

# **Off target: why Mercer's critique of our retirement modelling misses the mark**

**August 2019**

Brendan Coates, Owain Emslie, and Jonathan Nolan

## 1 Summary

Grattan Institute research has shown that the conventional wisdom that most Australians don't save enough for retirement is wrong. The vast majority of retirees today and in future are likely to be financially comfortable.

Our modelling shows that on reasonable assumptions, most workers today will also be comfortable when they retire. The median worker aged 30 can expect a retirement income of at least 89 per cent of their pre-retirement income – well above the 70 per cent benchmark used by the OECD and others, and more than enough to maintain pre-retirement living standards. And many low-income Australians will get a pay *rise* when they retire, through a combination of the Age Pension and their compulsory superannuation savings.

Grattan's findings accord with past modelling by the Treasury, including that done for the Henry Tax Review. And they are consistent with recent retirement modelling by actuarial firm Rice Warner. In contrast, research by others in the superannuation industry that finds otherwise has typically overestimated retirees' spending needs, or ignored non-super savings.

In a recent report, superannuation firm Mercer claimed Grattan's retirement income research was 'very misleading' and was based on assumptions that were 'not realistic' for the average Australian. This Grattan policy paper shows that the Mercer critique of our work misses the mark.

Some of Mercer's claims result from an unfortunate misreading of our approach. Mercer mistakenly concludes that we model a decline in working-age incomes in the lead up to retirement, when in fact incomes in our modelling peak just before retirement.

Mercer argues that retirement incomes should be assessed against the peak in earnings from ages 40 to 55, indexed forward by wages to age 67. But such a benchmark is 15 per cent higher than Australians ever earn while working. It also ignores the fact that most Australians aged 40-55 are still incurring the costs of raising dependent children, whereas in retirement they are not. After all, spending by Australian households *falls* by around 15 per cent between ages 45-49 to 60-64. Mercer's work falls into the same trap as much Australian research on retirement incomes: it *assumes* what retirees need without looking closely at what they spend, or what they earn while working.

And Mercer's preoccupation with ensuring *all* retirees, and especially wealthier retirees, are as well off in retirement as beforehand is a recipe for higher inheritances. Its approach would force low- and middle-income Australians to over-save for their retirement. Policymakers can only justify lowering someone's living standards during their working life if they're protecting them from even worse outcomes in retirement.

In contrast, our modelling is consistent with the lived experience of retirees today. Our *Money in retirement* report showed that most retirees today have a similar or higher living standard as they had while working. Most retirees today feel more comfortable financially than younger Australians who are still working. And retirees are less likely than working-age Australians to suffer financial stress such as not being able to pay a bill on time.

Retirement incomes policy needs to balance the trade-off between higher living standards when retired against lower living standards when working. And retirement modelling should reflect the reality of Australians' spending needs, in retirement and beforehand. Sadly Mercer's critique of Grattan's retirement research does neither.

## 2 Grattan's approach to retirement incomes policy and modelling

### 2.1 The challenge

Australia's retirement incomes system is supposed to ensure older Australians have enough income to enjoy a reasonable standard of living in retirement.<sup>1</sup> It aims to meet the minimum needs of all Australians. And it aims to provide a consistent standard of living across peoples' lives, also known as *lifetime consumption smoothing*.

But higher retirement incomes always come at a cost: either people have lower living standards while working; or governments give up more revenue for superannuation tax breaks; or taxpayers pay more for pensions. The key challenge for **retirement incomes policy** is balancing these trade-offs.

Forcing Australians to save more for their retirement is not always beneficial. If people have lower living standards while working they are less able to be able to afford to buy a home, or invest in their children's education, or start a new business. And making Australians save more than they need (or are likely to spend) in retirement is a recipe for larger inheritances, which will exacerbate wealth inequality in the long term.<sup>2</sup> Policymakers can only justify lowering someone's living standards during their working life if they're protecting them from even worse outcomes in retirement.

Retirement incomes policies should be set so they are appropriate for most people. Inevitably, policies will not produce the best outcome for every person to whom they apply. But setting retirement incomes policy for the small number of Australians who would otherwise not replace their pre-retirement living standards would mean forcing *everyone else*

to save more than they need, making a large number of Australians worse off.

**Retirement incomes modelling** should test whether retirement policy settings are appropriate for most people. Such modelling can't ever be representative of the retirement incomes achieved by all Australians. And as with any modelling, it naturally involves making assumptions: when will people retire; how long will they live for; and what living standard should they aim to sustain through their retirement?

The real test here is to make assumptions that best reflect reality. Grattan's approach to retirement incomes policy, and modelling, has sought to do precisely that. And unlike most other work in this field, Grattan has spelt out our assumptions in substantial detail.<sup>3</sup>

### 2.2 Grattan's research finds most Australians can look forward to an adequate retirement

Our 2018 *Money in retirement* report showed that, on reasonable assumptions, most Australian workers can also look forward to an adequate retirement. Our updated retirement incomes modelling using the Grattan Retirement Income Projector (GRIP) shows the median worker aged 30 today can expect a retirement income of at least 89 per cent of their pre-retirement post-tax income – well above the 70 per cent benchmark used by the OECD and others, and more than enough to maintain pre-retirement living standards.

The vast majority of workers aged in their 40s and 50s are also on track for a comfortable retirement (Figure 2.1).<sup>4</sup> In fact those in their 40s and

---

1. See Daley et al. (2018, chapter 2) for a detailed discussion of what the objectives should be for Australia's retirement incomes system.

2. Daley et al. (2014).

3. Daley et al. (2018, table 4.3).

4. People who will retire over the next two decades may not save as much out of their pay packets as younger generations, but the Age Pension will replace a larger

50s are typically on track to replace at least 80 per cent of their pre-retirement, post-tax earnings in retirement, well above the 70 per cent benchmark used in our research.

Thus the vast majority of Australians will have an income in retirement sufficient to maintain their lifestyle before retirement, and well above the Age Pension, even if the Superannuation Guarantee doesn't increase as scheduled from 9.5 per cent to 12 per cent of wages. And many low-income Australians will get a pay *rise* when they retire, through a combination of the Age Pension and their compulsory superannuation savings.

Of course, retirement incomes won't be adequate for all retirees in future. Falling rates of home ownership mean that many more low-income retirees will rent, increasing their risk of poverty in retirement. And single women with low savings are particularly at risk. These are the real challenges facing Australia's retirement incomes system.

Grattan's findings demonstrated that higher compulsory superannuation contributions aren't needed. We also showed that if governments want to boost retirement incomes, the current policy of increasing the Super Guarantee to 12 per cent is among the worst ways to get there: it would cost workers and governments more today, it would do little to boost the retirement incomes of many low- and middle-income workers tomorrow, and it would lead to lower pensions for both current and future retirees.

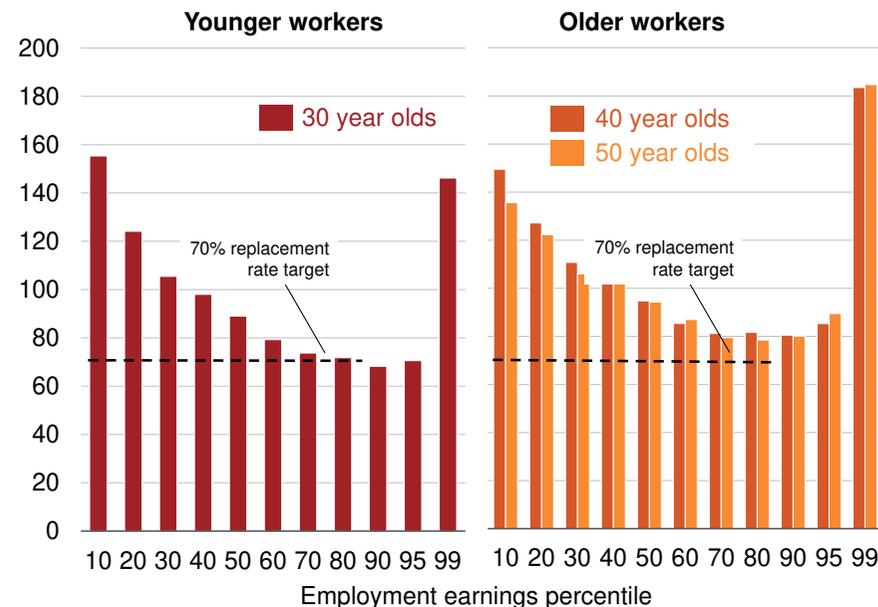
More importantly, higher super wouldn't tackle the real challenges facing our retirement incomes system: the pensions assets test taper is too harsh, and Commonwealth Rent Assistance is too low.<sup>5</sup>

share of their pre-retirement incomes. And lower compulsory super contributions are offset by historically high returns on assets and significant non-super savings by the wealthy Daley et al. (2018, chapter 5).

5. Coates and Emslie (2019b).

**Figure 2.1: Both older and younger workers can expect to replace at least 70 per cent of their pre-retirement income**

Replacement rates of pre-retirement disposable income for households aged 65-84 in 2015, relative to when aged 45-64 in 1995, per cent



Notes: See Daley et al. (2018, figure 1.2).

Source: Daley et al. (Ibid., figure 1.2), updated for latest Grattan retirement incomes projections published in Coates and Emslie (2019a, pp. 22-23).

