

19 April 2024

Sent to: yfys@treasury.gov.au

Superannuation Efficiency and Performance Unit
Retirement, Advice and Investment Division
Treasury
Langton Cres
Parkes ACT 2600

**Annual Superannuation Performance Test - design options
Consultation Submission**

Thank you for the opportunity to provide this submission to Treasury's consultation on options to improve the Annual Superannuation Performance Test and the specific questions raised.

It is important that the measures contained within the superannuation legislative structure – including MySuper, My Future My Super, and the Performance Test – enhance our system and do not constrain the value of benefits provided through restricting innovation, limiting investment outcomes, or providing misleading information to consumers and industry participants.

As an industry participant, I have been closely involved with the YFYS policy since it was first announced and have responded to multiple previous consultations. As an independent contributor, I believe I can bring a unique perspective to the consultation.

Noting the preference of Treasury for a focused response, I have provided feedback on the consultation questions where I believe I am most qualified to comment.

Regards

A handwritten signature in dark ink, appearing to read 'John Peterson', is displayed on a light gray background.

John Peterson

Contact Details: primail@ozemail.com.au

Executive Summary

1. Policy formulation around the regulation of superannuation funds in Australia, including the YFYS Performance Test, exhibit few signs of being evidence based. This Submission introduces evidence which is based on the actual performance of Australian Superannuation Funds.
2. The Performance Test is based on Strategic Asset Allocation (Benchmark) portfolios.
3. The use of SAA portfolios in performance assessment is only valid if the static market assumptions of Modern Portfolio Theory apply. It is demonstrated that those assumptions do not apply in the complex markets of the real world. The use of market indexes and SAAs in the Performance Test is therefore invalid and misleading.
4. An existential risk (Performance Test Risk) is created for those superannuation funds that deviate their security selection or asset allocation away from the market indexes and asset allocations privileged in the Performance Test.
5. As a result, the Performance Test, in conjunction with other aspects of Superannuation Policy, is leading Superannuation Funds to alter their investment strategies and process in ways that are detrimental to members.
6. An alternative approach to performance measurement that does not rely on indexes or Strategic Asset Allocation benchmarks is proposed.
7. The results of a failure to meet a performance test are currently too extreme. The consequences of a failure should be managed and moderated by an independent panel of investment experts.

Annual Superannuation Performance Test - design options

Consultation Submission

John Peterson

Introduction

About

My professional investment experience of more than 40 years includes direct responsibility for institutional investment management in numerous forms.

I have provided this submission purely in my personal capacity. None of the views I express should be taken as being representative of any organisation with which I have been associated.

Evidence Based

To date, superannuation Policy in Australia does not appear to have been based on evidence derived from the actual performance and behaviour of Australian Superannuation Funds. Instead, the regulatory approach has largely been driven by theory, and theoretical assumptions, about the behaviours of markets and fund trustees.

To the extent possible the information presented in this Submission will be Evidence Based, i.e., based on measurable performance or behaviours.

Regulatory Environment

The Your Future Your Super Performance Test is part of a complex and interrelated regulatory environment. This environment includes, among other things:

1. The Corporations Act 2001 and Regulations (Corporations Act);
2. The Superannuation Industry (Supervision) Act and Regulations (SIS Act);
Which incorporates Superannuation Legislation Amendment (MySuper Core Provisions) Act 2012 and regulations (MySuper).
3. ASIC Regulatory Guide 97 Disclosing fees and costs in PDSs and periodic statements (RG97);
4. Treasury Laws Amendment (Your Future, Your Super) Act 2021 and Regulations (YFYS), which include the Performance Test (Performance Test or Test).

It is not possible to consider the implications of the Performance Test in isolation, as many of its effect will be either amplified or dampened through its interactions with other components of Superannuation Legislation and Regulation (Policy).

Theoretical Underpinnings of Superannuation Policy

Although not explicitly stated (or possibly recognised), the key underpinning of superannuation Policy in Australia (MySuper, RG97, and YFYS - including the Performance Test) is based on the theoretical principles and assumptions of Modern Portfolio Theory (MPT). While the use of a theoretical framework can be useful in many fields, it is critical when developing regulatory policy applying to superannuation, which will have real-world impacts, to be aware of, and take into account, the limitations of that theory, and hence the unintended consequences that may be produced.

In order to be aware of, and hence incorporate a robust understanding of the real-world impact of superannuation policy, it is necessary to subject the theoretical underpinning of Policy – including the Performance Test – to rigorous, evidence based, assessment.

To date the development of superannuation Policy has been devoid of both an appreciation (or at least a recognition) of the risks of underlying assumptions not aligning with market reality, and of the rigorous testing required to ensure that actual outcomes align with expected outcomes.

This failure in policy development has already contributed to significant distortions in superannuation Funds' investment decision making, among other things. Therefore, it is pleasing to see Treasury responding to the many red flags raised by industry participants through this Request for Consultation.

Investment Theory

In general, superannuation Policy in Australia is based on the paradigm of, the now 70 years old, 'Modern' Portfolio Theory (MPT: Markowitz, 1952, 1959) and its extensions. As there is no evidence that the implications for superannuation of this theoretical foundation to Policy have been considered, it is, I believe, critical to do so in this response. The following section explores the key assumptions of MPT, compares them to evidence from investment markets, and considers the implications for policy formulation, in some – perhaps excessive for some - depth.

The key conclusions from this analysis are summarised in the section headed 'Investment Theory and Superannuation Policy – Summary' below (see Page 23).

Modern Portfolio Theory

MPT is based on a number of simplifying assumptions which have little or no empirical evidence to support them.

The issue of the unrealistic nature of the underlying assumptions of MPT, and their implications for its real-world application, have been widely discussed. The following outline has been largely drawn from Beyhaghi & Hawley's 2013 article titled, 'Modern portfolio theory and risk management: assumptions and unintended consequences'.

The assumptions of MPT include:

1. The Rational Investor assumption including;
 - a. The Efficient Market Hypothesis; and
 - b. The assumption that returns on assets are stochastic, following a normal bell curve distribution. i.e., There is finite (fixed) variance and returns are independent of each other.
2. Investors are risk averse and make decisions based on the axioms of expected utility theorem.
3. Risk aversion (the risk-return trade-off) is linear or constant;
4. A monotonic investor always prefers a portfolio with a higher expected return over another portfolio with a lower expected return;
5. Investors are price takers who cannot affect a security price; and
6. The investor knows the expected return of each asset in their portfolio.

It should be noted that to calculate the expected return of an asset one needs to know the distribution of the return of that asset in all possible future 'states of the world', and the probability of each of those states occurring.

As Beyhaghi & Hawley (2013) observe, none of these assumptions are empirically supported, with most having been proven false.

Sharpe (1964), in an extension to the original work of Markowitz (1952, 1959), introduced the concepts of systematic and idiosyncratic risks, portfolio beta, diversification and the linear relationship between beta as a measure of portfolio/asset risk and the expected return of a portfolio/asset. Sharpe argued that risk-averse investors will prefer a well-diversified portfolio only exposed to systematic risk.

Returns from idiosyncratic risk are by definition randomly distributed and, given efficient markets (the EMH assumption), cannot be exploited. Therefore, any effort or cost, expended in analysing them cannot add to a fund's returns. Therefore, MPT effectively assumes the active managers cannot add value over and above systematic (market) risk, and that any fees paid to for active management will necessarily reduce the return of the investment portfolio.

This belief appears to be an underlying principle of the MySuper and subsequent superannuation Policies, with their focus on products being 'low cost'.

The Capital Asset Pricing Model (CAPM), based on the works of Treynor (1962), Sharpe (1964) and Lintner (1965), postulates the relationship between risk and expected return. The CAPM introduces the additional assumptions that:

7. All investors are identical;
8. That investors maximize economic utility;
9. That the shape of their utility function is assumed to be fixed;
10. That investors can lend and borrow a risk-free asset without any restriction; and
11. That correlations between different assets do not change over time.

As Beyhaghi & Hawley (2013) conclude, MPT provides a standard to measure a portfolio's relative benchmark performance. Therefore, MPT provides a framework for performance attribution. However, there are two major weakness of this framework:

1. First, it relies significantly on past data which are mostly based on a factor model with a static structure. That is, an underlying assumption is that returns (both for the market and the underlying security) follow a normal distribution;
2. Second, is the extent to which a market index really represents the 'market' as MPT uses it. (That is, as including all possible investments.) The 'benchmarks' selected for the Performance Test generally do not meet the criteria of including all possible investments. This is a major contributor to the creation of unintended consequences for funds' investment approaches.

Beyhaghi & Hawley (2013) conclude that "performance measurements based on alpha or beta that is estimated according to a market index are inaccurate".

In summary, Performance measures that are based on the principles of Modern Portfolio Theory – including comparisons to 'market benchmarks / indices' – are unreliable and inaccurate.

Static, Random or Complex Markets

The underlying assumptions of MPT effectively eliminate the concept of time in the model. As a result, there is no potential for markets, economies, or the regulatory environment, to change. (There would therefore be no need to consider the impacts of the Performance Test on Fund behaviour, as the Test could not have been introduced.)

In reality, investors and regulators do recognise that markets are not static, and that as a result regulatory changes do have effects by altering the parameters that define the 'state' of the economic system. These demonstrated beliefs and actions are however, inconsistent with consensus financial and Portfolio Management theories, and hence with the use of a Strategic Asset Allocation Benchmark in performance assessment.

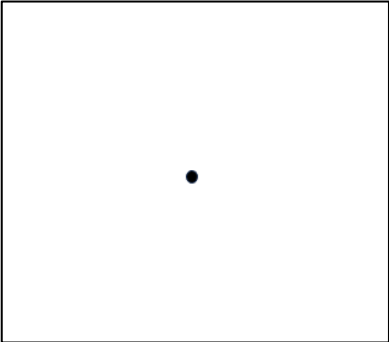
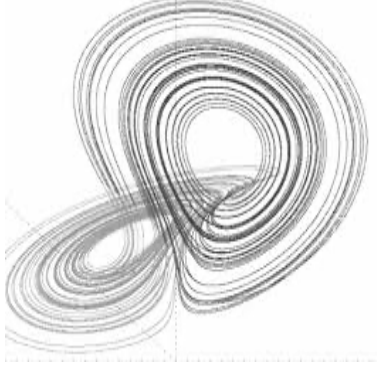
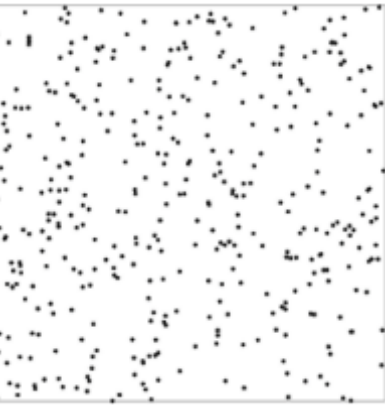
The 'actual' state of markets

At the topmost level, economic and financial theories are based on assumptions (or beliefs) about whether economic systems and markets conform to one of three (3) possible 'states':

1. Static Markets (equilibrium) – as embodied in classical economics, which includes MPT; or
2. Complex Markets – as embodied in the economics of Keynes or complexity economics; or
3. Random Markets – which by definition defies theoretical description.

We could depict these three 'states' graphically as in Figure 1:

Figure 1

Static Markets (Static Equilibrium)	Complex Markets	Random Markets "A Random Walk Down Wall Street"
		
Classical Economic Equilibrium	Complexity Economics	No Theory
Markets Outcomes are Fixed	Market Outcomes are Complex but not Random	Market Outcomes are Random / Unpredictable
Regulation does not exist	Regulation has effects	Regulation has no effect
Managers cannot add value	Managers can add value	Managers cannot add value

Static and Random markets are the two extreme positions either side of complex markets and represent only a tiny fraction of possible market states.

If the economy was static, then it would be in long-run equilibrium. All prices and future outcomes (GDP, Inflation, earnings, interest rates, etc.) would be known in advance and would never change from current levels. (Or might all change proportionally if we assume growth in the economy.) Regulation cannot exist in markets in static equilibrium, because regulation did not exist initially, and it is assumed that the 'state' of the market cannot change. The assumptions required ensure that active investment managers cannot add value in static equilibrium systems.

In reality we do not act as though the economy and markets are static, as the evidence does not support this contention.

Similarly, **if the economy was random**, then regulation would not be effective as markets and economic actors would behave randomly whatever regulation was applied. Random markets would also randomly either shrink to zero - if a large enough number of negative periods of GDP randomly occurred - or explode to infinity – if a large enough number of periods of positive GDP randomly occurred. In random markets active managers cannot anticipate market or security price movements and therefore cannot add value.

Again, in reality, we do not act as though the economy and markets are random, as the evidence does not support that theory. We do observe that while there are fluctuations in markets and the economy, there are feedback mechanisms that tend to restore balance (but

not equilibrium) over time – unless poor regulation drives the economy or a market to an extreme. Feedback loops are a defining characteristic of complex systems.

In the real world almost all systems are complex. These include weather systems, group dynamics, hive behaviours, the nervous system, cities, the Internet and the financial system. In general, there are very few things that are either completely static or completely random. In a large complex system such as the economy, static or random states essentially do not exist.

In a complex economy, regulations do have effect, as they alter the parameters that define the system and drive economic participants' actions.

All information is not known by all participants simultaneously. It is therefore possible for economic agents, including active investment managers, to create proprietary information through research, and therefore earn superior returns after fees for their investors.

Implications of Static Markets

A number of implications for which investment strategies will give the best outcomes for investors hinge on whether markets are static, and therefore conform to the assumptions of MPT, or whether market behaviours are more akin to complex markets.

