Investment Philosophy and Strategy

2009–18

qsuper.qld.gov.au

QSuper

Contents

CIO Foreword

In 2009, QSuper established a new investment governance model and capability which allows the Trustee more independence in setting its investment philosophy and strategy. An Investment Committee was established, and I was appointed Chief Investment Officer and invited to think broadly about where this new capability should take QSuper's investments.

It gave us the unusual opportunity to think from a relatively clean sheet of paper. It was also, coincidentally, in the immediate aftermath of the Global Financial Crisis (GFC). Both factored heavily in what came next.

The early debates were about the impact the GFC had on QSuper's default members. The investment outcomes, measured as time weighted returns and compared to other superannuation funds as a form of risk-equivalent benchmark, were very competitive.

Yet it was clear when we listened to members' feedback through surveys and at seminars that they were concerned and unsure what to do. We felt we needed a different approach with different strategies and measures of success that were better aligned to our members' financial wellbeing.

The debates culminated in two significant outcomes:

- A new investment philosophy and strategy for pursuing absolute return objectives were set for the member investment choice options. This path and its outcomes so far are the subject of this paper. We use the Balanced Option as a case study.
- A new accumulation default investment option which was constructed along asset-liability management lines (the subject of a following paper).

This was a significant undertaking, but we had a lot in the way of research into investment philosophies from around the world to guide us. As this paper records, the work undertaken was very much about adapting good ideas to the problem rather than finding new solutions. We are now far enough advanced to be cautiously optimistic that this new philosophy will continue to serve QSuper's members well. We first reported on progress in 2015 and this is the next update.

Many people have contributed to this and I am not going to single anyone out. However, I am very grateful that the Investment Committee was willing to enable all this to be implemented. QSuper has an Investment team who were able to prepare a strategy and maintain the courage of their convictions as the implementation progressed. That is, good investment governance and the results are now on the board for us to reflect upon.

I am retiring in September 2019 and the journey will continue in the hands of others. I wish them well and have every confidence the best is still to come.

Brad Holzberger

Chief Investment Officer, QSuper

Executive Summary

This document traces the development of investment philosophy at QSuper from the initiation of the internal investment capability in early 2009. The Balanced Option is used as a case study to demonstrate how this philosophy has been transformed into an investment strategy. However, there are several multi-asset class investment options at QSuper, and this same philosophy is applied consistently to all.

The two decades leading up to 2009 saw the establishment of modern Australian superannuation funds during a very benign period for financial markets, particularly in Australia. Both equity and bond returns were underpinned by a structural re-rating of inflation, interest rates and price-earnings ratios. 70% growth/30% defensive asset allocation was dominant, and this served all stakeholders well as market retracements were short and always followed by strong rallies.

Funds were all successful; mandated contribution flows and investment returns combined to provide strong growth in funds under management. Members could exercise choice but seldom did as they were only just becoming aware of superannuation as a personal and social asset. Trustees followed peer focused investment strategies, with success measured by comparative returns reported for individual financial years and never adjusted for risk. There seemed little need to explore alternative philosophies.

However, in 2009, in the immediate aftermath of the GFC, a series of developments – many unrelated to investment policy – saw QSuper choose to significantly change its governance model. This included a decision to insource a significant investment capability.

Strategy in the Balanced (Default) Option was very strongly influenced by peer relativities. In common with the industry, risk was mainly a function of deviation from peer returns, measured over periods as short as one year.

When invited to identify the major investment opportunities and risks facing the Fund, the new investment team nominated the following, which essentially remains unchanged to the present:

- The GFC signalled a major transition point in return and risk. It affected economies, financial markets, government, regulatory policies and financial institutions in a material and permanent way.
- Repair in its aftermath would take a very long time and require unconventional policies to be held for longer than anticipated.
- This would eventually give rise to lower long-term returns from all financial assets, along with heightened volatility. Future scenarios would be extremely difficult to identify and quantify.
- The standing policy of very high allocations to equities, which represented extremely high concentration-risk, is not suited to this environment when considered in the context of superannuation fund members' risk tolerances during accumulation because:
  - equities cannot be guaranteed to always meet reasonable long-term absolute return objectives; and
  - sequence risk is significant, particularly for default members.

A new investment philosophy was worth considering, and two key paths have been implemented.

1 QSuper Lifetime as the pre-retirement default for Accumulation accounts.

- Strategies vary according to age and Lifetime account balance.
- Strategy is defined by the mix between growth assets and low-risk assets, with risk defined in terms of retirement incomes.

2 A new strategy (Risk Balanced) for seeking long-term risk-adjusted asset only returns (the subject of this paper).

- Risk parity principles underpin the key structure, but it differs in many ways from the traditional risk parity products.
- This requires the adoption of high duration bonds (HD Bonds).

These paths are still being debated across QSuper, because:

- Industry confidence in long-term equity returns is high, with the implication that investing in bonds will incur unnecessary opportunity cost.
- Many commentators contend that future bond returns will be very low because bond yields are low by historic standards. So, even if the strategic policy is sound we should perhaps defer implementation.
- Dynamic Asset Allocation (DAA) may enable us to navigate and even exploit these timing challenges. However, DAA and alpha programs are not likely to be successful, in isolation, given the scale of the challenge.

This debate is healthy and productive. Fiduciaries are demanding strong evidence to support investment recommendations, devoting a significant part of the investment agenda to the ongoing discussion and considering input from external parties. This is what members would expect their Trustee to be doing in uncertain times.

While the Investment Committee has approved the general direction Management has been recommending, they have also chosen to modify recommendations in several important and material ways.

This paper documents the main elements of QSuper's Risk Balanced strategy and the outcomes which have flowed from it so far using the Accumulation account of the Balanced Option as the case study. Its objectives are codified in a scorecard and include an absolute return objective, a fee objective and minimisation of downside risk. The Balanced Option previously had objectives related in part to peer funds, which it had met successfully over shorter and longer timeframes.

The new strategy was implemented progressively from mid-2011. The main differences between the current and previous strategies are:

- less concentration in a single risky asset class (equities);
- the introduction of new risky assets, high return seeking sovereign bonds (or high duration bonds (HD Bonds) which have equity-level volatility and return drivers partially uncorrelated to equities;
- more unlisted equity and debt;
- more real and alternative assets; and
- more non-core market country exposures (listed and unlisted assets).

> "One of the main differences between the current and previous strategies has been the introduction of a new risky asset class, high return seeking sovereign bonds (or high duration bonds (HD Bonds) which have equity-level volatility and return drivers partially uncorrelated to equities."

The most material change in the portfolio, the introduction of HD Bonds, has provided the portfolio with a more effective way to trade off risk and return.

- Portfolio structuring within the bond asset class has increased its risk/volatility to be equity-like.
- Some equity risk has then been replaced with roughly equivalent bond risk. If bonds and equities were perfectly correlated this would see no change in portfolio risk, but as these asset classes have tended to have low or even negative correlations, overall portfolio risk is significantly reduced via this approach.

The new strategy has now been in place for about ten years, during a very unusual market environment, and the future remains clouded. It is too early to draw definitive conclusions, but the outcomes achieved (both outright returns achieved and risk-adjusted returns)[1] show the strategy has met the multiple and challenging return and risk goals[2] which were set. Relative performance has been as good as or better than what could have been delivered by traditional portfolios (those concentrated in equity risk).

> "The strategy implemented from 2011 for the accumulation account of the QSuper Balanced option has met the multiple and challenging return and risk goals which were set."

- Investment Principles underpin all strategies and since the initial set of principles were approved in 2009 there has been very little change. Only two amendments have been adopted:
- adding a principle on sustainable investing; and
- amending the principle on foreign currency to accommodate larger currency exposures under certain conditions.

Capability development along the way has been guided by two five-year plans and planning for the investment management of a QSuper with substantially larger assets under management is now underway. The second plan initiated several important developments including:

- enhanced resources to manage accumulation default and retirement assets;
- sustainable investment policies which included a change to investment principles;
- systems and IT platforms; and
- performance measurement and evaluation.

1 This refers to returns for the 10-years to 31 December 2018 achieved by the accumulation account of the QSuper Balanced option. Returns for this option appeared in SuperRatings Balanced Superannuation Fund category survey for 10-years to 31 December 2018. Returns for the 10-years to 31 December 2018 for the accumulation account of QSuper Balanced option can be accessed on qsuper.com.au. Risk-adjusted returns are based on QSuper's analysis of data from the SuperRatings Balanced Superannuation Fund category survey for 10-years to 31 December 2018.

2 The risk goal referred to here is reduction of the annual volatility of returns associated with the accumulation account of the QSuper Balanced option.

Background

In the 1990s and 2000s many Australian superannuation funds were established, grew to significant scale and established their investment beliefs, objectives and strategies. Over this period, inflation was continually falling and then stabilising at low levels.

Key points:

- The Australian superannuation industry has historically been dominated by a pervasive culture of comparative returns where the primary objective of funds has been to outperform a peer average annual return.[3] Risk was not a focus of commentary or debate, and it was assumed it would always be rewarded.
- 70% growth/30% defensive strategies dominated. The GFC upended all of this as the retracement of equities was especially severe compared to previous occasions.
- Alpha outcomes were strongly negative across the GFC despite the expectations set by active managers that alpha would in fact cushion funds from downside market risk.
- After quantification and debate, QSuper recognised the structural risks (both annual volatility and the probability of large drawdowns, which gives rise to sequencing risk for members with large balances) in the Balanced (Default) Option was not a good result for members. Consequently, there was a general willingness to explore new directions in investment philosophy.

The consequence was that interest rates (short and long) were constantly falling, profit growth was stable, and price-earnings ratios were structurally expanding. This produced a long period of strong equity and bond returns, in which, market retracements were brief and always followed by strong rallies.

Funds grew quickly, through a combination of mandatory contributions and strong returns. Members, despite having choice of fund and investment strategy, rarely exercised it. This gave rise to a pervasive industry culture of comparative returns where the primary objective of funds became to outperform a peer average annual return. Risk was not a focus of commentary or debate and it was assumed it would always be rewarded.

