



Superannuation Efficiency and Performance Unit
Retirement, Advice and Investment Division
Treasury
Langton Crescent
Parkes ACT 2600
Email: YFYS@treasury.gov.au

13 October 2022

Dear Sir/Madam,

RE: Submission to the Review of Your Future, Your Super (YFYS) Measures

We thank you for the opportunity to provide comments on the recent superannuation legislation changes. This document serves as our submission to the *Review of Your Future, Your Super Measures* (issued on 7 September 2022). The effects of the YFYS performance test is an area in which the Finance Department at the UTS Business School has recently become increasingly interested in. Our research team is currently conducting several projects to assess the extent to which there have been implementation issues or unintended consequences of the performance test for MySuper products.

In this submission, we will address only the performance test aspect of the YFYS legislation, however our arguments outlined below will answer the four consultation questions:

- 1. Does the measurement of actual return using strategic asset allocation affect risk-taking behaviour by superannuation trustees?*
- 2. Does the current set of indices used to calculate benchmark returns unintentionally distort investment decisions or reduce choice for members? If so, is there a way to adjust the benchmark indices while maintaining a clear and objective performance test?*
- 3. Does the calculation of actual RAFE and benchmark RAFE discourage non-performance related product features that members may value (such as customer service or platform products)? If so, can this be addressed without diminishing the test's focus on performance?*
- 4. What are the longer-term impacts of the performance test on market dynamics and composition? How will these factors impact on long-term member outcomes?*

This submission has been co-authored by the following faculty members:

- Dr. Lorenzo Casavecchia (E. lorenzo.casavecchia@uts.edu.au, T. (02) 9514 7773)
- Dr. Hardy Hulley (E. hardy.hulley@uts.edu.au | T. (02) 9514 7754)
- Dr. Kristoffer Glover, CFA (E. kristoffer.glover@uts.edu.au | T. (02) 9514 7778)

Introduction

This submission focuses on the distortions induced by the implementation of the YFYS performance test. The fundamental problem is that the severe consequences of failing the test have shifted the objectives of super fund trustees from the traditional goal of delivering high (risk-adjusted) returns to the artificial goal of *not failing the test*. To make matters worse, from the perspective of trustees, the test looks like a binary call option on a super fund's benchmark-adjusted returns, and the only lever they control is the tracking-error risk of its portfolio (via the fund's asset allocation). The incentive to minimise the probability of failing the performance test drives a "threshold" strategy, where funds that are likely to pass the test jettison tracking-error risk in order to lock-in the binary payoff, while funds that are likely to fail gamble by increasing tracking risk. It is unclear that strategic behaviour of this type produces portfolios that serve the best interests of super members; in fact, the opposite is almost certainly true.

Upon inspection, we can identify at least three specific unintended consequences of the YFYS performance test and its implementation for asset allocation, performance, investor protection and liquidity risk:

1. By shifting the focus from absolute to relative performance measurement, while simultaneously imposing a threshold test on performance, the YFYS legislation has dramatically altered the strategic asset allocation for a super fund.
2. The process following a failed performance test could precipitate a raft of other problems, such as a first-mover advantage of informed product members, heightened liability-side liquidity risk, expected liquidity-induced distortions in asset allocation, and gaming in the market for mergers.
3. The way in which the performance measure used by the test mixes investment performance with administrative fees and expenses seems arbitrary and does not enjoy theoretical or empirical support.

We address each of these problems in more detail below.

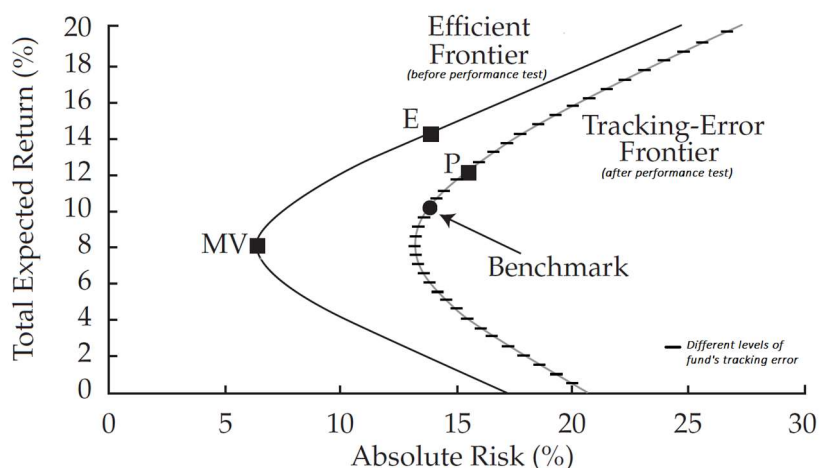
1. Combining relative performance with a pass/fail threshold