The next two sections consider actual Australian market evidence related to two propositions that are frequently presented as supporting the argument that markets are static, and hence that 'index investing' will give superior outcomes than 'active investing' (Vanguard: Plagge & Rowley, 2022; S&P: Ganti et al., 2023).

These propositions are:

- the 'Zero-Sum' contention; and
- the proposition that as it is impossible to select managers who will add value in the future.

If either of these propositions are true, then it follows that active management cannot add value (and hence that index investing is preferred).

If, on the other hand, it is established that positive net returns can be earned from active management, then both propositions would be disproved.

Sharpe's Zero Sum contention (Sharpe, 1991)

This argument is based on the underlying assumptions of MPT, specifically the Efficient Market Hypothesis assumption that all markets are in equilibrium and that all information is incorporated into market prices (Vanguard: Plagge & Rowley, 2022).

This assumption is evidenced by there being no concept of time in MPT, and thus markets, economies, and the regulatory environment, cannot change. i.e., The same outcomes – say level of GDP – will be produced in all circumstances and in all future periods.

On the other hand, if active investment decisions do alter economic outcomes, by making the allocation of capital more efficient in the economy, then there will be value created over and above that which would have occurred with a purely passive approach. As it would be reasonable to expect that some of this added value will accrue preferentially to the active managers involved, then there would be scope for them to add value after fees.

The contention that it is impossible to selecting managers who will add value.

This contention can be summarised as:

‘Even if some managers add value after fees, manager performance is random. It is therefore not possible to select managers who will add value in the future.’

This theoretical contention (a.k.a. the Indexing argument) is again based on a number of the underlying assumption of MPT, in particular that:

- The average active manager underperforms the Index (Zero Sum as above, S&P: Ganti et al., 2023)
- Managers do not consistently add value – assessed through Contingency Table analysis - as they are seeking to exploit non-market (i.e., idiosyncratic) investment risks, which are random and therefore impossible to consistently exploit (ASIC Report 22: Allen et al. 2002; Vanguard: Plagge & Rowley, 2022; S&P: Ganti, et al. (2023)).

Given the above, it would not be possible to select managers that will consistently add value. As a result, investors will get random manager performance and average manager returns – which will be less than those of the index.

It follows from these contentions that fees paid to active investment managers will necessarily result in a net decrease in investor’s returns, and therefore active management cannot add value.

Evidence About Static vs Complex markets

Static Markets and the consistency of Manager Performance

While no-one believes that the economy and markets are random (with the exception that returns are assumed to be normally (i.e., randomly) distributed in MPT), there is considerable debate and published analysis related to the question of whether the economy and markets can be regarded as being static.

The first area of evidence that we can consider is the question of whether markets are static through considering the results of contingency table analysis.

A contingency table is a tool used in comparing outcomes across two periods. It is commonly used when comparing the performance of investment funds over two non-overlapping time periods as a means of ‘assessing’ the consistency of manager performance. The argument being that if managers perform in the top quartile (or top half, third, quartile, quintile, decile, etc.) of their peer group in the successive periods, then this is taken as being indicative of consistent performance.

In reality, contingency table analysis as applied in finance, does not actually measure the consistency of fund performance. However, it does have relevance in assessing whether markets are static or complex, and hence whether the Performance Test is valid.

If we take the situation where markets conform to the assumptions of Modern Portfolio Theory, then:

1. Markets are in equilibrium – which implies that their behaviour (pattern of returns, volatility, etc.,) are stable or regularly repeating.
2. There is no learning and no innovation, so all investors will repeat the same behaviour in future periods as they did in the past when presented with the same situation.
3. There is no opportunity to create proprietary information or use it in investing, as:
 - a. All information is already known and incorporated in prices; or
 - b. Pricing is 'efficient' and therefore any new information is instantaneously incorporated in prices.

In this situation those managers that produced top quartile (half, quintile, decile, etc.) performance in period one (1) will necessarily produce top quartile performance in period two (2), as everyone would repeat their previous behaviours. The same would apply for funds that were in the other quartiles. That is, funds that were second quartile in period 1 would necessarily also be ranked second quartile in period 2, and so on.

We would plot this set of outcomes in a Contingency Table as:

		Period 2 Result			
		Quartile 1	Quartile 2	Quartile 3	Quartile 4
Period 1 Result	Quartile 1	25% of funds			
	Quartile 2		25% of funds		
	Quartile 3			25% of funds	
	Quartile 4				25% of funds

That is, 25% (one quarter) of funds would have been first quartile in period 1 and they would also be first quartile in period 2 – hence be in the top left corner. The 25% of funds that were second quartile in period 1, would be second quartile in period 2, and so on.

This would plot in the contingency table as 25% of funds being in each of the cells on the diagonal, with no funds in the other 12 off-diagonal cells.

Note: All funds repeating their performance from period 1 in period 2, and hence being on the diagonal of the contingency table, is the result that **must occur if markets are static** (as assumed by MPT), Therefore:

1. Finding that all funds do not lie in the diagonal would actually be proof that markets are not static; and
2. If markets are not static (i.e., they are complex) and managers are adding value, then they will not exactly repeat their period 1 performance in period 2, and hence will

not lie on the diagonal. **They will exhibit some other pattern-of-performance across the two periods.**

(What the actual pattern-of-performance will be if managers are adding value in complex markets is beyond the scope of this submission. However, separate analysis by the author of actual fund performance has found that active managers perform consistently. As a result, those managers that do consistently add value can be identified by institutional investors.)

There have been many pieces of historic ‘research’ conducted that have used contingency table analysis to ‘assess’ whether active managers perform ‘consistently’ (ASIC Report 22: Allen et al. 2002; Plagge & Rowley, 2022; Ganti, et al. (2023)). As explained above, all of **this historic research has actually been assessing whether markets are static, not whether managers have performed consistently.**

The general result of this historic analysis has been that manager performance does not exactly repeat (i.e., lie on the diagonal). While not the objective of the research conducted, this is actually strong evidence that markets are not static.

If markets are not static, then as explained above, SAA’s – including the Performance Test - cannot be used as valid performance benchmarks.

Investment Fees and Fund Returns

Current Policy reflects a belief that reducing investment fees increases net returns to investors - or equivalently, that paying investment fees reduces returns.

The Australian Super and Hostplus Experiments

Australian Super and Hostplus have, for the past decade, been conducting a real-world experiment comparing the actual returns to investors from following an actively managed investment approach – i.e., paying manager fees – versus the returns obtained from following an indexed (low management fee) approach.

This has occurred through each superannuation fund offering both an actively managed and an indexed investment option to members with the same investment objectives and risk profiles. These are real funds that have had real investors and actual investments for the last decade.

Importantly, this experiment overcomes one of the main problems inherent in using SAAs as benchmarks, which is that **it is impossible to know which SAA a superannuation fund would adopt if required to limit its investments only to passive index funds.** This is because actively managed investments will have different expected risks and returns than index investments, and will therefore have different allocations in investment portfolios.

As a result, the actual asset allocation adopted by a super fund for an actively managed option will not be the same as the one that would be adopted for an indexed only option.

(The assumption made in the Performance Test that actual SAAs would be the same for portfolios invested in indexes is not evidence based. Moreover, doing so would be inconsistent with Trustees’ obligations to act in the best interests of fund members when making investments.)

In the Australian Super / HostPlus experiment, while different from the active fund's actual SAA, the SAA adopted for the indexed product is the one that would have been adopted if the active product was forced to invest in passive indexes.

(Note: While almost certainly not conceived as an experiment, the conditions of an experimental model – including 'controlling' for differences in investment and risk objectives, the decision-making structure, administration fees, and market conditions - have all been met.)

Australian Super offers its actively managed 'Balanced' and passively managed 'Indexed Diversified' options, while Hostplus offers the actively managed 'Balanced' and passively managed 'Indexed Balanced' options.

In both cases the investment management fees incurred by the actively managed products have exceeded those of the passively managed options – by 0.40%p.a. (40 basis points) in Australian Super's case, and by 0.85%p.a. (85 basis points) in Hostplus's case as at 30 June 2023.

After taking into account investment management fees, over the 10 years to June 2023 **the actively managed funds significantly and consistently outperformed their passive counterparts**. The outperformance was 1.38% p.a. in Australian Super's case, and 1.00%p.a. for the Hostplus options.

The results of the experiments are very clear, with the actively managed options significantly outperforming the passive options after fees, over extended periods of time.

Australian Super: Periods to June 2023

Option	Investment Fees	1 Year	2 Years p.a.	3 Years p.a.	5 Years p.a.	7 Years p.a.	10 Years p.a.
Balanced (Active)	0.50%	8.22%	2.60%	8.23%	6.72%	8.14%	8.60%
Indexed Diversified	0.10%	11.56%	2.57%	7.44%	6.44%	7.18%	7.22%
Fee Difference		0.40%					
Active Outperformance		-3.34%	0.03%	0.79%	0.28%	0.96%	1.38%

Hostplus Super: Periods to June 2023

Option	Investment Fees	1 Year	2 Years p.a.	3 Years p.a.	5 Years p.a.	7 Years p.a.	10 Years p.a.
Balanced (Active)	0.89%	7.97%	4.72%	9.98%	6.88%	8.55%	8.93%
Indexed Balanced	0.04%	12.34%	2.95%	8.01%	6.50%	7.47%	7.93%
Fee Difference		0.85%					
Active Outperformance		-4.36%	1.78%	1.97%	0.38%	1.08%	1.00%

Source: Australian Super and Hostplus

* Investment Fees including Performance Fees and excluding Transaction Costs

These are real-world (i.e., evidence based) results, which are not consistent with the predictions of MPT.

Moreover, these outcomes show that in reality, there is a net benefit in active management, and conversely, a net detriment in moving to a lower investment management fee. These results suggest that for Australian superannuation funds, reducing investment management fees by 10 basis points (0.10%) can be expected to reduce net (after fees) investment returns by between 12 and 34 basis points.

These results are sufficient to demonstrate that the assumptions of MPT do not apply to Australian Superannuation Funds.

1. Contingency table analysis provides strong evidence that markets are not static;
2. The consistent outperformance of Australian Super and Hostplus's actively managed options provides proof that:
 - a. Active managers produce positive net investment returns after fees;
 - b. Active managers who will add value can be selected in advance; and
 - c. Active manager performance is consistent, not random.

If the Assumptions of MPT do not apply to Australian Superannuation Funds, then the Performance Test, which is based on MPT, cannot be used to assess fund performance.

Policy Beliefs

Investment Management Fees

As current legislative Policy applying to superannuation funds and their investments are based on the theoretical assumptions of Modern Portfolio Theory, this leads to a number of 'beliefs' being reflected in the relevant legislation, including the Performance Test.

Contrary to the evidence from the actual performance of Australian superannuation funds, regulators have, and continue to, prioritise reductions in superannuation fund fees.

"APRA expects RSE licensees to continue to prioritise delivering **reduced fees and costs**, particularly for those with more expensive MySuper products."

"Since the first Heatmap in 2019, total fees and costs have declined for most MySuper products. The reductions have primarily been driven by **lower investment fees** and transaction costs, suggesting RSE licensees have adopted more efficient ways to execute their investment strategy. APRA estimates that 8.1 million members (56% of member accounts) have experienced a drop in disclosed total fees and costs from the date of the 2021 Heatmap to the 2022 Heatmap. The total estimated savings for members is \$210 million per annum." (Emphasis added) APRA Insights Paper MySuper Heatmap December 2022

This statement clearly indicates that reduced total fees and costs – being primarily "driven by lower investment fees and transaction costs" – is seen by APRA as a positive outcome of the Heatmap and Performance Test, with the reduction in fees flagged as 'savings' to members.

This assertion is not evidence based, being completely unsupported by actual evidence from the performance of Australian superannuation funds.

The evidence from superannuation fund performance in the Australian Super / Hostplus experiment suggests that the 'savings' of \$210 million per annum identified by APRA, would have come at a net cost to members of between \$247 million and \$724 million per annum.

Irrespective of APRA's unsupported assertion that 'RSE licensees have adopted more efficient ways to execute their investment strategy', it is well known that the primary driver of reductions in investment fees – in particular since the introduction of RG97 - has been significant shifts from actively managed to indexed investments with lower management

fees (Bright, 2016; Clarke, 2016; Chant West, 2018; Hartley, 2016). This process has been accelerated by the introduction of the Performance Test with actively managed investments now facing the double hurdle of having to justify the payment of investment fees, with their adverse optics for fund raising, and the incurring of Performance Test Risk by the organisation.

Investment Risk and Portfolio Risk

References to 'Risk' and 'Investment Risk' in Section 52 of the SIS Act are generally interpreted as referring to the overall risk of funds' investment portfolios (i.e., Net Portfolio Risk or Portfolio Risk), which is commonly expressed as portfolio volatility or standard deviation.

There is however a material difference between Investment Risk and Portfolio Risk which is not recognised in the legislation and needs to be drawn out when considering 'risk adjusted' performance assessment.

1. Investment Risks are risks associated with individual investments that are sources of Investment Returns, over and above the risk-free cash rate. That is, Investment Risks are risks that are expected to be rewarded for taking, by receiving additional investment returns.

Investment risks include;

- Earnings risk;
- Duration risk;
- Credit risk;
- Property risk;
- Illiquidity Risk;
- Commodity risk; and
- Manager Skill

All Investments are composed of varying combinations of these Investment Risks. If grouped into asset classes then those asset classes can also be seen as having combinations of these Investment Risks.

For example:

- Listed Equities primarily give exposure to the investment risks of Earnings and Duration risks.
- Fixed interest is primarily exposed to Duration and Credit Risks.
- Alternative assets, have a significant exposure to Manager Skill. (Generally speaking, alternative assets can be defined as assets that only exist with, or have a high exposure to, Manager Skill.)

