference Portfolio over 2019 and 2020 has led, inevitably, to some loss of conviction in the investment thesis and questioning of the investment strategy. There is some divergence between the Board and executive as to how things are going ▪ Active investing is a competitive activity. As a sub-set of beliefs an investing organisation should work out where it has a comparative edge (and where it doesn't) and focus on those areas. Articulating and agreeing this edge will help with Board – executive alignment (why GSFA invests the way it does) ▪ Our impression is that the Board would like to see more work on why the Fund portfolio is configured the way it is, including asset classes not currently in the portfolio, whilst the executive regard the portfolio as relatively settled

Executive Summary: potential development areas

Scope to improve understanding of portfolio risks *See pages 32-33 and appendix 2*	The Fund's Reference Portfolio (RP) is the cornerstone of its risk budget; however, every portfolio decision taken represents a divergence from the RP giving rise to active risk. ▪ There appears to be a lack of common understanding as to the primary purpose of the RP: the central (mainly executive) view is that the RP acts as an indicator as to how much risk the Fund should adopt and that all active decisions are taken whilst aiming to hold the actual Fund risk constant with the RP and enhance Fund returns. The alternative view is that active decisions are taken to ensure that the Fund earns the same expected return as the RP while taking lower risk ▪ It's not apparent that (at least pre 2019) the Board / IC had a strong understanding of just how (and to what magnitude) the Fund is different to RP, and in what conditions it wouldn't do well and to what extent. Decision makers would benefit from greater clarity around comfort levels with active risk and *ongoing* information on how much active risk the Fund is taking at any point in time, including the constituent shares of active risk (in aggregate, the active risk budget) ▪ Whilst the Board receives regular stress-testing results (showing how the Fund would perform in, for example, a re-run of the GFC), there is little in the way of scenario analysis. Use of pre-mortem scenarios, for example, would provide greater insights into the conditions that might drive worse than anticipated performance of a particular strategy ▪ Decision makers might also benefit from more of a balanced scorecard approach to risk reporting where qualitative and quantitative views through a range of risk lenses can be shown together
Improved meeting of top down vs bottom up *See pages 34-36*	There is scope to better consider the layers of portfolio decision making between strategic and macro considerations, and manager selection ▪ There might be a gap between top down ('this asset class is attractive') and bottom up manager selection perspectives. There is potential for improvement in the way opportunity exposures are sized and both asset class strategies and mandates are designed ▪ The manager selection and alpha (manager excess return) conviction process could be more robust, for example.: what is the thesis behind why a particular manager is selected?; how does the team ensure consistency of views across evaluation parameters across managers?; how are net alpha assumptions arrived at? ▪ More systematic and regular consideration of the broader investment universe and how opportunities might improve overall portfolio quality, and what the trade offs might be, seems warranted.
Some design issues with SIPSP *See page 17 and appendix 2*	GSFA's SIPSP should clearly reflect the Board's preferences with regard to policy, the standards by which policy application is measured and the procedures by which policy is given effect • As currently drafted the SIPSP does not adequately distinguish between policy, standard and procedure. Whilst these are each notionally dealt with, the language used doesn't clarify distinctions adequately. • There is missing, or poorly defined, policy with respect to some key issues, e.g.: liquidity; manager exposures; credit limits; leverage; securities lending • More could be done to improve the coherence of GSFA's broader policy architecture, e.g., there is poor bridging between the SIPSP and (for example) the procurement policy or operations manual

Executive Summary: potential development areas

Streamlined decision making *See pages 25-26 and appendix 2*	Whilst the governance structures within GSFA are robust and facilitate good transfer of knowledge and information, there is some scope to improve the efficiency of decision-making both between and within the governance structures ▪ The role of the Investment Committee (IC) has been modified to clarify its responsibilities. It is not a decision-making body: the intent is that it reviews all significant investment papers before they go to the Board. The purpose of this review could be more clearly expressed in the IC Terms of Reference. Further, the status of an IC reviewed paper could be clearer. Given that the IC members represent the Board’s investment expertise, it would be appropriate for the IC to endorse management recommendations post-review and then support those recommendations at the subsequent Board meeting ▪ Greater use of documented decision-making frameworks (see our earlier point on program fragility) would facilitate better discussions between the executive and the IC (and ultimately the Board). Focus can then shift to “how is this proposal consistent with the agreed way we invest? We note that existing cross-references to investment beliefs are a form of this ▪ Decision making can be slower than is sometimes desirable, for example in replacing managers who the executive have determined are no longer fit for purpose. The executive ameliorates this to some extent by maintaining a bench of reserve managers. Given the degree of decision-making reserved to the Board, it is important that IC and Board decision timing has the flexibility to work outside the formal meeting schedule when required
Ethical investment *See pages 39-47*	Globally, investor focus on responsible investment issues has increased markedly in the last few years. Climate change is understandably a particular focus area. Like most investors, GSFA finds itself on a steep learning curve, the direction of which is clear although the end point may not be. Overall, we note the concerted attention that GSFA pays to responsible investment issues, particularly given its size and available governance budget. Development areas for GSFA centre around: ▪ Deepening its approach to ESG integration, including ESG risk monitoring, integrating ESG factors into strategy and manager analysis and ongoing engagement with its external managers ▪ Further developing its approach to stewardship including strengthening its voting and engagement policies and increasing disclosure and transparency ▪ Continuing to develop its climate strategy

Executive Summary: recommendations overview

Recommendations approach

We have provided three levels of recommendations for GSFA to consider in this report

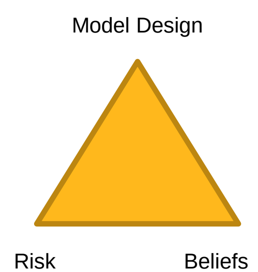
1. Strategic priorities – these are high impact recommendations that could shape the strategic agenda and future direction of the organisation. These recommendations should be considered as a priority before others to ensure appropriate sequencing. Depending on the strategic choices made, there is potential for these recommendations to meaningfully change the way GSFA operates
2. Key considerations – these are important recommendations to consider but are less likely to have significant impact on how GSFA operates. These can be viewed as incremental changes that will drive value adding improvements with lower effort than the strategic priorities
3. Further suggestions – throughout the body of the report we have made suggestions for improvements the organisation could look to implement. These are lower priority than the recommendations set out on pages 13-14 as they are likely to have a lower impact on the organisation

Interconnectivity between recommendations

- We have split the recommendations into a number of separate considerations but note there is significant overlap and interconnectivity between them
- The recommendations are set out in priority order based on where we think the recommendations will have the highest value add impact on the organisation.
- The recommendations are not, however, set out for sequential implementation. Implementation sequencing is conditional on choices made.

Strategic priority considerations

- We have made 3 key strategic priority recommendations that relate to the topics listed below. These areas are highly interconnected as demonstrated below
  - Governance and investment model design
  - Beliefs and comparative advantages
  - Total and active risk budgeting



- GSFA's investment beliefs are a cornerstone to defining how they invest and the model used to implement the investment program
- The governance model and key organisational responsibilities should align with a view of where GSFA can add most value (its comparative advantages) relative to third party providers
- GSFA's beliefs in how and where it can add value above the Fund's Reference Portfolio should be directly linked to its active risk budget
- The higher the complexity of investment choices made, the greater the requirement to develop a deeper governance budget

Recommendations: strategic priorities

Governance budget	▪ **We recommend** GSFA evaluate its governance budget in light of the Fund's complexity and take action to ensure these are fully aligned. ▪ We note here that GSFA has three broad options to ensure alignment between its governance budget and the Fund's complexity. A mix of all three options is a possibility: 1. Expand its governance budget by adding further resource and capabilities across both the Board and the investment team 2. Expand its governance budget by making greater use of third party providers (including the potential for appointing non-Board members to the Investment Committee) 3. Reduce the complexity of the Fund
Beliefs and comparative advantages	▪ **We recommend** GSFA revisit its investment beliefs to: ▪ provide a tighter link between Board-level beliefs, strategy adopted by GSFA and expected outcomes of acting on those beliefs ▪ create a series of principles or sub-beliefs that capture how the executive gives effect to the Board's beliefs ▪ **We recommend** GSFA undertake an analysis to define and document in which areas, and why, it believes it has a comparative advantage in investment decision making. ▪ We note that the analyses recommended here might impact on investment and governance model choices
Risk management	▪ **We recommend** GSFA develops a risk appetite framework that: ▪ clarifies how total risk is defined (linked to Fund objectives) ▪ encompasses a Risk Appetite Statement as a cornerstone of the risk budgeting process ▪ defines a total active risk (tracking error) range relative to the Reference Portfolio ▪ defines value add categories for spending the Fund's active risk budget (aligned with beliefs and principles) ▪ captures forward looking expectations for allocating the Fund's active risk budget across categories and the associated expected return and information ratio ▪ expands consideration and articulation of risk into qualitative factors using a balanced scorecard to articulate the trades offs in spending the active risk budget

Recommendations: key considerations

Decision making frameworks	▪ **We recommend** GSFA capture its approaches to investment decision making in clear decision frameworks. These frameworks should cover at a minimum: ▪ risk management (as per previous recommendation) ▪ dynamic asset allocation ▪ asset class portfolio construction ▪ external manager selection and monitoring ▪ responsible investment, including integration of climate change considerations ▪ We note here that such frameworks will enhance the Board's ability to exercise its oversight function and in doing so expand GSFA's governance budget.
Board education	▪ **We recommend** GSFA strengthen its Board induction processes and develop an ongoing education program. ▪ We note here that such a program ideally has a mix of internally curated material, external expert guest speakers and attendance at relevant industry events. Furthermore, linking to the frameworks above will reinforce understanding of the investment approach.
Portfolio Management	▪ **We recommend** GSFA deepen its portfolio management practices through: ▪ adoption of more disciplined risk / capital exposure processes creating understanding of exposures in the Fund at all times and having processes for shifting those exposures if they are not viewed as sufficiently rewarded ▪ greater focus on 'hunting' for new ideas and ongoing evaluation of previously disregarded opportunities whose relative attractiveness may have changed through time ▪ deeper evaluation of asset class sub-strategies and exposures with clear assessment criteria for aligning portfolio exposures with desired characteristics ▪ greater use of scenario analysis as a technique to evaluate alternative possible outcomes
SIPSP	▪ **We recommend** GSFA redraft its SIPSP to: ▪ Create greater clarity between policy, standard and procedures ▪ Incorporate a climate policy ▪ Complete missing or incomplete elements related to liquidity; manager exposures; credit limits; leverage and securities lending
IC role	▪ **We recommend** GSFA further strengthen the role of the Investment Committee by making it responsible for endorsing key investment recommendations that go to the Board.

Suggestions

- **We suggest** GSFA:

SIPSP	▪ improve the documented links between the SIPSP and other organisational policies ▪ reinsert appropriate wording with respect to the Fund's expected excess return over NZ Government Bonds ▪ use its Global Fixed Interest benchmark as the benchmark for Life Settlements
Investment Model	▪ consider a more formal manager review process with defined triggers for further consideration or action ▪ adopt a regular process to screen Fund securities holdings to ensure unintended exposures are minimised ▪ consider performance through a different lens portraying returns on active risk at a strategy level
Ethical Investment	▪ continue to develop its approach to ESG integration by deepening and broadening its approach over time to include: • measuring and monitoring exposure to material ESG risks and opportunities on an ongoing basis • integrating material ESG factors into the entire investment process • engaging with existing investment managers to improve their approach to RI and being willing to direct capital away from external investment managers that lag best practice ▪ consider whether ESG integration should be brought into the CFI resource sharing agreement to allow it to access additional resources ▪ consider reviewing its approach to ensure consistency of voting with its views and to manage reputational risk ▪ continue to develop its approach to stewardship, including developing formal voting and engagement policies and increasing disclosure and transparency by reporting stewardship activities to stakeholders ▪ continue to develop its climate strategy to include assessment and management of both transition and physical risks across all asset classes ▪ aligns its climate reporting approach with the TCFD recommendations

2. SIPSP Review

2. SIPSP: appropriateness of

Appropriateness of the SIPSP

Background

- The minimum requirements for the SIPSP are set out in Section 15m of the Act. GSFA seeks advice on the structure and content of its SIPSP and, as required by the Act, reviews it at least annually.
- GSFA's SIPSP is formulated in such a way as to meet the requirements of the Act with various sections detailing with the prescribed and each section sub-divided into policy, standards and procedures.
- Sitting separately to the SIPSP, GSFA maintains various other policies and control documents. These include its Procurement Policy and Operations Manual.

WTW Comments

- The SIPSP is a key foundational document and should clearly reflect the Board's preferences with regard to policy, the standards by which policy application is measured and the procedures by which policy is given effect. While the SIPSP attempts to address this need, we find it falls short in two respects:
  1. As currently drafted the SIPSP does not always adequately distinguish between policy, standard and procedure. Whilst these are each notionally dealt with, the language used doesn't clarify distinctions adequately. An example of this drafting confusion can be found in the policy described in the responsible investment section of the SIPSP:

     The Authority's RI policies encompass:

     a) avoiding prejudice to NZ's reputation as a responsible member of the world community;

     b) environmental, social, and governance considerations; and

     c) the retention, exercise, or delegation of voting rights acquired through investments.

     Here, the policy talks about policy without actually describing any policy. We find this sort of drafting problem to be reasonably common. Poor drafting, in and of itself, will not lead to poor outcomes for the Fund but might give rise to confusion as to what the actual policy intent is, particularly during times of change or organisational stress. In Appendix 2 we provide some general guidance on policy statement drafting.
  2. There is missing policy with respect to some key issues, for example: manager concentration, credit limits; leverage and securities lending are not dealt with directly (or are dealt with inadequately) in policy statements, although all are important aspects of Fund risk management and should be directly addressed. As noted later, specific policy on the response to climate change should also be included.
- In addition to the two points already noted, we think more could be done to improve the coherence of GSFA's broader policy architecture, for example, there is poor bridging between the SIPSP and the Procurement Policy or Operations Manual both of which impact on management of the Fund. We note that PwC raised a similar point in their 2016 review.
  - **We suggest** GSFA improve the documented links between the SIPSP and other organisational policies

2. SIPSP: compliance with and changes to

Compliance with SIPSP	**Background** ▪ GSFA has various operational procedures and controls in place to ensure its ongoing compliance with the SIPSP. The most significant of these check that the Fund's investment exposures are in line with that intended by policy. ▪ GSFA's independent investment advisor undertakes an annual review of GSFA's compliance with its SIPSP. Since the previous independent review, the annual SIPSP compliance review has not picked up any material instances of non-compliance. Relatively minor issues identified tend to reflect unintended consequences of policy drafting and often give rise to recommendations for edits to the SIPSP. ▪ The independent compliance review is reported to the Board and, where necessary, recommended modifications to the SIPSP are picked up in the subsequent SIPSP review. **WTW Comments** ▪ We are satisfied that the SIPSP has been complied with in all material respects and that GSFA has in place a reasonable process to ensure ongoing compliance and detect and address issues of non-compliance. ▪ Given our earlier comments on drafting issues, we are not surprised that many of the observed instances of (non-material) non compliance can be traced back to unintended consequences of SIPSP drafting.
Changes to the SIPSP since the last review	**Background** ▪ As already noted, GSFA reviews the SIPSP on an at-least-annual basis. Each review tends to deliver at least some incremental changes, although for the most part these are enhancements to improve drafting clarity and are not otherwise particularly material. ▪ Our review of the latest (September 2020) SIPSP against that in place at the time of the previous independent review (SIPSP date Nov 2015) identified the following material changes: • Section 3 – Statement of Investment Philosophy: a section has been added outlining how GSFA interprets best-practice portfolio management and providing further contextual background. GSFA's investment beliefs have been refined and added to. Contextual information linking beliefs to investment strategy has been added. • Section 4 – Asset Classes and Selection Criteria: asset class definitions have been slightly modified. A reference to equity securities lending has been dropped. • Section 5 – The Balance of Risk and Return: the Fund's investment objective has changed : **Old:** *Maximise the Fund's excess return relative to New Zealand Government Stock (before New Zealand tax) with a one in four chance of underperforming New Zealand Government Stock by 10% cumulatively measured over rolling ten year periods* **New:** *Maximise the Fund's excess return relative to NZ Government bonds (before NZ tax) without undue risk of under-performing NZ Government bonds measured over rolling ten year periods.* *Continued on next page*

2. SIPSP: changes to

Changes to the SIPSP since the last review

(continued)

- Section 5 – The Balance of Risk and Return - continued: reference to the expected excess return of the Reference Portfolio relative to NZ Government Stock has been dropped.

