Performance of Super Funds in Australia: The Contribution of Alternatives and Active Management

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Abstract:

This paper evaluates the performance of Australia's largest superannuation funds by comparing their default MySuper products to custom-built public market equivalent (PME) benchmarks. Using over two decades of monthly data and returns-based style analysis, we find that most funds generate positive and statistically significant excess returns. This outperformance is robust across risk-adjusted performance metrics—including Sharpe, Sortino, and Omega ratios—and holds under alternative benchmarking approaches, suggesting that outperformance is not an artefact of model specification or return smoothing. However, we also observe that this excess performance has moderated in recent years, with returns increasingly tracking their benchmarks more closely since 2021. These findings contrast with recent international evidence questioning the value of active management and alternatives in institutional portfolios. In this setting, large super funds have effectively employed active investment strategies, including investments in unlisted assets, to enhance member outcomes. Our results contribute to the literature on pension fund performance by offering new evidence from a system with distinct investment strategies and long-term horizons.

Key Words: Super Funds, MySuper, Public Market Benchmark, Alternative Asset, Alpha.

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Introduction

The Australian superannuation industry has emerged as a critical pillar of the nation's financial system, managing approximately AUD 4.5 trillion and ranking as the fourth largest globally in terms of assets under management[1]. Over the past two decades, driven by a protracted low-interest-rate environment following the 2007–08 Global Financial Crisis (GFC) and the need for greater diversification (Sathye, 2011), these funds have aggressively shifted away from traditional equity-bond portfolios toward unlisted alternative assets, including private equity, hedge funds, property, and infrastructure[2]. Concurrently, all large funds employ a mix of active and passive investment strategies across listed asset classes. However, whether this structural shift and the associated active management genuinely deliver superior risk-adjusted returns net of fees remains a highly contested empirical question. In this study, we evaluate the performance of Australia's largest default superannuation (MySuper) funds to isolate and determine the true performance contribution of alternative investments and active management relative to public-market benchmarks.

The literature on institutional investment performance, particularly regarding alternative assets and active management, is extensive and reveals highly varied outcomes across regions (Ibbotson, Chen, and Zhu, 2011; Harvey & Liu, 2022; Mundi & Kumar, 2023). In the aftermath of the 2008 GFC, U.S. and Canadian pension funds significantly increased their exposure to alternative assets, largely driven by a search for yield as traditional fixed-income investments offered diminishing returns in a protracted low-interest-rate environment (MacLean, 2019; Mohan & Zhang, 2014). Interestingly, Defau and Moor (2020) note that while allocations in Europe, Australia, and New Zealand also tripled from roughly 5% to over 15% by 2020, funds paradoxically tended to invest more heavily in alternatives when interest rates were higher. Regardless of the macroeconomic drivers, several optimistic assessments suggest these strategic allocations paid off. Studies indicate that plans allocating more to hedge funds and private equity earned significantly higher returns (Bouvatier & Rigot, 2013; Peng & Wang, 2019), a strategy that proved particularly beneficial for bolstering underfunded plans (Peng & Wang, 2019). Similar improvements in risk-adjusted performance have been documented in emerging markets like Brazil (Flores, Campani, and Roquete, 2021) and the UK (Jackwerth & Slavutskaya, 2016).

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[1] [1] https://smcaustralia.com/news/australians-super-savings-on-track-to-become-second-largest-globally-by-the-early-2030s/

[2] https://www.apra.gov.au/quarterly-superannuation-statistics

Despite these theoretical diversification benefits, a growing body of empirical research casts serious doubt on the net-of-fee value generated by these complex portfolios. Richard Ennis highlights a distinct temporal shift: while U.S. public pension funds and endowments delivered strong performance prior to the GFC—with alternative investments playing a significant role—their heavy reliance on these assets became a severe drag on performance in the post-GFC era due to high fees and subpar returns (Ennis, 2025a; Ennis, 2021a). In a series of studies, Ennis (2020, 2022a, 2022b) demonstrates that these funds incurred high investment expenses (averaging roughly 1.3%) and underperformed comparable passive portfolios by approximately 1.4% annually. Critically, he argues that the purported diversification benefits are illusory; in practice, alternative assets exhibit high correlations with public equities during market downturns, failing to provide downside protection. Hooke and Yook (2018) corroborate this, finding that high fees over a 20-year period translated to lower returns and higher volatility for state and municipal pensions compared to purely passive public-market portfolios.

This scepticism is echoed in analyses of specific asset classes. For hedge funds, Ibbotson, Chen, and Zhu (2011) decompose returns, revealing that, net of hefty fees, the remaining alpha is often negligible or negative. Furthermore, while hedge funds outperformed balanced portfolios prior to 2008, changing market dynamics, regulation, and central bank interventions led to significant underperformance in the subsequent period (Bollen, Joenväär, and Kauppila, 2021). Rather than being market-neutral, they often exhibit varying market exposure, undermining their role as diversifiers (Ennis and Sebastian, 2003, 2005). Similarly, Phalippou (2020) demonstrates that private equity returns are significantly lower than commonly advertised once substantial management fees, performance fees, and aggressive appraisal smoothing are fully accounted for, concluding they should only be utilised by investors with exceptional governance and expertise (Ennis & Sebastian, 2005). Geographical differences also matter, as seen in real estate, where U.S. pension funds have historically underperformed their peers in Europe and Australasia due to higher investment costs (Andonov, Eichholtz, and Kok, 2015).

Beyond the allocation to alternative assets, scholars have revisited the broader debate on investment fund performance, often questioning how much outperformance is due to manager skill versus luck. Harvey and Liu (2022), for instance, show that although a minority of mutual funds exhibit genuine skill, the apparent outperformance of most funds is statistically indistinguishable from what would be expected by chance, highlighting the methodological challenges in identifying true manager skill. Using a comprehensive bootstrapping approach on decades of fund returns, their study enhances the accuracy of performance evaluation, although fully disentangling skill from luck across varied market conditions remains challenging.

Ennis (2001, 2021b) shows that for US pension and endowment funds, active management of US common stocks underperformed by the margin of their costs. Empirical evidence from active management performance studies also underscores persistent underperformance in publicly traded markets in recent years. The S&P Dow Jones Indices SPIVA Scorecard reports that in 2023, approximately 60% of U.S. large-cap actively managed equity funds underperformed the S&P 500, marking the 14th consecutive year in which passive strategies outperformed a majority of active managers. This persistent trend raises questions about the efficacy of active management in generating superior risk-adjusted returns within the Australian superannuation landscape.

Even though numerous studies have examined illiquid and alternative assets in the U.S., Canada and European institutional portfolios, relatively few have focused on the Australian superannuation sector, even though industry analyses began recognising the need to look beyond the traditional 60/40 stock–bond allocation as early as the 1990s (ASFA 2018). A report by the Australian Institute of Superannuation Trustees observed that funds with higher allocations to infrastructure and real estate have consistently outperformed their peers, particularly during periods of market volatility. Cummings and Ellis (2015) found that not-for-profit superannuation funds with higher allocations to illiquid assets (such as private equity and infrastructure) achieved superior risk-adjusted returns compared to those with more liquid portfolios. Their analysis, based on detailed regulatory filings, suggests a potential illiquidity premium benefiting these funds. However, the analysis is based on pre-GFC data, and the authors caution that this may be subject to survivorship bias and not fully account for liquidity constraints during market stress periods—a vulnerability recently highlighted by the IMF Global Financial Stability Report (2024) and observed during the early-2020 market volatility (RBA, 2021).

To address these limitations, we adopt a methodology similar to that employed by Ennis (2022b, 2024), constructing tailored Public Market Equivalent (PME) benchmark portfolios for each fund's default MySuper option using returns-based style analysis. By employing rolling quadratic programming over three-year windows, our methodology enforces long-only, fully invested constraints while dynamically adapting to each fund's time-varying asset allocation. This approach rigorously isolates the specific portion of net-of-fee returns generated by active selection and unlisted assets, strictly separated from broad market movements. Furthermore, the transparent construction of benchmarks and the clear methodological framework enhance the replicability of our study, allowing other researchers to verify and build upon our findings.

Crucially, a key contribution of this paper is the application of a benchmarking methodology that directly addresses prominent criticisms of the current regulatory framework, specifically the Australian Prudential Regulation Authority's (APRA) Your Future, Your Super (YFYS) performance test. The existing YFYS test evaluates funds against static strategic asset allocation benchmarks, an approach that has been widely criticised for lacking explicit risk adjustment, disproportionately penalising allocations to illiquid alternative assets, and inadvertently incentivising short-term benchmark-hugging over optimal long-term investment strategies. By employing a PME framework based on dynamic returns-based style analysis, our methodology automatically accommodates time-varying risk exposures and evaluates performance using realistic, net-of-fee public market proxies. This provides a strategy-neutral, risk-aware evaluation tool that not only isolates true alpha generated by active management and unlisted assets but also offers policymakers and industry practitioners a more robust performance-measurement framework that does not stifle investment innovation.

Our findings contrast with recent international scepticism. We document that the majority of Australia's largest super funds generated positive and statistically significant excess returns, risk-adjusted returns, and CAPM alpha relative to their custom PME benchmarks. This suggests that the inclusion of alternative assets and active management has historically added value to Australian portfolios rather than detracted from performance, potentially driven by differences in regulatory oversight, transparency (Mather, 2023), management fees (Ennis 2022a; Andonov, Eichholtz, and Kok, 2015), and divergent investment strategies[3]. However, we also observe a recent structural shift: since 2021, cumulative excess returns and alpha across most funds have moderated, tracking their passive public-market benchmarks much more closely. This plateau suggests a potential convergence in a maturing market environment, reflecting either diminishing marginal gains from alternative assets or increased competitive efficiency in active strategies.

These results carry important implications for practitioners and policymakers in the superannuation industry. They suggest that the inclusion of alternative assets and active management has added value to Australian portfolios rather than detracted from performance. This research contributes to the ongoing debate on the role of alternative assets and active management in institutional portfolios by offering new evidence from the Australian perspective. It highlights the need for a nuanced understanding of context-specific factors

[3] https://www.afr.com/companies/financial-services/apra-expects-quarterly-unlisted-asset-valuations-by-big-super-20230720-p5dpzd

influencing investment performance and underscores the value of analyses tailored to specific regulatory and market environments.

The rest of the paper is organised as follows: Section 2 discusses the evolution of the Australian superannuation industry, and Section 3 details the methodology used in this study. Section 4 describes the data sources. Section 5 presents the main results of the analysis. Section 6 discusses the robustness of the method. Finally, Section 7 concludes the paper.

2 The Australian Superannuation System

2.1 Background

Australia's compulsory superannuation system, a mandatory defined-contribution pension scheme, was established in 1992 through the Superannuation Guarantee (SG), which requires employers to make contributions to workers' retirement savings. Initially set at 3–5% of wages, the SG has incrementally increased, reaching 12% in July 2025[4] (ASFA 2024). This policy innovation, combined with successive regulatory and structural reforms, has catalysed one of the fastest-growing private retirement systems globally. As of March 2025, total superannuation assets stood at approximately AUD 4.1 trillion[5]—more than 140% of Australia's GDP.

Institutional development of the system has been shaped by major reforms, including the establishment of the Australian Prudential Regulation Authority (APRA) in 1998 and the Cooper Review (2009), which introduced "MySuper" default products as part of the Stronger Super reforms. MySuper products are legally required to adopt a single diversified strategy or lifecycle design and are subject to performance benchmarking and fiduciary obligations (Treasury 2020). Additional regulatory tightening followed the Productivity Commission's (2018) review and the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry (2019), both of which highlighted concerns about efficiency and member outcomes. APRA now enforces a comprehensive prudential standard regime (e.g., SPS 530 Investment Governance) that mandates robust trustee oversight, internal risk systems, and performance disclosures (APRA 2024b).

Participation in superannuation has become nearly universal. Coverage rates have risen from around 32% in the early 1980s to nearly 80% by 2019 (ASFA 2024), with strong growth in member accounts and balances. Demographic aging has reinforced the importance of

[4] https://www.ato.gov.au/businesses-and-organisations/super-for-employers/paying-super-contributions/how-much-super-to-pay

[5] https://www.apra.gov.au/quarterly-superannuation-performance-statistics-highlights-march-2025

superannuation in Australia's retirement income framework, especially as an increasing number of individuals transition from the accumulation phase to retirement drawdown.

As the system expanded, there has been marked consolidation. APRA-regulated super funds with more than six members have fallen from 171 in 2004 to 89 in 2025[6]. The Productivity Commission's 2018–19 review and the 2019 Royal Commission both highlighted efficiency and value for money, prompting mergers among medium and small funds. Today, only a few dozen mega funds (each with tens of billions in assets) dominate the APRA-regulated sector.

2.2 Investment Strategy and Asset Allocation Trends

As the system has matured, superannuation funds have evolved from simple balanced portfolios dominated by domestic equities and government bonds into globally diversified portfolios with substantial exposure to illiquid and alternative assets. By December 2024, APRA-regulated funds held approximately 23% of assets in Australian equities, 32% in international equities, and only 19% in fixed income (APRA 2025a). A notable trend has been the steady increase in allocations to unlisted assets, including infrastructure (8%), unlisted equity/private equity (5%), and unlisted property (4%), totalling roughly 18% of the total asset base (APRA 2025a). These exposures are typically managed internally or via specialist managers and reflect the funds' capacity to pursue illiquidity premia given their long-term investment horizons.

The use of alternatives is more prevalent among not-for-profit (industry and public-sector) super funds than among retail funds, a trend supported by economies of scale and internal investment capabilities (Figure 1). Industry funds now manage over two-thirds of all APRA-regulated assets and lead the sector in cost efficiency and performance (Productivity Commission 2018).

2.3 The Largest Superannuation Funds

As of March 2025, the APRA-regulated superannuation system was highly concentrated. The ten largest funds collectively managed more than half of the AUD 2.9 trillion in assets held by APRA-regulated entities (APRA 2025a). AustralianSuper, the largest fund, managed approximately AUD 360 billion, followed by Australian Retirement Trust (~AUD 310 billion), Aware Super (~AUD 183 billion), and UniSuper (~AUD 143 billion)[7].

Most large funds offer MySuper – the compliant default investment option. These are typically structured as either single-diversified portfolios (e.g., "Balanced") or lifecycle products that adjust asset allocations based on the member's age or birth year. According to APRA (2025a),

[6] https://www.apra.gov.au/quarterly-superannuation-statistics
[7] https://www.superguide.com.au/comparing-super-funds/largest-super-funds

there were 57 MySuper products across 45 licensees, with approximately AUD 1.07 trillion in member assets. Lifecycle strategies accounted for 44% of MySuper products, though single-strategy balanced options still dominate in terms of AUM.

Figure 2 presents the AUM of the 25 largest superannuation funds, ranked in descending order. Of the 25 largest super funds, 17 offer publicly available MySuper products, collectively managing 90% of the total industry AUM. The remaining eight funds either do not offer a default MySuper option or operate products that are not open to the general public. For example, the PSS Accumulation Plan is restricted to federal government employees.

For many funds, the MySuper product constitutes the majority of total assets. For example, AustralianSuper, Australian Retirement Trust (ART), the Retail Employees Superannuation Trust (REST), and HOSTPLUS, their MySuper portfolios account for approximately 65%, 46%, 81%, and 67% of their total AUM, respectively (as of June 2023)[8]. These proportions reflect the scale of default contributions in the system.

Contribution inflows to MySuper products totalled AUD 77.3 billion in the 2023–24 financial year, and these products remain the default for disengaged members under the "Your Future, Your Super" regime (APRA 2025a). Performance testing of these products has introduced market discipline, requiring underperforming funds to notify members and to cease accepting new default accounts.

Large super funds continue to increase their allocations to alternatives within these default portfolios. The average MySuper default in a top-tier fund holds between 10% and 25% in unlisted infrastructure, private equity, and property. For example, AustralianSuper's Balanced MySuper option allocates approximately 15.2% to infrastructure and 5.3% to private equity, in addition to global and Australian equity holdings (AustralianSuper, 2024). Similarly, HESTA's Balanced Growth default portfolio includes substantial allocations to infrastructure, private equity, and other alternative investments (HESTA 2024). These allocations are designed to enhance diversification, provide inflation-linked cash flows, and improve long-term risk-adjusted returns.

3 Methodology

The primary objective of this study is to evaluate the impact of alternative investments and active management on the performance of Australia's largest super funds. We employ a robust benchmarking approach and analyse various performance metrics to achieve this.

