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## Money in retirement More than enough

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This report was written by John Daley, Brendan Coates, Trent Wiltshire, Owain Emslie and Jonathan Nolan. Tony Chen, Cécile Bartholomeeusen, William Young, Peter Robertson, Hugh Parsonage, Diana Hourani and Josh Lipp provided valuable research assistance and made substantial contributions to the report.

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## Overview

The conventional wisdom is that Australians don't save enough for retirement. But this belief, encouraged by the financial services industry fear factory, is mistaken. The vast majority of retirees today and in future are likely to be financially comfortable.

Most retirees today feel more comfortable financially than younger Australians who are still working. Retirees today are less likely than working-age Australians to suffer financial stress such as being unable to pay a bill on time. Across the income distribution, people typically have enough money to sustain the same, or a higher, living standard in retirement as when working. Most own their own homes. And most retirees are more likely to be able to afford optional extras such as annual holidays. Australians tend to spend less after they retire, and even less into old age. While their medical costs increase, these are largely borne by the taxpayer. Many retirees are net savers, and current retirees often leave a legacy almost as large as their nest egg on the day they retired.

The retirees of tomorrow are likely to be even better off due to a combination of compulsory super contributions, non-super savings, and the Age Pension. Our modelling shows that, even after allowing for inflation, the average worker today can expect a retirement income of at least 91 per cent of their pre-retirement income – well above the 70 per cent benchmark used in this report and endorsed by the OECD. Many low-income Australians will get a rise in pay when they retire, because the Age Pension and the income they get from compulsory retirement savings will be higher than what they earned before retirement.

But our retirement incomes system doesn't work for everyone. Senior Australians who rent in the private market are more likely to suffer financial stress than homeowners, or renters in public housing. And this problem will get worse: on current trends home ownership

for over-65s will decline from 76 per cent today to 57 per cent by 2056. Consequently the real policy priority should be to boost the maximum rate of Commonwealth Rent Assistance by 40 per cent, or roughly \$1,400 a year for singles.

Even if governments did want to boost retirement incomes more generally, the current policy of increasing compulsory super contributions to 12 per cent is the worst way to get there: it will cost workers and governments more today, reduce the pensions of current retirees, and do less for future retirement incomes, than the alternatives. Reducing superannuation fees would increase retirement incomes and budget revenues more than the planned increase to the Super Guarantee.

Loosening the Age Pension assets test could boost retirement incomes for around 20 per cent of retirees today, rising to more than 70 per cent of retirees in future. It would also deal with anomalies in the system: some people who save \$100 while working increase their total retirement income by less than \$100 in real terms. And more of the value of owner-occupied housing should be included in the Age Pension assets test.

Given that retirement incomes are broadly adequate both today and in the future, there is room to reduce tax breaks so that the budgetary cost of the retirement system is more sustainable. Reducing super tax breaks could save the budget more than \$4 billion a year. Reducing age-based tax breaks could save another \$1 billion a year. Australia's population is ageing. Unless governments have the courage to make these reforms, future budgets will not be able to fund aged care and health at the same level as today, which is the real threat to adequate retirement incomes in future.

## Recommendations

### 1. The Superannuation Guarantee should remain at 9.5 per cent

- Planned increases in the rate of compulsory superannuation contributions to 12 per cent by July 2025 should be abandoned.

### 2. Commonwealth Rent Assistance should be increased by 40 per cent

- The maximum rate of Commonwealth Rent Assistance should be increased by 40 per cent – an extra \$1,410 a year for retired singles and \$1,330 for couples.
- This increase should also apply to Rent Assistance recipients below Age Pension age.
- Commonwealth Rent Assistance should be benchmarked to rents paid by the poorest 40 per cent of renters, rather than to the consumer price index.

### 3. The Age Pension assets test taper rate should be reduced to \$2.25 each fortnight for every \$1,000 in assets

- The Age Pension should be withdrawn at a rate of \$2.25 per fortnight for each \$1,000 of assets above the “asset free” area, rather than the current rate of \$3 per fortnight.

### 4. Superannuation tax breaks should be reformed further

- As recommended in our 2015 report, *Super Tax Targeting*:
  - Annual super contributions from pre-tax income should be limited to \$11,000 a year.
  - Lifetime contributions from post-tax income should be limited to \$250,000, or an annual cap on post-tax contributions of \$50,000 a year.

- Earnings in retirement – currently untaxed for balances below \$1.6 million – should be taxed at 15 per cent, the same as superannuation earnings before retirement.

### 5. Age-based tax breaks should be reformed

- As recommended in our 2016 report, *Age of Entitlement: age-based tax breaks*:
  - The Seniors and Pensioners Tax Offset should be wound back so that it is available only to pensioners, and so that those who do not qualify for a full Age Pension pay some income tax.
  - The Medicare levy should also be imposed on seniors at the level where they are liable to pay some income tax.

### 6. The value of the home should be included in means tests for the Age Pension and aged care

- As recommended in our 2018 report, *Housing affordability: re-imagining the Australian Dream*:
  - The Age Pension assets test should be changed to include the value of a home above some threshold – such as \$500,000.
  - Correspondingly, the value of assets that do not reduce the Age Pension should be raised to the same levels that apply to non-homeowners.

7. The Productivity Commission should investigate raising the age of access to the Age Pension and superannuation to 70 years

- The Commonwealth Government should request the Productivity Commission to investigate the economic, social and budgetary costs and benefits of gradually increasing the age of access to the Age Pension to 70 years, including:
  - Whether there should be a new regime for easier access to the pension for people aged over 60 years whose health has been so impaired that it is difficult to work.
  - Whether reforms are needed to the early access regime to ensure people with a disability can continue to have early access to superannuation.

8. The Commonwealth Government should ask the Productivity Commission to review the adequacy of Australians' retirement incomes

- The Commonwealth Government should request the Productivity Commission to review the adequacy of Australians' retirement incomes.
- As part of that review, the Productivity Commission should establish a new standard for retirement income adequacy and assess how well Australians of different ages and incomes will meet that standard.
- That standard should form the basis for government guidance about the adequacy of retirement savings, including on the ASIC *Money Smart* website. References to the ASFA comfortable retirement standard should be removed.