Private Equity, for example, would have exposure to Earnings Risk, Duration Risk, Illiquidity Risk and Manager Skill. As a result, it has a high level of exposure to Investment Risks, with a commensurate expectation that it will deliver high investment returns.

Volatility and Risk

It is notable that neither volatility nor currency exposure are included in the above list of Investment Risks. This is because they are not sources of Investment Returns, with both having zero expected returns over time. They are therefore not Investment Risks as they are not expected to provide a return over the risk-free cash rate.

Given the central role that volatility plays in MPT, it is worthwhile explaining the above statement in some detail.

Firstly, the primary contributors to volatility are changes in expectations about earnings and duration risks, which are Investment Risks – i.e., We expect to be rewarded through the receipt of additional returns, for accepting earnings uncertainty and a longer duration on the returns from an investment. Therefore, volatility of returns of an investment is primarily a variability in price derived from equity and duration risks.

For fixed interest investments the return – in the form of interest payments and the return of capital – involve a moderate duration. For equity investments, the duration of returns – in the form of dividends – is long-term, extending for a potentially infinite time period. It is therefore unsurprising that the variability of returns of equities is typically greater than that for fixed interest investments, as the duration of the investment is longer.

As duration is an Investment Risk, investors expect to receive a higher return for longer duration fixed interest investments (as reflected in the typically upward sloping yield curve), and for equity investments.

A key consideration here is that **Investment Returns are related directly (linearly) to Investment Risks, with higher returns expected from taking on greater levels of Investment Risk.** Therefore, an assessment or analysis of Investment Returns must be based on Investment Risks, not Portfolio Risks.

The effect of listing equities.

Certain aspects of MPT, such as the CAPM, are based on the assumption that the capitalisation weighted index of listed equities represents ‘the return’ from holding equities.

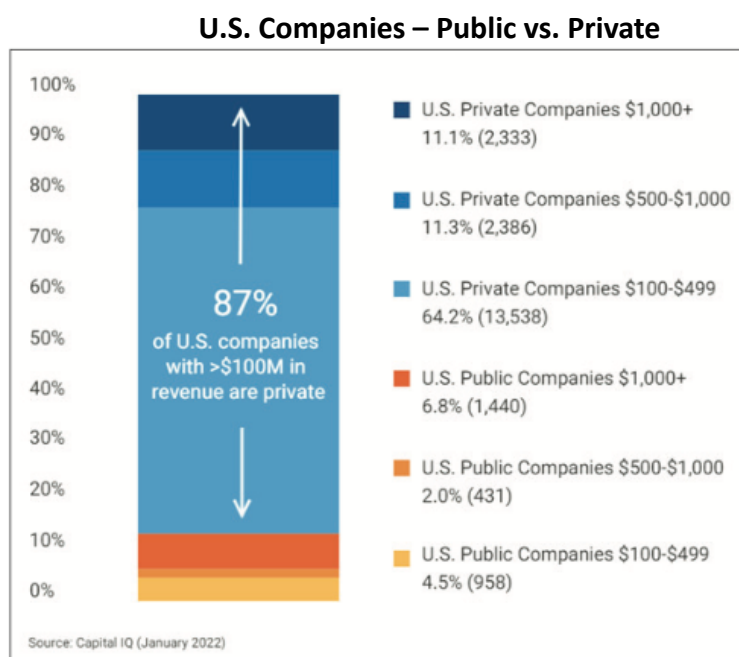
This assumption is incorrect. Underlying Investment Risks are the source of Investment Returns, and in the case of equities, these are primarily Earnings Risk and Duration Risk. The listing of an equity on the stock exchange has the effect of reducing Duration Risk, as the security can now be liquidated more quickly. Therefore, it would **be expected that returns from listed equities would be less than those of unlisted equities.**

This observation is consistent with the general observation that the proportion of companies that are listed on stock exchanges has been diminishing, with unlisted equities offering more attractive returns than listed equities.

“At their peak in 1996, there were 7,300 publicly traded companies in the US. Today there are about 4,300.” *‘The stock market is shrinking and Jamie Dimon is worried’*. CNN Business 9 April 2024

In the United States, a significant majority of companies with greater than \$100 million in revenue are not listed.

Figure 2



Source: Hamilton Lane, Capital IQ

Used with the permission of the Chartered Alternative Analyst Association

This strongly suggests that adopting a listed ‘benchmark’ for all equity investments in the Performance Test (S&P/ASX 300 for Australian equities and various MSCI indices for international equities) as is currently the case is deeply flawed. This is because a majority of potential investments, which could be invested in through superannuation funds’ Private Equity sectors, will be significantly misrepresented in the Performance Test.

This type of misrepresentation, which applies to multiple asset classes – in particular private market investments and alternatives – creates an existential threat to superannuation funds (i.e., Performance Test Risk), which will have a significant impact on investment decision making.

Manager Skill as an Investment Risk

The Investment Risks listed above are a combination of risks related to particular investments (earnings, duration, credit, property, and commodities), to illiquidity and to 'Manager Skill'.

Recall that, as explained above, MPT assumes that systematic (or market) risk is a source of returns, while idiosyncratic risks cannot be exploited and are therefore risks to be avoided through diversification (i.e., investing in an index). If, however, markets are not static – as demonstrated above - then **active managers have the potential to exploit idiosyncratic risks by employing Manager Skill.**

There are many types of Manager Skill that investors can earn Investment Returns for taking. These Investment Risks include, but are not limited to:

- a. Individual company analysis (earnings, credit)
- b. Relative company analysis (competitor analysis, pricing power)
- c. Analysis of market dynamics (relative value, price momentum, etc)
- d. Security analysis (probability of default)
- e. Legal analysis (credit default, the value of securities under certain conditions, complex structuring)
- f. Development skills (property & infrastructure)
- g. Arbitrage skills
- h. Trading skills

There are far more Manager Skill based Investment Risks than there are security / market related Investment Risks. In a complex financial system Portfolio Theories would be significantly enhanced by including 'Manager Skill' as an asset class, as it is a real source of Investment Returns.

Evidence of Investment Returns earned from Manager Skill

In 2013, the author published a Research Note titled, "Investment Risk and Portfolio Risk for Superannuation Directors and Trustees" (Annexure A).

It was observed that the Future Fund had similar levels of market related Investment Risks to the average Balanced Superannuation Fund (approximately 12%) but had a significantly greater level of Manager Skill risk in its portfolio of investments (6% vs 4%)

On the basis of this greater allocation to Manager Skill, it was predicted that, over time, the Future Fund would earn a return approximately 1.5%p.a. greater than that of Australian Superannuation Funds' Balanced options. As Manager Skills are largely unrelated to Market Risks, it was also predicted that the enhanced returns would be earned with lower levels of Portfolio Volatility.

The tables below show that **actual results** over subsequent periods to June 2023 **have been consistent with these predictions**. This is strongly indicative of Manager Skill being a source of Investment Returns for Australian investors.

Returns to June 2023 (%p.a.: Years 3-10 annualized)

	1 year	3 years	5 years	7 years	10 years
Future Fund	6.0	8.6	7.1	7.7	8.8
Balanced Super Fund Median Return	9.1	7.5	5.9	6.9	7.3
Difference	-3.1	1.1	1.2	0.8	1.5

Source: Future Fund and SuperRatings

Volatility of Returns to December 2022 (%p.a. annualized)

	1 year	3 years	5 years	7 years	10 years
Future Fund	5.5	5.8	5.5	5.0	4.7
Balanced Super Fund Median Volatility	7.1	6.2	7.5	6.6	6.1
Difference	-1.6	-0.4	-2.0	-1.6	-1.4

Source: Future Fund and SuperRatings

The results from the Australian Super / Hostplus Experiment, and the performance of the Future Fund, strongly indicate that active investment management by Australian Institutional Investors does add value after fees.

It should be noted that this conclusion applies to institutional investors who:

- a. Are able to negotiate and pay institutional level fees for access to Manager Skill;
- b. Make use of institutional level analysis of investment managers and their investment process (both directly and through the use of consultants) to identify those managers who have a sustainable comparative advantage; and
- c. Have the capability of accessing unlisted or wholesale investment products that may only be available to institutional investors as a result of scale or capacity to bear illiquidity risk.

2. Portfolio Risk

As noted above, Investment Returns are related directly (linearly) to Investment Risks, with greater return expected to be earned from taking on greater levels of Investment Risk.

A portfolio is a collection of individual investments. As a result:

- Portfolio Return is the weighted sum of the Investment Returns from each investment in the portfolio;
- Gross Portfolio Risk is the weighted sum of the Investment Risks of each investment in the portfolio;
- However, Net Portfolio Risk – which is commonly called ‘Portfolio Risk’ in financial theory and practice (including in Australian superannuation regulation) - **is not** the weighted sum of the Investment Risks of each investment in the portfolio.

This is because of diversification of risks between investments in a portfolio, which reflects that Investment Risks are independent and therefore not perfectly correlated.

As a result, while there is a linear relationship between Portfolio Return and Gross Portfolio Risk, there is not a linear relationship between Portfolio Returns and Portfolio Risk.

(Note: There is need for clear definitions in this area. As noted above, Volatility is not Investment Risk, and therefore is not Portfolio Risk.)

It is possible to use ‘volatility’ as a risk unit to express Investment Risks both individually and in aggregate. However, this measure does not relate to variability in investment returns. The risk unit could equally well have been selected to be the Investment Risks of a 10-year government bond.

For example, the amount of Investment Risk associated with an investment being illiquid, could be expressed as being 3 units of Investment Risk. If the unit of measurement of Investment Risk is defined as ‘volatility’, then the expected return from the illiquidity risk would be equal to the expected return from 3 units of ‘volatility’. But this does not imply that the variability in the investment’s price as a result of the illiquidity will be equal to a statistical volatility of ‘3’.

The figures below illustrate the relationship between Investment Returns, Investment Risk and Portfolio Risk.

Figure 3, illustrates the linear relationship between Expected Return and the level of Investment Risks in a portfolio. On an ex-post basis there would be some dispersion around the expected line as not all Investment Risks would generate the expected Investment Returns

Figure 4, illustrates the non-linear relationship between Expected Return and Portfolio Risk (as proxied by Volatility). This relationship is non-linear because different Investment Risks have different correlations between them, with the total of all possible relationships (i.e., all possible Asset Allocations) lying on or inside the Outcome Region.

Figure 3

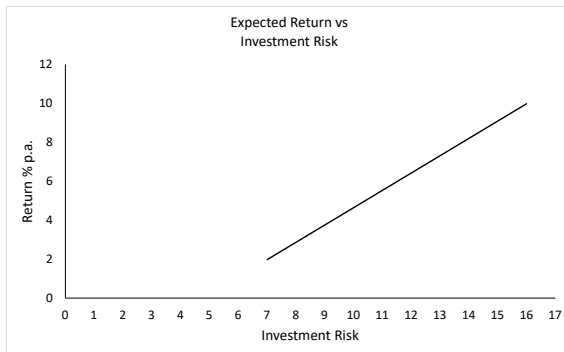
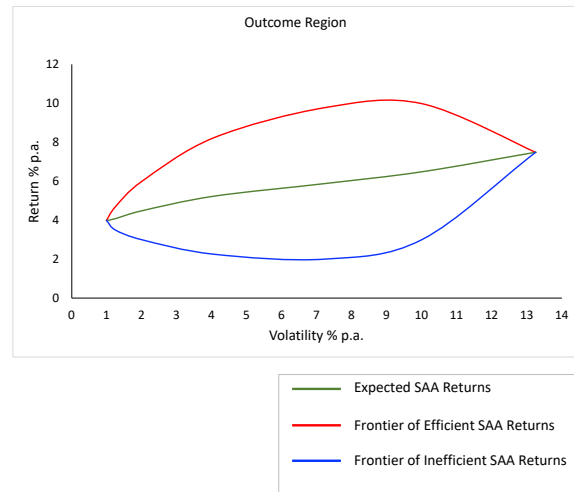


Figure 4



The Outcome Region is equivalent to the set of ‘attainable E, V combinations’ defined in Figure 1 of Markowitz’s ‘Portfolio Selection’ article. (Markowitz, 1952)

The outcome region is defined by the investment ranges allowed for each type of Investment, and the expected returns and standard deviations of returns of each investment, and the correlations between them.

(The ex-post outcome region would be defined by the actual returns, volatilities and correlations between each investment and the various asset allocations in each possible portfolio.)

As expected, returns for each investment can differ, and correlations are not all unitary (1) then there is a significant level of dispersion of expected Portfolio Returns for each level of Portfolio Risk, when correlations are taken into account.

As can be seen, the maximum and minimum Portfolio Returns correspond to the highest and lowest levels of Investment Returns in Figure 3. This is because the Portfolio Return is simply the weighted sum of the returns from each investment in the portfolio.

The red line is the ‘**Efficient Frontier**’ which is well known from MPT, being the set of asset allocations (including SAAs) expected to give the highest rate of return for each level of Portfolio Risk (Volatility or Standard Deviation). Efficient portfolios make up only about 1% of all possible asset allocations.

(Note that the efficient frontier is often drawn as only the upward sloping segment of the efficient portfolios – i.e., the upper left segment of the red line. Under conditions of uncertainty however – as occurs with complex markets - it cannot be known with certainty whether the efficient set will reach a peak of returns and then roll-over, as in Figure 4, or whether a corner solution will eventuate with the efficient set continuing to slope upwards through to the point of maximum Portfolio Volatility. Given this, it seems most rational to define the Efficient Frontier as all portfolios with the highest expected return for each level of Volatility.)

MPT assumes that markets are static, and hence all future returns, risks and correlations are known with certainty in advance. MPT assumes therefore that those portfolios (asset allocations) that will lie on the ex-post efficient frontier can be identified in advance, and the Portfolio Construction problem reduces to the simple task of identifying them.