  The Reference Portfolio and Target Portfolio allocations have changed and a new limit on private equity exposure has been added. In addition, asset class rebalancing ranges have changed as has the mix of dynamic asset allocation tilts and associated ranges – see Appendix 3 for further detail.

  The at-least frequency of the Reference Portfolio review has moved from three years to four years.
- Section 6 – Benchmarks: as above, reference to the expected excess return of the Reference Portfolio relative to NZ Government Stock has been dropped.
- Section 8 – Responsible Investment: specific classes of excluded securities (e.g. manufacture of cluster munitions) have been replaced with a more general description of the factors that might give rise to exclusion. Specific reference is now made to the factors that would drive exclusion of sovereign government bonds.
- Section 9 – Risk Management: the SIPSP now specifies that Fund transactions be authorised by at least two people.

WTW Comments

- Subject to the comments below, we are generally satisfied that the changes made to the SIPSP are appropriate and complete both in relation to GSFA's capabilities and with regard to GSFA meeting its statutory requirements to invest the Fund.
  - We think dropping reference, in the Fund's performance objective, to an expected excess return over NZ Government Bonds is a mistake. The Fund (rightly) adopts a risk profile that is considerably riskier than that of Government bonds and therefore GSFA should have an expectation that the Fund is adequately compensated for that.
    - **We suggest** GSFA reinsert appropriate wording with respect to the Fund's expected excess return over NZ Government Bonds
    - We note that GSFA sets out its excess return expectations in its Statement of Intent so could simply cross-reference between the two documents
  - In the Governance Model section of this report we raise some questions about GSFA's governance capacity as it relates to the more complex elements of the Fund.
  - In the Investment Model section we raise some issues with respect to the formulation of investment beliefs.

2. SIPSP: response to previous review

Appropriateness of GSFA's response to issues raised in previous independent review

Background

- PwC raised a number of recommendations in the 2016 Independent Review.
- For the most part, GSFA accepted and acted on the recommendations. We show exceptions to this in Appendix 4.

WTW Comments

- With the following exceptions, we are satisfied that GSFA's responses to recommendations in the previous review are appropriate:

PwC recommendation (paraphrased)	GSFA response (paraphrased)	WTW Comments
Establish an overarching [policy] document architecture	Agreed	▪ As discussed earlier, we think this is still missing
Introduce a proxy benchmark for life settlements	No suitable benchmark can be found given idiosyncratic nature of asset class	▪ Life settlements are effectively funded from the Global Fixed Interest asset class. This should provide a reasonable 'cost of capital' benchmark against which to measure life settlements. ▪ **We suggest** GSFA use its Global Fixed Interest benchmark as the benchmark for Life Settlements.
Stress testing should be used in formulating an appropriate investment strategy.	GSFA undertakes stress testing as part of formulating the Reference Portfolio	▪ GSFA could make greater use of scenarios in formulating strategy. We comment more on this in the Investment Model section
Have a succession plan for key staff	Agreed	▪ We think this area is still underdone and comment more on it in the People Model section
Adopt a policy on risk budgeting	All elements are in place, therefore explicit policy is not necessary	▪ We think GSFA has more work to do to clarify its risk budgeting approach, particularly with respect to active risk. We comment more on this in the Investment Model section

3. Governance model

3. Governance Model: introduction

Overview	▪ The **Governance model** comprises the resources, structures, processes and practices an organisation adopts in order to achieve its mission ▪ A strong governance model is critical to ensure that decisions can be made effectively and that an organisation maximises its chances of meeting its mission. ▪ To evaluate the effectiveness and efficiency of GSFA in undertaking its functions we must evaluate the strength of GSFA's governance model and governance capacity. In particular we are interested in governance structures and decision-making processes and whether those are efficient and fit for purpose.
Underlying factors	▪ To effectively evaluate the governance model we break it down into 5 factors • **Governance budget** – is an organisation's capacity to apply governance disciplines (whether at Board or management level). The available governance budget is shaped by three key inter-related elements: 1) the time available to relevant staff and Board members to consider issues; 2) the domain competency (expertise) of those considering the issues; and, 3) the efficiency of decision making systems. • **Governance structures** – the various groups / structures at GSFA that contribute to investment decision-making and oversight • **Decision making processes –** the people, processes, tools and frameworks in place to facilitate decision-making and the mindset and approach to decision-making • **Review and oversight process –** how GSFA stays on top of the decisions it is required to make and oversees implementation of those decisions and decisions made on its behalf • **Mission, beliefs and objectives –** the mechanisms in place to define what GSFA is aiming to do (mission and objectives) and how it intends to do it (beliefs)
Information sources	▪ To evaluate the governance model we collected information from multiple sources including • Documentation review • Interviews with the investment team • Interviews with the Board / IC

3. Governance Model: key changes since the previous review

Key changes since the previous review	▪ GSFA's governance budget has increased since the previous Independent Review in 2016 through the addition of a senior staff member and an increase in the number of Investment Committee (IC) meetings. ▪ The IC has taken on a more formal role with more regular meetings scheduled and more engagement with the investment team ahead of the Board meetings. ▪ Processes for decision-making has remained largely unchanged since the previous review but there have been changes to the decision-makers. All current Board members, including the Board and IC Chairs, have been appointed since the previous Independent Review as part of the normal rotation of Ministerial appointments. ▪ Apart from the IC change noted above, review and oversight processes have remained relatively unchanged since the previous review. That said, the attention now given to responsible investment issues, notably climate change, has increased considerably since the previous review. ▪ GSFA has begun a process to re-visit and re-draft its investment beliefs to make them more succinct and to provide greater clarity in how it invests the Fund in line with those beliefs. ▪ The mission and objectives of the Fund have remained essentially unchanged, apart from the wording change to the investment objective commented on in the previous section.
WTW commentary	▪ With the addition of New Zealand and Global Private Equity programs and the Style Premia strategy, the Fund's investment arrangements have grown more complex since the previous Independent Review. In addition, the ensuing five years have been a challenging period for investors and responsible investment issues, notably responses to climate change, have risen significantly in prominence. We might have expected to see a greater increase in GSFA's governance budget to support this increase in investment arrangement complexity and demands on the Board and executive's time. ▪ We think the shift in the IC role is a very positive move for the organisation. Early socialisation of investment ideas with Board members is critical to ensure that messaging is clear and in line with expectations. We believe there is more scope to utilise the IC to its fullest potential. ▪ New Board/IC members and chair changes can be very positive for an organisation as they inject new and potentially diverse thinking. Changes, though, can also be a challenge as the organisation needs to ensure new members fully understand how and why the organisation does things the way they do. New members of the Board/IC can change the group dynamics, and this should be understood and managed. Turnover in the Board membership reinforces the desirability of a comprehensive and ongoing Board education program to bolster institutional memory and continuity. ▪ We are supportive of the process to re-visit beliefs and ensure that they truly capture how the organisation invests. We comment further on this in the Investment Model section.

3. Governance Model: governance budget

Governance budget	Background

Governance budget

Background

- GSFA's direct governance budget comprises its Board (including the Investment Committee) and executive and the capabilities and capacity they bring to the organisation. GSFA enhances its capacity and capabilities by outsourcing certain functions. It further enhances the governance budget through developing investment decision shortcuts such as the use of investment beliefs.
- GSFA's Board has 6 members, all of whom were appointed since the previous Independent Review. The IC comprises 3 Board members.
- GSFA employs Annuitas to provide the executive functions required to manage and administer the Fund. Annuitas services GSFA and the National Provident Fund. The Annuitas investment team comprises 5 individuals, 4 of whom are very experienced investment practitioners. The investment team is supported by other staff within Annuitas, including the CEO.
- The Board retains responsibility for most strategic investment decision-making and for oversight of the Fund.
- GSFA has designed an investment approach for the Fund that contains several complex elements. These increase the governance requirements of the Fund
- GSFA runs a hybrid sourcing model: it outsources almost all security and asset selection and some asset class design components required for the Fund to third party providers, however, it retains to itself key strategic investment decision-making. It uses third party consultants to challenge and input to investment decision making.

WTW Comments

- The expansion of the governance budget through using third parties is a strong practice – an organisation should understand what is possible given their governance budget and seek to only insource elements where they believe they have a comparative advantage
- The Fund contains some complex elements and GSFA faces increasing demands from issues such as climate change. The internal team is small and a large proportion of investment decision making remains in-house. In our view, the investment team is under resourced relative to the Fund's complexity - it is not clear the team has sufficient capacity to stay on top of everything they need to evaluate and monitor to the degree that portfolio elements warrant – we expand on this more in the Investment Model section of this report. We note too the added challenges of managing another fund and its Board
- Whilst the Board (and therefore IC) has members with some investment background, the investment experience of the Board might not be sufficiently broad given the complex elements in the Fund. The Board (and particularly the Investment Committee) would benefit from access to additional investment expertise, whether through expanded membership or greater use of independent advice. We note here that the Board can appoint ex officio members to the IC. There might be an opportunity here to draw on the investment expertise residing within other Crown Financial Institutions, notably ACC and NZ Super.
- In summary we think GSFA's governance budget is too small relative to the complex elements of the Fund and increasing demands on GSFA's attention. There are structural choices that could be made to better align the governance budget with portfolio complexity. Options include: more resourcing; more outsourcing; or portfolio simplification

3. Governance Model: structures and decision-making processes

Governance structures

Background

- Best-practice organisations are governed through a detailed matrix of responsibilities, authorities and accountabilities, covering the participants in the decision-making process and their roles and decision types.
- GSFA's formal investment governance structures comprise the Board, Investment Committee (IC) and the internal investment team (through Annuitas as detailed on the previous page).
- Roles across these groups are defined in GSFA's Corporate Governance Statement. The Board retains most strategic investment decision making, except for sizing positions in the dynamic asset allocation programme.
- Over the last 5 years GSFA has defined a clearer role for the IC, which now focuses on pre-review and challenge of all significant recommendations intended for the Board.

WTW Comments

- GSFA's governance structures appear to work well to facilitate effective decision making.
- The Annuitas structure adds some complexity to the organisation arrangements as the GSFA Board does not have direct influence and oversight of the investment team (that being, technically, the function of the Annuitas Board). That said, the investment team regard themselves as working for GSFA rather than Annuitas.
- The re-clarification of the IC's role is very positive. The IC provides an excellent forum for early socialisation and discussion to ensure that key issues are aired and settled ahead of Board meetings.
- There is scope to further enhance the IC's role to ensure Board and IC meetings and discussions are adding sufficient value in the decision-making process.

Decision making processes

Background

- GSFA has defined processes for decision making, with the investment team undertaking a significant proportion of the analysis and positioning recommendations and the Board responsible for agreeing these recommendations.
- The Board owns the Reference and Target portfolios (see Investment Model section).
- The Board and IC tend to operate in calendar time – with 8 scheduled meetings a year. Most decisions are made in those meetings, however, both groups are able and prepared to meet outside of regular meetings to discuss and agree urgent matters.
- GSFA maintains a defined workplan, set at the start of the calendar year, that shapes the Board and IC agendas and the investment team's work programme.
- Discussions at Board / IC meetings centre around meeting papers provided by the internal team. These paper include both qualitative and quantitative assessment of the topics for discussion.
- GSFA occasionally utilises independent reviews to challenge investment decision-making.

Continued on next page

3. Governance Model: review and oversight process

Decision making processes
 	
(continued)
	WTW Comments
	▪ Management's preparation of Board material is generally sound and thorough. Papers provided to the Board and the subsequent discussion at the Board appear to be quite strategic in nature – this is positive as it allows the Board to focus on what has the greatest impact on the organisation and the Fund.
	▪ The calendar time nature of Board decision making can provide challenges for organisations, so it is very positive that GSFA are willing and able to operate outside of calendar time.
	▪ There is some perception within both the Board and Management that decision making is not as effective as it could be. Factors influencing this include:
	  ▪ Governance structure roles could be further clarified, especially that of the IC
	  ▪ There is a perceived hesitation to make big decisions and move away from the status quo
	  ▪ There are challenges around discussing technical issues and getting the 'right' information to be able to make decisions
	  ▪ The Board/IC and Management are sometimes approaching the problem / discussion from different angles and have challenges in meeting in the middle on common ground
	▪ We think these challenges largely tie back to our earlier point around the mismatch between Fund complexity and the available governance budget.
	▪ To aid continuity and institutional memory, more could be done to capture decision-making frameworks (how GSFA invests). This would aid onboarding of new Board members and staff while at the same time providing a good platform from which the Board can exercise active oversight of the Fund

Review and oversight process	**Background** ▪ The Board stays across its decision-making and oversight responsibilities through reporting provided by the internal investment team. That reporting has two objectives: 1) to help the Board make decisions and 2) ensure that the decisions made have been implemented effectively and in accordance with the SIPSP. ▪ The Board receive a number of reports to facilitate oversight of decisions made on their behalf, including but not limited to the GM Investments report, performance reporting, manager evaluations and DAA attribution and reporting. ▪ Separate compliance and risk oversight processes are in place to ensure enterprise and investment risks and associated issues are understood and managed. *Continued on next page*

3. Governance Model: mission, beliefs and objectives

Review and oversight process *(continued)*	**WTW Comments** • Reports provided to the Board are generally sound and sufficiently detailed to enable the Board to exercise its responsibilities. • The Fund has a long-term orientation, which is appropriate given underlying liabilities and GSFA's risk appetite. A long-term orientation is, however, always at some risk from shorter term pressures, particularly when there are complex elements in the portfolio • The sharp underperformance of the Fund relative to the Reference Portfolio over 2019 and 2020 has led, inevitably, to some loss of conviction in the investment thesis and questioning of the investment strategy. There is some divergence between the Board and executive as to how things are going. • Our impression is that the Board would like to see more work on why the Fund portfolio is configured the way it is, including asset classes not currently in the portfolio, whilst the executive regard the portfolio as relatively settled • Given the technical nature of much of the material, and the fact that Board members have varying degrees of previous investment experience, there is a need for ongoing education of Board members on relevant investment topics. Existing Board education is somewhat ad hoc and might not cover all topics required for individuals to able to effectively oversee investment decision making.
Mission, beliefs and objectives	**Background** ▪ GSFA has clearly defined the Fund's objective, its investment strategy and the portfolio management principles and investment beliefs it applies. ▪ GSFA uses the concept of a Reference Portfolio (see Investment Model section) to set its investment objectives in better context. ▪ GSFA links its investment beliefs to investment strategy decisions to begin to bring to life how they have implemented those beliefs ▪ GSFA is currently working through a process to re-clarify and streamline its investment beliefs. Previously it had 20 high level beliefs relating to asset allocation, asset class and risk factor strategies, manager and investment selection, and execution. **WTW Comments** ▪ Subject to our comments regarding including an expectation of the excess return over the NZ Government Bond benchmark, we think the Fund's objective is appropriately set. ▪ We note that the investment team's compensation arrangements align them somewhat to their success in meeting the Fund's objectives ▪ We comment on the Reference Portfolio and investment beliefs in the Investment Model section