[8] https://www.apra.gov.au/annual-mysuper-statistics

We constructed customised PME benchmarks for each MySuper portfolio using Sharpe's (1992) returns-based style analysis (RBSA). This method incorporates rolling regression with quadratic programming over three-year periods to align PME benchmark performance with MySuper portfolios, minimising tracking error while identifying excess returns attributable to alternative assets and active management. We follow the methodology proposed by Sharpe (1992) to construct a public market benchmark for each MySuper (or default) investment option. Our benchmark model includes five asset classes, each represented by a market-capitalisation-weighted index aggregating returns from a broad universe of securities. These asset classes are: Australian Shares (AS), International Shares ex-Australia Hedged (ISH), International Shares ex-Australia Unhedged (ISU), Bonds (B), and Cash (C).

A limitation of using conventional public market indices to proxy these asset classes is that they are not adjusted for taxes, fees, and transaction costs incurred by superannuation funds, whereas superannuation fund returns are net of taxes, fees, and costs. To address this, we utilise the indexed asset class investment options provided by Australian Retirement Trust (ART), specifically the Australian Shares Index, International Shares Hedged Index, International Shares Unhedged Index, Bonds Index, and Cash option. These products track public indices but are net of fees, costs, and taxes, making them more representative of the actual net returns that super funds can deliver. The composition of each of these asset classes is detailed in Appendix 1.

The benchmark portfolio is constructed according to the following return-generating process:

$$R_{MS,t} = \beta_{AS}R_{AS,t} + \beta_{ISU}R_{ISU,t} + \beta_{ISH}R_{ISH,t} + \beta_B R_{B,t} + \beta_C R_{C,t} + \varepsilon_t \quad (1)$$

where $R_{MS,t}$ denotes the return of the MySuper portfolio in month t, $R_{i,t}$ is the return of the asset class $i \in \{AS, ISU, ISH, B, C\}$, β_i is the exposure of the portfolio to asset class i, and ε_t is the residual return attributable to asset selection and exposure to unlisted or alternative assets.

To identify the portfolio's exposures, β_i, we employ quadratic programming. The objective is to determine the set of non-negative asset class weights that best replicate the observed return series of each MySuper product, subject to the constraint that the weights sum to one (i.e., $\sum_i \beta_i = 100\%$,). This approach minimises the variance of the residual term ε_t within each rolling window, which reflects deviations from the benchmark due to selection or allocation to unlisted assets. Formally:

$$\varepsilon_t = R_{MS,t} - [\beta_{AS}R_{AS,t} + \beta_{ISU}R_{ISU,t} + \beta_{ISH}R_{ISH,t} + \beta_B R_{B.t} + \beta_C R_{C,t}] \quad (2)$$

The square root of the variance of ε_t is referred to as the "tracking error", and its minimisation ensures the benchmark closely aligns with the fund's observable risk–return profile. It is

important to emphasise that the method is not designed to minimise the average or cumulative deviation from the benchmark, nor does it imply a value judgment about performance. Rather, it reveals the sensitivity of each fund to systematic asset class exposures over time.

To capture the time-varying nature of these exposures, we apply a rolling regression over a 36-month (three-year) window. This rolling approach provides insight into how each MySuper fund's asset class sensitivities evolve over time, which is critical for understanding dynamic portfolio strategies and risk exposures. The steps are as follows:

1. Estimate the MySuper portfolio's exposures β_i over the 36-month window spanning *t−36*-to *t−1*.
2. Use the estimated exposures to compute the benchmark return in month *t*.
3. Calculate the excess return for month *t* as the difference between the actual return of the MySuper portfolio and the benchmark return.
4. Advance the estimation window by one month (i.e., drop *t−36*, add *t*), and repeat steps 1–3 to derive the excess return for month *t+1*.
5. Evaluate the goodness-of-fit of the benchmark using two metrics: the coefficient of determination (R^2) and the tracking error (standard error of the residuals).

We assess performance relative to the benchmark using standard metrics, including annualised return, annualised volatility, maximum drawdown, Sharpe ratio, Sortino ratio, and Omega ratio. Additionally, we provide a time-series plot of cumulative compounded excess returns and the portfolio-to-benchmark return ratio to visualise performance dynamics over time.

To evaluate the contribution of active management, including exposure to unlisted assets, we estimate Jensen's alpha using the Capital Asset Pricing Model (CAPM):

$$R_{MS_jt} - r_{f.t} = \alpha_j + \beta_{CAPM,j}(R_{Benchmark_jt} - r_{f,t}) + \mu_{j.t} \quad (3)$$

Where, R_{MS_jt} is the return of MySuper fund *j*, $r_{f.t}$ is the risk-free rate (proxied by the three-month T-Bill rate of Australia), $R_{Benchmark_jt}$ is the return of the style-matched benchmark of MySuper fund *j* in month *t*, $\beta_{CAPM,j}$ measures the systematic risk of the portfolio relative to its benchmark, and α_j captures the excess return unexplained by market movements. We adjust the standard errors for serial correlation and heteroskedasticity using the Newey-West estimator. A positive and statistically significant α_j is interpreted as evidence of outperformance, potentially attributable to managerial skill or exposure to alternative assets.[9]

[9] We used ChatGPT 4o and Grammarly to improve the clarity and readability of this paper

4 Data

This paper focuses on the performance of ten prominent super funds: AustralianSuper, Australian Retirement Trust (ART), UniSuper, HOSTPLUS, Retail Employees Superannuation Trust (REST), HESTA, Construction and Building Unions Superannuation Fund (CBUS), Aware Super, Telstra Super (TS) and Care Super. These represent the largest industry, public sector and corporate super funds in Australia. All MySuper return series are sourced from Morningstar Direct.

We also collect monthly return data for the five ART's indexed asset classes from Morningstar Direct, spanning November 2002 to December 2024. The exception is the Australian Shares Index, which is available only from February 2006 onward. To extend this series back to November 2002, we backcast its returns using the S&P/ASX 300 TR Index (ticker: AS52T Index), which closely mirrors the performance of the ART index. The backcasting methodology and adjustments are documented in Appendix 2.

Because ART's indexed investment options are net of taxes, fees, and fund-level costs, their performance differs from their respective gross public market indices. These adjustments result in slightly lower annualised returns and modified risk characteristics. Over time, the compounding effect of costs materially reduces net returns, which must be considered when benchmarking against super fund returns. Figure 3 compares the ART Australian Shares Index and the S&P/ASX 300 TR Index from February 2006 to December 2024. While both exhibit broadly similar return profiles, the ART series had approximately 1% lower annual volatility than the S&P/ASX 300 and delivered higher Sharpe, Sortino, and Omega ratios. Based on this consistency, we use the S&P/ASX 300 Index as a proxy to backcast ART's Australian Shares Index performance prior to February 2006. The backcasting method is discussed in Appendix 2.

Table 1 lists the 10 superannuation funds and their corresponding MySuper products analysed in this study, along with the commencement date for each fund's inclusion in the sample. For funds that offer lifecycle investment structures as their default option, we use the return series from the initial lifecycle stage (i.e., the portfolio with the highest growth asset allocation).

4.1 PME Benchmark Portfolio

Table 2 reports the goodness-of-fit results for each MySuper product, showing how effectively each fund's returns are explained by its style-matched benchmark portfolio. The explanatory power is measured using the coefficient of determination (R^2), while the annualised standard

error of the regression, referred to as tracking error, measures the extent to which the fund's returns deviate from its benchmark.

An R^2 close to 1 implies that the fund's return variation is largely captured by its benchmark, suggesting a high alignment in systematic risk exposures. A low annualised tracking error indicates that the MySuper product closely follows the benchmark in terms of both return and volatility. Importantly, when a fund exhibits both a low annualised tracking error and a higher annualised return with similar volatility relative to the benchmark, this may be interpreted as evidence of value added through asset allocation decisions, particularly with respect to alternatives and selection effects.

As shown in Table 2, the majority of superannuation funds exhibit R^2 values of approximately 0.90 or higher, indicating a strong fit between actual and benchmark returns. The annualised tracking error across funds ranges from 1.49% to 2.97%, with Aware Super achieving the lowest tracking error in the sample at 1.49%. This suggests that Aware Super's MySuper portfolio most consistently replicates its benchmark portfolio, while deviations observed in other funds may reflect idiosyncratic portfolio strategies, including tactical allocation or exposure to unlisted assets.

5 Results

This section presents the empirical results of the performance analysis of Australia's largest superannuation funds. We evaluate the value added by active management and allocation to alternative assets by comparing each MySuper portfolio to a custom-built public market equivalent (PME) benchmark, constructed via rolling returns-based style analysis. We assess outperformance through raw and risk-adjusted returns, CAPM alpha, and performance during crisis periods, supplemented by robustness checks and volatility-matched benchmarking.

5.1 Performance Relative to Benchmark

Across the sample, MySuper portfolios delivered consistently higher annualised returns than their corresponding PME benchmarks. Excess returns ranged from 0.49% to 1.46% per annum, with a sample average of 1.07%. Figure 4 shows annualised returns for each fund and its benchmark over the study period.

Even though all the MySuper portfolios in our sample generated excess returns, not all of those are statistically significant at the 5% level. As Table 3 shows, 7 out of the 10 portfolios in our sample generated statistically significant excess returns over their PME benchmark portfolios.

To assess consistency, we analyse 10-year rolling excess returns (Figure 5) and examine their performance in bullish and bearish markets. All MySuper portfolios outperformed their PME benchmarks in every 10-year window for which data was available.

Table 4 presents the minimum, maximum, and mean excess returns across these rolling periods. While the direction of outperformance is consistent, the magnitude varies significantly across funds for which we have data on comparable time periods (AustralianSuper, ART, HOSTPLUS, HESTA, CBUS, Aware Super and Care Super), suggesting heterogeneity in strategy, manager skill, or exposure to alternative assets.

5.2 Risk and Risk-Adjusted Performance

Here, we analyse the risk and risk-adjusted returns of MySuper portfolios, with a particular focus on metrics such as the Sharpe ratio and returns over maximum drawdowns (RoMaD). This is critical for understanding portfolio resilience during volatile periods.

We understand that volatility and maximum drawdown are not ideal measures of the economic risks underlying portfolios with illiquid assets. However, the lived experience of super fund members makes volatility and drawdown important. So, it is still useful to estimate them.

While volatility was similar between each MySuper portfolio and its benchmark, by construction of the RBSA method, the MySuper portfolios generated higher risk-adjusted returns, as reflected in Sharpe ratios (Figure 6). Sharpe ratios for MySuper portfolios ranged from 0.41 to 0.98, while their PME benchmarks ranged from 0.35 to 0.90, resulting in an average incremental Sharpe ratio of 0.16.

When risk is assessed using Maximum Drawdown and RoMaD, the results appear more nuanced. Only four of the ten funds exhibited lower Maximum Drawdowns relative to their PME benchmarks, whereas seven funds outperformed their benchmarks on a RoMaD basis, as illustrated in Figure 7.

We also analysed other risk-adjusted return measures commonly used in the industry – the Sortino Ratio and the Omega Ratio. The Sortino Ratio and Omega Ratio are alternative measures of risk-adjusted performance used by investors and asset managers to evaluate how effectively a portfolio delivers returns relative to risk. While the Sharpe Ratio remains one of the most commonly used performance metrics, it has limitations that the Sortino and Omega Ratios are specifically designed to address.

The Sortino Ratio focuses on downside risk rather than overall volatility. Unlike the Sharpe Ratio, which treats all fluctuations—whether gains or losses—as equally undesirable, the Sortino Ratio penalises only negative returns, or returns that fall below a minimum acceptable

threshold (often the risk-free rate or a target return). This makes the Sortino Ratio particularly attractive to investors who are primarily concerned with the possibility of losses rather than volatility more broadly. For example, a portfolio that delivers frequent but small positive returns and occasional sharp declines may have a similar Sharpe Ratio to one with evenly distributed ups and downs, but the Sortino Ratio would more clearly differentiate between them. In this way, the Sortino Ratio offers a more investor-relevant measure of performance by focusing on harmful volatility.

The Omega Ratio goes even further by considering the entire distribution of returns. It compares the probability and magnitude of gains to those of losses, relative to a chosen threshold. This allows it to capture not only the average return and variability, but also how returns are skewed and how fat the tails of the distribution are—features that are particularly important in portfolios with non-normal return profiles, such as those holding alternative assets. Investors may prefer the Omega Ratio when evaluating strategies with asymmetric risk, like private equity or hedge funds, because it provides a more comprehensive picture of how often and by how much a portfolio exceeds or falls short of a target return.

Our estimates show that (Figure 8) all the MySuper portfolios experienced higher Sortino Ratios and Omega Ratios compared to their respective PME benchmark portfolios.

These results indicate that the super funds have efficiently balanced risk and reward – the integration of alternative investments and active management has potentially added value by optimising the risk-return trade-off.

5.3 CAPM Alpha

The above analysis shows that the super funds produced both higher returns and higher risk-adjusted returns compared to their passive PME benchmark. In this section, we use the Capital Asset Pricing Model (CAPM) to differentiate the portion of portfolio returns attributable to market exposure (beta) from the excess returns generated through active management or allocation to alternative assets (alpha). This is crucial for understanding whether the outperformance stems from systematic market movements or the fund manager's skill. We use the Ordinary Least Squares (OLS) method to estimate the CAPM, with adjustments for heteroskedasticity and serial correlation using Newey-West estimators.

Since our benchmark portfolio is generated with listed assets, a positive alpha indicates that the portfolio outperformed its benchmark on a risk-adjusted basis, suggesting skilful active management and or allocation to alternative unlisted assets. Conversely, a negative alpha implies underperformance relative to the benchmark on a risk-adjusted basis.

The CAPM regression results (Table 5) reveal that the MySuper products of Australia's largest superannuation funds exhibit betas clustered closely around 1, indicating that their returns are broadly aligned with the market's risk profile. The results also show that none of the super funds is taking on disproportionately high market risk. However, several funds show slight deviations from unity, suggesting nuanced differences in market exposure. For example, HOSTPLUS reports the lowest beta at 0.91, followed by AustralianSuper at 0.93 and CBUS at 0.944. These values imply that these funds are less sensitive to market volatility, potentially due to greater allocations to unlisted assets. Notably, all reported betas are statistically significant at the 1% level, reinforcing the precision of these estimates.

Turning to alpha, the majority of funds exhibit statistically significant positive alpha, indicating that their performance exceeds what would be expected from market exposure alone. AustralianSuper, ART, UniSuper, CBUS, Aware Super, and Care Super all report positive alphas in the range of 0.08% to 0.13% per month, with significance at the 1% or 5% levels (Table 5). By contrast, HOSTPLUS, REST, HESTA and Telstra Super do not exhibit statistically significant alpha, suggesting that any excess returns in these funds may be attributable to chance rather than systematic value added. When annualised, the ten super funds in our sample on average generated an alpha of 1.11%, with a range of 0.57% to 1.53% (Figure 9). Taken together, the results suggest that while the majority of large Australian super funds do generate risk-adjusted outperformance, this is not uniform across the sector. The differences in alpha may be linked to varying degrees of investment internalisation, governance quality, or asset-class exposures, particularly in alternatives.

When we look at the time series of annual alphas (Figure 10), we see that they declined notably during periods of market stress, particularly the Global Financial Crisis (GFC) and the COVID-19 pandemic. While post-pandemic recovery restored alpha to earlier levels, a more recent downturn is evident across all funds, with some alphas turning negative.

To gather long-term insights into a portfolio's ability to consistently deliver excess returns beyond its market risk exposure, we also examine the 10-year rolling CAPM alpha (Figure 11) and the distribution of those 10-year rolling alphas (Table 6). By covering full market cycles, this metric can help evaluate a portfolio's adaptability to varying economic conditions and long-term resilience.

All funds generated positive alpha over rolling decades in the post-GFC period, with average rolling alpha ranging from 0.05% to 0.16% per month. The magnitude of the alphas also varies widely across the funds for which we have comparable-period data. This suggests that, despite

short-term volatility, active management and alternative-asset exposures produced durable excess returns over full market cycles.

Overall, these findings suggest the presence of value added through active management decisions, such as tactical asset allocation or the skilful deployment of unlisted investments in Australia. Notably, the strong alpha performance of these funds contrasts with trends observed in U.S. public pension plans, where active management has often failed to generate statistically significant excess returns post-GFC (Ennis 2021b, 2022a, 2024).