The blue line is the '**Inefficient Frontier**', which is not so well known. It is the set of asset allocations expected to give the lowest rate of return for each level of Portfolio Risk (Volatility or Standard deviation). Inefficient portfolios make up only about 1% of all possible asset allocations.

If the economic system and markets are complex rather than static, then it is not possible to know the future returns, risks and correlations in advance. Furthermore, in a complex market system, there is sufficient uncertainty about investment outcomes, over any reasonable investment period for a superannuation fund, that the probability of an asset allocation selected today being on the ex-post efficient frontier at some point in the future is essentially the same as it being on the ex-post inefficient frontier – i.e., about 1%.

As there is a significant dispersion of expected (and ex-post actual) returns for each level of Portfolio Risk, the green line is the statistically 'expected' outcome for each level of Portfolio Risk. (That is the expected return if expectations about returns were formed without prior knowledge of actual outcomes.)

When markets are complex, and the future returns of investments are not known with certainty, then the expected relationship between Portfolio Return and Portfolio Risk is uncertain. The 'best estimate' of the expected Portfolio Return for each level of Portfolio Risk will be the Expected Portfolio Return (the green line).

Notably, there will be no reason to expect that higher levels of Portfolio Returns will be associated with higher levels of Portfolio Risk. This only applies if the portfolios lie on the Efficient Frontier (which by definition have higher Expected Portfolio Returns for higher levels of Portfolio Risk). It is assumed that these portfolios can be identified in advance under the static market assumptions of MPT, but this is not the case in complex markets.

Evidence: The Return / Volatility scatterplots of Australian Superannuation Funds

If the assumptions of MPT hold in reality, then this will be evidenced by there being a significant upward slope to the returns/volatility plots of superannuation funds with similar return/risk objectives. That is, there will be an upward slope to the portfolio risk/return trade-off.

This will be the case because only market risks can exist under MPT assumptions.

If markets are complex, then superannuation funds can earn additional returns from taking Manager Skill Risks (which are generally only weakly correlated with Market Risks) and the return / volatility trade-off will be flatter – or even inverted.

The following figures plot the historical return / volatility (standard deviation) trade-off for the Balanced Funds in the SuperRatings Fund Crediting Rate Survey for periods to June 2023.

Figure 5

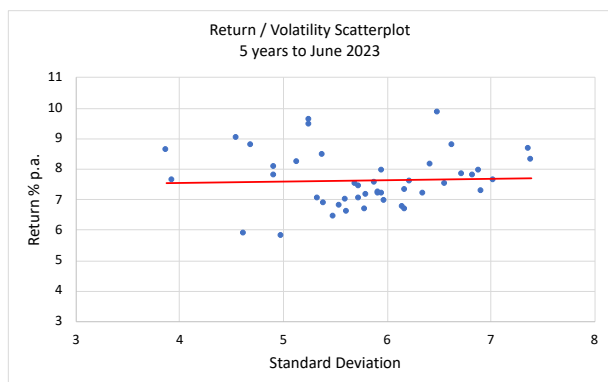


Figure 6

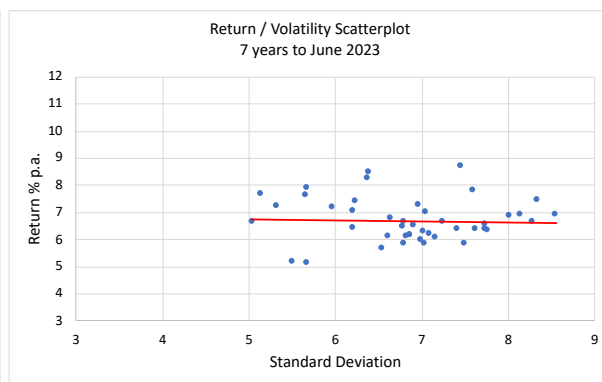
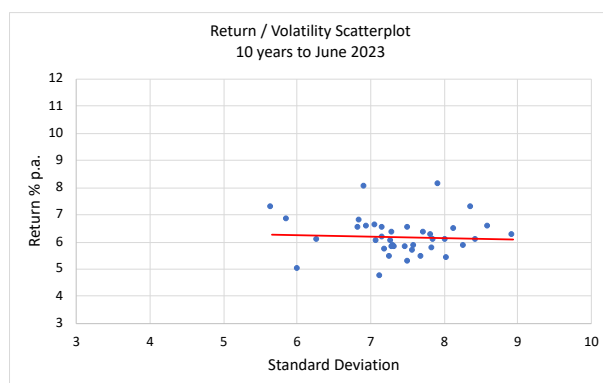


Figure 7



Source: SuperRatings

In each case the risk/return relationships are essentially flat (not significantly different from zero slope), and hence the MPT prediction that the portfolio risk/return trade-offs will be positive, can be rejected.

This result is consistent with returns from Manager Skill somewhat offsetting the upward slope that would be expected if Investment Returns only came from Market Risks.

More importantly however it demonstrates that there is no meaningful relationship between Portfolio Returns and Portfolio Risk.

Since Portfolio Risk is not related to Portfolio Return, then Portfolio Risk cannot be used to measure or assess Portfolio/Investment Performance.

Assessing Portfolio (SAA) Performance

If an asset allocation portfolio, such as an SAA, is to be used as a 'benchmark' in assessing investment performance and, if there is no relationship between Portfolio Returns and Portfolio Risks, then it is necessary to assess the performance of the 'benchmark' before it can be used. This is the case with the Performance Test which is based on SAAs.

A key weakness of the Performance Test (and the Heatmaps) is that the assertion made by APRA that the benchmark comparisons made are meaningful, is not evidence based. As a result, there is no way of knowing whether the benchmarking methodology used is appropriate, or whether the benchmarks selected are 'good'.

In fact, there is nothing that makes a static asset allocation benchmark, that is only valid under the assumptions of MPT, 'good' in the complex environment of the real world.

It is therefore necessary to assess the Performance Test SAA benchmarks before any valid conclusions can be drawn from the Test.

Investment Theory and Superannuation Policy- Summary

To summarise the above sections, it was demonstrated in the above analysis that:

- Superannuation Policy in Australia has not been based on rigorous evidence-based assessment. Instead, it is based on the assumption of Modern Portfolio Theory (MPT).
- MPT is based on many assumptions with little or no empirical evidence to support them. Many have been proven false.
- The lack of alignment of these assumptions with market reality has contributed to significant distortions in superannuation funds' investment decision making.
- There are two major weaknesses in using MPT based benchmarks for performance measurement:
 - The static structure of MPT
 - Market indexes are assumed to 'include all possible investments'. None of the benchmark indices used in the Performance Test meet this assumption.
- Performance measures that are based on the principles of Modern Portfolio Theory – including comparisons to 'market benchmarks / indices' – are unreliable and inaccurate.
- MPT assumes static markets, which implies:
 - The 'Zero-Sum' contention; and
 - That it is impossible to select active managers who will add value after fees.
- Contingency Table analysis proves that markets are not static, and therefore MPT is flawed and the Performance Test SAAs cannot be used as valid performance benchmarks.

- The Australian Super and Hostplus experiments demonstrate that active management by Australian Superannuation Funds does add value and that the assumptions of MPT are not valid.
- As the Assumptions of MPT do not apply to Australian Superannuation Funds, then the Performance Test, which is based on MPT, cannot be used to assess fund performance.
- Current legislative Policy applying to superannuation funds is based on the assumptions of MPT, and include the belief that reduced investment fees is beneficial to members. This belief is not evidence based.
- Evidence is provided that investment fee reductions achieved as a result of the Heatmap and the Performance Test are currently costing superannuation fund members one-quarter to three-quarters of a billion dollars in lost earning each year.
- If the effects of RG97 are taken into account, the shifts from active to passive investments across the superannuation industry since the introduction of MySuper are likely to be costing superannuation fund members multiples of these amounts per year.
- Returns over and above the cash-rate are earned by taking on Investment Risks.
- Volatility of returns is not in Investment Risk, and therefore not a source of Investment Returns.
- An assessment or analysis of Investment Returns must be based on Investment Risks. The Performance Test SAAs are measuring Portfolio Risks not Investment Risks.
- Index benchmarks commonly contain only a small proportion of possible investments. Therefore, using asset-based benchmarks in the Performance Test will significantly impact superannuation fund investment decision making.
- It was demonstrated that Manager Skills are Investment Risks which are rewarded with increased Investment Returns.
- The inclusion of Manager Skill in investments is diversifying and leads to lower levels of Portfolio Volatility.
- Investment Returns are linearly related to Investment Risks. Portfolio Returns are not linearly related to Portfolio Risks.
- Since Portfolio Risk is not related to Portfolio Return, then Portfolio Risk cannot be used to measure or assess Portfolio/Investment Performance.
- There is nothing that makes a static asset allocation benchmark 'good'.
- It is necessary to assess the Performance Test SAA benchmarks before any valid conclusions can be drawn from the Test. At present this is not occurring.

My Future My Super Performance Test

In this response I will take a number of factors as given:

- a. The economy and financial markets are a complex system where some of the parameters that define the system are government Superannuation Legislation and Regulation (Policy).
- b. It is not possible to consider the implications of the Performance Test in isolation, as many of its effect will be either amplified or dampened through its interactions with other components of Policy.
- c. Factors that distort investment decisions by superannuation funds will lead to lower investment returns to members.
- d. Prior to the introduction of the “Objective for Superannuation”, a principal Investment Objective for superannuation fund Trustees was to earn as high a return for members as prudently possible given members risk objectives.
- e. The economy and markets exhibit characteristics of complex systems, and do not conform to the assumptions of Modern Portfolio Theory.

This is at odds with the apparent belief of regulators of Australian superannuation funds that the economy and markets conform to the assumptions of Modern Portfolio Theory. (This belief is not evidence based and has been demonstrated to be incorrect (above).)

- f. Static Asset Allocation benchmarks are not intrinsically ‘good’, and have many theoretical and practical weaknesses.

This is at odds with the apparent belief of regulators of Australian superannuation funds that Static Asset Allocation (SAA) benchmarks are ‘good’. (This belief is not evidence based and has been demonstrated to be incorrect (above).)

- g. Investment management fees are a price paid to access Manager Skill, and active management has a positive expected net return to investors.

This is at odds with the apparent belief of regulators of Australian superannuation funds that investment fees are a cost to members, resulting in lower investment returns. (This belief is not evidence based and has been demonstrated to be incorrect in respect of active investments made by institutional investors (above).)

That regulators (Treasury, APRA & ASIC) hold the beliefs ascribed to them in items (e), (f) and (g) above is illustrated by:

- MySuper (with its emphasis on low fees and costs);
- Fee measurement under RG 97 (which defines investment fees and costs as being expected to reduce investment returns);
- The commentary in the APRA Insights Paper to the MySuper Heatmap December 2022, which emphasises the benefits of reduced investment fees; and
- The YFYS Performance Test – which is based on performance relative to a Strategic Asset Allocation (SAA) implemented through low cost / index investments.

Strategic Asset Allocations are ‘Good’

Theory

As explained above, unless the assumptions of MPT are met (i.e., the economy is static) then performance measures that are based on the principles of Modern Portfolio Theory – which includes SAA benchmarks - are unreliable and inaccurate.

Market Portfolio Indexes

To be a valid measure the comparison SAA benchmark must be a “Market Portfolio”, as defined under MPT. This is defined as including all possible investments. The Performance Test Benchmark Indexes fall well short of this requirement, with many potential investments (both listed and unlisted) not included.

For example, under the Performance Test framework:

- a. Listed equity indexes are used for all equities. As noted above, the majority of appropriate equity investment are not listed. Furthermore, listed equities do not have the Duration, Illiquidity and Manager Skill Investment Risks that unlisted equities have, thereby creating a significant mismatch between the Investment Risk profiles of unlisted equities and the ‘benchmark’.
- b. Government backed infrastructure investments are biased against.

For example, the Dexu (previously AMP) Community Infrastructure Fund (CIF) invests primarily in government backed Public Private Partnership infrastructure (hospitals, schools, desalination plants, convention centres, etc.) and limits its exposure to development risks. As a result, it has a relatively low Expected Return commensurate with its low level of Investment Risk.

While its risk/return characteristics are attractive, and it is in the Performance Test’s Unlisted Infrastructure Benchmark (MSCI Australia Quarterly Private Infrastructure Fund Index (Unfrozen)), its lower level of expected return, makes the CIF unattractive to Australian Superannuation Funds, relative to the Infrastructure Benchmark, which has a higher expected return due to greater exposure to developmental and patronage risks. The fund is now predominantly held by offshore investors.

- c. The range of possible investments under the description of ‘credit’ is also very broad. The Performance Test credit benchmark (Bloomberg Global Aggregate Corporate Index (hedged AUD)) includes senior and subordinated global investment grade, fixed-rate corporate debt, with one-year or longer to maturity.

There are however many valid credit investments that fall outside this benchmark, in particular stressed or distressed credit, which can be very illiquid, and whose final outcome is critically dependent on the legal, analytical, and structuring Manager Skills that only highly specialized managers possess.

Strategic Asset Allocations

In addition to the flaws of using SAAs as performance benchmarks noted previously, there are other considerations that make them inappropriate for use in the Performance Test.

- a. Changes in investment behaviour to minimise differences between the actual and Strategic asset allocations.

Differences between a fund's SAA and actual asset allocation are typically described as 'Tactical' asset allocation shifts. As differences from the SAA are sources of Performance Test Risk, then it would be expected that superannuation funds will attempt to manage this risk. It would be expected that:

- i. Tactical AA shifts will become less frequent; and
- ii. Changes to a fund's SAA will become more frequent in order to more closely reflect actual asset allocations.