### 2.3 Grattan's findings are consistent with Treasury, but contradict industry research based on flawed assumptions

Grattan's research aligns closely with previous Treasury modelling, including that done for the Henry Tax Review, which also concluded that retirement incomes will be adequate for most Australians.<sup>6</sup> Crucially, Treasury has consistently benchmarked retirement incomes to inflation, rather than to wages.<sup>7</sup>

Recent modelling by actuarial firm Rice Warner also generates similar outcomes to Grattan's retirement incomes modelling.<sup>8</sup> And unlike much other industry research, Rice Warner benchmarks retirement spending needs to inflation, not wages.<sup>9</sup>

But our findings contradict the claims of others in the superannuation industry that Australians are not saving enough for their retirement. Such claims have typically been based on research that overlooks, or is silent about, three important issues.<sup>10</sup>

First, a lot of research assumes that incomes in retirement should keep up with wages growth. Implicitly they assume that a retiree needs an income 28 per cent higher at age 92 than at age 67, even after accounting for inflation (Figure 2.2). But our analysis shows that

---

6. For example see: Morrison (2015), Rothman (2011), Henry (2009) and Treasury (2009).

7. Daley et al. (2018, table 4.4.).

8. Rice Warner (2019, graph 6, graph 7).

9. Rice Warner (ibid.) continues to deflate working-age income by wages.

10. In contrast to our analysis, several high-profile Australian studies claim that most Australians face an inadequate retirement. They are inconsistent with the findings of GRIP either because they assume that spending in retirement should keep up with wages growth, contrary to actual behaviour; or they compare retirement incomes to the Association of Superannuation Funds of Australia's 'comfortable' standard, which is inappropriate; or they ignore non-super savings, which are material for high-income earners. Few explain how their findings are very sensitive to their assumptions, particularly the choice of deflator. For more detail see Daley et al. (2018, table 4.4.).

Australians tend to spend less after they retire, even when they have money to spare.<sup>11</sup> Therefore, retirement incomes should be measured after accounting for inflation, rather than wages.<sup>12</sup>

Second, some research compares retirement incomes to ASFA's 'comfortable' standard. But that is too high – the standard was set to reflect a lifestyle typical for the top 20 per cent of retirees at the time.<sup>13</sup> Average living standards in Australia before retirement are lower than the ASFA benchmark for living standards in retirement. The average household can only reach ASFA's 'comfortable' benchmark in retirement by living less than 'comfortably' before retirement.

Third, some research ignores non-super savings, which are material, especially for wealthier households. Not all wealthier retirees have an investment property portfolio, shares, bank deposits, and a business, but most have something beyond their super and their home.<sup>14</sup> Failing to include these non-super savings particularly skews findings for the wealthiest 20 per cent of retirees.

---

11. Ibid. (figure 3.5, figure 3.6).

12. Since replacement rates in GRIP are calculated by comparing retirement incomes over the entire retirement to the last five years of working, GRIP implicitly allows for wage deflation of working-age incomes, but CPI-deflation of retirement incomes. In contrast, wage indexation remains appropriate for the Age Pension since the pension is designed to ensure older Australians do not fall into poverty in retirement, and poverty is experienced relative to community living standards: Daley et al. (Ibid., p. 54).

13. Ibid. (p. 34).

14. Daley and Coates (2016); and Daley and Coates (2017).

## 2.4 Our findings are consistent with the lived experience of retirees today

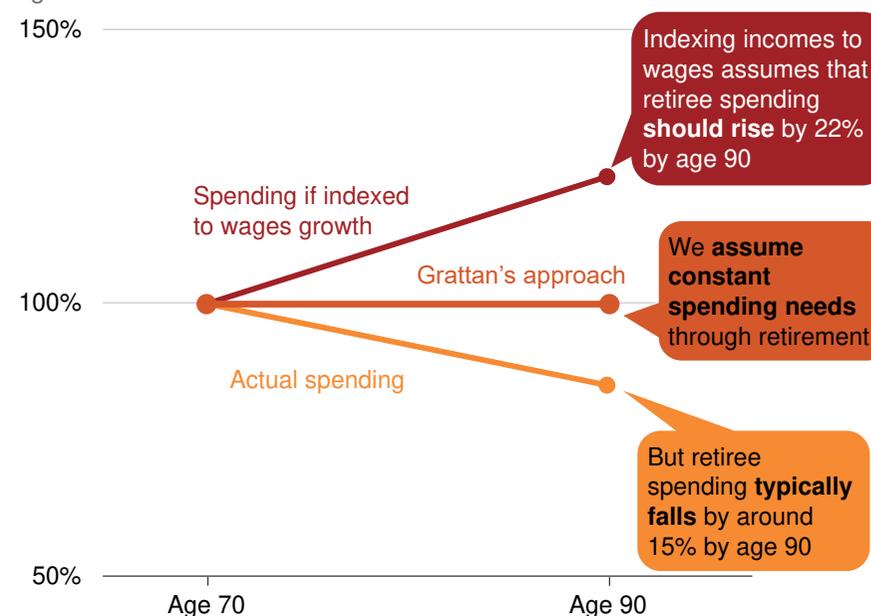
Most importantly, Grattan's retirement modelling accords with the actual experiences of retired Australians today.

Much previous retirement incomes simply assumed retirement incomes would be inadequate, especially by forecasting that retirees' spending needs would rise in line with wages as retirees aged. In contrast, Grattan looked at what retirees spend in retirement, and how retirees' *actual* income and spending compared to their income and spending 20 years ago, before they retired.

Our *Money in retirement* report found that, across the income distribution, retirees today typically have enough money to sustain the same, or a higher, living standard in retirement as when working (Figure 2.3 on the following page).<sup>15</sup> Subjectively, most retirees today also feel more comfortable financially than younger Australians who are still working (Figure 2.4).<sup>16</sup> Some retirees are suffering financial stress, especially if they rent, but rates of financial stress are much lower than for retirees than for people of working age.<sup>17</sup> Many retirees are net savers, and current retirees often leave a legacy almost as large as their nest egg on the day they retired.<sup>18</sup>

**Figure 2.2: Retirees' incomes should rise in line with inflation at most, not wages**

Real (inflation adjusted) retiree spending as a proportion of their spending at age 70



Notes: Assumes annual real wages growth of 1 per cent. Stylized spending example taken from Daley et al. (2018, figure 3.5).

Source: Daley et al. (Ibid., figure 4.6).

15. Daley et al. (2018, figure 3.11).

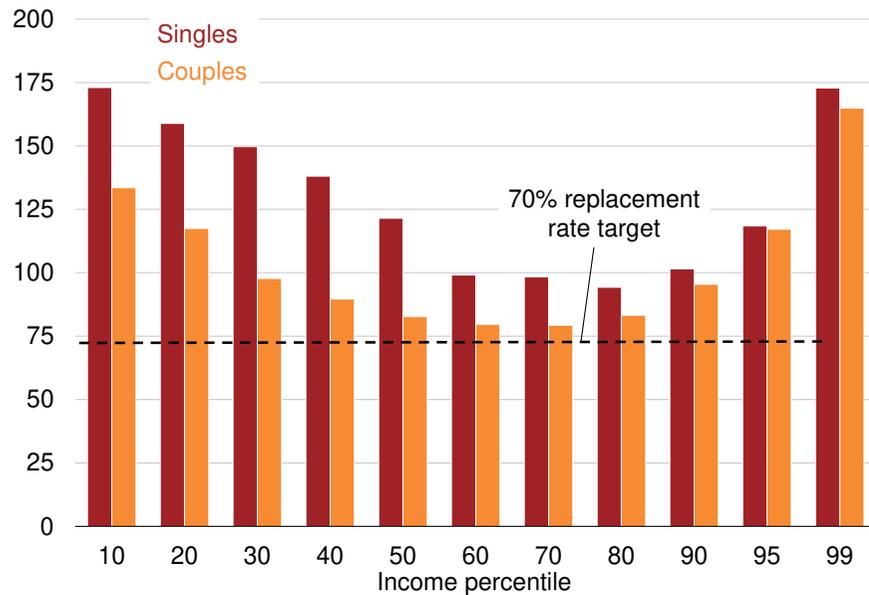
16. Ibid. (p. 18).

17. Ibid. (figure 3.3).

18. Ibid. (pp. 31-34).

**Figure 2.3: Retirees today have higher incomes than when they were working-age**

Disposable income for households aged 65-84 in 2015, relative to income for households aged 45-64 in 1995, \$2015-16, per cent

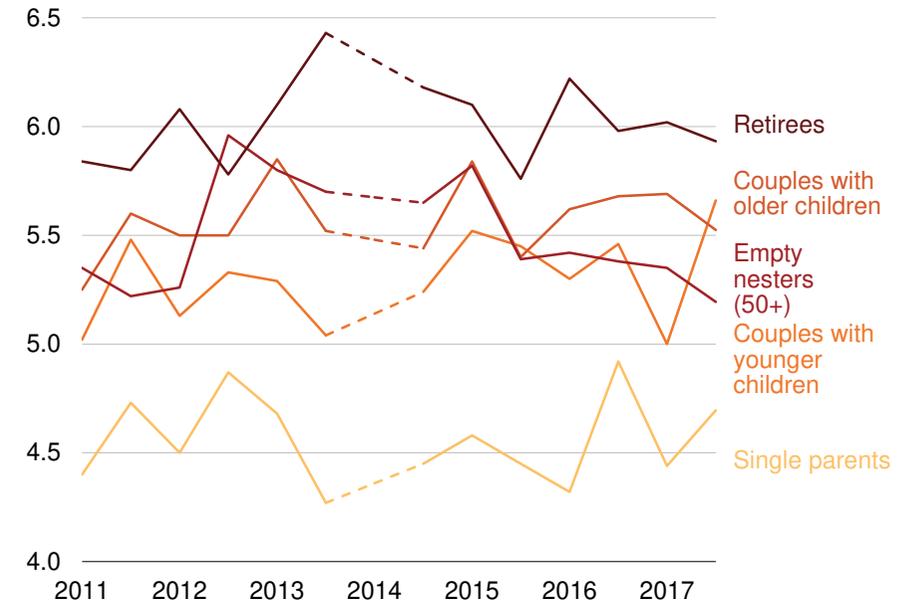


Notes: Based on disposable income from the 1995-96, and 2015-16 iterations of the Survey of Income and Housing. Disposable income includes head of household and their partner, but not children. Incomes in 1995 adjusted to take account of changes in ABS definitions of income between surveys.