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## 1 The myth of Australia's retirement savings crisis

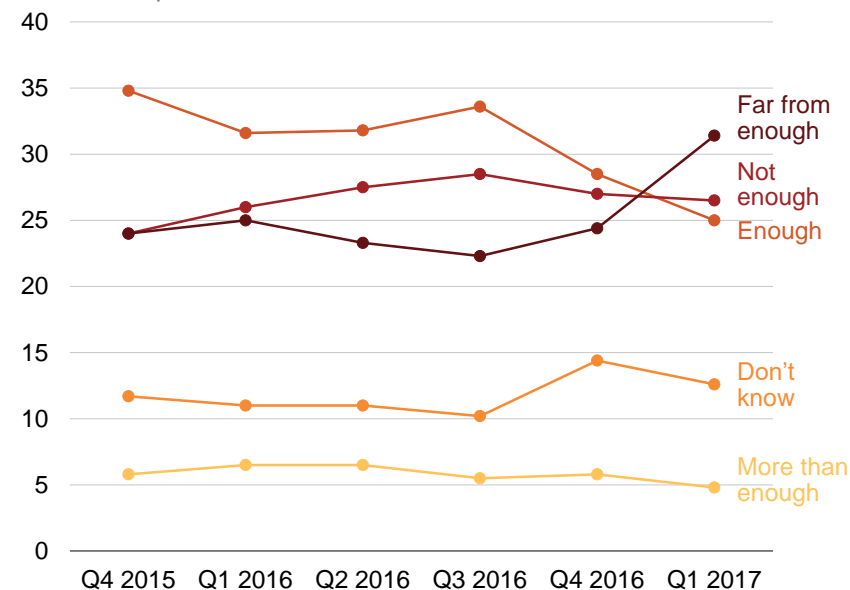
### 1.1 Pessimism about future retirement

The conventional wisdom is that Australians are not saving enough for retirement. Many worry that longer life expectancy will leave them without enough money in their later years. The superannuation lobby argues that working Australians need more superannuation to fund a reasonable retirement.<sup>1</sup> Slower growth in incomes<sup>2</sup> and the possibility of lower investment returns in future<sup>3</sup> also fuel concerns that existing savings rates won't be enough.<sup>4</sup>

Many Australians fear that they will have an uncomfortable or insecure retirement. According to a NAB survey, most think they won't have enough to retire on (Figure 1.1). This is broadly consistent with an ANU poll, which found that almost half of non-retired Australians consider it unlikely they will have sufficient money to live comfortably in retirement.<sup>5</sup> In a ME Bank survey, 'maintaining lifestyle in retirement' was 'one of the biggest worries' for about a third of households. A third of households expected that in retirement they would only be able to afford the essentials.<sup>6</sup> These concerns are rising (Figure 1.1).

These pessimistic attitudes reflect the repeated messaging – primarily from the financial services industry – that Australians won't have

**Figure 1.1: Most Australians fear they won't save enough for retirement**  
Per cent of respondents



Source: NAB – Group Economics (2017).

1. For example, see: Industry Super Australia (2015a) and ASFA (2015a).
2. Although opinions differ on the causes – whether population ageing, secular stagnation, technological change, the overhang from the Global Financial Crisis or rising inequality – many believe that growth will be lower for longer. For example see: Gordon (2016) and Minifie et al. (2017, p. 8).
3. Neal (2016); and Palmer and White (2016).
4. Gurria (2016).
5. J. R. Bray and Gray (2016, p. 3). More than a third say they 'probably' or 'definitely' will not have enough to live comfortably in retirement. Only 19 per cent are certain they will have enough.
6. ME Bank (2018).

enough for their retirement.<sup>7</sup> Many of these claims are based on the ‘comfortable’ retirement standard constructed for the Association of Superannuation Funds of Australia (ASFA). But as explained in Section 3.5.1 on page 34, this standard is unrealistic. ASFA’s ‘comfortable’ standard would support an affluent lifestyle more luxurious than most Australians currently have during their working lives. And it misleadingly suggests that anyone with fewer resources will have an ‘uncomfortable’ retirement. Even some government publications now use the ASFA ‘comfortable’ standard to communicate retirement adequacy, such as the ASIC *Money Smart* website.<sup>8</sup>

## 1.2 Satisfaction with retirement today

While Australians who are still working tend to be anxious about retirement, those who have already retired – and are living with the reality – are much less worried about having enough money in retirement.<sup>9</sup> This doesn’t seem to be just the stoicism of old age. As documented in Chapter 3, today’s retirees say they are financially

comfortable, they suffer less financial stress than younger people, and their spending patterns appear to be constrained more by lack of opportunity than lack of cash. Of course, some retirees do struggle, especially if they rent privately (Section 3.6 on page 40).

## 1.3 This report shows retirement incomes are adequate for most Australians

While most Australians are worried about their retirement, this report shows that **retirees today** typically have a higher standard of living in retirement – measured by their incomes and expenditure – than they did during their working lives (Figure 1.2 on the next page). In fact many people continue to save after retirement. Existing retirees of all income levels have a retirement income of at least 70 per cent of their pre-retirement income – the benchmark of retirement income adequacy used by the OECD, the Melbourne Mercer Global Pension Index and this report (Section 4.5.7 on page 56). Poorer retirees in particular have much higher incomes in retirement than they achieved during their working lives, while the Age Pension exceeds most poverty benchmarks, except for retirees renting in our major cities.

**Retirees in future** may be more worried about their retirement (Figure 1.1 on the previous page), but they will have even higher incomes than retirees today. Workers aged in their 40s and 50s today – many of whom didn’t benefit from compulsory super contributions for their whole working lives – can still expect to receive an income in retirement of at least 70 per cent of their pre-retirement earnings (Figure 1.2 on the following page). The one-off windfall gain to asset values as interest rates fell,<sup>10</sup> historically high super returns in the past two decades,<sup>11</sup> together with non-super savings by the wealthy, more than offset any impact from missing out on compulsory super

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7. For selected examples see: Accurium (Patten (2015)); AIST (Keane (2016)); AMP (Elsworth (2018)); Aspire Retire Financial Services (Maragna (2017)); Canstar (News.com.au (2012)); Care Super (Bowden (2014)); Challenger (Liew (2015)); Colonial First State (Kakulas (2014)); HSBC (Collett (2016)); Industry Super Australia (Industry Super Australia (2018)); Intrust Super (Elsworth (2016)); Mercer Consulting (Patten (2015)); MLC (Elsworth (2017a)); REST (Collett (2016)); Tribeca Financial (Elsworth (2017b)); Verante Financial Planning (Patten (2015)); Willis Towers Watson (Myer (2017a)). See also numerous articles featuring ASFA: Elsworth (2015); Chung (2016); Taylor (2016); Elsworth (2017c); Elsworth (2017d); Mumbrella (2017); Myer (2017b); Prior (2017); Elsworth (2017e).

8. ASIC (2018a). ASIC presents the ASFA standards to ‘give you a rough idea of how much money you need to support a modest or comfortable retirement’ under the heading ‘How much is enough super?’, without noting that the ‘comfortable’ standard is designed to reflect a lifestyle typical for the top 20 per cent of retirees today (Section 3.7 on page 41).

9. Only 55 per cent of non-retired people think it is likely they will have enough money to live comfortably in retirement, compared to 72 per cent of retirees. J. R. Bray and Gray (2016, p. 3).