While type (i) adjustments might be difficult to detect, type (ii) adjustments should be readily identifiable from funds' SRS533 and SRS 550 returns.

- b. The level of uncertainty around the likely (or expected) returns from SAAs is probably much higher than most people appreciate.

It is easy to overlook the fact that the X-axis on the standard Return / Volatility diagram represents a measure of the dispersion of the expected returns from the portfolios in the Outcome Region. (Or the Efficient Frontier if that is assumed to be identifiable under the assumptions of MPT). So, while we might act as though the Return / Volatility diagram gives a reasonable prediction of the level of Portfolio Return that can be expected for each level of Portfolio Volatility (or 'Risk' as used in legislation), the range of likely returns is actually very large.

Figure 8,

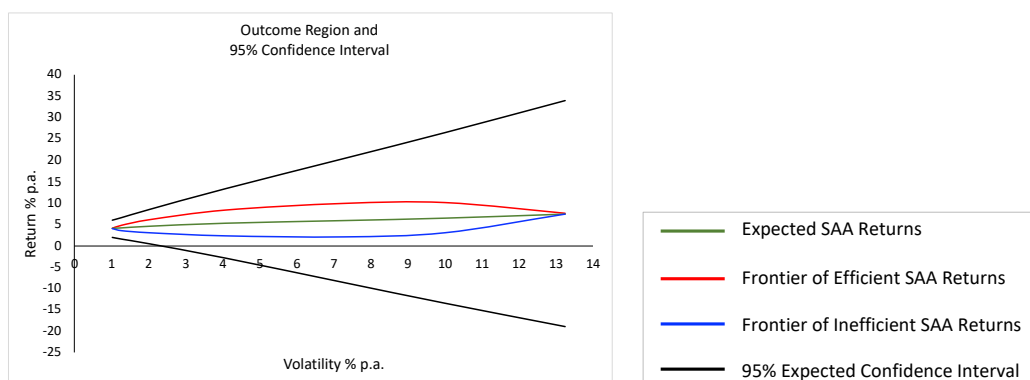


Figure 8, shows the Outcome Region from Figure 4, and includes the 95% confidence interval around the Expected SAA Return (green line). As most 'Balanced' or 'Growth' style investment options would have portfolio

volatilities of 7-9% the range of probable return outcomes is very large (+/- 15%).

The range of the likely outcomes indicates that any selected SAA does not provide a reliable guide to the level of returns that can be expected from an SAA, and hence whether an SAA is actually related to the 'Objectives' of the superannuation option.

(The behaviour of Australian superannuation legislators suggests that they hold the belief that a superannuation option's SAA is related to, and is likely to meet, the option's Investment Objectives for its members. This would be true if, and only if, the assumptions of MPT apply in the real world. If they do not apply, then such a belief is unfounded and likely to be misleading.)

In summary, there is no evidence to support the contention that an SAA corresponds to an outcome that will meet fund objectives.

The Objective of Superannuation

The Superannuation (Objectives) Bill defines the objective of superannuation as being, "to preserve savings to deliver income for a dignified retirement, alongside government support, in an equitable and sustainable way".

While the Objective of Superannuation does not mention earning investment returns, there is ample evidence and theory to support the idea that a higher superannuation balance on retirement is superior to a lower balance. Thus, to date, Trustees of superannuation funds have typically set investment objectives for Superannuation Options that recognise the importance of earning returns for members (CPI+, etc).

The introduction of the Objective of Superannuation, with its primary focus on 'preservation' of contributions, will undoubtedly lead trustees to adopt investment strategies that preserve savings (i.e., minimise the probability of losses) at the expense of lower returns to members.

Importantly, the combination of the definition of investment fees as a cost to members along with the creation of organisational risk associated with the Performance Test, gives a double emphasis to hugging a benchmark using index products, thereby reducing returns to members. The Objective of Superannuation's emphasising 'preservation' over 'return' will serve to emphasise the reduction in the importance of member returns in Trustees considerations. This is already creating significant distortions in funds' investment decisions.

The Problems with using SAA Benchmarks in the Performance test

As noted in the discussion above, there are multiple theoretical and practical weaknesses in using SAA Benchmarks to attempt to assess superannuation fund performance in the Performance Test.

All of these weaknesses revolve around a framework issue with the use of benchmarks in the Test, being that they are not related to the Investment Risks that drive Investment Returns. All of the concerns raised in the Your Future, Your Super Review derive from this issue.

It is also the case that the solution to the Performance Assessment problem lies in adjusting the framework of the Test to focus on Investment Risks.

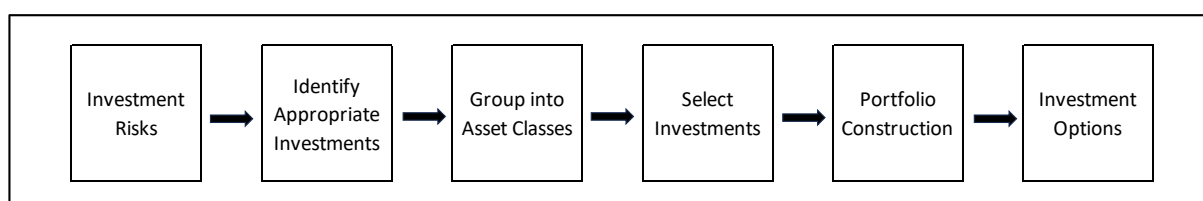
The structure of investment returns

The earning of investment returns by a superannuation fund follows a path from taking on Investment Risks (in order to earn returns greater than the risk-free cash rate), to identifying appropriate investments (including grouping them into asset classes), to selecting individual investments and combining them into investment portfolios (portfolio construction) and then creating Investment Options for members based on those portfolios.

Superannuation Investment Process

The general model for the superannuation investment process is set out in Figure 9.

Figure 9



It should be noted that:

- Investment Risks (Earnings Risk, Duration Risk, Credit Risk, Property Risk, Commodity Risk, Illiquidity Risk, and Manager Skill) are the sources of Investment Returns, which are returns greater than the risk-free cash rate.
- Appropriate investment are Investments which meet the investment institutions', or regulators', definition of what would be appropriate for the investment option. These include considerations of factors such as liquidity requirements, ESG, Modern Slavery, etc.
- The Appropriate Investments identified are then grouped into asset classes by the Superannuation Fund. An asset class typically contains investments judged to have similar investment characteristics by the Fund. An asset class could include liquid and illiquid, or listed and unlisted, investments. These groupings and judgements can differ between institutions depending on their particular perspectives.

This difference in the allocation of investments to asset classes of particular names has been a major source of errors and distortions with the Performance Test to date. For example, an asset class might be defined as 'Absolute Return' by a fund on the basis of the investments allocated to it having a low likelihood of not earning a positive return – such as cash or low risk credit.

APRA's different definition of what was meant by an 'Absolute Return' asset class - as consisting of hedge fund investments - has led to some investment options being significantly mis-categorised, and therefore incorrectly assessed, in the Performance Test.

- The superannuation fund then applies its investment strategy and processes to select the investments and construct a portfolio (including by default an asset allocation) that is expected to meet the investment objectives of the investment Option.

In some cases, the security selection / portfolio construction process may proceed in discrete steps (say select the investments in an asset class, and then, after assessing the characteristics of the asset classes, determining an asset allocation). In other cases, the investment process may follow more of a 'Total Portfolio Approach' (see Chartered Alternative Analyst Association, Bowman et al., 2024) which has an awareness of the drawbacks of an asset allocation constrained approach.

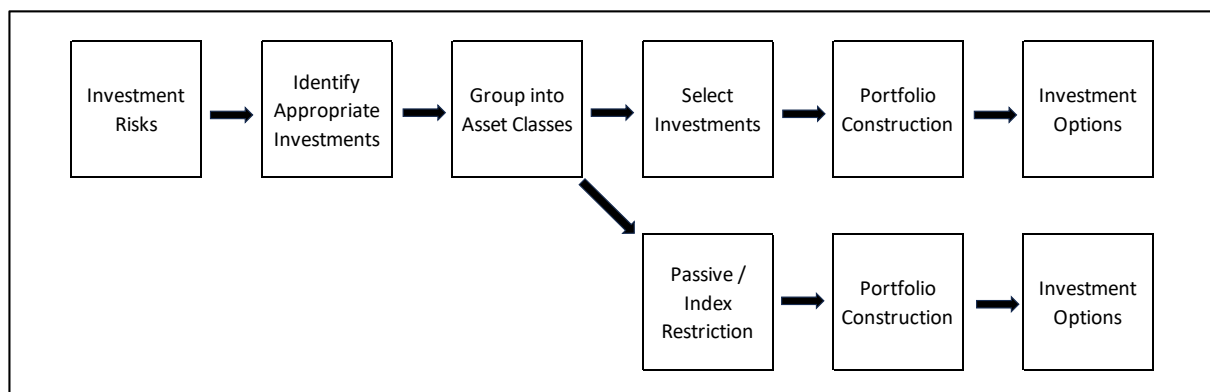
Index Constrained Superannuation Investment Process

Some institutions may decide to constrain the investment process at the Investment Selection stage by limiting securities to only those included in Passive Indexes constructed based on the criteria adopted by the index constructor. This is illustrated in Figure 10.

The restrictions imposed generally involve the removal of Appropriate Investment that are not listed, not of a particular size, not of a particular credit rating or duration, etc. In other words, a large number of investments that would be appropriate for a superannuation fund to invest in are eliminated from the potential investment pool if an indexed approach is adopted.

It may be that an indexed approach is optimal, however this will only be the case if the economy and markets conform to the assumptions of MPT, which have been demonstrated not to be valid.

Figure 10



The Apples to Oranges Performance Test

A basic criterion for a performance measurement framework to provide valid assessment results is that it compares like with like.

As is apparent from figure 9 and 10 above, the Performance Test in its current form does not satisfy this criterion. Essentially apples are being compare to oranges.

If the results produced by the standard Superannuation Investment Process (Figure 9) are compared to a benchmark based on an Index Constrained Investment Process (Figure 10)

then the resulting mismatch in the Investment Selection and Portfolio Construction processes will create significant risks for Funds following the standard process.

These risks will manifest as Performance Test Risk. For funds facing Performance Test Risk – particularly where the consequences of failing the Test are severe (as is the case with the Performance Test which creates an existential threat to the organisation) – then risk-management requires the fund to alter its investment approach to be more in line with the measurement process (i.e., convert apples to oranges).

This involves restricting its set of ‘appropriate’ investments only to those include in, and at essentially the same weighting as their weighting in, the index.

As this is a restricted set of ‘appropriate’ investments then the investment process will be altered from the process that Trustees believed to be in the best interests of members prior to the introduction of the Test.

The only other alternative is to modify the framework of the Performance Test so that it compares like with like. This could theoretically be achieved in two different ways:

- a. Develop investment indices that reflect the full scope of appropriate investments that superannuation funds could make. This would have the advantage of comparing the performance of all superannuation options (including those which choose to have a constrained investment set) to the performance of the full range of acceptable investments.

Obviously, this would be incredibly complex, and the indexes would require constant updating to allow for new investments as they evolved. It would also not resolve the issue of gaming the index by only investing in those investments with higher expected returns (as is the case with the CIF).

- b. The second alternative involves doing away with the artifice of sector / asset allocation benchmarks, by moving earlier in the superannuation investment process and assessing fund Investment Returns against their exposures to Investment Risks.

This could be achieved by having each Investment held by a superannuation fund categorised by its exposure to each of the 7 Investment Risks - Earnings, Duration, Credit, Property, Commodity, illiquidity and Manager Skill. From experience there are typically around 70 significant investments in a balanced / growth fund’s investment portfolio.

The Investment Risk of a portfolio of investments would then be calculated as the weighted sum of the Investment Risk exposures of all individual Investments.

Note, any measure of Investment Risk could be adopted, as it is merely a numerical unit of measure. So, Investment Risk could be measured in units of risk of a Ten Year Bond, with say an investment in an all maturities bond index having 0.6 Ten Year Bond risk units per dollar invested, a Development Infrastructure Investment may have 1.3 risk units per dollar invested, with a listed equity portfolio having 2.2 risk units. The weighted sum of the Ten Year Bond risk units would give the Gross Portfolio Risk of the portfolio.

For ease of understanding I tend to use a risk unit labelled 'Volatility'. (Note this generally has no relationship to the mathematical concept of volatility or Standard Deviation.)

For some, but very few, Investments there is a close to 1:1 correspondence between statistical volatility and the risk unit called volatility. For example:

- A listed equity portfolio could be assigned 16 risk units – which is essentially the long-term Standard Deviation of an equity portfolio.
- Similarly, a bond portfolio might be assigned as having 7-8 risk units, which again is broadly equal to the long-term Standard Deviation of an all-maturities bond portfolio.
- A Cash portfolio would typically be assigned a low risk unit value of 0-1.
- On the other hand, Private Equity, has exposure to Earnings Risk (16 units), Duration Risk (2 units), Illiquidity Risk (3 units) and Manager Skill (3 units). As a result, it would have a high level of exposure to Investment Risks of say 24 units.

While not typically explicitly considered, these values should be readily known by the superannuation fund investment team that made each Investment. For performance assessment purposes however, it may be desirable to obtain independent values from asset consultants or other research organisations. (In any case the risk values assigned to particular investments should be sourced independently from superannuation regulators.)

The Performance Test would then involve the simple process of calculating the Investment Risk taken by a superannuation fund Option over the relevant assessment period and comparing the Option's Investment Return to that of peer funds that have taken similar levels of Investment Risk.

No asset allocation-based SAA would be required and an easy apples-to-apples comparison can be made between funds whether they have restricted their investments only to those contained in indexes, or to a more general set of appropriate investments for that portfolio.