4. Investment model

Willis Towers Watson

4. Investment Model: introduction

Overview	▪ The **Investment Model** comprises the layers of investment decision making required to create a portfolio. It considers beliefs, investment frameworks, risk management, portfolio construction and implementation. ▪ An organisation's investment philosophy and investment model define the unique way the organisation adds value through investment decision making and the objectives, constraints and beliefs that shape the target state and available degrees of freedom. ▪ To evaluate whether the SIPSP is appropriate, we must evaluate the strength of the investment decision making process and how the elements detailed in the SIPSP are lived by the organisation. In particular, this means considering the frameworks, processes and decision points for designing and implementing portfolios and how the decisions being made add value to the Fund
Underlying factors	▪ To effectively evaluate the Investment Model we break it down into 8 factors: ▪ **Investment beliefs and objectives** – translating the organisation's mission into investment objectives and defining how the fund should be constructed to best meet these objectives ▪ **Risk management** – determining the organisation's appetite for risk including the minimum risk required to meet fund objectives and the maximum risk tolerance to avoid mission impairment. Defining the risk budget and how it might be spent ▪ **Investment strategy (portfolio construction)** - spending the risk budget through managing the trade-off between greater diversification into broad asset classes / sectors / opportunities, leading to portfolio efficiency gains, against higher costs and complexity ▪ **Asset class strategy and configuration** - more focused attention within an asset class. Designing what the implementation of that component of the portfolio will look like across implementation routes and sub-strategies ▪ **Dynamic asset / risk management -** deviations from the target portfolio to take advantage of, or manage, risk when markets valuations have moved away from fair value ▪ **Manager selection and monitoring** – identifying, selecting and monitoring best-in-class managers to manage portfolios on the organisation's behalf. Introducing manager skill as a driver in the portfolio ▪ **Portfolio management** – ongoing assessment and monitoring of the portfolio to ensure that exposures remain in line with expectations ▪ **Performance and reporting** – evaluating and reporting on the performance of the fund and understanding key drivers of performance
Information sources	▪ To evaluate the Investment Model we collected information from multiple sources including • Documentation review • Interviews with the investment team • Interviews with the Board / IC

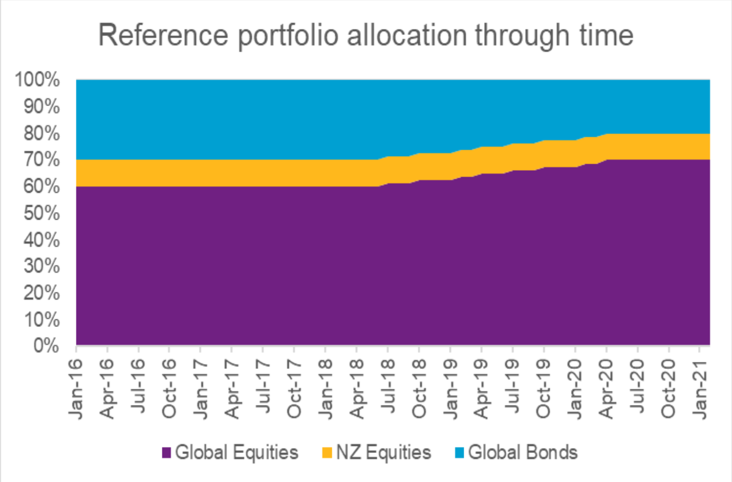
4. Investment Model : key changes since the previous review

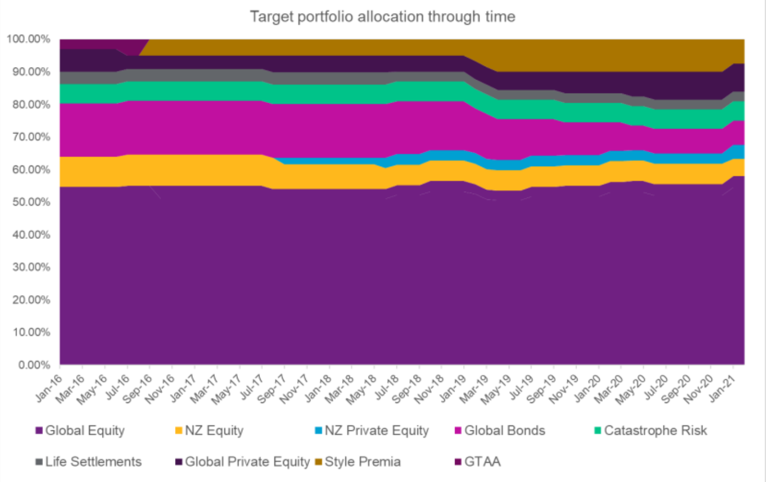
Key changes since 2016

Mission, beliefs and objectives

- As noted in the Governance Model section, GSFA has begun a process to re-visit and re-draft its investment beliefs to make them slightly more succinct and to provide greater clarity in how it invests the Fund in line with those beliefs.

Risk management and investment strategy





- In 2018, GSFA revised its Reference Portfolio from a 70% equities, 30% bond portfolio to an 80% equities, 20% bond portfolio. This change resulted from a technical change to the way long-run risk is calculated and a change (increase) to the expected equity risk premium.
- GSFA has made a number of changes to the Fund's Target Portfolio since 2016. These are outlined in Appendix 3.

Asset class strategy and configuration

- The GTAA strategy was reconfigured to a Style Premia strategy.
- The Fund introduced a Global Private Equity programme advised and managed through a third-part provider. The previous endowment style exposure was wound down during this period.

Continued on next page

4. Investment Model : key changes since 2016

Key changes since 2016
(continued)
	Dynamic asset / risk management
	▪ The DAA process was restructured over the period to provide a more robust framework and model for DAA positioning, this included:
	  ▪ Reconfiguration of signals
	  ▪ Changed parameters around position sizing
	  ▪ Greater delegation to the investment team to run the programme
	Manager selection and monitoring
	▪ The Global Public Equities manager configuration was altered over the period to ensure capital was allocated to managers in whom GSFA has the highest conviction.
	Portfolio management
	▪ We did not identify any other changes to portfolio management processes.
	Performance and reporting
	▪ We did not identify any changes to performance reporting and related processes.

WTW commentary	▪ We are supportive of the process to re-visit beliefs and ensure that they truly capture how the organisation invests. We comment further on this on the next page. ▪ The process for revisiting the Reference Portfolio configuration was in depth and it appears the Board has a strong understanding of what that meant from a risk / return perspective. ▪ Changes in the Fund's Target Portfolio arise partly as a result of the increased risk of the Reference Portfolio and partly to improve overall diversification of the Fund. ▪ We believe the process for undergoing regular Target Portfolio reviews is sufficiently in-depth and well thought through. ▪ We view the changes to the DAA process as positive: they bring more structure, discipline and better governance to the program.

4. Investment Model: mission, beliefs and objectives

Mission, beliefs and objectives

Background

- The Fund's overarching investment objective is to maximise excess return relative to New Zealand Government Stock. In considering this, GSFA considers the appropriate risk profile for the Fund and the risk appetite and time horizon of the organisation.
- GSFA uses the concept of a Reference Portfolio to translate the objective into target risk and return objectives. The Fund benchmarks its performance against the Reference Portfolio to ensure it is adding value from its investment decision making. The Fund seeks to add value above the Reference Portfolio by adding other sources of return not found in the Reference Portfolio. The Reference Portfolio is reviewed every 4 years – the last review was in 2018.
- The investment team is clear that their objective is to target the same level of risk in the Target Portfolio as is in the Reference Portfolio whilst generating additional return. Part of the team's remuneration is linked to the Fund's rolling 5-year performance relative to the Reference Portfolio
- GSFA has struggled to add meaningful value above the Reference Portfolio since 2016 – this is discussed in greater detail in Section 6.
- GSFA has a series of investment beliefs that shape its investment thinking. Beliefs around active management, diversification and dynamic asset allocation have resulted in the organisation running a portfolio that is significantly different in composition to that of the Reference Portfolio. As previously noted, GSFA is in the process of reviewing its beliefs.

WTW Comments

- GSFA is clear on its mission and objectives, and these are central to their decision-making processes
- There is perhaps less clarity on how the mission is delivered, for example we heard as part of this review that, on the one hand, the goal is to maintain risk in line with the Reference Portfolio and increase returns; on the other hand, that the goal is to maintain return whilst reducing risk. It is critical to land on a common understanding of the purpose of the Reference Portfolio as a risk setting mechanism.
- Through the interview process we heard some challenges to GSFA's existing beliefs. For example, questioning whether such an active approach was appropriate and value additive. Strong investment beliefs, with a high degree of alignment between the Board and the executive, are a cornerstone of good fund governance. This has been recognised by GSFA, particularly following recommendations in the Board's recently commissioned independent review. We caution that there is much work to be done here, perhaps more than is currently appreciated.
- We note a lack of 'edginess' (the 'so what?' factor) in the high-level beliefs developed so far. Planned development of sub-beliefs (or principles for application) will be critical as will the process by which these are socialised and 'settled' between the Board and executive. We note some existing areas of disconnect on beliefs (including, for example, the degree of active management)
- Active investing is a competitive activity. As a sub-set of beliefs an investing organisation should work out where it has a comparative edge (and where it doesn't) and focus on those areas. Articulating and agreeing this edge will help with Board – executive alignment (why GSFA invests the way it does)

3 4. Investment Model: risk management

Risk management

Background

- GSFA does not have a formal Risk Appetite Statement but has adopted a Reference Portfolio as a simple, notional portfolio that is expected to achieve the Fund's investment objective. The use of a Reference Portfolio as the starting point in the Fund's risk management and portfolio construction process is well established.
- All decisions to move away from the Reference Portfolio either increase or decrease total risk and will change the configuration of risk within the Fund. The investment team aim to build a 'better' portfolio that aims to deliver a higher return than the Reference Portfolio whilst targeting a similar level of overall risk.
- A primary goal in the design of the Target Portfolio is to reduce the overall equity risk exposure, whilst maintaining the total risk exposure. The investment team focuses on ideas that they think give exposures not found in the Reference Portfolio.
- Volatility is the principal measure of risk used, both for individual investment opportunities and for the Fund in aggregate. However, the investment team recognise that risk is multi-faceted and balance consideration of metrics accordingly.
- The Fund does not use defined risk baskets or a formal active risk definition or allocation process. It does, however, consider broad exposures to risk as it allocates capital in the portfolio construction process. The investment team has started including information on a strategy's share of active risk when presenting strategy reviews to the Board.
- Risk management is largely undertaken utilising a quantitative framework based on an understanding of the risk appetite across different dimensions for the Fund.

WTW Comments

- GSFA's underlying risk thinking appears to be robust. There is good use of a Reference Portfolio and, in principle at least, the concepts of total and active risk budgets. This is quite advanced for a fund of this size and scale. That said, more can be done to improve upon the risk management framework, including adopting a formal Risk Appetite Statement, as risk is so central to the Fund's management.
- The risk management process is robust with strong use of quantitative analysis. The investment team demonstrate a good understanding that risk is multifaceted and requires consideration of different metrics. There is scope though for greater consideration of the qualitative elements of risk, including consideration of portfolio quality and risk trade offs. Decision makers might benefit from more of a balanced scorecard approach to risk reporting where qualitative and quantitative views through a range of risk lenses can be shown together.
- It's not apparent that (at least pre-2019) the Board / IC had a strong understanding of just how (and to what magnitude) the portfolio is different to the Reference Portfolio, and in what conditions it wouldn't do well and to what extent. We support management's initiative to include information on a strategy's share of active risk when presenting to the Board, however decision-makers would benefit from greater clarity around comfort levels with active risk and *ongoing* information on how much active risk the Fund is taking at any point in time, including the constituent shares of active risk (in aggregate, the active risk budget).
- Whilst the Board receives regular stress-testing results (showing how the Fund would perform in, for example, a re-run of the GFC), there is little in the way of scenario analysis. Use of pre-mortem scenarios, for example, would provide greater insights into the conditions that might drive worse than anticipated performance of a particular strategy.

3 4. Investment Model: portfolio construction

Investment strategy (portfolio construction)	**Background** ▪ GSFA has a clear investment philosophy and process for allocating capital across asset classes. The organisation aims to utilise a total portfolio approach and sees the portfolio as a whole, rather than just underlying parts. ▪ The Reference Portfolio plays a critical role in GSFA's portfolio construction process. All decisions to deviate from the Reference Portfolio consider whether they are diversifying away from the exposures they can get in the Reference Portfolio (e.g., equity risk premia). New investment opportunities are 'funded' from appropriate proxies within the Reference Portfolio to maintain the overall risk level within the portfolio ▪ The Fund is significantly diversified from the Reference Portfolio both with respect to asset class choice and through extensive use of active security selection with core asset classes like Global Equities. GSFA approaches this diversification in a disciplined and systematic manner. ▪ GSFA's capital allocation process appears deliberately 'naïve': allocations are made that will 'move the dial' on Fund returns. ▪ The investment strategy, expressed through the Target Portfolio, is formally reviewed every year **WTW Comments** ▪ GSFA's total portfolio approach is very positive as it limits silo behavior and ensures appropriate competition for capital across asset classes. ▪ The nature of a small investment team is that it needs to be across a lot of asset class and value add levers. The team needs sufficient capacity to source and filter new ideas. This should be on a continual rather than ad hoc basis. ▪ GSFA has dismissed some asset classes, but we would question whether the full range of opportunities has been considered before evaluating that their inclusion is not value additive: for example, infrastructure is a very diverse asset class spanning from core to highly opportunistic and idiosyncratic opportunities. We found it challenging to understand what the 'hurdles' are for an asset class to make it into the Target Portfolio and why some opportunities have while others haven't. ▪ Reinforcing our view, the Board and the investment team do not seem fully aligned in their conviction on the strength of the strategy. We get the impression the Board would like greater consideration of other asset classes not in the portfolio and do not have the same magnitude of conviction in some of the more idiosyncratic strategies included in the Target Portfolio e.g., Catastrophe Risk and Style Premia. ▪ We think GSFA would benefit through adoption of a more disciplined approach to ongoing capital allocation and having more formalised processes for reviewing (e.g., through an ongoing assessment of prospective returns) and shifting those exposures if they are not viewed as sufficiently rewarded.

3 4. Investment Model: factor evaluation

Asset class strategy and configuration	**Background** ▪ GSFA's approach to asset class configuration appears to be largely driven by manager selection considerations. The Target Portfolio defines the required exposure, and the investment team then focuses on identifying managers to provide that exposure. ▪ The investment team considers whether an asset class is conducive to active management or is best managed passively. Consistent with their investment beliefs they tend to favour active strategies. **WTW Comments** ▪ The team is highly pragmatic regarding what is possible from an implementation perspective. That said, we think there is scope to better consider the layers of portfolio decision making between top down ('this asset class is attractive') and bottom-up manager selection perspectives. Part of this is to ensure there are no unintended exposures through manager selection processes ▪ There is potential too for improvement in the way opportunity exposures within asset classes are sized and both asset class strategies and, consequently, manager mandates are designed.
Manager selection and monitoring	**Background** ▪ GSFA's makes use of an investment consultant to develop a long / short list of potential managers to cut down time searching the investable universe. A robust selection process is run to hire a new manager including developing a long list, RFP, manager meeting, due diligence and implementation discussions. ▪ GSFA's manager assessment process considers several factors to derive a view of manager 'conviction ' . Factors include business robustness, calibre of people and quality of investment process. A manager must score sufficiently well across factors to be implemented – this is reflected in a manager conviction score. Subsequent manager allocations (within asset classes) are largely risk (equal) weighted. ▪ The investment team engages with managers on fees to achieve alignment, as far as is possible, with the Fund's objectives. ▪ The investment team has significant engagement with existing and potential managers to understand market trends and develop asset class specific knowledge. The team maintains an 'on deck' and 'watch list' so, if conviction in a manager erodes, they can be replaced with an alternative manager quickly to avoid value destruction. **WTW Comments** ▪ While starting from a good base, GSFA's manager selection and alpha (manager excess return) conviction process could be more robust, for example: what is the thesis behind why a particular manager is selected?; how does the team ensure consistency of views across evaluation parameters across managers?; how are net alpha assumptions arrived at? GSFA could also consider weighting allocation to managers based on conviction. *Continued on next page*