This environment reinforced with Trustees that 70% growth/30% defensive strategies were sound. Asset consultants warned that they really represented very concentrated equity risks, but the discussion never resonated. Then, when the GFC struck, three things appeared to move to a different paradigm. Many of the policy settings which followed the GFC were unimaginable prior to it.

- The retracement was severe and impacted Australian equities (more recent previous retracements had not).
- It was extended and gave rise to discussions of whether the prevailing paradigm was stable.
- Government fiscal policy, monetary policy, financial market regulations and the financial actions and risk preferences of households changed structurally. Members voted with their assets and the trend to establish SMSFs and invest in residential real-estate grew rapidly. This was evident at QSuper, albeit at rates well below industry norms.

History shows that these policy changes were successful at pushing asset prices up (which was the intent as a means of stimulating economic activity) and have resulted in the decade since the GFC being very good for risk asset returns. Since 2009, risk levels of default options have risen steadily, and the strong return backdrop has again become ingrained in members' expectations.

The question remains whether the policy settings (low rates, fiscal deficits, high debt) which underpin these strong returns are permanent and what might happen to returns if they are returned to sustainable levels.

3 See https://www.moneysmart.gov.au/superannuation-and-retirement/how-super-works/choosing-a-super-fund from the Australian Securities & Investments Commission about things to look for when choosing a super fund, including comparing returns.

Coincidentally, QSuper started the current round of strategy debates in early 2009. The prevailing situation was:

- The industry was in the middle of the GFC, although hindsight shows equity markets were at a strategic bottom. It did not feel like it then.
- QSuper had undertaken DAA for some years and, while it was successful around the GFC, the impact on total returns was very modest. It became clear that DAA was not a way to manage risk in a material way.
- Peer returns were still a strong influence on strategy. It was indirectly the main determinant of Balanced (Default) Option strategy.
- Correlations of all listed and unlisted risky assets, hedge funds and alpha tended to one. Sovereign bonds were the only safe harbour for investors.
- Significant disenchantment with alpha seeking in listed markets prevailed. Alpha outcomes were strongly negative across the GFC despite the expectations set by active managers that alpha would in fact cushion funds from downside market risk.

It was recognised within QSuper management, after quantification and debate, that the inherent risk (both annual volatility and the probability of large drawdowns which gives rise to sequencing risk for members with large balances) in the Balanced (Default) Option was not a good match for members:

- the Board reviewed the impact of GFC outcomes on member balances and saw the disproportionate effects of sequencing risk for the first time;
- anecdotal evidence from members suggested great disquiet, with some members delaying retirement or returning to work; and
- the first signs of the significant flows to SMSFs (across the industry and QSuper) were noticed.

There was a general willingness to explore new directions in investment philosophy. The timeline of decisions which followed is in Attachment 1. The rationale for these decisions is set out below roughly in the chronological order in which they were debated, although many of the debates overlapped. The Balanced Option is used as a case study to demonstrate these changes.

Investment Principles

QSuper's asset-only investment strategies are based on a set of Investment Principles. These are regularly revisited, debated and challenged. The current set is listed below:

1 Sound investment governance should dictate investment policies and activities from the fiduciaries through fund investment staff to external managers.

2 Fund strategies should be related to risk.

3 Net long-term returns are the focus of objectives. Taxes and fees should be closely managed. Tax management can be used as an opportunity to add value across asset classes and investment strategies.

4 The application of sustainable investment practices, encompassing long-term, finance driven strategies that integrate ESG factors in investment arrangements, may enhance the probability of meeting investment objectives:

- a. The Board recognises that managing ESG factors supports broader investment strategy by reducing risk for a given return or increasing return for a given level of risk.
- b. The Board recognises that QSuper is a universal owner and that stewardship is the exercise of ownership rights to protect asset value and enhance long term returns, both for individual assets and the economy more broadly.

5 Generally, many assets with similar risk have similar long term expected returns when valuations are around normal levels. However, the valuations of assets fluctuate over time and this principle may not hold even over long-time periods. Strategies should change dynamically to reflect this impact when it is material.

6 Diversification should be achieved by seeking an appropriate balance of risk factors. These are not always fully described by simple asset class groupings.

7 Diversification should be employed as a strategy for reducing risk without sacrificing expected return. It should not be used solely as a means of reducing risk at the expense of expected return.

8 Overall fund level return and risk may be improved by holding significant exposures to international assets.

9 Various non-cap weighted equity and bond structures exhibit superior risk-adjusted returns to cap-weighted portfolios.

10 Traditional sectors of fixed interest (inflation, sovereign and credit) offer very different risk factors in a diversified portfolio and should not be seen as substitutes for accessing interest rate risk.

11 Illiquid assets enhance risk-adjusted returns and they can be effectively accessed when investment time horizons are sufficiently long.

12 In the absence of expected benefits, foreign currency introduced by offshore investing should be hedged to reduce uncertainty in the return stream. However, under appropriate conditions, considered holdings of select foreign currencies, independent of any underlying asset, may improve portfolio risk or return.

13 Alpha is accessible, but not reliably, across the board for all asset classes. This is a two-stage principle:

- a. is alpha theoretically and empirically observable?
- b. if so, can we find a means to reliably embed it in our fund?

14 External agents/managers should be used in areas where they can add value.

The investment principles are not set in isolation to the investment landscape and economic backdrop. As the portfolio and market conditions have evolved, these principles have been amended. The amendments relate to ESG and Foreign Currency (FX).

In the case of ESG, QSuper is mindful that factors comprising sustainable investment are multi-faceted. They:

- are uncertain and represent both risks and opportunities;
- can be of an investment and reputational nature; and
- have time horizons which are often longer than the typical investment cycle.

In the case of FX:

- market conditions and pricing have evolved such that FX exposures may provide some cost-effective downside protection and improve risk adjusted returns; and
- expansion into non-core markets needed to recognise that such currencies may exhibit risk premiums/return potential and incur transaction costs which may warrant leaving exposure unhedged on a case-by-case basis.

Investment Objectives and Strategy

An extended debate across 2009 and 2010 concluded that we faced a structural change in investment markets. The implications were that the future would encompass an extended period (perhaps decades) of sub-par long term returns (mid-single digits after fees and tax) to risky assets and by extension diversified multi-asset portfolios. As an example, for the Balanced Option there was a strong probability of returns below our CPI+4 % p.a. (after fees and tax) objectives. The rationale is in Attachment 2.

An outworking of these views was a decision by the Board to influence member expectations by reducing the investment objective of the Balanced (Default) Option:

It was reduced from CPI + 4% p.a., after fees and tax, over rolling 5-year periods to:

CPI + 3.5% p.a., after fees and tax, over rolling 10-year periods.

Other Diversified Investment options were adjusted accordingly. This decision was not implemented until 2013[4] after ongoing debates and consideration of member communications and relationship management with financial advisors and other stakeholders.

Key points:

- QSuper's investment professionals believe that an extended period (perhaps decades) of sub-par long term returns (mid-single digits after fees and tax) to risky assets and by extension diversified multi-asset portfolios is likely.
- An outworking of this view was to reduce the Balanced (Default) Option's return objective to CPI + 3.5% p.a., after fees and tax, over rolling 10-year periods. Returns for member investment choice options were also adjusted.
- We revoked peer relative objectives for the default fund and implemented QSuper Lifetime as the default pre-retirement option with the introduction of MySuper.
- We adopted a different, more diversified strategy (ultimately termed Risk-Balanced) to seek long-term risk adjusted returns in asset only portfolios. The goal is to achieve approximately equal long term returns to traditional 'balanced' portfolios but with reduced volatility and better outcomes in significant downside events.

4 Members were notified this happened in the Significant Event Notice of 16 December 2013

Investment Strategy

Given the investing environment was changing QSuper management were seeking a new, more robust, strategy. A debate ensued on alternative philosophies to achieve solid investment outcomes.

The goal in evaluating potential new philosophies was to keep expected returns up but also respect that we would face heightened risks from a range of possible scenarios because we were in uncharted waters. QSuper's investment team evaluated several paths to adapt philosophy to the new environment. This culminated progressively in the following decisions:

Default Option Strategy

Revoke peer relative objectives for the default fund and implement QSuper Lifetime as the default pre-retirement option with the introduction of MySuper. This is still developing and is discussed in separate reports.

Choice Option Strategy

Adopt a different, more diversified strategy (ultimately termed Risk-Balanced) to seek long-term risk adjusted returns in asset only portfolios. The goal is to achieve long term returns that are broadly equal to traditional 'balanced' portfolios but with reduced volatility and better outcomes in significant downside events. It draws from a range of other approaches, but particularly the philosophy of risk-parity which is a key part of the underlying principles.

At asset allocation level, as an alternative to simply holding more equities, introduce a second risky asset constructed from sovereign bonds. The low correlation between this asset and equities is a major contributor to overall fund diversification. Add significant exposures to unlisted assets in several asset classes.

> "At asset allocation level, and as an alternative to simply holding more equities, we introduced a second risky asset constructed from sovereign bonds."

The decision to expand interest rate risk through HD bonds and unlisted assets elicits controversy (both when first proposed post-GFC and in the current environment) because current bond yields are lower than medium-term past.

They are low but are consistent with where they have been for long periods historically. This does not warrant departure from the investment philosophy or delay in implementing because:

- Bond yields are roughly fair value and not irrationally low given macro-economic backdrop and likely path of monetary policy. Return and risk of these assets are driven in large part by the slope of the yield curve rather than absolute level of yields. This can be quantified through future scenario analysis and stress tests.
- They have been at these levels before and there is no irrefutable cause that they must rise materially. That is one scenario, but the opposite could be true also.
- Commentary is negative (and addresses normal, not HD bonds) but actual market consensus priced in is for only modest rises in long term bond yields. Scenario analysis undertaken by QSuper's investment team supports the contention that the inclusion of high duration bonds — on balance — improves risk management.

> "Our Risk-Balanced investment strategy aims to achieve approximately equal long term returns to traditional 'balanced' portfolios but with reduced volatility and better outcomes in significant downside events."

Asset Class Policies

Intra-asset class policies which complement this strategy were developed. In some cases, they are quite different to typical industry strategies. The policies would be characterised as very high risk when being compared on a tracking error basis to market-capitalisation weighted benchmarks or peer fund portfolios.