Source: Daley et al. (2018, figure 3.11).

**Figure 2.4: Retirees today feel more comfortable financially than any other group in society**

Self-assessed financial comfort, scores out of ten



Notes: Excludes anomalous December 2014 survey. Middle-aged singles and couples without children, and younger singles and couples without children, have been excluded for readability. Middle-aged households with no children are sometimes imagined to be the most financially secure, but even their self-assessed financial comfort is worse than retirees, having averaged just below 5.5 across the survey period.

Source: Daley et al. (Ibid., figure 3.1).

### 3 Mercer's critique of Grattan's retirement incomes modelling misses the mark

Our research showing that most Australians are already saving enough for their retirement has come as a surprise to many retirement income researchers.

In a recent report, Mercer claimed Grattan's research is 'very misleading'.<sup>19</sup> According to Mercer, our modelling is 'not realistic' for the average Australian because:

- We assume people are single when they retire, whereas 70 per cent have a partner and will receive a lower Age Pension for at least some of their retirement;
- Our calculations on desired lifestyle are based on the income people receive in the five years before their retirement;
- We model retirement incomes or those that work until the future pension eligibility age of 67, rather than modelling an earlier retirement;
- We project retirement incomes assuming retirees live until age 92, the projected average life expectancy for a 70-year-old in 2055.

Mercer claims that adjusting for these 'shortcomings' reduces the likely net replacement rates future retirees will achieve in our model. The next section of this chapter identifies where Mercer and Grattan agree in our approaches. The remainder of the chapter demonstrates that many of Mercer's proposed adjustments to our modelling would actually see our work depart from reality – and others reflect Mercer's bias towards unnecessarily boosting retirement incomes at the expense of people's living standards while working.

---

19. Mercer (2019, p. 1).

#### 3.1 There is much in common in our approaches

There are a number of areas where Mercer and Grattan agree when it comes to retirement incomes policy.

First, we agree that retirement incomes policy and modelling should be grounded in reality.

Second, we agree on the objective for retirement incomes policy: to ensure retirees have the same living standard in retirement as beforehand. Like Mercer, we believe retirement policy should aim to replace 70 per cent of pre-retirement, post-tax incomes for median-income earners.<sup>20</sup>

Third, we agree that people on very low incomes are likely to have a replacement rate closer to 100 per cent, while those on very high incomes should be satisfied with a replacement rate below 70 per cent.

Fourth, we agree that Australians can draw on a number of sources of income to fund their retirement, including:

- The means-tested **Age Pension**, that guarantees a minimum 'safety net' income for people with little other income or assets.
- Compulsory private saving via the **Superannuation Guarantee**, currently set at 9.5 per cent of wages, and legislated to rise to 12 per cent by July 2025.
- **Voluntary private savings**, including pre- and post-tax voluntary super contributions as well as other financial assets and investment property.

---

20. This is the same benchmark used in the past by the OECD and adopted in the Melbourne Mercer Global Pension Index. A higher replacement rate will be required for retirees that don't own their home: Daley et al. (2018, p. 65).

- **Home ownership**, which supports living standards in retirement because home-owning retirees do not need to set aside income for rent. And the home will become an increasing source of retirement income as retirees draw down on the value of the asset in retirement, especially via the Government's Pension Loans Scheme.<sup>21</sup>

And we agree that the system should draw on all sources of retirement incomes to achieve these objectives.

Fifth, Grattan and Mercer agree that retirees face investment, inflation, and longevity risks.<sup>22</sup> Grattan's research also suggests many people see their biggest risk in retirement as the possibility of significant one-off unexpected expenses, especially related to health and aged care.<sup>23</sup>

### 3.2 But Mercer inappropriately gives priority to living standards in retirement over living standards when working

Mercer identifies that replacement rates will be lower for couples than we have modelled for singles. Yet the typical retiree will spend about the same amount of time in retirement as a couple and as a single. Other retirement income modelling suggests most retiree couples can expect to have an adequate retirement income. And Grattan's research shows that retirees today – whether singles or couples – are achieving well more than 70 per cent of their pre-retirement incomes.

---

21. The Pension Loans Scheme provides an additional income stream for pensioners by allowing them to borrow against the value of their homes. The loan must be repaid upon the sale of the home.

22. Investment risk is the risk of lower investment returns. Inflation risk is the risk of higher inflation. Both risks result in a pot of savings at the point of retirement buying less than expected through retirement. Longevity risk is the risk of a person living longer than expected, so that their savings run out. See: Daley et al. (2018, p. 19).

23. Ibid. (pp. 33-34).

Many of Mercer's other criticisms of Grattan's research miss the mark entirely. Some result from an unfortunate misreading of our modelling approach. Others reflect an assumption that Australian workers should save enough to have a better living standard in retirement than they ever have while working. Mercer's work on retirement falls into the same trap as so much other Australian research on retirement incomes: it makes assumptions about what Australians need, without looking closely at what they actually spend both in retirement and beforehand.

And Mercer's preoccupation with ensuring *all* retirees achieve their target retirement income irrespective of whether they retire early or face other risks to their retirement incomes, while ignoring the often larger risks to living standards facing working-age Australians, is a recipe for higher inheritances. It would force many Australians to accept a lower standard of living while working. Policymakers can only justify lowering someone's living standards during their working life if they're protecting them from even worse outcomes in retirement.

Retirement incomes policy needs to balance the trade-off between higher living standards when retired against lower living standards when working. And retirement incomes modelling should reflect the reality of Australians' spending needs. Unfortunately, Mercer's approach to retirement incomes policy and modelling does neither.

The remainder of this chapter addresses Mercer's main claims one-by-one.

### 3.3 Modelling singles vs. couples

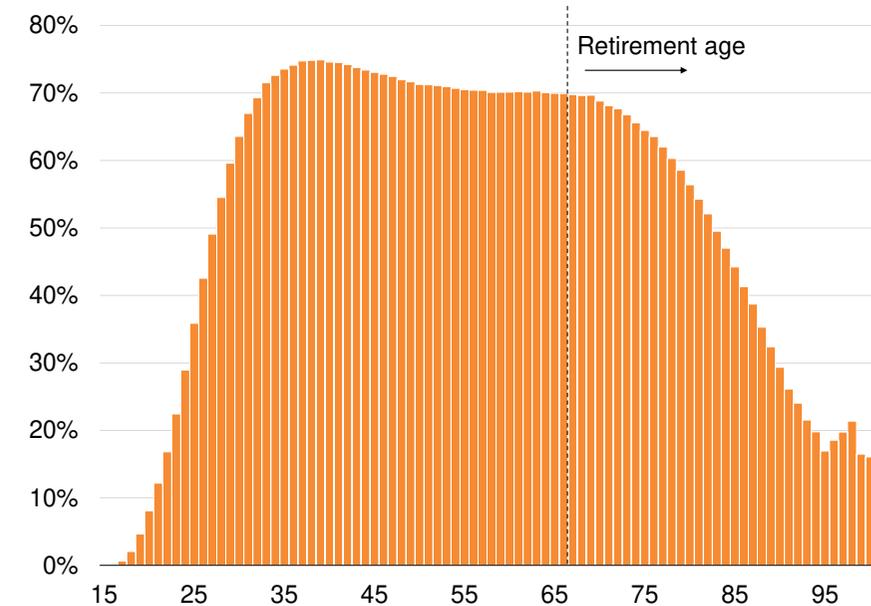
Mercer's argues that we overstate replacement rates in retirement by only modelling singles.

Of course replacement rates will be lower for couples than singles, because two people living as a couple will usually have lower pension entitlements than the same two people living apart. Our *Money in retirement* report acknowledged as much.<sup>24</sup>

Yet retirees spend about the same amount of time as a couple and as a single. At age 65, about 70 per cent of Australians are in couple. By age 80, the figure is down to about 50 per cent, and by age 92 it is down to about 25 per cent (Figure 3.1). As a result, the 'typical retiree' can expect to live just over half their retirement as a couple.<sup>25</sup> Lower rates of marriage mean retirees in future may spend even less time in retirement as part of a couple.<sup>26</sup> A single-person 'bias' is therefore about as accurate as a couple bias.

Nor is Grattan alone in modelling retirement incomes for singles. In fact, both the OECD research<sup>27</sup> that Mercer cites, and Mercer's own Melbourne Mercer Global Pension Index, model retirement incomes only for singles,<sup>28</sup> as did the Henry Tax Review.<sup>29</sup>

**Figure 3.1: Retirees are just as likely to be single as in a couple**  
Proportion of Australians coupled by age, 2016



Source: Grattan analysis of ABS (2016).

24. Ibid. (pp. 22-23).

25. By comparison, about 54 per cent of Age Pension recipients today are coupled. DSS (2019).

26. ABS (2018, Marriages (Australia), table 1). People approaching retirement today are somewhat less likely to be in a marriage (or de-facto relationship) than people aged 65 in 2006. According to Census data, about 70 per cent of people aged 65 were in a relationship in 2016, compared to 73 per cent of people aged 65 in 2006. The downward trend is likely to continue: people aged 45 to 60 were much less likely to be in a relationship in 2016 than for that age group in 2006: ABS (2016) and ABS (2006).

