



Australian Government
Productivity Commission

Superannuation:
Assessing Efficiency
and Competitiveness

Supplementary Paper –
Investment performance:
Supplementary analysis

October 2018

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The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

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Investment performance: Supplementary analysis

Key points

- This paper sets out additional analysis of investment returns, fees and costs in the superannuation system, including now by asset class, which will inform the final inquiry report.
 - The paper also updates key investment performance results from the draft report. Notably, these updates have not materially changed the number of member accounts in underperforming funds and MySuper products.
- Data from the Commission's supplementary ('second chance') survey of funds indicate that system-level returns net of investment expenses were (on average) close to or above financial market indexes for most asset classes over the 10 years to 2017. These results suggest a slightly more positive picture of system performance than the draft report's system-level benchmarking (where APRA-regulated funds as a whole fell below their BP2 benchmark). The discrepancy is unsurprising given the survey data are subject to both survivor and selection bias relative to the APRA data.
- Consistent with the analysis of relative performance by segment set out in the draft report, not-for-profit funds (on average) reported higher net returns and lower average costs than retail funds in most major asset classes.
- At a system level, Australian funds (on average) achieved comparable returns to pension funds in other countries for most major asset classes. But Australian funds have relatively higher investment costs for some major asset classes, including equities and fixed interest.
- At the system level, there is a 190 basis point gap between benchmark and actual net investment performance. After adjusting for asset allocation, tax, and reported administration and investment expenses some differences remain in investment performance across the system. This unexplained component (of about 90 basis points) — the 'residual' — is not attributable to these factors and likely reflects a combination of asset selection (decisions within asset classes), unreported indirect expenses and measurement error.
 - There is 200 basis point gap in the relative outperformance of the not-for-profit and retail segments that cannot be explained by the above factors. Available data suggest that indirect investment expenses only account for about 10 basis points of this residual difference, implying the remainder is likely to be differences in asset selection (within asset classes) — the relative merit of individual investment decisions — or measurement error.

(continued next page)

Key points (continued)

- While asset allocation is the largest determinant of net returns, most of the variation across individual funds and MySuper products is in the residual (attributable to asset selection, measurement error, or unreported indirect investment expenses). There is some evidence that fund-level residuals are correlated with proxy measures for fund governance efficacy. These measures include fund readiness to introduce a MySuper product, how fast the fund transferred default members to the MySuper product and fund use of related parties.
- This attribution analysis suggests avenues for further investigation by regulators and researchers, but the results here can only indicate association (correlation, not causation).
- Performance of a fund or product against its own benchmark over rolling five-year periods is reasonably predictive of the longer-term historical performance for that fund or product if it is underperforming. However, many funds and products with relatively good historical long-term performance also experience runs of below-benchmark performance over short-term horizons.
- For the products for which data are available, those with high fees (over 1.5 per cent of assets) contain at least 3 million member accounts and \$200 billion in assets. Almost all of these products are in retail funds, and about half are legacy (closed) products.
- Ten retail funds account for over 90 per cent of advice fee revenue reported to APRA, which averaged \$341 per member for these funds in 2017. Other data suggest that retail funds with high advice fees also have trailing commissions, which are not captured in APRA advice fee data.
- Use of related parties is, on average, associated with higher administration and investment expenses. Retail funds in the funds survey are much more likely to use related parties for investment than not-for-profit funds, but too few large retail funds provided these data to draw firm conclusions. Notably, the Commission's analysis was reliant on survey data due to major gaps and quality problems with related-party expenses data collected by APRA.
- Analysis of new ATO data indicate that SMSF expense ratios are much more clearly related to fund size than fund age. Those SMSFs that remain small appear to continue to experience high costs and low returns on average, even well after establishment costs have been paid.
 - A quarter of SMSFs established in 2012 with under \$500 000 grew to exceed this size within five years. However, 42 per cent of established SMSFs (some 200 000 SMSFs that were older than 2 years in 2016) have under \$500 000 in assets, facing high costs and low returns on average.

This is one of three supplementary papers the Commission is issuing following the May 2018 release of the draft report, *Superannuation: Assessing Efficiency and Competitiveness*. It also follows the receipt of post draft report submissions and public hearings by the Commission. The Commission's draft inquiry report included two chapters (chapters 2 and 3), seven draft findings (2.1–3.4) and three draft recommendations (DRs 12, 13, 21) that directly related to investment performance and fees (box 1). Most of the draft report's recommendations would contribute to the system's improved long-term investment performance and lower fees over time.

This paper sets out analysis of investment returns, fees and costs, and related party expenses for the Australian superannuation system, building on the analysis in the Commission's draft

inquiry report and online technical supplements. (The other two papers cover economies of scale and the fiscal impacts of insurance in superannuation.)

Box 1 Draft findings and recommendations directly related to investment performance and fees

Draft findings

- The majority of members and assets in the system are in products that have performed reasonably well. But there is significant variation in performance within and across segments of the system which is not fully explained by differences in asset allocation ... (DF 2.1).
- The SMSF segment has broadly tracked the long-term investment performance of the APRA-regulated segment on average, but many smaller SMSFs (those with balances under \$1 million) have delivered materially lower returns on average than larger SMSFs ... (DF 2.2).
- There is wide variation in performance in the default segment that is not fully explained by differences in asset allocation ... (DF 2.3).
- There is wide variation in performance in the choice segment that is not fully explained by differences in asset allocation ... (DF 2.4).
- Despite regulator endeavour, there remain significant gaps and inconsistencies in how funds report data on fees and costs ... (DF 3.1).
- In aggregate, total fees have been trending down as a proportion of assets. ... The MySuper and SuperStream reforms have likely acted to reduce fees. ... While dispersion of product-level fees has decreased over the past decade, there remains a persistent 'tail' of relatively high-fee (mainly for-profit) choice products ... (DF 3.2).
- Reported costs for SMSFs have increased over recent years. ... Costs for low-balance SMSFs are particularly high, and significantly more so than APRA-regulated funds. These high costs are the primary cause of the poor net returns experienced by small SMSFs on average ... (DF 3.3).
- Higher fees are clearly associated with lower net returns over the long term ... (DF 3.4).

Draft recommendations

- The Australian Government should legislate to extend MySuper regulations limiting exit and switching fees to cost-recovery levels to all new members and new accumulation and retirement products (DR 12).
- The Australian Government should require superannuation funds to clearly inform, on an annual basis, all members who are subject to trailing financial adviser commissions ... (DR 13).
- ASIC should ... review exit and switching fees faced by existing members, with a focus on whether these fees are related to the underlying performance of the product, and whether they unreasonably impede members moving to products that better meet their needs. (DR 21).

The analysis detailed in this paper addresses the following questions.

- Does the superannuation system deliver higher returns to individual asset classes compared to financial market indexes and pension funds in other countries? Are there differences by segment?

-
- Do differences in asset allocation, fees/expenses and asset selection (investment decisions within asset classes) explain the performance of the system, segments and funds?
 - Is longer-term investment underperformance relative to benchmark portfolios apparent over shorter time periods (at the fund and MySuper product level)?
 - Is the ‘tail’ of high-fee products concentrated in specific parts of the system?
 - Are high financial advice and administration fees concentrated in specific parts of the system?
 - Are there differences by segment in investment management costs at an individual asset-class level? Do Australian funds pay higher costs than in other countries?
 - Do funds using related parties for administration or investment incur higher expenses?
 - Are net return estimates for self-managed superannuation funds (SMSFs) biased by the way returns are calculated?
 - Do expenses for individual SMSFs fall over time and/or do net returns rise? If so, is this driven by growth in SMSF balances over time?

In addressing these questions, the Commission has undertaken the following analysis as detailed in this supplementary paper:

- comparator analysis (including against international data) that goes beyond what was published in the draft report
- attribution analysis (decomposition and thus attribution of differences in investment performance), to better understand the drivers of differences in investment performance across system
- new analysis in other areas (including fees, related parties and SMSFs)
- an update on the calculation of benchmark portfolios, and thus on the distribution of investment performance.

The paper draws on new and existing data obtained from regulators and research firms, as well as data obtained through the Commission’s supplementary ‘second chance’ survey of superannuation funds (box 2). While the Commission has endeavoured to obtain high-quality data, this has not always been feasible. As such, some of the analysis in this paper may be subject to the uncertainty inherent in small sample sizes or potential misreporting. Where this is the case, caveats have been included alongside the results.

This is a technical paper and as such the analysis presented is of a factual nature. Material from the paper will inform the findings and recommendations in the Commission’s final report.

The Commission is releasing this paper ahead of its final report. Inquiry participants may provide new and directly relevant evidence (of a method or data nature) related to the analysis. Any such evidence must be submitted no later than **Friday 9 November 2018** in

order that it can be considered by the Commission in finalising its report to the Australian Government by the end of the year.

Unless otherwise specified, all dollar values in this paper are nominal. References to funds regulated by the Australian Prudential Regulation Authority (APRA) pertain to those funds with more than four members.

Box 2 About the supplementary ‘second chance’ survey

In order to fill gaps in the evidence base from the funds survey undertaken prior to its draft report (a product of poor response rates), the Commission undertook a supplementary ‘second chance’ survey of APRA-regulated superannuation funds covering a subset of the questions asked in the first survey. These related to fund assets and returns by asset class; investment management fees by asset class; and fund expenses by expense category and by source (outsourced to related parties, to non-associated providers, or provided in-house).

The Commission’s survey prior to the draft report invited 208 funds to participate, and this was used as the basis for the supplementary survey. Subsequently, 22 funds were ‘screened out’, because they had either wound up or had commenced that process.

The Commission received supplementary survey responses from 136 of a possible 186 funds. The overall response rate represented over 90 per cent of accounts and assets in APRA-regulated funds, and the response rate was similar for retail and not-for-profit funds. The composition of the not-for-profit funds (that is, the split between industry, public sector and corporate funds) that responded to the survey was similar to the population of not-for-profit funds as a whole. Industry funds make up 54 per cent of responding not-for-profit funds, and account for around 80 per cent of not-for-profit accounts and 55 per cent of assets.

Responses to specific questions varied in quality — for example, 12 of the 136 funds provided no information about expenses. Results of the supplementary survey are presented throughout this paper, and a list of responding funds is presented in the attachment. Because the data were collected on an in-confidence basis, survey results for individual identified funds are not published.

During the course of the supplementary survey, a number of retail funds indicated that data are not usually collected or reported in the format (suited to performance attribution analysis) that was requested by the Commission. In order to obtain survey data that are broadly representative of the super system as a whole, the Commission agreed that, for 12 retail funds where fund-level data were not available, those funds could provide product- or option-level data that were broadly representative of within-asset-class performance at the fund level.

All data reported from the supplementary funds survey should be interpreted cautiously because:

- **some funds have made simplifying assumptions to provide data in the form requested by the Commission (for example, some funds indicated that for years prior to 2013-14 they did not have data on assets or returns that exactly matched to APRA’s asset-class classification)**
- **there are relatively few observations for some questions, particularly for earlier years and related party expenses**
- **some funds may have interpreted survey questions differently.**

Investment returns

The analysis of investment returns in the draft report (chapter 2 and technical supplement 4) has been extended to include an analysis of supplementary fund survey data (returns by asset class, relative to indexes and other countries), attribution analysis through a decomposition of the drivers of performance relative to benchmark portfolios, and an analysis of net returns relative to benchmark portfolios over shorter time periods.

Benchmark portfolios are weighted averages of financial market index returns, with the weights determined by the asset allocation of the unit under analysis (system, segment, fund or product). Two main types were used in the draft report: benchmark portfolio 1 (BP1) consists only of listed indexes, and benchmark portfolio 2 (BP2) consists of a combination of listed and unlisted indexes. Unless otherwise specified, all analyses in this paper are based on BP2. Investment fees, administration fees and taxes are included or excluded in constructing the benchmark depending on the specific analysis.

In response to feedback, the Commission has made some minor changes to the construction of the benchmark portfolios since the draft report — explained towards the end of this section. These led to some changes to the benchmarking results, mostly at the fund level. Notably, these updates have not materially changed the number of member accounts in underperforming funds and MySuper products.

Asset-class returns benchmarking to financial indexes

Does the superannuation system deliver higher returns to individual asset classes compared to financial market indexes? Are there any differences by segment?

In its supplementary funds survey, the Commission asked funds to provide historical returns at an asset class level for each year over the period 2008 to 2017, gross of tax but net of all investment fees and costs (paid by the fund at an asset class level). This information was also requested in the initial funds survey, but response rates were disappointing and few funds provided a complete set of data on net returns by asset class over time.

While response rates were higher for the supplementary survey, not all funds were able to provide a full set of the data requested:

- 12 retail funds provided net returns data at an option level rather than at a whole-of-fund level (as noted in box 1)
- several funds were not able to distinguish between net returns from Australian and international fixed income assets
- a number of funds provided net returns for total property and/or infrastructure without a listed/unlisted breakdown.

The analysis has been split into two parts. For the analysis at the system or segment level, the whole dataset is utilised, and weighted averages are calculated using the value of assets

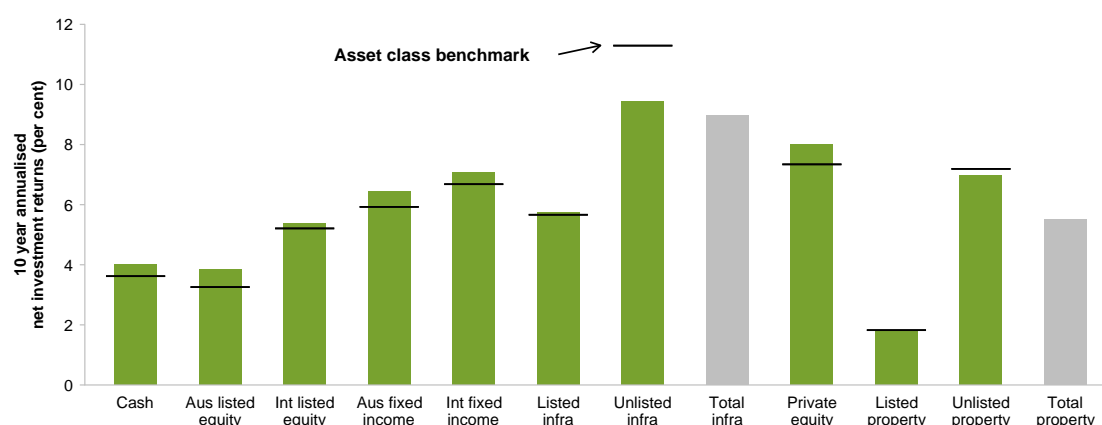
invested in a particular asset class. For the analysis at a fund level, a subset of years (2011 to 2017) is used to increase the number of data points available and the distribution of reported returns is unweighted.

The survey data were compared to the listed and unlisted indexes used in the construction of benchmark portfolios (as documented in technical supplement 4 and updated as described below). This was done gross of tax and net of investment fees.

System and segment comparisons

At a system level, funds on average perform close to or above benchmarks in all asset classes except for unlisted infrastructure (figure 1).

Figure 1 Returns exceed benchmarks in most asset classes
System returns weighted by assets invested in the corresponding asset class, 2008–2017^a



Sources	Supplementary funds survey and financial market index data (various providers).	
Benchmark	Asset-class benchmarks as per BP2.	
Coverage	In 2008, the funds in this figure represented up to 66% of total assets and 69% of member accounts of APRA-regulated funds. In 2017, the funds in this figure represented up to 86% of total assets and 87% of member accounts of APRA-regulated funds.	
Survivor Bias	Yes.	Selection Bias Yes.

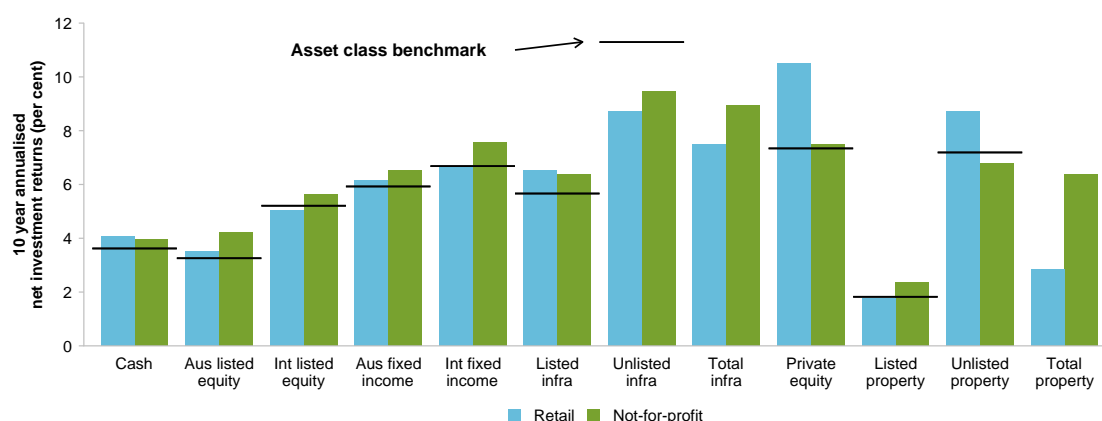
^a Annualised average returns for each asset class were calculated by taking the yearly system average return (weighted by fund assets) and calculating the geometric mean over the 10 year period. No benchmark is available for total (listed and unlisted) property and total infrastructure. The listed property benchmark is a weighted combination of domestic and international listed property, as described in technical supplement 4. Observations where funds did not split fixed interest into Australian and international categories have been excluded.

These results suggest a slightly more positive picture of system performance than the system-level benchmarking in the draft report (where APRA-regulated funds as a whole fell below their BP2 benchmark), which was based on APRA data. The discrepancy is unsurprising

given the survey data are subject to both survivor bias (funds which were wound up during the period are not represented in the survey sample) and selection bias (poorer performing funds being less likely to volunteer data in the survey or only partially volunteering data for some years). The implication is that funds choosing not to participate in the survey were more likely, on average, to underperform their benchmarks.

Consistent with the relative performance by segment analysis set out in the draft report, the data also suggest that not-for-profit funds on average outperformed retail funds in key asset classes (figure 2). Over the period, not-for-profit funds recorded a return of 4.2 per cent for Australian listed equity (compared to 3.5 per cent for retail funds) and 5.6 per cent for international listed equity (compared to 5.0 per cent for retail funds). Not-for-profit funds also outperformed retail funds on average in fixed income (both Australian and international), unlisted infrastructure and listed property. Retail funds outperformed not-for-profit funds on average in cash, private equity and unlisted property, though the latter two results are based on data from a relatively small selection of retail funds (6 and 19 funds respectively).

Figure 2 Not-for-profit returns exceed retail returns in most asset classes
Segment returns weighted by assets invested in the corresponding asset class, 2008–2017^a



Sources	Supplementary funds survey and financial market index data (various providers).		
Benchmark	Asset-class benchmarks as per BP2.		
Coverage	In 2008, the funds in this figure represent up to 66% of total assets and 69% of member accounts of APRA-regulated funds. In 2017, the funds in this figure represent up to 86% of total assets and 87% of member accounts of APRA-regulated funds.		
Survivor Bias	Yes.	Selection Bias	Yes.

^a Annualised average returns for each asset class are calculated by taking the yearly system average return (weighted by fund assets) and calculating the geometric mean over the 10 year period. No benchmark is available for total property and total infrastructure. The listed property benchmark is a weighted combination of domestic and international listed property, as described in technical supplement 4. Observations where funds did not split fixed interest into Australian and international categories have been excluded.

The Commission's analysis is focused on performance relative to indexes, not the absolute level of returns. However, some of the absolute returns in the survey data may not be indicative of returns over different time horizons. For example, funds in the survey reported higher returns on cash than on Australian listed equities (on average), but this would be driven by low or negative returns on equities during the Global Financial Crisis at the start of the time period. Other results appear to be driven by small sample sizes. For example, not-for-profit funds reported materially higher average returns for total property than retail funds, even though retail funds reported higher performance for unlisted property. This result mostly reflects that most property investment by not-for-profit funds is unlisted, whereas most retail fund property investment is listed. Only a handful of retail funds provided data for unlisted property returns.

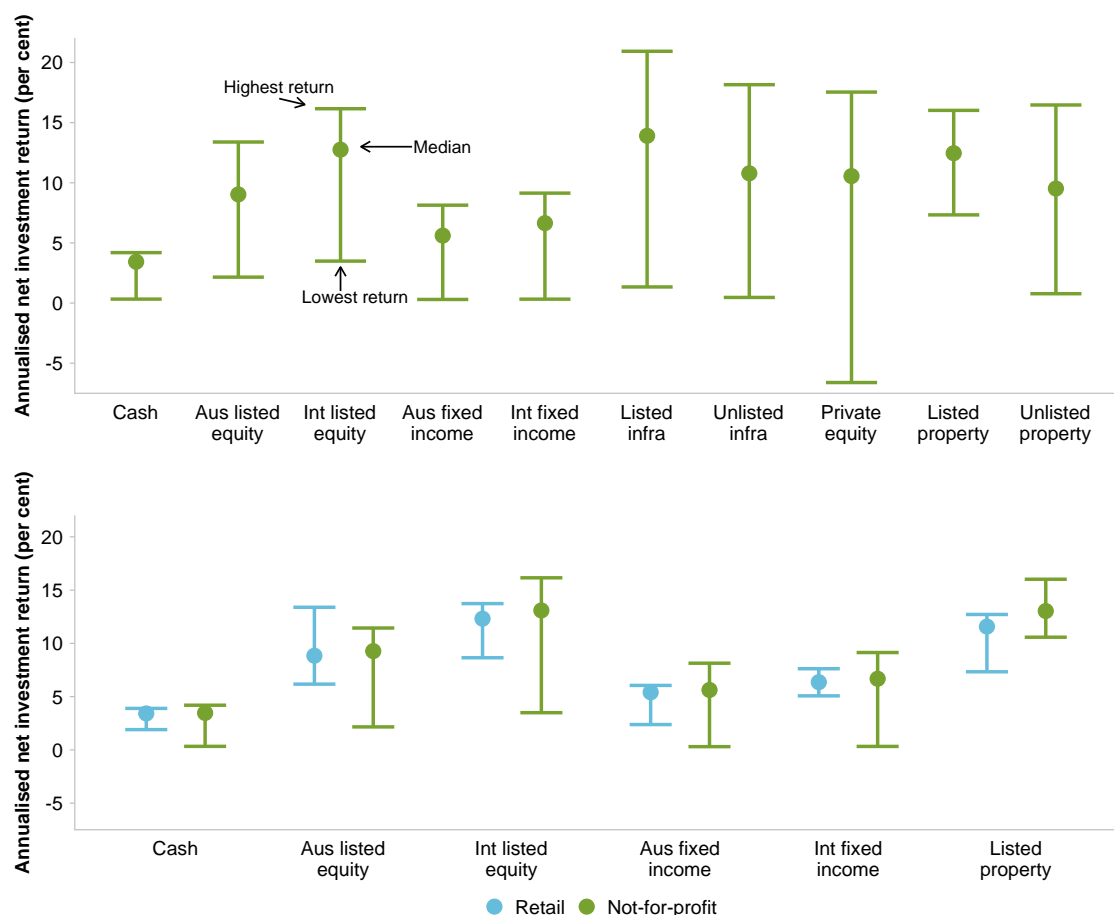
A caveat on these results is that some of the specific indexes used to benchmark each asset class are subject to a range of assumptions (set out in technical supplement 4 and below), and thus, while the best benchmark of what is available, may not be an ideal measure for all funds.

Fund-level distributions

An analysis of the distribution of fund-level returns requires data from each fund for the full period so that all funds in the sample have faced the same set of economic conditions. As a number of funds did not report returns prior to 2011 thus, to maximise the sample size for this analysis, data for 2011 to 2017 have been used instead of the full 10-year period. The asset class benchmarks are also calculated for 2011 to 2017.

The distribution of reported returns for cash and fixed income (both Australian and international) exhibit relatively low variance across funds, while listed infrastructure and private equity display a higher variance over the period (figure 3). A significant percentage of assets were held in funds that performed below the benchmark for international equity (77 per cent of assets below the benchmark), unlisted infrastructure (78 per cent) and both listed and unlisted property (95 per cent and 52 per cent respectively) (figure 4).