Listed equities

- Move well away from market-capitalisation benchmarks.
- Remove traditional active stock selection.
- Use several 'smart beta' strategies, which have provided superior risk-adjusted returns since their inclusion in the portfolio including lower drawdowns than market cap benchmarks.
- Combine international and domestic equities in one global listed equities (GLE) portfolio, expanding the policy framework to include EM exposures.
- Streamline the implementation of the GLE portfolio to improve portfolio management efficiency and internalise the portfolio construction process.

> "Our asset class policies would be characterised as very high risk when being compared on a tracking error basis to market-capitalisation weighted benchmarks or peer fund portfolios."

Bonds

- All sovereign exposures.[5]
- Extend duration to approximate the duration (risk) of equities. Returns are generated from four distinct risk premia, which provides the opportunity for higher returns even when long bond yields are comparatively low. These are coupons, change in yields, yield curve roll-down and currency hedging for international bonds.
- Use fixed interest assets in the diversified portfolios to positively contribute to returns while reducing the overall distribution of short- and long-term portfolio outcomes.
- Meaningfully diversify and reduce risk through low correlations between equities and bonds. This is more prevalent in some risk scenarios than others, but on balance it provides a strong risk control which is particularly suitable to the current medium to long-term environment.
- Include some inflation linked bonds opportunistically.
- Emerging market local currency sovereign bonds have been included opportunistically since 2016.

"The duration (risk) of our bond exposures approximate that of equities.[6]"

Unlisted equity assets

- Seek significant idiosyncratic active risk due to the nature of the asset class.
- Focus on larger, strategic core assets.
- Increase exposure to private equities, real estate and infrastructure, funded from cash.
- Accept an uneven pace of acquisition with fewer real estate opportunities given challenging pricing, while infrastructure weights have been raised above strategic weights owing to better pricing.
- Maintaining the pace of acquisition as FUM grows will continue to be a challenge in the future, particularly at current valuations.

"We have increased exposure to private equities, real estate and infrastructure, funded from cash. Our infrastructure weights have been raised above strategic weights."

Non-Core Countries

- In October 2016, the Investment Committee endorsed a business plan to potentially develop a capability to acquire and manage very substantial, permanent non-core country exposures (including emerging markets (EM) where appropriate) across all, or most asset classes.
- A driver of the expanded country set is an acknowledgement that the portfolio is dominated by a narrow set of countries (that we refer to as 'core' countries).
- While geographically dispersed across the globe, there is an ever-increasing economic integration between these economies – the diversification benefits of these different exposures are not as high as they were. But more concerning, many of these core economies are experiencing a secular growth slowdown, and an extended period of low cash and interest rates. This leads us to believe that asset classes associated with these economies are destined to receive lower returns going forward.
- Current allocations are concentrated in a few core countries, for example EM allocations are sharply lower than comparative GDP (30%) and GDP growth (70%).
- We broadened these exposures, but we did not have capacity to truly diversify our country set especially in EMs. Risks in the core developed countries are elevated/increasing and expected returns falling. A broader opportunity set now has the potential to diversify risks and provide higher returning opportunities.
- In only EM for example, using GDP as a guide, we could have 20-30% of assets spread across all asset classes in EM. We could also expect similar percentages in other non-core countries.

5 High-yield credit does form part of the fixed interest portfolio although the exposure is funded from listed equities since we expect the two asset classes to be relatively highly correlated during stressed market events. Essentially, we think of credit exposure as a form of equity exposure.

6 We define risk in this context as the annual volatility of returns of asset classes. We expect equities to have volatility of around 15% per annum over the long run. In the short run, it can be above or below this figure. The risk of the high duration bonds in the accumulation account of the QSuper Balanced option is similar to this.

One of the initiatives endorsed by the i2020 project was to consider and potentially develop a capability to acquire and manage very substantial, permanent non-core country exposures (including emerging markets (EM) where appropriate) across all, or most asset classes.

Sustainable Investment

Establishment of QSuper's ESG Policy commenced in 2005 with the launch of the Socially Responsible MIC Option. In 2009, QSuper formalised its active proxy voting arrangements following the transition of assets from QIC. In 2011, the Policy was expanded to include the appointment of an engagement agent, the Australian Council of Superannuation Investors (ACSI).

QSuper established a set of principles to guide its consideration of ethical investments in 2014. QSuper, in applying these ethical principles, ceased investing in companies involved in the manufacture of Tobacco Products from October 2014, and Land Mines and Cluster Munitions with effect from July 2019.

In 2017, the Board expanded its Investment Principles to integrate Sustainable Investment (SI) practices across its broader investment management framework to manage ESG risk. It does so in the belief that the application of sustainable investment practices, encompassing long-term, finance driven strategies that integrate ESG factors in investment arrangements, will enhance the probability of meeting investment objectives.

To facilitate this expansion, the Board approved an enhanced SI Policy and supporting capability which prioritises Climate Change and Corporate Governance as inaugural themes. Supporting programs integrate management of identified risks and opportunities at portfolio level and through stewardship (voting, engagement and advocacy) activity.

In combination, it is envisaged that QSuper's SI program when mature, will reflect QSuper's position as a large and influential, universal owner. This will mean:

- a comprehensive SI Policy documenting the Board's objectives, principles, risk preferences and priorities;
- best practice ESG governance commensurate with that Policy;
- completion of a significant debate on a fundamental investment case and integration of the investment case across all assets, portfolios and investment Options with measured impacts on returns and risk;
- a stewardship program whose activity ensures QSuper's influence as a large global investor is considered by stakeholders on material issues; and
- an expanded SI team that is well-regarded and presents as a strong informed voice in industry debate.

In aggregate, the SI program will ensure QSuper effectively manages ESG issues that are material to its global investment portfolios in a form that accords with member expectations, fiduciary duty and regulatory direction.

"Our Sustainable Investment program will ensure QSuper effectively manages ESG issues that are material to its global investment portfolios in a form that accords with member expectations, fiduciary duty and regulatory direction."

Risk Management

The decision to remove the influence of a peer focused strategy for the Default Option was fully implemented in October 2011 after a communication program to members. After that, debates about investment strategy and risk became more sophisticated.

Key points:

- The decision to remove the influence of a peer focused strategy for the Default Option was fully implemented in October 2011 after a communication program to members.
- Risk is a failure to meet retirement income goals for default members or absolute return objectives for choice members. It is not about deviation from peer returns.
- Roughly speaking our portfolio contains:
  - 55% equity beta;
  - 35% bond beta; and
  - 10% idiosyncratic beta.

Self-evidently, if being like peers is the basis of strategy, views about future investment returns and risks are not actually too relevant apart from adding a little value to relative returns at the margin.

In response to this, strategy debates became more forward looking. Scenario analysis (as opposed to deviation from peer returns) has become our most important tool to assess risk. The risk management framework which is progressively emerging from this is set out below.

Measuring risk

- Risk is a failure to meet retirement income goals for default members or absolute return objectives for choice members, with an asymmetric downside bias to reflect the risk tolerances of QSuper members.
- Sequencing risk matters because members are accruing and then drawing down. This is most directly relevant in the Default Option, but it is broadly applicable to Choice members as well.
- Short and long-term divergence from peer fund returns is not a relevant risk measure.
- Volatility alone (short or long-term) does not reflect the most material risk to members.

> "Risk is a failure to meet retirement income goals for MySuper members in the Lifetime default strategies or absolute return objectives for Choice members. It is not about deviation from peer returns."

Risk-Equivalence Exposure Management

- The portfolio contains multiple asset classes. We estimate, for each of these, the sensitivity (beta) to movements, particularly extreme movements, in equity and bond prices.
- By doing this we can roughly quantify how the whole portfolio may respond to extreme events.
- We use equity and bond betas because they are the largest and most reliable diversifying exposures. Bonds and equities will not certainly diversify under all scenarios, but the beta equivalence estimates help to think through the likely outcomes, not in isolation but as a complement to the other risk models.
- We focus on extreme events but there are a limited number of such examples historically and quantitative historical analysis cannot be definitive. So, history informs the beta estimates, but theory and judgement are applied. Roughly speaking our portfolio contains:
  - 55% equity beta;
  - 35% bond beta; and
  - 10% idiosyncratic beta.

Risk Management Tools

- To be fit-for-purpose, QSuper's tool set contains some bespoke tools, built using standard theory, consistent with our objectives and philosophies.
- We manage the absolute return stream risk to which members are exposed. This contrasts to many other funds that aim to outperform either Reference Portfolios or Peer groups, which effectively anchors their base betas to market cap portfolios or industry standards. The focus of risk then becomes the differences to these anchors at the expense of the focus on absolute risks. It also puts the focus on developing tactical processes, and on seeking expensive and difficult-to-access alpha, to enhance performance.
- QSuper, on the other hand, has clear investment principles that drive the process to focus on managing the beta exposures in the portfolio. This focus benefits both efficiency and effectiveness since it is commonly accepted that:
  - the base asset allocation (the betas) dominates portfolio outcomes; and
  - accessing betas is cheap and efficient compared to alpha.

- While tracking error is a term commonly used in risk management discussions, it does not feature in our tool kit since it is a term that considers risk relative to some benchmarks. It is not a term that is useful in managing absolute risk[7], indeed it tends to lead away from an absolute risk focus.
- QSuper has also avoided measures such as Value-at-Risk[8] as part of its risk toolset. Such measures are difficult to relate to in part because they attempt to merge a range of scenarios, without instructively communicating their inherent assumption set which is often dominated by recent historical relationships.
- Off the shelf risk systems fail to incorporate price risk (a key risk on which the team focuses to develop its DAA processes).
- QSuper's principal investment risk tools for modelling and communicating risk are:
  - a proprietary asset factor model; and
  - ex-ante Investment Scorecards.

As the portfolio has evolved on more progressed investment principles and philosophies, more bespoke tools have become necessary to better understand and communicate the risks embedded in the portfolio.

> "While tracking error is a term commonly used in risk management discussions, it does not feature in our tool kit since it is a term that considers risk relative to some benchmark. It is not a term that is useful in managing absolute risk, indeed it tends to lead away from an absolute risk focus."