The introduction of a performance test based on relative returns, incorporating a pass/fail threshold, has forced super fund trustees to focus their attention on tracking risk, since that determines the probability of failing the test. Funds that are likely to pass have an incentive to reduce tracking risk, in order to reduce the probability of failing, while funds on the precipice of failing have an incentive to gamble by increasing tracking risk. The issue is that any attempt to manipulate tracking risk must distort asset allocation, because different asset classes contribute *unevenly* to overall tracking risk. For example, listed equity is a high volatility asset class for which it is possible to eliminate tracking risk by holding the legislated set of performance benchmarks. By contrast, while an unlisted private asset (e.g., infrastructure and property) is a relatively low volatility asset class, any investment in it necessarily incurs tracking-error risk, since there is no tradeable benchmark for such unlisted private assets. So, while it may be optimal for an unregulated fund to invest substantially in an unlisted asset, based on its member profile, the focus on not failing the test drives asset allocations away from that asset class and towards listed assets (e.g., domestic equity and international equity). In other words, the performance test has driven a wedge between the incentives of super fund trustees and the investment needs of their product members.

The conceptual illustration below provides a better understanding of the wedge between trustees' incentives and members' needs created by the performance test. To begin with, note that the performance test effectively introduces a second efficient frontier into the super fund universe: In

addition to the traditional efficient frontier,¹ super funds must now contend with a new efficient frontier—the ‘Tracking-Error Efficient Frontier’— which lies down and to the right. The tracking-error frontier plots portfolios maximising funds’ expected *excess return* (above the benchmark) for a given level of *tracking risk*.²

Figure 1: Performance Test – New “Rules of Engagement”



Since there are substantial disparities between tracking-error risk and absolute risk across asset classes, it follows that an optimal portfolio on the second efficient frontier (e.g., portfolio *P*) may be far from optimal, when compared with portfolios on the first efficient frontier (portfolio *E*). But in order to control the probability of failing the performance test, a fund needs to hold a portfolio on the second efficient frontier (the minimum tracking risk portfolio), while the first efficient frontier is what actually matters to its product members.

It is important to stress that, from a member’s perspective, the optimal choice of the “right” super fund on this curve will always result in a manager with a lower Sharpe Ratio than could be achieved with (more) efficient passive market indexes that are carefully chosen and mixed. Therefore, the introduction of the performance test and the resulting shift in funds’ incentive structure (to secure their continued survival) may yield more conservative strategic asset allocations that serve member interests poorly.³

Motivated by the above, we tested empirically the unintended consequence of the shift in fund managers’ incentives to minimize tracking error risk.⁴ Our preliminary findings on the changes in funds’ SAA after the introduction of the YFYS performance test is consistent with the theoretical predictions outlined above. Figure 2 below provides clear evidence of the economic impact of the performance test on the percentage allocation of super funds to different asset classes. Explicitly, we quantify the economic magnitude of the percentage difference in the portfolio allocation of ‘Pass’ funds and ‘Fail’

¹ As introduced in Markowitz (1952), Portfolio selection. *The Journal of Finance* 7:77–91.