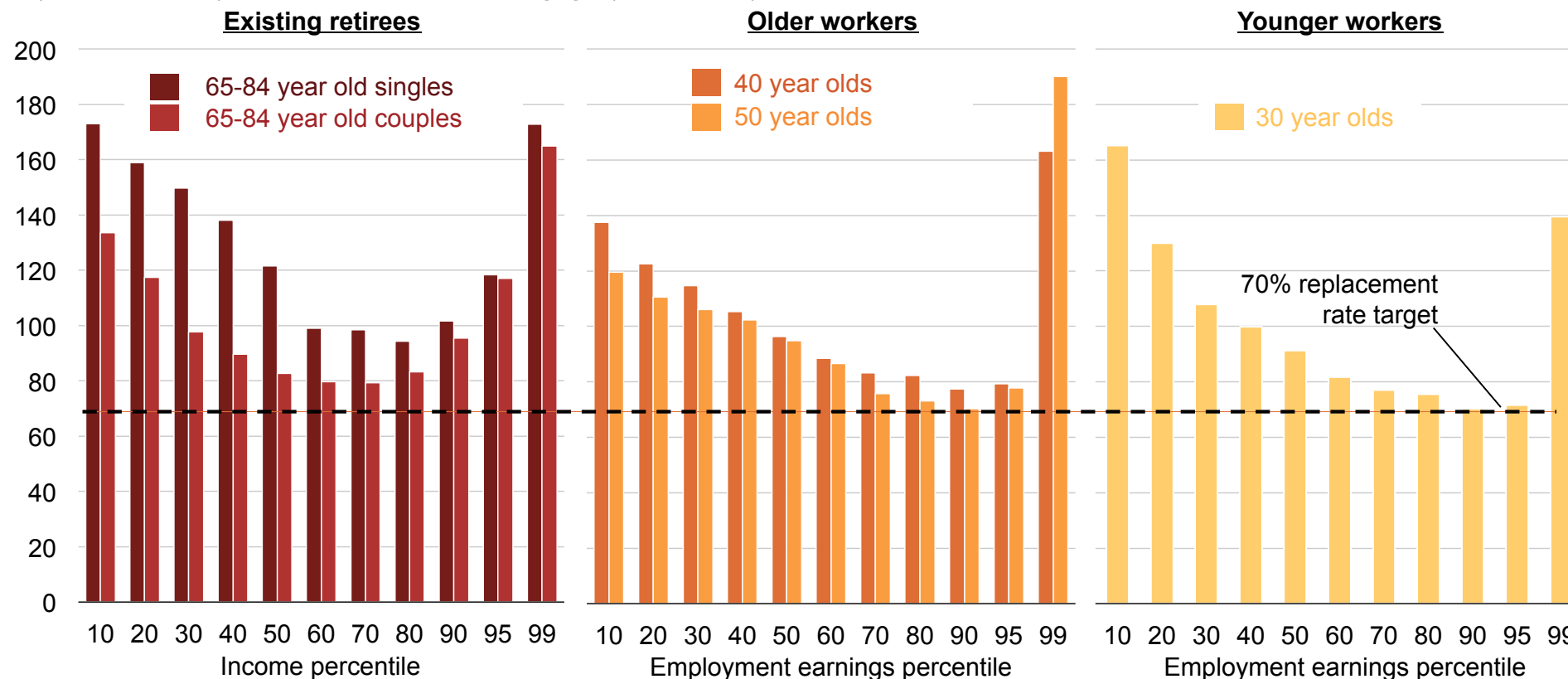
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10. Wiltshire and Wood (2017).

11. ASFA (2018a).

**Figure 1.2: Current retirees, existing workers and new workers of all incomes can expect an adequate retirement income when compared to their pre-retirement incomes**

Replacement rates of pre-retirement income for various age groups in 2015-16, per cent



*Notes: Replacement rates for existing retirees are based on disposable household incomes for households with a household head aged 65-84 in 2015, relative to disposable income for households with a household head aged 45-64 in 1995, adjusted for inflation to \$2015-16, where disposable income includes head of household and their partner, but not children, as reported in Figure 3.11 on page 42 and described in Section 3.5.1 on page 34. Replacement rates for older and younger workers are calculated based on average projected disposable income during whole of retirement compared to average projected income in last five years of working life, CPI deflated, based on the Grattan Retirement Income Projector as reported in Figure 4.1 (new workers) and Figure 5.3 (older workers). Older and younger worker scenarios are based on existing policy settings, including the 67-year retirement age and the 12 per cent Superannuation Guarantee. The income distribution for "existing retirees" includes all households, whereas those for "older workers" and "younger workers" only includes those that submit a personal income tax return, and therefore misses many of those in the bottom 10 per cent by lifetime earnings such as recipients of Newstart, Disability Support Pension or Parenting Payment. However those missed in GRIP are likely to have very high replacement rates in retirement as the Age Pension exceeds their pre-retirement income (Box 2 on page 46).*

*Sources: See Figure 3.11 on page 42; Figure 4.1 on page 44 and Figure 5.2 on page 70.*

contributions (Section 5.2 on page 68). Again, the poorest 40 per cent of workers can expect a pay *rise* in retirement, because the Age Pension and the income they get from compulsory retirement savings will be higher than the wage they receive during their working life.

Finally, people **starting work today** will have adequate retirement incomes: workers of all income levels will retire on incomes at least 70 per cent of their pre-retirement earnings (the ‘replacement rate’). Their retirement incomes will be higher than older retirees – reflecting rising real wages. But their replacement rates will be lower because the Age Pension will account for a smaller share of their retirement incomes and because they are unlikely to benefit from the same windfall gains to wealth as earlier generations (Figure 1.2 on the preceding page).

Our findings contradict the claims of many in the superannuation industry that Australians are not saving enough for their retirement (Table 4.4 on page 61).<sup>12</sup> Such claims are based on research that overlooks three important issues.

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 when at age 67, even after accounting for inflation. But our analysis shows that Australians tend to spend less after they retire, even when they have money to spare (Section 3.4 on page 31). Therefore, retirement incomes should be measured after accounting for inflation, rather than wages.<sup>13</sup>

Second, some research compares retirement incomes to the ASFA ‘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

(see Section 3.5.1 on page 34). Average living standards in Australia *before* retirement are lower than the ASFA benchmark for living standards *in* retirement. The average household can only reach the ‘comfortable’ benchmark in retirement by living less than ‘comfortably’ before retirement. This report instead uses the 70 per cent replacement rate benchmark as a better measure of adequate retirement incomes (Table 4.2 on page 57).

Third, some research ignores non-super savings, which are material, especially for wealthier households (Section 4.5.5 on page 55). 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 depresses the replacement rates of the top 20 per cent of retirees (see Appendix C.4.4 on page 115; Figure D.7 on page 127).