3 4. Investment Model: factor evaluation

Manager selection and monitoring *(continued)*	**WTW Comments** ▪ We are concerned the investment team might be spending too much time 'managing the managers' and not enough time thinking about the exposures the managers give them: are they still attractive?; does the manager's approach remain the best way to access them?; and can this manager still add value in this space? ▪ Using a consultant to help find best-in-class manager is a strong practice to ensure that the organisation is focusing its time appropriately. Depending on choices made as to how to address the governance budget mismatch identified earlier, the investment consultant could have a greater role to play in ongoing asset class strategy configuration and monitoring. ▪ **We suggest** that GSFA consider a more formal manager review process with defined triggers for further consideration or action.
Dynamic asset / risk management	**Background** ▪ GSFA's dynamic asset allocation (DAA) programme is positioned as to tilt Fund level exposures to equities, bonds and currencies as market valuations move beyond certain pre-defined relative valuation limits. The programme was significantly redesigned in 2016. ▪ GSFA has leveraged an understanding of NZ Super's successful approach to DAA but created a version that is fit for its purposes. **WTW Comments** ▪ An internal DAA process of this nature is not common for a fund the size of the Fund or organisation the scale of GSFA. That said, we think the DAA process is robust and well executed by the investment team. The process makes good use of clearly defined signals, a well-structured framework and a clear understanding of the role it plays in the portfolio. Since being reconfigured, it has delivered good performance that has been meaningfully additive to the Fund. ▪ The governance arrangements surrounding the process are strong both from a process and outcome oversight perspective and there is good understanding of the process itself. GSFA should consider this program as one of their areas of comparative advantage.
Portfolio Management	**Background** ▪ GSFA's portfolio management processes largely centre around the rebalancing process. There are defined rebalancing ranges in place and the investment team rebalances the Fund to mid point level if these are breached. Where necessary, GSFA makes use of a transition manager to implement required shifts to portfolio exposures. ▪ The investment team provide ongoing oversight of asset class dynamics and external managers. *Continued on next page*

3 4. Investment Model: factor evaluation

Portfolio Management *(continued)*	**WTW Comments** ▪ We are not certain that the investment team is able to stay abreast of all the exposures within the portfolio. Historically there has been some unintended biases or exposures in the portfolio that impacted performance. We could not be confident that existing processes capture whether further such unintended exposures exist. ▪ **We suggest** GSFA adopt a regular process to screen Fund securities holdings to ensure unintended exposures are minimised. ▪ We think there is opportunity for more systematic and regular consideration of the broader investment universe and how opportunities might improve overall portfolio quality, and what the trade offs might be.
Performance and reporting	**Background** ▪ GSFA reports Fund performance to the Board on a monthly basis. A quarterly investment report contains: • a summary of Fund performance over various time periods • a detailed quarterly and 12-month attribution analysis to identify the root causes of performance relative to the Reference Portfolio. • a summary of individual manager performance • the Fund's actual asset allocation relative to the Target and Reference Portfolios • the estimated risk of the Target and Reference Portfolios and their expected behaviour under stress conditions • Fund liquidity, including liquidity under stress conditions • collective investment vehicle holdings and derivative counterparty exposures, and • private equity allocations and expected capital commitments ▪ Additional reporting includes annual cost effectiveness benchmarking and various ad hoc analyses **WTW Comments** ▪ GSFA's internal performance reporting is generally fit for purpose to explain to the Board the performance of the fund and key drivers. ▪ A better articulation of risk through a mixture of qualitative and quantitative factors using a balanced scorecard (see Appendix 2) to articulate the trades offs in spending the active risk budget would be beneficial. ▪ Given our earlier comments on the importance of an enhanced risk management framework, **we suggest** GSFA consider performance through a different lens portraying returns on active risk at a strategy level.

3.3 Ethical Investment Framework

Ethical investment framework: resourcing & extra-financial objectives & ESG integration

Overview	▪ We evaluate the appropriateness and effectiveness of GSFA's ethical investment framework through the following lenses: • Resourcing • ESG integration • Consideration of extra-financial objectives • Stewardship, and • Response to climate change. ▪ We note here that climate change is a deeply complex issue for investors (as it is for all of humanity) and has triggered a seismic (albeit emerging) shift in how investors like GSFA are approaching investing. Amongst the investment community, developments in this area are moving at such a rapid pace that clear best-practices are yet to emerge. On the following pages we provide further contextual information. ▪ As with previous sections we start this review with an overview of changes since the previous Independent Review.
Changes since previous review	**Background** ▪ GSFA has evolved its responsible investment practices in two material ways: • It has broadened the range of activities that are now subject to exclusion from the Fund • It is applying materially more time and resource to considering the implications of climate change on the Fund **Comments** ▪ We note the concerted attention that GSFA pays to responsible investment issues, particularly climate change impacts, especially given its size and available governance budget.
Resourcing	**Background** ▪ GSFA has a collaborative agreement with other Crown Financial Institutions (CFIs) that includes identification and analysis of high Responsible Investment (RI) risks, co-ordination of engagement and exclusion activities, and regular quarterly meetings to review high-risk securities and current engagements and exclusions. More detail on this agreement is provided on the following page. ▪ GSFA boosts its responsible investment governance budget through a resource sharing agreement with NZ Super as well as through external service providers BMO and MSCI. **Comments** ▪ As noted previously, the concept of best practice is evolving quickly in the area of RI and the increased workload required to deliver and maintain best practice in this area suggests that more resources will be needed to focus on RI issues, particularly in the areas of ESG integration and climate change. This resourcing point has been covered more generally in preceding sections.

Special feature: GSFA and CFI collaboration

CFI collaboration

Background

- Together with ACC, GSFA has entered into an RI resource sharing arrangement with the Guardians of New Zealand Superannuation (NZ Super). Under this arrangement NZ Super takes lead responsibility for identifying, analysing and providing guidance on material RI issues. These issues range from globally systemic (e.g., climate change) to industry or company specific.

Working practice

- The three CFIs meet quarterly with intra-meeting calls used where necessary. NZ Super takes the lead in preparing the agenda and materials for these calls, taking into account topics of interest to each CFI.
- The agenda for these meetings provides for updates on a variety of broad issues. For example, in the 12 months up to this review the CFIs considered:
  - A review of RI service providers including opportunities for cost sharing
  - Updates on climate change work
  - Updates to relevant legislation and relevant global treaties to which New Zealand is a signatory
- In addition, a significant part of the agenda is devoted to portfolio analysis, monitoring and engagement issues, supported by detailed analysis prepared by NZ Super or relevant service providers. This discussion includes:
  - The CFIs Global Focus List with a dashboard report of industries or companies subject to close scrutiny or ongoing engagement
  - An update on various ongoing, or newly established, collaborative engagements
  - Updates to portfolio exclusions
- Finally the CFIs consider relevant policy research and initiatives

GSFA exclusions and collaborative engagements

- GSFA aligns its portfolio exclusions with those of NZ Super. As of the date of this review, GSFA maintained exclusions across the following classes of activity: cluster munitions; anti-personnel mines; nuclear explosive devices and nuclear base operators; tobacco; recreational cannabis; and, companies involved in the manufacture of civilian automatic and semi-automatic firearms, magazines or parts prohibited under NZ law.
- In addition, GSFA has excluded a further 16 companies on the basis that the activities of those companies risk severe environmental damage, impinge on the human rights of affected communities or otherwise contravene widely accepted international norms.
- GSFA collaboratives with CFIs and other investors on the following engagement issues: human rights in the extractive industries; anti-bribery and corruption; fracking; tailings dam safety initiative; social media companies (post Christchurch mass shooting)

Ethical investment framework: ESG integration

ESG Integration

Background

- GSFA outlines its approach to RI in Section 8 of the SIPSP covering ESG integration, voting, engagement and exclusions. It summarises its philosophy in the investment belief: "*ESG factors affect the performance of companies, securities and investment portfolios presenting risks to be managed and opportunities to enhance returns*".
- GSFA is a signatory to the Principles of Responsible Investment (PRI), the global standard in this area. More detail on the PRI and GSFA's PRI assessment score can be found on the following page.
- GSFA outsources the investment management function to external investment managers and believes that they are best placed to make security level decisions on voting and corporate engagement. It encourages its investment managers to consider its RI policies, to integrate ESG factors into their investment analysis and engage with corporate entities as part of their investment process. GSFA incorporates ESG factors into the external manager selection and monitoring processes using questionnaires and interviews.

Comments

- We regard the ethical investment framework as consistent with the requirements, stipulated in the Act, to avoid prejudice to New Zealand's reputation as a responsible member of the world community. However, to maintain its responsibility under the Act, GSFA's approach to reputation management must continue to evolve as community expectations change.
- GSFA's overall approach to RI aligns with the PRI framework and best practice standards in a number of areas. We note though that the concept of best practice is evolving quickly in the area of RI and GSFA will need to continue to evolve alongside peers, particularly in its approach to climate risk management.
- We note that while GSFA outsources portfolio management to external managers that does not obviate the need for it to stay on top of material ESG issues, nor does it remove its ability to apply directive policy (e.g., around material issues like climate change) where appropriate.
- **We suggest** that GSFA continue to develop its approach to ESG integration by deepening and broadening its approach over time to include:
  - Measuring and monitoring exposure to material ESG risks and opportunities on an ongoing basis
  - Integrating material ESG factors into the entire investment process, including asset class configuration
  - Engaging with existing investment managers to improve their approach to RI and being willing to direct capital away from external investment managers that lag best practice
- We note that ESG integration is not currently included in the resource sharing agreement with NZ Super. **We suggest** that GSFA consider whether ESG integration should be brought into the agreement to allow GSFA to access additional resources to develop its approach to ESG integration over time

Special feature: GSFA and the PRI

PRI Principles

- The PRI is the world's leading proponent of responsible investment. It works to understand the investment implications of environmental, social and governance (ESG) factors and to support its international network of investor signatories in incorporating these factors into their investment and ownership decisions.
- The six Principles for Responsible Investment are a voluntary and aspirational set of investment principles that offer a menu of possible actions for incorporating ESG issues into investment practice. The principles are:
- **Principle 1:** We will incorporate ESG issues into investment analysis and decision-making processes.
- **Principle 2:** We will be active owners and incorporate ESG issues into our ownership policies and practices.
- **Principle 3:** We will seek appropriate disclosure on ESG issues by the entities in which we invest.
- **Principle 4:** We will promote acceptance and implementation of the Principles within the investment industry.
- **Principle 5:** We will work together to enhance our effectiveness in implementing the Principles.
- **Principle 6:** We will each report on our activities and progress towards implementing the Principles.

PRI assessment

- It is compulsory for signatories to report on their responsible investment activities annually. It's one of the explicit commitments that signatories make when signing the Principles.
- Reporting ensures: 1) accountability of the PRI and its signatories; 2) a standardised transparency tool for signatories' reporting; 3) that signatories receive feedback from which to learn and develop.
- Based on their reporting, signatories receive a detail assessment relative to signatory peers. GSFA's summary assessment follows:

Summary Scorecard

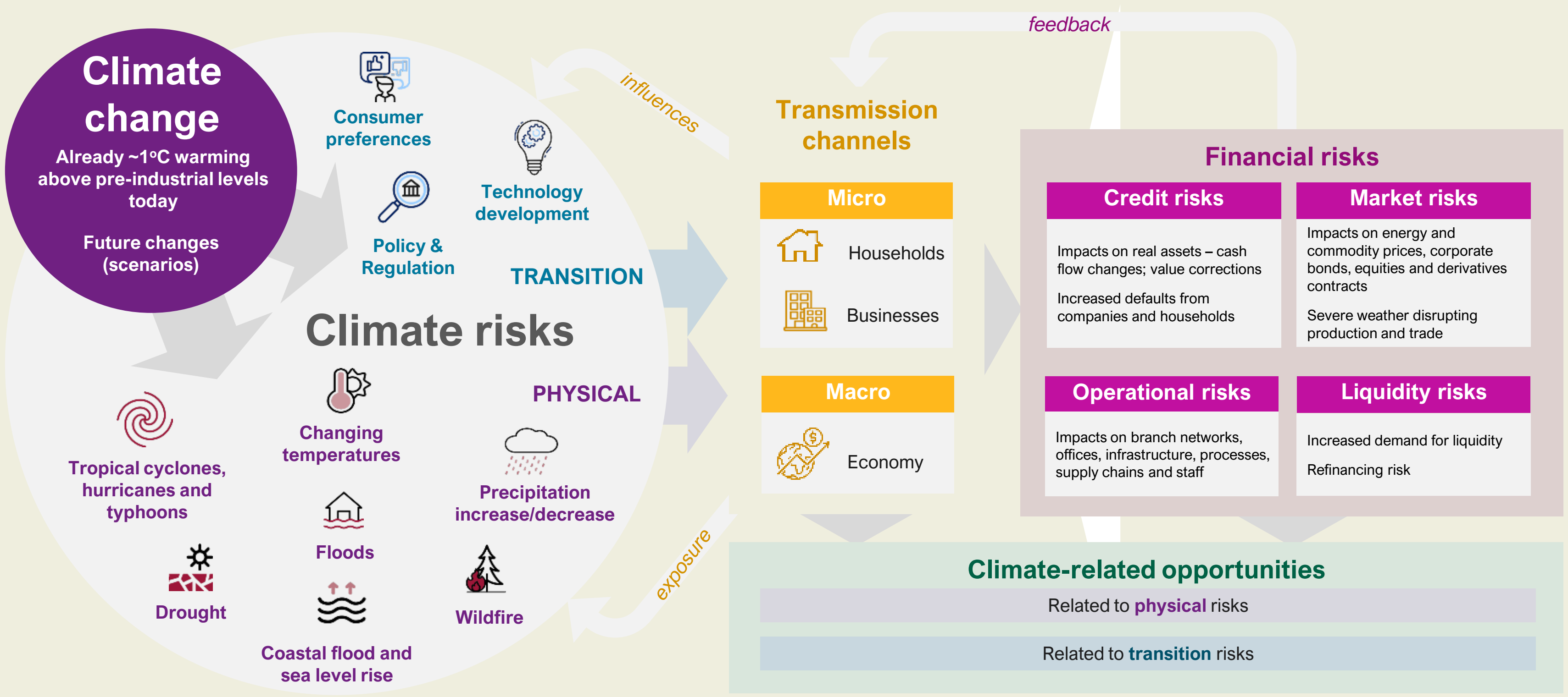
AUM	Module Name	Your Score	Your Score / Median Score
	01.Strategy & Governance	A+	A
Indirect - Manager Sel., App. & Mon			
>50%	02. Listed Equity	A	A
<10%	03. Fixed Income - SSA	A	B
<10%	04. Fixed Income - Corporate Financial	A	A
<10%	05. Fixed Income - Corporate Non-Financial	A	A
<10%	06. Fixed Income - Securitised	A	A
<10%	07. Private Equity	Not reported	
Direct & Active Ownership Modules			
0	11. Listed Equity - Active Ownership	A	B

Ethical investment framework: extra-financial objectives & stewardship

Extra-financial objectives	**Background** ▪ GSFA's ethical investment framework addresses extra-financial objectives and allows the organisation to consider controversial issues that may impact reputational risk. **Comments** ▪ The Fund's financial and extra-financial objectives need to be carefully factored into its investment arrangements and this may require a balance to be struck. The ongoing work with Treasury and CFIs to provide more transparency around Government expectations will help GSFA in considering these trade-offs ▪ GSFA's current approach does not include consideration of positive impacts, for example how the impacts of the Fund and GSFA's actions align to the United Nations' Sustainable Development Goals (SDGs). Some larger asset owners have begun to map impact through the SDGs. This is an area in which best practice industry standards are beginning to emerge and so investors should continue to monitor progress and be open to adjusting and amending their plans over time.
Stewardship	**Background** ▪ GSFA's approach to stewardship is outlined in its SIPSP. It recognises that due to the size of the Fund it is difficult to have an impact on its own and therefore collaborates with other investors to engage with companies on ESG issues and excludes them when engagement is unlikely to be successful. ▪ GSFA delegates responsibility to exercise voting rights to external investment managers. While it retains the ultimate voting right, in practice it has not directed managers on how to vote. **Comments** ▪ The CFI's approach (and therefore GSFA's approach) aligns with best practice in these activities: • Exclusions (where reputation issues are concerned); • Engagement (where universal owner principles can be applied); and • Use of the BMO engagement overlay (where BMO is employed as an engagement service provider and the Fund's holdings are put alongside other BMO client holdings to benefit from network influences). ▪ **We suggest** GSFA consider reviewing its approach to voting to ensure consistency with its views (e.g., on material issues) and to manage reputational risk ▪ **We suggest** GSFA continue to develop its approach to stewardship, including strengthening its formal voting and engagement policies and increasing disclosure and transparency by reporting stewardship activities to stakeholders ▪ We note that while stewardship is important, it can be difficult to have an impact through voting alone. It follows that as investors continue to develop their stewardship approach, they need to consider the degree to which they can make a clear difference, as opposed to just doing the right thing. In addition, they need to measure its impacts and identify the 'additionality' in their actions (whether it has made a clear and positive difference to a company). Impact will come from whether a company does something 'better' and collaboration with other asset owners is more likely to create the conditions for change. GSFA's best opportunity here is likely to come through its collaborative agreement with other CFIs.