This approach would reduce, or eliminate Performance Test Risk as superannuation funds' performances would be compared on a level and rational basis.

Responses to Concerns raised in Your Future, Your Super Review

My responses to this and the subsequent sections are given in *italics*. These are generally summary comments with the primary response to the request for consultation having been provided above.

Concerns raised by stakeholders	Summary of stakeholder views
Focusing on investment implementation over other measures of performance	<p>Performance delivered by trustees can be attributed to different factors. The current testing framework only assesses how well an investment strategy has been implemented. Stakeholders have raised concerns that the value delivered by a trustee's option design and asset allocation decisions, a key factor in performance of the trustee, is not currently assessed.</p> <p>This means that a product with an investment strategy that is not suited for its membership and delivers low returns may pass the test if the implementation of the strategy is above the benchmark. Conversely, a product with a superior investment strategy that delivers good returns may fail the test if the implementation of the strategy is below the benchmark.</p>
<i>This is a valid concern which arises from the use of Strategic Asset Allocations as a Benchmark in the Performance Test.</i>	
Encourages short-term decision making	<p>Some superannuation funds have reported the test focuses their attention on the short-term impact that investment decisions will have on their next year's performance test result. This detracts from the long-term outcomes that trustees should be considering when investing in assets.</p> <p>This risks funds prioritising investment in assets with more short-term certainty over assets that may provide superior long-term benefits to members.</p>
<i>This is valid concern, with funds moving investments closer to liquid indexes, and therefore shorter-term investments, in order to manage Performance Test Risk</i>	
Incentive to hug benchmarks	<p>To manage the risks of failing the test, anecdotal evidence from stakeholders suggests that the test has created incentives for most superannuation funds, if not all, to 'manage to the test' and seek to minimise their tracking error against the regulated benchmarks.</p> <p>This means that trustees focus on passing the test each year above seeking strong long-term investment returns for members. In some instances, they may be passing on opportunities to deliver better returns in lieu of more closely hugging the benchmark –</p>

	<p>and this includes trustees that have a track record of outperforming.</p> <p>Ultimately, this leads to superannuation funds viewing these benchmarks as a constraint on what they can invest in, which may have the long-term effect of dampening performance.</p>
<p><i>This is a valid concern and reflects superannuation funds rational responses to the introduction of Performance Test Risk.</i></p>	
Lack of investment flexibility	<p>There is consistent stakeholder feedback that the current test is not sector neutral and the benchmarks are better suited to investment in traditional asset classes (e.g., commercial property), but do not properly cater to possible investment opportunities (e.g. residential property in Australia). To avoid being identified as a poor performer, a superannuation fund may choose to invest in asset classes that are clearly covered under the benchmarks.</p> <p>For some trustees this has been taken as a barrier to particular investment strategies which would deliver strong outcomes for members. For example:</p> <ul style="list-style-type: none"> • Discouraging investment in assets that are not well-represented in the benchmark indices, including emerging asset classes such as those associated with the climate and energy transition, and housing. • Not supporting values-based investing, including faith-based or ESG focused investments, where the composition of the benchmarks do not align with these values of investing. This prevents investment strategies that can both deliver good returns and support member choice where members have made a deliberate decision to choose such products.
<p><i>This is a valid concern and accurately reflects superannuation funds' responses to Performance Test Risk.</i></p>	
Reduced choice, diversification, and active management	<p>The influence of the test provides incentives for superannuation funds to avoid active investment management by encouraging passive benchmark hugging. This in turn may reduce diversification, as funds seek to divest from (or not direct new investment into) assets or investment strategies that are not well represented in the benchmark indices. However, trustees may prioritise passive investment strategies to lower fees, even if this provides lower net returns in the long-term.</p> <p>Ultimately, members could be left with less choice in where to invest their retirement savings, and funds may end up investing in the same assets which reduces diversification and increases systemic risks.</p>

This concern is valid and reflects the reality that the combination of the treatment of investment fees as a cost that reduces returns (rather than the price of Manager Skill which is expected to increase returns) and the Performance Test creates strong incentives for superannuation funds to reduce active investment management at both the asset allocation and security selection levels, with a range of adverse consequences for superannuation fund members and the Australian economy.

Responses to Proposed Options for Reform

Principle	Description
Improves member outcomes	<p>Consistent with the proposed objective of superannuation, any performance testing regime should be focused on delivering income for members' dignified retirement.</p> <p>As recommended by the Productivity Commission, the test protects members from being offered objectively poor products by setting a minimum bar or a 'right to remain', but in addition it should not inhibit funds from seeking better risk-adjusted returns.</p> <p>Any test should place the obligation on trustees to make decisions about what is in the best interests of their members and not create barriers to invest in assets that deliver good returns.</p>
<i>The Performance Test does not satisfy this Principle or meet any of the descriptive objectives.</i>	
Effective and efficient	<p>To be effective, the test must continue to be objective and have clear consequences for failure. This provides clarity as to when a product has failed and allows for efficient and timely regulator action.</p> <p>The test should seek to be effective in identifying underperformers, without constraining or misidentifying well-performing funds.</p> <p>The test should also be efficient and timely to administer from the perspective of both APRA and superannuation funds.</p>
<i>The Performance Test is not objective, being based on the assumption that the economy and markets are static and that the principles of Modern Portfolio Theory are true, when this assumption is demonstrably false. As a result, the Test is not effective in identifying underperformers, and involves a significant burden on superannuation funds to manage their Performance Test Risk.</i>	

Widely applicable and transparent	<p>To achieve a level of certainty, it is preferable to have a consistent and comparable measure of performance across all superannuation products.</p> <p>Ideally the test should be applied to as many product types as possible, without unfairly punishing products using particular investment mandates or strategies.</p> <p>The results of the test should be clearly communicated to members and the industry in a timely fashion.</p>
<p><i>The Performance Test does not meet this Principle. In particular it unfairly punishes (or creates risk for) products using active management mandates and strategies.</i></p>	
Enduring	<p>Superannuation is a long-term asset and, to remain consistent with this outlook, a testing framework should remain appropriate to apply consistently over time. The test should aim to remain applicable as markets change without requiring regular changes to the framework. This is important to ensure industry have certainty about the long-term testing regime, and that members can see long term performance that is not impacted by changes to the test that reset the rules or baseline.</p>
<p><i>The Performance Test does not meet this Principle. By being based on arbitrarily designed asset class benchmarks it ensures that it will be constantly necessary to modify and update the test as new investments evolve.</i></p>	

Consultation Question

1. Do you agree with these principles? Are there any other principles that should be considered?

The above Principles are sensible objectives and would be good to implement. However, the Performance Test is only applicable to a static investment environment and therefore is incapable of delivering on any of the Principles in the complex market conditions of the real world.

Responses to Design Options

1. Status quo – SAA Benchmark Portfolio

As explained above, no performance measurement process that is based on the belief that Static Asset Allocation Benchmarks are 'good' is capable of meaningfully measuring superannuation fund product performance.

Option	Objective	Measure of Performance
Option 1 - Status quo		
1. Current Test	Assesses how well a trustee has implemented their investment strategy, based on SAA.	Product Performance Long-term annual average investment performance less most recent administration fees. Benchmark Benchmark portfolio of indices based on the product's individual SAA less median administration fees of relevant peers.
<i>As explained above, the SAA is methodologically unsound as a performance measure. Also, it will lose its meaning as it is adjusted more frequently by Superannuation Funds in order to minimise Performance Test Risk</i>		
Option 2 - Alternative single metric		
2a. Sharpe ratio	Assesses how effectively the trustee delivers risk-adjusted investment returns above that of the risk-free rate.	Product Performance Long-term average investment performance less the risk-free rate. Result is then divided by volatility of investment. Benchmark Multiple options, including a prescribed number (such as 1), peer comparison, or Sharpe ratio of a benchmark portfolio.
<i>Portfolio Volatility is not a measure of Investment Risk. It is dependent on the assumption of MPT and would be an extremely misleading basis for performance assessment.</i>		
2b. Peer comparison of risk-adjusted returns	Assesses whether a product is providing competitive risk-adjusted returns compared to peers.	Product Performance Long-term average investment performance (net of administration fees) against its exposure to growth assets (as a

		<p>proxy for risk).</p> <p>Benchmark</p> <p>A linear trendline based on results for the relevant product cohort (e.g., MySuper).</p>
<p><i>Growth assets are not a proxy to investment risk as they are too narrow a sample set and therefore excludes too many appropriate investment options.</i></p>		
2c. Risk-adjusted returns relative to Simple Reference Portfolio (SRP) frontier	<p>Assesses whether a product provides superior investment returns relative to a simple benchmark portfolio that bears a similar level of risk.</p>	<p>Product Performance</p> <p>Long-term average investment performance (net of administration fees) relative to volatility (standard deviation). Benchmark</p> <p>A line that reflects the risk-adjusted returns of a simple reference portfolio, of bonds and equities, for all levels of risk.</p>
<p><i>Volatility / Standard Deviation is not related to Investment Risk and therefore would not be a valid or reliable risk measure. The bonds-equity benchmarks are too narrow and would encourage benchmark / index hugging</i></p>		
Option 3 - Multi-metric framework		
3a. Heatmap	<p>Assesses the performance of a product against multiple metrics, similar to the APRA heatmaps, to provide a fulsome performance assessment.</p>	<p>Product Performance</p> <p>Utilises eight metrics contained within the APRA heatmaps (investment performance (3), fees (2), and sustainability of member outcomes (3)). Benchmark</p> <p>Varies depending on metric but includes benchmark portfolios and peer comparisons.</p>
<p><i>The concept of using multiple measures is likely to be an improvement over a single measure that is not applicable to complex investment environments. Unfortunately, the Heatmap measures suffer from most of the same structural weaknesses as the Performance Test.</i></p>		

3b. Targeted three-metric	Assesses the performance of a product against a smaller set of metrics to provide a more fulsome assessment of performance relative to the current test, but is simpler than 3a.	Product Performance Three independent metrics measuring performance, such as risk-adjusted returns, implementation of promises to members, and cost to members. Benchmark Varies depending on metric, but could include peer comparisons, disclosed targets and/or benchmark comparisons.
<i>Given that risk is not well defined in legislation, and is generally regarded as volatility which is only valid if the assumptions of MPT are met, then the Risk-Adjustment envisaged is likely to be problematic. As explained above, it would be valid to compare Investment Returns against Investment Risk.</i>		
<i>Cost to members would be very misleading given the current definition of fees in RG97 includes Investment fees, which are not a cost to members.</i>		
Option 4 – Alternative Framework		
4. Alternative metrics	This option is an opportunity for stakeholders to put forward an alternative framework that addresses concerns with the current test and the principles outlined in this paper. Options one to three are only examples of test frameworks that could be used and feedback on the detail of these options is welcomed.	
<i>An alternative approach to performance assessment involves doing away with the artifice of sector / asset allocation benchmarks, by focusing directly on comparing fund Investment Returns against their exposures to Investment Risks.</i>		
<i>As explained above, Investment Risks are risks associated with individual investments that are sources of Investment Returns, over and above the risk-free cash rate.</i>		
<i>That is, Investment Risks are risks that are expected to be rewarded for taking, by receiving additional investment returns.</i>		
<i>Investment risks include;</i>		
<ul style="list-style-type: none">• <i>Earnings risk;</i>• <i>Duration risk;</i>• <i>Credit risk;</i>• <i>Property risk;</i>• <i>Commodity risk;</i>• <i>Illiquidity Risk; and</i>• <i>Manager Skill</i>		
<i>All investments are composed of varying combinations of these Investment Risks.</i>		

For example:

- *Listed Equities primarily give exposure to the investment risks of Earnings and Duration risks.*
- *Fixed interest is primarily exposed to Duration and Credit Risks.*
- *Alternative assets, have a significant exposure to Manager Skill. (Generally speaking, alternative assets can be defined as assets that only exist with, or have a high exposure to, Manager Skill.)*
- *Private Equity, for example, would have exposure to Earnings Risk, Duration Risk, Illiquidity Risk and Manager Skill. As a result, it has a high level of exposure to Investment Risks, with a commensurate expectation that it will deliver high Investment Returns.*
- *An index fund would only have exposure to market related Investment Risks, while an actively managed fund would also have exposure to Manager Skill.*

How can this information be used to assess fund performance?

This could be achieved by having each Investment held by a superannuation fund categorised by its exposure to each of the 7 Investment Risks. The Investment Risk of a Portfolio of investments would then be calculated by simply summing the weighted Investment Risk exposures of all individual Investments. From experience there are typically around 70 significant investments in a balanced / growth fund's investment portfolio.

This value would be the Gross Portfolio Risk as defined earlier.

These values should be known by the investment team of the superannuation fund that made each Investment, although it would be desirable to obtain independent values from asset consultants or other research organisations.

This approach to assessing the Investment Risk of a portfolio has the advantage of inbuilt flexibility in the event that new or innovative investments evolve. A new investment can simply be identified by the various Investment Risks that it has exposure to, and it can then be incorporated into the Performance Assessment as part of the overall portfolio of Investment Risks.

It would also be possible to apply this method with equal validity to any investment portfolio, whether MySuper or Choice.

It also has the advantage that Investment Returns are assessed directly against the Investment Risks that generate those returns. That is, the relationship between Expected Return and Investment Risk should be essentially linear, with no need to carry out the Gross to Net Investment Risk conversion that leads to there being multiple returns expected for each level of (Net) Portfolio Risk.

The Performance Test would then involve the simple process of calculating the Investment Risk taken by a superannuation fund Option over the relevant assessment period and comparing the Option's Investment Return to that of peer funds that have taken similar levels of Investment Risk.

This ex-post assessment would reflect the total of the fund's investment results relative to actual implementations that were made by peers.