Of course, retirement incomes are not adequate for everyone. Many senior Australians who do not own their own home and have to rent in the private market are at significant risk of poverty. This problem will be worse for future retirees experiencing financial stress in retirement, because younger generations on lower incomes are less likely to own their own home than their parents were at the same age.

## 1.4 Guide to this report

The rest of this report sets out what Australia’s retirement incomes system should achieve and shows what policy changes are needed to meet this objective.

Chapter 2 describes the **aims and shape of our retirement incomes system**, and outlines the different ways to **measure whether people have enough money for retirement**.

Chapter 3 evaluates **current retirees’ living standards**.

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12. See Footnote 7 on page 12.

13. Our approach to calculating replacement rates of pre-retirement income assumes that incomes should grow in line with wages through the course of working life, but in line with inflation in retirement given that retirees’ spending falls sharply as they age.

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



Chapter 4 evaluates whether **people entering the workforce now** will have adequate living standards in retirement.

Chapter 5 evaluates whether people **already in the workforce** will have adequate living standards in retirement.

Chapter 6 assesses the **implications for policy**. It explores the trade-offs between various options to boost retirement incomes, compared to their budgetary impacts.

Chapter 7 shows why **Commonwealth Rent Assistance** should be boosted to help the growing number of retirees struggling with rising housing costs.

Chapter 8 considers whether the **Age Pension** is adequate and fair, and calls for the Age Pension assets test to be loosened. It also recommends including more of the value of owner-occupied housing in the Age Pension assets test.

Chapter 9 examines **compulsory superannuation**, and shows why the Superannuation Guarantee should not be increased.

Chapter 10 shows that **retirement tax arrangements** – particularly super tax breaks and age-based income tax breaks – need to be wound back to ensure future budgets can fund aged care and health care at the same level as today. It also canvasses potential changes to the age of access for the Age Pension and superannuation to 70 years.

## 1.5 What this report does not do

This report does not set out to examine every relevant issue.

It does not address the adequacy of retirement incomes for the **self-employed**. The self-employed are typically not required to make compulsory superannuation contributions. Some in the super industry have argued that the self-employed will face inadequate retirement

incomes, pointing to their lower superannuation savings.<sup>15</sup> However wealthier self-employed and small business owners tend to have higher non-super savings.<sup>16</sup> Extending the Super Guarantee to small business owners would also be impractical: small business owners may be reliant on profits from their business rather than pay themselves a salary or wage.<sup>17</sup> And the superannuation system caters to business owners in other ways.<sup>18</sup> A more detailed examination of these issues may be required in future.

It does not address **housing policies**, beyond recommending a boost to Commonwealth Rent Assistance for seniors. While access to housing is a critical contributor to retirement living standards, housing affordability is a big topic beyond the scope of this report. We wrote extensively about housing policies in our 2018 report, *Housing affordability: re-imagining the Australian dream*.<sup>19</sup>

Nor does this report address the implications of rising **health costs** for individuals or government budgets. These issues were addressed in previous Grattan Institute reports, such as *Balancing Budgets*,<sup>20</sup> and a

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15. Craston (2018).

16. For example, Craston (ibid., p. 24) finds that the wealthier self-employed have significant non-home net worth – higher than wage and salary earners. Self-employed with fewer assets are more likely to rely more heavily on the Age Pension in retirement.

17. The Henry Tax Review recommended against extending the Super Guarantee to small business people (Henry (2009, p. 12)).

18. They can already make voluntary pre- and post-tax super contributions. And small business owners can make additional post-tax contributions, outside of the annual post-tax contributions cap of \$100,000, up to the lifetime Capital Gains Tax (CGT) cap. If a small business owner transfers assets from their business into their superannuation fund then, within limits, they do not pay tax on capital gains that have accrued over the life of the asset and these gains do not count towards their post-tax contributions cap. Many small business owners appear to take advantage of these super tax breaks just before retirement (Daley et al. (2015, p. 57)).

19. Daley et al. (2018).

20. Daley et al. (2013).

submission to the Senate Standing Committee on Community Affairs inquiry into the out-of-pocket costs in Australian healthcare.<sup>21</sup>

This report does not analyse **potential reforms to retirement income policy in the drawdown phase**. Whatever a person's savings on the day they retire, they then need to manage the risks of longevity and investment returns through their retirement. Many people see their biggest risk in retirement as the possibility of significant one-off unexpected expenses. Managing these risks raises issues for both regulation and product design, but they are beyond the scope of this report. Several reviews are examining income policy in retirement, including the regulation and taxation of Comprehensive Income Products for Retirement (CIPRs),<sup>22</sup> and how these products are incorporated in means testing for the Age Pension.<sup>23</sup>

Nor does this report deal with **aged care funding or policy design**. While clearly important in the context of retirement income adequacy, these issues are beyond the scope of this report.<sup>24</sup>

This report does not address policies to reduce the very high **superannuation fees** paid by many Australian savers, beyond demonstrating the impact of these fees on the retirement incomes of Australians. Previous Grattan Institute research has shown that superannuation fees are far too high,<sup>25</sup> as has the recent Productivity

Commission Draft Report into superannuation costs.<sup>26</sup> Meanwhile our recent submission to the Senate Inquiry into the *Protecting Your Superannuation Package* Bill demonstrated that many Australians are paying far too much for insurance cover via superannuation, which is also reducing their retirement incomes.<sup>27</sup>

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21. Duckett and Breadon (2014).

22. Treasury (2016a).

23. DSS (2018a).

24. However the report does discuss how existing aged care funding arrangements, and concerns about future aged care spending, may encourage retirees to be excessively conservative in their retirement spending. For a comprehensive review of the challenges in aged care funding, see Productivity Commission (2011) and Tune (2017).

25. Minifie et al. (2014) and Minifie et al. (2015). Australians pay \$30 billion a year in super fees, almost 2 per cent of Australia's annual GDP, and more than the \$23 billion we spend each year on energy (Daley and Coates (2018a)).

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26. Productivity Commission (2018a).

27. Daley and Coates (2018b).

## 2 The aims and measures of Australia's retirement incomes system

Australia's retirement incomes system is supposed to ensure older Australians have enough income to enjoy a reasonable standard of living in retirement. Like most countries, Australia relies on a combination of public pensions and private savings to meet a broad range of retirement income needs. It aims to meet the minimum needs of all Australians. It aims to provide a consistent standard of living across peoples' lives. And it aims to spread risks between the public and private sectors in a fiscally responsible way.

Retirement income policy choices inevitably involve difficult trade-offs. Boosting retirement incomes always comes at a cost. Workers have to accept lower living standards while working in order to save for their retirement. Or governments give up more revenue for super tax breaks, or pay more for pensions, in order to boost retirement incomes. But previous changes to our retirement incomes system have not always heeded these trade-offs.<sup>28</sup> This chapter seeks to articulate a coherent set of policy purposes to navigate them.

