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19 April 2024

Dear Sir/Madam,

RE: Submission on "Annual Superannuation Performance Test – Design Options"

This document serves as our formal response to the *Annual Superannuation Performance Test – Design Options* consultation paper (issued on 8 March 2024). We thank you for the opportunity to provide comments on the design of the annual superannuation performance test.

The Finance Department at UTS Business School has had a keen interest in the Your Future, Your Super (YFYS) performance test and its implementation since early 2022 and this submission builds on our previous submission (in October 2022) to the *Review of Your Future, Your Super Measures.*

We believe that the unintended consequences of the current test design are well understood, and we are pleased that the Government is committed to finding solutions to these shortcomings. However, we also believe that the current testing paradigm is inherently flawed and does not adequately address what is meant by the "best financial outcomes for members." Therefore, in this submission we propose an alternative framework that better aligns with how the performance of a superannuation fund (as opposed to a mutual fund) should be assessed.

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

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Executive Summary:

Introducing an Alternative Performance Evaluation Metric of Super Fund Members' Retirement Readiness

This submission advocates for a paradigm shift from traditional fund performance metrics, such as alpha, the information ratio, the Sortino ratio, and the Sharpe ratio. Because such metrics emphasize short-term performance relative to benchmarks, they do not adequately align the economic incentives of superannuation funds with the *long-term* financial security and retirement objectives of their diverse member demographics.

This proposal introduces a new performance measure for superannuation funds that we have called the *Retirement Readiness Metric* (*RRM*). The RRM is designed to address significant shortcomings inherent in traditional fund performance measures by integrating member demographics and retirement income objectives into the evaluation of superannuation fund performance. It offers a holistic assessment of a fund's suitability for the long-term needs of its members that focuses on sustainability and adequacy of retirement income.

The necessity for a measure like RRM stems from the observation that the performance measures listed above do not account for the complexity of retirement planning, which not only demands the management of investment risks and returns but requires tailored strategies to meet the varied needs of a diverse member base. By integrating demographic data and focusing on retirement income adequacy, the RRM provides a better assessment of a fund's effectiveness in securing its members' retirement needs. This makes RRM a valuable alternative or supplementary metric to the existing YFYS performance test.

Introducing the Proposed Metric: A Member-Centric Approach

As the Australian Treasury continues to assess existing and alternative metrics for superannuation fund performance evaluation, the imperative for a more tailored and comprehensive approach is increasingly evident. Traditional performance tests, like the YFYS test, overlook critical factors such as individual member profiles and long-term retirement objectives, since they rely exclusively on financial outperformance relative to a set of benchmarks.

To address these shortcomings, we propose the RRM, a metric designed to redefine superannuation fund performance assessment. Unlike traditional performance measures, the RRM incorporates demographic data about a fund's members and focuses on the adequacy of their retirement income. This shifts the focus of performance evaluation from short-term risk-adjusted returns to the ability of a fund to meet the retirement income needs of its members. In detail, the RRM employs Monte Carlo simulations to estimate the probability that a fund will achieve the target retirement outcomes of its members. These probabilities are much more closely aligned with the economic purpose of a superannuation fund, which is to secure the retirement wealth of its members, than traditional risk-adjusted return measures like alpha or the measure implemented in the YFYS test.

Components of the RRM Framework:

1. Demographic Integration:

The RRM integrates member demographic data into the performance evaluation process. By considering the age and income distributions of a fund's members, the RRM allows the performance of a fund to be assessed based on how well it matches the characteristics of its members. This approach allows for a better evaluation of asset allocation decisions and portfolio implementation strategy, since it incorporates the diverse circumstances and requirements of a fund's members in the calculation.

2. Focus on Retirement Income Adequacy:

At its core, the RRM evaluates a fund based on its ability to meet or exceed the retirement income targets of its members. This shifts the focus from traditional benchmarked return comparisons to assessing retirement readiness, thereby emphasizing the primary objective of superannuation—securing a stable and sustainable retirement for members. Applying the RRM to various retirement scenarios (from modest to comfortable lifestyles) allows for a clearer picture of the impact of a fund's decisions on its members' retirement outcomes.

3. Usage of Monte Carlo Simulations:

Addressing the unpredictability of long-term market conditions, the RRM uses Monte Carlo simulations to estimate the likelihood of achieving designated retirement income milestones throughout the accumulation phase, under a variety of economic scenarios. This forward-looking probabilistic assessment of fund performance is a significant innovation that allows the RRM to express the performance of a superannuation fund in terms of the likelihood that it will satisfy its economic objective. Benchmarked return measures, such as those employed by the YFYS test, cannot do that, since even if a fund generates positive excess returns relative to performance benchmarks, it is impossible to say whether its returns are up to the task of funding the retirement needs of its members.