Climate change is an urgent and systemic global challenge

Climate change presents a widespread threat to financial, social and political systems with risks that are **financial and far-reaching** in breadth and magnitude, and whilst long-term in nature, **critically depend on short-term urgent action**.



"Global temperature change has climbed to the top of our extreme risk rankings"
– WTW Thinking Ahead Institute in 2019

Ethical investment framework: response to climate change

Climate change	

Climate change

Background

- GSFA's approach to climate change is summarised in its information sheet on Role and Action on Climate Change (as at 30 June 2020) and in its (newly adopted) investment belief: "*Climate-related risk is real and pervasive and requires concerted global adaptation to less carbon-intensive ways of living*".
- GSFA's current (executive) view is that: "Markets are beginning to price the risks arising from transition to a low carbon future, but it is very uncertain and active managers are best placed to research and manage the risks and opportunities".
- GSFA has developed a climate risk work plan that establishes a detailed list of actions it needs to take to address climate risks. Given GSFA resourcing, the plan is ambitious in scope and timing. In addition to work already completed, it includes: defining the objective for emissions exposure relative to the market; considering various approaches to decarbonisation; conditioning manager mandates or allocations to achieve objectives and deciding which collaborative climate initiatives to participate in.
- While the information sheet described above provides context, GSFA SIPSP lacks a formal climate change policy that includes its climate-related beliefs and describes how it identifies, assesses and manages climate risk across the Fund.

WTW comments

- Climate change is an issue to which GSFA is paying significant attention: the General Manager Investments is spending 30% of his time on it and it has been on every Board agenda in 2020 and 2021 to date. The Board Chair described it as "central and pervasive and an issue that will be woven into all decisions and reporting going forward".
- GSFA is still in the early stages of developing its approach to climate change and has started to monitor overall exposures to carbon emissions and fossil fuels, noting the limitations to the data currently. Despite those limitations, leading asset owners have begun to set targets and measure and manage their carbon footprint utilising global frameworks (such as the Institutional Investor Group on Climate Change's Net Zero Investment Framework).
- **We suggest** that GSFA aligns its climate reporting approach with the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD)
- **We suggest** that GSFA should continue to develop its climate strategy to include assessment and management of both transition and physical risks across all asset classes.
  - We note here that in addition to Fund level analysis, GSFA could require its managers to undertake such assessments at a sub-portfolio level and report back to GSFA.
- We support the view that markets are starting to price transition risk. There are contested views on the degree to which markets are doing a good job of pricing climate risks: our own research suggests that markets are currently pricing in a "business as usual" scenario where current policies continue and emissions, as well as social, socioeconomic and technological trends, do not shift markedly from historical patterns. We stress the dynamism that characterises sustainability issues and suggest investors continue to analyse the pricing of climate risk, recognising that the pricing of risk is something that is a continually changing element of the investment landscape.

Special feature: Climate change – strategic positioning and global frameworks

Potential strategic positions on climate

Strategically aligned to Paris Agreement pathway

Principles

- Investors adopting a strategically aligned position may consider their ability to influence and impact the wider system to be constrained and therefore consider they will be better be able to deliver on investment objectives with a more explicit portfolio focus
- There may be a risk of falling behind peers and ‘good’ practice with the absence of a clear strategic commitment and targets around Paris alignment and net zero however at the other end of the spectrum they do not want to take a leadership position, perhaps given the relative risks, uncertainty, lack of conviction in climate trajectories or concern over top-down constraints.

Typical actions

- Examples of targets include an interim carbon reduction target of 50% by 2030 combined with significant allocation to climate solutions target (e.g., double by 2030) with a focus on climate solutions particularly in private markets and alternative credit

Strategically ahead of Paris Agreement pathway

Principles

- Investors may adopt a strategically ahead position based on the belief that this will lead to better risk-adjusted returns, to demonstrate a leadership position and/or to have a positive ‘impact’
- Given the market propensity to underestimate long-term structural shifts and the inevitable policy response likely in the medium term, it may be possible to improve investment returns through both ‘better beta’ due to more effective stewardship and ‘alpha’ as the mispricing of climate issues is resolved

Typical actions

- Examples of targets include an initial carbon reduction versus benchmark target followed by an interim carbon reduction target of 50% by 2030 combined with a stretching allocation to climate solutions (e.g., more than double by 2030) with a strong focus on climate solutions particularly in private markets and alternative credit

Global frameworks

The Net Zero Asset Owner Alliance

- The Net Zero Asset Owner Alliance is part of the United Nations Framework Convention on Climate Change's (UNFCCC's) Race to Zero campaign, a global push by companies, cities, and investors to expand the community of organisations that have publicly committed to achieving net zero carbon emissions by 2050 at the latest in the run up to this year's COP26 Climate Summit
- The Net Zero Asset Owner Alliance is a group of 37 of the world’s largest investors with more than USD5.7 trillion of assets under management that have committed to transitioning their investment portfolios to net zero emissions by 2050
- In October 2020 the Alliance 2025 Protocol was released for industry consultation
- Members must publish their first targets within 12 months of joining the Alliance and review progress and update targets every 5 years

IIGCC Net Zero Investment Framework

- More than 70 members of the Institutional Investor Group on Climate Change (including Willis Towers Watson) representing over $16 trillion in assets under management collaborated to develop the Net Zero Investment Framework which was released for consultation in August 2020 followed by the NetZero Investment Framework Implementation Guide released in April 2021
- The Net Zero Investment Framework aims to provide a comprehensive framework that enables all investors to undertake ambitious strategies to transition portfolios towards achieving net zero emissions and a decarbonised global economy
- The framework sets out the main components of a net zero investment strategy and provides recommendations for asset owners and asset managers to assess and undertake alignment of their portfolios in order to maximise their contribution to the decarbonisation of the real economy, including metrics and targets where data and methodologies are available

Special feature: Climate change targets

Principles for setting targets

Best practice standards are evolving

- Consistent with the evolving best practice standards for setting climate targets, the transition to net zero should be achieved via a combination of decarbonisation in the short to medium term and investment in long-term climate solutions
- There are multiple "levers" that can be pulled in order to achieve targets and a combination of engagement, systemic change and potentially the creation of new products managed against lower emission indices will in all likelihood be required
- Engagement is likely to lead to greater systemic change compared with exclusions, but it is important to recognise that exclusions will be necessary at times where engagement cannot solve the problem
- It is also important not to focus solely on a single metric in assessing progress towards net zero goals, recognising both that different metrics have strengths and weaknesses and that analytics and data in the climate space are rapidly evolving

Current framework for setting targets

- A net zero goal can be translated into an annual "carbon budget" that sets guiderails for monitoring progress to net zero and whether portfolios are making a fair contribution to system-level goals
- Equally as important is fiduciary duty to members. This can be considered through the use of financial risk metrics such as carbon intensity (and other metrics as they become available) to indicate which investment opportunities are the most efficient ways to "spend" the carbon budget
- Net zero targets are intended not to exclude certain parts of the market but to ensure that exposures to climate risks are properly compensated via other dimensions of portfolio quality (e.g. higher risk-adjusted returns)
- The logical measurement framework for targets is a scorecard approach that presents a balanced view of the metrics that input to portfolio construction
- It is also necessary to remain flexible and enhance initial targets with more formal targets as best practice standards continue to evolve over time

Examples of climate targets

Carbon emissions reductions

- To limit warming to 1.5°C the UN estimates that from current levels, global carbon emissions must decline by approximately 7% every year from 2020 to 2030, declining by around 50% over the next decade and reaching net zero emissions by 2050
- A carbon emissions reduction target may be defined to be consistent with this pathway starting from 2020, roughly halving by 2030 and plotting a path from there to net zero emissions by 2050
- For investors that are already taking action to be on a Paris aligned pathway, estimates suggest an appropriate reduction of around 20% in 2021 compared to index levels, to reflect progress that should have been made since the 2015 Paris Agreement
- Weighted-average carbon intensity (WACI) is the metric recommended by the Taskforce on Climate-related Financial Disclosures (TCFD) – the global framework for climate-related financial reporting

Climate solutions

- Reducing emissions across an investment portfolio is not necessarily the same as contributing to emissions reductions across the real economy and will not result in the dramatic shift in business models required to transition to a net zero emissions economy
- To ensure the greatest impact on the real economy, action should be taken to both reduce emissions and increase investment in climate solutions
- A climate solutions target aims to increase investment in climate solutions such as renewable energy, low carbon buildings and energy efficient technologies
- Estimates suggest that in 2015 around 3% of global equities may have complied with the EU Taxonomy definition of climate solutions and that by 2050 this will need to be around 25% of global equities
- Based on a straight line pathway, current benchmark levels of climate solutions may be around 5% (with variation across asset classes) and an appropriate medium term target may be around 10% by 2030, noting that this could be refined as market consensus on climate solutions emerges

5. People and Operating model

Willis Towers Watson

5. People and Operating Models: introduction

Overview	▪ The People and Operating models capture how the investment and governance arrangements are supported. The People model explores the resources, responsibilities, capabilities and culture within the organisation and the Operating model captures the processes, tools and data to support decision making. ▪ The People and Operating models are critical for success in the Investment model as they allow an organisation to bring their investment philosophy to life. ▪ Given that investing is such a thinking and decision-making driven activity, to evaluate whether the SIPSP is appropriate we must evaluate the ability of the organisation to execute on it. In particular, this means considering whether the right people are in the right places doing the right things, and whether the organisation has the operational processes, tools and data it needs to ensure value is created through the process.
Underlying factors	▪ To effectively evaluate the people and operating model we break it down into 6 factors ▪ **Organisational capacity and capability –** the resources available to the organisation and the key competencies (including leadership) and engagement of those resources ▪ **Organisational culture –** the collective influence from shared values and beliefs on the way the organisation thinks and behaves ▪ **Sourcing model –** which core functional responsibilities sit within the organisation and which are outsourced ▪ **Operational processes –** the support functions, processes and decision-making that exist within the organisation to facilitate effective and efficient operation decision making ▪ **Risk and control –** the risk and control environment that surrounds investment operations to ensure they are suitable and well managed ▪ **Platform –** the organisation's infrastructure to facilitate improved decision-making through the use of tools, technology and data
Information sources	▪ To evaluate the People and Operating Models we collected information from multiple sources including • Documentation review • Interviews with the investment team • Interviews with the Board / IC

5. People and Operating Model: key changes since previous review

Key changes	▪ The investment team has increased in size since the previous Independent Review through the addition of a further senior team member in 2016. This took the investment team headcount from 4 to 5. The additional resource brought a wealth of experience and added to team cognitive diversity with a slightly different background to others in the team. ▪ We perceive that there has been little or no change to the team culture over the period. ▪ The sourcing model has remained fairly stable over the period, although the launch of a global private equity portfolio saw the introduction of a third-party advisor and manager for this strategy. ▪ There does not appear to have been any material changes to GSFA's core operational processes over the period. ▪ With the addition of a new Chief Risk Officer at Annuitas, operational risk management processes – including updates to the risk enterprise risk framework, policy documentation, risk capture and communication and annual review processes – have been overhauled. ▪ The investment platform has remained consistent over the period. The team has increased their access to sustainability related data.
WTW commentary	▪ The addition of a new senior team member was highly positive, providing a much-needed boost to overall capacity as well as bringing new skills to the team. ▪ GSFA appears to have a strong employee value proposition: retention of key staff is high. Cultural continuity is conducive to good investment decision making. ▪ The new enterprise risk processes put in place have improved the risk and control environment by allowing allow for a more holistic consideration of enterprise and investment risk .

5. People and Operating Models: organisational capacity & culture

Organisational capacity and capability	**Background** ▪ The internal investment team is small but has individuals with a diverse range of backgrounds and with clearly demonstrable investment experience and expertise. There are support functions within the business to enable the investment team to carry out their activity in an efficient manner. ▪ There are growing expectations and requirements of the internal team, driven by both internal and external factors – e.g., the need to spend more time thinking about climate change impacts on the Fund. ▪ The tenure at the organisation is generally high – many people in their roles have been with the organisation for 10 – 20 years. ▪ The internal team has looked to add skill sets as the Fund has become more complex **WTW Comments** ▪ The investment team is highly experienced, both in terms of domain competency and, importantly, GSFA's context. However, being small it is particularly vulnerable to breaks in continuity through the departure of any one of the senior team. We note that the need for succession planning is a recurring theme in strategic reviews of GSFA ▪ As noted in the Governance Model section we see a mismatch between the governance budget (read organisational resourcing) and the complexity of the Fund. As noted in the Investment model section we think that further resourcing will be required to address the continuing demands of GSFA's ethical investment (responsible investment) framework, notably with respect to considering climate change impacts.
Organisational culture	**Background** ▪ GSFA's culture appears consistent across the organisation. It is strategically focused and results oriented. There is a collegial feel around the Annuitas team whilst maintaining a preparedness to think differently and challenge others' perspectives. **WTW Comments** ▪ Investment team members appear to work well together and be very willing to challenge each other making the most of their diverse skills and experiences. ▪ The investment team's compensation structure goes someway towards achieving alignment of interests between team members and the Fund's success. ▪ Whilst there is generally good engagement and strong culture between the Board and executive, recent underperformance relative to the Reference Portfolio has made that relationship slightly more strained. There is a perception from some that the organisation can be too slow to react to new challenges and issues. ▪ As noted previously, we think more can be done to align the Board and executive on investment beliefs and their consequential impact on investment choices.

5. People and Operating Models: sourcing model & operational processes

Sourcing model	**Background** ▪ GSFA runs a hybrid sourcing model:– it outsources most of its security and asset selection and some asset class design components to third party providers but retains a significant proportion of investment decision making internally. It uses external consultants occasionally to challenge and input to investment decision making. ▪ GSFA works closely with other Crown Financial Institutions (CFI) – notably the NZ Super Fund – to expand its governance budget and facilitate intellectual property transfer, particularly with respect to its responsible investment framework **WTW Comments** ▪ GSFA makes good use of its external providers and uses them as a key tool for expanding their governance budget, challenging their thinking and for generating new ideas. ▪ Given the size of the team there is scope for GSFA's use of external providers to be broadened and for the organisation to think carefully about where it has a comparative advantage in investment decision making and how it wishes to best use its governance budget.
Operational processes	**Background** ▪ Key operational processes are largely outsourced to the custodian or investment managers: the key role for the organisation to play is in oversight. ▪ GSFA focuses on ensuring delegated processes are carried out effectively, there are no undue or unintended risks in the process and that third parties are delivering in line with expectations. ▪ GSFA does generate some specific trade instructions as part of the DAA process, although trades are executed by a third-party provider. ▪ The organisation has dedicated risk and finance functions to help support the ongoing operations of the Fund. Investment operational processes are largely carried out by one individual in the team. **WTW Comments** ▪ The operational processes appear fit for purpose given GSFA's size and scale. We did not perceive any undue risks in the processes and agree a largely outsourced strategy execution model is most appropriate. ▪ We note that the single person responsibility for investment operations processes raises key person risks as described earlier.

5. People and Operating Models: risk and control & platform

Risk and control	**Background** ▪ The risk and control environment is overseen by the Chief Risk Officer ▪ Risks are monitored on an ongoing basis and are reported up through the Board's Audit and Risk Committee. GSFA maintains a risk register, enterprise risk framework documentation, a breaches reporting process and monthly compliance checks. ▪ Pre and post trade checks are generally in place to ensure a robust control. The need for these checks is relatively low given the largely outsourced model GSFA has adopted. **WTW Comments** ▪ The risk and control environment is reasonable for the context of the Fund (given the sourcing model) – we see no red flags in the process. ▪ Overall, we think the operating and risk management processes are well structured and deliver a strong operating environment.
Platform	**Background** ▪ Data is largely provided by the custodian but GSFA supplements this using specialist data providers, particularly with respect to manager research and sustainability data. ▪ The investment team largely uses MS Excel and ad hoc frameworks / tools to facilitate their investment analysis. **WTW Comments** ▪ Given the GSFA's size and scale there are limits to what they can do from a platform perspective. For an organisation of this size and given the reliance on the custodian as part of the model, the addition of elements such as portfolio management systems, analytic tools, data warehousing, etc. would not be pragmatic.