### 2.1 The four pillars of Australia's retirement incomes system

Australia's retirement incomes system is made up of four pillars. Each plays a particular role in achieving the overall objectives of the system.<sup>29</sup>

First, the **Age Pension**, provided by government, guarantees a minimum 'safety net' income in retirement for people with little other

income or assets. The Age Pension is targeted through age, residency and means tests.<sup>30</sup> It supports people who live longer than expected and exhaust their private savings (*i.e.* it provides insurance against 'longevity risk'), and it supports people who earned comparatively little over their working life due to periods of unemployment, caring responsibilities or working part-time.

Second, compulsory private saving via the **Superannuation Guarantee**, currently set at 9.5 per cent of wages, supplements or substitutes for the Age Pension. The Super Guarantee is legislated to rise to 12 per cent of wages between 2021 and July 2025.<sup>31</sup> Super contributions benefit from generous tax breaks, which arguably compensate people for locking up some of their earnings in superannuation.

Third, **voluntary private savings**, including pre- and post-tax voluntary super contributions, other financial assets, and investment property, provide additional resources for retirement and for other major purchases. Taxes are lower on some forms of savings, especially voluntary pre-tax super contributions, negatively geared investment property, and assets that accrue capital gains. As Appendix A shows, these voluntary savings are large for many households, particularly those in the top 20 per cent.

Finally, **home ownership** supports living standards in retirement since home-owning retirees do not need to set aside income for rent.

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28. Daley and Coates (2016).

29. Some authors identify three pillars, either by combining all superannuation savings into one pillar, or by separating out compulsory and voluntary superannuation savings but ignoring voluntary savings beyond superannuation such as housing assets (see Henry (2009, p. 9)). Following the approach of Yates (2015), we identify housing as a separate pillar of the system.

30. Around 60 per cent of Age Pension recipients started receiving payments within one year of reaching the eligibility age (Productivity Commission (2015a, p. 44)).

31. The Superannuation Guarantee was introduced in 1992-93, with compulsory contributions rising from 3 per cent of wages in that year to 9 per cent from 2002-03 and 9.5 per cent in 2013-14. The rate is scheduled to remain at 9.5 per cent until 2021, then increase by half a percentage point each year until it reaches 12 per cent in July 2025 – see Figure 9.1 on page 88.

The family home tends to be Australians' largest single asset. Home ownership also partly insures against longevity risk and rising housing costs. But while 82 per cent of over-65s own their own home today, rates of home ownership are falling among the young and the poor.<sup>32</sup> On current trends, only 57 per cent of retirees in 40 years' time will own their own home (Section 4.7.1 on page 62).

Currently, few retirees draw down on the value of their home to fund their retirement: either by downsizing,<sup>33</sup> or by borrowing against the equity of their home while continuing to live in it (Section 2.3.5 on page 24). But that will need to change. House prices have outstripped growth in incomes. Median prices have increased from around four times median incomes in the early 1990s to more than seven times today (and more than eight times in Sydney).<sup>34</sup> As a result, people are spending more of their lifetime income to accumulate more valuable homes, either by paying down larger mortgages during their working lives, or using some of their retirement savings to pay off any remaining mortgage at retirement (Figure 4.9 on page 64). Government policy should therefore continue to encourage retirees to draw down on the equity of their home to help fund their retirement. The Government's recent expansion of the Pension Loans Scheme<sup>35</sup> is in the right direction.

Although not a retirement income system "pillar", **inheritances** are likely to become a more important source of retirement income in future, especially for wealthier retirees. While average inheritances

are small, they are likely to become much larger. Australians' wealth has increased rapidly over the past decade, especially among older Australians (Section 5.2 on page 68).<sup>36</sup> As this report shows, few retirees today are drawing down on their retirement savings (Section 3.3 on page 28). If the wealth of all people aged between 75 and 84 in 2014 were distributed equally to their children, the mean inheritance per child would be \$280,000.<sup>37</sup> But on current trends, inheritances will typically be received later in life and primarily benefit those who are already wealthy.<sup>38</sup>

Retirement living standards also depend on other parts of the **social safety net** – especially subsidised health and aged care. The costs of specific health and disability needs are best met via targeted services, rather than by ensuring all retirees have the resources to meet these costs themselves.<sup>39</sup> Meanwhile government already funds the majority of aged care costs: more than three quarters of the \$20 billion spent annually on aged care services is funded by government.<sup>40</sup>

While many commentators equate retirement savings with superannuation,<sup>41</sup> it is in fact the smallest pillar of Australia's retirement incomes system (Appendix A). In reality most Australians rely on all four pillars of the retirement incomes system to fund an adequate retirement, and all four pillars should be included when considering whether people have enough money for their retirement.

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32. Daley et al. (2018, figure 4.2.).

33. Daley and Coates (2017b).

34. Daley et al. (2018, p. 16). Recent single-digit falls in house prices in Sydney and Melbourne are still small compared to the run up in prices seen over recent decades (Coates et al. (2018a)).

35. 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. Productivity Commission (2015b, p. 28) and Treasury (2018a, p. 175).

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36. Wiltshire and Wood (2017).

37. Daley et al. (2014, p. 37) The median would be much lower – \$141,000 – reflecting how a small number of households have a disproportionate share of wealth.

38. Ibid. (figure 5.3.).

39. Harmer (2009, section 3.4.3.).

40. Tune (2017).

41. Daley et al. (2016a); and Daley and Coates (2016).

## 2.2 The aims of the retirement incomes system

Australia's retirement incomes system has several objectives.

It helps people **maintain a more consistent standard of living across their lives**, also known as *lifetime consumption smoothing*. People tend to focus too much on the short term, leading many to save less for their retirement than is needed if they want to consume at about the same rate across their lifetime.<sup>42</sup> Those who don't save for retirement can rely on the pension, which reduces the incentives to save.<sup>43</sup> The Super Guarantee is designed to overcome these behaviours. But it is generally accepted that the retirement incomes system should not seek to fully replace the pre-retirement living standard of the wealthiest Australians. This report aims to ensure that all but the top 20 per cent of workers in the earnings distribution retain their pre-retirement living standards (that is, achieve a retirement income of 70 per cent of their pre-retirement income).

The retirement incomes system should also provide a **minimum, 'adequate' standard of living** to people unable to fund their own retirement. The precise level of this minimum standard is the subject of much debate, and is discussed further in Section 3.5.2 on page 36.