Controlling Risk

The following questions were debated:

- Should this confluence of factors lead us to prize diversification more than we have in the past? If it is imprudent to place great confidence in any single expectation or scenario, to what extent should strategies be concentrated into dominant risks of any form?
- We have quantified scenarios and shown that truly diversified portfolios offer better outcomes across a range of possible scenarios. What potential opportunity costs, if any, should we accept (short or long-term) to narrow the distribution of future returns around the objective?
- Diversification is not foolproof. Are there still some scenarios when certain assets, held in any allocations, will not be able to meet fund objectives?
- Despite the potential of risk parity principles to provide diversification, is it feasible to conclude that we should not have to forego material long-term return to achieve this preferred risk management setting?

Portfolio Positioning Matrix (PPM)

- This is a custom-built, whole-of-portfolio positioning tool that:
  - systematically trades-off listed and unlisted asset class weights based on fundamentally-driven bond-and equity-beta equivalent valuations;
  - simultaneously assesses the impact of currency movements on offshore unlisted asset and cash weights; and
  - guides overall fund-level risk settings to ensure positions are set in accordance with QSuper's investment governance framework, including investment principles and asset class ranges.
- Its main output is the DAA portfolio, capturing a set of recommended asset allocation decisions that consider:
  - the portfolio's current asset allocation, including listed and unlisted assets and cash;
  - valuations of the liquid asset classes incorporating the latest economic forecasts, adjusted for daily market prices; and
  - the portfolio's foreign currency component, including how movements in the Australian Dollar (AUD) against a basket of currencies impact on the illiquid asset class weights of the portfolio.
- The PPM tool has considerably increased the efficiency and consistency of the portfolio positioning process.

7 Absolute risk is risk that is not measured in relation to other assets or market returns.

8 Value at risk is a measure of the risk of loss for investments. It estimates how much a set of investments might lose (with a given probability), given normal market conditions, in a set time period such as a day.

Investment Fees

QSuper's investment fee philosophy is stable and unchanged since 2009. The central tenet is to develop strategies based on desired net of fee (and tax) returns. There is no target or limit for investment fees in any Investment Option.

Key points:

- QSuper's investment fee philosophy is stable and unchanged since 2009.
- The central tenet of our investment fee philosophy is to develop strategies based on desired net of fee (and tax) returns.
- Fee policy seeks to balance these competing influences by establishing excellent value for money through fees for internal management plus effective contracts with investment managers and consultants.
- Performance fees have increased because asset allocations have risen, and returns have been consistently above hurdle rates which is significantly to members' benefits.

Fees are managed as a secondary goal because industry convention is to report fees separately and members and commentators are therefore drawn to make narrow comparisons.

Fee policy seeks to balance these competing influences by establishing excellent value for money through fees for internal management plus effective contracts with investment managers and consultants. For example:

- We have insourced portfolios that can be managed to a high standard and a competitive fee.
- For implementation mandates (e.g. passive equities) we have appointed managers with fit for purpose processes to implement those types of portfolios, noting the fees are typically lower than the likely cost of insourcing.
- For high value-add mandates we have developed principles and fees which are often non-standard. In addition to strong negotiation of fee rates, these principles include:
  - the introduction of performance fees in exchange for lower base fees with challenging benchmarks;
  - where possible, the introduction of high-water marks, performance fee clawbacks and caps; and
  - aggressive base fee tiering which takes into account the scale of QSuper's growth.

"The central tenet of our investment fee philosophy is to develop strategies based on desired net of fee (and tax) returns. There is no target or limit for investment fees in any Investment Option."

Fees have risen markedly since 2013 for three reasons:

- Asset allocations to unlisted and other "expensive" assets have increased materially. This has put pressure on base fees but insourcing, tiering and strong re-negotiation in selected mandates have offset this and kept base fee levels roughly stable.
- Performance fees have increased because asset allocations have risen, and returns have been consistently above hurdle rates which is significantly to members' benefits.
- RG97 (ASIC's guide to enhanced disclosing fees and costs Class order 14/1252 changes made to Corporations Act) has resulted in reported fee increases although actual fees are unchanged. QSuper has made sensible and defensible elections in implementing it.

Against a range of benchmarks, fee evaluation reveals strong outcomes:

- Insourcing, measured against the baseline and opportunity cost of continuation of previous management, reduces fees materially.
- Base fees for unlisted assets are below available benchmarks.
- Private assets are the key to understanding fees. The base and performance fees incurred to substitute private assets for listed equities and fixed income (low fee asset classes) have produced many multiples of dollars of additional return per dollar of additional fee. The value-add multiple is around 4 times.

"Performance fees have increased because allocations to unlisted assets have risen, and returns have been consistently above hurdle rates, which is significantly to members' benefits."

Information Technology

A dedicated IT team has been established to develop systems support and retain specialised investment technology expertise. Several capability-enhancing projects are continuing. The objective is more than to simply use technology efficiently. It is to meld deep expertise between investment and IT professionals so that IT systems can be acquired and adapted to offer materially improved decision-making skill and productivity.

Current IT Strategy is focused on:

- Centralisation and quality uplift of data through a new system "Curium" and an allied data warehouse;
- The centralisation of information, decision processes and reporting on to the "Investment Information Platform"; and
- The upgrade of existing trading platform for the Capital Markets function, in conjunction with a new desktop for Capital Markets to enhance the ability to work seamlessly from remote locations and support the trading capabilities.

The uplift in Data Management maturity is a key dependency to enhance the Investment Performance and Attribution capability.

Balanced Option as a Case Study

The Balanced Option provides a case study to observe how this change in philosophy progressed in real portfolios. Up until 2011, the Balanced Option scorecard contained an objective related to peer fund comparisons.

The table below shows the Balanced Option returns against the SuperRatings SR50, up to 30 September 2011. Before the strategy change, the Balanced Option was performing very creditably against its scorecard.

QSuper did not choose to withdraw the Balanced Option from peer surveys simply because comparative outcomes were poor. It was driven by a search for an improved philosophy.

Balanced Option 30 Sept 2011	Investment returns and rankings				
	1 Year	3 Years	5 Years	7 Years	10 Years
QSuper	1.22%	2.40%	1.89%	5.49%	5.56%
Median	-0.27%	1.10%	0.92%	4.56%	5.16%
Quartile	1	1	1	1	2
QSuper Ranking	7/46	11/46	10/46	9/43	13/35

The median fund return in this table is from funds that appear in SuperRatings SR50 Balanced Fund survey. Returns for the accumulation account of the QSuper Balanced option and the SR 50 Balanced Index (60-76) median are based on cumulative returns compounded annually after fees and for initial $50,000 invested over the periods to 30 September 2011. SuperRatings does not issue, sell, guarantee or underwrite this product. Past performance is not a reliable indicator of future performance.
Source: SuperRatings

Transition Plan

Changes followed a methodical course which took market realities and member communications into account. Around the end of 2011, we documented the plans as follows:

- To acquire as many illiquid assets as prudent and practical. These were predominantly real estate and infrastructure. These assets tend to be less volatile than listed assets over the short term and to have longer-term inflation-matching characteristics.
- To more equally weight listed equity and bond risk but retain a skew towards listed equities. The suggested proportion of equity and bond risk targeted was 58 per cent and 28 per cent, compared to 84 per cent and 2 per cent in a traditional portfolio. A further 14 per cent of the risk was in unlisted assets – infrastructure, real estate and private equity.
- To diversify the sub-asset class risk in listed equities and bonds. This meant a move away from market capitalisation-weighted portfolios in equities and bonds.

"Around the end of 2011, we documented a plan to acquire as many illiquid assets as prudent and practical. These were predominantly real estate and infrastructure. These assets tend to be less volatile than listed assets over the short term and to have longer-term inflation-matching characteristics."

The following section sums up where strategy is now.

Strategy in 2018

The asset allocation of the Balanced Option roughly followed that plan, as shown in the chart below, which reflects the scale of the changes made. The chart demonstrates why we sought to remove QSuper from peer ranking surveys.

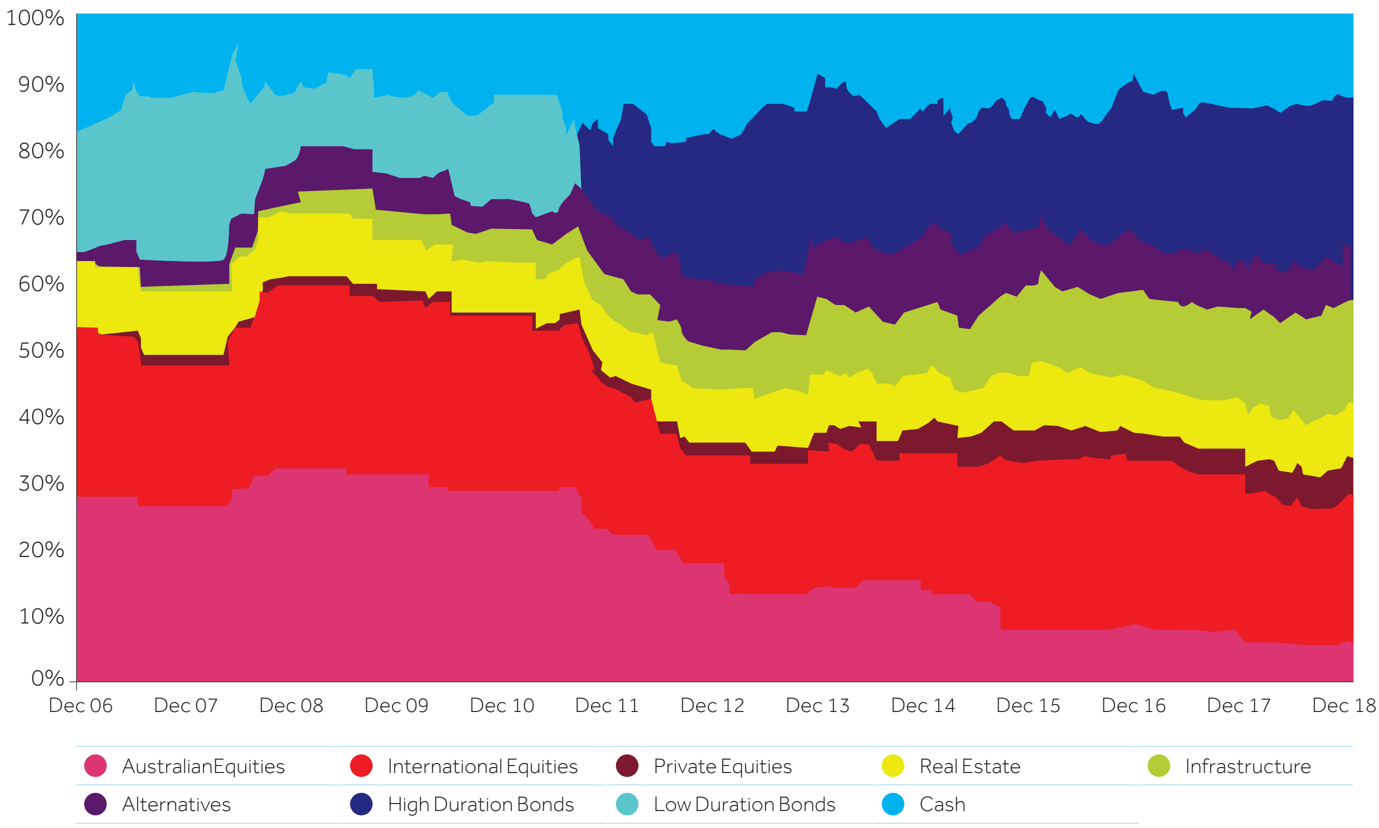
The current Balanced Option strategy represents a major departure from traditional industry Balanced strategies, and it is erroneous to compare them over short-term periods.