It would not be necessary to express the fund's investments in terms of asset allocations, as the relevant value is the Total Investment Risk incurred.

No asset allocation-based SAA would be required and a straightforward like to like comparison can be made between funds whether they have restricted their investments only to those contained in indexes, or to a more general set of appropriate investments for that portfolio.

This approach would reduce, or eliminate, Performance Test Risk as superannuation funds' performances would be compared on a level and rational basis.

Unlike the current Performance Test, I would recommend that a 'fail' would be review by an independent panel of investment experts (not regulators) with a view to producing improved performance over 3 years.

Consultation Questions

2. Is assessing the implementation of a strategy, as opposed to assessing the choice of strategy itself, a strength or weakness of the current framework?

There is significant confusion around the concept of an investment Strategy. A Strategic Asset Allocation is not an investment strategy, as its likely outcomes are too uncertain and are not related to investors' investment objectives.

If using a benchmark in performance assessment, then it should at a minimum be assessed by comparison to the ex-post Outcome Region.

3. Can the existing methodology be materially improved, such as by further calibrating benchmarks, to largely address unintended consequences? How could these improvements overcome the incentive to benchmark hug, and remove barriers to invest in emerging asset classes?

No, the methodology is fundamentally flawed. The fact that no asset class benchmark can never contain all investment that are appropriate investments for a superannuation fund means that there will always be a mismatch between the benchmark and potential investments.

While the benchmark is regarded as 'good' when there is no evidence to support that belief, then the issue raised will always exist.

4. What asset classes do you consider require better coverage in the test? What asset classes are covered well by the existing test?

All and none respectively. The concept of an asset class is an artifice that arose from the development of MPT. Modern investment methodology is rapidly moving beyond the concept of Strategic Asset Allocations to a Total Portfolio Approach. Therefore, the more general method of looking through to underlying Investment Risk will give a much more robust and flexible result.

5. Do you consider additional indices covering additional asset classes should be added to the test? If so, please provide the following details for each of your recommendations:

No. The use of asset classes is a major weakness of the Performance Test. Adding additional asset classes will increase complexity and cost, without resolving the core problems.

6. How should the test cater for new asset classes in the future?

By focussing on underlying Investment Risks, whereby a new investment will simply have a different combination of exposures to those risks.

7. Should the threshold for failure be recalibrated for some products? What evidence supports the need for a different threshold? How could a different threshold deliver better long term returns to members?

The current threshold (50 BP) is arbitrary. However, the more significant problem is the lack of informed and rational assessment of the meaning of a failure. A different, informed, response to an underperformance should be adopted.

8. Would retaining the current framework but moving to a simpler structure, such as a simple-reference portfolio of only bonds and equities, address some of the concerns with the current test?

No. If anything, placing a greater focus on only two asset class indices would exacerbate the structural weaknesses of the current framework.

2. Alternative single-metric test – Risk-adjusted returns

The Sharpe Ratio is based on the static market assumptions of MPT, which do not apply to real financial markets which are complex. Volatility is therefore not a measure of Investment Risk and any measure, such as the Sharpe, Information, or Treynor ratios based on volatility has no value.

Consultation Questions

9. Would the Sharpe ratio be a more appropriate testing approach than the current framework? Would this lead to better member outcomes?
10. How should the benchmark for performance be calibrated?
11. What data should be used to estimate the Sharpe ratio, and how frequently?

2b. Peer comparison of risk-adjusted returns

Peer comparisons have value as they start from the premise that managers and trustees can add value (and are therefore rational in making active investments) and that comparison between actual active results is meaningful.

Risk adjustment is more problematic as the standard 'risk' measure from MPT (Volatility) is not related to Investment Returns in the real (i.e., complex) world, and is therefore not a valid measure of risk.

The Alternative Framework set out above provides an approach to Risk Adjusted Performance Assessment that addresses this issue.

Consultation Questions

12. Are either of these approaches better than the existing test methodology (Option 1) or a simple Sharpe ratio (Option 2a)? Are there any other considerations that make this a better or worse option?
13. Are there any other alternative single-metrics that would be superior in addressing the principles set out in this paper? How would they provide a better testing framework? What net benefits do they provide over other proposed metrics?
14. What incentives would these alternative single-metric options provide trustees, and what would be the consequence of this for member outcomes?

3. Multi-metric test

See comments above

3a. Alignment with the APRA heatmap

See comments above. In essence the measures employed in the Heatmap are all problematic.

Consultation Questions

15. Would greater alignment to the APRA heatmaps improve the sophistication of the test?
16. Would it reduce incentives to benchmark hug and improve member outcomes?
17. Is correlation between metrics an issue? If so, how should this be addressed?
18. Should the test capture all the metrics in the heatmap? If not, what metrics?
19. How would the benchmark for performance be calibrated for chosen metrics? How would these metrics combine to determine overall pass/failure of the test?
20. What costs would be associated with aligning the test to the heatmap? What would be the benefits?

3b. Targeted three-metric test

See comments above

Consultation Questions

21. Would this framework improve the sophistication of the test? Would it reduce incentives to hug benchmarks and improve member outcomes?
22. Would this approach be more, or less, favourable than the heatmap approach?
23. What would the costs of implementing this approach be? What would the benefits be?
24. Are these the right measures of performance or are there other more important indicators of performance that should be measured in addition to or instead of those outlined? What metric should be used to assess these indicators?
25. How should the benchmark for performance be calibrated?

4. Alternative frameworks

See description above.

Consultation Questions

26. How would an alternative framework be constructed according to the elements outlined above? Please provide specific details.

See description above

27. How would this framework more effectively advance the principles outlined in this paper?

The proposed alternative would more effectively advance the Principles outlined in above in the following ways:

Principle 1. Improves member outcomes

- *The focus is on the aggregate performance delivered to members without distracting from this objective by introducing Performance Test (i.e., benchmark mismatch) Risk*
- *The test would identify objectively poorly performing product that have underperformed relative to the Investment Risk taken and not inhibit funds from investing in assets that are not included in the 'benchmark'.*
- *By removing Performance Test Risk, the test would allow Trustees to focus on achieving investment outcomes for members rather than on organisational survival.*

Principle 2. Effective and efficient

- *The proposed test is objective. It is not subject to arbitrary classifications of asset classes or benchmark performance indexes. The critical levels that constitute a failure would need to be defined.*
- *The identification of underperformers should be straight forward without the arbitrary assignment of funds to risk categories as occurs when asset allocations are used.*
- *The test is simple and efficient to administer for all concerned.*

Principle 3. Widely applicable and transparent

- *The proposed test can be applied effectively across all superannuation and non-superannuation products,*
- *The test is neutral between investment approaches. It does not assume that one approach (indexed) is superior as the current Performance Test does.*
- *Results should be available in a timely manner. (I would expect that the required information would be collected from superannuation fund via a slightly modified SRS 550. Note: The asset class definitions in the reporting form would not be required.)*

Principle 4. Enduring

- *The underlying Investment Risks that are the sources of Investment Returns are relatively permanent. By moving the proposed test to focus on these underlying Investment Risk it will be more consistent and applicable to a broader range of investment products than a test that is based on, and favours, asset indexes and asset allocation benchmarks.*
- *It should therefore be much more enduring than the current Performance Test*

28. What would be the costs and benefits associated with this framework, compared to the current test and any other alternatives?

- *I would expect that costs would be lower as the data needed to be collected is simpler.*
- *There would be very significant savings for superannuation funds and members by their avoiding paying monopoly prices to index providers for access to the benchmark indexes selected for the Performance Test by APRA.*

Note: If this alternative framework is not adopted, then regulators should address the monopoly supply situation created by the selection of specific indexes to represent particular asset classes. The providers of those indexes currently enjoy a monopoly supply position (created by APRA) and are pricing access to the indexes accordingly.

APRA should negotiate an appropriate pricing structure for superannuation funds commensurate with its monopoly position in selecting the indexes.

Broader considerations for reform

Scope of the test

I do not feel that I can make materially significant contributions in this area.

Consultation Questions

29. What are the most important considerations for performance of retirement products?
30. If the test were to expand to retirement products, would they require a different test to the accumulation phase? Would the test differ for different retirement products?
31. How could longevity products be most appropriately assessed? How could the products be compared?

Other products

I do not feel that I can make materially significant contributions in this area.

Consultation Questions

32. Do you agree that retirement phase, single-sector and externally-managed products are suitable for testing? Why or why not?
33. Should different assessment methods be applied to different cohorts of products?
34. Do you agree that the 'other products' outlined above are unsuitable for testing? If you think the 'other products' (or a sub-section of these products) are suitable for testing, how could they be appropriately tested?
35. Under each design option, how could the test accommodate cohorts that are suitable for testing? For example, using different metrics or benchmarks for performance for different cohorts.

Fees

It is critical that fees in this area remain limited to administration and not investment fees.

It may be relevant to include a total of fees received by the superannuation fund, including fees received for internal investment management

Consultation Questions

36. How should fees be measured under each design option?
37. Should fees be measured at the current option level, or should they be measured on a different level? How would this be achieved?
38. Are the current assumptions made in comparing fees acceptable? For example, should the \$50,000 representative member balance be adjusted based on the median member balance for a product cohort?
39. Is a peer comparison of fees the best way to measure fees? Is there a better approach to benchmarking fees? If so, how should this work?
40. What product cohorts should be considered? How should different cohorts be defined where products could meet multiple cohort definitions, such as single-sector retirement products?

41. How many years of fees data is appropriate to test? Should a greater weighting be given to certain years?

Consequences

In general, the identification of underperformance is a significant event. However, there is evidence that, as a result of the many deficiencies in the current Performance Test, some funds may have been subject to censure under the current regime when this was not justified and produced outcomes that were not in members best interests. (Conexus Institute, Bell, 2022; Hartley, 2022; Frontier, 2022; JANA, 2022)

Overall, given the many theoretical and practical weaknesses with the current Performance Test it would be advisable to modify the consequences of a failure to meet the legislated 'bright line', with the introduction of a qualitative overview by an independent panel of investment experts.

Consultation Questions

42. Should the consequences be adjusted to improve outcomes for members? How would this need to be tailored for the different options for performance testing?
43. How should the consequences be amended to better account for edge cases or different cohorts that fail the test for reasons beyond the trustee's control?
44. How could these provisions be effectively ring-fenced so that it applies only to the edge cases and not failures at large?
45. How could this be achieved without subjecting the regulator to undue challenge and impacting the efficiency of the regime?
46. What other remediation processes could occur?

Barriers to consolidation

I do not feel that I can make materially significant contributions in this area.

Consultation Questions

47. Are there any key barriers to consolidating closed and underperforming products? What quantitative evidence is there of these barriers? How do these weigh against other reasons a person may choose to remain in a product?
48. What evidence do trustees use to demonstrate that remaining in a closed and underperforming product is in the best financial interests of members, compared to moving to a performing product?
49. What is the process or criteria that trustees use when deciding on what product they will transfer members to when consolidating underperforming products?
50. Should APRA receive increased regulatory powers to direct superannuation trustees to consolidate underperforming products?

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Investment Risk and Portfolio Risk for Superannuation Directors and Trustees

This note follows on from my earlier “Portfolio Theory in the Real World” paper for the Directors and Trustees of superannuation and other investment funds. The purpose of this note is to provide an understandable outline of issues around risk in investing.

Principle

The basic principle that is almost **universally not understood** when speaking about risk and investments is that **Investment Risk and Portfolio Risk are very different things**. To demonstrate, consider the idea of the “Risk / Return Trade-off”, which we have all heard of, and generally think that we understand.

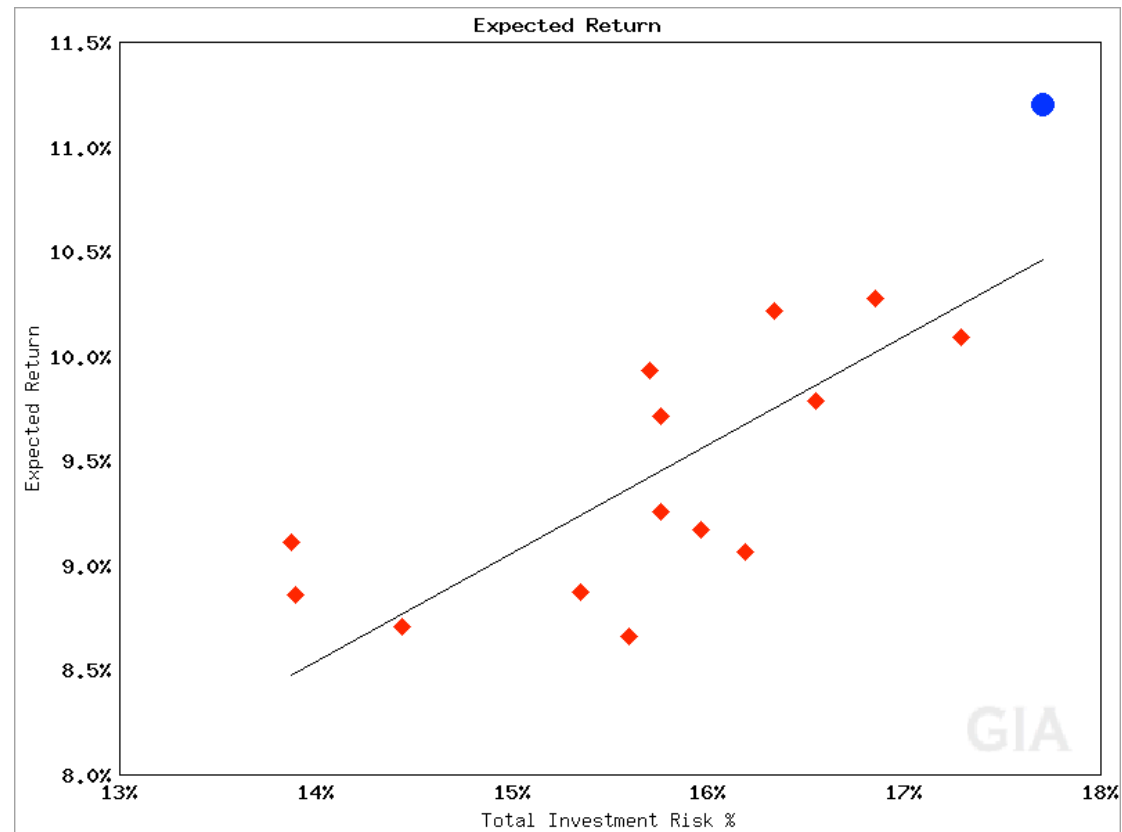
The essence of the Risk / Return Trade-off is the idea that in order to earn higher rates of return it is necessary to take higher levels of “risk”. We typically associate this higher “risk” with an increased likelihood (i.e. probability or frequency) of “loss” on an investment portfolio (increased Portfolio Risk). Hence we create portfolios of increasing “risk”, that we describe with terms such as ‘conservative’, ‘balanced’, ‘growth’, ‘high growth’, etc., that we expect will have higher levels of return over time.