The retirement incomes system needs to be **fiscally sustainable**, especially in the context of Australia's ageing population. The Commonwealth Government spends about 2.9 per cent of GDP on the Age Pension. In addition, governments today give up around \$35 billion a year – or 1.9 per cent of GDP – in superannuation tax

breaks.<sup>44</sup> Age-related spending is also growing quickly, reflecting population ageing<sup>45</sup> and an increase in government transfers to older Australians.<sup>46</sup> Aged-care and health spending have been increasing much faster than welfare spending, and are expected to continue to do so.<sup>47</sup>

The retirement incomes system should **deal appropriately with investment, inflation and longevity risks**.<sup>48</sup> The combination of a means-tested public pension and privately held superannuation and other retirement savings mean those risks are spread between the public and private sectors.<sup>49</sup>

The retirement incomes system should **maintain incentives to work, save and invest**. While means-testing the Age Pension targets support to those most in need, it also increases the effective marginal tax

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44. Treasury (2018b) and Coates (2018a). It is often cautioned that one cannot simply add together the Treasury's 'revenue foregone' tax expenditure estimates for contributions and earnings tax breaks into one figure. However, we estimate the degree of 'double counting' in combining the 'revenue gain' tax expenditure estimates from abolishing each of these tax breaks at less than \$1 billion a year over that period (Coates (2018a)).

45. Australia's old-age dependency ratio was 25 in 2015 and will be 41 in 2050, compared to the OECD averages of 28 and 53 respectively. OECD (2017a) and Hockey (2015).

46. Daley et al. (2015, p. 7).

47. Hockey (2015, p. XVI).

48. 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, or that they die early and accidentally leave a larger-than-expected bequest.

49. Relying too much on the public sector to insure against market and longevity risks can increase the cost of the system, affecting its sustainability, meaning a government may then be unable to keep its promises to individuals. Relying too much on the private sector can expose people to excessive risks when saving for their retirement (Henry (2009, p. 31)).

42. Financial System Inquiry (2015, p. 119).

43. Studies comparing pensions in different countries suggest that each dollar of pension decreases private savings by between 23 to 44 cents, Hurd et al. (2012) and Alessie et al. (2013). The Super Guarantee combats the potential problem that people capable of saving for their retirement will save too little on the expectation the government will foot the bill via the Age Pension, or what economists call 'moral hazard' (Drew and Stanford (2016, p. 22)).

rates of older workers.<sup>50</sup> But international studies show that effective marginal tax rates don't really affect the decisions of older people to work.<sup>51</sup> And empirical evidence from around the world confirms that those on higher incomes tend to save about the same amount irrespective of tax rate.<sup>52</sup>

These **aims must be balanced**. For example, while policy generally aims to provide a consistent standard of living before and after retirement, there are big budgetary costs in doing so for people with very high incomes. The Government has formalised this idea by proposing that the objective of the superannuation system is to 'provide income in retirement to substitute or supplement the age pension'.<sup>53</sup> Implicitly, the superannuation system, and super tax breaks in particular, does not aim to provide additional savings beyond the point at which a person no longer qualifies for a part Age Pension.

It follows that the retirement incomes system **should not be about minimising taxes**. Government support for retirement incomes via pension payments or super tax breaks should not aim to reduce the tax rate on savings as an end in itself.<sup>54</sup>

The retirement incomes system should also **avoid boosting inheritances** because inheritances tend to increase wealth inequality<sup>55</sup> and to reduce incentives to work. This creates a quandary for retirement income policy. As shown in Section 3.4 on page 31, many

retirees don't spend down their capital. In part this appears to be driven by a psychology of extreme prudence.

Should policy aim to deliver an adequate retirement income to a person who chooses to live purely on the income from their investments, keep their capital intact, and passes it on as a bequest? If policy does support retirement incomes at this higher level, then government support for retirement income will also effectively subsidise bequests, unless there are substantial and effective inheritance taxes<sup>56</sup> – which are unlikely in Australia anytime soon.

It follows that policy should aim to provide adequate retirement income assuming that retirees will largely run down their savings through retirement, while acknowledging that some people will choose to have a lower retirement income, but leave a larger bequest.<sup>57</sup> Of course, if retirement income policy is set assuming substantial drawdown, then it needs a substantial safety net to protect the minority of people who significantly outlive their life expectancy.

Finally, the retirement incomes system should also **draw on all sources of retirement incomes** to achieve these objectives. In practice that means that the compulsory elements of the retirement

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50. Ingles and Stewart (2015); and Daley et al. (2016b, p. 23).

51. While lower taxes on wages encourage seniors to work more, the resulting increase in income and savings *discourages* further work. Evidence from Australia is thin because most Australian studies have focused on how taxes affect the choice to work of people under age 65 (Daley et al. (2016b, p. 24)).

52. Daley et al. (2015, figure 2.4).

53. *Superannuation (Objective) Bill* 2016, cl.5.

54. In contrast, some commentators have argued that broad superannuation tax breaks are a worthwhile step towards lower taxes on earnings on savings in general: e.g. Carling (2015).

55. Daley et al. (2014, pp. 19–22).

56. Australia already indirectly supports inheritances, because it is one of only 13 OECD nations without estate or inheritance taxes (Cole (2015)). Australia does have a *de facto* death tax in the form of a tax on super death benefits to non-dependants, which is intended to restrict the use of super tax breaks for estate planning purposes. But the current tax rates on death benefits provided to non-dependants do not claw back the full value of tax breaks provided to the deceased over their life, and these provisions have been substantially avoided by 'recontribution' strategies that withdraw assets from superannuation in retirement and then recontribute them as after tax contributions which are not subject to super death benefits (Daley et al. (2015, pp. 54–56)).

57. Other analyses of retirement income adequacy also make this assumption. For example, Rothman and Bingham (2004) and Rothman (2007, p. 5) measure replacement rates on the basis of *potential* net expenditure before and after retirement, assuming retirees leave minimal estate at average life expectancy.



income system – the Age Pension and compulsory saving via the Superannuation Guarantee – should not be set such that they alone *guarantee* the same living standard in retirement as retirees had in working life.<sup>58</sup> Rather, the retirement income system should account for what people *actually* save, including voluntary super and non-super savings, when setting the target level of retirement income to be delivered by the Age Pension and compulsory super. Otherwise the significant number of workers who have *some* voluntary savings (Appendix A) will be forced to save *too much* for their retirement, leading to larger bequests.

## 2.3 Measuring the adequacy of Australia's retirement incomes system

Measuring retirement income adequacy requires us to select *which* benchmark, *who* to measure, and *what* assets and incomes will be counted towards retirement income – particularly non-super financial assets, owner occupied housing, and assets that a household chooses to leave as a bequest rather than to consume.

### 2.3.1 Which benchmarks should be used?

Choosing the right benchmarks is important because retirement incomes policies are not costless. Policymakers must balance the opportunity to consume while working, with compulsory saving for retirement. Of course, benchmarks should be tied to the objectives for the system – in particular supporting lifetime consumption smoothing and avoiding poverty, as discussed in Section 2.2 on page 19.