While the rolling 10-year alpha estimates reported in Table 6 indicate that all MySuper funds have consistently generated positive risk-adjusted excess returns over long horizons, a clear downward trend has emerged in recent years. Notably, although alpha recovered quickly following the COVID-19 shock, demonstrating resilience in active management and alternative-asset strategies, the recovery appears short-lived. Since around 2021, alpha has steadily declined across all funds, with several now exhibiting markedly lower levels of outperformance relative to their style-matched benchmarks.

This declining trend in alpha may be attributed to several structural and market-driven factors. First, as more superannuation funds adopt similar diversification strategies and gain access to illiquid and alternative asset classes, the competitive advantage from these allocations may be eroding. Second, lower market volatility and reduced dispersion in asset returns in the post-COVID environment may have made it more difficult for managers to generate alpha through tactical asset allocation. Third, the rapid growth and consolidation of super funds into mega-funds could diminish their flexibility to make outsized bets or exploit niche market opportunities, reducing their ability to outperform consistently. Fourth, mega-cap equities have performed very strongly over this period, making it more difficult to outperform the blended PME benchmarks.

Moreover, the increasing regulatory scrutiny on performance and fees, particularly under the Your Future, Your Super reforms, may have constrained the risk-taking capacity of funds, prompting a shift towards more benchmark-aware or passive-like strategies. This behavioural adjustment, while beneficial for reducing downside risk, could also reduce the potential for alpha. The uniformity of this trend across all major funds suggests it is unlikely to be fund-specific and instead points to systemic pressures within the superannuation sector. Going forward, sustained alpha generation may require either a recalibration of investment strategy or a new source of differentiation, as the low-hanging fruit of scale and diversification may no longer be sufficient to maintain excess returns.

One potential concern is that using the PME benchmark in the CAPM specification, where benchmark returns are constructed from estimated asset weights, may introduce measurement error into the estimated beta, thereby biasing the alpha estimates upward or downward. To address this issue, we perform a robustness check by re-estimating the CAPM model using the five underlying asset-class returns directly as explanatory factors, bypassing the intermediate step of constructing the PME benchmark. A fundamental limitation of estimating a multi-factor model using standard Ordinary Least Squares (OLS) regression is that unconstrained coefficients inherently allow theoretical short-selling and leverage. This assumption is economically unrealistic for default superannuation funds, which operate under strict long-only mandates. To resolve this, we additionally estimate the multi-factor model using quadratic programming (specifically, Non-Negative Least Squares), which strictly constrains the factor coefficients to be non-negative and sum to one, thereby enforcing realistic portfolio constraints. We ran the factor model under both the unconstrained OLS and constrained quadratic programming specifications. The results, reported in Table 3A.1 (Appendix 3), are highly consistent with the baseline findings presented in this section. Specifically, the estimated alphas remain economically and statistically significant for all but one fund across both specifications. This confirms that our primary conclusions are robust and not merely artifacts of the benchmark weight estimation process embedded in the PME framework.

While estimating a constrained Factor CAPM via quadratic programming provides a robust statistical check, we prefer the PME-benchmarked CAPM for several reasons. Primarily, the multi-factor approach fractures risk across several indices, preventing the estimation of a single, unified measure of the portfolio's overall market exposure. By consolidating the asset classes into a single PME benchmark, our model yields a singular, interpretable Beta that clearly defines the fund's systematic risk relative to its passive alternative. Furthermore, because the PME benchmark is constructed using rolling estimation windows, it dynamically captures the fund's changing asset allocation over time. Consequently, the PME alpha provides a much cleaner economic measure of genuine managerial skill, untainted by the style drift that often biases the static alpha of long-horizon factor models.

5.4 Resilience During Market Stress

The decline in alpha during the GFC and COVID-19 periods (Figure 10) prompted a closer examination of these portfolios' performance. This section examines how MySuper portfolios performed during periods of financial crises and market stress, specifically the Global Financial Crisis (GFC) and the COVID-19 pandemic.

To explore how super funds perform under adverse market conditions, we evaluate their relative cumulative returns and drawdowns during the GFC and the COVID-19 crisis.

The relative cumulative return is calculated as the ratio of the MySuper portfolio's cumulative returns to those of the PME benchmark portfolio. It captures the compounded excess performance over time. A steadily rising ratio implies consistent outperformance, while a flattening ratio indicates that the fund's returns are tracking more closely with its benchmark. Figure 12 shows that all funds underperformed their PME benchmarks during these crises, and after years of an upward trend, they have plateaued in recent years.

The levelling-off of the cumulative return ratios in Figure 12 suggests that the performance advantage of MySuper portfolios over their benchmark portfolios has diminished in recent years. The convergence of these ratios across all funds suggests that the excess return previously delivered by active management and allocation to alternative assets has recently declined or become more volatile. This pattern is consistent with the decline in rolling 10-year alphas discussed earlier and may reflect several factors. First, as financial markets have become more efficient and correlated in recent years, particularly during the post-COVID recovery phase, opportunities to generate excess returns through strategic allocation or selection may have narrowed. Second, heightened regulatory scrutiny and performance benchmarking under the *Your Future, Your Super* framework may have led funds to reduce risk or adopt more benchmark-aware strategies, which would naturally result in returns more closely aligned with passive benchmarks.

Additionally, lagged or smoothed valuations of unlisted assets during volatile periods may have overstated prior outperformance, with subsequent adjustments bringing returns into line with benchmarks. In essence, the levelling of cumulative return ratios signals a plateau in the value-added contribution of active management, at least relative to the low-cost, investable benchmarks used in this study and raises important questions about the sustainability of excess returns in an increasingly competitive and regulated environment.

However, the extent of underperformance and the time required to recover relative to the benchmark portfolio varied widely. We have already seen that the maximum drawdown of the MySuper portfolio exceeded that of the PME benchmark portfolio for most super funds in the sample (Figure 7). They occurred during the GFC. We observe similar patterns when examining their drawdowns during the COVID-19 pandemic. All but one of the MySuper portfolios experienced higher drawdowns than their respective PME benchmarks (Figure 13).

All except one also took longer than their PME benchmarks to reach their pre-GFC peaks. On average, the MySuper portfolios took 34 months (range: 21 to 52 months) to reach the pre-GFC

peak, whereas their respective PME benchmarks took 31 months (range: 21 to 55 months) (Figure 14). The recovery period during the COVID-19 period was very similar between MySuper and its PME benchmark portfolios. The MySuper portfolios took the same amount of time or one to two months longer than the corresponding PME benchmark portfolio to return to their pre-COVID-19 peak.

This suggests that, although super funds, on average, added value in normal and expansionary periods, they were relatively less resilient than their customised PME benchmarks during periods of financial crisis. This result is consistent with the finding that US pension funds with more alternative investments performed worse than those with only modest allocations during the GFC (MacLean, 2019).

6 Robustness

To ensure the validity and reliability of our primary findings, we subject our performance evaluation framework to a series of rigorous robustness checks. Because the estimation of abnormal returns can be sensitive to assumptions embedded in benchmark construction and the underlying data frequency, we test our model against several alternative specifications. We test the sensitivity of our results to the benchmark's rebalancing frequency by estimating a PME that holds asset-class weights constant annually rather than updating them monthly. We also create a static PME benchmark. Additionally, we address concerns regarding the potential volatility smoothing inherent in monthly return data for illiquid assets, the influence of a high cash allocation within the benchmark opportunity set, and the representativeness of the underlying passive fee structures. Finally, we expand our analysis beyond the largest mega-funds to investigate whether the observed outperformance holds for a broader cross-section of smaller superannuation funds. Across these varied specifications, our central conclusion remains unchanged: Australian superannuation funds have consistently generated positive, statistically significant risk-adjusted excess returns relative to their public-market equivalents.

6.1 Annually Rebalanced PME Benchmark

The primary analysis in this study is based on benchmark portfolios constructed using ART's single-index asset class options, with monthly rebalancing performed via rolling regression within a 36-month estimation window. This methodology provides precise and dynamic estimates of each fund's evolving exposures, enabling close tracking of the MySuper portfolios. However, monthly portfolio rebalancing, while analytically rigorous, would be operationally intensive. Frequent trading incurs significant transaction costs—including brokerage fees and bid–ask spreads—and imposes higher administrative burdens, potentially eroding net

performance. In light of these practical considerations, we evaluate the robustness of our findings by varying the rebalancing frequency.

We construct a new set of benchmark portfolios (referred to as the New PME benchmark henceforth) using the same returns-based style analysis approach, but with annual rather than monthly rebalancing of exposures. This alternative specification reflects a more realistic and cost-aware portfolio management setting, serving to test whether our key performance and tracking results hold under different rebalancing assumptions.

The New PME benchmark construction process follows the same rolling regression method, using 36 months of historical data to estimate asset-class exposures. These exposures are then held constant over a 12-month horizon to generate benchmark returns, with the process repeated annually throughout the sample period. Comparing each MySuper portfolio to its annually rebalanced benchmark enables us to assess whether the earlier results depend on the frequency of benchmark updates.

As shown in Table 7, benchmark fit remains strong under annual rebalancing. Most MySuper products exhibit R^2 values above 0.90 and tracking errors below 2.00%, consistent with results under monthly rebalancing. This indicates that even with less frequent updating, the benchmark effectively captures the systematic structure of MySuper portfolio returns.

The results indicate that the rebalancing frequency has a minimal impact on the outcomes. As illustrated in Figure 15, the excess returns per annum for MySuper portfolios were very similar across both monthly and annually rebalanced PME benchmarks.

Importantly, the overall pattern of superior MySuper performance remains consistent across various rebalancing assumptions. As summarised in Figure 16, the MySuper portfolios continue to deliver higher annualised returns, maintain comparable or lower volatility, and exhibit superior Sharpe ratios relative to their annually rebalanced benchmarks. This consistent performance, even under a more cost- and implementation-aware framework, confirms that the observed value added is not an artefact of model specification but rather reflects genuine portfolio-level advantages—likely attributable to active asset allocation and unlisted-asset exposures.

We further assess risk-adjusted performance using CAPM regressions with the annually rebalanced benchmarks. As presented in Table 8, the majority of funds continue to exhibit statistically significant and economically meaningful alpha. Specifically, at the 5% significance level, eight funds—AustralianSuper, ART, UniSuper, HOSTPLUS, HESTA, CBUS, Aware Super, and Care Super—demonstrate positive and significant CAPM alphas relative to six funds in the monthly rebalanced benchmarks. Notably, the magnitude of alpha for AustralianSuper,

UniSuper, CBUS, and Care Super exceeds 0.13% per month, or approximately 1.50% per annum, suggesting substantial value added relative to their passive market exposures[10].

6.2 Static PME Benchmark

To test the robustness of our findings, we also construct benchmark portfolios using a static regression approach, following the method used by Ennis (2022). Unlike rolling regressions, which update exposures over time, the static specification assumes fixed asset class exposures over the entire sample period—an assumption consistent with the relatively stable long-term asset allocations of superannuation funds. One concern with rolling regressions using overlapping windows—such as the 36-month rolling window employed in our monthly PME benchmark construction—is that they may introduce autocorrelation into benchmark returns through mechanical smoothing.

To investigate this, we tested for autocorrelation in the PME benchmark return series and found no statistically significant autocorrelation at lags one through twelve. This provides additional reassurance that the rolling regression approach does not distort benchmark volatility in our case.

The performance results under the static specification are consistent with those from the rolling PME benchmarks. The explanatory power remains high, with R^2 values ranging from 0.80 to 0.96 and tracking errors between 1.48% and 2.6%. All MySuper portfolios continue to generate statistically significant positive excess returns and risk-adjusted performance, as measured by Sharpe, Sortino, and Omega ratios. In addition, all but one fund achieved higher RoMaD relative to their static PME benchmarks (Figure 17). Results from the CAPM model under static exposures also yield positive and statistically significant alphas for all funds (Table 9), with magnitudes comparable to those reported earlier (Tables 5 and 8).

In sum, these findings confirm that the value added by MySuper portfolios persists under more conservative benchmarking assumptions. The ability of these funds to outperform even when benchmark updates are infrequent suggests that their excess returns are not artefacts of benchmark sensitivity but are grounded in enduring active management decisions and portfolio construction choices. This strengthens the argument that Australia's largest super funds, particularly those with internal investment capabilities and exposure to alternatives, have consistently delivered performance above what would be expected from passive public market exposures alone.

[10] Additionally, comparisons of 10 year-rolling alphas, cumulative relative performance and drawdowns during the GFC and COVID-19 periods yielded consistent findings. These additional results are not included here and can be provided upon request.

6.3 PME Benchmark without Cash

A potential criticism of the PME benchmark is that the returns-based style analysis assigns a relatively high weight to cash, which may appear inconsistent with the actual portfolios of large superannuation funds. This could raise the concern that the estimated alpha partly reflects returns earned over cash, rather than true outperformance relative to an appropriately risk-matched benchmark. To address this issue, we re-estimate the PME benchmark excluding cash from the opportunity set. The results remain materially unchanged. The estimated excess returns and alphas are very similar to those obtained under the baseline specification, and the benchmark's implied growth-defensive allocation does not change in any economically meaningful way. These results are presented in Appendix 4. Without cash, the PME benchmark generated slightly higher returns, greater volatility, and a higher Sharpe Ratio than the benchmark with cash. This reduces the magnitude of the excess returns generated by the MySuper portfolios; however, they remain positive. All of them also had higher Sharpe Ratios compared to the PME benchmark without cash.

In the no-cash specification, the quadratic programming procedure reallocates most of the omitted cash weight to bonds, while the weights on equity exposures remain broadly similar. This indicates that our results are not driven by an anomalously high cash allocation in the benchmark. Rather, the evidence continues to support the conclusion that the observed outperformance reflects genuine value added from active management and exposure to alternative assets, not merely returns measured relative to cash. We also present the average allocation of the PME benchmarks to growth and defensive assets for with and without cash (Table 4A.1).

6.4 PME Benchmark with Quarterly Data

A further potential concern in our baseline analysis is that using monthly return data may introduce volatility smoothing due to the funds' substantial allocations to illiquid alternative assets. Because unlisted assets are not continuously marked to market, the monthly return series can artificially understate the true portfolio volatility. Critics often argue that quarterly returns provide a more accurate measure of risk for portfolios heavily invested in private markets.

To address this appraisal smoothing concern, we re-estimate our returns-based style analysis model using quarterly data. For this specification, we utilise a 7-year (28-quarter) estimation window to calibrate the initial benchmark weights, rolling the regression forward by one quarter

at a time. We find that transitioning to a lower-frequency return series increases the Sharpe ratios for both the actual MySuper portfolios and their corresponding PME benchmarks. Most importantly, the central results of our study remain unchanged: the MySuper portfolios continue to generate positive excess returns over the quarterly PME benchmarks. This confirms that our primary findings are not an artifact of volatility smoothing inherent in monthly data but rather reflect genuine outperformance driven by active management and alternative-asset exposures. Appendix 5 presents these results for both the with- and without-cash benchmarks, using quarterly data.

6.5 Return Matching PME Benchmark

The RBSA method creates a benchmark by replicating the portfolio's volatility. However, it is well documented that the inclusion of illiquid assets lowers reported volatility relative to actual volatility, as these assets are not marked to market. Consequently, including illiquid assets smooths portfolio fluctuations, and the PME benchmark created by replicating volatility may not reflect the underlying economic risks of the illiquid assets.

In this section, we pose a different question. We ask: "*If we have a PME benchmark for the MySuper portfolio that produces the same average annual returns, how much extra volatility should this benchmark portfolio have?"* To answer this question, we create a new PME benchmark portfolio using the MSCI ACWI Index alongside the RBSA-created PME benchmark portfolio. By design, the new PME benchmark portfolio and the corresponding MySuper portfolio share the same average annual returns. For example, the new PME benchmark portfolio for ART comprises 65% of the RBSA-created PME benchmark and 35% of the MSCI ACWI, and both ART's MySuper portfolio and the new PME benchmark achieved an average annual return of 7.75% from November 2005 to December 2024.

Figure 18 compares volatilities for these two portfolios across super funds. This analysis highlights the impact of illiquid assets on volatility smoothing and the adjustments needed to construct accurate benchmarks.

We find that the new PME benchmark portfolio can produce the same return as the MySuper portfolios, albeit at the expense of higher volatility. The excess volatility ranges from 0.17% to 1.63%. The new PME benchmarks also experienced higher maximum drawdowns than their

corresponding MySuper portfolios and lower returns over maximum drawdown for most funds, as shown in Figure 19.