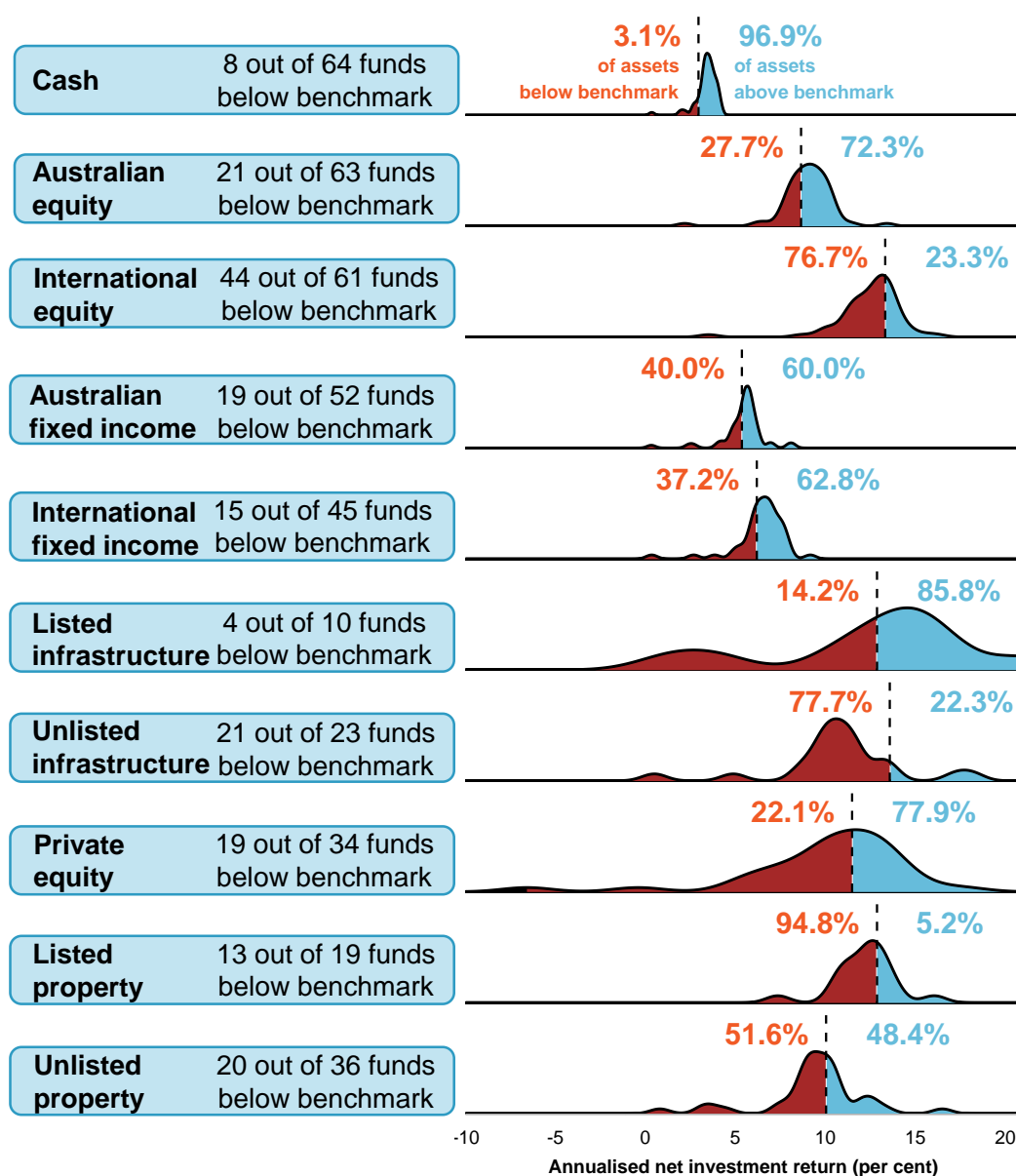
Figure 3 Variation in returns by asset class, 2011–2017^a



Sources	Supplementary funds survey and financial market index data (various providers).
Coverage	In 2017, the funds in this figure represent up to 66% of total assets and 62% of member accounts of APRA-regulated funds.
Survivor Bias	Yes.
Selection Bias	Yes.

^a Annualised returns are calculated by calculating the geometric mean over the period for each fund. Only asset classes with a sufficient number of observations were used for the comparison between retail and not-for-profit funds. Observations where funds did not split fixed income into Australian and international categories have been excluded.

Figure 4 **Distribution of returns by asset class, 2011–2017^a**



Sources	Supplementary funds survey and financial market index data (various providers).
Benchmark	Asset-class benchmarks as per BP2.
Coverage	In 2017, the funds in this figure represent up to 66% of total assets and 62% of member accounts of APRA-regulated funds.
Survivor Bias	Yes.
Selection Bias	Yes.

^a The dashed line is the asset class index over the period. The density plots are a measure of the distribution of returns at the fund level — they are not weighted by assets. The height of the plots indicate the number of funds that obtained a return of that value (a similar interpretation to a histogram). The percentage of assets that are below the benchmark is calculated by dividing the assets from funds below the benchmark by the total assets invested in an asset class. Observations where funds did not split fixed interest into Australian and international categories have been excluded.

Within segments, a larger proportion of retail fund assets fall below the benchmark compared to not-for-profit fund assets, in all asset classes excluding listed infrastructure and private equity (table 1). However, a caveat is that some asset classes have a very small number of retail funds than not-for-profit funds reporting their returns over the period 2011 to 2017, and thus the data may not be fully representative of all retail funds in the system.

Table 1 Distribution of returns by asset class, 2011–2017

Asset class	<i>Per cent of assets below benchmark (within the segment)</i>	
	<i>Retail</i>	<i>Not-for-profit</i>
Cash	3	3
Australian listed equity	45	11
International listed equity	96	62
Australian fixed income	61	12
International fixed income	61	11
Listed infrastructure	10	50
Unlisted infrastructure	100	77
Private equity	1	25
Listed property	100	28
Unlisted property	100	50

^a In 2017, the funds in this table represent up to 66% of total assets and 62% of member accounts of APRA-regulated funds. The asset-class benchmarks are as per BP2. Observations where funds did not split fixed interest into Australian and international categories have been excluded. The total survey coverage indicates the number of retail and not-for-profit funds providing usable data on returns by asset class, but not all of these funds are represented in this table. Only funds that provided returns data for all years between 2011 and 2017 for an asset class are included in this analysis.

Sources: Supplementary funds survey and financial market index data (various providers).

Asset-class returns benchmarking to other countries

Does the Australian superannuation system deliver higher returns to individual asset classes compared to pension funds in other countries?

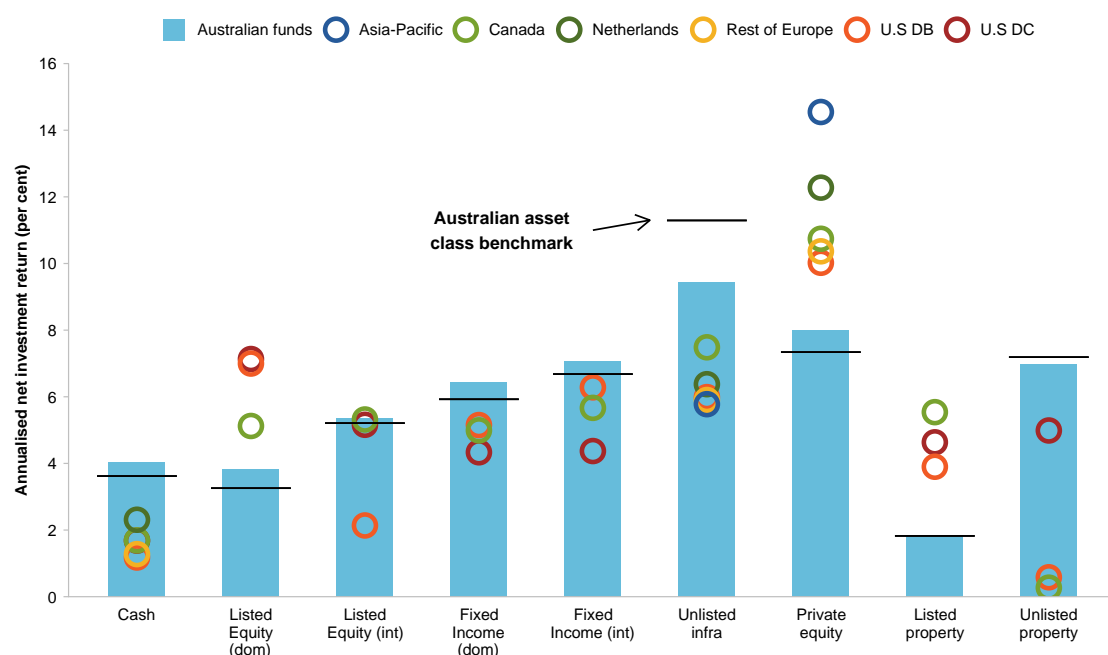
International comparisons using overall net returns are fraught due to differences in asset allocation, regulatory requirements and tax systems between countries. However, it is possible to abstract from these differences by comparing returns at an asset-class level (gross of tax but net of investment fees). The Commission identified this approach in its stage 1 study on How to Assess Competitiveness and Efficiency (PC 2016), and has only now been able to fulsomely undertake and present the analysis following the ‘second chance’ supplementary survey of funds.

The Commission has compared the reported asset-class returns of Australian superannuation funds over the period 2008–2017 to those of international pension funds over the period

2007–2016 (gross of tax but net of all investment fees).¹ The international data were purchased from CEM Benchmarking and published in technical supplement 4 to the draft report. The analysis in this paper updates the preliminary results in the draft report, which were based on the initial funds survey (with much lower coverage).

The comparison suggests that Australian funds performed better, on average, than their international peers in cash, fixed income (domestic and international), unlisted infrastructure and unlisted property (figure 5). The reverse is true for domestic listed equity (though this comparison is complicated by each country’s domestic equity market being driven by local economic conditions), private equity and listed property. While Australia outperformed international funds on average in unlisted infrastructure, it was still below its benchmark.

Figure 5 International comparison of asset class returns^a
Ten year returns^a



Sources	Supplementary funds survey, CEM Benchmarking data, and financial market index data (various providers).
Benchmark Coverage	Asset class benchmarks as per BP2. In 2017, the Australian funds in this figure represent up to 86% of total assets and 87% of member accounts of APRA-regulated funds.
Survivor Bias	Yes.
Selection Bias	Yes.

^a Australian returns are for 2008–2017 while other country returns are for 2007–2016. The solid line is the asset class benchmark for Australian funds over 2008–2017. The listed property benchmark is a weighted combination of domestic and international listed property, as described in technical supplement 4.

¹ Due to different data collection needs, the supplementary funds survey collected data for 2008–2017 rather than 2007–2016. While it may reduce comparability with CEM benchmarking data, the periods either side of the comparable time span (2006 and 2017) both had relatively high returns.

A key caveat, however, is that the time periods differ between the international data and the Australian data. Although both cover a 10-year period with only a one-year difference, there is scope for different economic conditions to influence the comparison, in particular, since 2007 was immediately prior to the Global Financial Crisis (this could explain the difference in listed property returns between Australian and international funds). A further caveat, on all international comparisons, is that funds in different countries (or even individual funds within the same country) may report net returns using slightly different methods.

Investment performance attribution

Do differences in asset allocation, administration expenses, investment expenses and tax explain the performance of the system, segments and funds?

Several inquiry participants questioned whether the benchmarking analysis in the draft report led to valid and reliable results. Some pointed to the role of randomness in investment performance (for example, Anthony Asher, sub. DR151; Investment Analytics Research, sub. DR192) or noted that the ranking of individual funds' performance can be sensitive to the specific time period and economic conditions (NAB MLC Wealth, sub. DR174).

However, others supported the methodology, arguing that it removes much of the 'noise' from performance (Geoff Warren, sub. DR118) and that it is 'a definitive tool to identify where there is long-term underperformance in the system' (Australian Super, sub. DR150, p. 1). Indeed, APRA (sub. DR204, p. 8) argued that the benchmark portfolios 'provide a useful reference point as RSE [Registrable Superannuation Entity] licensees continue to review and enhance their approach to investment performance assessment'.

To better understand the nature of investment performance, the Commission has undertaken an attribution analysis of historical net returns for the system, some segments, funds and MySuper products using confidential APRA fund-level data. The analysis decomposes net returns into several measured factors — asset allocation, tax and expenses — to attribute drivers of differences in investment performance, over the long term and relative to benchmark portfolios. What remains is a 'residual', which is likely to comprise asset selection (individual investment decisions within asset classes), unreported indirect expenses and measurement error.

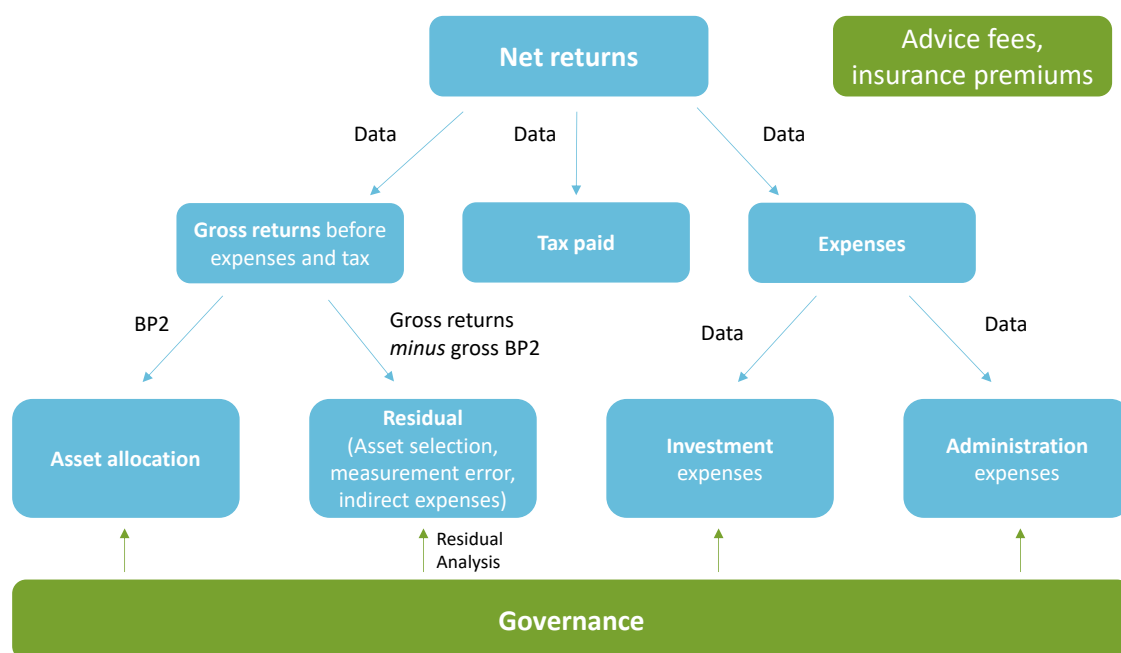
Components of the decompositions

The Commission has decomposed historical net returns into several components: asset allocation, tax, expenses² and a residual (figure 6). Asset allocation effects are calculated using the gross (of all fees and tax) return benchmark — that is, the return to a portfolio of

² Expenses incurred by funds are considered rather than fees because net returns in APRA fund-level data are calculated using expenses. However, fees are used in the MySuper product decompositions.

market indexes. Tax and expenses are calculated using APRA or SuperRatings data, and then subtracted from the gross return benchmark.

Figure 6 **Attribution analysis: conceptual decomposition of net returns**



The residual is the component of net returns that remains after the above factors have been subtracted. It is equivalent to the difference between the actual *gross* return for the unit of analysis (from APRA or SuperRatings data) minus the *gross* return benchmark.

There are several potential drivers of the residual. The primary candidate is asset selection within asset classes, which in this context can be thought of as deviations in gross investment performance from the market average within each asset class. This will inherently vary by fund depending on specific investment strategies, selected asset holdings and choice of investment managers. In short, it reflects how well a fund is doing at securing exposure to an asset class, including via its intra-asset class investment strategy and the investment decisions of fund managers within those sub-classes (including for direct asset holdings).

The residual could also reflect measurement errors, including inaccuracies in the Commission's benchmarking assumptions and data sources. For example, the asset allocations used in the benchmark may not be completely representative for each individual fund. The residual may also include the effect of indirect expenses which are implicitly captured in returns, but not explicitly captured in expense data. For example, indirect investment expenses are embedded in APRA data on gross returns, but are not separately disclosed as expenses.

Importantly, the residual does not include anything which is not captured in the returns data, such as most advice fees and insurance premiums. Any fees that are not reflected in the underlying administration and investment expense data similarly cannot be used to explain the differences in performance across segments and funds in the Commission's analysis.

As suggested in the figure, all components of the decomposition — not just the residual — will likely reflect a fund's overall governance, as a driver of the key intangibles such as trustee and investment team calibre, investment process and management of conflicts. Therefore, full identification of the amount by which governance affects net returns is impossible with the data available. As a 'next best', the Commission has considered how proxy indicators of fund governance efficacy may relate to fund-level residuals.

Attribution methodology

The Commission has conducted two types of decomposition in undertaking attribution analysis of investment performance. Absolute performance decompositions take a given unit of analysis (system, segment, fund or product) and distinguish the components of the net returns for that unit of analysis, where:

$$\text{Net return} = \text{benchmark asset allocation} - \text{administration expenses} - \text{investment expenses} - \text{tax} - \text{residual}$$

Relative outperformance decompositions decompose the total **out**performance gap between segments and funds. In the case of the segment-level relative outperformance decomposition, the **out**performance gap is calculated by subtracting the outperformance of one segment from the outperformance of the other.³ Specifically, it is defined as:

$$(\text{Not-for-profit actual performance} - \text{Not-for-profit benchmark}) - (\text{Retail actual performance} - \text{Retail benchmark})$$

Which is decomposed as:

$$\text{Outperformance gap} = \text{administration expense gap} + \text{investment expense gap} + \text{tax gap} + \text{residual gap}$$

The interpretation in this case is that the larger the total outperformance gap, the better the not-for-profit segment is performing compared to the retail segment, after accounting for differences in asset allocation.

³ Most retail funds have a negative outperformance gap, as the retail segment returns are below their benchmark. Subtracting this from the not-for-profit outperformance gap leads to a larger total outperformance gap (subtracting a negative number from a positive number).

In terms of the components the outperformance gap is decomposed into, these also represent differences relative to benchmarks. For example, for the tax gap:

$$\text{Tax gap} = (\text{Not-for-profit actual tax} - \text{Not-for-profit tax in benchmark}) - (\text{Retail actual tax} - \text{Retail tax in benchmark})$$

The difference in asset allocation, while not a component of the relative outperformance decomposition as such, has been shown on relevant charts for information. Adding the difference in asset allocation to the outperformance gap yields the net returns gap between the segments.

In the case of fund-level relative outperformance decompositions, the total **out**performance gap is the fund's **out**performance minus system outperformance. Funds with a large and positive total outperformance gap are performing better than the system as a whole, taking into account differences in asset allocation. And funds with a negative outperformance gap are performing worse than the system, even when accounting for differences in asset allocation.

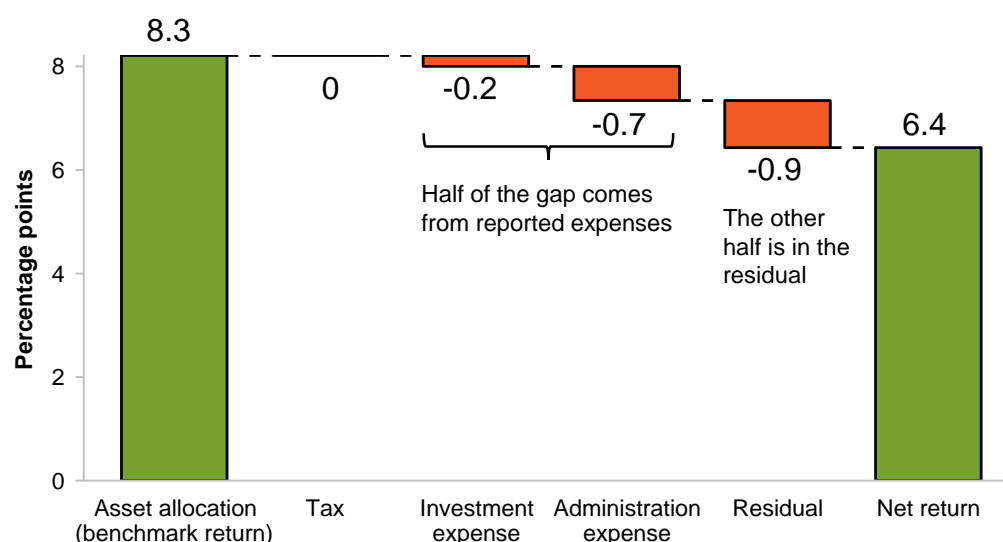
The Commission has used simple arithmetic averages for the decomposition analysis because geometric averages (time-weighted measures) are not linear functions of inputs and thus pose computational difficulties for decomposing attribution quantities. However, the discrepancies are likely to be very small — so arithmetic averages provide a reasonable approximation.

The Commission has also conducted simple regression analysis on the fund-level residuals to explore potential correlations with various fund characteristics. While the correlations might suggest avenues of further investigation and analysis by regulators and researchers, the results here are associative — they can only indicate correlation, not causation.

Absolute performance decomposition: system

Over the 13-year period 2005–2017, investment and administration expenses collectively accounted for almost 100 basis points (1 percentage point) of gross returns for the APRA-regulated system as a whole, while tax had no impact (figure 7). The residual is large, accounting for a further 90 basis points of returns, though some of this likely comprises indirect investment expenses — that is, costs which are deducted as an investment fee by investment managers (at the underlying asset level) from the returns that funds earn, but are not reported in APRA data.

Figure 7 Absolute performance decomposition: system level
2005–2017



Sources	PC analysis of APRA confidential data and financial market index data (various providers).
Benchmark Coverage	System BP2. All APRA-regulated funds. Excludes exempt public sector superannuation schemes, eligible rollover funds and insurance-only superannuation funds.
Survivor Bias	No.
Selection Bias	No.

SuperRatings data (on fees charged on superannuation products) suggest that indirect investment expenses were in the vicinity of 40–50 basis points in 2018. To the extent this is representative of the overall period, this means that indirect investment expenses could likely explain roughly half of the residual.⁴ This would also mean that investment expenses in total are likely to have a similar impact to administration expenses. However, this illustrative estimate does not account for differences in indirect investment expenses over time, though it would likely capture the effect of updated disclosure requirements (under the Australian

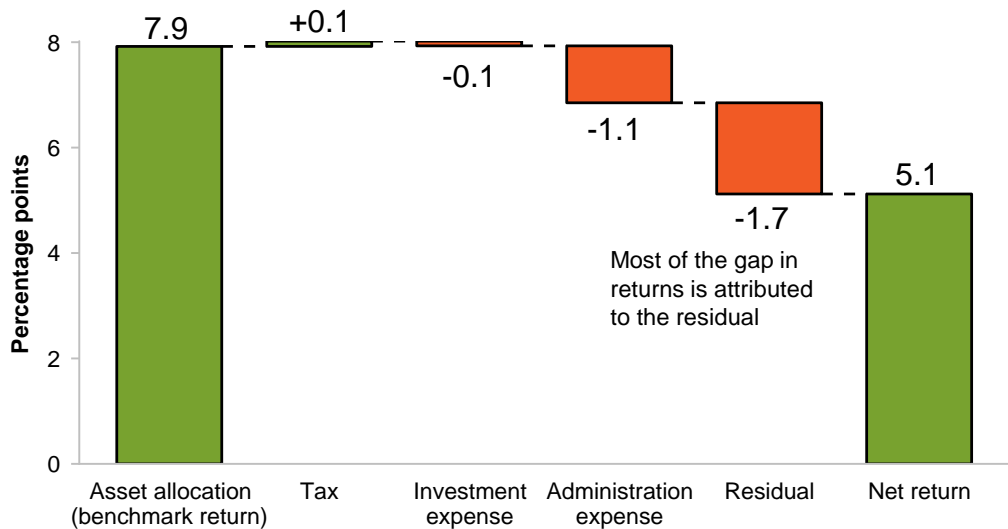
⁴ These figures are based on the median indirect investment fee for products in 2018, with 295 products represented. This is not full coverage of the system — other data sources may yield different estimates.

Securities and Investment Commission’s Regulatory Guide 97) on investment costs reported to SuperRatings.

Absolute performance decomposition: across segments

The retail segment appears to have deducted more from returns than the system average on the administration side (figure 8), while its average reported investment expenses appear to be less than for the system. One possibility is that retail funds have, on average, higher indirect investment expenses which would be bundled into the residual — itself much larger (in absolute terms) than for the system. However, SuperRatings data suggest this is not the case. In 2018, the median indirect investment fee for retail products was 33 basis points. Assuming these indirect investment expenses are representative (and ignoring the selection bias in SuperRatings data), this would leave the majority of the residual (about 137 basis points) unexplained.

Figure 8 **Absolute performance decomposition: retail segment**
2005–2017

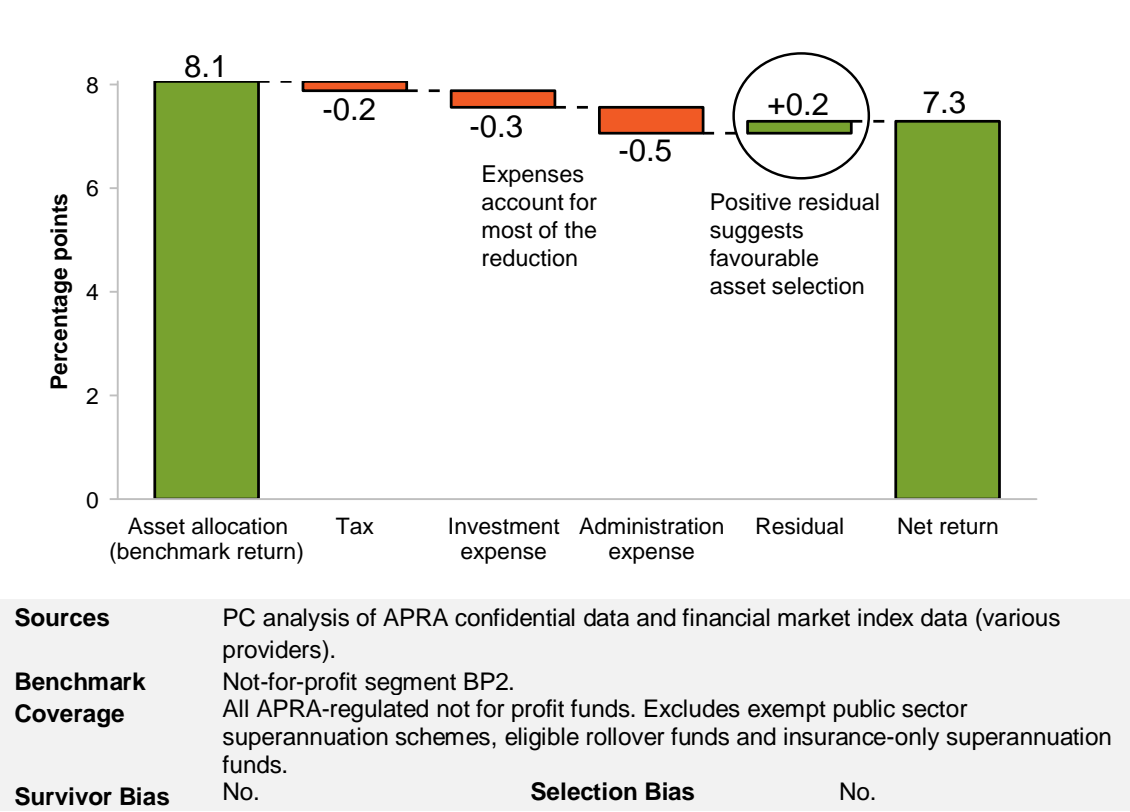


Sources	PC analysis of APRA confidential data and financial market index data (various providers).
Benchmark Coverage	Retail segment BP2. All APRA-regulated for profit funds. Excludes exempt public sector superannuation schemes, eligible rollover funds and insurance-only superannuation funds.
Survivor Bias	No.
Selection Bias	No.