4. Visualisation of Fund Performance Results:

Heatmaps can be used to present Monte Carlo estimates of the probabilities of achieving retirement income milestones during the accumulation phase of a fund, for each of its member age groups. This means that fund performance is not a single number, like expected risk-adjusted return, but a series of values describing a fund's suitability for the retirement needs of each age-cohort of its members.

The RRM: Basic Principles and an Example of Construction

The underlying idea behind the RRM is straightforward. Returns are randomly sampled from the historical distribution of a fund's after-fee returns and are used to simulate the projected growth of its member account balances between now and the time they are expected to retire. Given the risk in a fund's future returns, there will be scenarios where account balances do not meet a desired threshold, and it is the identification and quantification of the likelihood of such a shortfall that forms the basis of the RRM metric.

Below, we describe one possible way to perform the simulations and outline a simple and intuitive idea for defining appropriate cumulative return thresholds for each age cohort in a fund. The devil is in the detail, however, and there are many different assumptions that could be made, some

requiring the collection of additional data. Our aim is to highlight a general approach and to provide a simple example of how it could be implemented. It goes without saying that more work must be done to refine the process for actual implementation.

For our example implementation, we obtained fund-level returns and member-specific characteristics from the Annual Fund-Level Superannuation Statistics (AFLSS) published on the APRA website. Our sample covers the universe of superannuation funds over the period from June 2014 to June 2022.[1]

To perform the Monte Carlo Simulations, we first estimated the average annual return for each fund in the sample, as well as the volatility of its annual returns, over the five-year period from June 2017 to June 2022. Funds report membership characteristics, including numbers of accounts and member benefits, by age segments. For each age segment k of a fund, we simulated the annual return paths for a representative member belonging to that segment, over the period starting from the average age for the segment (denoted by A_k) until the assumed retirement age of 65. Our variable of interest is the cumulative return along each simulated return path. For each simulation trial s, the cumulative return of a member in fund i and age segment k is computed as follows:

$$Cumulative\ Return_{i,k,s} = \Pi_{j=1}^{65-A_k}\left(1 + r_j^s\right).$$

We repeated this process 100,000 times to generate the distribution of cumulative returns for each age segment of a fund.

To determine whether the cumulative returns generated by a fund meet the retirement needs of its members, we estimated cumulative return thresholds for each age segment. First, we estimate the annual contributions of a representative member from age 20 to age 65 based on the distribution of the median salary as reported by the Australian Bureau of Statistics.[2] Second, we compute the minimum annual required rate of fund return for the representative member to have sufficient retirement savings when reaching age 65. Three scenarios of the required retirement savings are considered based on different levels of members' spending needs: i) \$279,000 for low spending needs; ii) \$595,000 for medium spending needs; and iii) \$795,000 for high spending needs.[3] We then compute the thresholds of cumulative returns of different age segments based on the estimated annual required rate of return.

Finally, we estimate the likelihood for a fund to satisfy the retirement income adequacy test for its members across all age segments. For each age segment, we compute the probability that a fund fails to generate a cumulative return that is at least the value of the corresponding threshold. Using the number of members' accounts as the weight, the weighted average of the failure probability is computed, which provides insights into the capability of the fund to meet the retirement income objective for all their members.

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[1] According to APRA, starting from June 2023, AFLSS does not contain data reported on membership profiles or demographics by gender and age segments, which will be transited to enhanced data to be published in the Quarterly Superannuation Fund Statistics in the second quarter of calendar 2024.

[2] We estimate the median salary of different ages using linear interpolation. We assume 12% of the annual salary is contributed to the member's super account and a taxation rate of 15%. All calculations are based on 2024 dollars. An inflation rate of 2.5% is considered, which is the midpoint of the RBA's inflation rate target of 2-3%.

[3] We refer to the savings targets for current retirees aged 65-69 reported by Super Consumers Australia in setting the target retirement savings for the three scenarios.

Examples of Metric Calculation

Table 1 below provides the cumulative return thresholds for the three scenarios described above. The first row presents the threshold cumulative returns under the low spending scenario, while the second and third rows present the threshold cumulative returns for the medium spending and high spending scenarios. For example, for a fund to provide a member aged between 25 and 34 with a balance of $279,000 when they retire at age 65, the fund must generate a cumulate return of at least 158% over the remaining period until retirement. Similarly, for a fund to provide a member aged between 60 and 64 with a balance of $795,000 when they retire at age 65, it must generate a cumulative return of 119% over the remaining period until retirement.