> "The current Balanced Option strategy represents a major departure from traditional industry Balanced strategies, and it is erroneous to compare them over short-term periods."

Key points:

- The current Balanced Option strategy represents a major departure from traditional industry Balanced strategies, and it is erroneous to compare them over short-term periods.
- Overall GLE weights have been reduced marginally. In part, this reduction funded purchases of unlisted assets but also reflects DAA decisions to reduce weights as prices increased.
- HD Bond weights have increased. This reflects material strategy change as well as DAA decisions as higher yields make this asset class relatively more attractive. This represents the largest single change to risk profile.
- We would not expect our diversified strategy to outperform a traditional strategy if equities have above average returns for an extended period. The strength of the strategy is that it provides a very good balance of risks across a wide range of scenarios.

Asset Allocation – Balanced Option



Source: QSuper

While shown separately in the chart, Australian equities and international equities were combined into a GLE portfolio.

- Overall GLE weights have been reduced materially. In part, this reduction funded purchases of unlisted assets but also reflects DAA decisions to reduce weights as prices increased.
- Australian equity weights were reduced to the target percentage of the GLE portfolio and have remained relatively constantly at that level since.
- In the major developed markets all equities are now held in bespoke non-market cap portfolios.
- We have started increasing equity weights to what we refer to as non-core markets. These encompass a range of developing markets, but also other developed markets that tend to be underrepresented (or non-core) in standard market-cap benchmarks. We expect to continue to increase allocations to these countries but do not see such exposures as a golden bullet to a low return environment.

HD Bond weights have increased. This reflects material strategy change as well as DAA decisions as higher yields make this asset class relatively more attractive. This represents the largest single change to risk profile.

To achieve the increase in bond risk we restrict the exposure to only sovereign bonds and extend the duration significantly. The combined aim is to achieve bond volatility like equities.

Typical Australian superannuation funds often have around 15 per cent invested in bonds. This standard bond allocation is restricted in risk reducing potential because it is relatively low duration (which reduces both return and volatility) and it includes a material allocation to credit risk which does not diversify equity risk very well, particularly in downturns.

Total levels of unlisted assets are now in line with long term targets, albeit the split of these holdings is not as even as we expected.

- Real Estate weights remain below target. This reflected a scarcity of perceived good value opportunities.
- Infrastructure weights are now above long-term targets, reflecting opportunities in this asset class but also concerns about forward returns from most other asset classes.

Cash weights decreased slightly to fund unlisted assets. Though the holdings are still above long-term targets due to the perceived elevated risks seen in many asset classes and economies.

Foreign currency exposure (not shown on chart) are around 10 per cent in line with investment principles. The long-term plan is to continue to carry some level of foreign currency given the broader macro-economic backdrop and as exposures to non-core countries and assets are built-out.

"Overall Global Listed Equity weights have been reduced marginally. High Duration Bond weights have increased. This reflects material strategy change. Infrastructure weights are now above long-term targets, reflecting opportunities in this asset class but also concerns about forward returns from most other asset classes."

Calibrating Risk Tolerance

The new strategy has several goals against which we measure its success and risks.

Returns

- To achieve CPI+3.5 per cent p.a. after fees and tax over rolling ten-year periods.
- To achieve at least equivalent returns to the previous more conventional industry strategy if equity returns are like central forecasts (say 6 per cent to 10 per cent).

Risk

- To improve on the two risk dimensions of short to medium-term volatility and severity of downside outcomes compared to the previous more conventional strategy.

These return and risk outcomes are dependent on the scenarios which unfold over time. For example, we would not expect the diversified strategy to outperform a traditional strategy if equities have above average returns for an extended period.

The strength of the strategy is that it provides a very good balance of risks across a wide range of scenarios when compared to the objective scorecard. The implications of holding a well-diversified portfolio across a range of medium to long-term scenarios are outlined below.

If equity markets are strong:

- Absolute returns will be good and exceed objectives probably.
- Risk to members is the opportunity cost of even higher returns because equities remain the largest single, but no longer dominating, exposure.
- Bonds returns will probably be lower than median forecasts. They may reduce absolute returns a little but not enough to breach objectives, which we would expect to outperform in this scenario.
- Even if bonds are notably weak they are still not dominant (per cent allocations or impact on total returns) to equities so outcomes should be fine.

If equity markets are weak:

- Absolute returns will be weak and probably at or below objectives, but stronger than the traditional approach in all but the rare case where bond returns are also weak.
- Bond exposures will diversify and materially improve absolute return outcomes.
- The outcome for members will be tolerable as a diversified portfolio will temper the dominant risk to members of falling well short of objectives.

If both equity and bond markets are weak:

- Absolute returns will be poor and probably well below objectives.
- They are unlikely to be worse than the traditional approach.
- Very little can be done to protect members from this scenario.

"We would not expect our diversified strategy to outperform a traditional strategy if equities have above average returns for an extended period. The strength of the strategy is that it provides a very good balance of risks across a wide range of scenarios."

Reducing Risk while Increasing the Weight to Risky Assets

The flaw in the traditional strategies on which we are seeking to improve, is that risk closely matches equities but the defensive assets (cash and low duration bonds) which are used to reduce risk also strategically reduce the return over time. Those strategies will produce outcomes that have the risk of equities but returns below equities. The current strategy substitutes some of the dominant equity risk with bond risk of similar volatility.

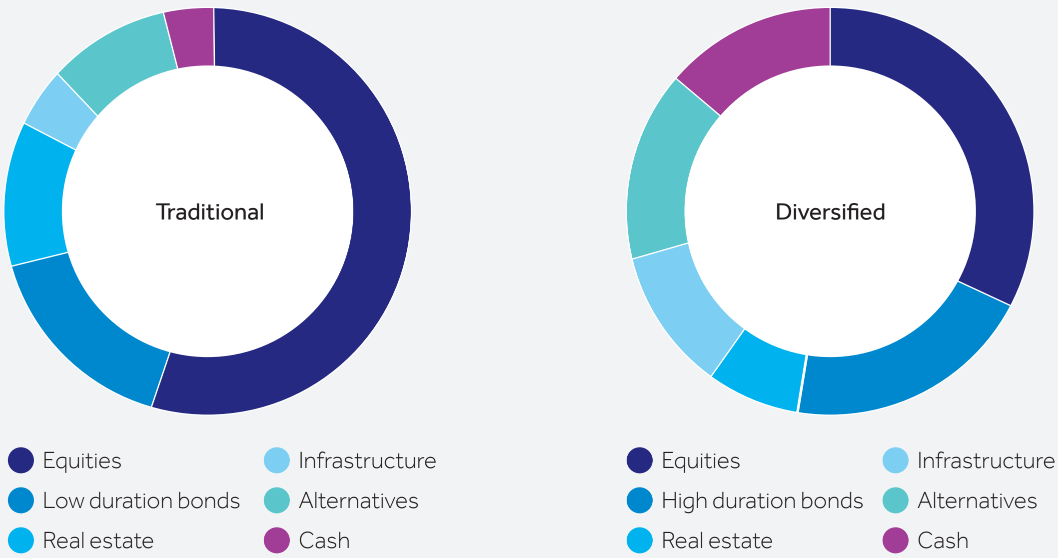
If our investment principles hold, our equity and bond exposures will have similar risk and therefore similar returns over the long run. The decrease in risk comes from low correlations between two risky assets with similar allocations rather than a dominance of one risky asset offset by a smaller allocation to a lower risk asset.

"The flaw in traditional strategies is that risk closely matches equities but the defensive assets (cash and low duration bonds), which are used to reduce risk also strategically reduce the return over time. The current strategy substitutes some of the dominant equity risk with bond risk of similar volatility."

What may not be apparent from asset allocation tables alone is that we have increased the total allocation to risky assets in the portfolio. Low duration bonds are generally not risky, but HD bonds are.