6. Ex-post performance review

Summary of findings

Our brief	The terms of this review require us to evaluate the ex-post performance of the Fund since inception. This is expected to incorporate a time period analysis, including performance since the last statutory review. We are asked to form an opinion on the drivers of these returns over these time periods, commenting on appropriateness of the contribution from these drivers relative to the risk taken. In this review we focus primarily on the period since the last review (for performance purposes 31 December 2015), providing a detailed analysis of returns, drivers of return and risk over that period. We provide summary comments on the period since the Fund's inception (effective date 31 March 2001).
Returns relative to benchmark	Over the period covered by this review, the Fund has returned 9.2% p.a. and has outperformed its NZ Government Bond benchmark by 5.5% p.a. Since inception (1 October 2001), the Fund has returned 7.5% p.a. and has outperformed its NZ Government Bond benchmark by 2.0% p.a. GSFA uses a Reference Portfolio (RP) to measure (amongst other things) whether the particular mix of assets in the Fund performs better or worse than a more simply constructed portfolio that meets the risk and return objectives of the Fund. The Fund underperformed its RP by 1.4% p.a. over the period since the last review and by 0.3% p.a. over the period since inception. With hindsight, therefore, the Fund would have been better served by sticking with an asset mix closer to that of the RP.
Returns relative to risk taken	There are two standard measures of the return per unit of risk 1. The **Sharpe ratio** measures total Fund return (in excess of the risk-free rate) in relation to risk taken (measured by Fund volatility). A fund with the Fund's risk profile should expect to have a long-term average Sharpe ratio in excess of 0.3. ▪ Over the period since the last review the Fund's Sharpe ratio was 0.9 and over the period since inception it was 0.4. Both measurements indicate that at an absolute level the Fund has been adequately rewarded for the risk taken. 2. The **Information ratio (IR)** measures the active (or excess) return, whether at a Fund or asset class level, against the active risk taken (against the respective benchmark). Given that the Fund has performed poorly relative to the Reference Portfolio over both measurement periods, the IR is negative. In other words, the Fund was not rewarded for the active risk taken or the additional fees, illiquidity, complexity and governance burden incurred.
Important caveat on relative performance	Although the Fund underperformed the Reference Portfolio (and by extension produced a negative IR), this does not imply that GSFA made poor investment decisions, only that in the particular set of circumstances that have driven asset class performance (particularly in 2019 and 2020) a different mix of assets would have produced better outcomes. The more important question is whether the investment choices GSFA made for the Fund were reasonable in the context of circumstances at the time. As addressed in earlier sections we are satisfied, with minor qualifications, this was the case.

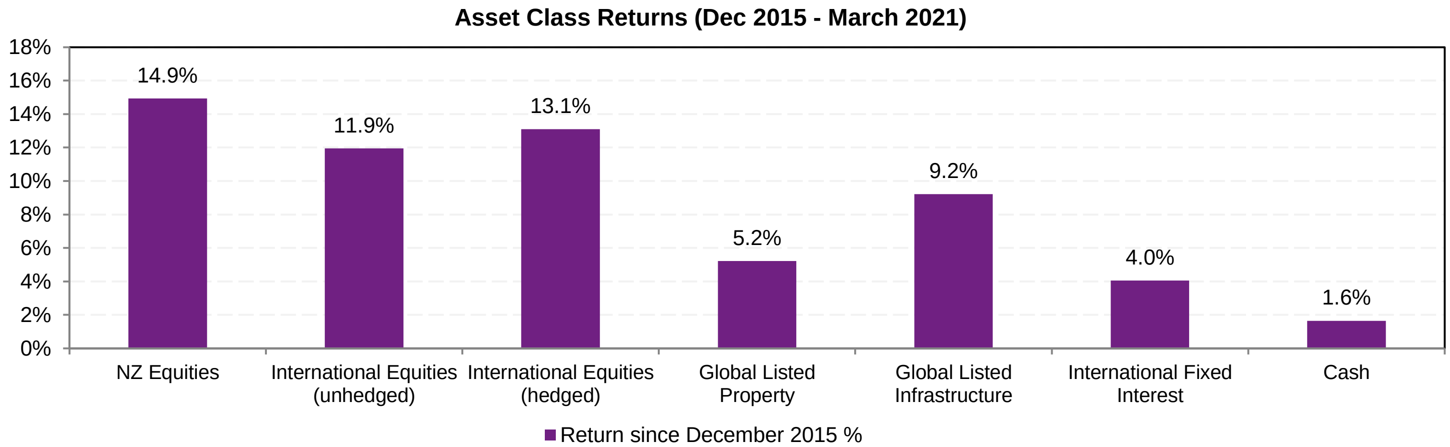
Period since 31 December 2015: detailed review

Performance since last review: Market context

The impact of COVID-19 and other key market events since the last review

Before diving into the results of the attribution analysis, we highlight the key market events that defined the period since GSFA's last performance review to provide some context around the attribution results:

- The Covid-19 pandemic was the major driver of markets over the 2020 calendar year. The global economy fell into recession as countries were forced to deal with overwhelmed healthcare services, spikes in unemployment and global supply chain issues. Central bank and government policy underpinned a rebound in global equity markets during the second half of the year, and news that effective vaccines were within reach sent a wave of optimism through risky markets – as a result markets ended the year on a positive note.
- Up to the end of 2019/early 2020 there was an exceptionally long period of global economic expansion, which translated into strong returns across all asset classes but especially equity markets. A simple Reference Portfolio with equities and bonds performed particularly well over the past 10 years to the end of 2019, compared to the other 10 year periods since 2020. Funds with equity-heavy strategies have therefore benefited from this environment.
- Markets were volatile at times in the period of 2016-2019, but overall continued their upward trajectory as global equity markets hit record highs in 2019. Headlines over this period were dominated by geopolitical tensions and risks, as well as concerns of slowing economic growth towards the end of 2018. Markets were generally unfazed by major geopolitical events as equities recovered quickly from downturns and continued to rally throughout key developments such as the 2016 US election result, China/US tensions, and the UK's departure from the European Union.
- The table below highlights the performance of major asset benchmarks over the period from December 2015 to March 2021 (hedged to NZD):



Performance since last review: Fund level returns

Fund returns relative to Fund benchmarks

GSFA measures the performance of the Fund against 2 benchmarks:

- the return on New Zealand Government bonds, as a simple proxy for the Government's cost of capital
- a Reference Portfolio, which represents the lowest cost, simplest available portfolio that will achieve GSFA's objective to maximise the return of the Fund without undue risk

In the period since 31 December 2015 the Fund has performed against its benchmarks as follows:

Fund (% p.a.)	NZ Gov't Bonds (% p.a.)	Reference Portfolio (% p.a.)
9.2%	3.7%	10.6%

The Fund has comfortably outperformed the first of its benchmarks but underperformed the second. In the analysis that follows we focus on the latter and address the question of whether the Fund has been adequately rewarded for the risks taken.

Before doing so though we raise one issue with respect to the NZ Government Bonds benchmark: we note that GSFA does not specify a target margin by which it *must* outperform this benchmark (i.e. a target). Given the Fund is run at a level of risk significantly higher than that of Government bonds, GSFA should expect to earn an appropriate risk premium over and above this benchmark. GSFA sets out its *expectation* (not a target) for how much the Fund will outperform Government bonds in its Statement of Intent. The latest SOI has this expectation at an excess return margin of 4.3% p.a.

Actual Fund vs Reference Portfolio by period

As noted, the Fund has underperformed the Reference Portfolio by 1.4% p.a. in the period since 31 December 2015. This performance can be broken down by calendar period as follows:

	2021 to 31 Mar	2020	2019	2018	2017	2016	Since 31/12/15 (p.a.)
Fund	7.0%	5.7%	14.4%	-3.2%	16.0%	9.4%	9.2%
Reference Portfolio	3.5%	10.9%	21.4%	-3.0%	16.0%	8.2%	10.6%
Excess Return	+3.6%	-5.2%	-7.0%	-0.2%	-0.1%	+1.2%	-1.4%

Clearly, the Fund's underperformance relative to the Reference Portfolio is almost entirely explained by performance in 2019 and 2020. We comment later on the circumstances that gave rise to this.

Performance since last review: attribution analysis

Why the Fund might have underperformed the Reference Portfolio

The GSFA believes that over time it can outperform the Reference Portfolio through a combination of:

- Diversification - choosing asset classes that are not in the Reference Portfolio
- Security selection – choosing a mix of securities that is different from that in the respective asset class benchmarks
- Dynamic asset allocation (DAA) – altering the target mix of assets to capitalise on when asset classes are under or over-priced relative to long run expectations

Measuring the relative contribution of each of these is relatively straightforward:

	2021 to 31 Mar	2020	2019	2018	2017	2016	Since 31/12/15 (p.a.)
Diversification[1]	0.8%	-0.8%	-1.5%	0.6%	-0.7%	-0.4%	-0.4%
Security selection[2]	2.5%	-5.2%	-4.0%	-0.3%	-0.1%	0.8%	-1.2%
DAA	0.5%	1.3%	0.0%	-0.1%	0.1%	0.3%	0.4%
Residual effects[3]	-0.3%	-0.5%	-1.4%	-0.5%	0.6%	0.5%	-0.2%
Excess return	**3.6%**	**-5.2%**	**-7.0%**	**-0.2%**	**-0.1%**	**1.2%**	**-1.4%**

In summary, both diversification and security selection detracted value over the period shown, although the latter was by far the most impactful. This was slightly offset by positive value added by the DAA program.

[1] Calculated as: The sum of (Actual sector weights – RP sector weights)*(sector benchmark returns – RP return)

[2] Calculated as: The sum of {Actual sector weights*(sector returns – sector benchmark returns)}

[3] The mathematics of the performance attribution used here means that there is always a residual amount that can't be attributed to one of the other three sources. As can be seen it tends to average out over time.

Performance since last review: attribution analysis - diversification

The impact of diversification

The Reference Portfolio is a simple construct containing Global Equities, NZ Equities and Global Bonds. Each of these is proxied by a market representative portfolio.

GSFA seeks to add value to the Fund by diversifying away from the Reference Portfolio through the addition of other asset classes. It constructs a Target Portfolio to represent its desired mix at any point in time. It has added 5 assets to the mix: NZ Private Equity; Global Private Equity; Catastrophe Risk; Life Settlements; and Style Premia. The average mixes of the Reference and Target Portfolios and the performance of each asset class benchmark in the period since 31 Dec 2015 are as follows:

	Global Equities	NZ Equities	Global Bonds	NZ Pvt. Equity	Gl. Pvt. Equity	Cat. Risk	Life Settle.	Style Premia
Reference Portfolio	63.4%	10.0%	26.6%	-	-	-	-	-
Target Portfolio	55.0%	7.5%	13.6%	2.0%	5.9%	6.0%	3.3%	6.7%
BM performance (p.a.)	11.9%	14.9%	4.0%	12.3%	15.1%	2.0%	-3.1%	1.7%
Contribution to portfolio excess return (p.a.) (Diversification)	-0.1%	-0.1%	1.0%	0.1%	0.2%	-0.5%	-0.5%	-0.6%

In simple terms, overweighting (underweighting) asset classes (relative to Reference Portfolio weights) that outperform (underperform) the Reference Portfolio adds value to the Fund and vice versa. From this we can see that, all other things being equal, if asset classes had performed in line with their benchmark returns then:

- Allocations to NZ and Global Private Equity would be value additive – contributing ~0.3% p.a. to Fund returns
- Allocations to Catastrophe Risk, Life Settlements and Style Premia would be value detracting (~ -1.5% p.a.)
- Reduced allocations to the core Reference Portfolio asset classes would be value additive (~0.8% p.a., primarily driven by the lower allocation to Global Bonds).

Of course, the actual portfolio does not always match the Target Portfolio due to the impact of market volatility and portfolio cashflows. This mismatch creates further potential for over or under-performance but the effect should be trivial over longer periods (assuming no systematic bias in portfolio weights towards under/overweight).

Performance since last review: attribution analysis

The impact of security selection

In addition to adding value through diversification, GSFA believes that it can select managers who can deliver at least the benchmark returns for each respective asset class. In some asset classes, notably, NZ Equities, Global Equities and Style Premia it aims to identify managers who can exceed those benchmarks.

We compare the performance of each of the Fund's asset class against the assigned benchmark below. As earlier, we use the period since 31 Dec 2015.

	Global Equities	NZ Equities	Global Bonds	NZ Pvt. Equity	Gl. Pvt. Equity	Cat. Risk	Life Settle.	Style Premia
Target weight	55.0%	7.5%	13.6%	2.0%	5.9%	6.0%	3.3%	6.7%
Actual return (p.a.)	11.3%	15.1%	5.0%	10.4%	8.8%	-0.7%	-1.8%	-3.9%
Benchmark return (p.a.)	11.9%	14.9%	4.0%	12.3%	15.1%	2.0%	-3.1%	1.7%
Excess return (p.a.)	-0.7%	0.2%	1.0%	-1.8%	-6.3%	-2.7%	1.3%	-5.6%
Contribution to portfolio excess return (p.a.) (Security Selection)	-0.3%	0.0%	0.1%	-0.1%	-0.4%	-0.2%	0.0%	-0.6%

As can be seen, security selection has detracted value in every asset class except Global Bonds, NZ Equities and Life Settlements. Style Premia, despite its relatively low weight in the Fund was the biggest contributor to security selection underperformance. We would note though that this is largely due to the use of a cash benchmark (the US Treasury Bill index) for this asset class and that this contribution could be included in the diversification effect.

Performance for the above asset classes can be deconstructed further to highlight the impact of GSFA's portfolio construction within these asset classes, and the security selection performance of selected managers against their benchmarks. We complete this analysis on the following page.

Performance since last review: attribution analysis

Portfolio construction and security selection within underperforming asset classes

Global Equities: In summary, the global equity portfolio has lagged its benchmark in recent years. Given the large allocation to equities, this has had a significant impact on total Fund return. The underperformance over this period is driven by two factors:

- underperformance of some managers
- A slight style balance whereby the portfolio tended to be underweight growth stocks with a tilt towards value and low volatility strategies (both of which unperformed the broader market benchmark over this period)

Style Premia: The poor performance of this asset class was driven by two factors:

- "Core" alternative betas (which are the dominant return driver of the returns in this asset class) have struggled for a number of years as a result of a challenging market environment. This is a trend that we have observed across the majority of style premia managers in the market.
- The selected manager for this strategy underperformed its peers.
- We note the allocation to this strategy has recently been reduced from 10% to 7.5% of the Fund.

Private Equity: Performance has been positive in absolute terms, but has lagged the listed equity benchmark equivalent. There are a couple of considerations here: 1) the "j-curve" effect in private equity means that returns lag in the early period of fund investment as capital is gradually committed; 2) valuation lags in private equity mean that it is difficult at any one point in time to make a like for like comparison. That said, the lag behind the benchmark over the period suggests a significant subsequent revaluation would be required to make up the shortfall.

Dynamic asset allocation

The third and final way that GSFA seeks to add value is through the use of Dynamic Asset Allocation (DAA). This strategy aims to add value by overweighting (or underweighting) selected asset classes once the expected return for that asset class goes above (or falls below) a pre-determined threshold.

The strategy is given effect by tilting weights to NZ and Global Equities, Global Bonds, Currency and Cash. We do not have the data to perform an analysis of returns from each of the underlying asset classes.