The not-for-profit segment appears to deduct less than the system average from members in administration expenses, and slightly more through reported investment expenses (figure 9). The latter result could be due to greater use of in-house investment by large not-for-profit funds, meaning a higher proportion of investment expenses would be incurred directly. The

residual in this case is positive, meaning that the net effect of all of the uncaptured components (such as asset selection and indirect investment expenses) is positive. SuperRatings data suggest that the median indirect investment fee is about 43 basis points for industry funds, implying that other factors (such as asset selection) add to returns by well over 43 basis points.

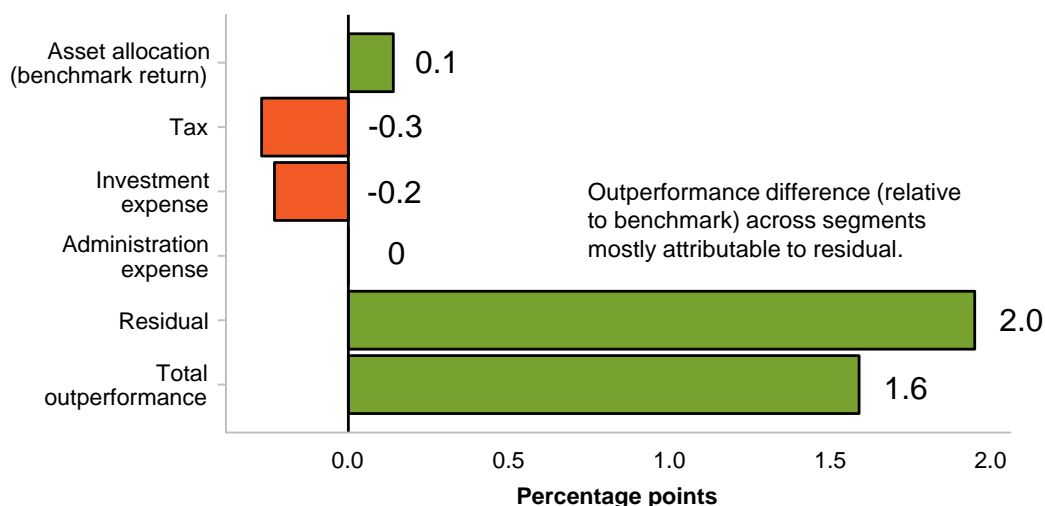
Figure 9 **Absolute performance decomposition: not-for-profit segment**
2005–2017



Relative outperformance decompositions: across segments

Figure 10 shows a relative outperformance decomposition of the not-for-profit segment against the retail segment. ‘Asset allocation’ refers to the difference in the benchmark return for the segments — in this case, the not-for-profit segment benchmark was approximately 10 basis points higher than the retail segment benchmark. As noted above, ‘tax’ (and analogously for investment expenses, administration expenses and the residual) refers to the difference between the not-for-profit segment’s tax and its benchmark tax, minus the retail segment’s tax and its benchmark tax.

Figure 10 **Relative outperformance decomposition: not-for-profit to retail funds**
2005–2017



Sources	PC analysis of APRA confidential data and financial market index data (various providers).
Benchmark	System BP2.
Coverage	All APRA-regulated funds. Excludes exempt public sector superannuation schemes, eligible rollover funds and insurance-only superannuation funds.
Survivor Bias	No.
Selection Bias	No.

About 30 basis points of the total outperformance gap can be explained by not-for-profit funds paying more tax compared to their benchmark tax than retail funds, on average.⁵ This does not necessarily mean that not-for-profit funds fare worse on tax management. It could be due to differences in the proportion of assets in the retirement phase between segments, or inaccuracies in the assumptions used to add tax to the benchmarks.

Not-for-profit funds have a larger negative outperformance gap in *reported* investment expenses compared to retail funds, on average. Administration expenses do not help explain the total outperformance gap. This is by construction, as the benchmarks use the actual administration expense paid by each segment.

Most notably, the difference in outperformance between the two segments is almost entirely driven by the difference in residuals (about 200 basis points). Based on SuperRatings data, this difference does not appear to be driven by differences in indirect investment expenses (10 basis points). Though SuperRatings data may not reflect the full extent of differences in

⁵ Despite the tax rates being tailored to the segments, the amount of tax paid can differ in the benchmark because of the returns being different in the benchmark. This is because the same tax rate (percentage of investment earnings) can have a different contribution to net returns in percentage points, depending on the level of benchmark returns it is applied to.

investment expenses, they nevertheless would suggest that the bulk of the difference in residuals is attributable to other factors, predominantly asset selection (within asset classes) and also, potentially, measurement error. This is consistent with results from the Commission's funds survey, where not-for-profit funds performed better than retail funds (on average) in most asset classes.

Absolute performance decompositions: across funds

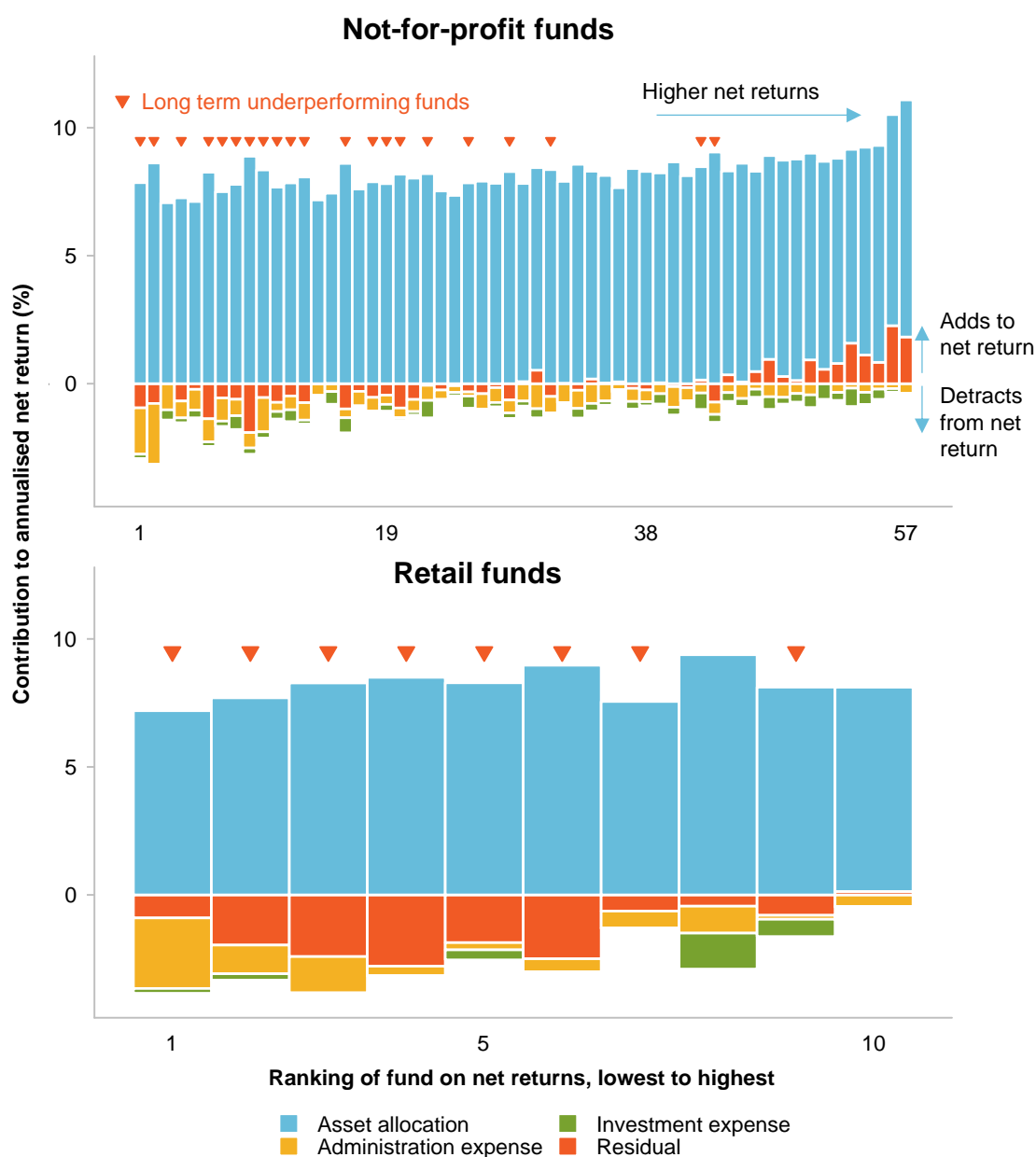
Figure 11 shows an absolute performance decomposition at the fund level, split by not-for-profit and retail funds. Each bar represents the outcomes for a particular fund. As in the draft report, only funds with MySuper products are included (representing 54 per cent of assets and 61 per cent of member accounts in all APRA regulated funds in 2017), due to the need to make asset allocation adjustments (since funds only reported their default asset allocation to APRA prior to 2014), as described in technical supplement 4. Parts of the bar which extend from zero and above are components which 'contribute' to net returns, while parts which extend below zero are components which 'subtract' from net returns. The bars have been ordered from left to right in terms of the total net returns delivered, so that the funds with the highest level of net returns are on the right. Long-term underperforming funds (those with a 13-year annualised net return below BP2 minus 0.25) are marked with an orange triangle. Further, as explained later in this paper, the Commission's fund level analysis is now on a gross of tax basis (and thus tax is not included in these decompositions).

Asset allocation is the largest driver of total net returns across the board, but is not the predominant source of variation across funds. Variation in fund-level residuals (a standard deviation of 90 basis points) is much larger than in fund-level asset allocation effects (standard deviation of 49 basis points) or administration expenses (47 basis points). Funds on the right hand side of the chart generally have lower expenses, though these do not appear to differentiate the best funds from the funds in the middle. The higher net returns of the funds on the right seem to be partly reflected in the larger positive residuals. By contrast, funds on the left typically have larger administration expenses, as well as substantial negative residuals. There are some funds that outperform their benchmark, but deliver relatively low net returns (in terms of the absolute level). However, most funds that outperform their benchmark tend to be towards the right hand side of the figure.

The role of indirect investment expenses cannot be reliably estimated at the fund level using SuperRatings data. Data on these costs are only available for 43 of the 67 funds in the fund-level analysis and, even where they exist, the coverage across each fund's assets is unclear. The Commission attempted a linear regression analysis of the fund-level residuals on fund indirect investment expenses; however, the results do not lead to a clear interpretation.⁶

⁶ In this analysis, each fund's indirect investment expense was computed as the median of the product indirect investment fees (for which the Commission had data). The results suggest that an increase of fund-level indirect investment expenses of 100 basis points is associated with a decrease in the residual by about 50 basis points. This result is not statistically significant.

Figure 11 **Fund-level absolute performance decomposition (total net returns)**
2005–2017



Sources	PC analysis of APRA confidential data and financial market index data (various providers).
Benchmark Coverage	Fund-tailored BP2. All APRA-regulated funds with a MySuper product in the dataset over the full period (54% of assets and 61% of member accounts in all APRA-regulated funds with a MySuper product in 2017). Over the whole system, the figure represents 67 funds, 27% of assets and 47% of member accounts in 2017.
Survivor bias	Yes.
Selection bias	Yes.

Relative outperformance decompositions: across funds

Figure 12 presents a fund-level relative outperformance decomposition (split by fund type) — where individual fund outperformance is compared against system outperformance. Since this figure compares outperformance gaps (which are calculated relative to benchmarks), differences in asset allocation are already controlled for. Administration expenses are also absent from this chart since, by construction, these expenses are the same in the performance data and the benchmarks (technical supplement 4). This figure provides a clear indication that residuals play a large role in differences in fund-level performance.

Fund-level residual analysis

While all components of the decomposition are ultimately a reflection of a fund's overall governance, without data on the factors that influence a fund's overall strategy in investment and administration it is impossible to fully distinguish the effects of governance. The Commission has undertaken exploratory analysis of fund-level residuals (on a gross of tax basis) to identify factors that may be driving the residuals. Factors considered include proxies of fund governance efficacy in an attempt to discern any distinguishable (albeit partial) effects of governance on performance.

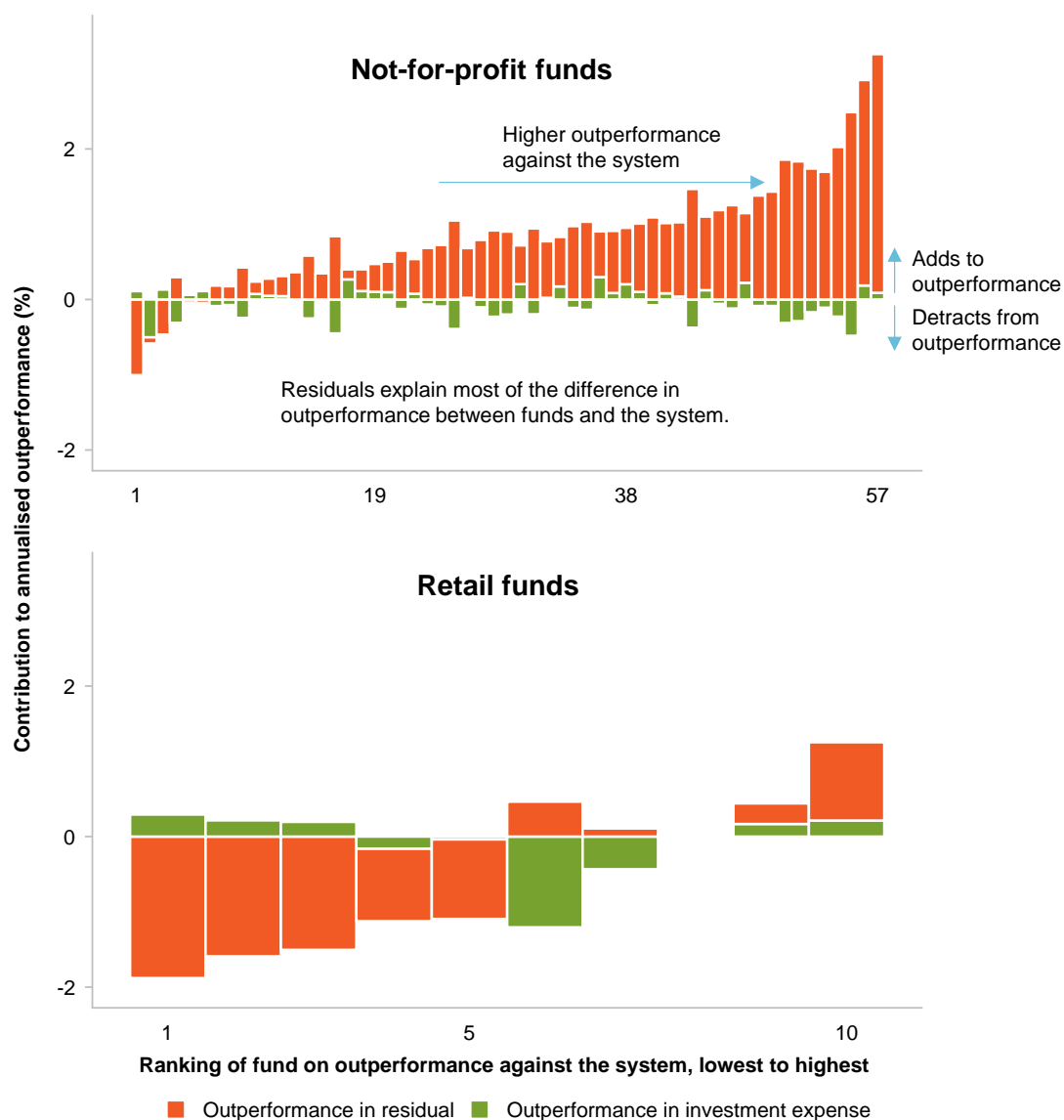
Small sample sizes, dependence of the residuals on the benchmarks, and the assumptions that come with the benchmarks preclude definitive answers on the underlying drivers of investment performance — hence, the analysis is exploratory.

As the residuals are constructed using fund-level benchmarks, the sample in these analyses consists only of funds that have a MySuper product (representing 54 per cent of assets and 61 per cent of member accounts in funds that had a MySuper product in 2017). Since the residuals are constructed with reference to benchmarks, they may include some degree of measurement error flowing from the specific assumptions and data sources used to construct the benchmarks (as set out in technical supplement 4 and below).

How long it took for funds to launch their MySuper products

The Commission has examined the length of time each fund took to launch a MySuper product. The MySuper regime was a well-known change in the policy environment with significant lead time of around 3.5 years, from December 2010 (when the government announced it would move to implement the regime) to July 2013. It can be reasonably assumed that funds had the same information, and while some funds may have required more preparation, given the lead time, all funds had the same opportunity to launch a MySuper product at the start of the regime. Variation in the time taken to launch a MySuper product could therefore arguably reflect variation in funds' capability and readiness to design a MySuper product, as well as the suitability of its precursor products to default members' needs.

Figure 12 **Fund-level relative outperformance decomposition (against system outperformance)**
2005–2017



Note	One retail fund approximately matched the system exactly on outperformance.		
Sources	PC analysis of APRA confidential data and financial market index data (various providers).		
Benchmark Coverage	Fund tailored BP2. All APRA-regulated funds with a MySuper product in the dataset over the full period (54% of assets and 61% of member accounts in all APRA-regulated funds with a MySuper product in 2017). Over the whole system, the figure represents 67 funds, 27% of assets and 47% of member accounts in 2017.		
Survivor bias	Yes.	Selection bias	Yes.

Table 2 presents the results of the regression analysis. While the sample sizes are small, there is likely to be a negative association — the more time it took to launch a MySuper product, the more negative the residual. In this table, each row corresponds to the estimated value of the residual given the number of months taken to launch a MySuper product, such that differences between the first row and another row correspond to the marginal effect of a longer launch time.

Pooling all the data together (treating the time taken as a continuous variable) suggests that there is an approximately 11 basis point decrease in the residual for each additional month it took a fund to launch a MySuper product (this is statistically significant). Using dummy variables for each month suggests a less clear-cut relationship. The average reduction in the residual for funds launching their MySuper product after three months is well over 100 basis points in this analysis, but only 8 basis points for funds that launched after six months.

These results do not appear to be clearly driven by the not-for-profit and retail segmentation. A number of not-for-profit funds launched their MySuper products late relative to other funds.

Table 2 Residuals and MySuper launch dates^a

Residuals calculated over 2005–2017

<i>Months taken to launch MySuper after the start of the MySuper regime^b</i>	<i>Pooled data model, averages (bp)</i>	<i>Dummy variable model, averages (bp)</i>	<i>Number of funds</i>	<i>Number of not-for-profit funds</i>	<i>Number of retail funds</i>
Within 1 month	-11	-7	33	33	0
1	-22	-25	8	8	0
2	-32	-37	2	2	0
3	-43	-125	3	0	3
4	-54	+39	4	4	0
5	-64	-119	10	5	5
6	-75	-15	5	3	2
7	-86	-56	1	1	0

^a The linear trend for the pooled data model and the 3 and 5 month dummies in the dummy variable model were all significant at the 95 per cent level. ^b The first row corresponds to the intercept, with each subsequent row adding the corresponding linear trend effect or dummy variable effect to arrive at the averages.

Source: PC analysis of APRA confidential data.

How long it took for funds to complete the transfer of default assets to their MySuper product

In principle, the length of time taken by a fund to complete the transfer of default assets to their MySuper product should be an indicator of the fund's ability to manage member flows and ability to move members into a low-fee default product in a timely manner. However,

APRA data only tracked the progress of funds on an annual basis. This frequency of reporting is not granular enough to identify any clear relationships.

The overwhelming majority of funds completed the transfer between 1 and 2 years after the MySuper regime started, leaving the data with little variation to extract a meaningful relationship. The average fund that completed the transfer after 1 year had a more positive residual, at 16 basis points higher than for funds that completed the transfer immediately (table 3). The associations for funds which completed their transfers after 2 years are distinctly negative (but not statistically significant). However, this result could also be, in part, a direct effect of the delay (to the extent that delay was associated with funds having administrative expenses higher than otherwise for a longer period of time, and thus lower residuals when measured over the whole period), rather than the quality of fund governance per se.

Table 3 Residuals and completion of MySuper default transfers
Residuals calculated over 2005–2017

<i>Years taken to complete MySuper default transfers after the start of the MySuper Regime^a</i>	<i>Non-linear model, averages (bp)</i>	<i>Number of funds</i>
Within 1 year	-28	15
1	-12	44
2	-70	5
3	-196	1
4	-179	2

^a The first row corresponds to the intercept, with each subsequent row adding the corresponding dummy variable effect to arrive at the averages.

Source: PC analysis of APRA confidential data.

Related parties

The Commission sought to identify if there was a distinguishable association between the use of related parties and the residual. This would be an indirect association, since any impact of using related parties on administration or reported investment expenses would already have been adjusted for directly (and not in the residual). It could arise where use of related parties is associated with higher indirect investment expenses, or with a fund's asset selection (within asset classes). To the extent that use of related parties reflects poorer governance, then poor governance may be correlated with residuals.

Table 4 presents regression analysis of residuals and calculated service provider expense ratios (expenses divided by total fund assets), based on APRA data. Expense ratios are used to avoid the problem that larger expenses are likely to be associated with larger funds. The results suggest that increased usage of related party service providers is associated with more negative residuals. The effects are statistically significant at the 90 per cent level. An increase in related party service provider expense ratios by 20 basis points (a relatively large

increase according to the standard deviation) is associated with a 20 basis point decrease in the residual. However, gaps and inconsistencies in the expenses data (especially expenses by related parties) means that these results could possibly be driven by measurement error.

Table 4 also shows the effects for the retail and not-for-profit segments, although it should be noted that small sample sizes make it difficult to separate out these effects. The results for retail funds may seem counterintuitive but are heavily skewed by the small sample of 10 funds, and in particular two funds that deviate significantly from the broader trend. The result for not-for-profit funds is consistent with the overall sample results, although the magnitude is diminished. None of the results by segment are statistically significant.

Table 4 Residuals and related party expense ratios
Residuals calculated over 2005–2017; related party data for 2017

<i>Coefficient</i>	<i>One standard deviation (bp)</i>	<i>All funds (bp)</i>	<i>Retail funds only (bp)</i>	<i>Not-for-profit funds only (bp)</i>
Increase in non-associated service provider expense ratio by 100 bp	27	-7	+113	-21
Increase in related party service provider expense ratio by 100 bp	23	-99*	+154	-44

* denotes significance at the 90% confidence level.

Source: PC analysis of APRA confidential data.

However, these results are subject to significant data limitations, particularly in terms of the quality and completeness of data on related party arrangements. This paper also considers related parties in the context of the supplementary survey results, set out later.