6.6 Costs and Fees of Management

Another possible objection to our benchmark construction is that the benchmark's net returns rely on the fee and cost structure of a single provider, the Australian Retirement Trust (ART), which may not perfectly represent the cost structures of all superannuation funds in our sample. We note, however, that the objective of the benchmark is to approximate an investable passive public-market alternative on a net-of-fees-and-tax basis, rather than to match the average fee schedule of the superannuation sector. This is the relevant counterfactual for assessing whether funds generate value added relative to passive market implementation. Importantly, if other funds face lower passive implementation costs than ART, the corresponding benchmark would earn higher net returns, implying a smaller estimated excess return for the funds in our sample. Furthermore, while a fund's total investment fee is highly dependent on its specific asset allocation—particularly its exposure to costly unlisted alternatives—administrative fees are generally invariant to portfolio composition. A comparison of administrative fees for a standard $50,000 account balance demonstrates that ART's pricing is highly competitive relative to other industry mega-funds. Specifically, ART charges $112 in annual administrative fees, compared to $102 for AustralianSuper, $119 for HOSTPLUS, and $128 for REST. Because ART features one of the lowest administrative fee burdens in the industry, its indexed investment options provide a rigorous, low-cost, and conservative proxy for evaluating the net-of-fee value added by active management and alternative asset allocations.

6.8 Sample Selection, Smaller Funds, and the Scale Effect

A potential criticism of our primary analysis is that it focuses exclusively on Australia's largest superannuation funds, raising concerns that the findings may not generalise to smaller or retail funds. Our initial sample selection was driven by a combination of fund size and data availability. Because a central objective of this study—motivated by recent international literature on institutional performance—was to evaluate the contribution of alternative assets and active management in the protracted post-GFC environment, we required a sufficiently long time series of returns. For most retail funds and several other large funds, reliable default return data only became available after 2013.

To address this limitation and ensure our methodology holds across a broader cross-section of the industry, we extend our analysis to include 11 additional funds for which at least ten years of data are available to construct the rolling PME benchmark. While the shorter data history

precludes a full post-GFC evaluation for these specific entities, we assess whether they generated excess returns and alpha over their available sample periods.

The results of this extended analysis demonstrate that several of these smaller funds also outperformed their respective PME benchmarks and generated positive alpha over the past decade (Tables 6A.1 and 6A.2). Importantly, however, this expanded sample reveals a distinct scale effect in portfolio performance. We observe a strong positive correlation between a fund's total Assets Under Management (AUM) and its 10-year annualised excess returns (Figure 6A.1). This finding suggests that while active management and alternative asset allocations can add value across the broader superannuation sector, the largest mega-funds are significantly better positioned to harvest these illiquidity and complexity premia, likely due to greater economies of scale, superior access to top-tier private market deals, and the cost efficiencies of internalised investment teams.

7 Conclusion

This paper evaluates the performance of Australia's largest superannuation funds by comparing their default MySuper products with custom-built PME benchmarks constructed using returns-based style analysis. Using more than two decades of monthly data, we find that most funds generated positive, statistically significant excess returns and alphas relative to passive public-market benchmarks, and that this outperformance is generally robust across alternative performance metrics and benchmark specifications. These findings stand in contrast to a substantial international literature, particularly from the US, that questions whether alternative assets and active management add value after fees in large institutional portfolios.

For pension fiduciaries and fund managers, these results underscore the critical importance of governance and institutional design. Our results suggest that, in the Australian context, large superannuation funds have historically been able to use scale, long-term liquidity horizons, and the internalisation of investment teams to improve member outcomes. In particular, the evidence indicates that alternatives and active management have not merely increased complexity but have contributed positively to net returns on a risk-adjusted basis. At the same time, the paper also documents that this excess performance has moderated in recent years, with returns tracking their benchmarks more closely since 2021. This pattern suggests that the benefits from alternatives and active management may be becoming harder to capture as the market matures and competition for attractive opportunities intensifies.

Beyond its implications for institutional asset allocation, our findings offer actionable insights for policymakers currently reviewing the YFYS regulatory framework. Because our evidence demonstrates that Australian mega-funds have historically derived genuine value from dynamic active management and illiquid alternative allocations, it is critical that regulatory performance tests accurately capture these complex risk-return trade-offs. Transitioning from static asset allocation targets to dynamic, risk-adjusted frameworks, such as the PME methodology applied in this study, would provide a more precise measure of long-term fiduciary skill. For regulators, adopting such outcome-based evaluation metrics would maintain robust sector accountability while mitigating the unintended consequences of the current test, ensuring funds remain free to pursue innovative, long-term strategies that maximise member retirement outcomes.

In sum, this paper adds new empirical evidence to the debate on the efficacy of active management and alternative assets in institutional portfolios. It highlights that, under the right conditions, these strategies can deliver sustained outperformance. However, it also cautions that such success is context-dependent and potentially diminishing. As the superannuation sector continues to evolve, future research should investigate the sources of declining alpha and the structural features that may help funds sustain their performance advantage in an increasingly complex investment landscape.

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Table 1. Superannuation Funds and their MySuper Products

Superannuation Funds	MySuper Product	Commencement Date
AustralianSuper	Balanced	November 2002
Australian Retirement Trust (ART)	Lifecycle (High Growth)	November 2002
UniSuper	Balanced	February 2004
HOSTPLUS Superannuation Fund	Balanced	November 2002
Retail Employees Superannuation Trust (REST)	Growth	July 2006
HESTA	Balanced Growth	November 2002
Construction And Building Unions Superannuation Fund (CBUS)	Growth	November 2002
Aware Super	Lifecycle (High Growth)	November 2002
Telstra Superannuation Scheme (Telstra Super)	Lifecycle (Growth)	July 2003
Care Super	Balanced	November 2002

Note: Data extracted for these superannuation funds from Morningstar starts from this date.

Table 2. Goodness of Fit

Superannuation Fund	R^2	Annualised Tracking Error
AustralianSuper	0.91	1.95%
ART	0.93	1.87%
UniSuper	0.94	1.74%
HOSTPLUS	0.76	2.97%
REST	0.92	1.59%
HESTA	0.89	1.99%
CBUS	0.90	1.84%
Aware Super	0.96	1.49%
Telstra Super	0.92	1.61%
Care Super	0.91	1.95%

Notes: The period covered was November 2005 to December 2024 for all super funds, except for UniSuper, REST and Telstra Super. For UniSuper, the start date is February 2007, for REST, July 2009 and for Telstra Super, July 2006.

Table 3. Annualised Excess Return

Superannuation Fund	Annualised Excess Return
AustralianSuper	1.26%**
ART	1.11%*
UniSuper	1.07%*
HOSTPLUS	1.30%
REST	0.69%
HESTA	0.96%*
CBUS	1.46%**
Aware Super	0.92%*
Telstra Super	0.49%
Care Super	1.44%**

Note: ***: 0.1% level of significance, **:1% level of significance, *:5% level of significance

Table 4. 10-Year Rolling Annualised Excess Returns

	AustralianSuper	ART	UniSuper	HOSTPLUS	REST	HESTA	CBUS	Aware Super	Telstra Super	Care Super
Min	1.11%	0.13%	0.97%	0.83%	0.23%	0.75%	1.39%	0.33%	-0.09%	1.28%
Max	2.07%	2.11%	1.52%	2.49%	1.05%	1.80%	2.42%	1.60%	0.84%	2.01%
Mean	1.55%	1.25%	1.23%	1.64%	0.59%	1.26%	1.91%	1.01%	0.44%	1.70%

Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from November 2015 to December 2024. UniSuper's start date is February 2017, REST's is July 2019, and Telstra Super's is July 2016. The table reports annualised excess returns.

Table 5. Estimation Results from CAPM Regression: (Re-balanced Monthly)

Superannuation Fund	**α**	**β**
AustralianSuper	0.0012 (0.0004)**	0.930 (0.0273)***
ART	0.0010 (0.0004)*	0.946 (0.0301)***
UniSuper	0.0009 (0.0003)**	0.977 (0.0232)***
HOSTPLUS	0.0013 (0.0007)	0.910 (0.0486)***
REST	0.0005 (0.0004)	1.011 (0.0260)***
HESTA	0.0008 (0.00042)	0.972 (0.0451)***
CBUS	0.0013 (0.0004)**	0.944 (0.0308)***
Aware Super	0.0008 (0.0003)*	0.977 (0.0177)***
Telstra Super	0.0005 (0.0004)	0.965 (0.0215)***
Care Super	0.0012 (0.0003)***	0.989 (0.0264)***

Note: ***: 0.1% level of significance, **:1% level of significance, *:5% level of significance

Table 6. 10-Year Rolling CAPM Alpha (Monthly)

	AustralianSuper	ART	UniSuper	HOSTPLUS	REST	HESTA	CBUS	Aware Super	Telstra Super	Care Super
Min	0.10%	0.02%	0.07%	0.08%	0.01%	0.07%	0.12%	0.03%	0.01%	0.11%
Max	0.19%	0.18%	0.13%	0.24%	0.11%	0.17%	0.21%	0.16%	0.09%	0.18%
Mean	0.14%	0.11%	0.10%	0.16%	0.05%	0.11%	0.16%	0.10%	0.05%	0.15%

Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from November 2015 to December 2024. UniSuper's start date is February 2017, REST's is July 2019, and Telstra Super's is July 2016. The table reports the rolling CAPM alphas estimated using 120 months of data.

Table 7. Goodness of Fit: (Annual Re-balancing)

Superannuation Fund	R^2	Tracking Error
AustralianSuper	0.91	2.00%
ART	0.93	1.89%
UniSuper	0.93	1.82%
HOSTPLUS	0.77	2.90%
REST	0.93	1.51%
HESTA	0.90	1.92%
CBUS	0.90	1.85%
Aware Super	0.96	1.50%
Telstra Super	0.93	1.52%
Care Super	0.91	2.00%

Notes: The period covered was November 2005 to December 2024 for all super funds, except for UniSuper, REST and Telstra Super. For UniSuper, the start date is February 2007, for REST, July 2009 and for Telstra Super, July 2006.

Table 8. Estimation Results from CAPM Regression: (Re-balancing Annually)

Superannuation Fund	**α**	**β**
AustralianSuper	0.0013 (0.0004)***	0.910 (0.0286)***
ART	0.0012 (0.0004)*	0.930 (0.0319)***
UniSuper	0.0011 (0.0003)***	0.955 (0.0265)***
HOSTPLUS	0.0015 (0.0006)*	0.892 (0.0552)***
REST	0.0006 (0.0004)	1.006 (0.0262)***
HESTA	0.0009 (0.0004)*	0.974 (0.0469)***
CBUS	0.0014 (0.0004)***	0.926 (0.0338)***
Aware Super	0.0008 (0.0003)*	0.967 (0.0173)***
Telstra Super	0.0005 (0.0004)	0.947 (0.0236)***
Care Super	0.0013 (0.0003)***	0.978 (0.0224)***

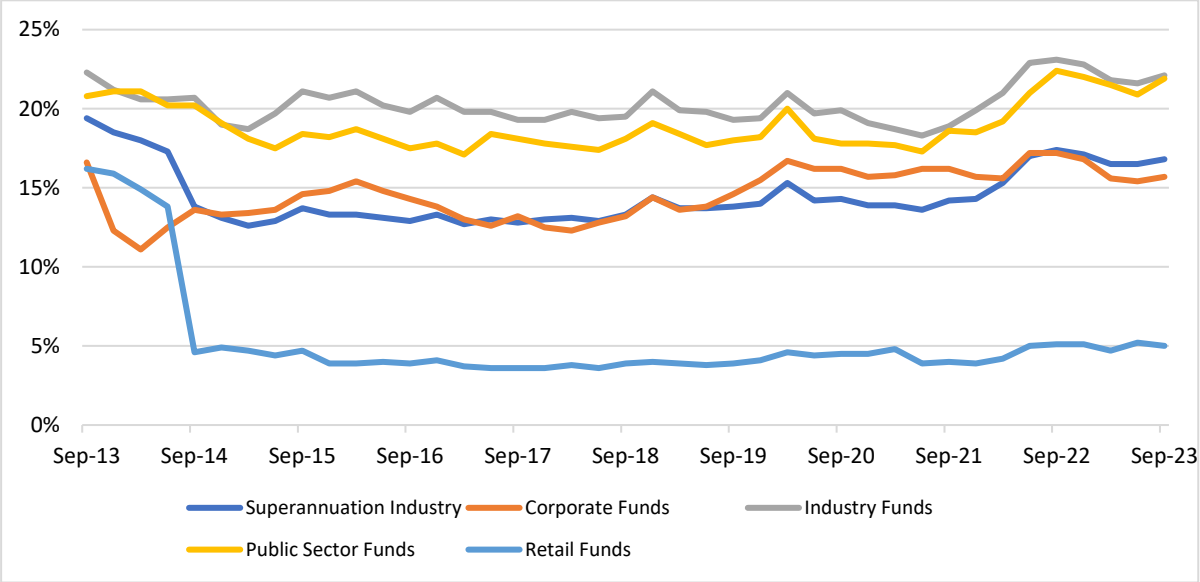
Note: ***: 0.1% level of significance, **:1% level of significance, *:5% level of significance

Table 9. Estimation Results from CAPM Regression: (Static Regression)

Superannuation Fund	**α**	**β**
AustralianSuper	0.0012 (0.0003)***	0.9901 (0.0301)***
ART	0.0011 (0.0003)**	0.9916 (0.0316)***
UniSuper	0.0008 (0.0003)**	0.9933 (0.0293)***
HOSTPLUS	0.0016 (0.0005)**	0.9847 (0.0568)***
REST	0.0009 (0.0003)***	0.9924 (0.0190)***
HESTA	0.0010 (0.0003)**	0.9914 (0.0370)***
CBUS	0.0012 (0.0003)***	0.9892 (0.0270)***
Aware Super	0.0011 (0.0003)***	0.9927 (0.0180)***
Telstra Super	0.0002 (0.0004)	0.9987 (0.0257)***
Care Super	0.0014 (0.0002)***	0.9855 (0.0246)***

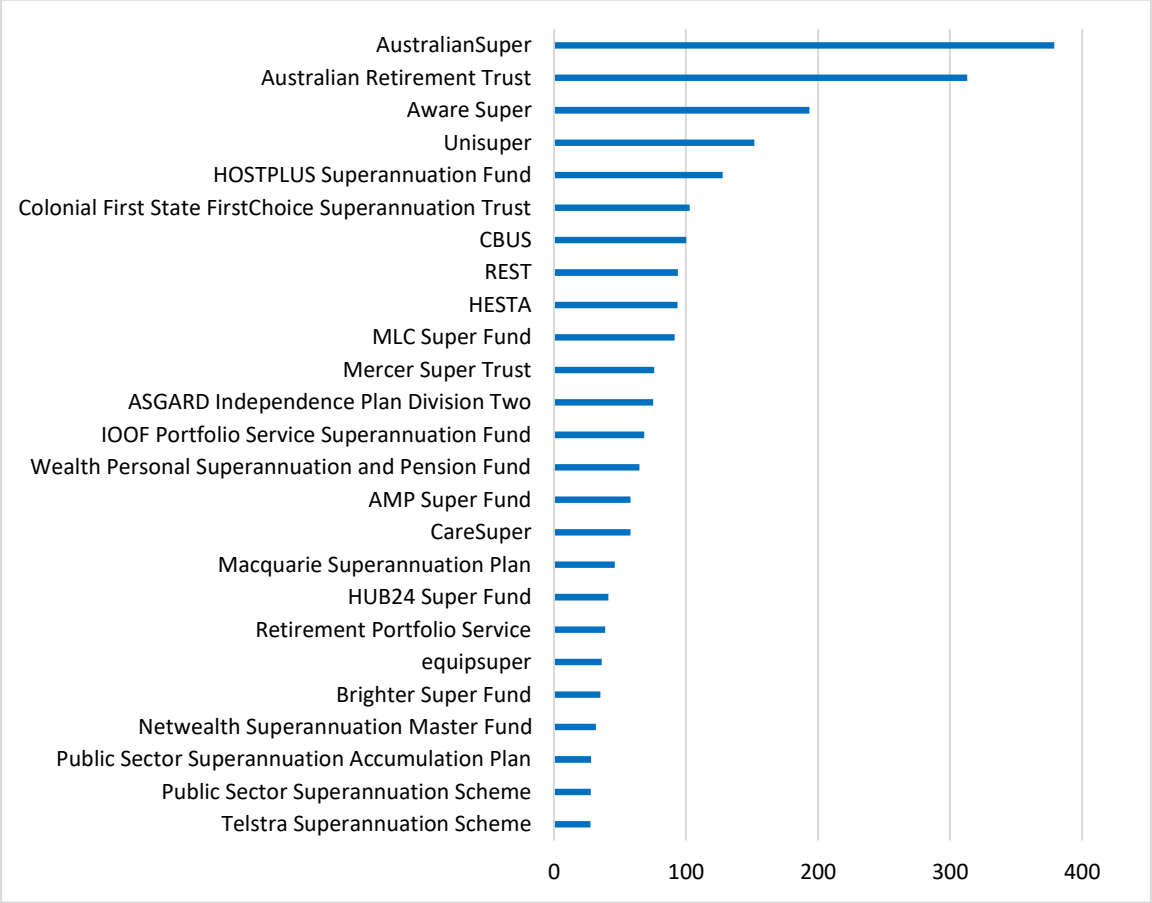
Note: ***: 0.1% level of significance, **:1% level of significance, *:5% level of significance