Scenario	Retirement Target	Real Return	25 to 34	35 to 44	45 to 49	50 to 54	55 to 59	60 to 64
1	$279,000	–1.19%	1.58	1.38	1.26	1.18	1.11	1.04
2	$595,000	2.19%	4.98	3.15	2.28	1.81	1.44	1.15
3	$795,000	3.35%	7.32	4.15	2.78	2.09	1.58	1.19

Table 1: Cumulative return thresholds by age and scenario.

Next, Table 2 presents the results of the simulations for a sample of 10 superannuation funds (the actual fund names and other identifying information have been removed). We present the results for only 10 funds as an illustration, however the results for all funds can be obtained from the authors upon request. The results are presented as a heat map, where the values in the Age Group columns are the probabilities of a fund failing to meet the threshold cumulative return for a given age bucket, under one of the three retirement spending scenarios. The values in the Weighted Average column are the weighted average probability of a fund failing to meet the threshold cumulative return to fund its members' retirement needs, with the weights determined by number of members in each of the member age bins. This weighted average probability is the RRM metric we propose. It is an aggregate measure of a fund's ability to meet the retirement needs of its members.

According to Table 2, Fund 2 is the best-performing fund under the low-spending scenario where members only need to accumulate $279,000 at age 65, since the average probability of the fund failing to deliver sufficient returns to meet this objective is only 1.71%. On the other hand, Fund 6 is the worst performing fund under the low-spending scenario, since the average probability that it fails to meet the required threshold return for this scenario is 33.38%.

In addition to the single RRM metric, comparison of the probabilities across the six different age bins provides a quantitative assessment of how the fund's risk-return trade-off decisions are affecting its members in different age groups. For example, we can see from Scenario 1 that when retirement needs are low, most funds have a higher shortfall probability for older members when compared to younger members. This is due to the longer time horizon of younger members, i.e. their ability to compound returns over multiple periods and to diversify short-term downside risk. However, Scenario 3 reveals that when retirement needs are much higher, it is younger members that are cross subsidizing older members since the funds' returns are clearly insufficient to meet the higher target over the long run. It is this delicate interplay between risk, return, and heterogeneous time horizons that the RRM can reveal.

Fund Name	Age Group						Weighted Average
	25 to 34	35 to 44	45 to 49	50 to 54	55 to 59	60 to 64	
Scenario 1							
Fund 1	0.22%	0.87%	2.02%	3.83%	8.66%	19.87%	9.11%
Fund 2	0.04%	0.17%	0.67%	1.75%	4.79%	15.33%	1.71%
Fund 3	1.08%	2.59%	4.78%	7.70%	13.48%	24.77%	8.76%
Fund 4	1.59%	3.45%	6.15%	9.01%	14.90%	25.80%	4.62%
Fund 5	0.08%	0.34%	1.06%	2.53%	6.25%	17.47%	5.50%
Fund 6	24.66%	27.80%	30.52%	32.80%	36.69%	41.25%	33.38%
Fund 7	0.02%	0.19%	0.66%	1.75%	4.93%	15.13%	2.65%
Fund 8	11.73%	15.51%	19.30%	22.81%	27.87%	35.22%	26.09%
Fund 9	3.18%	5.77%	9.06%	12.66%	18.40%	28.63%	9.55%
Fund 10	2.71%	4.98%	8.14%	11.65%	17.67%	27.78%	13.82%
Scenario 2							
Fund 1	53.06%	52.61%	51.85%	50.94%	50.75%	50.77%	51.07%
Fund 2	25.35%	28.69%	31.70%	33.51%	36.60%	42.14%	29.87%
Fund 3	66.19%	64.17%	61.37%	59.39%	57.21%	55.22%	60.58%
Fund 4	36.11%	38.69%	39.85%	40.81%	42.39%	45.20%	38.19%
Fund 5	41.78%	43.01%	44.06%	44.23%	45.21%	47.87%	44.69%
Fund 6	98.36%	96.36%	93.36%	89.85%	83.92%	73.12%	87.51%
Fund 7	25.53%	28.95%	31.70%	34.13%	36.94%	42.36%	31.70%
Fund 8	65.67%	63.35%	60.87%	59.03%	56.67%	53.95%	57.95%
Fund 9	59.88%	58.70%	56.89%	55.30%	54.21%	52.73%	57.38%
Fund 10	46.88%	47.31%	47.62%	47.42%	48.19%	48.70%	47.79%
Scenario 3							
Fund 1	85.80%	81.83%	77.69%	73.54%	70.00%	62.79%	70.71%
Fund 2	61.27%	59.56%	57.97%	56.20%	55.53%	53.76%	58.93%
Fund 3	91.06%	87.46%	83.19%	78.94%	74.23%	66.01%	80.24%
Fund 4	60.37%	59.23%	57.22%	55.69%	54.57%	52.62%	58.84%
Fund 5	79.24%	75.28%	71.64%	68.58%	65.08%	60.03%	68.80%
Fund 6	99.89%	99.56%	98.57%	96.87%	93.04%	81.84%	93.82%
Fund 7	61.89%	59.84%	58.71%	56.93%	55.93%	53.86%	58.62%
Fund 8	83.03%	78.97%	74.73%	71.42%	67.16%	60.41%	68.82%
Fund 9	83.48%	79.76%	75.69%	71.70%	68.13%	61.34%	76.45%
Fund 10	70.96%	68.47%	65.49%	62.82%	60.73%	56.41%	63.34%