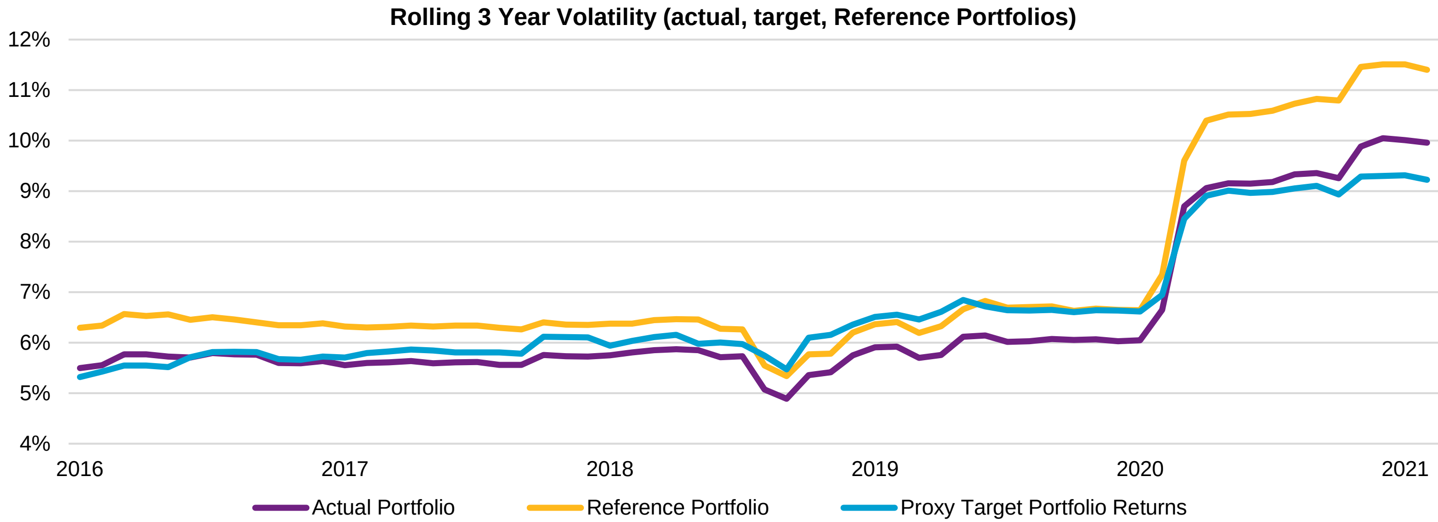
	2021 to 31 Mar	2020	2019	2018	2017	2016	Since 31/12/15 (p.a.)
DAA performance	0.5%	1.3%	0.0%	-0.1%	0.1%	0.3%	0.4%

Return on risk since last review: introduction

Reward for risk: introduction	The level of risk taken in the Fund is a balance of GSFA's risk capacity (ability to take on risk) and risk tolerance (willingness to take on risk). This balance defines the total portfolio risk budget. These factors also determine how much of the target return is derived from taking market risk (the Reference Portfolio) and how much from value-adding activities The sum of all the decisions taken in moving away from the Reference Portfolio is referred to as active risk. Active risk is expected to deliver an excess return stream that is positive and relatively lowly correlated with the Reference Portfolio. Active risk can increase or decrease the absolute risk arising from the choice of Reference Portfolio. How much active risk GSFA takes (the active risk budget) will be driven by the Fund's return need (return target – market return), GSFA's tolerance for underperformance relative to the Reference Portfolio, their degree of conviction in their own skill, and organisational constraints and beliefs. The active risk taken within each asset class is measured relative to that asset class' respective benchmark. The aggregate active risk across the Fund is a function of the weight of each asset class, the active risk taken in each asset class and the correlation of active risks across asset classes.
Absolute risk: Reference Portfolio vs Target Portfolio	The Target Portfolio reflects the diversification choices made for the Fund. GSFA's intent is to hold the absolute level of risk of the Target Portfolio consistent with the Reference Portfolio. It can only estimate this on an ex-ante basis. Whether risk is actually held constant depends on how individual asset class risk and correlations turn out in reality. As can be seen in the following chart the ex-post level of risk of the Fund has tended to track consistently below the RP. There are 2 key reasons for this: ▪ Asset class diversification relative to the Reference Portfolio results in a lower level of actual portfolio volatility ▪ Allocations to private equity typically introduce a timing lag and smoother return path due to infrequent pricing – in other words, a private equity allocation does not perfectly reflect current movements in equity markets. This also contributes to the relative lower volatility to the Reference Portfolio (which invests in listed equities that are priced daily).

Return on risk since last review: diversification and security selection

Absolute risk: Reference Portfolio vs Target Portfolio



Absolute risk: Sharpe Ratio

We can measure the Fund's total return against the level of risk taken – the Sharpe ratio – and compare this to the equivalent measure for the Reference Portfolio. We do not provide 2021 numbers separately as three months is not a meaningful sample.

	2020	2019	2018	2017	2016	Since 31/12/15 (p.a.)
Fund return	5.7%	14.4%	-3.2%	16.0%	9.4%	9.2%
Fund risk	14.9%	6.1%	7.0%	3.4%	5.4%	8.3%
Fund Sharpe ratio	0.3	2.1	-0.7	4.1	1.3	0.9
RP return	10.9%	21.4%	-3.0%	16.0%	8.2%	10.6%
RP risk	17.1%	6.7%	7.7%	3.2%	6.1%	9.2%
RP Sharpe ratio	0.6	3.0	-0.6	4.3	0.9	1.0

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Return on risk since last review: diversification and security selection

Active risk: security selection

As mentioned, GSFA incurs active risk in each asset class. The table below compares GSFA's ex-ante active risk assumptions with ex-post observed results over the measurement period. Adding the excess return series from Page 61 we can determine the return per unit of risk - the Information Ratio (IR).

(p.a.)	Global Equities	NZ Equities	Global Bonds	NZ Pvt. Equity	Gl. Pvt. Equity	Cat. Risk	Life Settle.	Style Premia
Active Risk (ex-ante)	2.0%	2.0%	2.0%	6.0%	6.0%	5.0%	6.0%	11.0%
Active Risk (ex post)	1.5%	2.6%	2.8%	11.9%	14.9%	4.0%	4.8%	9.7%
Excess Return	-0.7%	0.2%	1.0%	-1.8%	-6.3%	-2.7%	1.3%	-5.6%
Information ratio	-0.4	0.0	-0.2	0.3	-0.7	0.3	-0.4	-0.6

Ex-post active risk outcomes were broadly consistent with ex-ante assumptions. The observed high risk in private equity will be partly explained by valuation timing (stale pricing) effects. A positive IR implies that a manager is being rewarded for the risk taken. A lower IR (e.g., Style Premia) suggests that the manager is not being rewarded for taking risks relative to their benchmark.

Active risk: DAA

Over the measurement period, the DAA strategy has run active risk averaging 0.43% per annum. GSFA's long-run average assumption is for active risk of 1%, but not too much should be read into this difference as the DAA strategy is inherently opportunistic. Given the excess return of 0.36%, the strategy has generated an information ratio of 0.9.

	2020	2019	2018	2017	2016	Since 31/12/15 (p.a.)
Active Risk	1.4%	0.4%	0.2%	0.1%	0.2%	0.4%
Performance	1.3%	0.0%	-0.1%	0.1%	0.3%	0.4%
Information ratio	0.9	0.0	-0.3	1.0	1.1	0.9

Period since inception: summary review

Performance since inception: Fund level

Actual Fund vs Reference Portfolio and NZ Bonds by period

We have extended our analysis shown on page 58 to cover the period since inception to March 2021, where the Fund has performed against its benchmarks as follows:

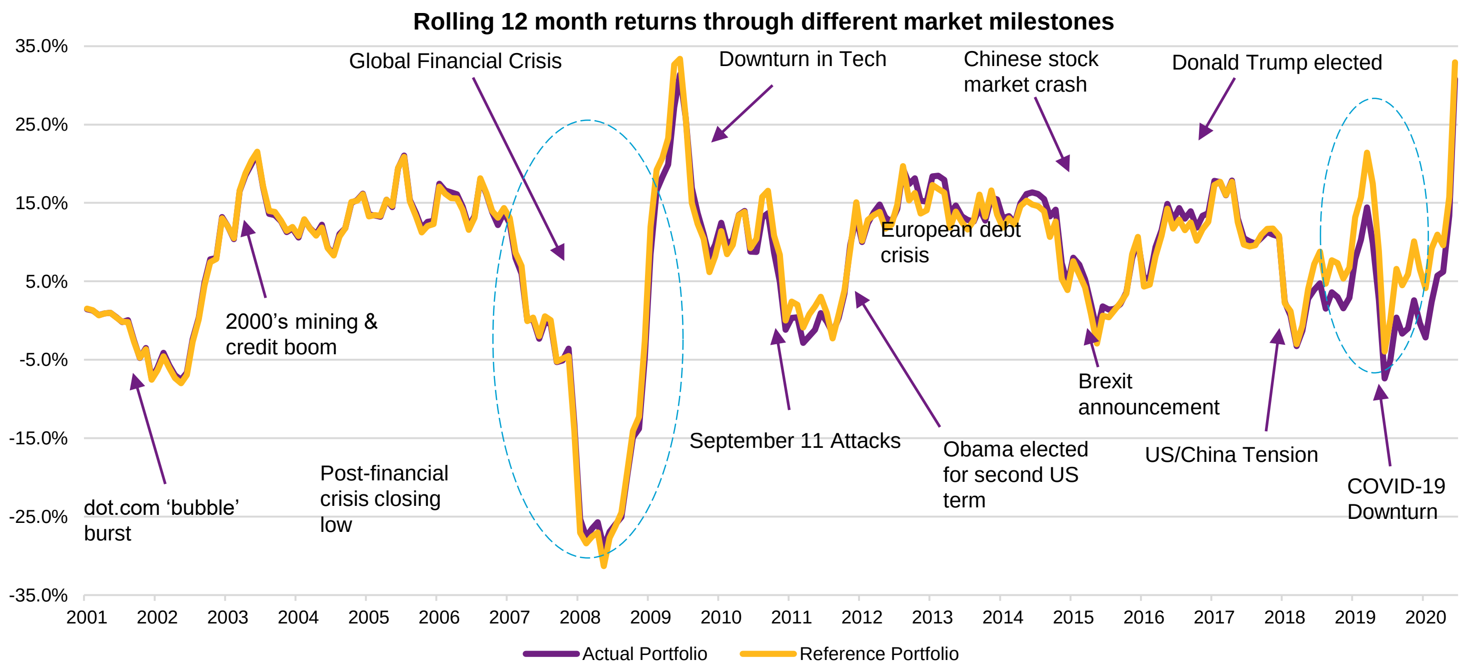
%pa	1 Jan 2016 - 31 Mar 2021	1 Jan 2010 - 31 Dec 2015	1 Jan 2005 - 31 Dec 2/09	1 Oct 2001 - 31 Dec 2004	Since Inception
Fund	9.2%	9.3%	3.9%	6.8%	7.5%
NZ Gov't Bonds	3.7%	5.9%	6.4%	6.5%	5.5%
Excess Return (NZ Bonds)	5.5%	3.4%	-2.5%	0.3%	+2.0%
Reference Portfolio	10.6%	9.0%	4.2%	6.6%	7.8%
Excess Return (RP)	-1.4%	0.3%	-0.2%	0.1%	-0.3%

- The Fund has outperformed the first of its benchmarks but has underperformed the second. However, this underperformance against the Reference Portfolio is primarily driven by underperformance in recent years (as highlighted in the previous section). This can also be seen through the excess return since inception which is fairly marginal.
- The gradual decline in bond yields (particularly in recent years) has resulted in improved excess returns relative to the NZ Government Bonds benchmark over time, which can be seen in the decreasing level of NZ Govt Bond returns since inception.
- Given that over longer time periods the fund has performed adequately against the Reference Portfolio (after discounting the performance in recent years), we have not provided further detail on individual security/diversification contribution at the asset class level in this section of the report, as these numbers are relatively marginal compared to the stark differences which we identified in the period since December 2015.

On the page 69 we summarise the excess returns of each asset class since inception.

Performance since inception: in market environment context

Performance across different market regimes



- The chart compares the Fund's performance to the Reference Portfolio over rolling 1 year periods against the backdrop of different market regimes.
- The conclusions from the chart are unsurprising in that the portfolios performed very similarly over the first ~17 years, however over the most recent 3 years a more noticeable difference in performance is visible.
- It is worth noting that in market downturns (e.g. GFC ~2008-2009, COVID-19 ~2019-2020) that the Fund has performed in line with the Reference Portfolio. This suggests that a number of defensive mechanisms in the Fund (low volatility equities, diversity, active management, currency exposure) have not made it more resilient at a total portfolio level to these market crises.

Performance since inception: asset class returns

Excess returns since inception of currently invested asset classes

The average mixes of the Reference and Target Portfolios and the performance of each asset class benchmark (and the excess return of each asset class) in the periods since their inception are as follows:

Average allocations and performance SI*	Global Equities	NZ Equities	Global Bonds	NZ Pvt. Equity	Gl. Pvt. Equity	Cat. Risk	Life Settle.	Style Premia
Reference Portfolio	53.7%	11.4%	26.1%	-	-	-	-	-
Target Portfolio	48.1%	10.4%	19.3%	3.0%	6.9%	5.5%	3.1%	7.1%
Asset class benchmark performance (% p.a.)	7.6%	11.2%	6.4%	18.5%	8.7%	5.2%	0.5%	2.0%
Asset class excess return (% p.a.)	0.6%	0.8%	0.4%	-2.8%	-1.4%	-2.3%	0.4%	-6.4%

* Performance shown is since inception of each asset class

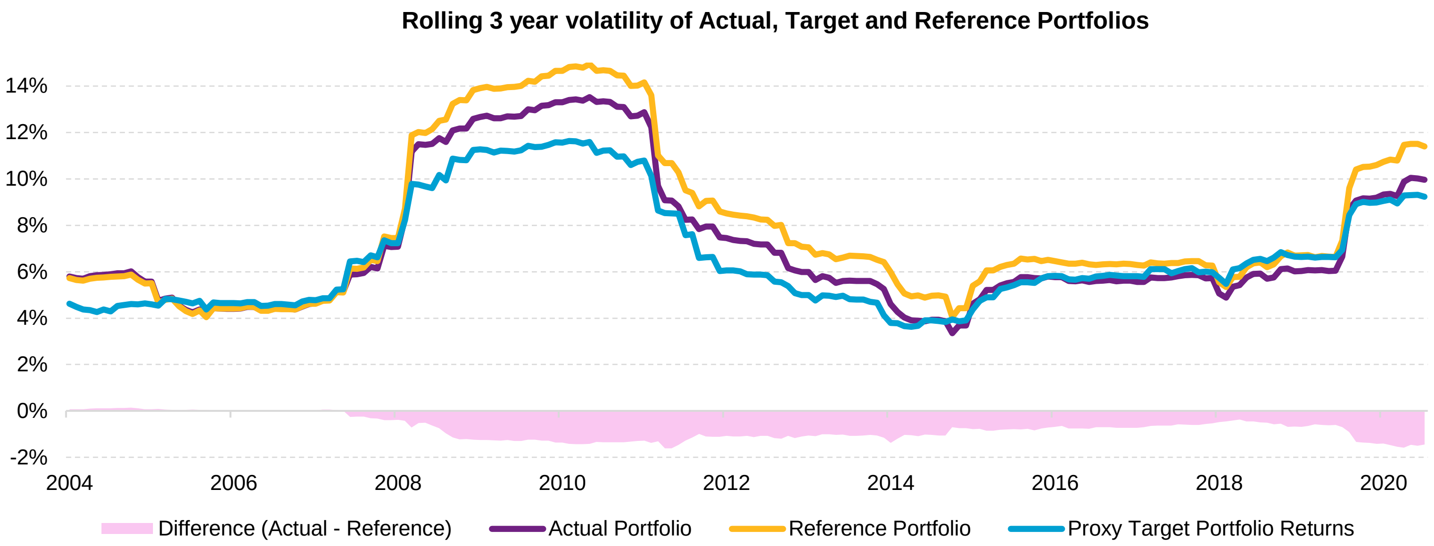
Comments

Across core asset classes (such as Global Equities and Bonds) the Fund has added value relative to the respective benchmarks since inception. However, within diversifying/alternative asset classes (such as Style Premia and Private Equity) the Fund's excess returns since inception have been negative. The exception to this is in Life Settlements. The key drivers of this underperformance (most of which has been covered in the earlier section of this report) are outlined below:

- Private equity – given the illiquid nature of the asset class there is a lag in unit pricing which tends to mean that portfolios underperform their listed benchmarks over shorter time horizons. Given that the Fund has only invested in private equity for ~3 years this effect can be seen quite prominently in excess returns. We note that the underperformance over this period is largely dominated by 2020 excess returns (which is due to the use of a listed benchmark where listed securities rebounded to a greater extent).
- Idiosyncratic elements – within each asset class, active management and unintended style biases as a result have driven performance, with underperformance since inception influenced heavily by recent performance history (e.g. manager underperformance over 2018-2020 dominates the since inception excess return for Style Premia).
- While the unintended exposure to Value in global equities led to recent portfolio underperformance, this is offset by historical positive excess returns.
- For Catastrophe Risk and Life Settlements, relative performance should factor in the imperfect nature of the respective benchmarks. It would be reasonable to supplement assessment of these asset classes with peer analysis and/or comparison to agreed manager performance expectations where possible.