Figure 1. Allocation to Alternative Assets by Fund Type



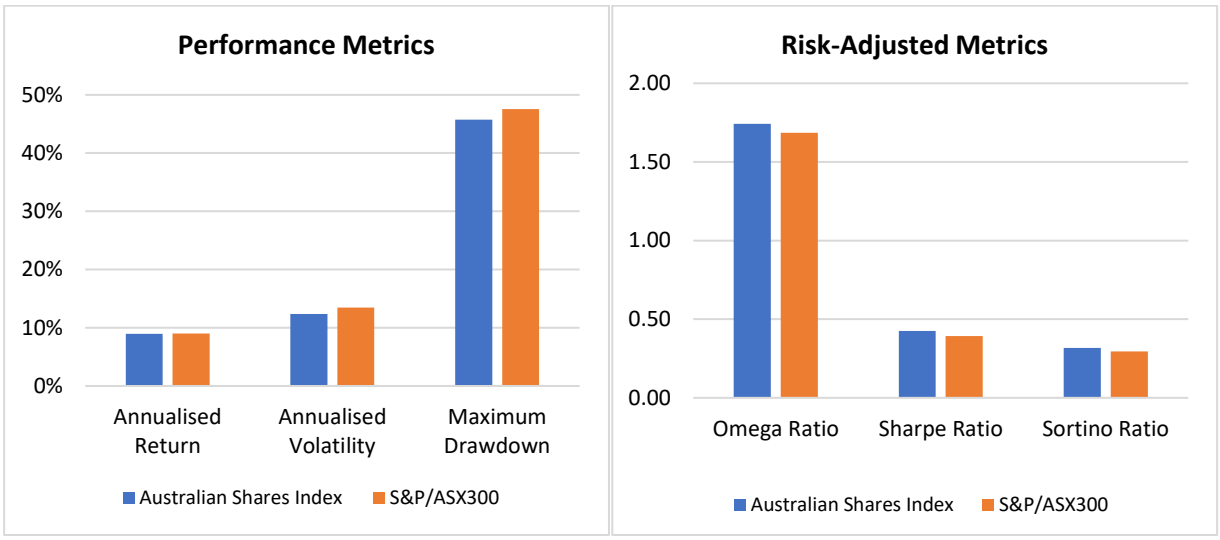
Source: APRA, Quarterly Superannuation Performance, March 2025.

Figure 2. Asset Under Management - Largest Super Funds (in billion AUD)



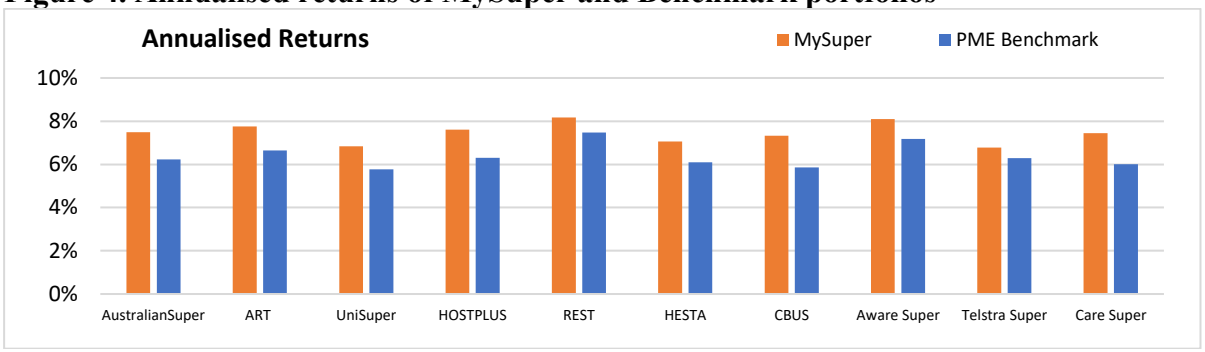
Source: APRA, Quarterly Superannuation Fund Level Statistics, December 2024.

Figure 3. Performance Analysis of ART's Single-Index Asset Class and Public Market Indices



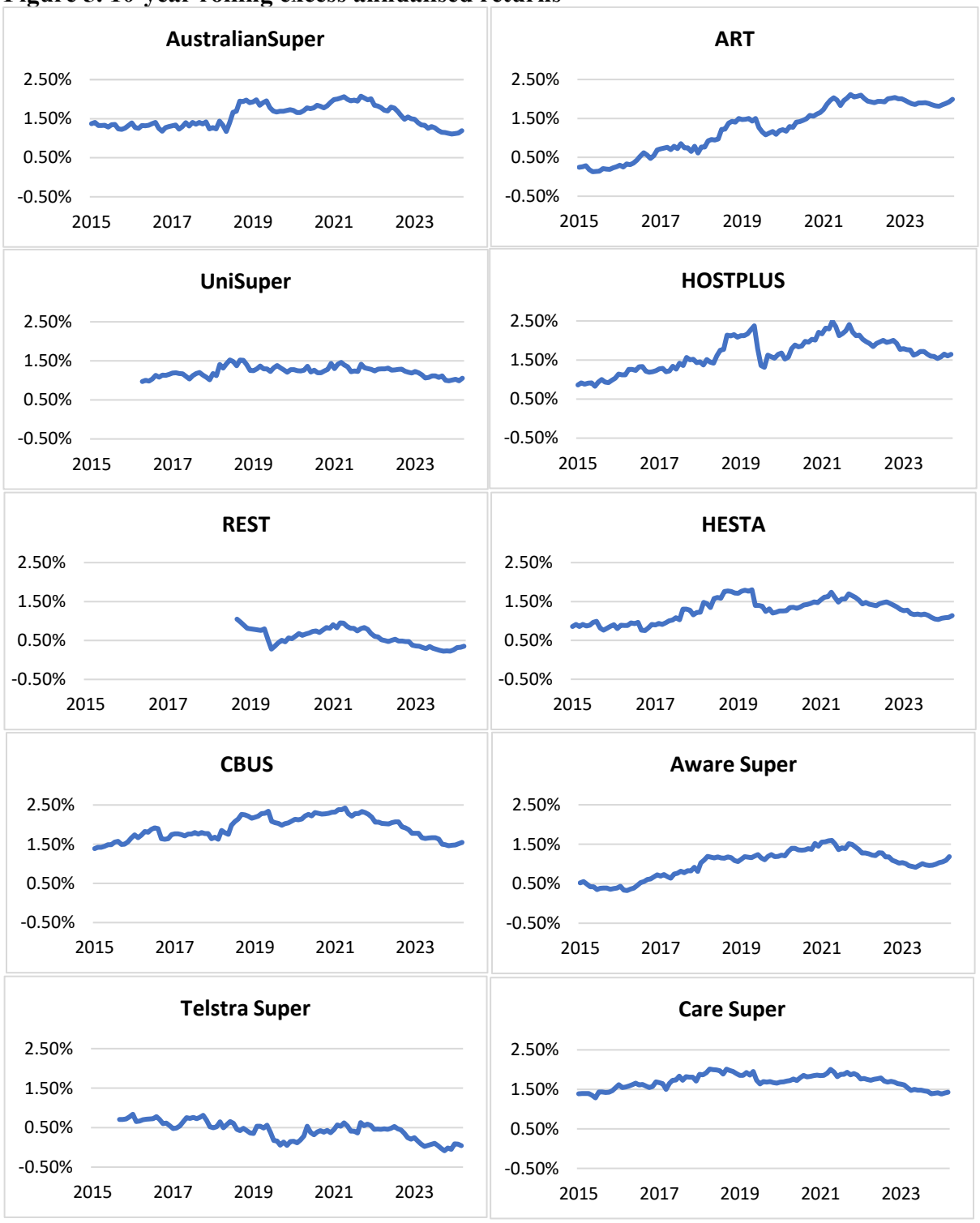
Note: Monthly return from February 2006 to December 2024.

Figure 4. Annualised returns of MySuper and Benchmark portfolios



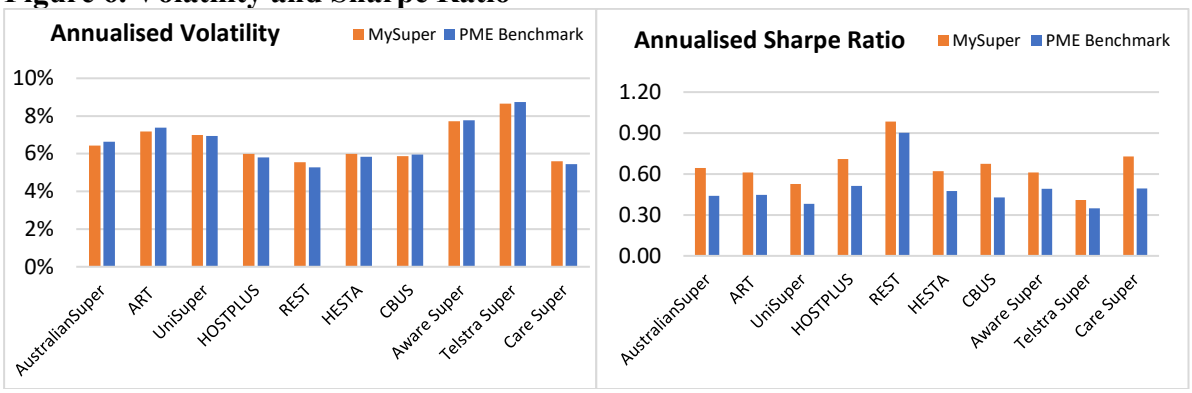
Notes: The period covered was November 2005 to December 2024 for all super funds, except for UniSuper, REST and Telstra Super. For UniSuper, the start date is February 2007, for REST, July 2009 and for Telstra Super, July 2006. The difference in annualised excess returns is statistically significant for 7 out of the 10 MySuper portfolios.

Figure 5. 10-year rolling excess annualised returns



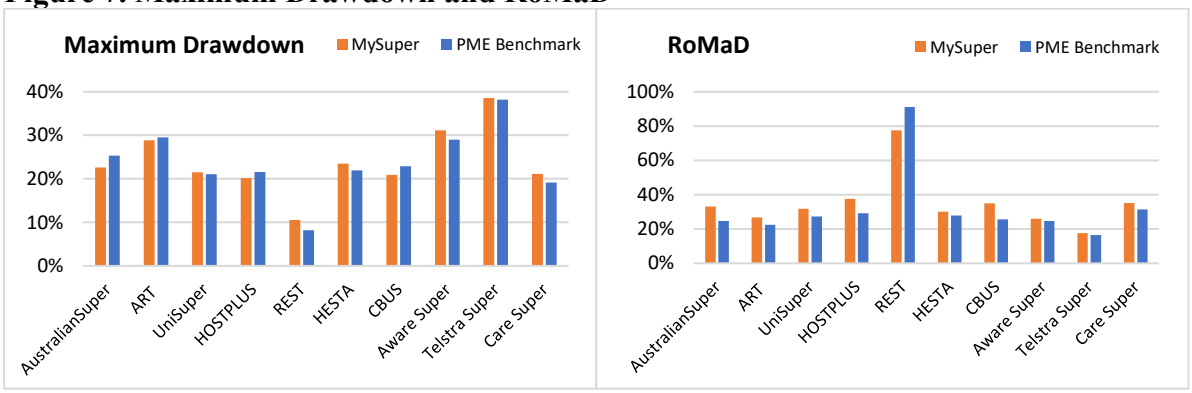
Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from November 2015 to December 2024. UniSuper's start date is February 2017, REST's is July 2019, and Telstra Super's is July 2016.

Figure 6. Volatility and Sharpe Ratio



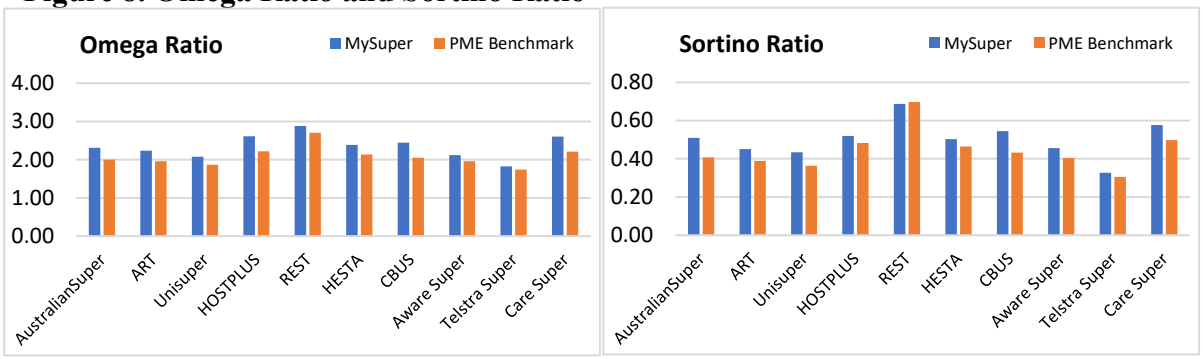
Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006. We use the 3-month Bank-Bill rate as the risk-free rate to calculate the Sharpe ratios.

Figure 7. Maximum Drawdown and RoMaD



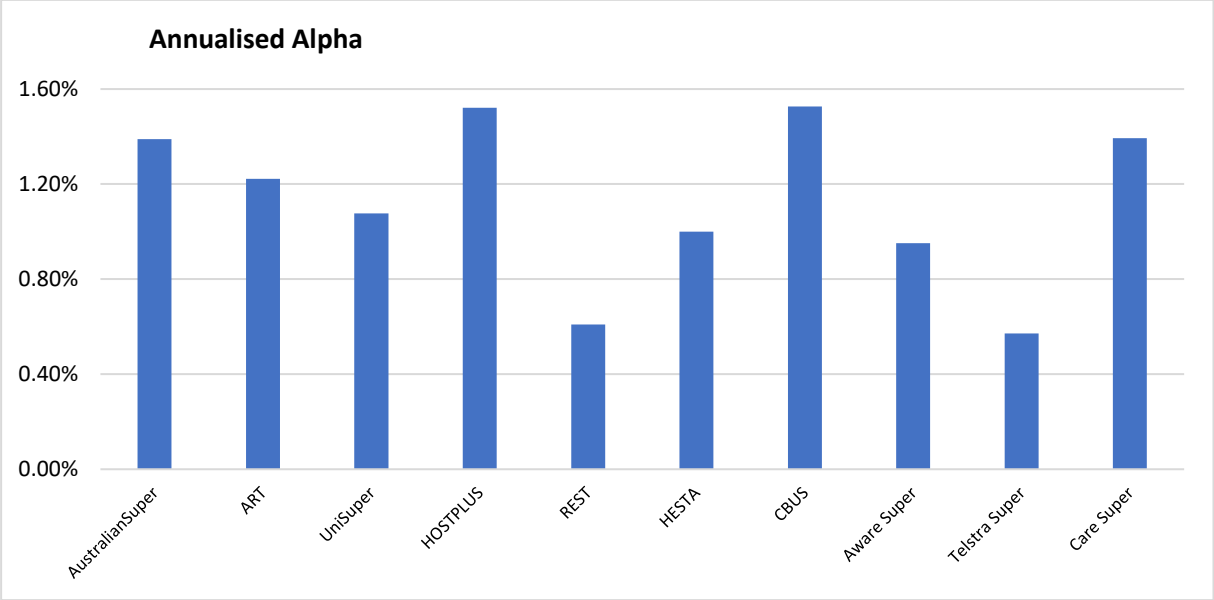
Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006. For all except REST, the maximum drawdown occurred during the GFC. For REST, the maximum drawdown occurred during COVID-19.