The ability to afford a reasonable level of spending during retirement can be judged in a variety of ways.

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58. For example, ACTU (2016, p. 1) argues that the Age Pension and superannuation alone 'should provide for an Australian worker to maintain his or her standard of living when he or she retires'. In other words, the target of lifetime consumption smoothing is instead actually a *floor*.

We can ask whether retirees today *feel* comfortable financially – a **subjective well-being measure**.

We can examine whether retirees *in fact* are able to buy the things they want. If they continue to accumulate savings during retirement, it suggests that they have more than enough financially. This is a **behavioural measure**.<sup>59</sup>

For both current and future retirees we can assess whether they *can afford* to pay for a defined basket of goods and services that are seen as providing the highest standard of living that government is prepared to subsidise – a **budget standard**.

And we can compare their expenditure or income when working, to their expenditure or income in retirement – known as a '**replacement rate**'.

Similarly, poverty – or its absence – can be judged in a variety of ways.

We can examine whether retirees today *in fact* go without basic goods and services because of **financial stress**.

We can assess whether retirees today and in future *can afford* to pay for a defined basket of goods and services that are seen as essential (these are also known as **budget standards**).

And we can compare their incomes to others in society, which measures '**relative poverty**'.

None of these measures is perfect. But collectively they indicate well whether the retirement incomes system is fulfilling its aims of supporting lifetime consumption smoothing and avoiding poverty. Of course, they cannot be applied just to the average person. We need to understand how the results vary across the spread of the population.

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59. Of course, spending behaviour can also reflect other concerns, such as longevity risk – the risk that retirees may outlive their savings – or other unforeseen spending needs (Section 3.4 on page 31).

### 2.3.2 Who should be measured?

In judging a retirement incomes system, a key issue is whether to assess the means of each *individual* or each *household*.

In retirement – and during working life – most Australians live with a spouse or partner, and the household pools resources.<sup>60</sup> That's why the Age Pension means test is based on household-level income and assets.<sup>61</sup>

Some argue that the retirement incomes system should not assume that households pool resources.<sup>62</sup> They point out that resources within households can be owned and controlled unequally, which may expose individuals (more often women) to the risk of poverty in retirement.<sup>63</sup> They claim that *individual* income and wealth is the better measure of well-being.

But ignoring household pooling of assets and income would lead to a much less targeted retirement income system, given that most households do in fact pool resources.<sup>64</sup> Providing adequate resources in retirement for every *individual*, irrespective of the resources of any partner, would require much more savings, and much more government

support. We could only insure against the risk of retirement poverty for each member of a couple by over-resourcing most couples.

Consequently, this report assumes that households pool income and assets, especially in assessing minimum living standards in retirement.<sup>65</sup> Where possible, this report assesses the adequacy of *household* retirement incomes (taking into account that many households are singles).

But in calculating replacement rates for those not yet retired, this report assesses the adequacy of *individual* retirement incomes, because it is too complex and uncertain to model relationship transitions over time (Chapter 4 and Chapter 5).

Replacement rates for individuals are a reasonable proxy for the replacement rates of couple households. For those on high incomes, the replacement rate for a couple will by definition be somewhere between the replacement rates of the two individuals.<sup>66</sup> For those in the top 30 per cent of the income distribution, pension entitlements are a relatively low proportion of their retirement income (Figure 4.3 on page 47). For people on lower incomes, the calculus is more complex. Replacement rates will be lower when the couple is combined since two people living as a couple will usually have lower pension entitlements than the same two people living apart. But as shown in Figure 1.2 on page 13, replacement rates for singles on lower incomes are typically much higher than the targeted 70 per cent. Therefore replacement rates for couples, while lower than we report, would still be higher than the benchmark replacement rate of 70 per cent used in this report. The lower pension entitlement once a couple combines is less of an issue if measuring retirement adequacy using budget standards.<sup>67</sup>

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65. Consistent with the approach of Coates (2018a, p. 12).

66. The replacement rate of the couple is the sum of their retirement incomes divided by the sum of their pre-retirement incomes.

67. Those standards are typically set lower for a couple than for two individuals. As a result, analysis of retirement incomes at the household level typically finds that

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60. Coates (2018a). 70 per cent of people between 18 and 65, and 50 per cent of people over 65, live in a household with another adult. ABS (multiple years-b).

61. DHS (2016). When people live together there are opportunities to share some items of expenditure and some economies of scale. For example, the 2009 Harmer Pension Review estimated the costs of a single-person household are 60-to-70 per cent of the costs of a couple household (Harmer (2009, p. 45)).

62. For example, see Austen and Sharp (2017) and Stewart (2009).

63. For example, Austen and Sharp (2017, pp. 313–314) notes that in most (62 per cent) Australian heterosexual couple households, the male partner has more (non-housing) wealth than the female partner. And 46 per cent of married men aged 65 and over (but only 20 per cent of married women) perceive that they control most of their household's financial decisions.

64. For example, see: Breunig and McKibben (2012), Bradbury (2004) and Lancaster and Ray (2002).

This report also excludes incomes and assets of adult children still living at home, when assessing the adequacy of retirement incomes for existing retirees,<sup>68</sup> and when estimating future retirement savings.

### 2.3.3 What assets should be counted?

Many traditional approaches have assumed that retirement incomes will primarily be generated by formal pension savings. For example, when the OECD assessed the adequacy of retirement incomes, it included only income drawn from mandatory pension schemes, and voluntary schemes that cover at least 40 per cent of the working population.<sup>69</sup> Applied to Australia, this approach would ignore voluntary superannuation contributions, as well as substantial non-super savings. In the past, many Treasury assessments of the adequacy of retirement incomes have typically included only superannuation savings,<sup>70</sup> as did a number of industry assessments (Table 4.4 on page 61).

But this approach is outdated. As noted in Appendix A, Australians save for retirement using a number of vehicles, including superannuation, housing, and non-super assets that generate income such as investment housing and shares. These non-super savings have persisted even as the superannuation system has matured, and they generate income in retirement. Ignoring these non-super savings paints

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a higher proportion of couples than singles will reach budget standards: see Actuaries Institute (2015) and Industry Super Australia (2015b).

68. This especially matters when comparing the incomes of retired households today compared to their incomes in the past while working when many still had adult children living at home (Section 3.7 on page 41).

69. OECD (Table 4.5 2017b, pp. 102,150). Mandatory schemes with near-universal coverage were also included, provided they cover at least 85 per cent of employees (OECD (ibid., p. 98)).