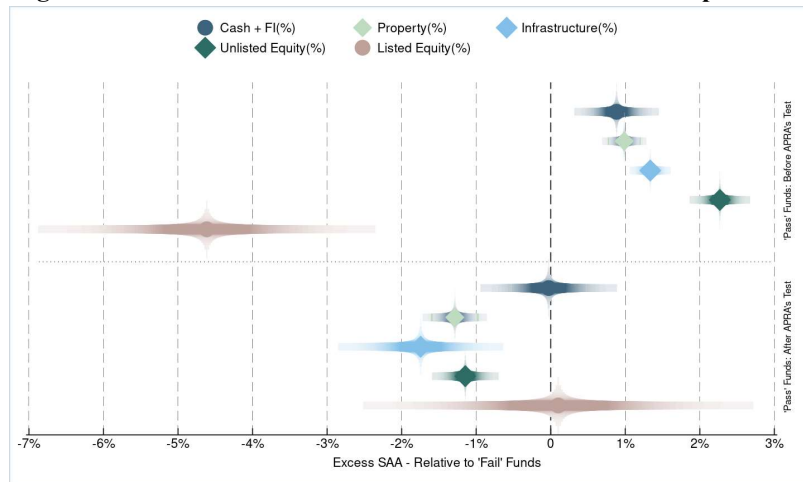
² The tracking-error-variance efficient frontier imposed by the performance test is inefficient everywhere, since it lies to the right of the normal (non-tracking-error optimized) Markowitz efficient frontier. The intuition behind this result is that super funds will choose to become diversified relative to a set of benchmarks that are not fully diversified (e.g., MSCI/Mercer Australia Core Wholesale Monthly Property Fund Index and MSCI Australia Quarterly Private Infrastructure Fund Index).

³ Some have suggested the use of alternative metrics such as the information ratio (IR) to account for differences in tracking-error risk across funds. We argue that this is not a valid solution to the problem. Basing the performance test on IR will correct for such differences but will not alter funds’ SAA incentive.

⁴ Data is from Australian Prudential Regulation Authority (APRA), Australian Taxation Office and Bloomberg.

funds to different asset classes *before* and *after* the introduction of the performance test.⁵ To quantify any changes in funds' exposure to tracking-error risk, we consider the time-series changes in their percentage allocation to *Property*, *Infrastructure*, *Unlisted Equity* and *Listed (Domestic and International) Equity* around the performance test implementation.

Figure 2: Performance Test and Distortions in the SAA of super funds



The illustration above shows that prior to the introduction of the performance test (upper subplot), 'Pass' funds reported an SAA with significantly higher *excess* percentage allocation to *Property* (+1.0%), *Infrastructure* (+1.3%), and *Unlisted Equity* (+2.3%), when compared to 'Fail' funds. Following the introduction of the performance test (lower subplot), 'Pass' funds decided to change markedly their allocation to unlisted assets characterised by low-volatility and high tracking-error risk. This is confirmed by their lower average percentage strategic asset allocation to *Infrastructure* (-1.8%), *Property* (-1.3%), and *Unlisted Equity* (-1.2%) when compared to 'Fail' funds. Consistently, 'Pass' funds have also increased their allocation to listed (domestic and international) equity, an asset class which is traditionally characterised by higher absolute volatility but low tracking-error risk, on average.⁶ These findings are not only economically meaningful but also statistically significant. It is also important to note that our models account for *contemporaneous* changes in macroeconomic conditions (e.g., higher unexpected inflation risk) or structural industry changes (e.g. M&A deals among super funds).

Table 1 below confirms the existence of a significant performance penalty associated with a reduced percentage strategic allocation to *Growth Assets (Infrastructure + Property + Unlisted Equity)* and *Risky Assets (Infrastructure + Property + Unlisted Equity + Listed Domestic Equity + Listed International Equity)*.⁷ In economic terms, a 1% lower allocation to growth assets boosts annual gross

⁵ The SAA percentage loadings of 'Pass' funds (in excess of 'Fail' funds) are estimated using dynamic panel regressions with quarter fixed effects. Note that the dashed vertical line at 0 corresponds to no difference between 'Pass' funds and 'Fail' funds. Statistical significance is plotted with coloured confidence intervals and is estimated using quarter-clustered standard errors (a confidence interval crossing the vertical line at 0 implies lack of statistical significance of SAA point estimates).

⁶ We also found that the average 'Pass' fund has a 17.3% greater degree of specialization (t -stat>7.1) in *MySuper* products. This suggests a high degree of business-related risk faced by 'Pass' funds (and/or their RSEs) with a higher degree of asset concentration in the *MySuper* segment, which could further discourage loading on tracking-error risk.

⁷ In this Table, we estimate 2-stage instrumental variable regressions (2SLS) of the relation between funds' annualised gross investment returns and fund's allocation to growth assets and defensive assets. We instrument each of these asset classes using the net members benefit outflow ratio which is defined by APRA as the sum of

investment returns by 0.23%, on average. By shifting the fund tournament from total returns to excess returns, it is likely that the performance test has in fact hindered the long-term returns of product members.