This, quite standard, description **is incorrect**. It is generally correct that **higher levels of Investment Risk are associated with higher Expected Returns**. However **Investment Risk has little relationship to the level of Portfolio Risk**.

To understand this difference, consider the GIA analysis of the Future Fund’s investment portfolio as at June 2013. First, recall that the two sources of Investment Risk that a portfolio may earn returns from are Market Risk and Manager Risk (or Manager Skill). As returns earned from taking investment risk are additive, then the sum of these two risks is Total Investment Risk.

The Expected Return of the Future Fund versus Total Investment Risk is plotted as the blue circle in Chart 1. The Expected Returns versus Total Investment Risk of 14 of Australia's major balanced / growth style super funds are also plotted in red.

Chart 1



The total of the Investment Risks (market + manager), expressed as volatility (% p.a.), being taken by the Future Fund is ~17.5%, (this is 2% higher than the average super fund), with an Expected Return approximately 1.5% p.a. greater over time. This relationship is in line with the Risk / Return Trade-off.

The Future Fund's Total Investment Risk (17.5%) is roughly in line with investing 100% of its assets in Australian Equities. Based on the Fund's Investment Risk **it may therefore be tempting to classify the Future Fund as a "High Growth" style portfolio** with a high risk of negative returns in the short term. **In reality, nothing could be further from the truth.**

Now consider Chart 2, which plots the Future Fund's **Expected Return against a measure of Portfolio Risk** - the Probability of a Negative 1 Year Return. (Using any other measure of Portfolio Risk, such as volatility or expected number of negative 1 year returns over a 20 year period, would give exactly the same result.)

Chart 2

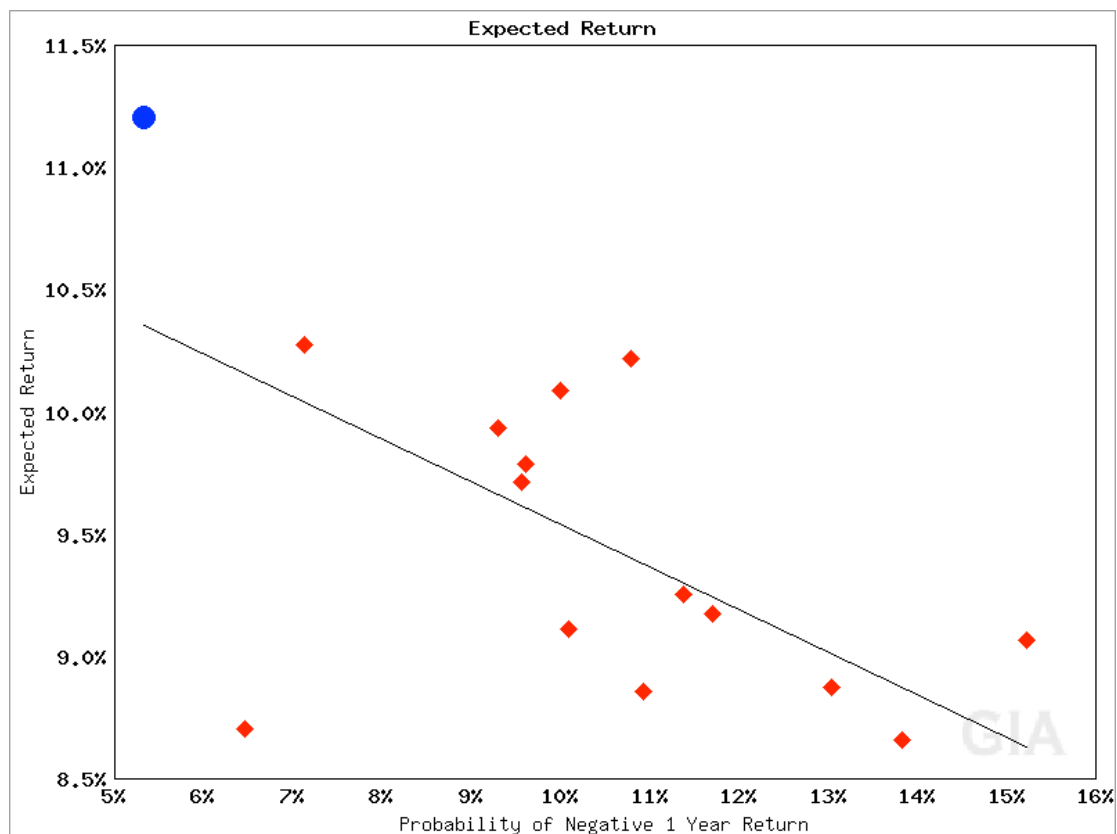


Chart 2 represents the more commonly presented return versus risk diagram in the investment industry, with Portfolio Risk on the horizontal axis, and Expected Return on the vertical axis. We would **typically expect to see the “Risk / Return Trade-off” sloping upwards to the right, as in Chart 1, but this is not the case!!! This is because Portfolio Risk is not the same as Investment Risk.**

What the GIA analysis in Chart 2 shows is that the Future Fund’s investment portfolio actually has a **much lower level of Portfolio Risk** than Australian superannuation funds’ growth investment portfolios, with approximately ½ the likelihood of loss than the average superannuation fund, even though the Expected Return (which is based on Investment Risk) **is higher**.

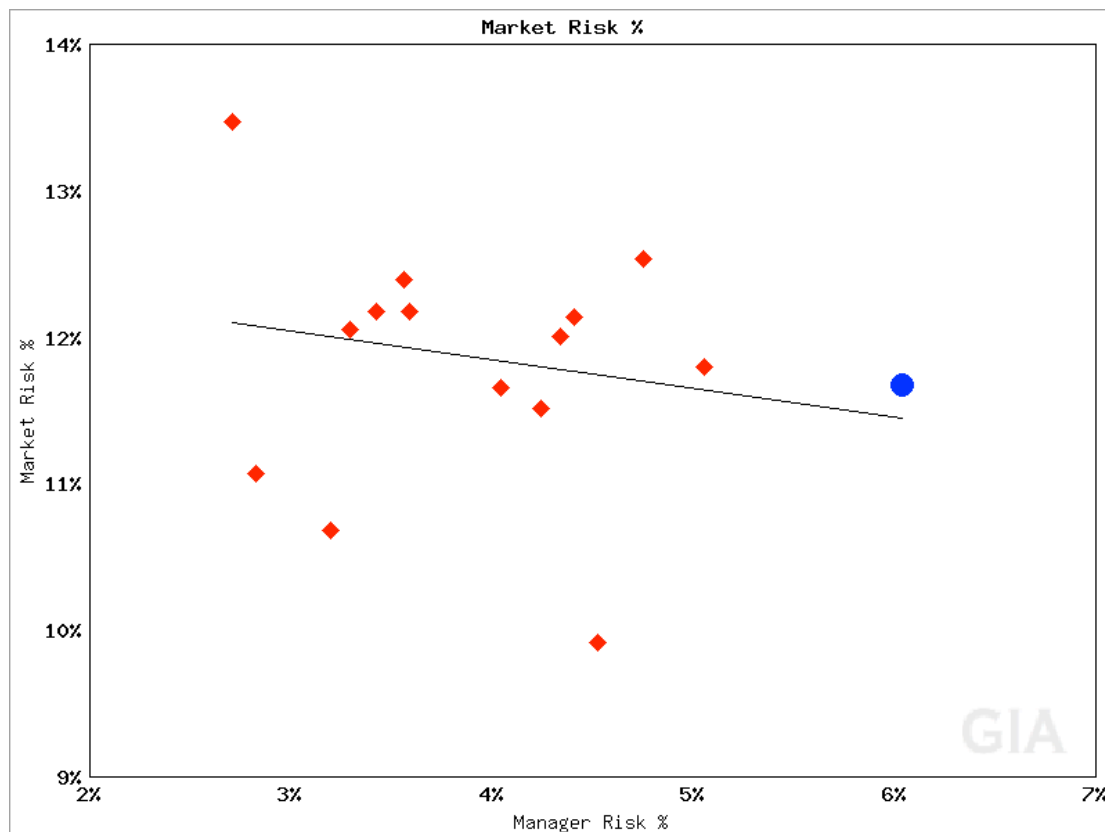
The Apparent Inconsistency

For virtually everyone with even a passing exposure to the current investment orthodoxy (Modern Portfolio Theory and its associated ideas) the outcome for the Future Fund’s portfolio presented above will appear counter intuitive, and inconsistent with ‘reality’.

In fact, both the Future Fund's outcome, and investment theory, are correct. The apparent inconsistency arises from the widespread **incorrect implementation of Portfolio Theory**. The universal mistake that is made is **to ignore the existence of manager skill**.

Consider Chart 3, which plots the levels of Market Risk (vertical axis) and Manager Risk (horizontal axis) in funds' portfolios.

Chart 3



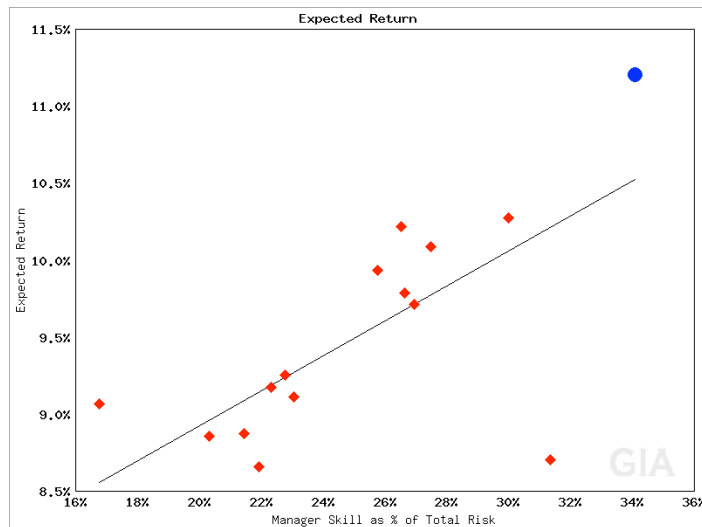
What is apparent is that while the Future Fund has largely the same level of Market Risk as Australian Superannuation Funds, it has made a higher allocation to Manager Skill than those funds. Thus the Future Fund has a higher overall level of Total Investment Risk, with corresponding higher Expected Return.

While the level of return is directly related to the level of Total Investment Risk (as returns are additive), because of the diversification effects of the higher proportion of Manager Skill the Future Fund's portfolio it actually has a relatively low level of Portfolio Risk. Correspondingly it has a lower likelihood of loss.

This linkage can be seen in Charts 4 and 5, which plot Expected Return and Probability of Negative 1 Year Return respectively,

against the proportion of Manager Skill in fund's Total Investment Risk.

Chart 4

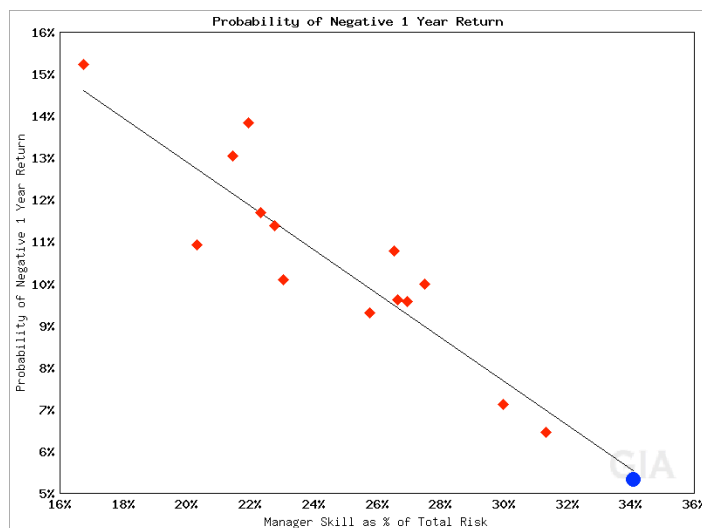


In the case of the Future Fund, Manager Skill represents $\sim 1/3^{\text{rd}}$ of Total Investment Risk. This is higher than for Australian superannuation funds.

Thus, while expected returns are higher, the greater level of Manager Risk, that is less correlated to Market Risks, leads to the Future Fund having a lower level of Portfolio Risk.

Thus, we have the relationship that higher levels of Investment Return are associated with lower levels of Portfolio Risk.

Chart 5



It should be noted that this relationship follows directly from the inclusion of Manager Skill in Portfolio Theory.

John Peterson
March 2013

Investment Returns are earned by taking Investment Risk

Investment Risk and Portfolio Risk are very different things

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