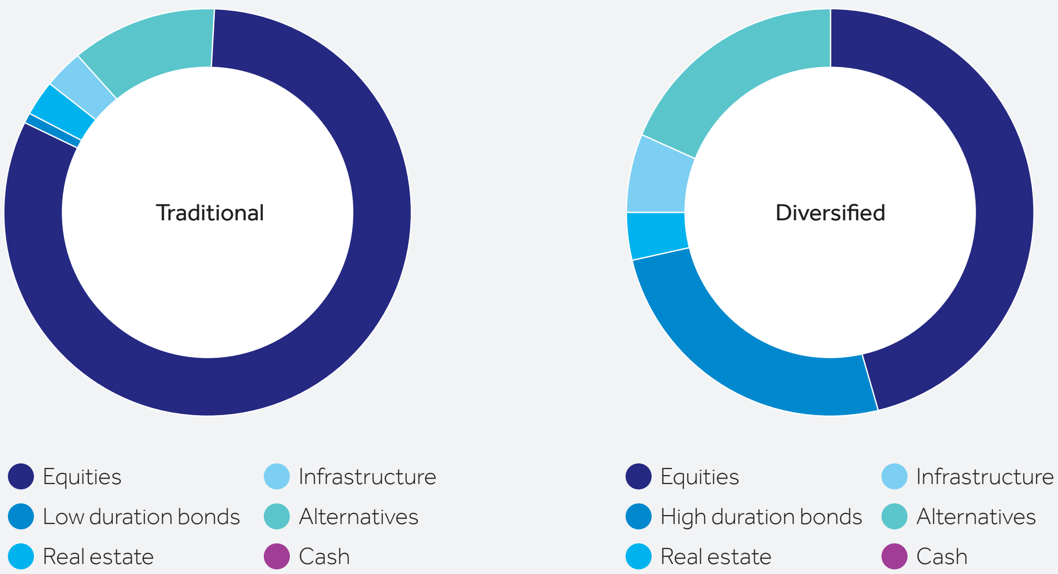
However, a core part of the whole strategy and a fundamental principle of investment management is that the significantly increased diversification decreases the total risk in the portfolio. The following pie charts show this impact.

Traditional vs diversified portfolios – asset allocations



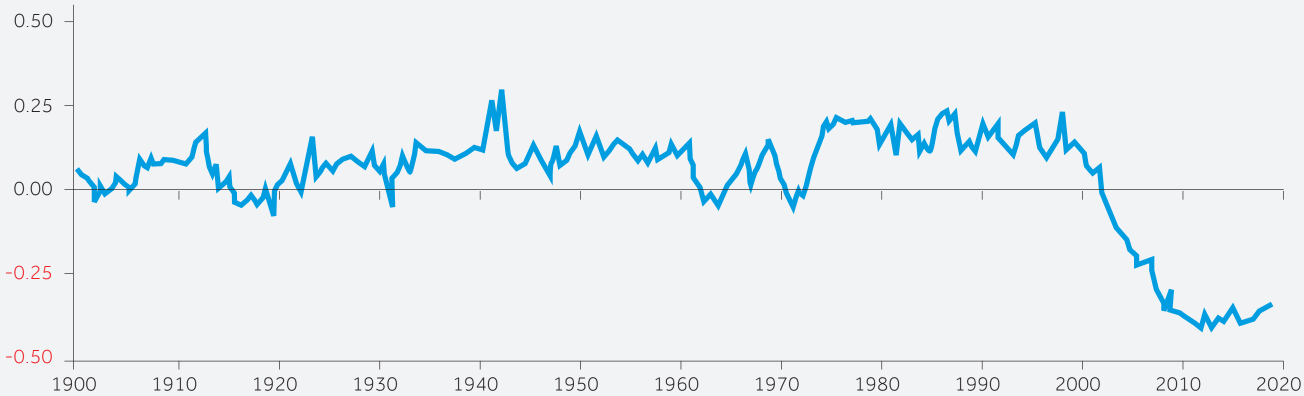
Portfolio risk allocation (narrowly defined as contribution to volatility) moves as shown below. While equity risk is still the primary risk exposure, at just over 50 per cent, this is well down from its dominant levels of 80 per cent.

Traditional vs diversified portfolios – asset class contributions to total volatility



The asset allocation of the "traditional" portfolio, at the top, represents the average of the strategic asset allocation, which is the expected long-term asset allocation, of funds in the SR50 Balanced (60-76) Index. The asset allocation of the "Diversified" portfolio, at the top, represents the expected long-term asset allocation of the accumulation account of the QSuper Balanced Option. The volatility of the "traditional" portfolio is based on QSuper's analysis of the expected long-term asset allocation of the average of funds in the SR50 Balanced (60-76) Index. The volatility of the "diversified" portfolio is the expected volatility of the accumulation account of the QSuper Balanced Option based on its expected long-term asset allocation.
Source: SuperRatings, QSuper

Rolling 10-year correlation of monthly returns between International Equities and International HD Bonds



The chart shows rolling 10-year correlations of monthly returns for bonds and equities. Bonds and equities are:

• hedged over the full period, net of fees and taxes

• equally-weighted across Australia, US, Germany, UK and Japan.

AU equities include franking from July 1987 onward, not before. Source: Global Financial Data

Correlations do not need to be negative to reduce the risk in the portfolio, just low, particularly during times of equity stress. The chart above shows the rolling correlation of 10-year monthly returns between equities and bonds over the last 100+ years. With correlations averaging below 0.5, and sometimes even negative, bonds and equities have been very diversifying historically.

While we suggest bonds and equities will tend to be negatively correlated during most significant negative equity events, this need not always be the case. A strong central bank response to high inflation, or even expectations for such a response, can be bad for most asset classes, including equities and bonds. In this case we would expect that a more diversified portfolio could perform equally as badly, or even somewhat worse, than a more traditional portfolio.

However, we see this scenario as a relatively low probability at present, with even lower probability that the conditions would exist for a strategic period (such as a decade). Hence a view that a diversified portfolio is lower risk does not imply such a portfolio will always do better in a drawdown, but simply that in most plausible future scenarios it should do better or no worse.

The benefits of diversification are not just about smoothing shorter term outcomes, but also about reducing the possibility of negative returns over a strategic period.[9] We have seen that equities and HD bonds can have poor returns for a decade or more, but diversification helps mitigate bad outcomes in such instances.

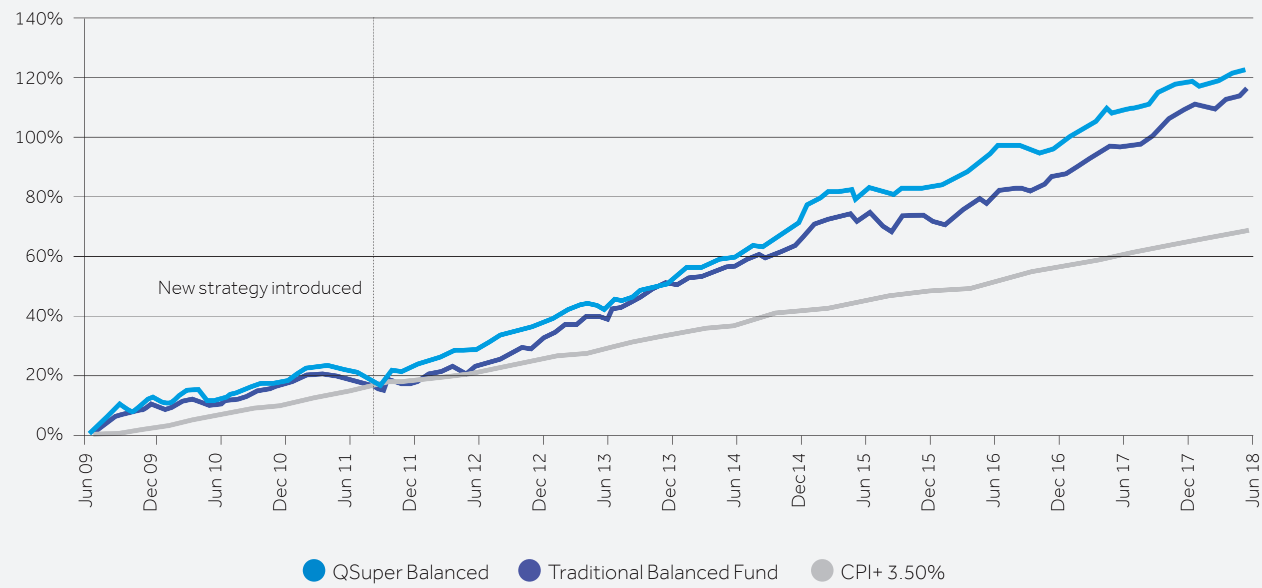
"We have increased the total allocation to risky assets in the portfolio. Low duration bonds are not risky, but HD bonds are. However, a core part of the whole strategy and a fundamental principle of investment management is that the significantly increased diversification decreases the total risk in the portfolio."

9 "Strategic period" relates to the return objective and timeframe of the various investment options available through QSuper. For instance, the return objective and timeframe for the accumulation account of the QSuper Balanced option is CPI + 3.5% per annum, after fees and taxes, over rolling 10-year periods.

Balanced Option Risk-Adjusted Returns

Outcomes of the strategy over short and medium terms are presented below. No definitive long-term outcomes are available yet. To provide context, the chart below compares the returns from the Balanced Option with the SR50 median. This represents a real-world proxy, typical of what QSuper would have received over the period if we had maintained the previous strategy. The chart shows the cumulative returns against both the scorecard return objective and for the two comparative strategies since 2010. Initially the two portfolios tracked together until the full effect of the change in 2011.

Cumulative returns for traditional vs. diversified portfolio strategies



Notes: Results are shown to the last completed financial year (ending 30/06/2018) in line with the table shown below. All results are drawn from the SuperRatings SR50 Balanced Index median outcomes. "Traditional Balanced" represents SuperRatings SR50 median outcomes. SuperRatings does not issue, sell, guarantee or underwrite this product. QSuper Balanced is the accumulation account of the QSuper Balanced option. Past performance is not a reliable indicator of future performance.
Source: SuperRatings

Next, we show annual returns to demonstrate risk outcomes over shorter periods.