Table 1. Return contribution of strategic allocation to different asset classes

	GROSS INVESTMENT RETURNS(%)			
	(i)	(ii)	(iii)	(iv)
INSTRUMENTED ASSETS:	GROWTH ASSETS	RISKY ASSETS	DEFENSIVE ASSETS	GROWTH/DEFENSIVE RATIO
β_i	0.232***	0.151***	-0.302***	2.874***
σ_{β_i}	(0.078)	(0.050)	(0.109)	(0.951)
t-stat β_i	[2.974]	[3.081]	[-2.771]	[3.022]
N	1,939	1,939	1,939	1,939

Given the misalignment of trustee’s and members’ incentives caused by the introduction of the performance test, and our empirical evidence on asset allocation distortions, we believe it is critical to improve the efficiency of the legislated set of performance benchmarks with a focus on unlisted property and infrastructure assets. Such adjustments would not only help estimate correctly the value added of each fund, but also minimise the wedge in incentives and hence the long-term impact on product members.⁸ Without such corrections, and short of a thorough portfolio-holdings-based performance test, we feel that there is no clear way to maintain the existing performance test in a clear and objective way, without exerting a material negative impact on asset allocation and long-term member outcomes.

2. Signalling effect of first-year failure on remaining members

Following the first-year failure of the YFYS performance test, the members of the fund in question are advised of its failure. If the fund fails the test also in the second year, it is closed for new investment. The idea behind this policy is that the first failure fires a warning shot across the super fund’s bow, while a second failure results in the fund being closed to new business. In reality, however, the consequences of the first failure seem to be terminal, since around 10% of its accounts are closed, based on fund data from the first test in 2021.⁹ This could lead to strategic complementarities—the expectation that other members will withdraw their money reduces the expected return from staying in the ‘Fail’ fund and increases the incentive for each individual product member to withdraw as well, therefore amplifying the damage to the fund. The liquidity impact of such pre-emptive outflows, incurred over a short period, is likely too severe for the fund to remain viable. This implies that the signal associated with the first-year failure creates an enhanced first-mover advantage among more informed (or more sophisticated) product members. By promptly rolling out of first-time underperforming funds in response to the performance test outcomes, first-redeeming members pass along the dilution cost—and any potential liquidity issues—associated with their redemption activity to the remaining (less informed

total members' benefits flows out and outward rollovers over the sum of total members' benefits flows in and inward rollovers. Other lagged control variables (omitted for brevity) include: the logarithm of the assets under the management of the fund; the logarithm of the assets under the management of the RSE licensee; the logarithm of the number of products offered by the RSE licensee; the administration fee charged to a representative member with an account balance of \$50,000; and the fund percentage net cash flows. All models include time fixed effects with standard errors clustered by time. One, two and three asterisks denote statistical significance at the 10%, 5%, and 1% levels, respectively.

⁸ In addition to increasing funds’ (expected) tracking error, *inappropriate* and *untradeable* benchmarks that are not *reflective* of a fund’s strategic allocation to private infrastructure and property assets also runs the risk of generating excess returns artificially, thus crediting or penalising a fund for benchmark error-based returns.

⁹ As of 31 January 2022, 100,000 member accounts (or 10% of the accounts of ‘Fail’ funds), worth around \$4 billion (or 7% of total assets of ‘Fail’ funds) have been closed (see Your Future, Your Super Review: Consultation paper, 7 September 2022).

or less sophisticated) members. It is also reasonable to assume that payoff complementarities triggered by the announcement of first-year failure are stronger among ‘Fail’ funds with higher allocation to less liquid assets such as infrastructure, property and unlisted equity. This is because early redemptions impose higher dilution costs on funds with more illiquid (private) assets than those with more liquid (listed) assets.