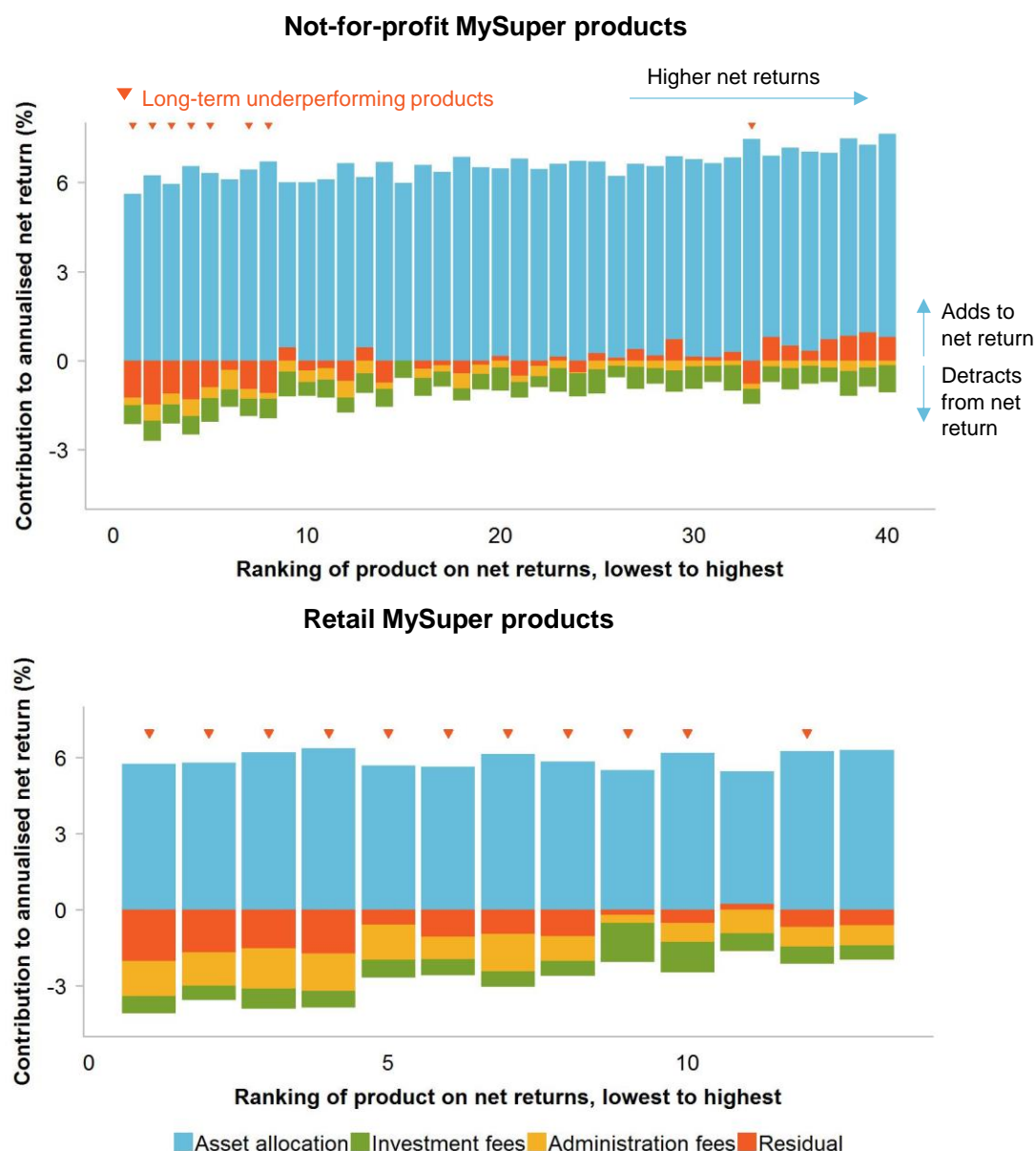
Fund size

Fund size is one possible reason why residuals differ across funds, since larger funds may have access to greater flexibility in how they implement their investment strategy and greater access to different types of assets. The Commission is examining fund size in a separate analysis of the relationship between returns and size. That analysis will be published in the supplementary paper on economies of scale.

Absolute performance decomposition: across MySuper products

Figure 13 shows an absolute performance decomposition for MySuper products. As with the fund-level analysis above, each bar represents the outcomes for a particular product (this analysis uses fees rather than expenses in the decomposition due to the availability of data). Parts of the bar which extend from zero and above are components which contribute to net returns, while parts which extend below zero are components which subtract from net returns. The bars have been ordered from left to right in terms of the total net returns delivered, so that the products with the highest net returns are on the right.

Figure 13 **MySuper product-level absolute performance decomposition^{a,b}**
2008–2018



Sources	PC analysis of SuperRatings, APRA and financial market index data (various providers).		
Benchmark Coverage	Product-tailored BP2. 53 of 105 current MySuper options covering 76% of member accounts and 75% of assets in all MySuper products as at June 2018.		
Survivor bias	Yes.	Selection bias	Yes.

^a Administration fees are calculated as those charged on a \$50 000 balance. ^b Current MySuper products were connected with pre-cursors with the support of SuperRatings where requested. 15 life-cycle products are represented by their largest 'balanced' (according to SuperRatings definitions) stage.

As with the fund-level analysis, asset allocation is the largest driver of total net returns across the board, but is not the predominant source of variation across products. Variation in the product-level residuals (a standard deviation of 73 basis points) is much larger than in product-level asset allocation effects (41 basis points), administration fees (41 basis points) or investment fees (19 basis points). Lower-performing products generally have materially higher administration fees and lower residuals.

Due to the way that fees are reported for MySuper products, this analysis is likely to largely capture most indirect investment fees — and thus any impact of unreported investment costs on the residual is likely to be much smaller than for the system, fund and segment level analyses above (which use fund-level data).

However, three important caveats apply to the MySuper attribution analysis.

- Tax cannot be separated out from the net returns because tax liabilities are not reported separately in the SuperRatings data. This means that part of the residual will include tax. Part of the variation in residuals is thus likely attributable to variation in tax liabilities stemming from different investment strategies, or variation in the underlying quality of tax management by funds.
- Net returns are already net of any implicit (indirect) asset-based administration fees that funds may charge. Data on these fees were not available. Netting out reported administration fees therefore means that any products with an implicit asset-based administration fee will have this fee netted out twice. This may explain some of the variation in administration fees.
- Given data limitations, unlisted infrastructure is not included in the benchmark asset allocation. This means that part of the residual may include the difference in performance of unlisted infrastructure compared to listed infrastructure.

At this stage, the Commission has not conducted a relative outperformance decomposition (between individual products and the average default segment performance). It would be unlikely to add much insight beyond the fund-level analysis of relative outperformance, and the combination of the default segment average and tailored benchmarking undertaken below.

Investment performance over shorter time periods

Is longer-term investment underperformance relative to benchmark portfolios apparent over shorter time periods (at the fund and MySuper product level)?

The Commission has analysed trends in investment performance over time, at both the fund and MySuper product level, to shed light on whether historical performance over shorter time periods can serve as an indicator of longer-term historical performance. This performance is measured relative to benchmark portfolios (BP1 and BP2) tailored to the asset allocation of each fund or product. This approach means that most fluctuations in

broader investment markets or economic conditions should be controlled for, even over the shorter term.

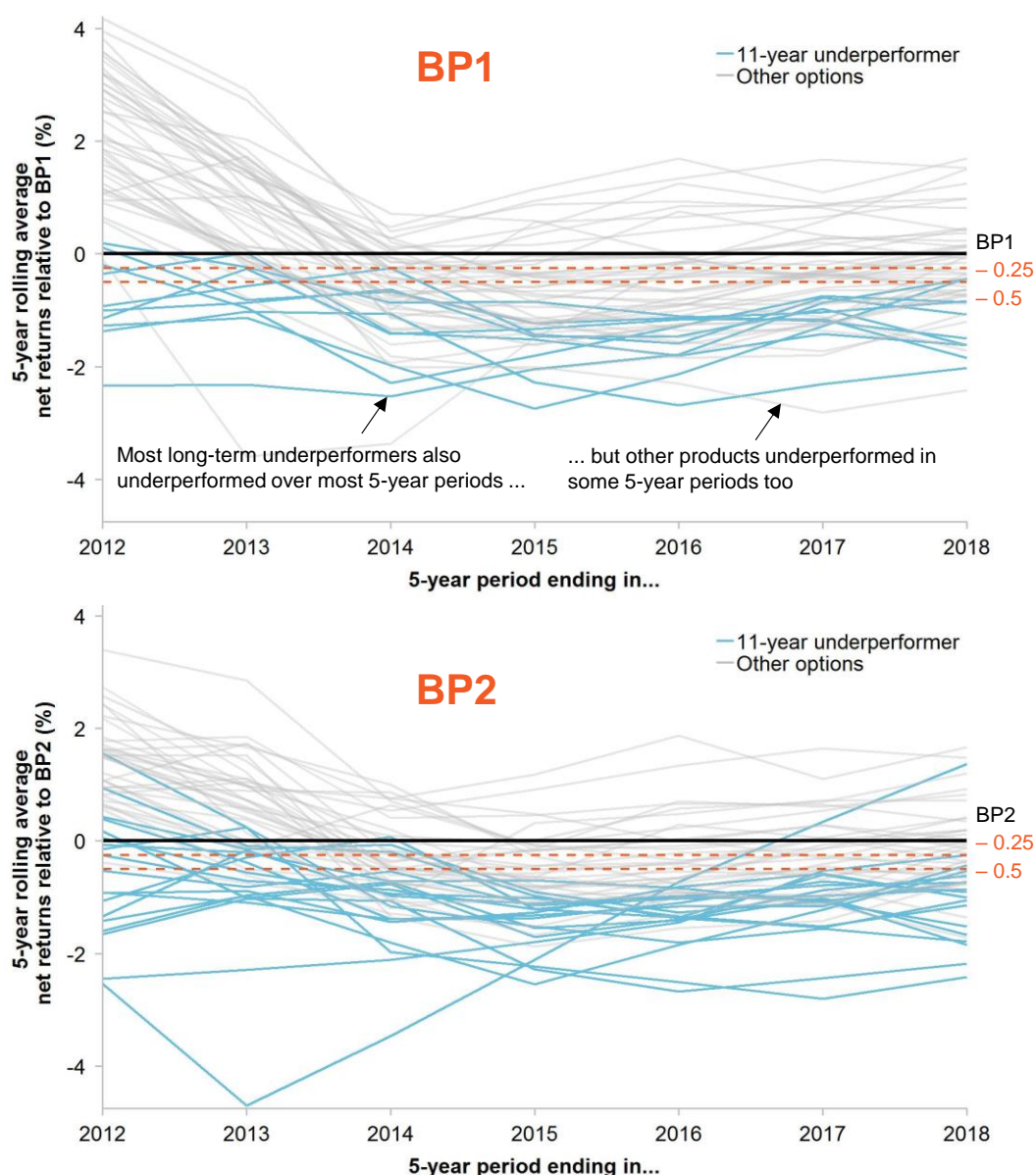
For MySuper products, there is a noticeable relationship between historical long-term underperformance and consistent short-term underperformance (measured as rolling five-year averages below BP1 or BP2 minus 25 basis points) (figures 14 and 15). For example, 68 per cent of MySuper products that underperformed over 11 years underperformed in over 80 per cent of the five-year rolling averages. This relationship is less pronounced at the fund level (figures 16 and 17). Only 45 per cent of funds that underperformed over 13 years underperformed in over 80 per cent of the five-year rolling averages. This is likely due to fund-level performance being the collective product of many different options that may vary in performance (and which may be established or wound up within the time period), creating more short-term ‘noise’.

For both MySuper products and funds, the converse hypothesis does not always hold — products and funds that performed relatively well over the long-term also often underperformed in rolling five-year periods. For example, 40 per cent of MySuper products and 30 per cent of funds that were better performing (above BP2 minus 25 basis points) over the longer time horizon (11 and 13 years respectively) underperformed in over half the five-year rolling average periods.

This means that while long-term underperformance is often comprised of many periods of short-term underperformance, not all funds that underperform in the short term go on to be underperformers in the longer term. Even funds with relatively good performance can experience runs of short-term underperformance against benchmarks.

This analysis has not been extended to individual choice products. As noted in the draft report, the available product-level data only cover about 13 per cent of assets in the choice segment, meaning there is likely to be strong selection (reporting) bias. As such, analysis over shorter-term horizons is unlikely to capture the worst choice options in the system.

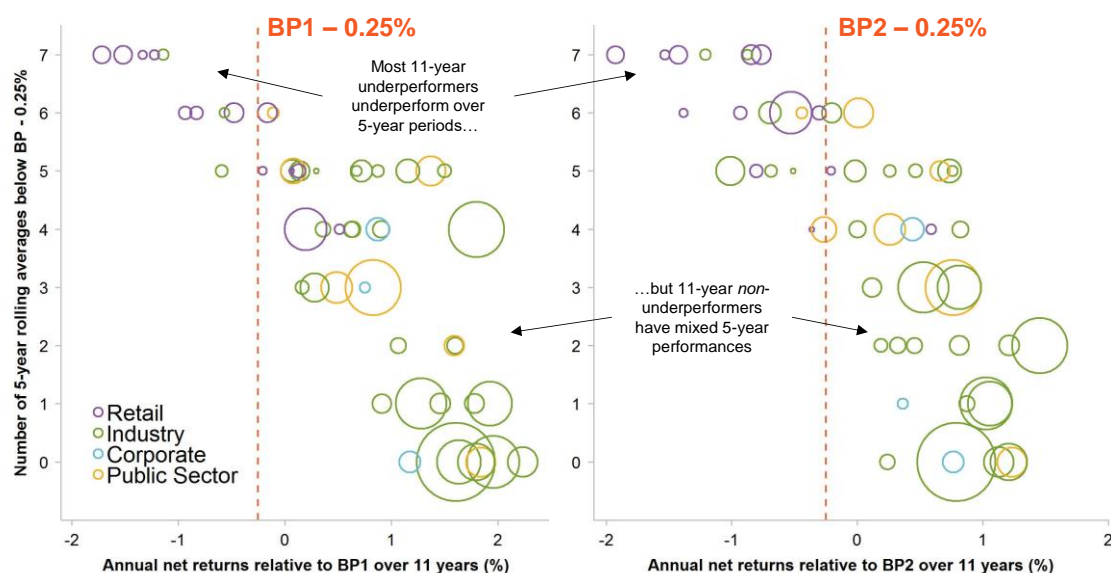
Figure 14 **MySuper product performance: rolling five-year averages^{a,b}**
2008–2018



Sources	PC analysis of SuperRatings, APRA, and financial market index data (various providers).		
Benchmark Coverage	Option tailored BP1 and BP2. 53 of 105 current MySuper options covering 76% of member accounts and 75% of assets in all MySuper products as at June 2018.		
Survivor bias	Yes.	Selection bias	Yes.

^a Current MySuper products were connected with pre-cursors with the support of SuperRatings where requested. 15 life-cycle products are represented by their largest 'balanced' (according to SuperRatings definitions) stage. ^b 11-year underperformance is defined as 25 basis points below a tailored BP. BP2 does not include unlisted infrastructure due to data limitations. Net returns are net of investment fees, taxes and implicit asset-based administration fees.

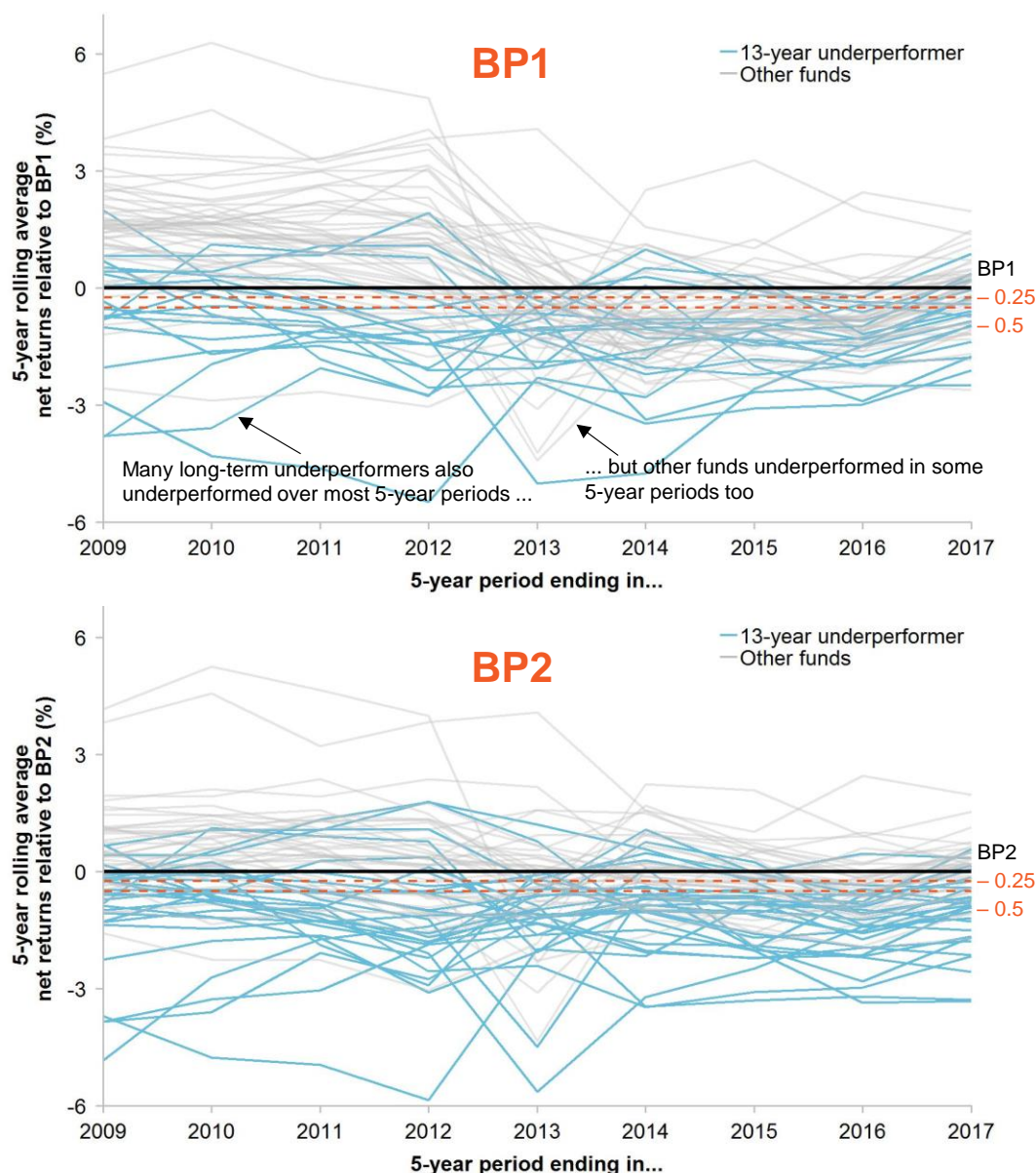
Figure 15 MySuper performance: rolling five-year averages^{a,b}
 Number of underperforming 5-year averages and 11-year performance
 2008–2018
 Size of circles indicates the size of each product's assets under management



Sources	PC analysis of SuperRatings, APRA, and financial market index data (various providers).		
Benchmark	Option tailored BP1 and BP2.		
Coverage	53 of 105 current MySuper products covering 76% of member accounts and 75% of assets in all MySuper products as at June 2018.		
Survivor bias	Yes.	Selection bias	Yes.

^a Current MySuper products were connected with pre-cursors with the support of SuperRatings where requested. 15 life-cycle products are represented by their largest 'balanced' (according to SuperRatings definitions) stage. ^b 11-year underperformance is defined as 25 basis points below a tailored BP. BP2 does not include unlisted infrastructure due to data limitations. Net returns are net of investment fees, taxes, and implicit asset-based administration fees.

Figure 16 **Fund (with MySuper product) performance: rolling five-year averages^a**
2005–2017

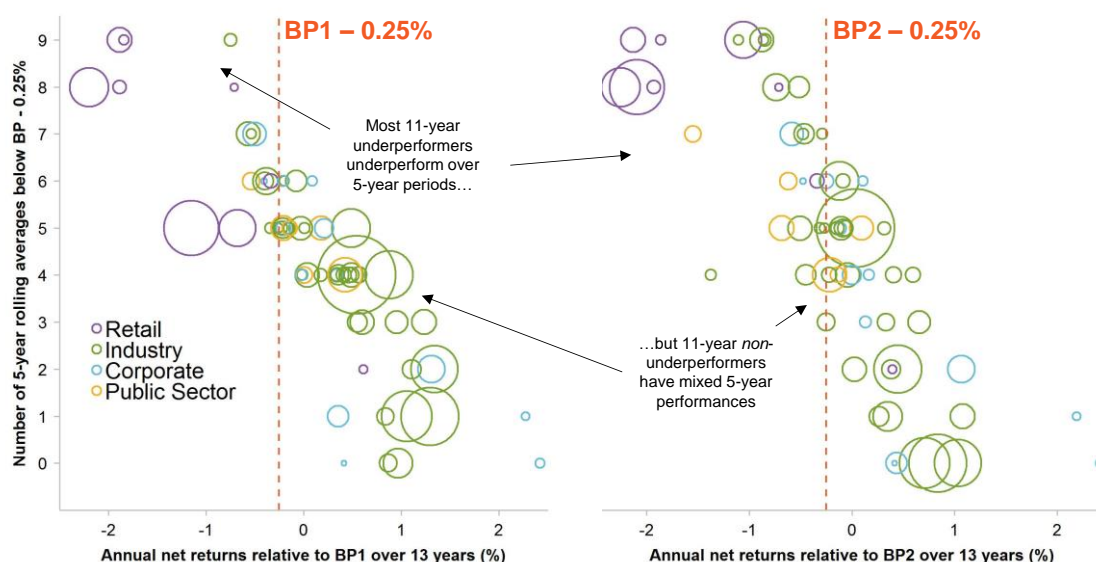


Sources	PC analysis of confidential APRA and financial market index data (various providers).
Benchmark Coverage	Fund-tailored BP1 and BP2. All APRA-regulated funds with a MySuper product in the dataset over the full period (54% of assets and 61% of member accounts in all APRA-regulated funds with a MySuper product in 2017). Over the whole system, the figure represents 67 funds, 27% of assets and 47% of member accounts in 2017.
Survivor bias	Yes.
Selection bias	Yes.

^a 13-year underperformance is defined as 25 basis points below a tailored BP.

Figure 17 **Fund (with MySuper product) performance: rolling five-year averages^a**

Number of underperforming 5-year averages and 13-year performance
2005–2017



Sources	PC analysis of confidential APRA and financial market index data (various providers).
Benchmark	Fund-tailored BP1 and BP2.
Coverage	All APRA-regulated funds with a MySuper product in the dataset over the full period (54% of assets and 61% of member accounts in all APRA-regulated funds with a MySuper product in 2017). Over the whole system, the figure represents 67 funds, 27% of assets and 47% of member accounts in 2017.
Survivor bias	Yes.
Selection bias	Yes.

^a 13-year underperformance is defined as 25 basis points below a tailored BP.

Updates and adjustments to the (draft report) benchmarks

The Commission has updated the data sources and assumptions it has used for its investment performance benchmarks (as originally set out for the draft report in technical supplement 4). This was done in response to feedback on the draft report (in the form of submissions and public hearings), as well as further targeted consultations with selected industry and academic experts. These updates led to some changes to the benchmarking results, mostly at the fund level (described below). Notably, the number of members in underperforming funds and MySuper products has not materially changed from that presented in the draft report.

The focus here is on areas where feedback has materially informed changes on specific methodological issues; other issues raised in submissions will be addressed in the final report. The assumptions that were revisited are set out below; all other assumptions and data

sources remain the same as in the draft report. Further adjustments to data or assumptions may be made for the final report as necessary.

New data

An additional year of data has been added to the analysis of system, segment and fund-level returns, which now covers a 13-year period (2005–2017). An additional year has also been added to the analysis of MySuper (and default predecessor) product returns, which now covers an 11-year period (2008–2018). The sample coverage has not materially changed (detailed below).

Hedging ratios

Several inquiry participants questioned the Commission's use of constant, system-wide hedging ratios for international asset classes in the draft report: 30 per cent for international equities and 80 per cent for international fixed interest. Some argued that hedging ratios change materially over time (for example, NAB MLC Wealth, sub. DR174), or that some funds may have hedging ratios materially different from the assumption (for example, First State Super, sub. DR165).

Very little data are available on hedging ratios for international fixed interest. Confidential APRA data suggest an average ratio of 62 per cent over the period 2014–2017, whereas a recent survey by NAB estimated 88 per cent in 2017 (up from 72 per cent two years prior) (NAB 2017, p. 8). Experts consulted by the Commission expected that hedging would be close to 100 per cent. As such, there are no strong evidential grounds for deviating from the assumptions in the draft report.

While sufficient data on hedging ratios at a fund or product level are not available, the Commission has examined data on hedging ratios over time at a system level. For international equities, confidential APRA data indicate an average ratio of 28 per cent over the period 2014–2017. Separate data from Chant West's asset allocation survey indicate a simple average ratio of 27 per cent over the period 2010–2018 (covering 50 products across a range of fund types) (Chant West, pers. comm., 29 August 2018). In both cases, there is only modest variation between years. As such, the Commission has opted to keep its hedging ratio for international equities unchanged.

Private equity

The use of an Australian private equity index was questioned by some participants, who argued that a global index may be more reflective of how superannuation funds invest (Geoff Warren, sub. DR118; Sunsuper, sub. DR197). The Commission has now obtained the Cambridge Associates Private Equity index, and updated the benchmarks to reflect the system average domestic–international split in private equity investment from SuperRatings data, varied by year and segment (table 5). For fund-level analysis, the corresponding

fund-type shares are used. The system-level shares are broadly consistent with ABS data that indicate most private equity investment by Australian entities is domestic (ABS 2018).

Table 5 **Assumed share of domestic private equity^a**
Percentage of total private equity

Segment	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
System	63.8	37.7	45.2	51.2	68.5	62.5	69.8	66.7	70.9	69.8	72.0	75.4	76.1
Corporate	41.4	41.4	60.0	65.0	75.0	33.4	43.8	48.5	52.8	37.0	0.0	0.0	39.6
Industry	49.8	33.6	39.6	45.6	53.7	45.0	36.2	52.0	53.4	54.2	57.7	63.2	63.2
Public Sector	77.5	46.9	44.0	47.9	65.8	66.8	82.3	92.4	91.8	95.6	99.0	99.8	97.9
Retail	90.1	36.2	71.9	83.0	97.4	97.4	98.6	97.3	99.6	99.7	100.0	100.0	100.0

^a Based on a sample including 140 options with available data in 2017 and 27 options with available data in 2006.

Source: PC analysis of SuperRatings data.