27. OECD (2017).

28. Mercer (2018).

29. Henry (2009); and Treasury (2009).

And focusing on singles alone does not imply that couples will have inadequate incomes. Retired couples are on the whole wealthier than singles even after adjusting for household size (Figure 3.2).<sup>30</sup> Recent retirement modelling by actuarial firm Rice Warner finds that median-income singles and couples would replace 70 per cent of their pre-retirement earnings in retirement, and all but the wealthiest 20 per cent of singles and 30 per cent of couples will achieve a 70 per cent replacement rate – and that's ignoring all voluntary savings.<sup>31</sup> The superannuation industry's own modelling shows that couples are more likely to achieve common adequacy standards than singles.<sup>32</sup>

In fact Grattan research shows that while replacement rates among couples already retired today are lower on average than for singles, they are still well above the 70 per cent replacement rate target adopted in our work.<sup>33</sup> And retired couples are on average replacing a *higher* proportion of their pre-retirement expenditure than retired singles<sup>34</sup> and are less likely than singles to suffer financial stresses or poverty in retirement.<sup>35</sup>

### 3.4 Our measure of pre-retirement incomes

According to Mercer:<sup>36</sup>

Grattan assumes that our desired lifestyle is based on the income received in our last five years of work before retirement. In fact, many Australian workers gradually transition to retirement and reduce their

30. ABS (2019a).

31. Rice Warner (2019, graph 6, graph 7).

32. For example, Rice Warner (*ibid.*) finds that couples across the earnings distribution reach the ASFA comfortable standard benchmark, compared to just the top 80 per cent of singles. See also: Actuaries Institute (2015) and Industry Super Australia (2015).

33. Daley et al. (2018, figure 3.11).

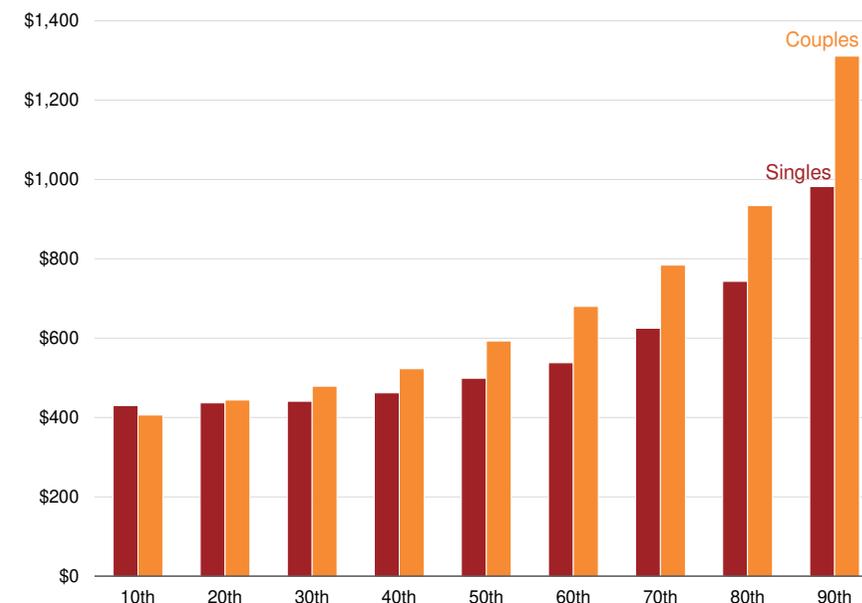
34. *Ibid.* (figure 3.12).

35. HILDA (2016, p. 30).

36. Mercer (2019, p. 2).

**Figure 3.2: Couples tend to have more spending power than singles in retirement**

Equivalised disposable household income at top of selected percentiles, weekly, singles and couples aged over 65 years

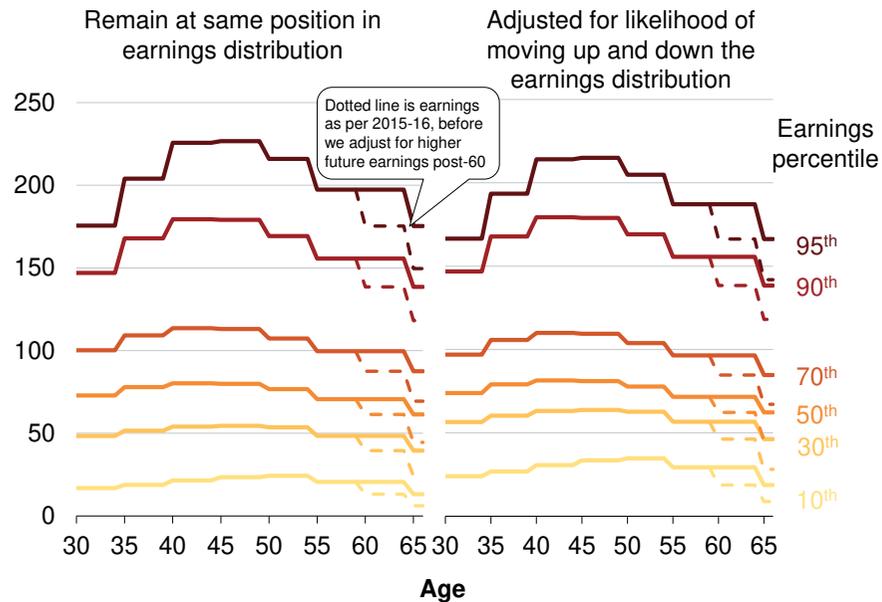


Note: Includes households where reference person is aged over 65 years.

Source: Grattan analysis of ABS (2016).

**Figure 3.3: Working-age incomes as projected in GRIP only fall a little from age 60 onwards**

Salary income as a proportion of AWOTE by age at different starting earnings points, per cent

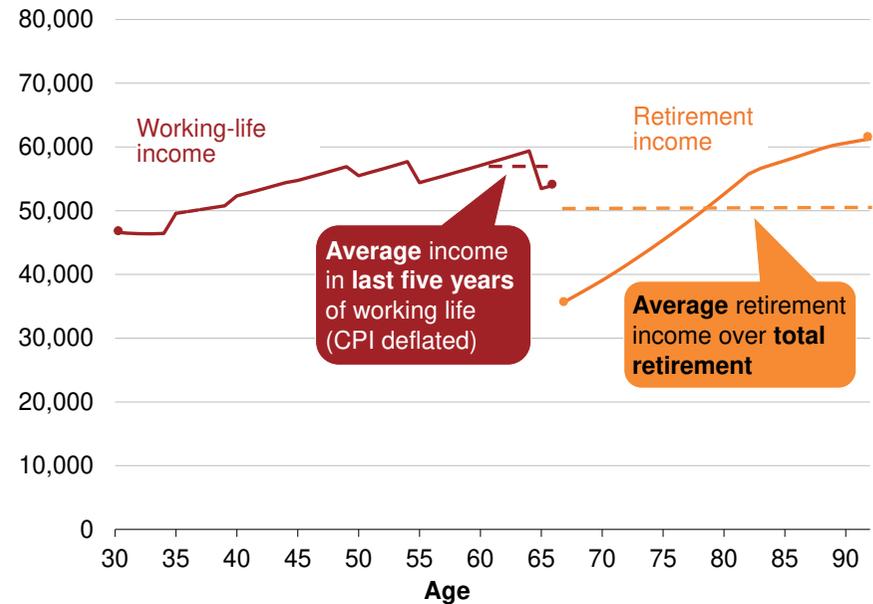


Notes: Lifetime income adjusted using a transition matrix that reflects the likelihood of moving up and down the income distribution over the course of a person's working life. As this is calculated as share of AWOTE at the time, it is effectively wage deflated.

Source: Daley et al. (2018, figure 4.2) Graphic has been revised since publication to clarify Grattan's approach to modelling working-age incomes in the years approaching retirement in GRIP.

**Figure 3.4: How we measure replacement rates: pre-retirement earnings peak just before retirement**

Real annual income, median earner, \$2015-6 (CPI-deflated)



Notes: Models retirement income of a person born in 1985, who works from age 30 to 67, and dies at age 92. Assumes wages growth falls by the amount of any Super Guarantee increase. Includes savings outside super. Employment earnings adjusted to account for movements up and down the earnings distribution, including transitions in and out of part-time work. Retirement savings drawn down over 26 years to leave a small bequest in addition to the home. Retirement income deflated by CPI.

Source: Grattan Retirement Income Projector.

income in the last few years. Hence, this reduced income does not represent their long-term standard of living.

It's true that Grattan calculates replacement rates by comparing average income over retirement against post-tax incomes in the last five years of working life. It's also true that our approach mimics that of many defined benefit pension schemes, where pension entitlements are typically set as a proportion of workers' final earnings.

Mercer presents no evidence for why replacement rates should be set at people's incomes at ages 40-50, apart from that being the point when earnings peak on a wage-deflated basis. Our approach reflects the reality that *actual* incomes of many Australians aged in their 60s *today* fall relative to the rest of the population before they retire.<sup>37</sup> In contrast, most other retirement incomes models simply ignore the reality that workers' incomes vary over time.<sup>38</sup>

But Mercer's claim that we overstate retirement incomes by comparing them to incomes in the last five years before retirement is based in part on an unfortunate misreading of our methodology. Grattan isn't modelling retirement for Australians today: we're modelling the retirement incomes of people aged 30 today and who won't retire for another 37 years. Rates of workforce participation are much higher today than they were 30 years ago, especially for women. The age for accessing the Age Pension will also be higher, at 67 years.