Our findings suggests that more sophisticated product members do take action against underperforming funds by withdrawing earlier, with some of those who failed in 2021 experiencing higher than average net member outflows. Further, we find that the net members' benefits outflow ratio has in fact increased significantly among ‘Fail’ funds following the negative signalling effect of first-year failure outcome (refer to the left subplot of Figure 3).¹⁰ In economic terms, the (expected) first-failure has significantly worsened the liability-side risk of ‘Fail’ funds which have faced net members’ benefits outflow ratios that were between 15% and 20% higher than ‘Pass’ funds, *even after removing the effect of outward rollovers due to successor fund transfers (SFTs)*. Importantly, our findings show that the deterioration of the net members’ benefits outflow ratio has been particularly more severe among those funds with greater allocation to private assets which are likely to be less liquid than other more liquid asset classes such as domestic equity. The implication of the greater liability-side liquidity risk for remaining members of ‘Fail’ funds is an economically sizeable deterioration of expected returns as higher net members’ benefits outflow ratio reduces the ability of the average fund to allocate capital to less liquid private assets such as infrastructure and property (right subplot of Figure 3).

Figure 3. Deterioration of funding ratios – Implication for SAA strategies



Table 2 provides the estimated coefficients of dynamic panel regressions of the relationship between a fund’s reported strategic allocation to *Growth Assets (Infrastructure + Property + Unlisted Equity)* and net members’ benefits outflow ratio (*FUNDING RATIO*). On average, a 10% higher net members’ benefits outflow ratio is associated with a 0.22% reduction in a fund’s allocation to growth assets. Unsurprisingly, a worsening in net members’ benefits outflow ratio (i.e., higher liquidity risk) forces the fund to increase its average allocation to *Defensive Assets (Cash + Fixed Income)*.

¹⁰ Net members’ benefits outflow ratios greater than 1.0 (i.e., >100%) imply that super funds are facing increased difficulties in balancing cash outflows (i.e., total members’ benefit outflows plus outward rollovers) with cash inflows (total members’ benefit inflows plus inward rollovers). The results of our econometric tests are available upon requests from the authors.

Table 2. Funding risk deterioration and strategic asset allocation

	GROWTH ASSETS(%)	RISKY ASSETS(%)	DEFENSIVE ASSETS(%)	GROWTH/DEFENSIVE RATIO
	(i)	(ii)	(iii)	(iv)
<i>FUNDING RATIO</i>	-2.216***	-3.427***	1.704***	-0.179***
σ_{β_i}	(0.239)	(0.228)	(0.212)	(0.016)
<i>t-stat</i> $_{\beta_i}$	[-9.272]	[-15.031]	[8.037]	[-11.187]
N	1,939	1,939	1,939	1,939

Overall, our findings indicate that the (expected) first-year failure triggers a significant change in the SAA of ‘Fail’ funds, which in turn imposes significant performance penalties on product members as funds that are needing to use capital to pay members’ benefits (and lump sum obligations) must now adopt more conservative SAA strategies which are not conducive to earning real rates of return. As a result, the performance test impairs significantly the ability of first-year ‘Fail’ funds (and their remaining members) to avoid failing the performance test also the following year.¹¹

3. Mixing investment performance with administrative fees and expenses

The performance measure used by the YFYS test combines a relative investment performance measure with a measure of excess administrative fees and expenses in an arbitrary formula that does not enjoy support in the academic literature on investment performance evaluation and may well drive unintended behaviour. To begin with, the formula applies implicit weights to investment returns and administrative fees and expenses, with no clear indication that the weighting scheme is optimal. If the punishment for higher than median fees and expenses is too high, the performance test will exacerbate the drive towards passive investments in listed assets due to the tracking risk problems described above. This causes a feedback problem in the performance test: As more funds move towards indexing, in order to reduce tracking risk and the punishment for fees and expenses, so the median level of administrative fees and expenses will decrease, thereby increasing the punishment for active management for funds that have not gone passive. Second, the use of representative administration fees and expenses (RAFE) in the *most recent fiscal year* incentivizes funds to engage in short-term strategic fee-setting policies (e.g. temporary fee waivers) that could further distort (net) excess return estimation.

Although there is a widespread view among Finance academics that the high fees associated with active investment management are not justified by the performance of active investment strategies, the issue is far from settled. Indeed, there is some evidence that this view is driven by econometric problems with performance measurement and that active management fees (as high as they may be) are in fact consistent with a rational equilibrium. With that in mind, the component of the YFYS performance measure that focuses on administrative fees and expenses does not serve a clear purpose; a performance measure based purely on after-fee returns would likely do a better job, since it would still implicitly account for the effect of fees and expenses.

¹¹ Worsening liquidity risk coupled with performance test failure could also reduce the appeal of ‘Fail’ funds to potential suitors and shift the drivers of selection and ability to attract high-synergy merger partners.