Other assets

Several participants questioned the use of equities indexes to proxy for the ‘other’ assets class in benchmarks, noting that equities are often poorly correlated with the assets in this class (such as hedge funds and commodities), and that some of these assets are more defensive in character (Chant West, sub. DR191; NAB MLC Wealth, sub. DR174; Sunsuper, sub. DR197; Geoff Warren, sub. DR118). To reflect this, the Commission has decided to use a simple mix of 50 per cent equities and 50 per cent fixed interest (with each split evenly into the relevant domestic and international indexes).

Indirect investment expenses

In the draft report, the Commission applied an allowance to benchmarks for indirect investment expenses that are not reflected in asset-class investment costs, including custodian, valuation and search costs. The allowance was 15 basis points (0.15 percentage points) for BP1 and 40 basis points for BP2, based on pre-draft report consultation with experts.

There was little feedback on this assumption in submissions. However, further consultation with industry experts and academics has informed the Commission’s decision to reduce this allowance to 10 basis points for all benchmarks. This reflects estimates provided to the Commission that custodian and search costs are likely to be within the range of 1–10 basis points (with 10 chosen as a conservative approach). Most valuation costs are likely to be reflected in asset prices or investment management costs, and thus do not require a separate adjustment to the benchmarks.

Unlisted property

Some participants raised concerns about the treatment of the unlisted property asset class in the draft report where, due to data availability, the Commission used a domestic unlisted index for all unlisted property from 2008 onwards, and listed indexes for the years 2005 to 2007 plus an imputed illiquidity premium. Chant West (sub. DR191) argued that this could have overstated BP2 by about 25 basis points, given much higher returns to listed property (relative to unlisted) during those years. Both Chant West and AustralianSuper (sub. DR150) argued that the use of a listed index plus illiquidity premium should be applied across the whole period, not just three years. Sunsuper (sub. DR197) submitted that it would be better to combine a set of regional listed indexes to proxy for a global index.

The Commission has since been able to obtain data for the Mercer Unlisted Property Index (Australia) for the years 2005–2007 (provided by Mercer to the Commission upon request). These data indicate an average return over those three years of 16.6 per cent, compared to 25.1 per cent under the assumptions used in the draft report. The unlisted property benchmark now comprises an unlisted index for the full time period.

Unlisted infrastructure

Analysis of funds survey data (described above) indicates that many funds' returns to unlisted infrastructure were well below the index over the period. This may suggest that the specific index used — the MSCI/IPD Unlisted Infrastructure Index — is not representative of the Australian superannuation system. For example, the country composition of superannuation funds' holdings may differ to that in the index, which was 54 per cent Australian unlisted infrastructure at June 2018 (MSCI 2018). However, consultation with relevant industry experts suggests that the index is likely to be a suitable benchmark for Australian funds, and in the absence of an alternative index the Commission has decided not to make any change.

Tax

The Commission subtracted the median tax paid by superannuation funds (as reported to APRA) from each year in the benchmarks in the draft report, combined with sensitivity testing at flat rates of 5 and 7.5 per cent.⁷ (For the fund-level analysis, each fund's individual tax rate was applied). At the time, the Commission understood that the APRA data reflected actual tax paid. Several participants criticised this approach, given it does not reflect accrued or deferred tax liabilities, arguing instead that long-term average tax rates should be used (AustralianSuper, sub. DR150) or, alternatively, a flat rate of 6.0 to 7.5 per cent (Chant West, sub. DR191).

⁷ The benchmarking analysis only adjusts for domestic tax; international tax is excluded from the analysis.

On further investigation, the Commission has ascertained that the APRA data do, in fact, include an allowance for deferred tax liabilities. Combined with the fact that net returns in APRA datasets are calculated using the same tax data, the APRA tax rates have been retained for benchmarking at the system level. However, rather than using the median rate across the system, an average tax rate has been used (weighted by each fund's investment earnings), by year. Segment averages have also been applied for the retail and not-for-profit analyses.

Further, to avoid complexities where some funds experience investment earnings close to zero in some years (and thus have very high or low tax rates), the Commission has decided to do all fund-level benchmarking on a gross-of-tax basis.

Some participants also questioned the use of fund-level tax rates for benchmarking MySuper products, as the fund level data would include (untaxed) earnings in the retirement phase (ASFA, sub. DR148). The Commission has now used APRA MySuper data from 2014–2018 to impute historical tax rates. This was done by taking the average fund-level tax rate, and adding the average difference (across 2014–2018) between the average MySuper tax rate and the average fund-level tax rate. This produced an average rate from 2008 to 2018 of around 5.8 per cent.

Since crediting-rate data (from SuperRatings) are used for the analysis of MySuper products, an upward adjustment has also been made to offset insurance-related deductions. Funds can deduct the cost of insurance premiums from their overall tax liability, the benefits of which in practice are expected to flow back to members in the form of lower insurance costs. Funds typically include these deductions in the income tax item when reporting to APRA (rather than in the contributions tax item). Because net returns calculated using crediting rates are gross of any insurance premiums, the amount of any insurance-related deductions needs to be offset from the MySuper tax data such that the tax calculation only pertains to investment earnings.

How have the main benchmarking results changed?

In the main, the draft report's qualitative results have not changed in the Commission's updated performance distribution analysis:

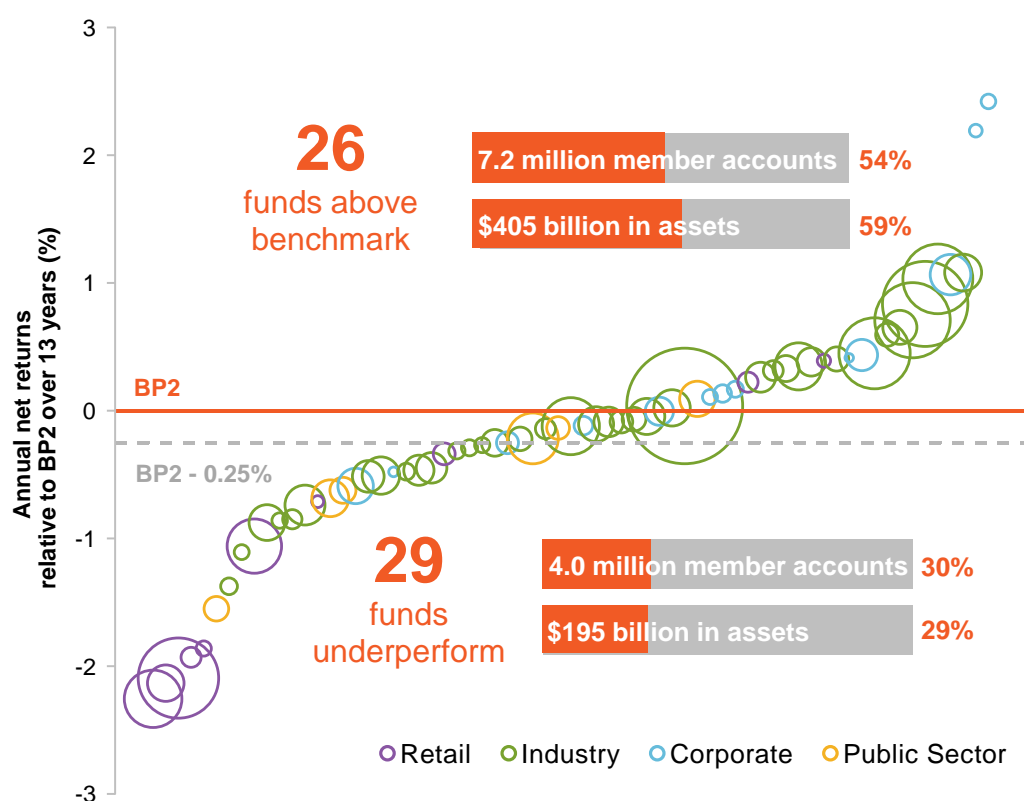
- net returns for the system continue to fall just short of BP1 and below BP2 by a material margin
- the retail segment continues to fall short of both BP1 and BP2
- the not-for-profit segment continues to outperform both BP1 and BP2.

However, the number of funds performing above BP2 tailored to their own asset allocation (over a 13-year period) has fallen (figure 18).

Figure 18 **Individual funds (with MySuper products): 4 million accounts are in underperforming funds**

Performance relative to individual funds' benchmark portfolios, 2005–2017

Size of circles indicates the size of each fund's assets under management



Sources	PC analysis of APRA confidential data and financial market index data (various providers).
Benchmark Coverage	Fund tailored BP2. All APRA-regulated funds with a MySuper product in the dataset over the full period (54% of assets and 61% of member accounts in all APRA-regulated funds with a MySuper product in 2017). Over the whole system, the figure represents 67 funds, 27% of assets and 47% of member accounts in 2017.
Survivor bias	Yes.
Selection bias	Yes.
Further results	Of the 29 underperforming funds, 15 were industry funds, 8 retail funds, 3 public sector funds and 3 corporate. 12 funds performed less than 25 basis points below BP2 (2.1 million member accounts and \$81.8 billion in assets).
Draft report benchmarking	47 funds above benchmark (9.8 million member accounts, \$448 billion in assets); 20 funds underperform (4.6 million member accounts and \$197 billion in assets); 7 funds less than 25 basis points below BP2 (262 000 member accounts and \$18.8 billion in assets) (figure 2.9 in draft report).

Previously, 47 funds were above their benchmark (accounting for 9.8 million member accounts and \$448 billion in assets). This has now reduced to 26 funds (with 7.2 million member accounts and \$405 billion in assets). The proportion of assets and accounts in underperforming funds has largely remained steady, but the composition has changed, as

there are now 29 underperforming funds, compared to 20. These results suggest that some small funds moved from being outperformers to the buffer zone (between BP2 and 25 basis points below), and that some small funds in the buffer zone are now classed as underperformers, offset by a handful of larger underperforming funds moving into the buffer zone.

In the draft report, the Commission benchmarked the 10-year performance of 66 MySuper products and their relevant pre-cursors against a BP2 calibrated from the default-segment average asset allocation. The Commission has updated this analysis to an 11-year sample (covering the period 2008–2018).

The sample size for the default-segment analysis has fallen by two (66 down to 64), but the coverage of accounts and assets has lifted slightly (75 and 73 per cent respectively, to 78 and 77 per cent). This is likely due to a combination of some out-of-sample smaller products merging with larger ones, and strong growth for in-sample products.

There is little change in the number of underperformers (26 down to 23), the affected accounts (from 1.7 million up to 1.8 million), or the affected assets (steady at \$62 billion) (figure 19).

The Commission has also conducted additional benchmarking against BP2s calibrated to each individual MySuper product's asset allocation (including representative life-cycle investment options), over the same 11-year period. The key benefit of this new analysis is that it controls for differences between the default segment average asset allocation, and each individual product's asset allocation.

Data quality limited this sample to 53 products. Several adjustments were needed to ensure the asset allocation data were suitable for this analysis (the key principle was to ensure that each option's asset allocation summed to 100 and was consistent with the reported growth/defensive ratio, which all 53 options had data on). The methodology will be detailed in full in the final report.

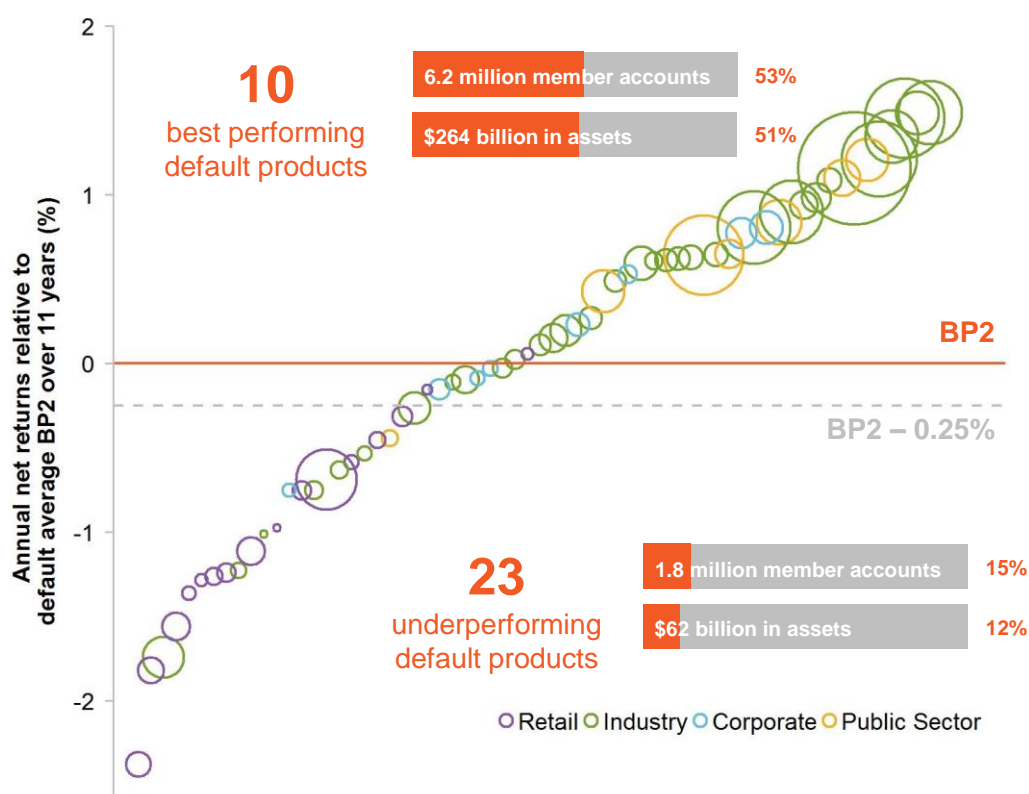
This analysis found 19 underperforming products, representing 1.7 million member accounts and \$66 billion in assets (figure 20). This includes 9 (of the 19 in the sample) representative life-cycle options. The analysis did not produce materially different results to the segment average BP2. This suggests that differences between the product-level and MySuper average asset allocations were not strong drivers of the original results against the MySuper average BP2. Of the 53 products that were benchmarked against a tailored BP2, only one that underperformed the segment average BP2 did *not* also underperform its tailored BP2. This finding is consistent with the MySuper product performance decomposition analysis above, which did not find differences in asset allocation to be a major driver of differences in performance.

Figure 19

MySuper performance: MySuper average benchmark^{a,b,c}

Performance relative to MySuper average asset allocation, 2008–2018

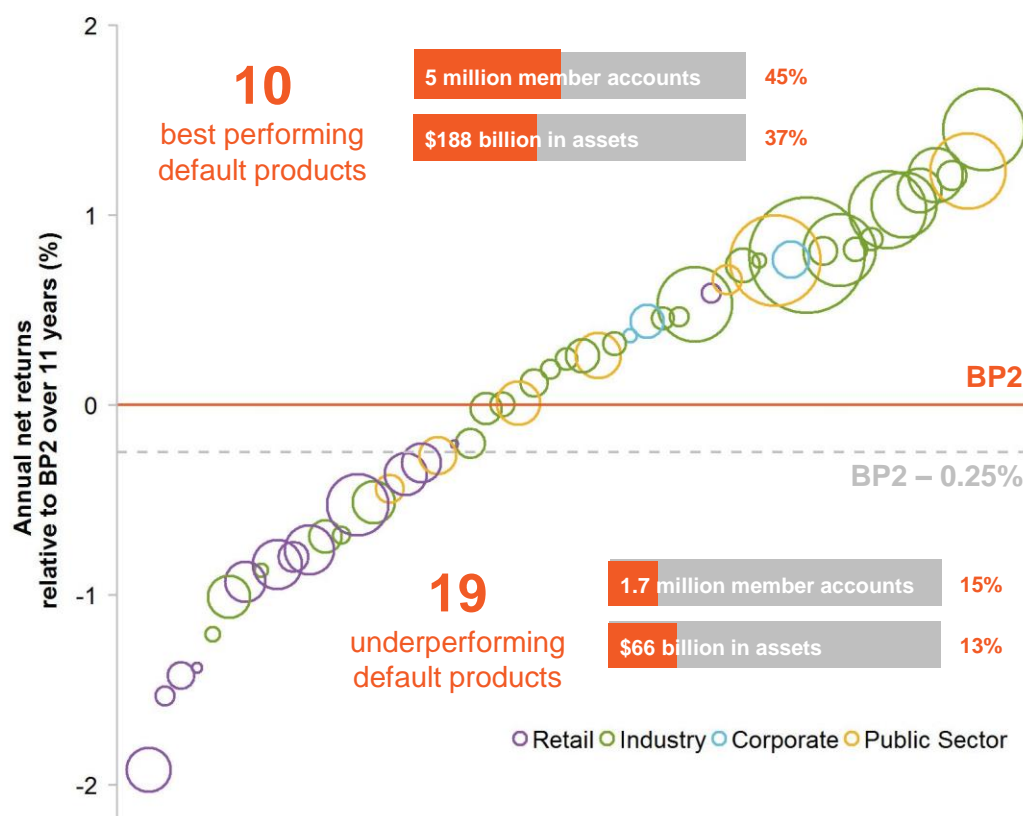
Size of circles indicates the size of each fund's assets under management



Sources	PC analysis of SuperRatings, APRA, and financial market index data (various providers).
Benchmark Coverage	MySuper average BP2. 64 of 105 current MySuper products covering 78% of member accounts and 77% of assets in all MySuper products as at June 2018.
Survivor bias	Yes.
Selection bias	Yes.
Further results	Of the 23 underperforming products, 7 were in industry funds, 14 in retail funds, 1 in a public sector fund and 1 in a corporate fund. 24 products performed above BP2 but are not in the top 10 (3.5 million member accounts and \$184 billion in assets). 7 products performed less than 25 basis points below BP2 (180 000 member accounts and \$7 billion in assets).
Draft report benchmarking	10 best performing products (6.1 million member accounts, \$225 billion in assets); 26 products underperform (1.7 million member accounts and \$62 billion in assets); 22 MySuper products above BP2 but not in the top 10 (3 million member accounts and \$150 billion in assets); 10 products less than 25 basis points below BP2 (428 000 member accounts and \$29 billion in assets) (figure 2.13 in draft report).

^a Current MySuper products were connected with pre-cursors with the support of SuperRatings where requested. 19 life-cycle products are represented by their largest 'balanced' (according to SuperRatings definitions) stage, but only the assets and accounts in the representative stage are counted. ^b BP2 does not include unlisted infrastructure due to data limitations. ^c Net returns are net of investment fees, taxes, and implicit asset-based administration fees.

Figure 20 MySuper performance: tailored benchmark^{a,b,c}
Performance relative to individual products' benchmark portfolio, 2008–2018
Size of circles indicates the size of each fund's assets under management



Sources	PC analysis of SuperRatings, APRA, and financial market index data (various providers).
Benchmark Coverage	Product-tailored BP2. 53 of 105 current MySuper products covering 76% of member accounts and 75% of assets in all MySuper products as at June 2018.
Survivor bias	Yes.
Selection bias	Yes.
Further results	Of the 19 underperforming products, 6 were in industry funds, 11 in retail funds, 2 in public sector funds and zero in corporate funds. 21 products performed above BP2 but are not in the top 10 (4.5 million member accounts and \$242 billion in assets). 3 products performed less than 25 basis points below BP2 (182 000 member accounts and \$9 billion in assets).

Fees and costs

In its draft report, the Commission found that there is a high dispersion of fees and costs across funds and products in the superannuation system. In preparation for the final report, the Commission has undertaken a more granular analysis of this dispersion, including for advice and administration fees.

The high-fee tail

Is the ‘tail’ of high-fee products concentrated in specific parts of the system?

In the draft report, the Commission identified a number of products with disclosed administration and investment fees that together exceed 1.5 per cent of assets. These were defined as the high-fee ‘tail’. This section examines more closely the characteristics of the high fee tail, drawing on an expanded set of products in the SuperRatings dataset.⁸ The SuperRatings sample comprises only APRA-regulated funds. In 2017, it included 360 products containing 79 per cent of total assets and 79 per cent of member accounts.

At June 2017, the high-fee tail accounted for 17 per cent of member accounts, 17 per cent of assets and 26 per cent of products. The tail has narrowed over time on a variety of measures (table 6). For example, the share of member accounts in the tail has fallen from 31 per cent in 2009 to 17 per cent in 2017. However, these figures may be an underestimate of the true extent of high-fee products in the system due to selection bias in the SuperRatings dataset (funds with underperforming products are less likely to volunteer their data).

Table 6 The tail of high fees has narrowed over time
Products with fees exceeding 1.5 per cent of assets

<i>Year</i>	<i>Share of member accounts in dataset</i>	<i>Share of assets in dataset</i>	<i>Share of products in dataset</i>
	%	%	%
2009	31	38	44
2013	32	33	40
2017	17	17	26

Source: PC analysis of SuperRatings data.

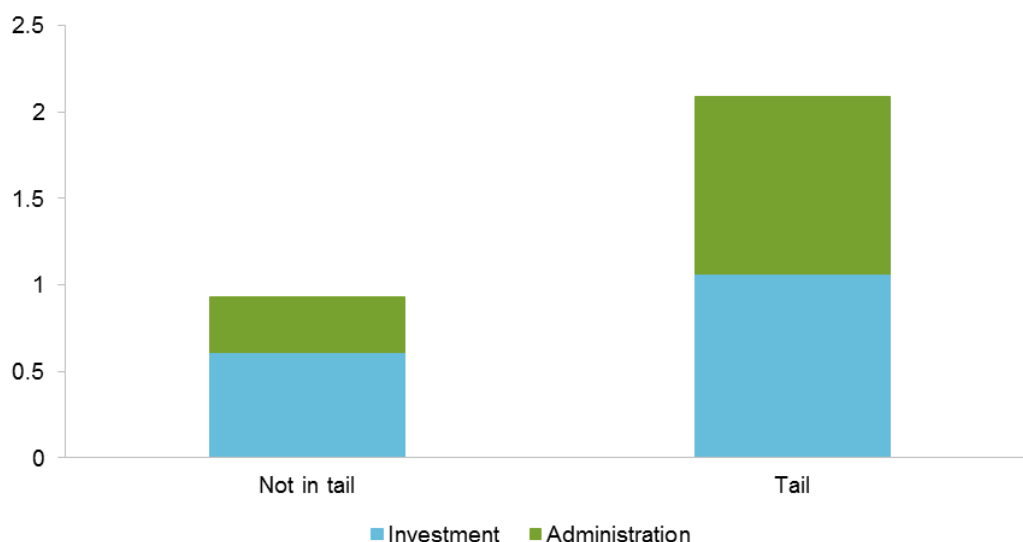
The data suggest that most of the difference in fees between products in the tail and not in the tail is due to administration fees (figure 21).

There were 92 products in the high-fee tail in June 2017, with assets valued at \$213 billion (table 7). This included three MySuper products — two from retail funds and one from an industry fund — all of which are among the underperforming default products over the period 2008–2018 in the Commission’s investment performance analysis.

Retail funds accounted for 89 of the products in the tail at June 2017, or 97 per cent of the tail. The three other products in the tail were offered by industry funds. Because of the high representation of retail products in the tail, the average fee for retail products (weighted by assets) also lies in the tail, at 1.6 per cent of assets in June 2017.

⁸ The Commission has changed the source of assets data it uses to aggregate fees across products and funds. Instead of using SuperRatings product-level data as weights, the Commission is now using APRA data — by combining product-level asset data for MySuper products with fund-level asset data. This has expanded the number of products in the dataset used for the analysis. For example, there are now 348 products for 2016, compared to 327 in the draft report analysis.

Figure 21 Administration fees especially higher for products in the tail
Fees as per cent of assets, 2017



Source: PC analysis of SuperRatings data.

Almost half of the retail products in the tail are closed to new members (referred to as ‘legacy’ products in the draft). All legacy products in the tail are retail products. Retail legacy products account for almost \$100 billion (or 46 per cent) of assets in the tail, and almost 2 million (or 60 per cent) member accounts.

As of June 2017, there was no indication in the SuperRatings data of a decline in the share of legacy products in the tail. The number of legacy products in the tail has remained largely unchanged since 2015 while the total number of products in the tail has fallen, with the result that the share of legacy products has risen each year since 2015.

Table 7 Products in the tail by fund type
Products with fees exceeding 1.5 per cent of assets

	<i>Products</i>	<i>Member accounts</i>	<i>Assets</i>
	No.	m	\$b
Retail	89	3.1	209
of which, open to new members	46	1.2	110
of which, closed to new members	43	2.0	99
Not-for-profit	3	0.1	4
Total	92	3.2	213

Source: PC analysis of SuperRatings data.

There is a larger tail for retirement products than for accumulation products (figure 22). In part this may reflect that administration costs are typically higher for retirement products — which could be an indicator of less competition in the retirement segment (draft report, figure 3.8). Because of this and other factors, retirement products are over-represented in the overall high-fee tail. Retirement products account for 33 per cent of assets in the tail, but just 15 per cent of assets in products below the tail.

Turning from products to funds, in the SuperRatings database in June 2017, 29 per cent of funds had products in the high fee tail (table 8). This proportion was 65 per cent for retail funds and 3 per cent for not-for-profit funds. 14 retail funds (out of 40) did not have a high fee product, and 56 not-for-profit funds (out of 58) did not have a high fee product.