That is why we lift up projected incomes in GRIP for ages 60-64 in future to the levels seen for those aged 55-59 today. And incomes at

---

37. Earnings for people in their 60s still trend up in real terms, because wages have historically grown faster than prices. This can be seen clearly in Figure 3.4 on the preceding page where working-age incomes are deflated by inflation only.

38. For example, the OECD research that Mercer cites assumes that incomes do not vary as workers age. Instead individuals remain at the same point in the earnings distribution, often based on average full-time earnings, grown by real earnings of 1.25 per cent a year, until the year they retire. OECD (2017).

age 65-66 are increased to reflect what we see for those aged 60-64 today (Figure 3.3 on the previous page). In fact, working-age incomes in GRIP peak on an inflation-adjusted basis just before retirement – the precise period we use as the denominator for calculating replacement rates (Figure 3.4 on the preceding page). And comparing retirement incomes to working-age incomes over a full working life – the most reasonable alternative – actually *increases* the replacement rates for the median earner from 89 per cent to 94 per cent.<sup>39</sup>

Mercer argues that retirement incomes should be assessed against the peak in earnings from 'say aged 40 to 55, and then index that figure by wages, through to age 67'.<sup>40</sup> This would result in Australians have a much higher living standard in retirement than they ever have while working, for two reasons.

First, by taking peak earnings at ages 40-55 and benchmarking that figure to wages growth until age 67, Mercer would benchmark retirement incomes against an idyllic pre-retirement living standard that Australian workers never actually enjoy. The reality is that workers' incomes fall, or at least flatline, in the years leading up to retirement. Mercer would like to pretend otherwise. In fact, Mercer's retirement income benchmark is 15 per cent higher than what Australians *ever earn* while working (Figure 3.5 on page 15).

Second, Mercer's approach ignores the fact that most Australians aged 40-55 are still incurring the costs of raising dependent children, whereas in retirement they are not.<sup>41</sup> If the objective is to sustain people's living standards in retirement, surely the fact that typical retirees do not have dependent children should be taken into account.

---

39. Coates and Emslie (2019a, p. 24).

40. Mercer (2019, p. 6).

41. The average number of dependent children in each household falls from 1.5 per household aged 35-44, to 1 per household aged 45-54, to just 0.2 per household aged 55-64. ABS (2019a, table 10.3.).

Our analysis shows that spending by Australian households *falls* by around 15 per cent as they move from ages 45-49 to 60-64 (Figure 3.6 on page 16). And that holds for both wealthier and poorer households (Figure 3.7).

A close look at the reality of Australians' incomes and spending habits as they approach retirement demonstrates that our approach of using the last five years of working life as the denominator probably *underestimates* the degree to which retirees replace their pre-retirement living standards. In short, we're being conservative.

### 3.5 Retirement at age 67

Mercer's next claim is that:<sup>42</sup>

It is reasonable to assume that for most individuals 10 per cent of the superannuation benefit will be consumed so that only 90 per cent is available at age 67. Such a reduction in the available superannuation assets will inevitably have an impact on retirement income although the extent will also depend on the relative importance of the age pension.

Mercer's concern about our assumption that Australians will retire at the official pension age of 67 years is misguided. Older working-age Australians today already expect to retire at around age 67 – younger Australians, like those that we model, are should expect to retire even later.<sup>43</sup> The eligibility age for the Age Pension will also soon be 67 years. People who are forced to retire early, such as carers or those with a disability, can access the Carer Payment or the Disability Support Pension. People without work can get Newstart.<sup>44</sup>

---

42. Mercer (2019, p. 9).

43. The average age of retirement among those aged 45 and over today is 67 years for men and 66 years for women. ABS (2017, Table 9.1).

44. For example, the Henry Tax Review estimated that an average income earner would have a replacement rate of 70 per cent if they retired early and received

Forcing Australians to save even more for retirement, just in case they retire early, makes them poorer while working and is simply a recipe for larger inheritances. The Henry Tax Review was clear on this point when it argued against increasing compulsory super contributions beyond 9 per cent:<sup>45</sup>

Setting the superannuation guarantee rate to account for a person with a shorter working life would result in people with a longer working life saving significant amounts for their retirement.

And our approach is already conservative: we assume a working life of 37 years between ages 30 and 66, whereas in reality most Australians start working well before age 30, thereby accumulating higher superannuation balances than we project. Figure 3.8 shows that our approach is also consistent with the average expected working life for Australians today. Meanwhile those that take longer career breaks than we project can still to replace their pre-retirement living standards.<sup>46</sup>

### 3.6 Life expectancy at age 92

Grattan assumes that retirees will live until 92. That is based on the prediction, in the 2015 *Inter-generational report*,<sup>47</sup> of average life expectancy for people reaching age 70 in 2055. Mercer argues that retirees cannot assume they will die at age 92, and therefore their

---

the Disability Support Pension, or 65 per cent if they received Newstart: Treasury (2009, p. 111). Although Newstart has since fallen relative to community living standards because it is benchmarked to inflation only: Daley et al. (2019, p. 38).

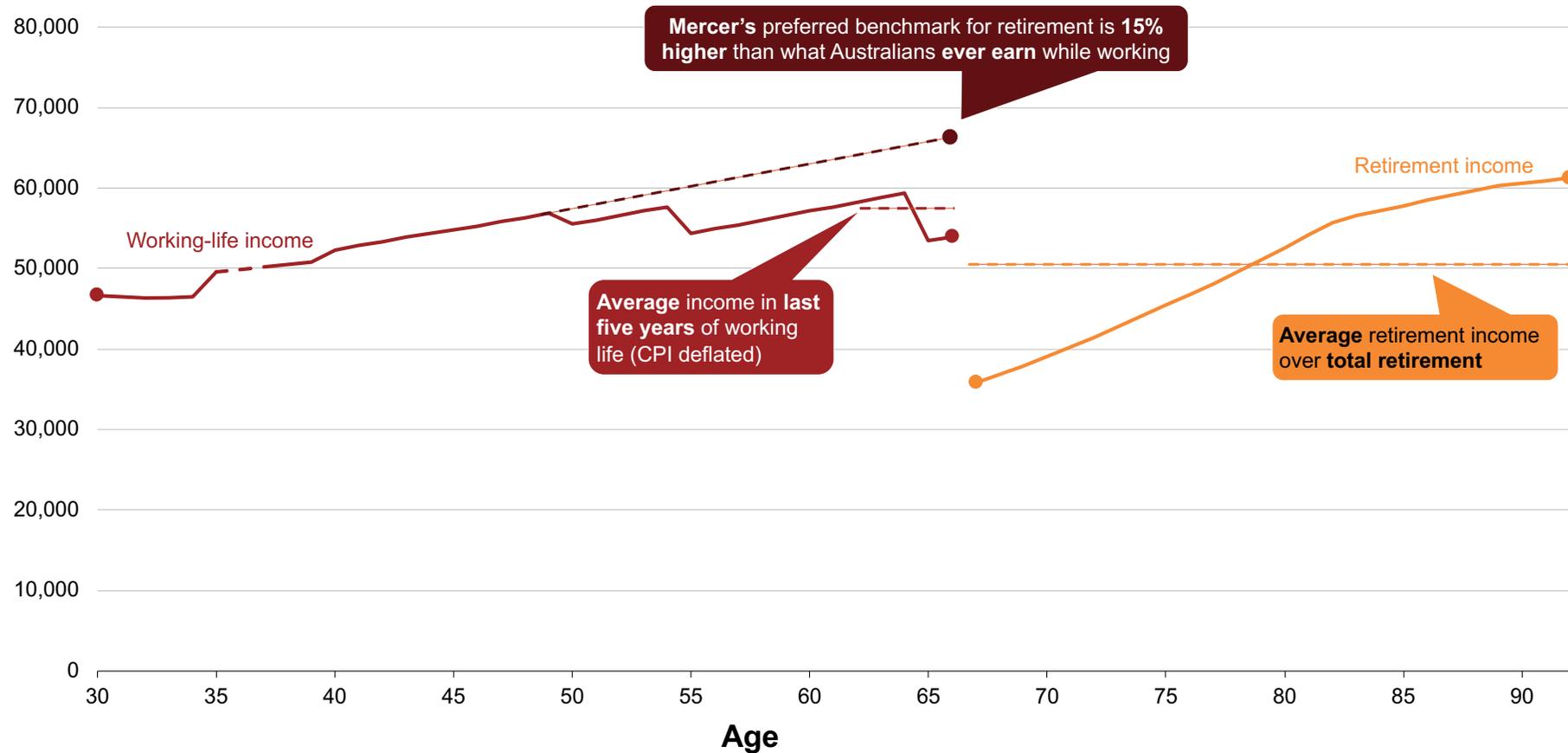
45. Treasury (2009, p. 111).

46. The median worker who takes an extra ten years out of the workforce (working for just 27 years) can expect to replace 85 per cent of their pre-retirement earnings in retirement. They may have lower super savings but they receive more Age Pension instead. Coates and Emslie (2019a, p. 26).