Return and distribution outcomes:
QSuper balanced vs. median peers' portfolio

	QSuper Balanced	Traditional (Average Peers)	Difference
2009/2010	10.8%	9.8%	1.0%
2010/2011	10.0%	8.7%	1.3%
2011/2012	6.3%	0.4%	1.3%
2012/2013	9.9%	14.7%	-4.8%
2013/2014	12.6%	12.7%	0.0%
2014/2015	12.0%	9.6%	2.4%
2015/2016	7.3%	2.8%	4.5%
2016/2017	7.9%	10.5%	-2.6%
2017/2018	6.9%	9.2%	-2.3%
Cumulative	**9.3%**	**8.8%**	**0.5%**
Standard Dev	**2.3%**	**4.0%**	

Notes: Traditional (Average Peers) are SuperRatings SR50 median outcomes. The standard deviation is of the figures shown (not for example of the underlying monthly data). Past performance is not a reliable indicator of future performance. QSuper accumulation account fund returns for the Balanced investment option are net of fees and taxes. SuperRatings Fundamentals report as at 30/06/2018, returns are based on the industry average measures for $50,000 invested in the Balanced investment option using the actual net returns and fees from the product disclosure statement current at time of printing the report. It doesn't include the cost of insurance. The table is presented in accordance with accounting and reporting standards showing the returns from full financial years. SuperRatings SR50 Balanced Index (60-76) median based on cumulative returns compounded annually after fees and for initial $50,000 invested over the period to 31 December 2018. SuperRatings does not issue, sell, guarantee or underwrite this product. Past performance is not a reliable indicator of future performance.
Source: SuperRatings

The 10-year return to 31/12/2018 is 8.60% p.a. ranking the Balanced Option as the number 1 Option in the SR50 Balanced Index.

The table shows that while returns over the period have been similar between the two approaches, the new strategy has been more stable. In summary, the table on page 21 as well as this page show:

- Most importantly, the strategy has met its absolute scorecard return objective over the period since its inception.
- It has also met the secondary expectation of at least matching the traditional strategy return, even though this was a period of strong equity returns.
- From a risk perspective it has also met the dual objectives:
  - it has lower short-term volatility than a traditional strategy; and
  - it had better performance during the two main drawdown periods in the second half of 2011 and the first half of 2015.

"The Balanced Option is ranked #1 for 10-year returns to 31 December 2018 in the SR50 Balanced Index.[10] Moreover, the new strategy has delivered more stable returns."

In the following sections we analyse the sources of return and risk which have contributed to these successful outcomes.

Asset Class Returns

The charts on the following pages show asset class returns and the contribution of asset classes to the total return respectively. Contributions from different asset classes dominate returns at different times. During the 2011/2012 and 2015/2016 years when equities had negative returns, bonds had strong positive returns.

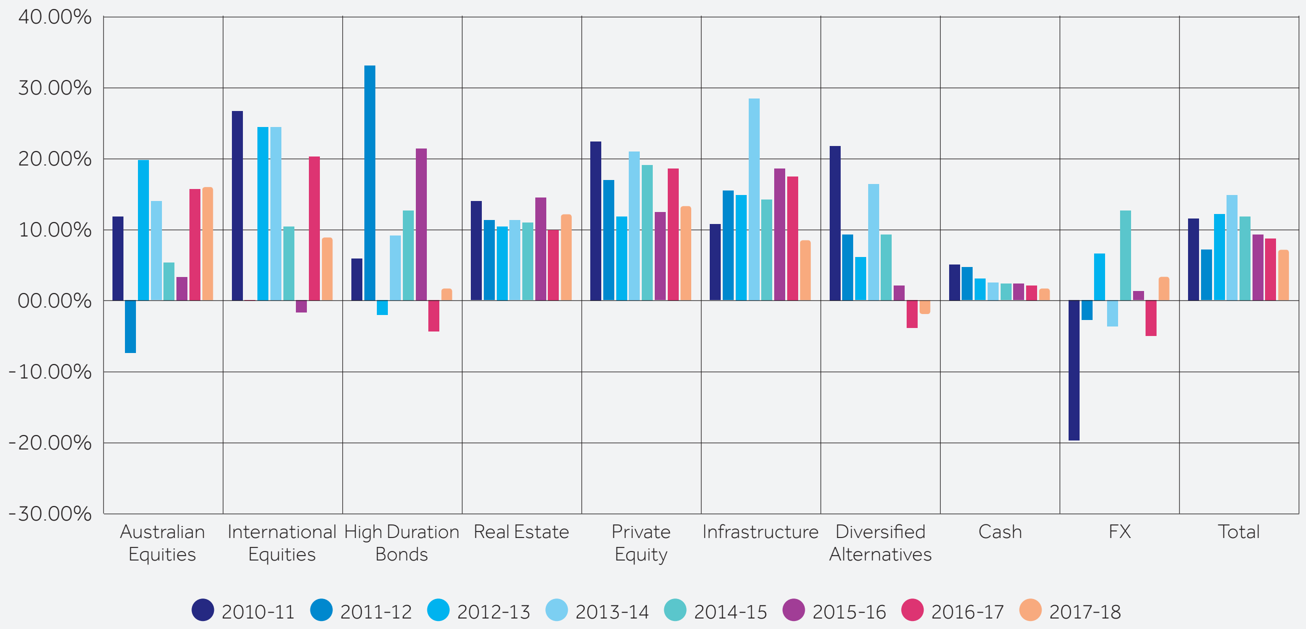
When bonds had negative returns (2012/2013 and 2016/2017), equities did very well. We can see that there are similarities in the quantum and distribution of the returns of the three liquid risk asset classes (AE, IE and HD bonds). The HD bonds are producing equity-like risk and returns per design.

Equity like risk can mean equity like losses. In isolation, either a HD bond portfolio or an equity dominated portfolio has the potential to produce decent returns over the very long run, but with a very large range of outcomes. Historically, either asset class can produce negative real returns for strategic periods (decades or two). We cannot be sure that this will not be the case for any period going forward.

A decision to diversify takes fortuitous upside outcomes out of play, but also reduces the probability that we are making a strategically poor decision for members.

10 The #1 ranking for the 10-years to 31 December 2018 is for the accumulation account of the QSuper Balanced option in the SuperRatings SR50 Balanced Index (60-76) fund survey. The performance for the accumulation account of the QSuper Balanced and SuperRatings is based on cumulative returns compounded annually after fees and for initial $50,000 invested over the period to 31 December 2018. SuperRatings does not issue, sell, guarantee or underwrite this product. Past performance is not a reliable indicator of future performance.

Asset class returns, by financial year (including year to date)



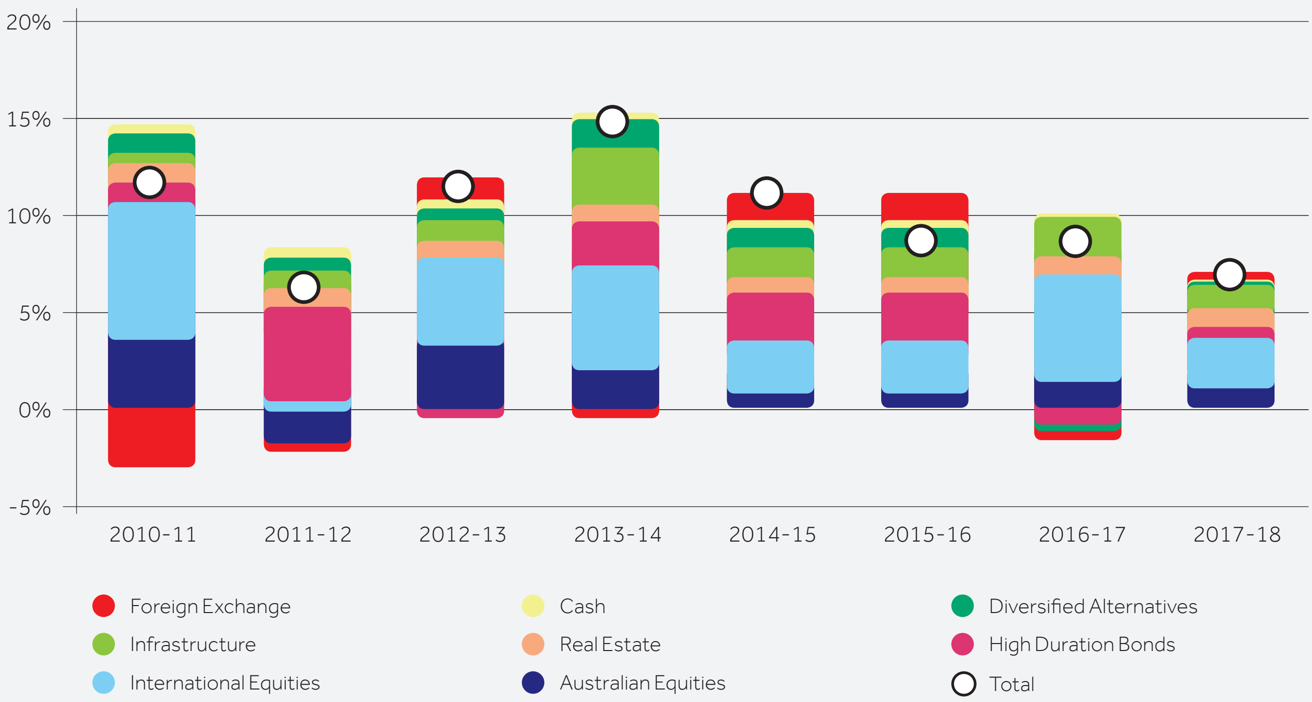
Source: QSuper

"Contributions from different asset classes have been sourced at different times. During the 2011/2012 and 2015/2016 years when equities had negative returns, bonds had strong positive returns.

When bonds had negative returns (2012/2013 and 2016/2017), equities did very well.

There are similarities in the quantum and distribution of the returns of the three liquid risk asset classes (Australian Equities, International Equities and High Duration Bonds). The High Duration Bonds are producing equity-like risk and returns per design."

Balanced Option financial year returns, by asset class contributions



Source: QSuper

Summary of Case Study

The new strategy has been operational for about seven years. It has been a very unusual market environment and the future remains clouded. It is too early to draw definitive conclusions, but the strategy has produced outcomes which so far have met the challenging multiple return and risk goals that were set.

The reasons for this have been in the form for which the strategy is designed - markets have proved difficult to forecast and diversification has seen robust portfolio outcomes despite volatile returns from individual asset classes.

"It is too early to draw definitive conclusions, but the strategy has produced outcomes which so far have met the challenging multiple return and risk goals that were set."

Conclusions

This paper shows the scale of change (using the Balanced Option as a proxy) which has occurred at QSuper as we implemented a new philosophy to achieve long term risk adjusted absolute returns. The debate continues however.

Our central case scenario is that asset returns will be positive but modest by historic standards. The key to the debate lies in the assessment of the balance of risks and the degree to which this balance should impact strategy.