Table 2: The shortfall probabilities for each age group and the average value weighted by the number of members in each group (the RM metric), for each fund and scenario.

How the RRM Addresses the Limitations of the Current Performance Test

Despite the good intentions of the YFYS legislation, several important limitations of the current annual performance test have been identified. To help with the evaluation of our proposed new framework, we conclude our submission by detailing these shortcomings below and highlight how the RRM approach could address each issue:

1. Narrow Metric Focus:

The YFYS test predominantly relies on Strategic Asset Allocation (SAA) benchmarks to evaluate fund performance. This approach primarily assesses the implementation effectiveness of investment strategies rather than their suitability or efficacy for the demographics of the fund members. Consequently, it may neglect crucial strategic decisions that substantially influence member outcomes, such as tailored asset allocation and comprehensive risk management.

RRM Response: The RRM evaluates the suitability and efficacy of investment strategies based on their alignment with the actual retirement needs of fund members, facilitating more informed and strategic asset allocation and risk management decisions.

2. Benchmark Dependency and Short-Termism:

The YFYS test promotes "benchmark hugging" to ensure compliance, which may stifle innovation and lead to suboptimal investment strategies that overly focus on short-term returns rather than sustainable, long-term growth.

RRM Response: The RRM counters this tendency by assessing fund performance against retirement income targets rather than conventional benchmarks, encouraging funds to pursue strategies that foster long-term growth and innovation.

3. Inadequate Consideration for Member Diversity:

The YFYS test uniformly applies across diverse demographics, failing to account for the unique financial goals, risk tolerances, and life stages of individual members. This general approach can result in investment strategies that do not optimally serve all member segments.

RRM Response: By integrating detailed demographic data, the RRM tailors performance evaluations to the specific financial goals, risk tolerances, and life stages of individual members, ensuring that investment strategies are appropriately aligned with the circumstances and objectives of different member segments.

4. Discourages Investment in Diverse Asset Classes:

The current test structure may prevent funds from investing in non-traditional or emerging asset classes, necessary for sectors like climate and energy transition.

RRM Response: The RRM encourages the inclusion of a broader range of asset classes by evaluating how these investments contribute to meeting long-term retirement income goals, thereby enhancing portfolio diversity and potential returns.

5. Impact on Member Engagement and Choice:

The rigidity of the YFYS test could reduce transparency and limit the ability of funds to offer products that align with specific member values, such as ESG criteria.

RRM Response: Contrary to a benchmark-centered performance ranking, the RRM enhances member engagement and provides clearer insights into how fund performance relates to personal retirement outcomes, offering probabilistic and dollar-term perspectives.

6. Unintended Consequences on Fund Strategies:

Feedback from stakeholders indicates that the YFYS test design has led to strategic rigidity, where funds may prioritize compliance over member benefits.

RRM Response: By focusing on long-term retirement readiness, the RRM encourages funds to adopt strategies truly aligned with the long-term interests of members, reducing strategic rigidity.

7. Complexity and Cost:

The YFYS test's complexity, especially when adjusting to include a broader range of asset classes or refining benchmarks, incurs significant costs.

RRM Response: Although the RRM employs more advanced methods like Monte Carlo simulations, it aims to streamline performance assessment and reduce the need for frequent adjustments by focusing directly on outcomes that matter to members.