47. Hockey (2015, table 1.1.).

**Figure 3.5: Mercer's preferred approach would set the retirement benchmark 15 per cent higher than what most workers even earn**

Real annual income, median earner, \$2015-16 (CPI-deflated)

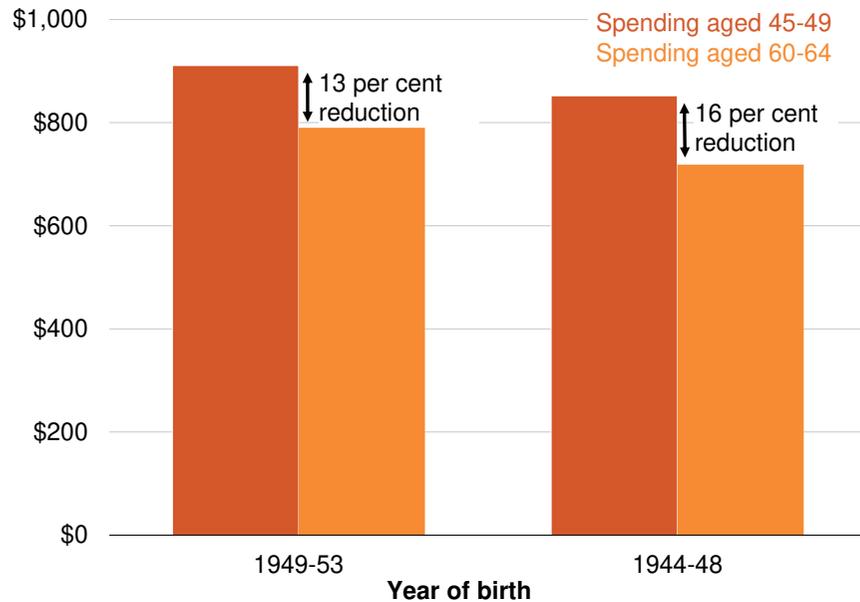


Notes: Models retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. Assumes wages growth falls by the amount of any Super Guarantee increase. Includes savings outside super. Employment earnings adjusted to account for movements up and down the earnings distribution. Retirement savings drawn down over 26 years to leave a small bequest in addition to the home. Retirement income deflated by CPI.

Source: Grattan Retirement Income Projector; Mercer (2019).

**Figure 3.6: Australian households spend *less* as they approach retirement because the kids move out**

Median household spending on goods and services (\$2015-16)

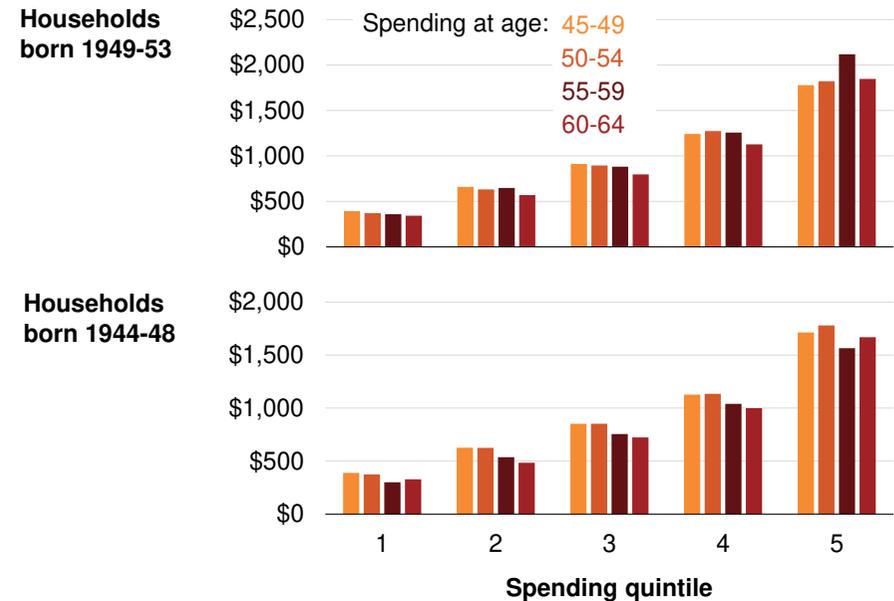


*Notes: Inflated to 2015-16 dollars using CPI. To compare couples and singles, spending in couple households reduced by 50 per cent using a process called equivalisation. No adjustment made for children – this shows how much people in aged 45 to 50 spend on children. While the age cohorts are 5 years apart, there was a gap of 6 years between the past three Household Expenditure Surveys.*

*Sources: Grattan analysis of ABS (multiple years[a]).*

**Figure 3.7: Australian households of all incomes spend *less* at age 60 than they do in their peak earning years**

Median household spending on goods and services by spending quintile (\$2015-16)



*Notes: Inflated to 2015-16 dollars using CPI. To compare couples and singles, spending in couple households reduced by 50 per cent using a process called equivalisation. No adjustment made for children – this shows how much people in their 45 to 50 spend on children. While the age cohorts are 5 years apart, there was a gap of 6 years between the past three HES surveys.*

*Source: Grattan analysis of ABS (ibid.).*

superannuation savings would have to be spread out over a longer retirement.<sup>48</sup>

But the reality is that the wage-benchmarked Age Pension already provides substantial protection against longevity risk for most Australians, especially later in retirement. By the time a median wage earner aged 30 today reaches 92, the full Age Pension will be worth 73 per cent of their average annual income across their retirement (Figure 3.9). Since retirees' spending needs also appear to fall by 15-20 per cent from the beginning of retirement to age 90, and the Age Pension rises through retirement, the full pension provides quite a safety net for most retirees.

Of course, longevity risk is more of a problem for the wealthiest 20 per cent of retirees. Yet Grattan's modelling assumes retirees aged 92 will also still have 10 per cent of their retirement wealth set aside.

As Mercer notes, the OECD allows for 10 per cent of the superannuation balance at retirement to cover the cost of buying an annuity, thereby removing longevity risk for the individual.<sup>49</sup> Those who own a home will also be able to use the Pension Loans Scheme to supplement their spending.<sup>50</sup> And we have ignored the prospect that retirees will receive any inheritance, which is more likely for many wealthier retirees.<sup>51</sup>

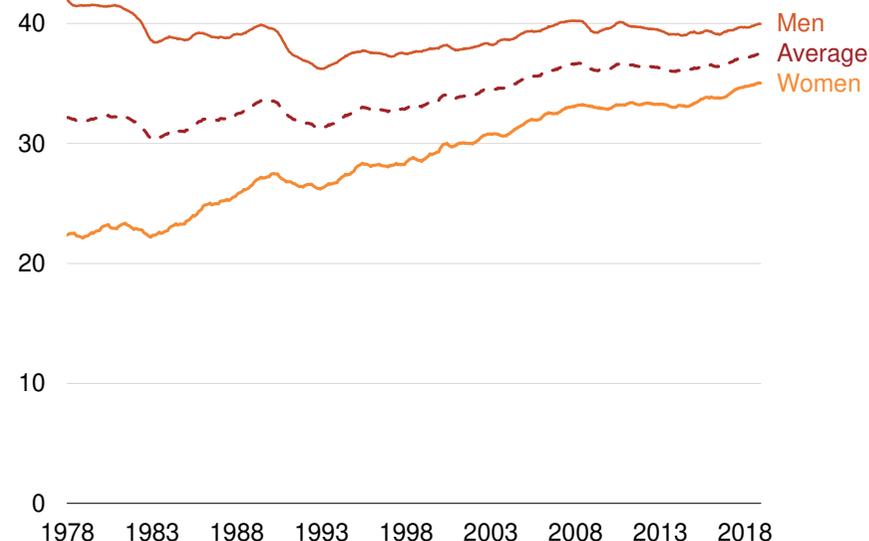
48. Mercer (2019, p. 9).

49. Ibid. (p. 7).

50. Changes to the Pension Loans Scheme announced in the 2018-19 Budget may result in more retirees drawing down on the value of their home. The Government plans to expand access to all Australians over Age Pension age with real estate in Australia, and increase the maximum fortnightly income stream to 150 per cent of the Age Pension rate. Daley et al. (2018, p. 25).

51. The probability that someone in the wealthiest 20 per cent receives an inheritance in a given year (2 per cent) is more than double that for someone in the poorest 20 per cent. Someone living until 92 has around a 1-in-5 probability of receiving an inheritance after their 67<sup>th</sup> birthday. For someone in the wealthiest 20 per cent, this is closer to 1-in-4. Grattan analysis of HILDA (2019).

**Figure 3.8: Younger Australians today expect to work for around 37 years**  
Expected working life by gender, 1978 to 2019



Notes: Expected working lifetime is the sum of the employment ratio for people aged 15+, six-month rolling average used for smoothing.

Source: ABS (2019b, table LM1).

As noted in Chapter 2, retirement incomes policies should be set for the majority, not the minority.

### 3.7 Risks and uncertainties

Mercer argues that retirees face considerable risks and uncertainties during their retirement years, such as inflation, market risk, and unexpected expenditures. They propose that 15 per cent of the initial retirement benefit is used to remove or mitigate these risks through the purchase of an annuity or the setting aside of a buffer for unexpected events. By comparison, Grattan's modelling sets aside 10 per cent of private savings in retirement as a buffer against unexpected shocks, or to purchase an annuity that protects against many of these risks.

Mercer's approach *guarantees* incomes will be lower before retirement. And Australia's retirement incomes system already provides more protection against risks in retirement than workers have before retiring.