Return on risk since inception

Absolute risk: Reference Portfolio vs Target Portfolio



The chart above highlights that the Actual Portfolio has experienced less volatility than the Reference Portfolio over most rolling 3 year periods commencing in 2001. Reasons for why the actual level of risk would track lower than the Reference Portfolio risk are discussed on page 63.

Absolute risk: Sharpe Ratio

The Sharpe ratio for the Fund and Reference Portfolio over respective periods are:

Risk (annualised volatility)	1 Jan 2016 - 31 Mar 2021	1 Jan 2010 - 31 Dec 2015	1 Jan 2005 - 31 Dec 2/09	1 Oct 2001 - 31 Dec 2004	Since Inception
Fund risk	8.3%	6.4%	10.5%	5.7%	8.0%
Fund Sharpe ratio	0.9	1.0	-0.3	0.2	0.4
RP risk	9.2%	7.3%	11.4%	5.6%	8.8%
RP Sharpe ratio	1.0	0.9	-0.3	0.2	0.4

A since inception Sharpe ratio of 0.4 is an acceptable return on risk.

Appendices

Appendix 1: terms used in this review

Terms specific to GSFA - Governance

- **Act:** the Government Superannuation Fund Act 1953
- **Annuitas:** Annuitas Management Limited, a joint venture company formed by GSFA and the National Provident Fund
- **Board:** the Board of GSFA
- **CFI:** Crown Financial Institution, this includes NZ Super
- **Fund** is the Government Superannuation Fund
- **GSFA:** the Government Superannuation Fund Authority
- **Investment Committee (IC):** a committee of the Board that reviews key investment recommendations
- **Management:** employees of Annuitas Management Limited
- **NZ Super:** the New Zealand Superannuation Fund
- **SIPSP:** GSFA's Statement of Investment Policies, Standards and Procedures

Terms specific to GSFA - Investment

- **BMO:** BMO Global Asset management, which provides a range of investment services including outsourced ESG engagement
- **Catastrophe Risk:** investment strategies that generate a premium from exposure to catastrophic events such as hurricanes and tropical storms
- **DAA:** dynamic asset allocation, the regular adjustment of allocation to markets and asset classes based on current and forward looking return expectations
- **GTAA** is global tactical asset allocation, a multi-asset strategy investing across a variety of different asset classes and markets
- **Life Settlements:** investment strategies with exposure to life insurance policies

Terms specific to GSFA - Investment

- **MSCI:** Morgan Stanley Capital International, an investment research firm that provides stock indexes portfolio risk and performance analytics and governance tools to investors
- **Reference Portfolio:** a simple, passive, listed portfolio which is capable of meeting the Fund's objectives over time
- **Style Premia:** an investment strategy which allocates to various risk factors or 'investment styles' within and across asset classes
- **Target Portfolio:** GSFA's intended asset allocation at any given point in time

Governance jargon

- **Balanced scorecard:** a scorecard that considers a variety of quantitative and qualitative measurements. Please see appendix 2
- **Beliefs:** a set of operating hypotheses about how investment markets work and the factors that drive investment performance
- **Best-practice:** a state where the organisation functions *with a margin of safety* over meeting its mission and benchmarks and compares *very well* by reference to peers
- **Comparative advantages:** the structural and developed advantages that allow an organisation to undertake a function more effectively than others
- **Governance budget:** the capabilities, resources and processes in place to implement and oversee organisational strategy
- **Risk appetite statement:** an organisation's articulation of its tolerance and appetite for risks
- **Sourcing model:** an overview of what an organisation insources (activity is conducted internally) and outsources (activity is delegated to a third party)

Appendix 1: terms used in this review (continued)

Investment jargon

- **Alpha:** excess return over and above a benchmark
- **Active risk:** the risk of an investment strategy relative to that of its benchmark. Measured as relative volatility. Can be applied at asset class or fund level
- **Asset class:** a grouping of investments that exhibit similar characteristics
- **Credit limits:** maximum amount of exposure the Fund can have to a particular financial institution or class of credit rating
- **Diversification:** a strategy that aims to reduce risk by allocating investment across a range of asset classes, strategies, managers and instruments
- **Engagement:** communication with a company that is intended to bring about a change of approach of behaviour, often in relation to ESG factors
- **ESG:** Environmental, Social, Governance
- **Ethical investment:** a strategy and practice to incorporate ESG factors in investment decisions. At GSFA it is used interchangeably with responsible investment
- **Exclusion:** the systematic exclusion of certain companies, sectors, or countries from the permissible investment universe. Usually involves certain activities based on specific criteria
- **Excess return:** see Alpha
- **Idiosyncratic risk:** a category of investment risk that is unique to an individual asset (such as a company stock), and asset group (such as a particular sector) or a specific asset class
- **Information ratio:** measurement of the ratio of alpha relative to active risk
- **Leverage**: an investment strategy of using borrowed money - specifically, the use of various financial instruments or borrowed capital - to increase the potential return of an investment
- **Manager concentration:** the concentration of capital to a single counterparty or investment manager
- **Pre-mortem scenarios:** a technique to consider, before the fact, events or conditions that could lead to a strategy performing measurably worse than expectations
- **Responsible investment:** see Ethical investment
- **Risk budgeting:** a process of deciding how much risk to take within an investment strategy and then sub-dividing that into risk allocations at a sub-strategy level
- **Securities lending:** the practice of loaning shares of stock, commodities, derivative contracts, or other securities to other investors or firms
- **Security selection:** the process of identifying individual securities within a certain asset class that will make up the portfolio
- **Sharpe ratio:** the average return earned in excess of the risk-free rate per unit of volatility or total risk
- **Stewardship:** engagement with companies to promote corporate governance practices that are consistent with encouraging long-term value creation for shareholders in the company
- **Strategic tilting:** an investment strategy that aims to take advantage of relative changes in market valuations. See DAA
- **Tracking error:** see Active risk
- **Value add:** see Alpha
- **Volatility:** a measure of risk based on returns a security, market or portfolio experiences over a given period of time. Technically, the standard deviation of returns.

Appendix 2: best practice guidance

- In this report we point to instances where better practices could be adopted. In this appendix we provide some high-level directional guidance as to how those practices might be better shaped.

Area of practice	Best Practice Summary
SIPSP drafting	▪ Clearly constructed policy drafting provides a very helpful way to ensure that there is a common understanding, between the Board, executive and key stakeholders, of how the organisation is intended to work in practice ▪ Prefacing policy statements with clearly distinguished introductory narrative is a helpful way to separate policy and narrative. ▪ We favour an approach that uses simple declarative (and, where necessary, imperative), active voice, statements for policy statements: i.e., *"We will [insert relevant policy action]"*. ▪ It is perfectly acceptable for a policy statement to refer to an underlying framework: i.e., *"We will maintain and adhere to a [insert relevant topic] decision making framework that addresses [insert minimum requirements as appropriate"* ▪ Standards can be the frameworks referred to in a policy statement; some form of limit (e.g., a credit limit or minimum liquidity requirement), or a benchmark. ▪ Procedures describe what must be done and by whom to ensure compliance with the policy. Best practice example ▪ The Guardians of New Zealand Superannuation are subject to the same broad SIPSP requirements as GSFA. The greater organisational complexity at the Guardians means that they use separate policy documents that sit under the umbrella of their SIPSP. All their policies are available on their website. Here is an example of how they position policy statements:

6. Strategic Tilting Decision Making

The Strategic Tilting framework generates a signal to tilt a market exposure when its expected return over cash (risk premium) differs materially from our equilibrium assumptions. This will primarily occur when we assess markets to be priced at an elevated or depressed level relative to our measures of fair value. The size and timing of incremental tilts and of the total tilts are governed by a set of rules within the framework, overlaid with judgment, and subject to constraints that the Board may set. A key area for potential judgmental overlay to the signals will be assessment of downside risks.

Note the clear separation of introductory narrative

6.1. We will maintain and adhere to a Strategic Tilting decision making framework that focuses on the following:

Clear policy statement

- Maintenance of a robust signal generating framework;
- A sound decision making reporting process;
- Appropriate calibration of tilt positions to the perceived opportunities.

Clear standards

6.2. Proposals to change target Strategic Tilting exposures must be approved in accordance with the *Delegations Policy*.

6.3. An outline of the current strategic tilting framework must be maintained in Schedule 2.

Use of imperatives

Appendix 2: best practice guidance

<table>
<tr><th>Area of practice</th><th>Best Practice Summary</th></tr>
<tr><td>Beliefs</td><td>

Good investment beliefs serve a number of purposes. They fill gaps in knowledge and help to promote insightful action; they save time by acting as handy shortcuts in decision-making; they enhance process discipline and consistency; and, they improve transparency and help settle differences of opinion;
A good beliefs structure has three layers:

Core beliefs: these are high level statements covering core areas of belief and are usually “owned” by the Board or IC
Principles (sub-beliefs): These are more detailed statements fleshing out application to portfolio management and oversight. They are developed by the executive and endorsed by the Board or IC
Contextual narrative: this helps with understanding and interpretation and is owned by the executive

Beliefs and principles should be “edgy”, that is they should link demonstrably to actions taken within the organisation or fund. They should answer the question: “so what?”
As with policy statements, we prefer beliefs written in an active voice (“we”, “our”). This helps drive home that the beliefs are not an abstract idea but a link to what is happening with the organisation / fund context. It also helps reinforce a sense of ownership.
To help with top of mind retention, we favour limiting the number of core beliefs to between 5 – 10 and err towards the lower end. Principles will typically number between 3 – 6 for each core belief. It is less important that these are top-of-mind recall statements for Board/IC members, although they should be for key staff.
Organisations should take their time to debate and “settle” beliefs both within the executive and between the executive and Board. Doing this upfront will lead to more durable statements.

</td></tr>
<tr><td>Decision making frameworks</td><td>

Good decision-making frameworks serve several purposes. They:

help management clarify and deepen their thinking by: highlighting the basis on which decisions are made; identifying connections and feedback loops in the process; and, creating the potential for critical review
provide the Board with tools with which to deepen their oversight role. If the framework has been clearly articulated to, and understood by, Board members (perhaps as part of a Board education program), those members are able to ask the question: “can you tell us how this proposed course of action is consistent with the framework previously outlined?”
help with institutional memory and continuity through providing a basis for staff and Board member induction and ongoing education.

We favour frameworks with the following key elements:

Purpose – why does the framework exist, what is it trying to solve?
Design – what are the underlying principles (which could be beliefs) that guide design of the framework?
Build – what are the key elements of the framework and how do they relate one to the other?
Implement – how are the key elements populated? what criteria are used? what outputs are derived?

</td></tr>
</table>

Appendix 2: best practice guidance

Area of practice	Best Practice Summary
Portfolio quality scorecard	▪ Balanced Scorecards have been around in the business world for some 25 years. The idea of is that rather than just focusing on lagging indicators (e.g. profit) an organisation should also be focusing on leading indicators (i.e. what will drive success in the future). ▪ **Portfolio Quality Scorecards (PQS)** are analogous to Balanced Scorecards. The idea is that rather than just focussing on portfolio returns (a lagging indicator), an investor looks at their portfolio from different perspectives using a variety of lenses. ▪ In a PQS each lens is accompanied by a metric focused to the investor's particular preference. The investor might also specify the relative importance of each lens. How well the portfolio is faring when observed through each lens can be measured against agreed criteria and then shown either as a score or by using a traditional traffic light (R.A.G.) display. Each assessment can be supported by underlying analysis if required. ▪ What constitutes portfolio quality will differ from one investor to the next. Liability driven investors will use lenses that absolute return investors ignore. Long horizon investors will have different preferences than short horizon investors. ▪ Whatever the nature of the investor, we find it helpful to organise the portfolio lenses into common factors. One such configuration, showing potential lenses, is shown below:

- **Expected return**
- **Compensation for risk**
- **Historical performance**

Portfolio efficiency

- **Risk premium contribution**
- **Effective equity exposure**
- **Strategic bias**

Portfolio diversity

- **Tail risk**
- **Downside correlation**
- **Sustainability**

Portfolio robustness

- **Complexity**
- **Liquidity**
- **Fees**

Portfolio implementation

Appendix 3: SIPSP changes to Fund limits

- GSFA records, in its SIPSP, certain target allocations and permitted ranges for the Fund. The following summarises changes made since the previous Independent Review:

Reference Portfolio and Target Portfolio

Asset class	Reference Portfolio % weight (previous)	Reference Portfolio % weight (Mar 21)		Target Portfolio % weight (previous)	Target Portfolio % weight (Mar 21)
International equities	60.0	70.0		54.7	58.0
NZ equities	10.0	10.0		9.3	9.5
Fixed interest	30.0	20.0		16.3	7.5
Style premia	-	-		-	7.5
Global tactical asset allocation				3.0	-
Global private equity*	-	-		-	8.5
Multi-asset class				7.0	-
Catastrophe risks	-	-		6.0	6.0
Life settlement risks	-	-		3.7	3.0
Foreign currency exposure	20.0	20.0		20.0	20.0

* Total (domestic and global) invested private equities to not exceed 30% of total (domestic and global) invested private and public market equities.

Appendix 3: SIPSP changes to Fund limits

DAA Limits: limit vs target allocation %

Asset class / strategy	Previous	Mar 21
Cash v Equities v Bonds	+/- 10	+/- 10
DM Equities vs EM Equities	+/- 5	+/- 5
Global equities vs low vol. equities	+/- 5	-
NZ Equities vs international equities	-	+/- 2
DM Bonds vs EM Bonds	+/- 5	+/- 5
Foreign currency exposure	+/- 20	+/- 15
Currency majors vs NZD	+/- 10	+/- 10
HY Credit vs Govt bonds vs IG Credit	+/- 5	+/- 5
Opportunistic	+/- 5	-
Commodities and/or property	-	+/- 5

Rebalancing (+/- %)

Asset Class	Rebalancing limits (previous)	Reset limits (previous)	Rebalancing limits (Mar 21)
International equities*	5	2	5
NZ equities*	2	1	2
Fixed interest	4	2	4
Style premia	-	-	2
Catastrophe risks	-	-	2
Life settlements	-	-	2
Foreign currency exposure	-	-	5

* Mar 21 limits refer to combined public and private equity exposures

Appendix 4: GSFA responses to previous review recommendations

- PwC's 2016 Independent Review is available in the public domain at: https://treasury.govt.nz/sites/default/files/2015-12/gsfa-review-2016.pdf
- Similarly GSFA's response to the review is available here: https://www.gsfa.govt.nz/about-us/governance/review/response-to-2016-statutory-review.pdf
- In this section we identify only those recommendations where GSFA did not accept, or act on, PwC's recommendations. As noted on page X, we accept GSFA's response as appropriate unless otherwise commented on. For ease of cross-reference we have indicated those responses with an *
- In the interests of brevity we have paraphrased both the recommendations and the responses

PwC Recommendation	GSFA Response
• Introduce a proxy benchmark for Life Settlements	• No suitable benchmark available*
• Review the business case for Catastrophe Risk and Life Settlements	• Do not consider 'out of cycle reviews are necessary
• Bring fee negotiations forward in the RFP process	• Not practical
• Adopt a policy on risk budgeting	• All elements in place therefore explicit policy not required*
• Assess Fund performance on an after-tax basis	• Investment objectives set as pre-tax. Returns already on an after-foreign-tax basis.

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