Figure 8. Omega Ratio and Sortino Ratio



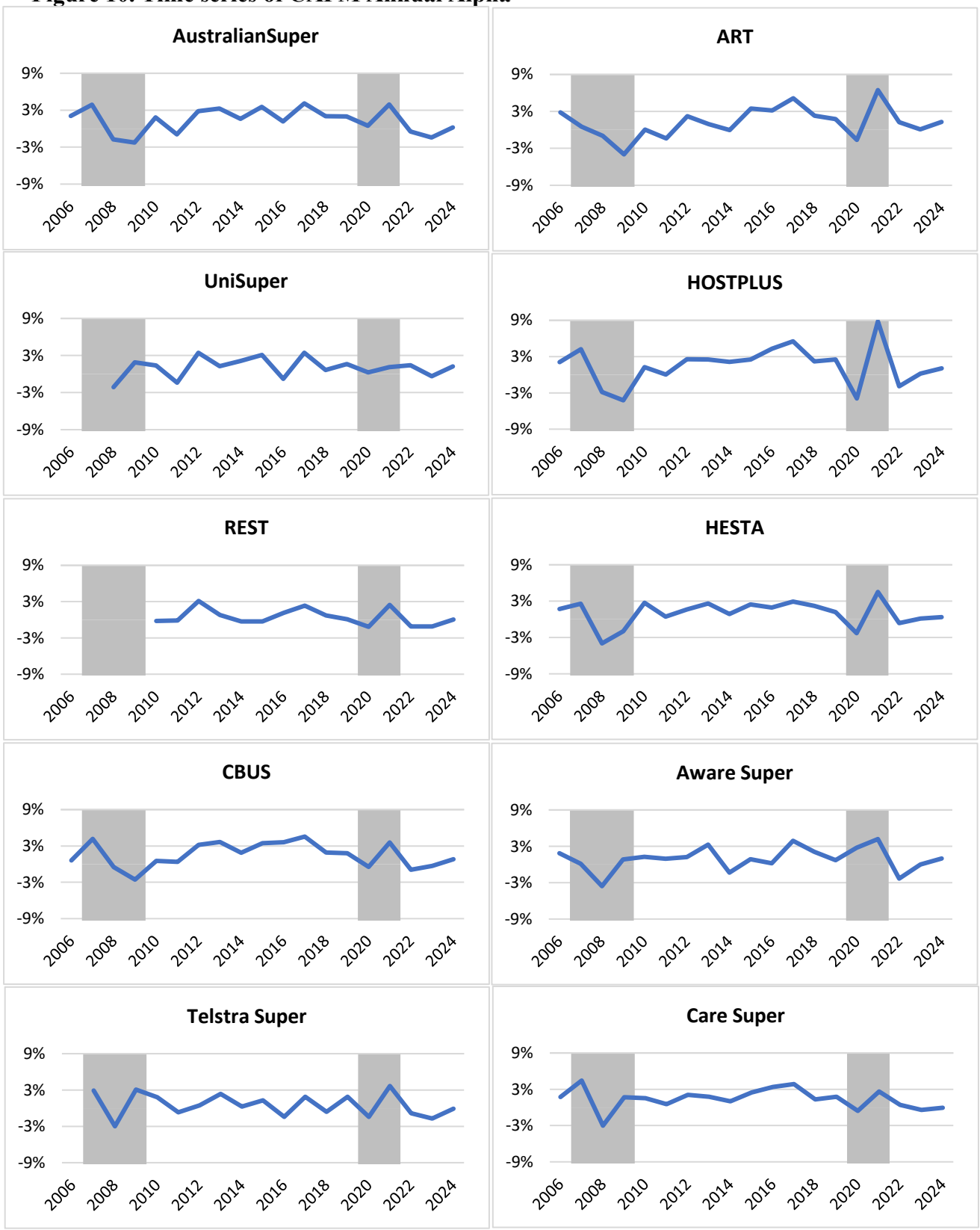
Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006. For all except REST, the maximum drawdown occurred during the GFC. For REST, the maximum drawdown occurred during the COVID-19 pandemic.

Figure 9. Annualised Alpha from the CAPM model



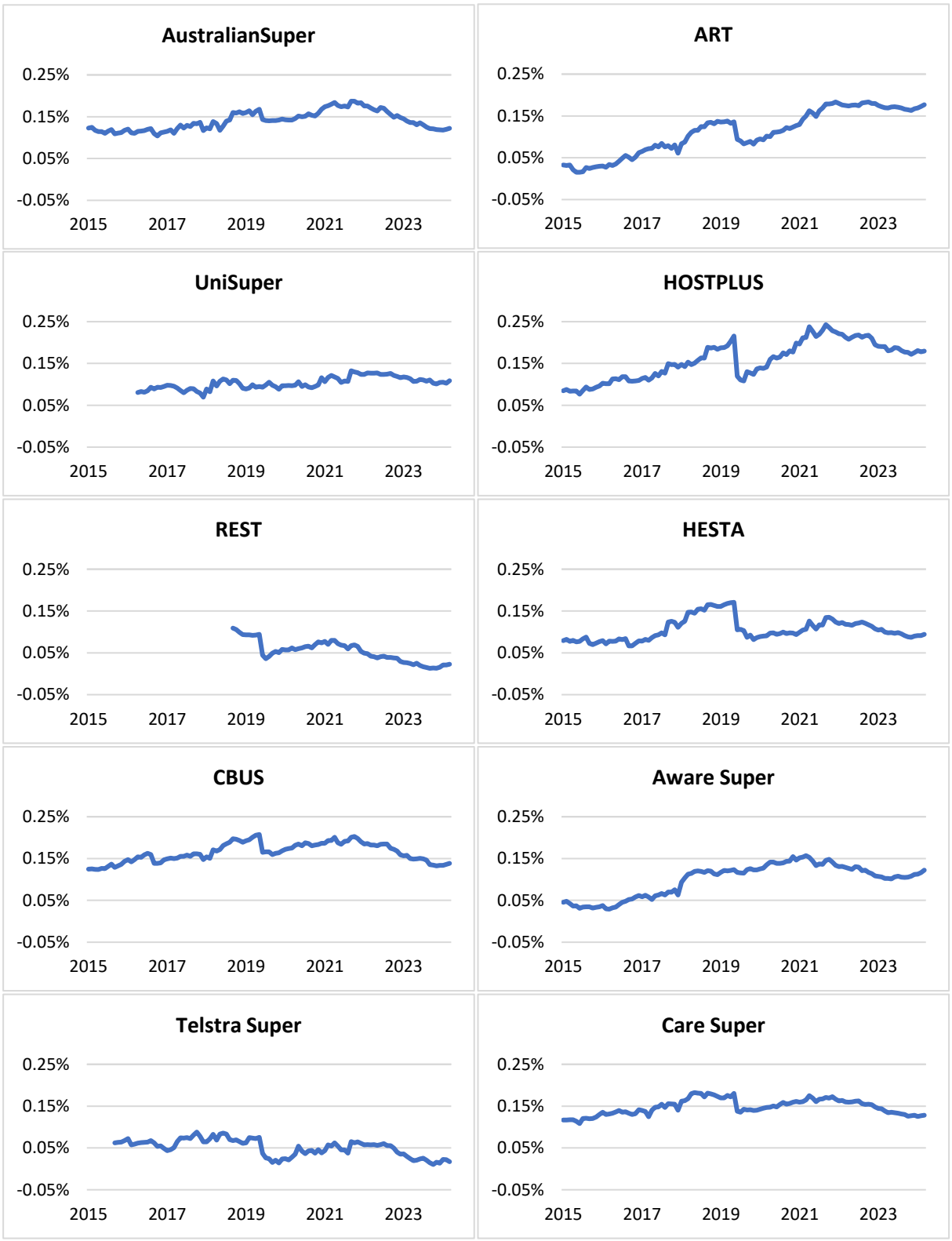
Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006. Annualised alpha is calculated by multiplying the alpha (from CAPM regression) by 12.

Figure 10. Time series of CAPM Annual Alpha



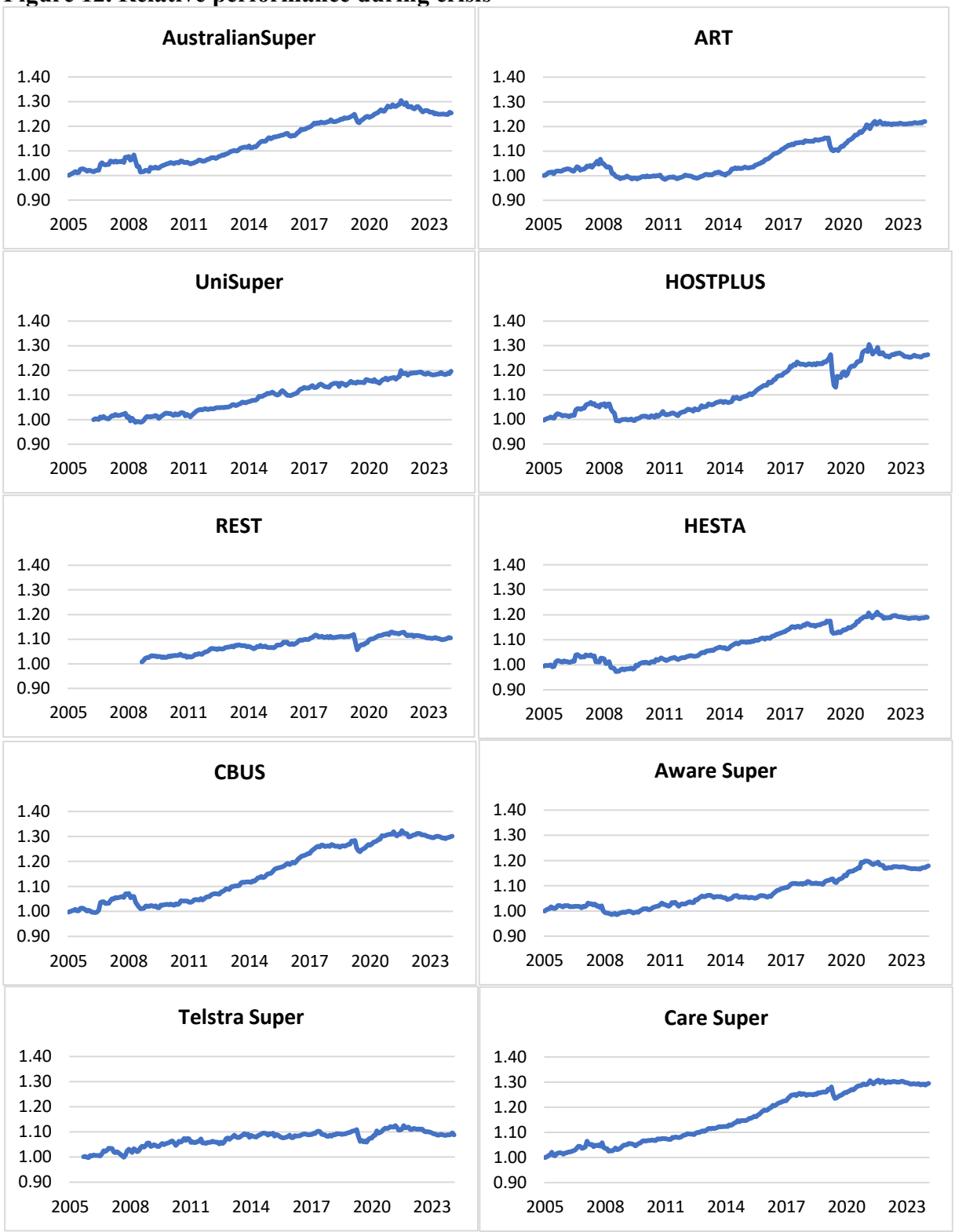
Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from January 2006 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006.

Figure 11. 10-year rolling CAPM Alpha



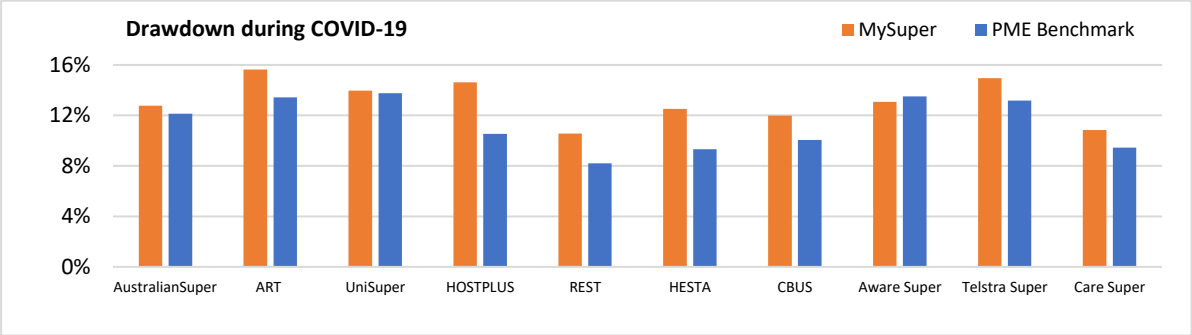
Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from November 2015 to December 2024. UniSuper's start date is February 2017, REST's is July 2019, and Telstra Super's is July 2016.

Figure 12. Relative performance during crisis



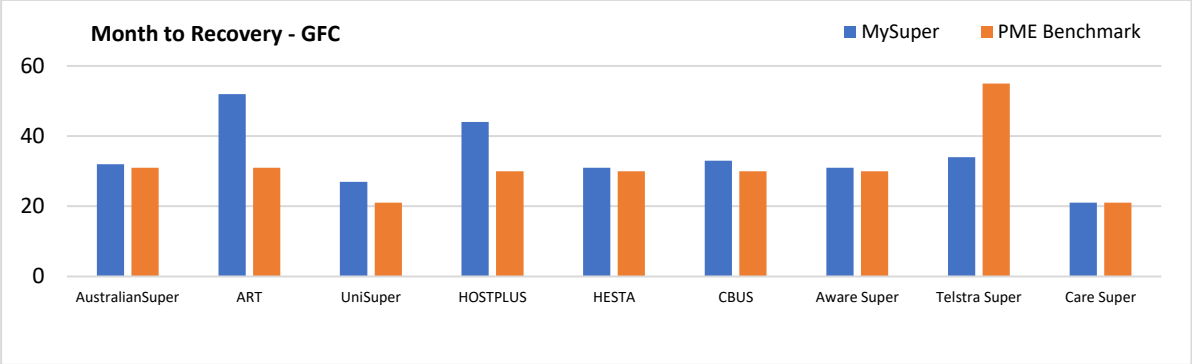
Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006.

Figure 13. Drawdown of MySuper and PME benchmark portfolios during the COVID-19 pandemic



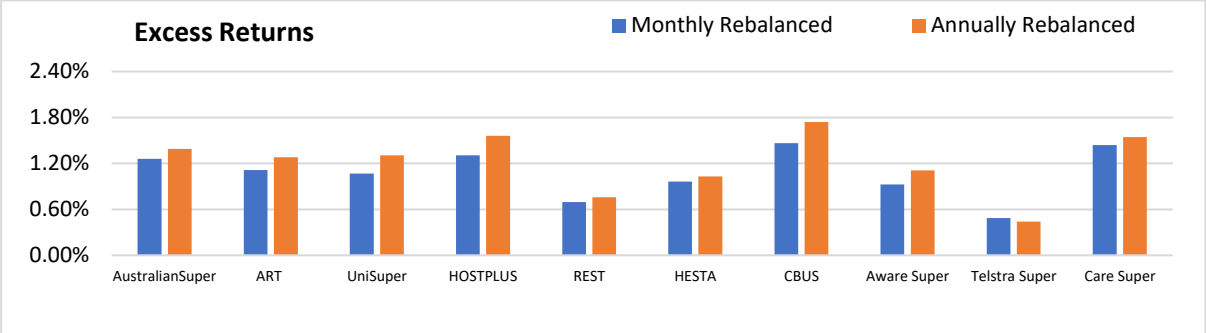
Note: The pre-COVID-19 peak was January 2020 for all the super funds.