The means-tested Age Pension provides insurance against many of these risks. And our research finds that lower returns don't matter very much to retirement incomes. A one-percentage-point decline in investment returns only reduces the net replacement rate for the median worker from 89 per cent to 86 per cent: while retirees would have lower superannuation balances, they would receive a larger part-pension instead, especially later in retirement.<sup>52</sup>

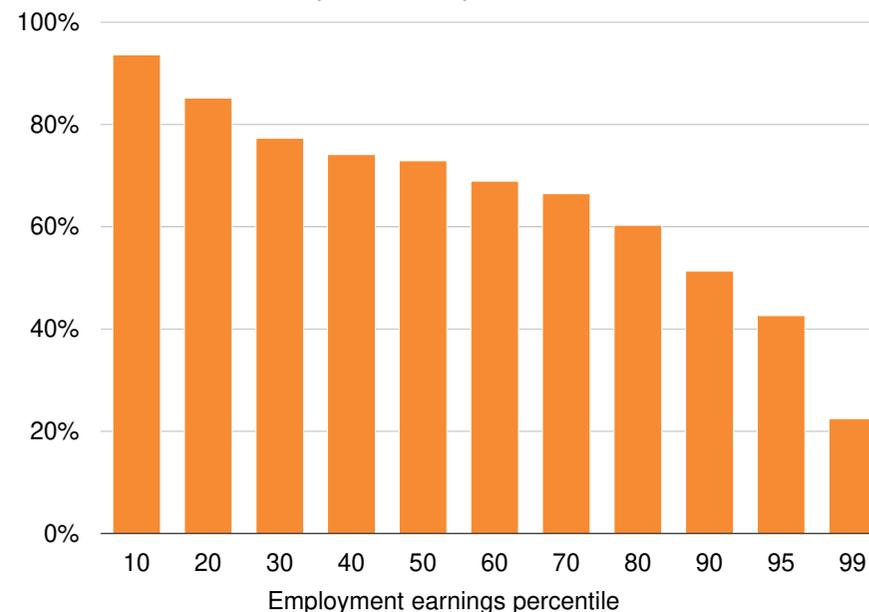
Retirees need more medical care but the costs of this care, including most unexpected care, are largely covered by the taxpayer.<sup>53</sup> Wealthier retirees may have higher medical costs because they are more likely to take our private health insurance and be ineligible for a Commonwealth Seniors Health Card. But as noted in Chapter 2, retirement incomes policy shouldn't be set for the wealthier minority.

52. Coates and Emslie (2019a, p. 24).

53. For example, governments spent around \$17,000 on healthcare for each household aged 80 and over in 2010. Daley et al. (2014, figure 25).

**Figure 3.9: The wage-benchmarked Age Pension provides substantial insurance against longevity risk for most retirees**

Maximum-rate age pension at age 92 as a percentage of average annual retirement income for a 30-year-old today, \$2015-16



Source: Grattan Retirement Income Projector.

Mercer says it is concerned about risks for retirees. But workers also face substantial risks to their living standards. For example, workers are vulnerable to lower-than-expected wages growth, periods of unemployment, and unexpected medical costs. The Age Pension, which is benchmarked to the higher of wages and inflation, provides a much more secure income than working-age Australians get. Unsurprisingly, younger Australians are much likely to report being financially stressed than Australians that are already retired (Figure 3.10).

### 3.8 The OECD comparison

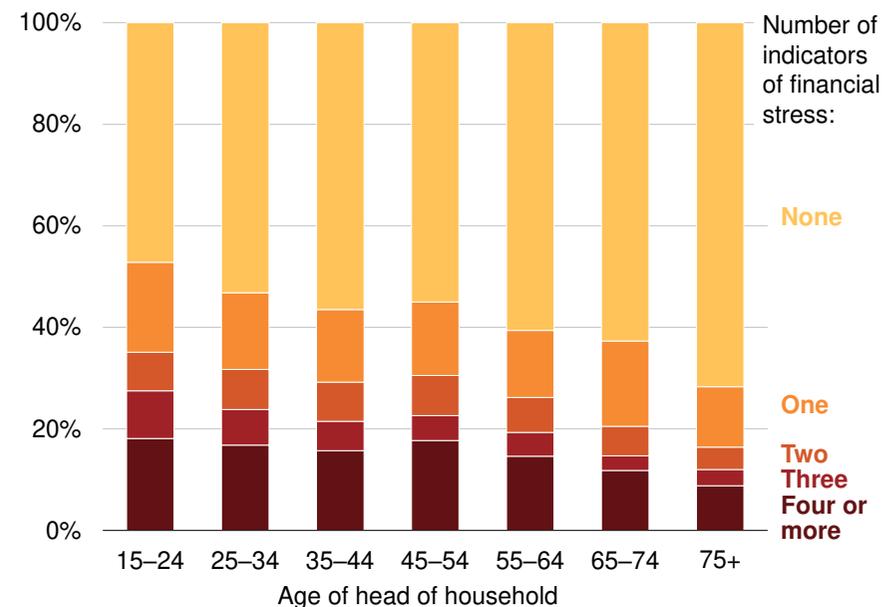
Mercer compares Grattan's retirement income modelling to that of the OECD. But the OECD's approach to modelling replacement rates is poorly suited to Australia since it underestimates the contribution of the means-tested, wage-benchmarked Age Pension to Australians' retirement incomes, and ignores all voluntary savings.<sup>54</sup>

The OECD assumes the purchase of a lifetime price-indexed annuity using accumulated superannuation at retirement, after allowing for a cost of 10 per cent. And the retirement income calculated by the OECD is for the first year of retirement, and the average income earner is assumed to receive virtually no age pension in that year, due to the financial resources available to them at that time.

In contrast, even wealthier Australians can expect to receive a substantial income from the Age Pension during their retirement years. As retirees draw down on their private savings, they will become eligible for at least a part-pension. And since the Age Pension is benchmarked to wages, it will grow in real terms through retirement. For example, we project that an income-earner at the 70<sup>th</sup> percentile aged 30 today will

**Figure 3.10: Younger households are more likely to suffer financial stress than retirees today**

Proportion of households experiencing indicators of financial stress in the past 12 months, 2015-16



Notes: The ABS has nine indicators of financial stress. They are whether, due to a shortage of money, a household: skipped meals; did not heat their home; failed to pay bills on time; failed to pay registration on time; spent more money than received; pawned or sold something; sought assistance from community organisations; sought financial help from friends or family; or would be unable to raise \$2000 in a week for something important.

Source: Grattan analysis of ABS (multiple years[b]).

54. For example, see Disney and Johnson (2001). The pension base rate is benchmarked to the maximum of CPI growth or 27.7 per cent of Male Total Average Weekly Earnings (MTAWE).

draw around \$400,000 in Age Pension payments over the course of their retirement, or almost 30 per cent of their total lifetime retirement income.<sup>55</sup>

The OECD also only includes income drawn from mandatory pension schemes, and voluntary schemes that cover at least 40 per cent of the working population.<sup>56</sup> Applied to Australia, this approach ignores voluntary superannuation contributions, as well as non-super savings, which are a substantial source of retirement income for the wealthiest 30 per cent of Australians.

Mercer also points to the lower replacement rates that the median income earner will have, according to our modelling, in the first five years of retirement (63 per cent) than across retirement as a whole (89 per cent).<sup>57</sup> We publish these figures to illustrate the sensitivity of retirement modelling to the replacement-rate measure adopted, but they do not reflect the living standard that we expect a retiree will actually enjoy in their first five years of retirement. This is a modelling assumption used to estimate average replacement rate over the course of retirement. Different drawdown approaches can generate a stable retirement income year-on-year with an average income over retirement that is comparable (or in fact higher) than our approach. As such, a much higher income in the first five years is achievable, but not modelled for simplicity. It is therefore misleading to compare these figures to OECD modelling.

### 3.9 Reasons to expect Grattan's figures are conservative

There are other reasons to expect Grattan's retirement incomes projections to be conservative.

---

55. Daley (2019, p. 10).

56. OECD (2017, pp. 102, 150).

57. Here Mercer cites our original results from *Money in retirement* (Daley et al. (2018, table 4.1)) for the first five years of retirement, rather than our latest projections: Coates and Emslie (2019a).

First, we assume spending needs remain constant through retirement, when in fact spending needs appear to fall by 15-25 per cent between aged 67 and 92, even after adjusting for increases in the cost of living (*i.e.* inflation) (Chapter 2).

Second, Grattan's approach of calculating replacement rates by comparing average post-tax incomes over retirement with working-age incomes in the last five years before retirement probably understates retirement incomes adequacy. There is a strong case for comparing retirement incomes to earnings over full working life, discounted by inflation. This approach, traditionally adopted by Treasury, is consistent with the principle of lifetime consumption smoothing. Under that approach, our replacement rate for the median earner would rise from 89 per cent to 94 per cent.<sup>58</sup>

Third, we probably underestimate the pension entitlements of retirees, especially middle-income earners. Our modelling assumes constant (CPI-adjusted) withdrawals from accumulated superannuation and from non-super savings, similar to a CPI-indexed annuity. Such an approach means that retirees' incomes grow over retirement as their pension entitlement increases. Under a more realistic scenario – where retirees draw down more on their savings, either to sustain the same real expenditure through retirement, or because their spending needs are higher early in retirement – retirees would qualify for more Age Pension since they would draw more down from their savings faster.

Fourth, we ignore all voluntary post-tax superannuation contributions. The bulk of voluntary super contributions are made by people with high incomes or large superannuation balances.<sup>59</sup> Ignoring these contributions, and underestimating non-super savings, reduces replacement rates for wealthier Australians – precisely the group of most concern to Mercer.

---

58. *Ibid.* (p. 24).

59. Daley and Coates (2015).

Fifth, we also underestimate the actual level of non-super savings that the wealthiest 30 per cent of Australians, including those earning average full-time earnings, will have to draw on in future to fund their retirement.<sup>60</sup> Non-super savings in GRIP are estimated at retirement rather than explicitly modelled as retirees age, in order to avoid counting the savings of younger Australians that may in fact be for consumption during working life or a deposit towards purchasing a home.<sup>61</sup> We assume non-super wealth for later generations will grow in line with real wages growth, or 1 per cent a year, whereas wealth usually grows faster than wages.<sup>62</sup>

### 3.10 Our modelling contradicts popular wisdom but not popular experience

Grattan's retirement incomes modelling may contradict the conventional wisdom of many in the superannuation industry, but it is consistent with the lived experience of retirees today.