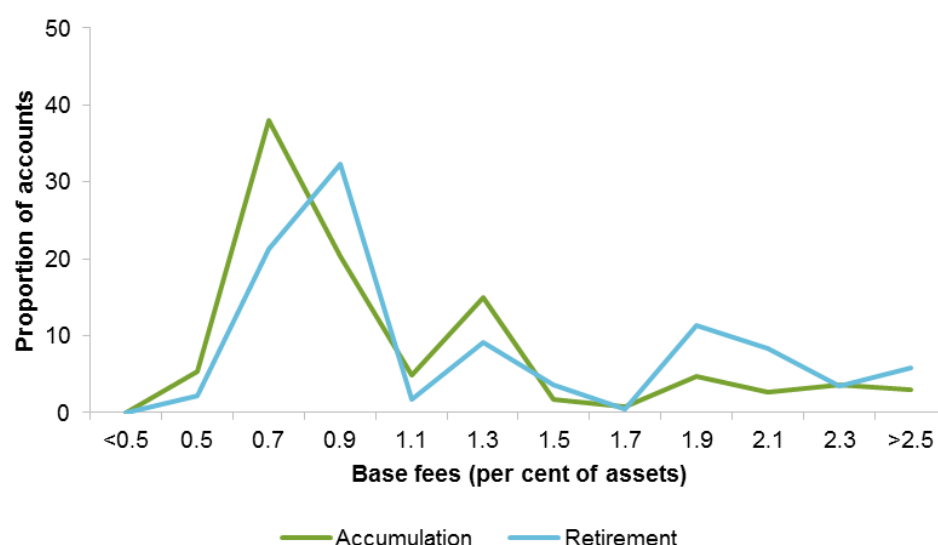
Table 8 What fund types are in the high fee tail?

Funds with products with fees exceeding 1.5 per cent of assets, June 2017

	<i>Funds in the tail</i>	<i>Funds in the dataset</i>	<i>Share of funds in the tail by fund type</i>
	No.	No.	%
Retail	26	40	65
Not-for-profit	2	58	3
Total	28	98	29

Source: PC analysis of SuperRatings data.

Figure 22 There is a greater dispersion of fees on retirement products than accumulation products
2017



Source: PC analysis of SuperRatings data.

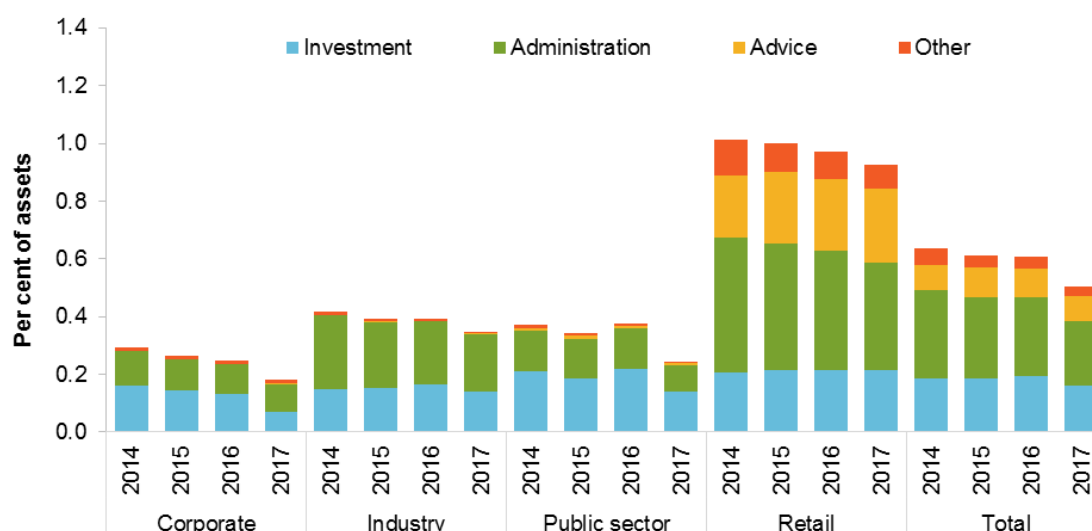
Financial advice fees

Are high financial advice fees concentrated in specific parts of the system?

While financial advice can benefit members, advice fees themselves erode member balances. This section presents advice fee revenue data published by APRA and by the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry (the Financial Services Royal Commission).

APRA data indicate that advice fee revenue is heavily concentrated in the retail segment (figure 23).⁹ In the publicly available APRA fund level data, 82 funds reported collecting advice related fee revenue in June 2017, totalling \$1.6 billion. Ten funds accounted for over 90 per cent of this revenue, totalling \$1.4 billion in 2017 — or \$341 per member account in those funds, on average (table 9). All were retail funds. For these ten funds, advice fees constituted 37 per cent of collected total fee revenue.

Figure 23 Advice fee revenue varies markedly between fund types^{a,b}
APRA-regulated funds, 2014–2017 (years end June)



^a Non-reporting of investment fee revenue by some funds distorts the comparison, and may explain why average fee revenue for retail funds (about 1.0 per cent of assets) is below average total fees disclosed in SuperRatings data (about 1.6 per cent of assets). ^b Advice fees in this figure include activity fees in APRA data that were received for the purpose of advice.

Sources: PC analysis based on APRA (2018a, tables 4a and 6b); APRA (2018e, table 7).

⁹ Advice fee revenue is reported in APRA data as either ‘activity’ fee revenue or ‘advice’ fee revenue. APRA defines ‘activity’ fee revenue as including any advice that ‘is engaged in at the request, or with the consent, of a member or that relates to a member and is required by law’. It defines ‘advice’ fee revenue as a residual, which ‘relates to the provision of financial product advice to a member by the RSE licensee and which is not incorporated into another fee’ (APRA 2015).

Not all advice fees are represented in APRA's advice and activity fee revenue data. Trailing commissions are classified in APRA's reporting framework as an administration expense. Data from the Financial Services Royal Commission indicate that trailing commissions for eleven of the largest retail funds totalled approximately \$220 million in the six months to July 2017 (FSRC 2018, annexure A). Six of these eleven funds are also among the ten funds with the highest advice fee revenue in APRA's public data in 2017. Of the others, four report zero advice fee revenue in the APRA data.

To the extent that retail funds do collect higher trailing commission revenues, this would contribute to the difference in administration fee revenue between fund types that is observed in figure 23.

Table 9 The characteristics of funds and advice fees
2016-17

	<i>Advice fee revenue</i>	<i>Assets</i>	<i>Members</i>	<i>Average advice fee revenue</i>
	% of total	% of total	% of total	\$ per member
10 retail funds with highest advice fees	91	24	16	341
Other retail funds	5	18	21	15
Not-for-profit funds	4	59	63	4

Source: PC analysis based on APRA (2018e, tables 3, 6 and 7).

Administration fees

Are high administration fees concentrated in specific parts of the system?

Funds levy administration fees as a fixed dollar fee per member or as a percentage of a member's balance. Almost all not-for-profit products levy a fixed dollar administration fee, according to SuperRatings data (table 10). Percentage based administration fees are more common in retail products. Just under 70 per cent of all products include both types of administration fee.

Table 10 How are administration fees charged to members?^{a,b}
Type of fee as a proportion of products, June 2017

	<i>Percentage based fee only</i>	<i>Fixed dollar fee only</i>	<i>Both fee types</i>
	%	%	%
Retail	27	11	59
Not-for-profit	5	13	78
Total	16	12	68

^a Percentage shares by fund type do not add up to 100 per cent because there are no administration fees data in SuperRatings for some funds. ^b Data are for a representative asset balance of \$50 000.

Source: PC analysis of SuperRatings data.

About 22 per cent of member accounts are in products that only charge a fixed dollar administration fee. For comparison, about 9 per cent of member accounts are in products that only levy a percentage based administration fee. The higher share of members in products that only charge fixed dollar fees reflects that some of Australia's largest superannuation funds are among those that only charge a fixed dollar fee.

Fixed dollar administration fees are typically lower per member than percentage based fees other than for very low account balances (table 11). Because of the contribution of percentage based fees, the average administration fees paid by a member rises with the member's balance, for example from \$220 for an asset balance of \$50 000 to over \$1200 for an asset balance of \$500 000. There are also large differences across segments — a member with a \$50 000 balance would pay a much higher administration fee in dollar terms if they were in the average retail fund (\$374 per year) than if they were in the average not-for-profit fund (\$127) (table 12). Most of the difference is due to percentage-based fees.

Table 11 Average administration fees vary by balance^{a,b}
\$, June 2017

<i>Member balance</i>	<i>Percentage based fee</i>	<i>Fixed dollar fee</i>	<i>Total administration fee</i>
10 000	27	83	111
25 000	69	83	152
50 000	139	81	219
100 000	279	71	350
200 000	559	65	624
500 000	1 225	65	1 290

^a SuperRatings data do not include any administration fee caps. ^b Figures may not add due to rounding.

Source: PC analysis of SuperRatings data.

Table 12 Administration fee levels vary by fund type^a
June 2017

	<i>Average fee</i>	<i>Average percentage-based fee</i>	<i>Contribution of percentage-based fee to average fee</i>
	<i>\$-equivalent</i>	<i>\$-equivalent</i>	<i>% share</i>
Retail	374	268	72
Not-for-profit	127	61	48
Total	219	139	63

^a Data are for a representative asset balance of \$50 000 and for the year ending 30 June 2017.

Source: PC analysis of SuperRatings data.

The estimates above are based on SuperRatings data, which do not include product-specific administration fee caps. APRA data indicates that around a quarter of MySuper products have administration fee caps. However, the prevalence of fee caps among MySuper products

varies widely by fund type. For example, 26 not-for-profit products had a fee cap in June 2017, compared with only one retail product (APRA 2018b). Where they are in place, caps range from \$73 to \$2735 per member per year.

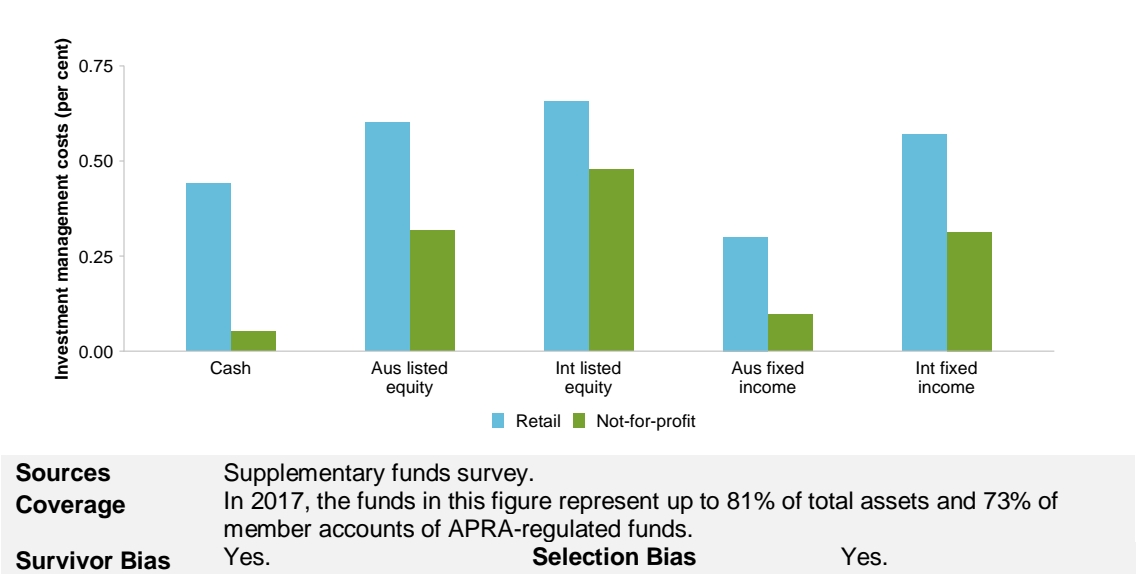
Asset-class costs in the funds survey

Are there differences by segment in investment management costs at an individual asset-class level?

In the supplementary survey, funds were asked to provide data on investment management fees and costs by asset class for each year over the period 2008 to 2017. This included investment management fees incurred with non-associated investment managers, and costs incurred either in-house or with related party investment managers. It also included any indirect costs that are taken out of returns.

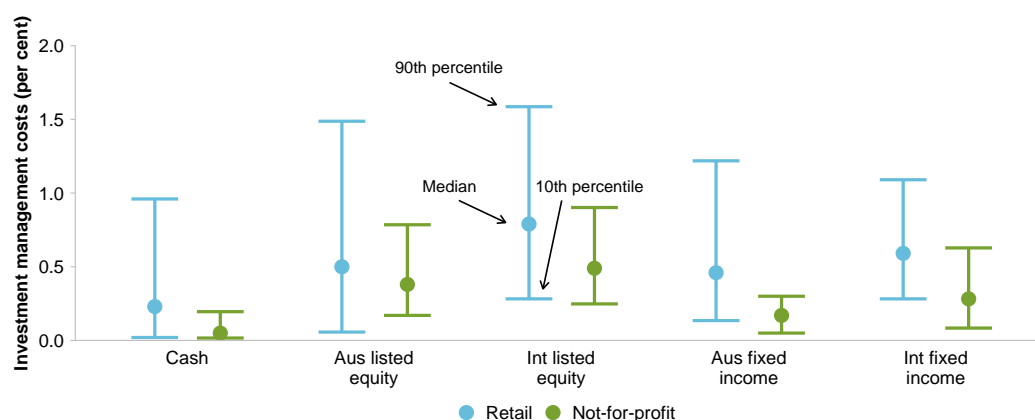
A comparison using reported data for 2017 suggests that retail funds paid higher investment costs than not-for-profit funds, on average, in all asset classes (with at least 25 observations). The largest difference was in cash, where retail funds paid 44 basis points on average compared to 5 basis points for not-for-profit funds (figure 24). The distribution of investment costs for retail funds exhibits larger variance across all asset classes compared to not-for-profit funds (figure 25). Other asset classes are not reported here due to small sample sizes.

Figure 24 Asset class investment costs by segment
Weighted by assets of a fund invested in the corresponding asset class^a, 2017



^a Only asset classes with at least 25 observations for both retail and not-for-profit funds are reported. Fund assets are used as weights to calculate an average investment management cost.

Figure 25 Variation in asset class investment costs by segment, 2017^a



Sources	Supplementary funds survey.
Coverage	In 2017, the funds in this figure represent up to 81% of total assets and 73% of member accounts of APRA-regulated funds.
Survivor Bias	Yes.
Selection Bias	Yes.

^a The figure shows investment costs reported by funds for 2017. The dot represents the median investment cost for each asset class by segment. The lower and upper bars are the 10th and 90th percentile respectively, meaning 10 per cent of observations are below the bottom bar and 90 per cent are below the top bar. Only asset classes with at least 25 observations for both retail and not-for-profit funds are reported.

Asset-class costs benchmarking to other countries

Are Australian superannuation funds' investment management costs at an individual asset-class level higher than those of pension funds in other countries?

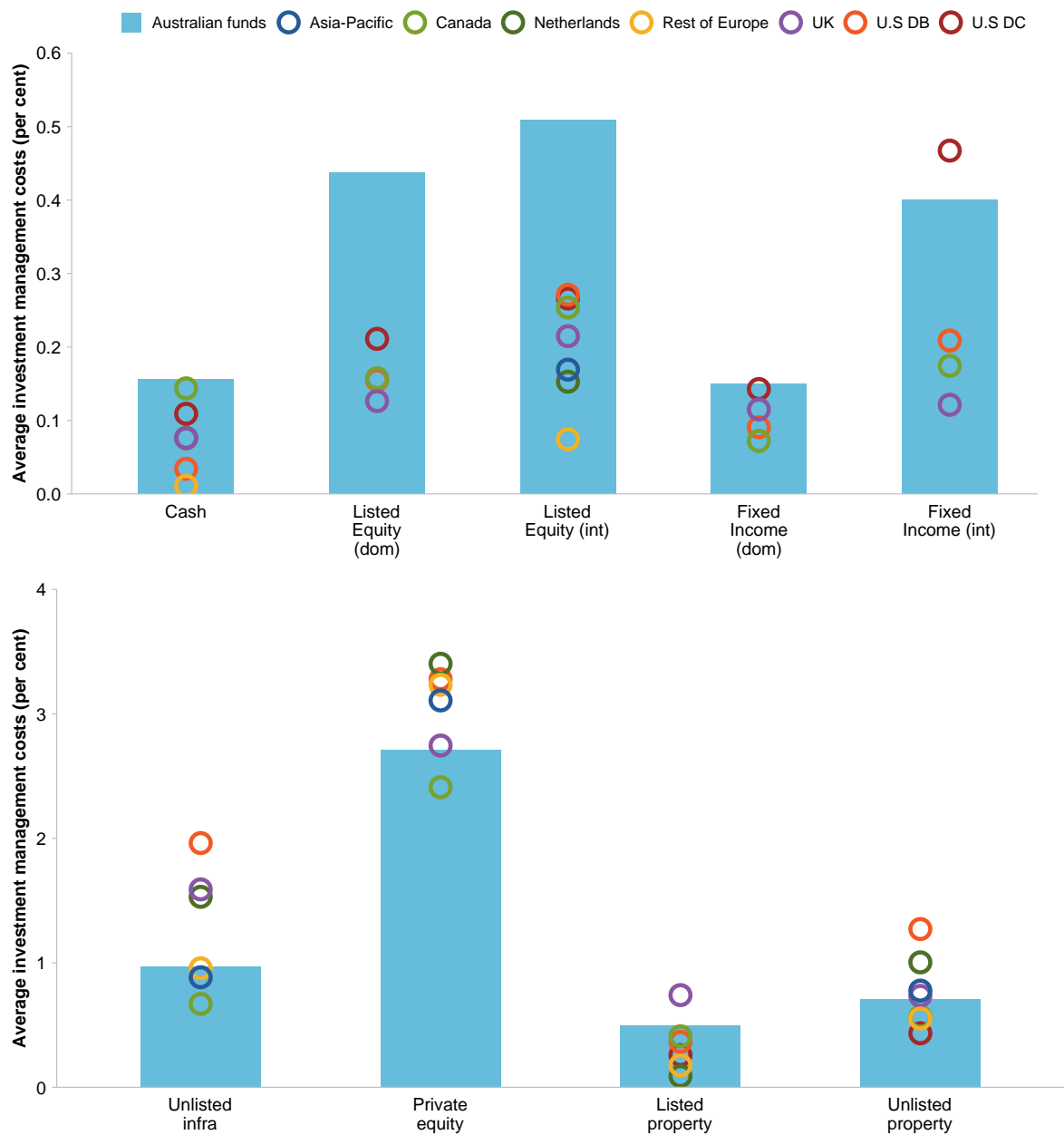
The Commission has compared the investment management costs of Australian superannuation funds in 2016 — as reported in the supplementary funds survey — to those of international pension funds (incorporating all direct and indirect costs). The international data was purchased from CEM Benchmarking and published in technical supplement 5 to the draft report. The analysis in this paper updates the preliminary results in the draft report, which were based on the initial funds survey (with much lower coverage). The draft report also included international comparisons of investment and administration costs based on data from the Organisation for Economic Co-operation and Development.

The comparison here suggests that Australian funds incur much higher investment costs for domestic and international equities, and international fixed income, compared to most other countries in the data (figure 26). Some of this difference could be attributed to a greater use of active management by Australian superannuation funds, at least for equities.

Australian funds also pay marginally higher costs for cash and domestic fixed income on average. By contrast, the investment management costs for Australian superannuation funds

are relatively comparable to international pension funds for unlisted assets (including unlisted infrastructure, unlisted property and private equity).

Figure 26 **International comparison of investment costs by asset class^a**
Investment management costs weighted by assets, 2016



Sources	Supplementary funds survey, CEM Benchmarking data and financial market index data (various providers).		
Coverage	In 2016, the funds in this figure represent up to 73% of total assets and 63% of member accounts of APRA-regulated funds.		
Survivor Bias	Yes.	Selection Bias	Yes.

^a The scale on the two panels differs.

Related parties

Do funds using related parties for administration or investment incur higher expenses?

On the whole, funds that use related-party service providers have higher expenses than those that either provide services in-house or purchases services from non-associated parties.

The Commission sought information about administration and investment expenses in its original funds survey, but was hampered by a low response rate by both industry and retail funds. As such, the draft report was only able to include a high-level analysis of APRA data. The relevant data was again sought through the supplementary funds survey, and is analysed in this section.

The Commission's surveys were used due to major gaps and quality problems with data collected by APRA, which constrained even the use of a simple methodology to compare the costs of using related parties. There would be clear benefit in the regulator more robustly collecting these data in a consistent manner across funds — which would allow for simple analysis (as undertaken here) and more sophisticated methodologies to be applied in the future. Such collection, use and analysis of data is needed for regulator supervision.

The supplementary funds survey asked funds to provide information for five expense categories, for the years 2011-12 and 2016-17 (table 13). Funds were asked to split the amount spent in each category by type of service provider: associated providers¹⁰ (related parties), non-associated providers, or whether the service was provided in-house.

Table 13 Funds survey expense categories^a

<i>Category</i>	<i>Description</i>
Administration expenses	Administrator, IT service provider, platform provider
Other administration services expenses	Accountant, financial advice (employer and member), professional indemnity insurer, internal auditor, lawyer, promoter, RSE actuary, RSE auditor
Investment management expenses	Investment manager
Custody expenses	Custodian
Other investment services expenses	Asset consultant, implemented consultant

^a Expense categories were defined with reference to APRA's SRS 331.0.

Of the 136 funds that provided a response to the Commission's fund survey, 13 funds provided no 2016-17 expense data at all, leaving 123 funds that provided some data on expenses. Overall, these funds accounted for 82 per cent of assets and 77 per cent of member accounts (in 2016-17) in the 186 funds invited to participate in the survey. Fewer funds

¹⁰ While the concept of an associated provider is similar to a related party, it is not precisely the same, but the definition of associated parties captures most related party arrangements (APRA 2018d).

provided 2011-12 expenses data, with only 111 of the 186 invited funds providing some expenses data for that year.

Survey responses were comparatively poor for retail funds, particularly with respect to investment expenses (table 14). Investment expenses data cover only around 37 per cent of assets and 35 per cent of member accounts in retail funds, in stark contrast to the 93 per cent of assets and 85 per cent of member accounts in not-for-profit funds. As such, some of the results may be subject to (positive selection) reporting bias, to the extent that funds with lower related-party expenses were more likely to provide data in response to the survey.

Table 14 Survey coverage: expenses data

	Total assets (2016-17)		Member accounts (2016-17)		Number of funds
	\$m	%	'000	%	
Administration expenses					
Retail funds					
Did not respond	216	37	4 003	42	42
Responded	365	63	5 410	58	61
Total	581	100	9 413	100	103
Not-for-profit funds					
Did not respond	69	7	2 107	13	21
Responded	952	93	14 566	87	62
Total	1 021	100	16 673	100	83
Investment expenses					
Retail funds					
Did not respond	368	63	6 083	65	67
Responded	214	37	3 330	35	36
Total	581	100	9 413	100	103
Not-for-profit funds					
Did not respond	70	7	2 525	15	24
Responded	951	93	14 148	85	59
Total	1 021	100	16 673	100	83

Sources: Supplementary funds survey; confidential APRA data.

Expenses data provided in the supplementary survey differ from the expenses data reported by funds to APRA. Total investment management expenses reported in the supplementary survey were 33 per cent higher than the data reported to APRA and published in APRA Fund Level Statistics for the same set of funds (table 15). This is likely due to significant underreporting of indirect investment expenses under the APRA reporting framework (as described in chapter 3 of the draft report). In contrast, administration expenses reported in the supplementary survey were about 9 per cent lower than in the APRA data.

Table 15 Supplementary funds survey results compared to APRA data^a
Expenses by category and data source, 2016-17

<i>Fund type</i>	<i>Administration services</i>			<i>Investment services</i>			<i>Number of funds</i>
	<i>Supplementary survey (\$m)</i>	<i>APRA (\$m)^b</i>	<i>Difference (%)^c</i>	<i>Supplementary survey (\$m)</i>	<i>APRA (\$m)^b</i>	<i>Difference (%)^c</i>	
Retail	2 260	2 536	-11	752	665	13	70
Industry	1 166	1 448	-20	1 830	1 698	8	33
Corporate	93	100	7	196	184	7	13
Public sector	468	301	55	995	303	229	15
Eligible rollover funds	22	22	-4	2	–	–	5
Total	4 008	4 408	-9	3 775	2 849	33	136

^a Expense categories are based on APRA's SRS 331.0. Administration services includes administration and other administration services, while investment services includes investment management services, custody expenses and other investment services expenses. ^b APRA totals are for the same funds providing data in the supplementary survey. ^c Difference is a percentage of the APRA expenses data.

Sources: Supplementary funds survey; confidential APRA data.

Administration expenses

How much do funds spend on administration with related parties?

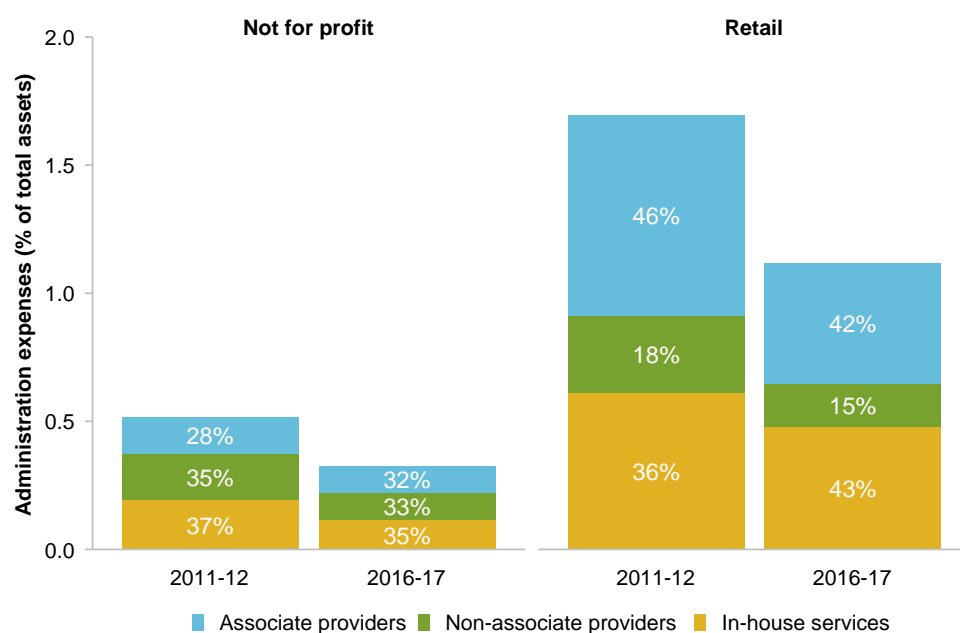
Funds that completed the supplementary survey reported administration expenses totalling over \$4 billion in 2016-17. About one-third of all administrative expenses were sourced from related parties (a proportion consistent with the data for 2011-12). However, the survey data suggest that the use of related parties is more prevalent in the retail sector, with not-for-profit funds tending to source more administration services in-house or through non-associated providers (figure 27). Not for profit funds directed about 30 per cent of their administration expenses to related parties in 2011-12 and 2016-17. In comparison, the percentage for retail funds exceeded 40 per cent in both years. This equates to administration expenses with related parties of between 10 and 15 basis points for not for profit funds, and between 47 and 78 basis points for retail funds.