Figure 14. Recovery period during the GFC (months)



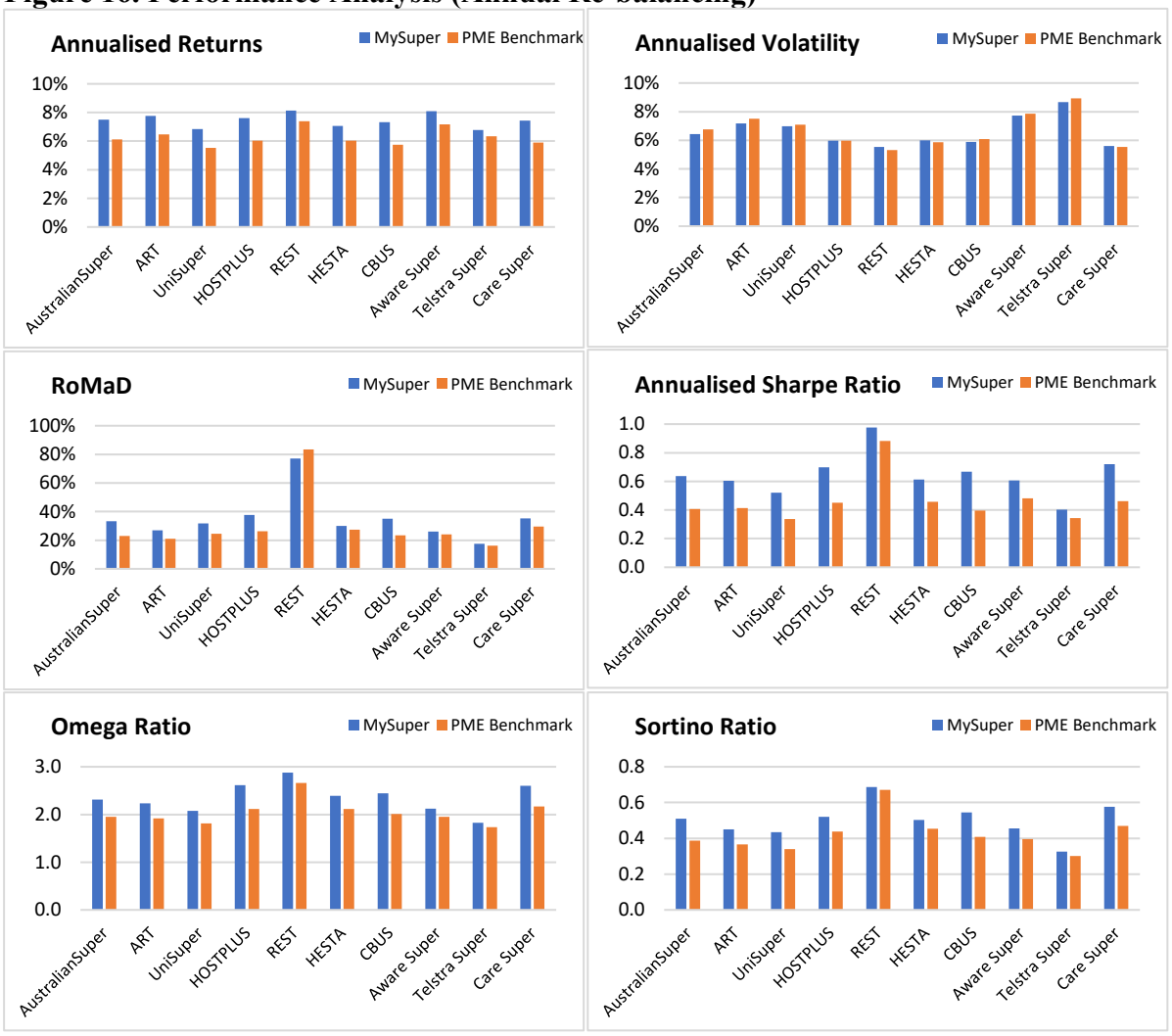
Notes: The pre-GFC peak for all super funds was May 2008. The reporting period for REST starts in July 2009. Hence, we were unable to compare their recovery period during the GFC.

Figure 15. Excess return of the MySuper portfolio over monthly and annually rebalanced PME benchmarks



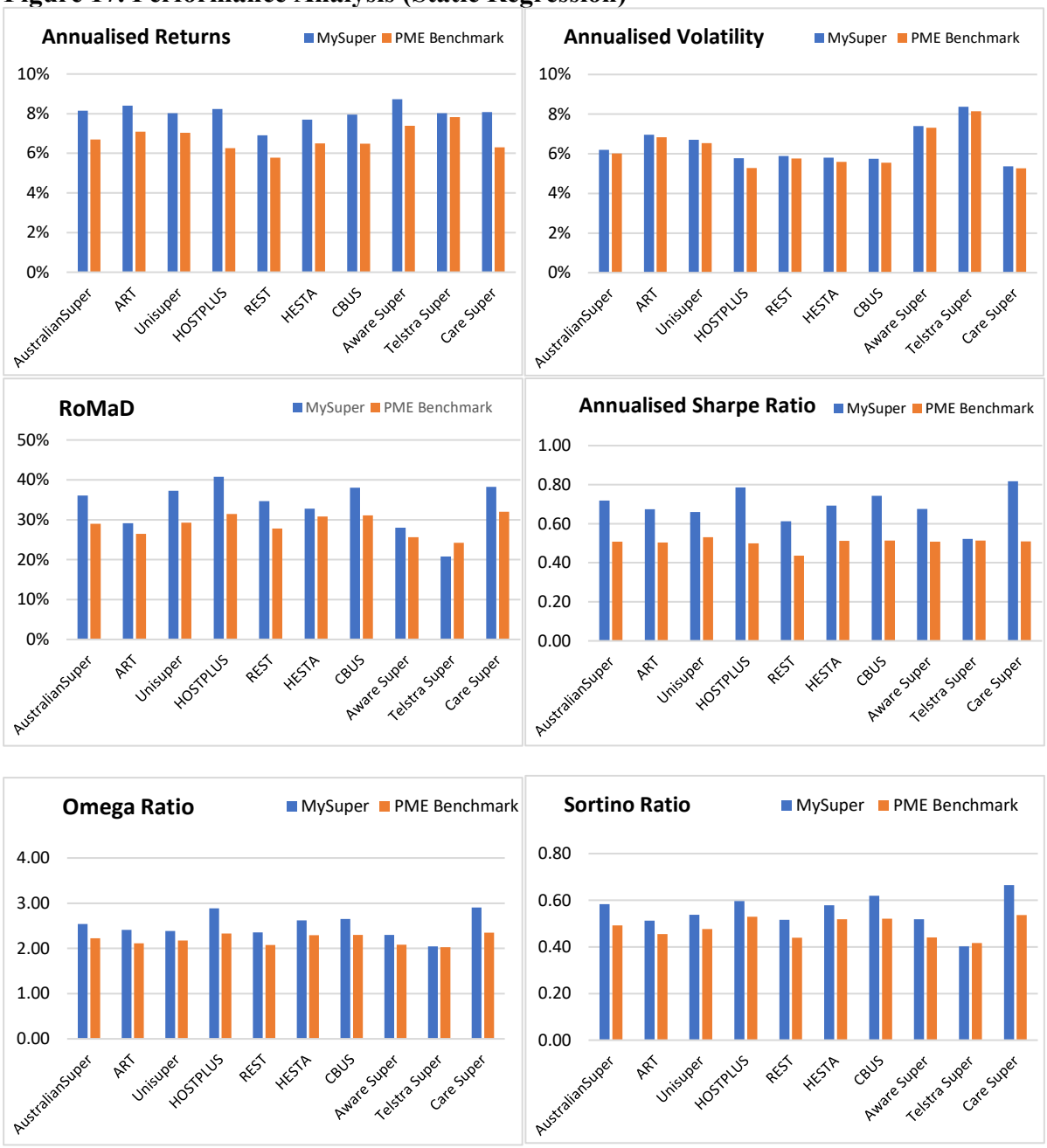
Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006. For the annually rebalanced portfolio, we maintained the allocation for 12 months, then rebalanced using the estimated weights based on the last 36 months of data.

Figure 16. Performance Analysis (Annual Re-balancing)



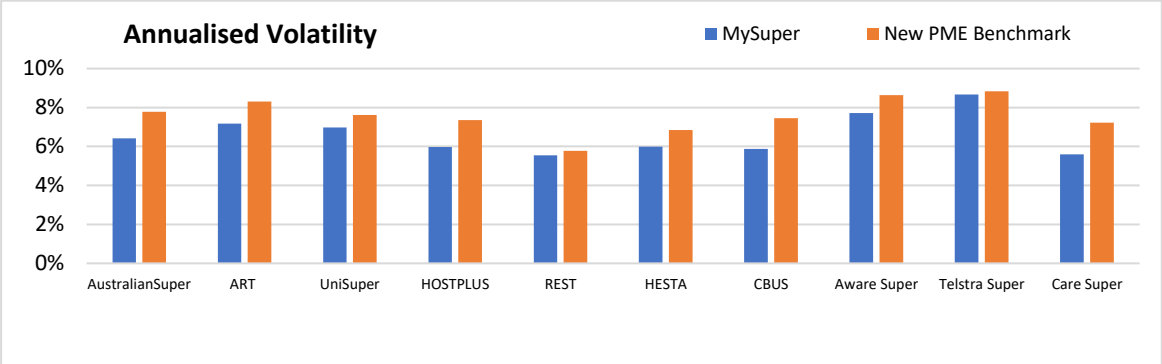
Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006. For all except REST, the maximum drawdown occurred during the GFC. For REST, the maximum drawdown occurred during the COVID-19 pandemic.

Figure 17. Performance Analysis (Static Regression)



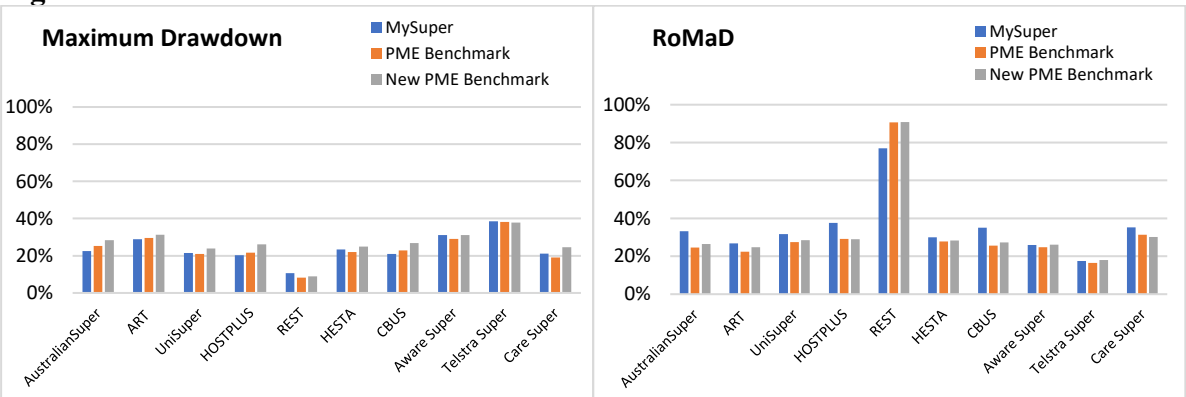
Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006. For all except REST, the maximum drawdown occurred during the GFC. For REST, the maximum drawdown occurred during the COVID-19 pandemic.

Figure 18. Volatility difference between MySuper and the New PME benchmark portfolios



Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006.

Figure 19. Maximum drawdown of the new PME benchmarks



Notes: The reporting period for all super funds, except UniSuper, REST, and Telstra Super, is from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006.

Appendix

Appendix 1. Description of Australian Retirement Trust's Asset Class Options

Asset Class Options	Investment Objective
Australian Shares Index	Closely match the returns of the performance benchmark (**MSCI Australia 300 Index**)*
International Shares Hedged Index	Closely match the returns of the performance benchmark (**MSCI ACWI ex Australia Investible Market Index (IMI) with Special Tax Net in $A hedged**) while maintaining a lower weighted carbon intensity
International Shares Unhedged Index	Closely match the returns of the performance benchmark (**MSCI ACWI ex Australia Investible Market Index (IMI) with Special Tax Net in $A unhedged**) while maintaining a lower weighted carbon intensity
Bonds Index	Closely match the returns of the performance benchmark (**50% Bloomberg Barclays Global Aggregate Index in $A hedged, and 50% Bloomberg AusBond Composite 0+ Yr Index**)
Cash	Aim for returns above the **Bloomberg AusBond Bank Bill Index** performance benchmark.

*: MSCI Australia 300 Index required incurring additional costs, making it impractical for analysis. We use a substitute benchmark: "S&P/ASX 300 Index", which is included in our data subscriptions. Thereby, enabling comprehensive analysis

Source:
https://www.australianretirementtrust.com.au/investments/options?tab=singleAssetOptions

Appendix 2. Back casting Returns

We regress the return of ART's single asset class product, "Australian Shares Index", on the return of its benchmark index (S&P ASX 300 Total Return index) using data from February 2006 to December 2024.

$$R_{AS,t} = \gamma_{AS} + \delta_{AS} R_{benchmark_{AS},t} + \epsilon_t \quad \text{(I)}$$

Where $R_{benchmark_{AS},t}$ is the return of the benchmark index in the month t.

Then we use the estimated $\hat{\gamma}_{AS}$ and $\hat{\delta}_{AS}$ to predict $\hat{R}_{AS,t}$ as follows:

$$\hat{R}_{AS,t} = \hat{\gamma}_{AS} + \hat{\delta}_{AS} R_{benchmark_{AS},t} \quad \text{(II)}$$

We use equation (II) to predict $\hat{R}_{AS,t}$ for the period from November 2002 to January 2006 and use them as regressors in equation (1) to fill the pre-February 2006 gap.

Appendix 3: Factor CAPM

We estimate the following factor model to determine alpha.

$$R_{MS,t} - r_t = \alpha + \beta_1(R_{AS,t} - r_t) + \beta_2(R_{ISU,t} - r_t) + \beta_3(R_{ISH,t} - r_t) + \beta_4(R_{B,t} - r_t) + \beta_5(R_{C,t} - r_t) + \epsilon_t \quad (4)$$

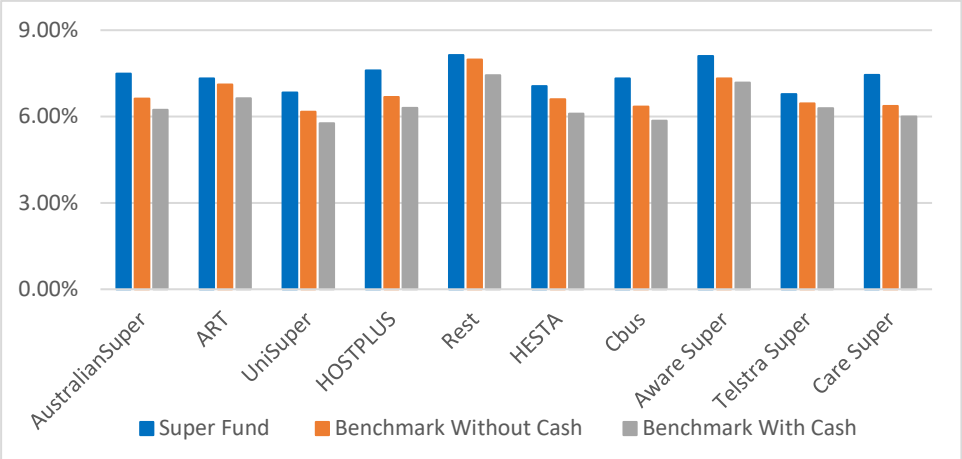
Table 3A.1: Estimation Results from CAPM Reg

Superannuation Fund	α (OLS)	α (Quadratic Programming)
AustralianSuper	0.0010 (0.0004)***	0.0010 (0.0003)***
ART	0.0010 (0.0004)***	0.0010 (0.0003)***
UniSuper	0.0007 (0.0003)**	0.0007 (0.003)**
HOSTPLUS	0.0015 (0.0006)**	0.0015 (0.0005)***
REST	0.0008 (0.0003)**	0.0008 (0.0003)***
HESTA	0.0008 (0.0004)**	0.0008 (0.0003)**
CBUS	0.0011 (0.0004)**	0.0011 (0.0003)***
Aware Super	0.0009 (0.0003)***	0.0009 (0.0002)***
Telstra Super	0.0001 (0.0004)	0.0002 (0.0003)
Care Super	0.0012 (0.0003)***	0.0012 (0.0003)***

Note: ***: 0.1% level of significance, **:1% level of significance, *:5% level of significance. All super funds, except UniSuper, REST, and Telstra Super, were covered from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006.