As noted in Chapter 2, retirees today typically have enough money to sustain the same, or a higher, living standard in retirement as when working. Subjectively, most retirees today feel more comfortable financially than younger Australians who are still working, and they are less likely than working-age Australians to experience financial stress.

While the past is never a perfect guide to the future, the fact that most retirees today appear to have an adequate retirement – when the rate

of compulsory super for most of them was 9 per cent or lower – should make Australians sceptical about the latest industry claims that we are not saving enough for our retirement.

---

60. Non-super savings included in GRIP are: non-super financial assets, other property equity, and business and trusts.

61. The level of non-superannuation assets is based on the distribution of assets sorted by wealth for 60-64 year-olds using the data from the ABS Survey of Income and Housing and HILDA. Daley et al. (2018, pp. 115-116).

62. For example, the assets included in non-super savings in GRIP (after accounting for offsetting liabilities) grew by 29 per cent in real terms in the decade to 2017-18, much faster than our 1 per cent annual growth rate implies. Grattan analysis of ABS (2019a).

## Bibliography

- ABS (multiple years[a]). *Household Expenditure Survey and Survey of Income and Housing, Australia*. Australian Bureau of Statistics.
- \_\_\_\_\_ (multiple years[b]). *Microdata: Income and Housing*. Australian Bureau of Statistics.
- \_\_\_\_\_ (2006). *Census of Population and Housing*. Australian Bureau of Statistics.
- \_\_\_\_\_ (2016). *Census of Population and Housing*. Australian Bureau of Statistics.
- \_\_\_\_\_ (2017). *Retirement and Retirement Intentions, Australia, July 2016 to June 2017*. Australian Bureau of Statistics. <https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6238.0July%202016%20to%20June%202017?OpenDocument>.
- \_\_\_\_\_ (2018). *3310.0 - Marriages and Divorces, Australia, 2017*. Australian Bureau of Statistics. <https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3310.02017?OpenDocument>.
- \_\_\_\_\_ (2019a). *6523.0 - Household Income and Wealth, Australia, 2017-18*. Australian Bureau of Statistics. <https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6523.0Main+Features12017-18?OpenDocument>.
- \_\_\_\_\_ (2019b). *Labour Force, Australia, Detailed, March 2019 - Electronic Delivery*. Australian Bureau of Statistics.
- Actuaries Institute (2015). *For richer, For Poorer, Retirement Incomes*. Sydney: Institute of Actuaries of Australia, <https://www.actuaries.asn.au/Library/Opinion/2015/ForRicherForPoorerRetirementIncomes2WEB.pdf>.
- Coates, B. and Emslie, O. (2019a). *Our latest retirement income projections show most Australians will still have enough*. Grattan Institute. <https://grattan.edu.au/news/our-latest-retirement-income-projections-show-most-australians-will-still-have-enough/>.
- \_\_\_\_\_ (2019b). *On Any View, the Case for Higher Compulsory Super Hasn't Been Made*. <https://www.austaxpolicy.com/on-any-view-the-case-for-higher-compulsory-super-hasnt-been-made/>.
- Daley, J. (2019). *How should we model incomes in retirement?* Sydney. <https://grattan.edu.au/presentations/how-should-we-model-incomes-in-retirement/>.
- Daley et al. (2014). Daley, J., Wood, D., Weidmann, B. and Harrison, C. *The wealth of generations*. Grattan Institute. <http://grattan.edu.au/report/the-wealth-of-generations/>.
- Daley, J. and Coates, B. (2015). “Catch up’ super contributions: a tax break for rich (old men)”. *The Conversation*. 25 November 2015. <https://theconversation.com/catch-up-super-contributions-a-tax-break-for-rich-old-men-51116>.
- \_\_\_\_\_ (2016). *Submission to Senate Standing Economics Committee Inquiry into the Superannuation (Objective) Bill 2016*. Grattan Institute. <https://grattan.edu.au/news/submission-to-senate-standing-economics-committee-inquiry-into-the-superannuation-objective-bill-2016/>.
- \_\_\_\_\_ (2017). *Supplementary Submission to Senate Standing Economics Committee Inquiry into the Superannuation (Objective) Bill 2016*. Grattan Institute. <https://grattan.edu.au/wp-content/uploads/2017/02/Supplementary-Submission-to-inquiry-into-Superannuation-Objective-13-February-2017-FINAL.pdf>.
- Daley et al. (2018). Daley, J., Coates, B., Wiltshire, T., Emslie, O., Nolan, J. and Chen, T. *Money in retirement: more than enough*. Grattan Institute.
- Daley et al. (2019). Daley, J., Duckett, S., Goss, P., Minifie, J., Norton, A., Terrill, M., Wood, T. and Coates, B. *Commonwealth Orange Book 2019: Policy priorities for the federal government*. Grattan Institute. <https://grattan.edu.au/report/commonwealth-orange-book-2019/>.

- Disney, R. and Johnson, P. (2001). *Pension Systems and Retirement Incomes across OECD countries*. UK.
- DSS (2019). *DSS Demographics, December 2018*.  
<https://data.gov.au/dataset/ds-dga-cff2ae8a-55e4-47db-a66d-e177fe0ac6a0/distribution/dist-dga-3c69d15e-5ac1-48d9-9ae4-56957c63485a/details?q=dss%20demographic>.
- Henry, K. (2009). *Australia's future tax system - The retirement income system: Report on strategic issues*.
- HILDA (2016). *Survey of Household Income and Labour Dynamics Australia*.  
[https://melbourneinstitute.unimelb.edu.au/%7B%5C\\_%7D%7B%5C\\_%7Ddata/assets/pdf%7B%5C\\_%7Dfile/0007/2155507/hilda-statreport-2016.pdf](https://melbourneinstitute.unimelb.edu.au/%7B%5C_%7D%7B%5C_%7Ddata/assets/pdf%7B%5C_%7Dfile/0007/2155507/hilda-statreport-2016.pdf).
- \_\_\_\_\_ (2019). *Survey of Household Income and Labour Dynamics Australia*.  
<https://www.melbourneinstitute.com/hilda/>.
- Hockey, J. (2015). *2015 Intergenerational Report*. Australian Government.  
<http://www.treasury.gov.au/PublicationsAndMedia/Publications/2015/2015-Intergenerational-Report>.
- Industry Super Australia (2015). *Off target: current tax and transfer settings do not achieve retirement security*.  
<http://bettertax.gov.au/files/2015/07/Industry-Super-Australia.pdf>.
- Mercer (2018). *Melbourne Mercer Global Pension Index 2018*.  
[https://www.mercer.com.au/content/dam/mercer/attachments/asia-pacific/australia/mmgpi-2017/au-2017-mmgpi-report.pdf?utm%7B%5C\\_%7Dmedium=referral%7B%5C\\_%7Dutm%7B%5C\\_%7Dsource=web%7B%5C\\_%7Dutm%7B%5C\\_%7Dcampaign=mmgpi](https://www.mercer.com.au/content/dam/mercer/attachments/asia-pacific/australia/mmgpi-2017/au-2017-mmgpi-report.pdf?utm%7B%5C_%7Dmedium=referral%7B%5C_%7Dutm%7B%5C_%7Dsource=web%7B%5C_%7Dutm%7B%5C_%7Dcampaign=mmgpi).
- \_\_\_\_\_ (2019). "A review of Grattan's work on super".  
<https://www.mercer.com.au/content/dam/mercer/attachments/asia-pacific/australia/our-thinking/A-review-of-Grattans-work-on-super.pdf>.
- Morrison, S. (2015). *Address to the Association of Superannuation Funds Of Australia (ASFA) Conference, Brisbane*. Brisbane.  
<http://sjm.ministers.treasury.gov.au/speech/006-2015/>.
- OECD (2017). *OECD Pensions at a Glance 2017*. Paris.  
[http://dx.doi.org/10.1787/pension%7B%5C\\_%7Dglance-2017-en](http://dx.doi.org/10.1787/pension%7B%5C_%7Dglance-2017-en).
- Rice Warner (2019). *What is the right level of superannuation guarantee?* Sydney.  
<https://www.ricewarner.com/wp-content/uploads/2019/06/Rpt-What-is-the-right-level-of-SG-Actuaries-Institute-June-2019.pdf>.
- Rothman, G. (2011). *Projecting the Adequacy of Australian Retirement Incomes: for whole of population, income and gender groups*.  
<https://www.business.unsw.edu.au/research-site/cps-site/Documents/G.%20Rothman%20-%20Projecting%20the%20Adequacy%20of%20Australian%20Retirement%20Incomes.pdf>.
- Treasury (2009). *Australia's future tax system, Report to the Treasurer, Part One Detailed analysis*.  
[http://taxreview.treasury.gov.au/content/downloads/final%7B%5C\\_%7Dreport%7B%5C\\_%7Dpart%7B%5C\\_%7D2/AFTS%7B%5C\\_%7DFinal%7B%5C\\_%7DReport%7B%5C\\_%7DPart%7B%5C\\_%7D2%7B%5C\\_%7DVol%7B%5C\\_%7D1%7B%5C\\_%7DConsolidated.pdf](http://taxreview.treasury.gov.au/content/downloads/final%7B%5C_%7Dreport%7B%5C_%7Dpart%7B%5C_%7D2/AFTS%7B%5C_%7DFinal%7B%5C_%7DReport%7B%5C_%7DPart%7B%5C_%7D2%7B%5C_%7DVol%7B%5C_%7D1%7B%5C_%7DConsolidated.pdf).