Do funds that use related parties have higher administrative expenses?

Within both the retail and not-for-profit segments, funds that source some portion of their administrative services from related parties report higher average total administrative expenses. Due to a lack of information about the amount and quality of services purchased by a fund, it is not possible to compare the costs of administrative services sourced from related and non-associate providers. However, it is possible to compare total administrative expenses for funds that do and do not use related parties (figure 28). Not-for-profit funds that use related parties report administrative expenses per member that are between 20 and 40 per cent more than not-for-profit funds that do not. The difference is smaller for retail

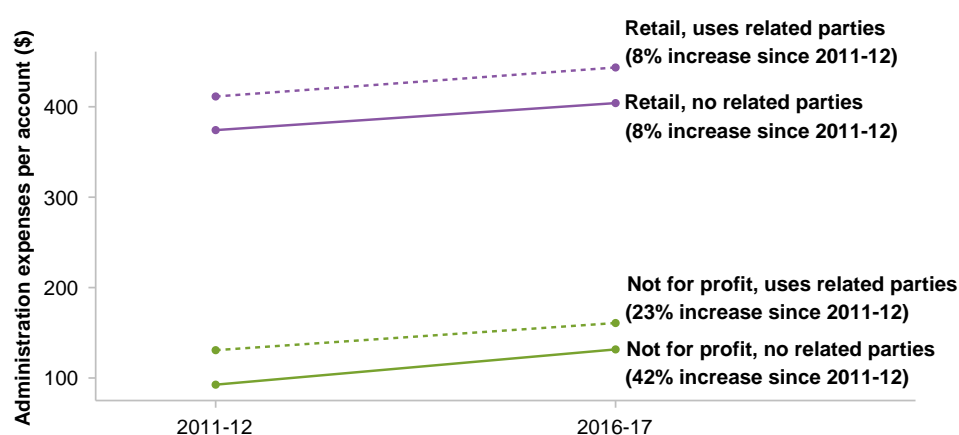
funds, with funds using related parties reporting administrative expenses that are around 9 per cent more than those that do not.

Figure 27 Total administration expenses as a per cent of total assets
By service source



Sources: Supplementary funds survey; confidential APRA data.

Figure 28 Funds using related parties tend to have higher total administration expenses per account^a



^a Funds are considered to be using related parties if related party expenses make up more than 10 per cent of their total administration expenses.

Sources: Supplementary funds survey; confidential APRA data.

Investment expenses

How much do funds spend on investment expenses with related parties?

In 2016-17, funds that completed the supplementary funds survey reported investment expenses totalling \$3.8 billion. About 17 per cent (\$627.5 million) of this was spent on services procured from related parties (table 16).

Reported relationships with related parties for investment services appear more prevalent in the retail sector — 60 per cent of retail fund investment expenditure goes to related parties, compared to only 5 per cent for not-for-profit funds. That said, a lack of investment expenses data from large retail funds means that it is difficult to draw strong conclusions.

Table 16 Investment expenses by service source
Total expenses and number of funds providing data

Source	Year	Not-for-profit funds			Retail funds ^a		
		Expenses (\$m)	Per cent of total expenses (%)	Number of funds	Expenses (\$m)	Per cent of total expenses (%)	Number of funds
In-house services	2011-12	80	55	18	14	88	2
	2016-17	232	88	18	1 414	33	5
Outsourced related parties	2011-12	48	33	9	108	59	7
	2016-17	166	66	12	462	85	14
Outsourced non-associated providers	2011-12	1 353	91	51	62	34	21
	2016-17	2 625	87	56	66	12	26
Total	2011-12	1 481	100	54	184	100	26
	2016-17	3 023	100	59	541	100	35

^a Retail funds in this table represented only 37% of total assets and 35% of all member accounts in the retail market segment, in 2016-17.

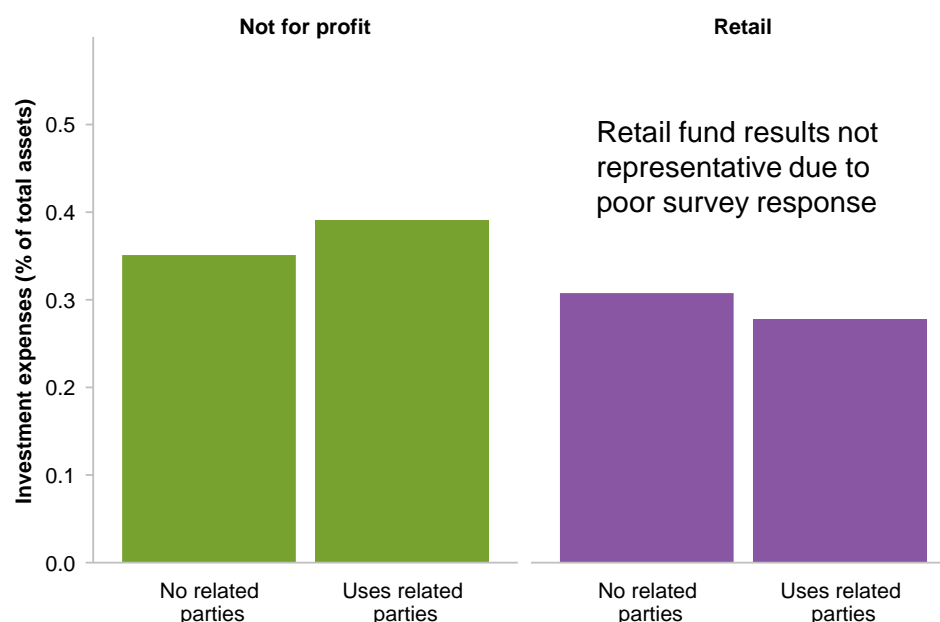
Source: Supplementary funds survey.

Do funds that use related parties have higher investment expenses?

In 2016-17, not-for-profit funds that used related parties for investment management reported higher total investment expenses than funds that did not (figure 29).

The Commission's analysis of retail funds was hampered by their relatively poor survey responses. Twelve retail funds with total assets in excess of \$5 billion — representing 59 per cent of the retail segment — did not provide information about investment expenses. This lack of data means that it is difficult to draw any firm conclusions about the use of related parties for investment by retail funds from the funds survey data.

Figure 29 **Not-for-profit funds using related parties tend to have higher investment management expenses^{a,b}**



^a Retail funds included in this figure represented only 37% of total assets and 35% of all member accounts in the retail market segment in 2016-17. ^b Funds are considered to be using related parties if related party expenses make up more than 10 per cent of their total investment management expenses.

Sources: Supplementary funds survey; confidential APRA data.

SMSF returns and expenses

Several inquiry participants questioned the validity of SMSF return and cost data published in the Commission's draft report, especially in terms of its comparability to reported data on APRA-regulated funds. This section briefly discusses some of these concerns and draws on new data made available to the Commission to shed further light on the performance of SMSFs. Specifically, it examines sources of bias in net returns calculations, then looks closely at how SMSF performance varies with the age and size of a fund.

Net returns calculations

Are net return estimates for SMSFs biased by the way returns are calculated?

Class Limited (sub. DR190) and the SMSF Association (sub. DR194) submitted that the 'return on assets' (ROA) formula used by the Australian Taxation Office (ATO) to calculate SMSF returns provides systematically lower figures than the 'rate of return' (ROR) formula

used by APRA to calculate institutional fund returns. This is because of how the measures are constructed:

$$ROA \text{ (ATO)} = \frac{\text{Net earnings after tax}}{\text{Average assets over the period}} \quad ROR \text{ (APRA)} = \frac{\text{Net earnings after tax}}{\text{Cashflow adjusted net assets}}$$

One key difference is the denominator used in each of the two measures — the ROA measure simply uses the average value of net assets over the period (calculated by taking the value of assets at the beginning and end of the period), whereas the ROR measure takes the beginning value and adds adjustments for net member flows and net insurance flows. The effect is that the ROA denominator is influenced by net earnings during the period, while the ROR denominator is not. In years with positive returns, the ROA will be lower than the ROR.

The method for calculating ‘net earnings after tax’ also differs, affecting both the numerator and denominator. In the case of ROA (as calculated by the ATO), net earnings are measured as the difference between opening and closing assets over a given period, with adjustments for non-earnings cashflows contributions, inward rollovers and other income not considered income. In the case of ROR (as calculated by APRA), net earnings are calculated directly using data on net investment and operating income and on changes in asset values (data which are not reported to the ATO by SMSFs) (ATO, pers. comm., 8 August 2017). The consequence is that the ROA net earnings measure is net of contributions tax and insurance flows, whereas the ROR measure is gross of contributions tax and insurance flows (Class Limited, sub. DR190, p. 3). Again, this means that ROA will tend to be lower than ROR.

In addition to these differences, the SMSF Association (sub. DR194, p. 11) suggested that ATO calculations of ROA may capture a wider set of administration expenses than APRA calculations of ROR, and thus may be influenced by advice and establishment costs of SMSFs.

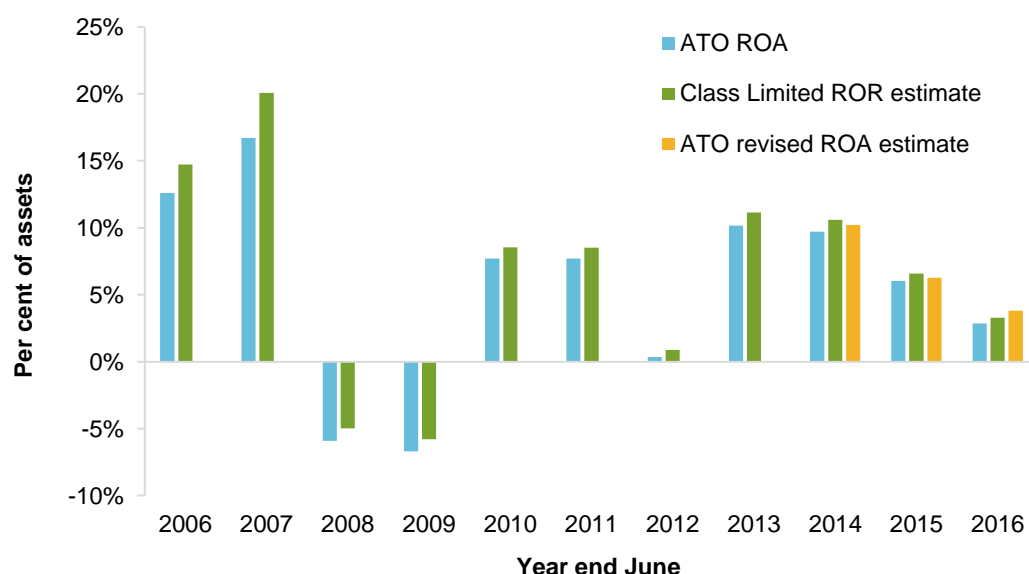
Some of the differences between the ROA and ROR formulas were acknowledged in the Commission’s draft report (chapter 2 and technical supplement 4). Since then, estimates have been provided to the Commission that attempt to replicate the ROR formula for SMSFs. This includes estimates from the ATO that attempt to more closely align the ROA formula for SMSFs to the ROR formula for APRA-regulated funds, allowing for improved comparisons (figure 30). These estimates were only provided for the SMSF segment as a whole.

- Class Limited provided ROR estimates (based on publicly available data) that adjust for the time period in the denominator, as well as the effect of contributions tax and insurance flows.
- The ATO provided ROA estimates that only adjust for the time period in the denominator.

Class Limited estimates suggest that the standard ROA measure is, on average, about 1 percentage point below ROR, with the difference greatest in the earlier years of the sample (the ATO estimates suggest a smaller margin). Estimates for SMSFs of different sizes are

not available. However, to the extent that contributions tax and insurance flows are relatively larger for smaller SMSFs, the difference between the ROA and ROR measures is likely to be greatest for smaller SMSFs.

Figure 30 ROA measures are generally lower than ROR^a
2006–2016



^a The estimates for Class Limited differ slightly from those in its submission (sub. DR190, p. 4) due to refinements to the calculation methodology. ATO revised ROA estimates are not available for all years.

Sources: ATO (pers. comm., 8 August 2017; 11 December 2017; 31 August 2018); Class Limited (pers. comm, 29 August 2018).

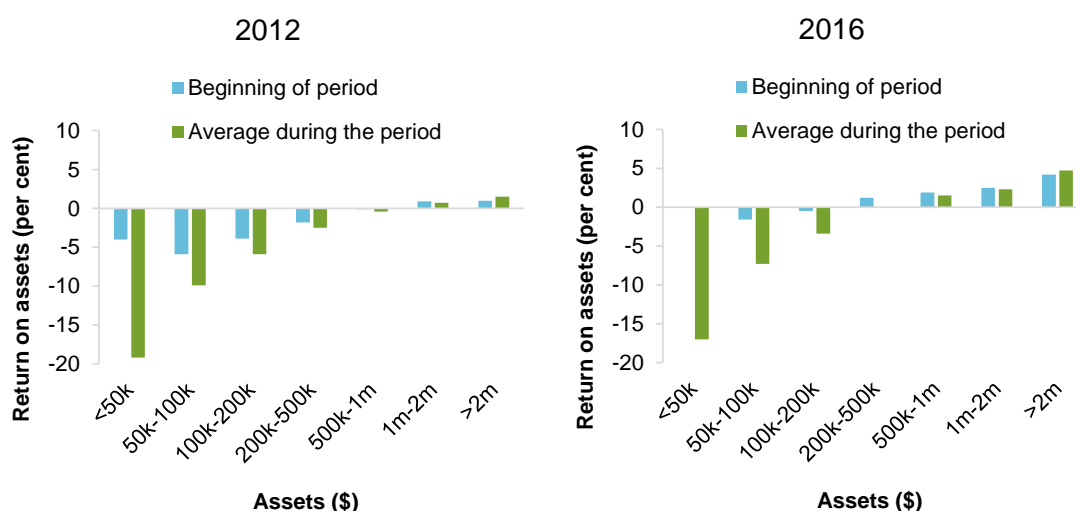
A further issue is that the ATO publishes data for SMSF returns in summary form according to a set of size brackets, with SMSFs assigned to brackets based on their average balance during the period (which reflects the SMSF overall rather than individual member balances). However, SMSFs that experience high returns (or, conversely, negative returns) may move up (or down) to another size bracket during the period. Class Limited (sub. DR190, p. 6) submitted that this can lead to ‘selection bias’, whereby the returns for smaller size brackets are brought down — by over 10 percentage points in the case of the smallest SMSFs. It argued that grouping according to balance at the *beginning* of the period can avoid this problem. Grouping the data this way would mean that the measured net return better reflects the average experience of SMSFs that start out with similar balances.

The ATO has provided calculations of ROA using an amended methodology that uses size brackets according to balance at the beginning of each year, rather than the average balance over the year (figure 31). In each year, the effect of measuring balances at the beginning of the period is to lift the measured returns for all size brackets, with the exception of the very largest (\$2 million or more). The differences are more pronounced for smaller SMSFs, especially those with balances under \$500 000. In 2016, for example, the difference was

about 1.2 percentage points for SMSFs between \$200 000 and \$500 000 in size, and as high as 17 percentage points for the smallest SMSFs (under \$50 000). The differences are of similar magnitudes for other years.

These differences are explained by the fact that, most notably for the smaller SMSFs, the average size of SMSFs *within* each bracket is larger when grouped by assets at the beginning of the period, compared to when grouped by average assets over the period. This may be because SMSFs close to the top of their starting bracket that experience strong returns (or high inward rollovers or contributions) end up being reclassified into the next highest bracket for the average-assets measure. At the same time, SMSFs could be measured as having strongly negative returns using the average-assets measure if their assets (the denominator in the calculation) shrink over the period — for example, because of high expenses and/or drawdowns from retired members. This appears likely, at least in the smallest size brackets, as net earnings were negative for SMSFs starting with less than \$100 000 for most years over the period 2012–2016.

Figure 31 Different balance period methods produce different returns^a



^a Size brackets calculated on assets at the beginning of the year (amended methodology) compared to size brackets calculated as the average balance over the year (current ATO methodology).

Sources: ATO (pers. comm., 31 August 2018, 24 September 2018).

New and existing SMSFs

Do expenses for individual SMSFs fall over time and/or do net returns rise? If so, is this driven by growth in balances?

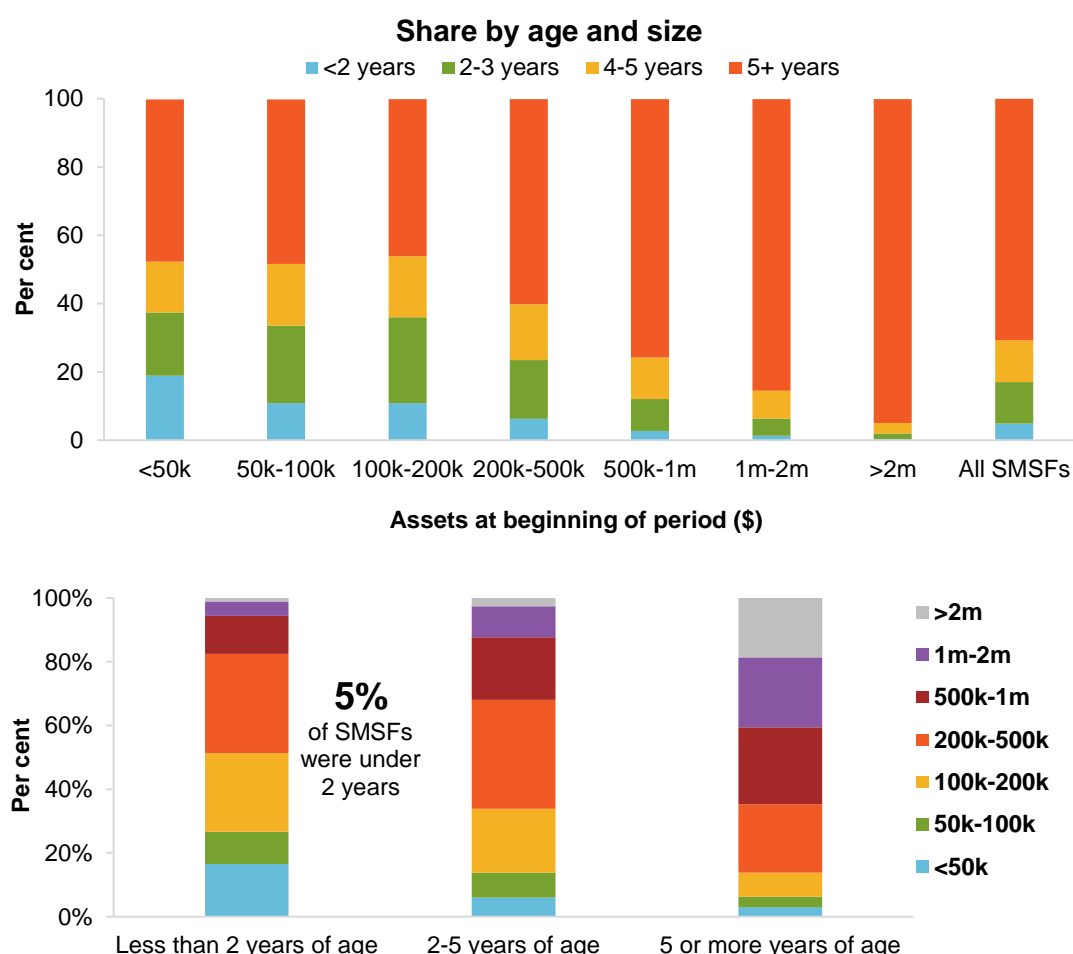
Some inquiry participants suggested that ROA estimates can be biased by the inclusion of one-off establishment and wind-up costs (for newly created and soon-to-be-closed SMSFs,

respectively). This can lead to negative net return figures for new SMSFs even where their pure investment return may be positive (SMSF Association, sub. DR194). The Commission was unable to separate out establishment and wind-up costs in its draft report analysis.

Age and size data

To shed light on whether SMSF returns are biased by establishment costs, the Commission has obtained ATO data on returns and expenses by the age and size of SMSFs (in size brackets based on balances at the beginning of each year). While most SMSFs have existed for five or more years, a material portion are younger than this, especially in the smaller size brackets (figure 32). This size and age distribution has not changed markedly in the five years to 2016.

Figure 32 **Younger SMSFs are more prevalent in smaller size brackets**
2016

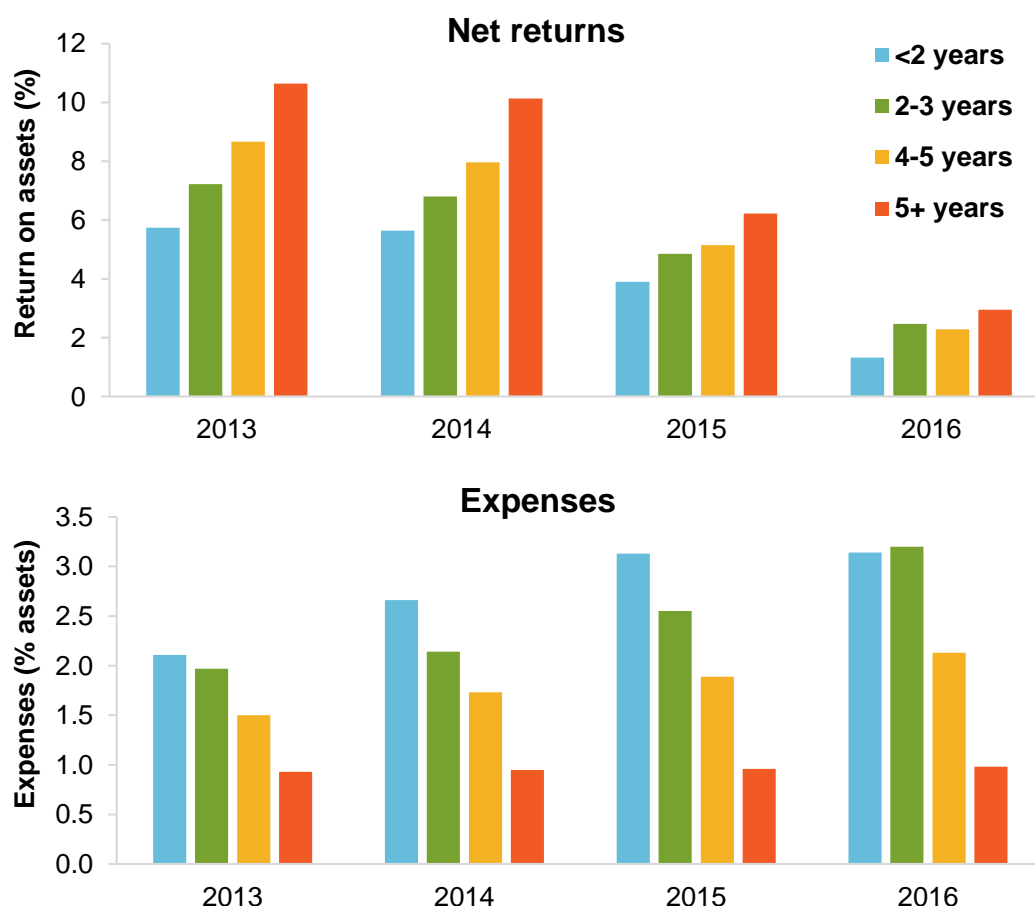


Sources: ATO (pers. comm., 31 August 2018, 24 September 2018).

In aggregate, newer SMSFs (under 2 years of age) had systematically higher average expense ratios (expenses as a percentage of total assets) and therefore lower net returns than older SMSFs (figure 33). These differences between new and established SMSFs appear to persist over time. To the extent they reflect one-off establishment costs being a temporary influence on expense ratios for newer SMSFs, members would not necessarily be worse off over the long term.

However, the effect of establishment costs is likely to be modest for two reasons. First, the SMSF Association (sub. DR194, p. 14) submitted that the average establishment cost over the years 2015–2017 was \$2129. Since the average size of new SMSFs (less than 2 years old) in 2016 was \$390 000, this suggests average establishment costs in the vicinity of 0.5 per cent of initial balances.