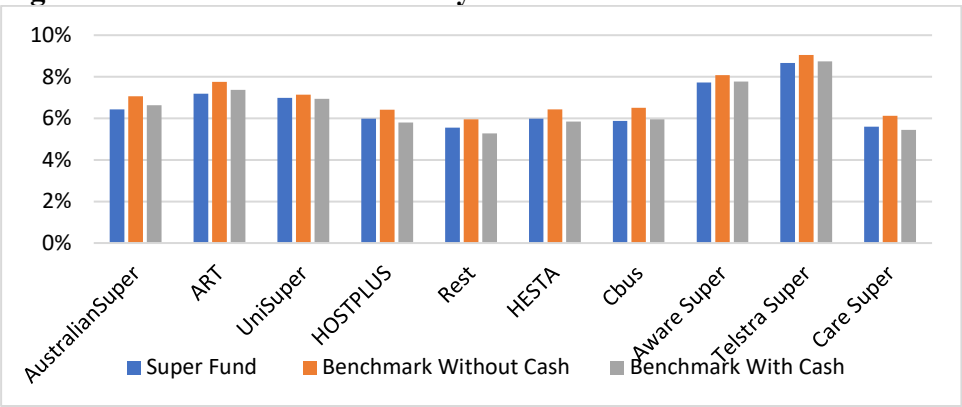
Appendix 4: PME Benchmarks With and Without Cash

Figure 4A.1: Annualised Returns



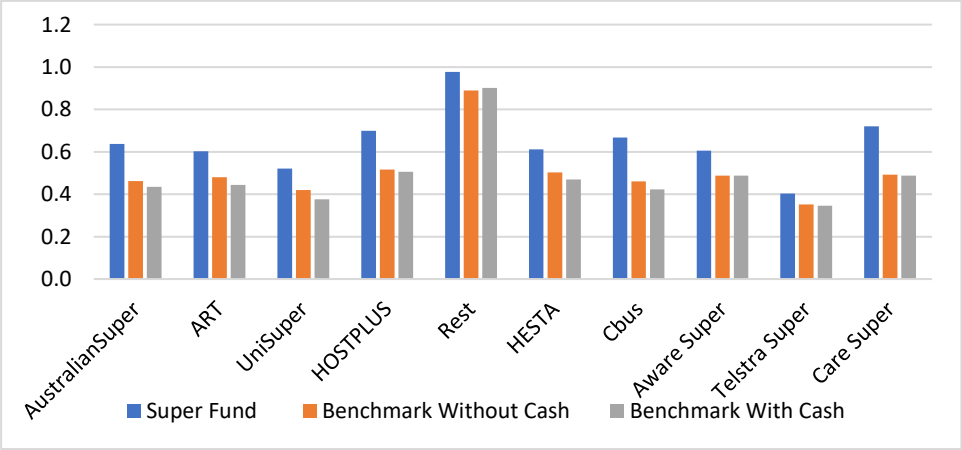
Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006

Figure 4A.2: Annualised Volatility



Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006

Figure 4A.3: Annualised Sharpe Ratio



Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from November 2005 to December 2024. UniSuper's start date is February 2007, REST's is July 2009, and Telstra Super's is July 2006

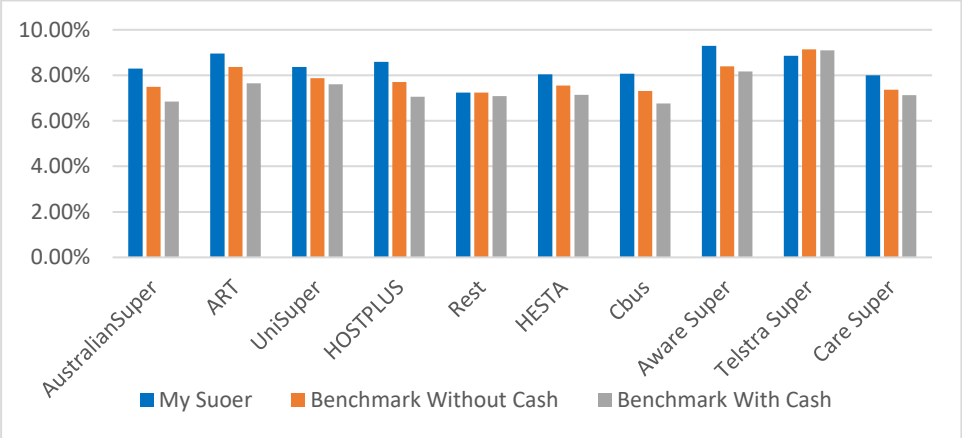
Table 4A.1: Distribution of Growth/Defensive Assets in PME Benchmarks with and without Cash

		Without Cash		With Cash	
Funds		**Growth**	**Defensive**	**Growth**	**Defensive**
AustralianSuper	Average	0.60	0.40	0.58	0.42
	Max	0.70	0.56	0.68	0.57
	Min	0.44	0.30	0.43	0.32
ART	Average	0.67	0.33	0.65	0.35
	Max	0.83	0.43	0.81	0.46
	Min	0.57	0.17	0.54	0.19
UniSuper	Average	0.61	0.39	0.60	0.40
	Max	0.67	0.49	0.67	0.48
	Min	0.51	0.33	0.52	0.33
HOSTPLUS	Average	0.54	0.46	0.51	0.49
	Max	0.65	0.67	0.65	0.62
	Min	0.33	0.35	0.38	0.35
Rest	Average	0.55	0.45	0.53	0.47
	Max	0.65	0.55	0.59	0.56
	Min	0.45	0.35	0.44	0.41
HESTA	Average	0.55	0.45	0.52	0.48
	Max	0.63	0.54	0.61	0.56
	Min	0.46	0.37	0.44	0.39
Cbus	Average	0.55	0.45	0.52	0.48
	Max	0.70	0.55	0.45	0.32
	Min	0.45	0.30	0.45	0.32
Aware Super	Average	0.72	0.28	0.70	0.30
	Max	0.88	0.41	0.87	0.39
	Min	0.59	0.12	0.61	0.13
Telstra Super	Average	0.78	0.22	0.76	0.24
	Max	0.93	0.51	0.93	0.55
	Min	0.48	0.07	0.45	0.07
Care Super	Average	0.53	0.47	0.50	0.50
	Max	0.60	0.60	0.54	0.56
	Min	0.40	0.40	0.44	0.46

Notes: These are weights of growth and defensive assets in the PME benchmark portfolios estimated using the monthly returns series.

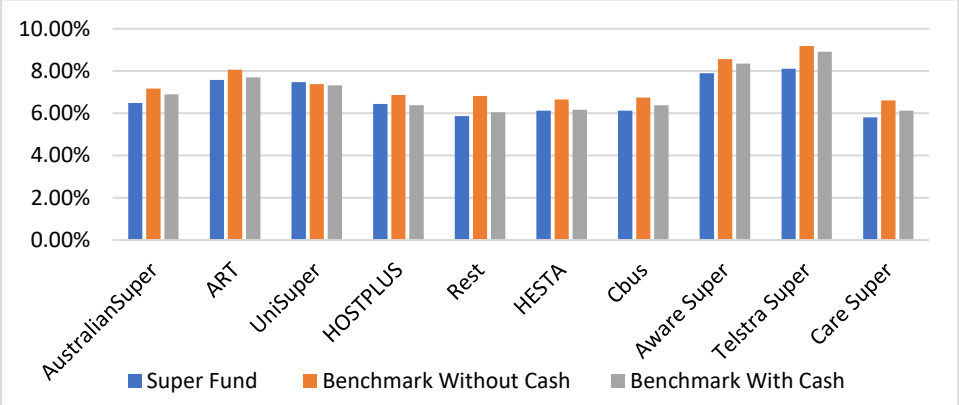
Appendix 5: PME Benchmarks with and Without Cash Using Quarterly Data

Figure 5A.1: Annualised Returns



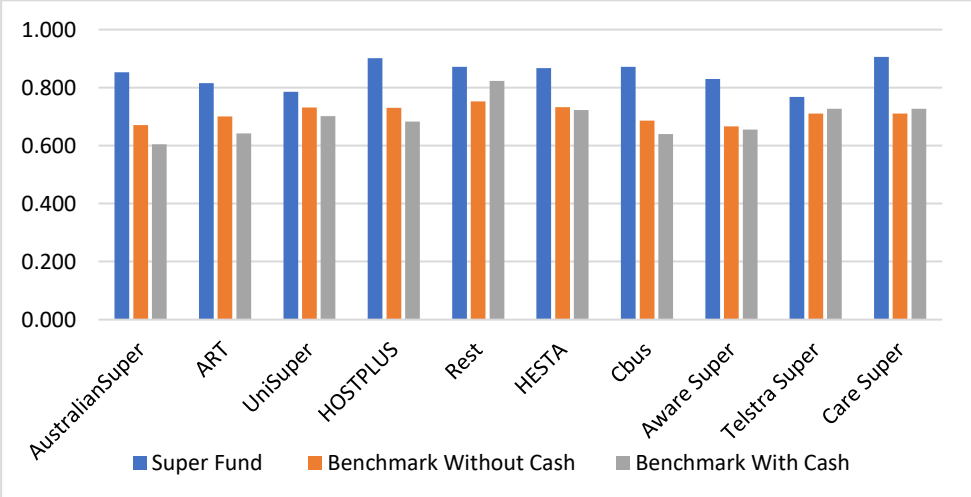
Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from March 2010 to December 2024. UniSuper's start date is June 2011, REST's is December 2013, and Telstra Super's is September 2010.

Figure 5A.2: Annualised Volatility



Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from March 2010 to December 2024. UniSuper's start date is June 2011, REST's is December 2013, and Telstra Super's is September 2010.

Figure 5A.3: Annualised Sharpe Ratio



Notes: All super funds, except UniSuper, REST, and Telstra Super, were covered from March 2010 to December 2024. UniSuper's start date is June 2011, REST's is December 2013, and Telstra Super's is September 2010.

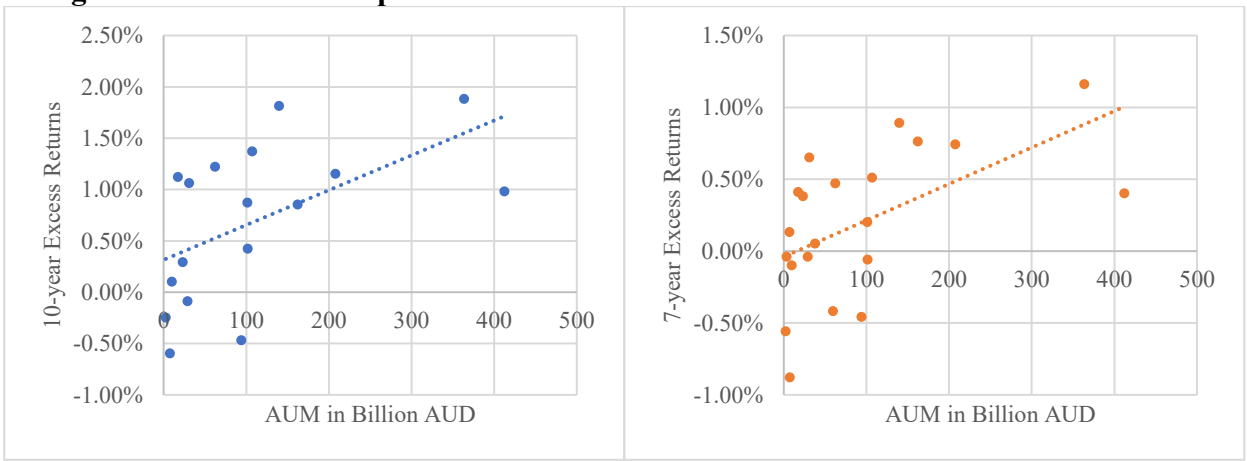
Appendix 6: Analysis with Extended Sample

Table 6A.1: Annualised Excess Returns over PME Benchmark

Fund	10Y	7Y	5Y	3Y	1Y
AustralianSuper	0.98%*	0.40%	0.32%	-0.63%	0.42%
ART	1.88%***	1.16%	1.88%	0.50%	0.88%
UniSuper	0.85%	0.76%	0.76%	0.31%	0.21%
HOSTPLUS	1.81%	0.89%	1.95%	1.07%	2.74%
REST	0.42%	-0.06%	0.14%	-0.25%	0.31%
HESTA	0.87%	0.20%	0.68%	-0.22%	-0.79%
Cbus	1.37%***	0.51%	0.66%	0.20%	0.73%
Aware Super	1.15%**	0.74%	0.35%	-0.01%	-0.68%
Telstra Super	-0.09%	-0.04%	0.02%	-0.93%	-0.23%
Care Super	1.22%**	0.47%	0.46%	-0.32%	-0.33%
AMP SS		-0.42%	0.01%	0.56%	0.31%
ANZ SCS	-0.60%	-0.88%	-0.31%	-0.47%	0.10%
AERS	0.10%	-0.10%	-1.06%	-1.47%	-1.36%
AFS		-0.04%	0.59%	-0.95%	-0.67%
Equip Super		0.05%	0.45%	0.40%	1.13%
Legal Super		0.13%	0.93%	0.60%	2.99%
MLC	-0.47%	-0.46%	-0.35%	-0.36%	-0.19%
NGS Super	1.12%	0.41%	0.65%	0.83%	3.09%
REI Super	-0.25%	-0.56%	0.34%	0.42%	0.11%
Team Super	0.29%	0.38%	0.97%	1.19%	-2.21%
Vision Super	1.06%**	0.65%	0.73%	0.09%	0.48%
Weighted average	1.08%	0.51%	0.74%	0.04%	0.42%

Notes: ***Significant at 1%, **Significant at 5%, *Significant at 10%. For the four newly added funds, AMP, AFS, Equip, and Legal Super, less than 13 years of return data are available. Because the PME benchmark requires a three-year window to generate the first benchmark return, we are unable to report full 10-year excess return results for these funds. Among the newly added funds, ANZ Smart Choice (ANZ SCS), AMP, MLC and Team Super offer MySuper products with a lifecycle. For these three funds, we analysed the base options for members in their early years: the 1990s, 1990s-plus, Growth and High Growth options for ANZ SCS, AMP, MLC and Team Super, respectively.

Figure 6A.2: Relationship between Performance and Size



Notes: The trend lines in both charts have slopes that are statistically significant at 5% level

Table 6A.2: Annualised Alpha

Fund	10Y	7Y	5Y	3Y	1Y
AustralianSuper	1.19%**	0.68%	0.51%	-0.25%	0.66%
ART	1.85%**	1.19%	1.80%	0.58%	0.93%
UniSuper	1.02%*	0.96%	0.85%	0.55%	0.46%
HOSTPLUS	2.13%	1.33%	2.17%	1.40%	2.93%
REST	0.19%	-0.28%	-0.07%	-0.48%	0.07%
HESTA	0.74%	0.11%	0.54%	-0.29%	-0.79%
Cbus	1.35%**	0.55%	0.65%	0.26%	0.77%
Aware Super	1.29%***	0.94%	0.55%	0.30%	-0.37%
Telstra Super	0.05%	0.12%	0.13%	-0.67%	-0.05%
Care Super	1.20%	0.51%	0.47%	-0.23%	-0.25%
AMP SS		-0.47%	-0.07%	0.42%	0.23%
ANZ SCS	-0.50%	-0.74%	-0.27%	-0.39%	0.14%
AERS	0.08%	-0.11%	-1.02%	-1.35%	-1.26%
AFS		0.23%	0.75%	-0.61%	-0.42%
Equip Super		-0.06%	0.33%	0.26%	0.96%
legalsuper		0.32%	1.00%	0.75%	2.97%
MLC Super	-0.30%	-0.26%	-0.19%	-0.16%	0.01%
NGS Super	1.26%**	0.62%	0.80%	1.02%	3.09%
REI Super	-0.46%	-0.78%	0.10%	0.10%	-0.13%
Team Super	-0.05%	-0.03%	0.52%	0.61%	-2.41%
Vision Super	1.07%**	0.70%	0.76%	0.19%	0.54%
Weighted average	1.18%	0.63%	0.79%	0.20%	0.54%

Notes: ***Significant at 1%, **Significant at 5%, *Significant at 10%. AMP, AFS, Equip, and Legal Super have less than 13 years of return data available. Because the PME benchmark requires a three-year window to generate the first benchmark return, we are unable to report full 10-year CAPM alpha results for these funds.