To summarise, one side of the strategy debate.

- There is a strong belief that equities will produce good returns with very high confidence.
- There is also a corresponding strong view of very poor future bond returns.
- Judgements can be made that members will have significant regret of opportunity cost when, in the face of good equity outcomes, a diversified strategy is seen to dissipate what could have been.
- Members would regret poor outcomes from an equity dominant strategy if equities post an extended period of poor returns. However, this can be deemed an acceptable risk if combined with a belief that there is low likelihood of this happening.

The alternative view, which underpins QSuper's strategy is:

- Bonds and equities are both at reasonable valuations given plausible future economic scenarios.
- It is possible that both could produce good and/or poor returns depending on which of the several plausible scenarios eventuates. We have limited ability to forecast timing around these, but qualified confidence that correlations will be low and so diversification benefits high.
- Members have asymmetric risk tolerances biased to downside. They will regret extended low returns more than they will prize above expected returns.
- Members have modest account balances when compared to retirement liabilities. Sequence risk, unfamiliarity with investment theory and normal behavioural tendencies mean members do not have long-term risk tolerance or patience to simply ignore extended market setbacks in full confidence that the retracement will be certain and beneficial.

The strategy debate collapses to the question of which strategy is best suited to the interest of members and their actual risk preferences? There is a strong emphasis within the QSuper investment philosophy on a primary principle that success should be measured in terms of member outcomes not comparative performance between superannuation funds.

Investment strategy and risk management are still being developed. The decisions already taken will take time to be validated and the reactions by markets to the path of monetary and fiscal policy normalisation, which could take many more years yet, is unpredictable. We will have to be ready and willing to respond consistently and ensure the strategy matches the balance of risks as they evolve.

"Our central case scenario is that asset returns will be positive but modest by historic standards.

We have limited ability to forecast timing around these, but qualified confidence that correlations will be low and so diversification benefits high.

Members have asymmetric risk tolerances biased to downside and tend to regret extended low returns more than they prize above expected returns."

Attachment 1: Timeline of Investment Policy Decisions

Mar 2009	Established Investment Committee and management delegations.
2009	Initial investment teams (Investment Strategy, Funds Management, Capital Markets and Policy and Governance) established.
2009	Reviewed the investment backdrop post GFC and concluded material systemic changes were emerging.
Jul 2009	Initial investment principles settled.
Sep 2010	Baseline investment philosophy conclusions settled after wide review: • move equities away from cap-weighted benchmarks; • move away from majority Australian exposure within equities; • bonds should have core of long duration sovereign exposure; • core currency position fully hedged; and • seek some alpha in listed and unlisted markets.
Nov 2010	Started debate on risk parity principles for Balanced (Default) Option.
2011	Debated QSuper Lifetime as Default Option (MySuper) for pre-retirement.
Jun 2011	Infrastructure policy approved.
Jul 2011	Real Estate policy approved.
Oct 2011	Balanced (Default) Option strategy changed. Removed from peer surveys.
Jan 2012	ALM team established to develop default investment strategies and objectives.
Jun 2012	Reduced Balanced (Default) Option objective to CPI + 3.5 % pa (after fees and tax).
2013	Debated application of philosophy and principles to QSuper Lifetime.
Jun 2013	Private equity policy approved.
Dec 2013	Funded first three cohorts to launch QSuper Lifetime as MySuper default.
Feb 2014	Workshop to review key Investment Principles: • application of risk parity principles (HD bonds); • diversification; and • risk budget of DAA.
Mar 2014	Segregated accumulation and pension assets to enable differentiated tax-effective strategies.
May 2014	Funded full eight cohort structure of QSuper Lifetime.
Jun 2014	Initiated tax-effective strategy debate encompassing: • Asset allocation; • Australian equities; and • Tax effective benchmarks.

Jul 2014	Strategic equities policy (first stage) approved.
Aug 2014	Strategic fixed interest policy approved.
Apr 2015	Tax effective implementation approved for GLE and FI portfolios following segregation of accumulation and pension assets.
Aug 2015	Insourced management of risk hedging portfolios for QSuper Lifetime.
Sep 2015	Workshop on performance measurement and attribution: • Consideration of appropriate benchmarks; and • Application to non-peer aware investment strategy.
2016	Dedicated investment IT established.
Feb 2016	Strategic equities policy (second stage) approved, folding Australian equities into a global mandate.
Mar 2016	Performance measurement Reference Portfolios (risk and return) approved.
Oct 2016	i2020 Business Plan approved: • Establishment of non-core market investment capability; • Endorsement of ALM, ESG and IT business plans; and • Indefinite deferral of insourcing of infrastructure management.
Jul 2017	QSuper becomes an open fund (public offer).
Aug 2017	Duration risk workshop undertaken with Investment Committee, reviewing drivers of bond risks in diversified portfolios.
Oct 2017	Non-core market investment policy approved seeking greater diversification for the diversified options.
Dec 2017	Development of the necessary governance framework and supporting submissions for Lifetime 2 approved. Gender is considered as a new factor in addition to age and account balance to differentiate strategies for members.
	Sustainable Investment Policy approved to facilitate integration of ESG factors into core portfolio arrangements in support of the broader investment strategy designed to meet the objectives.
Apr 2018	Sustainable investment principle amended, recognising that managing ESG factors supports broader investment strategy.
Jun 2018	Foreign currency principle amended, recognising changes in market conditions and risk management potential in diversified options.
Sep 2018	Strategic equities policy (third stage) approved: • Internalising the portfolio construction process; • streamlining implementation; and • reducing fees.
Dec 2018	Ten-year investment fee policy and implementation review considered by Investment Committee.

Attachment 2: The Investment Environment Post GFC

The past investors are used to (strong equity and bond returns with quick recovery from any retracement) was based on a systemic re-rating of inflation and consequently steadily falling interest rates. That is over. That precipitated excesses in financial markets which in turn gave governments and households great confidence, allowed consumption to exceed revenue and built up excessive debts and other liabilities. These were at the government and/or household sectors in various countries.

The GFC was the ringing of the debt bell and different countries approached the resultant dislocation and its aftermath in different ways. The developed world faces crushing debt loads. Post GFC, policy has moved these between governments and households in various countries, but the overall stock of debt has not diminished.

There is no credible long-term plan to deal with this. A key plank is quantitative easing which enables monetary policy to remain stimulatory even with short-term nominal rates at zero (which remains the case in some core countries).

This is designed to force asset prices up, and to rely on that to kick start economic growth. As social policy this is defensible; for long-term investors it is very concerning because it dissociates prices from fundamentals.

Immediate economic activity is at reasonable levels in the US and Australia, and still very low in other countries. That is even on the back of astonishing levels of monetary stimulus and still strong fiscal stimulus that only a few years ago would have been unthinkable. There is a broad consensus that this will just go on for as long as it takes. There is little discussion of how it will end.

An outworking of this is that the widely accepted central case of 'muddling through' is reasonable; but risks to that are imbalanced:

- if growth disappoints and deflation fears arise, policy makers have fewer means to respond, while; and
- if growth is stronger and inflation fears arise they have ample policy tools to respond.

This in turn implies an imbalance of risks to absolute returns from an investment perspective which should be considered when setting strategy.

Yield curves are steep in most developed countries, although it has flattened considerably in the US where the interest-rate normalisation process is most advanced. Equity markets have recovered, with prices well above pre GFC levels.

This is predominantly on the back of valuation expansion driven by falling cash rates and bond yields. Profit growth, reflecting economic activity, has been reasonable but patchy.

These two things; soft economic growth because stimulus will have to be wound back at some point, and high valuations, combine to portend an extended period of modest returns from all financial assets. Unlisted assets (infrastructure and real estate) have followed the same pattern. Outsized gains are predominantly from valuation re-rating, partly to reflect a safe-haven status, not sustainable growth in operating profits at above expected levels.

This gives rise to all sorts of economic and investment risks which cannot be defined or quantified. A very wide range of possible future outcomes must be contemplated.

"The past investors are used to (strong equity and bond returns with quick recovery from any retracement) was based on a systemic re-rating of inflation and consequently steadily falling interest rates. That is over.

Under such conditions, we prefer to hold a more diversified portfolio – especially one that does not sacrifice expected returns as high as those of a more concentrated portfolio over the long term."

This is very apparent on the global political stage. The political environment is now more uncertain than it has been in the past thirty years since the collapse of the Soviet Union. The rise of populist parties that threaten global trade flows; the uncertainty and messy political out-workings around the UK/EU Brexit negotiations; the threat of Italy potentially exiting the single currency market; the threat of North Korea's nuclear weapons ambitions; the slowdown in Chinese economic growth owing to a tightening in financial conditions to address very high debt levels.

Under such conditions, we prefer to hold a more diversified portfolio – especially one that does not sacrifice expected returns as high as those of a more concentrated portfolio over the long term.

Interest rates will likely go higher if economic growth remains strong and GDP levels remain high. But this will affect different members differently. Those with a greater proportion of cash investments will benefit the most, while those exposed to riskier assets such as equities and long-duration bonds will likely experience lower returns for a while.

Similarly, higher nominal interest rates are also likely to usher in higher annuity rates allowing retirees the opportunity to lock-in a higher level of income than was the case when interest rates were lower.

Higher US short-term interest rates relative to Australia's that undermine hedged offshore asset returns have also underpinned our willingness to hold higher levels of foreign currency in the portfolio.

It is eliciting caution across the industry because the debate coincides with a point in time when bond yields are lower than medium-term past. They are low but are consistent with where they have been for long periods historically. This does not warrant major departure from philosophy or delay in implementing because:

- Bond yields are roughly fair value and not irrationally low given macro-economic backdrop and likely path of monetary policy. Return and risk of these assets are driven in large part by the slope of the yield curve rather than absolute level of yields. This can be quantified through future scenario analysis and stress tests.
- They have been at these levels before and there is no irrefutable cause that they must rise materially. That is one scenario, but the opposite could be true also.
- Commentary is negative (and addresses normal, not HD bonds) but actual market consensus priced in is for only modest rises in long term bond yields. Scenario analysis supports risk management is improved on balance.

qsuper.qld.gov.au