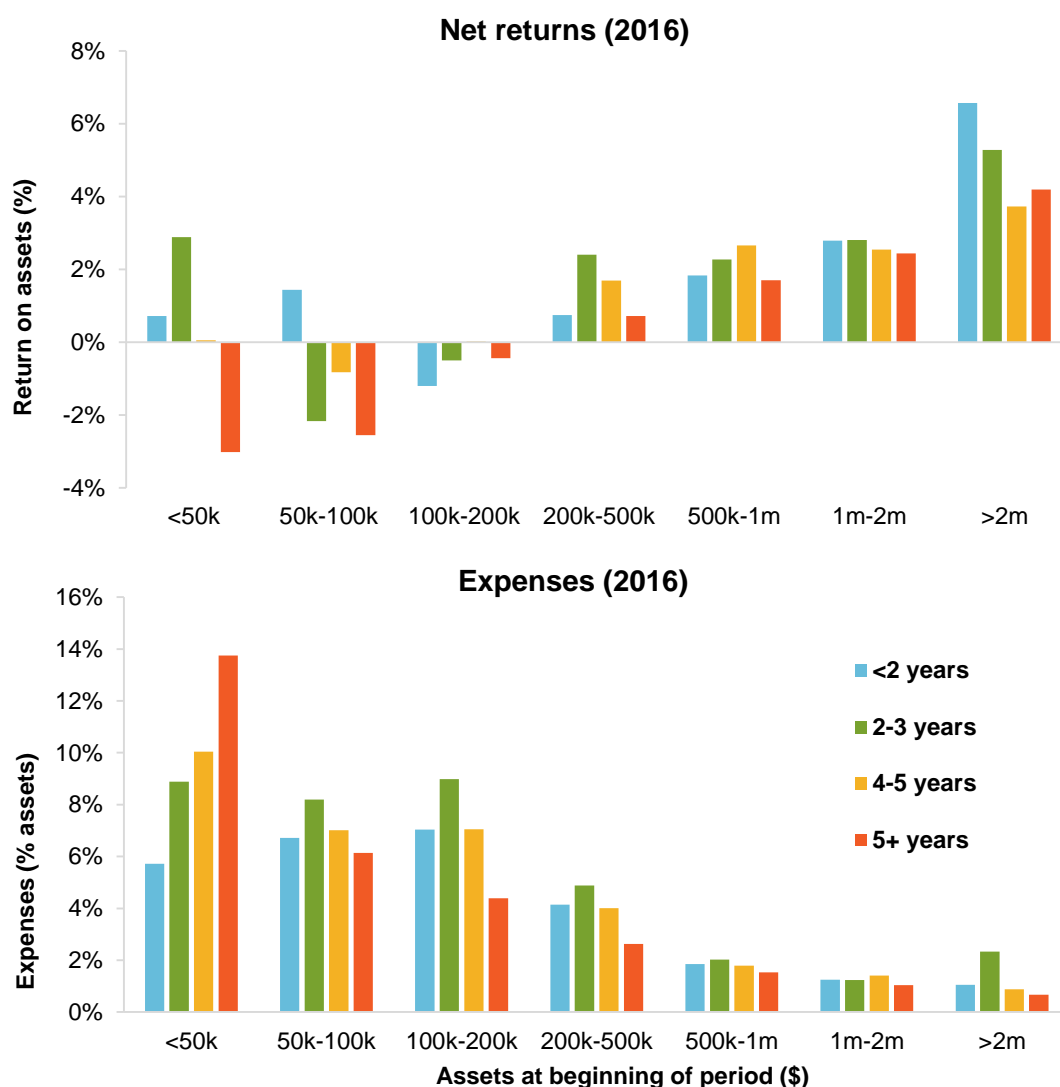
Figure 33 Younger SMSFs have higher costs and lower net returns, on average
2013–2016



Source: ATO (pers. comm., 31 August 2018).

Second, ATO data indicate that expense ratios are much more clearly related to fund size than fund age. Indeed, SMSFs between 4 and 5 years old have expenses that remain above 1.5 per cent of assets a year on average. When cut by size bracket, the ATO data (for 2016) show that SMSFs under \$500 000 in assets have expense ratios that are well above average, particularly for those in the smallest size brackets (figure 34). Indeed, in most size brackets, SMSFs aged between 2 and 5 years have similar or higher expenses on average compared to those that are under 2 years. Similar expense patterns are evident in the earlier years. The patterns are less clear cut in terms of returns, but SMSF age does not appear to be a strong predictor of investment performance or expense ratios within any size bracket.

Figure 34 SMSF returns and expenses by age and size bracket, 2016



Source: ATO (pers. comm., 24 September 2018).

These results may, in part, be explained by the trajectory of newly established SMSFs over time. To the extent that new SMSFs incur high initial costs but quickly grow to over \$500 000 in assets (for example, as members roll in balances from other funds), they may then experience a reduction in expense ratios and an increase in net returns (for example, due to economies of scale). However, those that remain small appear to continue to experience high costs and low returns on average, even well after establishment costs have been paid. In 2016, about 42 per cent (over 200 000) of SMSFs appear to be in this category (older than 2 years and balances less than \$500 000).

That said, this need not imply that all SMSFs with balances under \$500 000 are generating poor net investment returns. Averages conceal variation, and so some SMSFs within this group may well have lean costs and high net returns. A further possibility is that there are tax advantages to members that are not fully reflected in the net returns data (as noted in chapter 6 of the draft report).

The results could reflect the presence of wind-up costs (where some funds in the sample are in the process of being closed), especially for established SMSFs in the smaller size categories. In 2016, average costs for SMSFs that were wound up were \$5860, and collectively the costs of these wound-up SMSFs were equivalent to about 1.1 per cent of aggregate expenses across all SMSFs in that year (ATO, pers. comm., 31 August 2018).

Wind-up rates are generally low, with approximately 1.9 per cent of SMSFs wound up in 2016 (ATO 2018), though rates are around 10 per cent for small SMSFs (based on estimates below). This implies that the impact of SMSFs being wound up on average expenses for all SMSFs in the smallest size bracket could be about 1-2 percentage points.

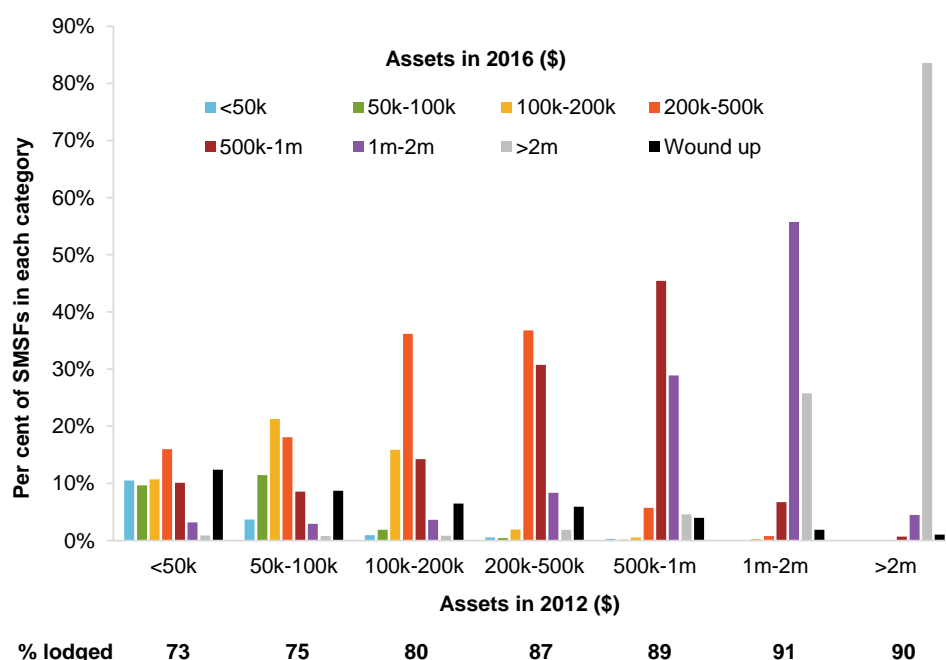
Longitudinal data

Other data shine a more direct light on the growth trajectories of individual SMSFs. The ATO has shared with the Commission data that were extracted to show how the 36 000 SMSFs that first lodged a tax return in 2012 (and were established in either 2011 or 2012) had fared over the following five years. Some of these data were previously published by the ATO in infographic format (ATO 2018).

Figure 35 shows the distribution of balances for new SMSFs in 2012 and where these funds ended up in 2016. Overall, about a quarter of funds with less than \$500 000 in 2012 had grown to over \$500 000 in 2016. For the two smallest brackets in 2012 (under \$55 000 and \$50 000 to \$100 000), about 20 and 15 per cent, respectively, remained in either of these categories by 2016. SMSFs that started large mostly tended to stay large.

These data also indicate how many SMSFs had wound up over the period. Wind-up rates were about 10 per cent for the two smallest size brackets in 2012, and proportionally much lower for larger brackets. Rates of non-lodgement of 2016 tax returns were also disproportionately higher for the smallest brackets. This could be an indication of financial difficulty in some cases.

Figure 35 SMSF class of 2012: where are they now?^a



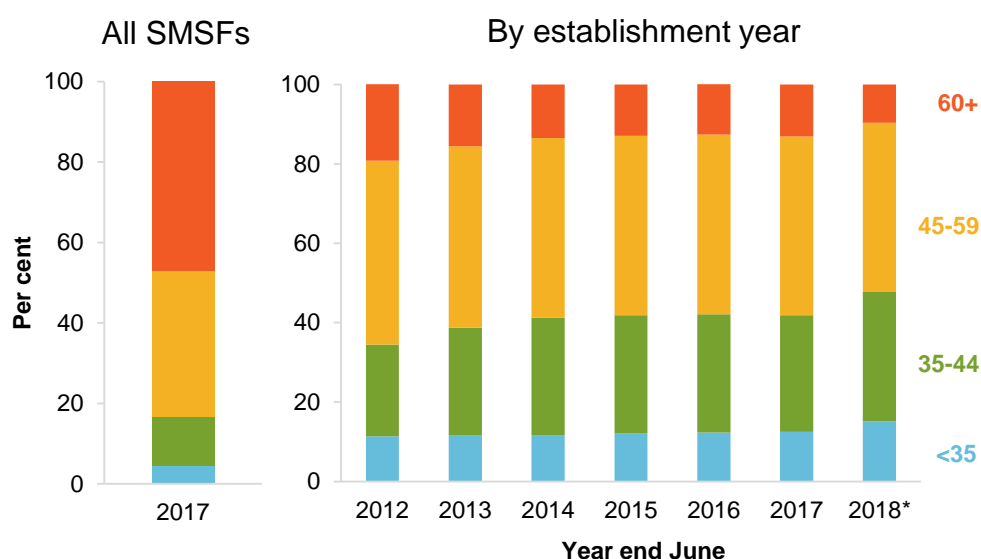
^a The percentage lodged indicates the share of SMSFs within each size bracket that had lodged a tax return in 2016 (and thus are included in the chart).

Source: ATO (pers. comm., 24 September 2018).

Age of SMSF trustees

Figure 36 shows the age distribution of SMSF trustee-members, for all SMSFs (left) and newly established SMSFs by year of establishment (right). SMSFs established in each of the past seven years had a materially higher proportion of trustees aged under 45 (about two in five, compared to less than one in five), with the strongest growth in the 35-44 age bracket. There was also modest growth in the share aged under 35. By contrast, the number of new SMSF trustees aged over 60 has been declining. The combined effect of these trends is a median age of 47.2 for trustees of new SMSFs (as of 2016), compared to 58.9 for all SMSFs (ATO 2018).

Figure 36 **Age distribution of SMSF trustees^a**



^a Figures for all SMSFs in 2017 and new SMSFs in 2012–2016 are drawn from annual data; figures for new SMSFs in 2017 and 2018 are the average of quarterly values. * Figures for 2018 are to end March.

Sources: ATO (2018; SMSF quarterly statistical reports, various dates).

SMSF asset allocation

In the draft report, the Commission noted that the asset holdings of SMSFs are difficult to observe in ATO datasets due to the way asset classes are defined. This also makes it difficult to compare the asset allocation of SMSFs with the APRA-regulated segment.

The Commission has been provided with data from Class Limited on the asset allocation of SMSFs on more of a ‘look-through’ basis — that is, assigning the assets within various trusts and managed funds to specific asset classes (table 17). These data suggest broadly similar conclusions to the less-granular ATO data, but also reveal that SMSF holdings of fixed income assets and equities are likely to be materially higher than suggested by the ATO data. The share of ‘other’ assets that cannot be assigned to the main asset categories (and is likely to mostly comprise unlisted trusts) is substantially lower in the Class Limited data (11 per cent compared to 28 per cent). Importantly, these figures represent the average across SMSFs — the asset allocations of individual SMSFs could differ materially.

Since only one year of data is available for this more granular asset allocation, the Commission does not intend to revisit the illustrative investment performance benchmarking for SMSFs in the draft report (beyond updating to an additional year of data).

Table 17 Asset allocation of SMSFs versus APRA-regulated funds

Share of total assets, June 2016

<i>Asset category</i>	<i>SMSFs (Class Limited data^a)</i>	<i>SMSFs (ATO data)</i>	<i>APRA-regulated funds</i>
	%	%	%
Cash	23.8	24.8	12.9
Fixed income - domestic	3.4	1.5 ^b	13.3
Fixed income - international	2.6	na	7.5
Listed equities - domestic	30.6	29.5	22.5
Listed equities - international	5.4	0.6	21.5
Private equity	1.3	1.0	4.4
Listed property	1.5	na	3.8
Unlisted property	19.2	14.9	5.2
Listed infrastructure	1.2	na	1.5
Unlisted infrastructure	0.0	na	3.5
Other	10.8	27.6	3.8

^a Data adjusted from share of net assets to share of total assets. Where SMSF assets could not be split into domestic/international, they have been apportioned in line with the observed split for the remaining assets in the relevant category. ^b Value is for debt securities (total). **na** Not available.

Sources: ATO (2018); APRA (2018c); Class Limited (pers. comm., 5 October 2018).

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Attachment: fund survey recipients and respondents

Table 18 lists the funds that were asked to respond to the Commission’s supplementary funds survey and indicates which funds provided a response to the Commission. The following tables summarise survey response data on net returns by asset class (table 20) and investment management costs by asset class (table 21).

Table 18 List of funds survey recipients and respondents

<i>Name</i>	<i>Initial survey</i>	<i>Supplementary survey</i>
Advance Retirement Suite	✓	
Alcoa of Australia Retirement Plan		✓
AMG Super		
AMP Eligible Rollover Fund		✓
AMP Retirement Trust	✓	✓
AMP Superannuation Savings Trust ^a	✓	✓
ANZ Australian Staff Superannuation Scheme	✓	✓
Aon Eligible Rollover Fund		
AON Master Trust		
ASGARD Independence Plan Division Two ^a	✓	✓
Australia Post Superannuation Scheme	✓	✓
Australian Catholic Superannuation and Retirement Fund	✓	✓
Australian Defence Force Superannuation Scheme		✓
Australian Eligible Rollover Fund	✓	✓
Australian Ethical Retail Superannuation Fund ^a	✓	✓
Australian Meat Industry Superannuation Trust	✓	✓
AustralianSuper	✓	✓
Australia's Unclaimed Super Fund ^a	✓	✓
Austsafe Superannuation Fund	✓	
Avanteos Superannuation Trust	✓	✓
AvSuper Fund	✓	✓
AvWrap Retirement Service	✓	✓
Boc Gases Superannuation Fund		
BT Classic Lifetime	✓	
BT Lifetime Super	✓	
Building Unions Superannuation Scheme (Queensland)	✓	✓
Care Super	✓	✓
CBH Superannuation Fund	✓	✓
Challenger Retirement Fund	✓	
Christian Super	✓	✓
Citibank Australia Staff Superannuation Fund	✓	
ClearView Retirement Plan	✓	✓
Club Plus Superannuation Scheme	✓	✓
Club Super	✓	
Colonial First State FirstChoice Superannuation Trust	✓	✓
Colonial First State Rollover & Superannuation Fund	✓	✓
Colonial Super Retirement Fund	✓	✓
Combined Super Fund	✓	✓

^a These funds submitted supplementary survey data after subsequent requests from the PC.

(continued next page)

Table 18 (continued)

<i>Name</i>	<i>Initial survey</i>	<i>Supplementary survey</i>
CommInsure Corporate Insurance Superannuation Trust		✓
Commonwealth Bank Approved Deposit Fund	✓	
Commonwealth Bank Group Super	✓	✓
Commonwealth Essential Super	✓	✓
Construction & Building Unions Superannuation	✓	✓
Crescent Wealth Superannuation Fund		✓
CSS Fund		✓
CUBS Superannuation Fund	✓	✓
Definitive Superannuation Plan ^a	✓	✓
Deseret Benefit Plan for Australia		
DIY Master Plan		✓
Dow Australia Superannuation Fund		
DPM Retirement Service	✓	✓
DuluxGroup Employees Superannuation Fund		
EmPlus Superannuation Fund	✓	✓
Encircle Superannuation Fund	✓	✓
Energy Industries Superannuation Scheme-Pool A	✓	✓
Energy Industries Superannuation Scheme-Pool B		✓
Energy Super	✓	✓
Enterprise Super		
Equisuper	✓	✓
Factory Mutual Insurance Company Superannuation Fund	✓	✓
Fairbrother Employees Retirement Fund		✓
Federation Alliance Superannuation Fund		✓
Fiducian Superannuation Fund	✓	✓
Fire and Emergency Services Superannuation Fund		
First State Superannuation Scheme	✓	✓
First Super		✓
Gillette Australia Superannuation Fund		
Goldman Sachs & JBWere Superannuation Fund	✓	✓
Grosvenor Pirie Master Superannuation Fund Series 2		✓
Guild Retirement Fund	✓	✓
Health Employees Superannuation Trust Australia	✓	✓
Heidelberg Australia Superannuation Fund		
Holden Employees Superannuation Fund		
HOSTPLUS Superannuation Fund	✓	✓
HUB24 Super Fund		✓
IAG & NRMA Superannuation Plan	✓	✓
Incitec Pivot Employees Superannuation Fund		
ING Direct Superannuation Fund		✓

^a These funds submitted supplementary survey data after subsequent requests from the PC.

(continued next page)

Table 18 (continued)

<i>Name</i>	<i>Initial survey</i>	<i>Supplementary survey</i>
Intrust Super Fund		✓
IOOF Portfolio Service Superannuation Fund	✓	✓
ISARF Superannuation Fund		✓
Itochu Australia Superannuation Plan	✓	✓
Jamestrong Packaging Australia Superannuation Fund		
L&H Group Superannuation Fund	✓	
Labour Union Co-Operative Retirement Fund	✓	✓
legalsuper	✓	✓
LESF Super		✓
Lifefocus Superannuation Fund		✓
Linfox Staff Superannuation Fund		
Local Authorities Superannuation Fund	✓	✓
Local Government Super		✓
Local Government Superannuation Scheme	✓	✓
Lutheran Super	✓	✓
Macquarie ADF Superannuation Fund	✓	✓
Macquarie Superannuation Plan ^a	✓	✓
Macquarie University Professorial Superannuation Scheme		✓
Manildra Flour Mills Retirement Fund		
Map Superannuation Plan		✓
Maritime Super	✓	✓
Max Super Fund		
Meat Industry Employees Superannuation Fund		✓
Media Super	✓	✓
Mercer Portfolio Service Superannuation Plan	✓	✓
Mercer Super Trust ^a	✓	✓
Mercy Super	✓	✓
Military Superannuation & Benefits Fund No 1		
Mine Wealth and Wellbeing Superannuation Fund	✓	✓
MLC Super Fund ^a	✓	✓
MLC Superannuation Fund	✓	✓
MTAA Superannuation Fund	✓	✓
Munich Holdings of Australasia Pty Ltd Superannuation Scheme		
MyLifeMyMoney Superannuation Fund	✓	✓
National Mutual Pro-Super Fund		
National Mutual Retirement Fund a		
Nationwide Superannuation Fund	✓	✓
NESS Super	✓	
Netwealth Superannuation Master Fund	✓	✓

^a These funds submitted supplementary survey data after subsequent requests from the PC.

(continued next page)

Table 18 (continued)

<i>Name</i>	<i>Initial survey</i>	<i>Supplementary survey</i>
NGS Super		
Nissan Superannuation Plan		
Oasis Superannuation Master Trust	✓	✓
OnePath Masterfund ^a	✓	✓
Oracle Superannuation Plan		
Perpetual Super Wrap	✓	✓
Perpetual WealthFocus Superannuation Fund	✓	✓
Perpetual's Select Superannuation Fund	✓	✓
Personal Choice Private Fund		✓
Pitcher Retirement Plan		✓
Port of Melbourne Superannuation Fund		✓
Powerwrap Master Plan		✓
Praemium SMA Superannuation Fund		✓
Premiumchoice Retirement Service	✓	✓
Prime Super	✓	✓
Public Sector Superannuation Accumulation Plan		✓
Public Sector Superannuation Scheme		✓
Qantas Superannuation Plan	✓	✓
Queensland Independent Education & Care Superannuation Trust	✓	✓
Rei Super	✓	✓
Retail Employees Superannuation Trust	✓	✓
Retirement Portfolio Service	✓	✓
Retirement Wrap ^a	✓	✓
Rexel Australia Superannuation Plan		✓
Russell Investments Master Trust	✓	✓
Smartsave 'Member's Choice' Superannuation Master Plan		✓
SMF Eligible Rollover Fund		
Star Portfolio Superannuation Fund	✓	✓
State Public Sector Superannuation Scheme	✓	✓
StatePlus Fixed Term Pension Plan	✓	✓
StatePlus Retirement Fund	✓	✓
Statewide Superannuation Trust	✓	✓
Stone Superannuation Fund		
Suncorp Master Trust	✓	✓
Sunsuper Superannuation Fund	✓	✓
Super Directions Fund a	✓	✓
Super Safeguard Fund		✓
SuperTrace Eligible Rollover Fund	✓	
Symetry Personal Retirement Fund	✓	✓

^a These funds submitted supplementary survey data after subsequent requests from the PC.

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Table 18 (continued)

<i>Name</i>	<i>Initial survey</i>	<i>Supplementary survey</i>
Tasplan Superannuation Fund	✓	✓
Telstra Superannuation Scheme	✓	✓
The ARA Retirement Fund		
The Bendigo Superannuation Plan ^a		✓
The Executive Superannuation Fund	✓	✓
The James Superannuation Fund	✓	✓
The Paragon Superannuation Fund		
The PPS Corporate Superannuation Fund		
The Retirement Plan		
The State Bank Supersafe Approved Deposit Fund	✓	
The Super Money Eligible Rollover Fund (SMERF)		✓
The Towers Watson Superannuation Fund		
The University of Adelaide Superannuation Scheme A 1985		
The University of New England Professorial Superannuation Fund	✓	✓
The University of New South Wales Professorial Superannuation Fund	✓	✓
The University of Sydney Professorial Superannuation System		✓
The University of Wollongong Professorial Superannuation Scheme		✓
The Victorian Independent Schools Superannuation Fund	✓	✓
Tidswell Master Superannuation Plan		
Toyota Super		
TWU Superannuation Fund	✓	
Ultimate Superannuation Fund	✓	✓
Unisuper	✓	✓
United Technologies Corporation Retirement Plan		
Victorian Superannuation Fund	✓	✓
WA Local Government Superannuation Plan	✓	✓
Wealth Personal Superannuation and Pension Fund		
Westpac Mastertrust - Superannuation Division ^a	✓	✓
Westpac Personal Superannuation Fund	✓	
Zurich Master Superannuation Fund	✓	✓

^a These funds submitted supplementary survey data after subsequent requests from the PC.

Table 19 Survey responses: asset class returns (2008–2017)

Asset class	Number of observations			Annualised net investment return (per cent)		
	System	Retail	Not-for-profit	System	Retail	Not-for-profit
Cash	750	292	458	4.05	4.17	3.95
Australian listed equity	749	295	454	3.84	3.52	4.21
International listed equity	734	282	452	5.37	5.02	5.63
Australian fixed income	622	264	358	6.43	6.16	6.54
International fixed income	546	223	323	7.08	6.69	7.57
Listed infrastructure	161	95	66	5.74	6.52	6.38
Unlisted infrastructure	314	48	266	9.44	8.72	9.46
Total infrastructure	443	109	334	8.96	7.50	8.93
Private equity	379	33	346	8.01	10.51	7.50
Listed property	338	202	136	1.82	1.76	2.36
Unlisted property	447	94	353	6.97	8.73	6.79
Total property	670	225	445	5.51	2.86	6.36

^a Number of observations refers to over the whole 10 year period. ^b Observations where funds did not split up fixed interest have been excluded. ^c Annualised net investment returns for each asset class are calculated by taking the yearly average return (weighted by fund assets) and calculating the geometric mean over the 10 year period.

Source: Supplementary funds survey.

Table 20 Survey responses: investment management costs (2017)

Asset class	Number of observations			Investment management cost (per cent)		
	System	Retail	Not-for-profit	System	Retail	Not-for-profit
Cash	74	31	43	0.19	0.44	0.05
Australian listed equity	80	34	46	0.42	0.60	0.32
International listed equity	77	32	45	0.53	0.66	0.48
Australian fixed income	75	34	41	0.18	0.30	0.10
International fixed income	66	28	38	0.41	0.57	0.31
Listed infrastructure	27	16	11	0.49	0.75	0.38
Unlisted infrastructure	43	7	36	0.95	3.28	0.89
Private equity	43	3	40	2.79	3.13	2.75
Listed property	42	25	17	0.54	0.65	0.37
Unlisted property	50	13	37	0.88	0.93	0.88

^a Investment management costs for each asset class are calculated by taking the average cost (weighted by fund assets).

Source: Supplementary funds survey.