70. Rothman and Bingham (2004, p. 7); and Henry (2009).

an unfairly bleak picture of retirement income adequacy, particularly for the wealthiest 20 per cent of retirees.<sup>71</sup>

Non-super savings are likely to remain important even as the super system matures. A Reserve Bank of Australia study found that each extra dollar of compulsory superannuation savings was accompanied by an offsetting fall in non-super savings of only between 10 and 30 cents.<sup>72</sup> Households hold a material portion of their wealth outside of super so that they have an option to use it before turning 60, and because they are nervous that government may change the superannuation rules before they retire (Figure A.2 on page 105). Other asset classes, such as negatively geared property, are taxed lightly and so will likely remain an attractive vehicle for accumulating wealth. Whatever the motivation, many households heading towards retirement have substantial non-super, non-home assets to draw on.

Assets such as household effects or vehicles should not be assumed to generate income in retirement. But these assets do support living standards in retirement, primarily because their owners don't need to buy them again<sup>73</sup> – which presumably explains why they are counted in the Age Pension assets test.

### 2.3.4 How should housing costs be incorporated?

A common criticism of many measures of retirement income adequacy – such as replacement rates and the ASFA retirement standards – is that they ignore housing costs and declining rates of home ownership.

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71. Burnett et al. (2014) find that omitting one or more of the 'pillars' of retirement savings leads to significant underestimation of potential living standards during retirement, particularly among those with higher levels of disposable income and net worth. Ignoring non-super savings also leads to misrepresentation of the total risk profile of retirement savings and income.

72. Connolly (2007).

73. Daley and Coates (2017a, p. 3).

Housing costs are typically households' largest single expense, and they can have a big impact on living standards in retirement.

Retirees who have paid off their mortgage spend much less on housing (on average 5 per cent of disposable income) than working home-owners or retired renters (25 to 30 per cent) (Figure 2.1).<sup>74</sup> Consequently, a retiree who rents needs a higher retirement income to achieve the same living standard as a retiree who owns their own home.

If retirement incomes are judged using budget standards, they need to incorporate actual housing costs. While the ASFA retirement standards assume home ownership, other common poverty benchmarks explicitly account for the costs of renting (Section 3.5.2 on page 36).

Similarly, if retirement incomes are judged using replacement rates, then the target replacement rate needs to reflect the fact that pre-retirement households typically spend a substantial portion of their income on housing, while most retired households do not. For example, the OECD's target replacement rate of 70 per cent of pre-retirement income, used in this report, is set on the assumption that retirees own their own homes outright in retirement, but are paying mortgage costs of one-third of income until retirement.<sup>75</sup> Judgements about future retirement incomes must also take into account that fewer retirees are likely to own their own home in future (Section 4.7 on page 59).

### 2.3.5 What proportion of assets at retirement should be used for retirement as opposed to bequests?

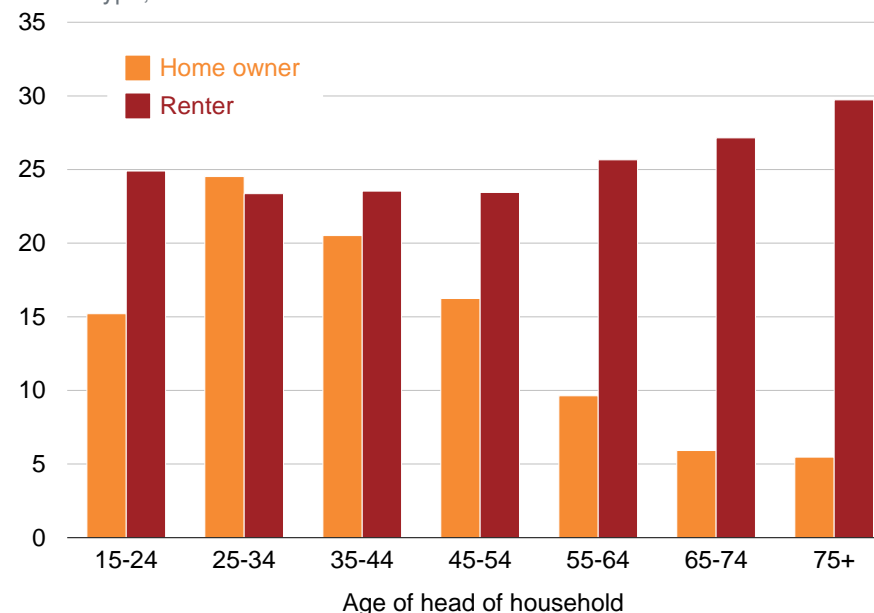
Retirement incomes policy should be set so that savings when a person retires are largely spent down during retirement rather than

74. The main housing costs for home-owners are council rates and insurance.

75. OECD (2012, p. 161). However average housing costs among Australian working home-owners are lower, at around 20-25 per cent of household disposable income (Figure 2.1). Retirees also avoid work-related expenses and spend less eating out.

**Figure 2.1: Homeowners' housing costs decline sharply as they approach retirement**

Housing costs as a percentage of household disposable income by age and tenure type, 2015-16



Notes: Housing costs include mortgage interest and principal repayments and general rates for homeowners, and rental payments for renters. Does not include imputed rent.

Source: Grattan analysis of ABS (2017a).

left as bequests. Otherwise policy will effectively expend government money, or compel savings, to fund bequests (see discussion on page 20, in Section 2.2).

Consequently, replacement rates should assume that savings other than owner-occupied housing are largely drawn down within average life expectancy.

But as noted in Section 3.4 on page 31, in practice many retirees don't draw down on their savings in retirement. Instead many continue to save during their retirement. Such saving may be partly rational as retirees seek to self-insure against longevity risk and unexpected health or aged-care costs. Consequently, replacement rates should assume draw down rates that set aside a modest amount for these contingencies in the form of a bequest at life expectancy (in addition to the value of any home owned).

While it might be rational for retirees to draw down on the value of their home to fund retirement, very few do so. Less than 1 in 2,500 Age Pension-age households use the Pension Loans Scheme,<sup>76</sup> and this is unlikely to change soon.<sup>77</sup> Consequently, replacement rates in this report do not assume that retirees draw down on the equity in their home. Instead the home is left as a bequest, or to fund residential aged care needs.

However, as noted in Section 2.1 on page 17, home equity is likely to become an increasingly important source of retirement income in future, especially as house values (and mortgage debts) have risen relative to incomes. But big changes in behaviour are unlikely

while most of the value of a home is not counted in the Age Pension assets test – which is one of the reasons we recommend changing the Age Pension assets test to include the value of a home above some threshold such as \$500,000 (Section 8.3 on page 83).

The next three chapters explain how retirement incomes measure up against these benchmarks, first for retirees today, and then for retirees in the future.

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76. Productivity Commission (2015b, p. 28).

77. Changes to the Pension Loans Scheme announced in the 2018-19 Budget may result in a few 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: Treasury (2018a, p. 175).

### 3 Incomes for today's retirees

Retirees of today – many of whom didn't benefit from compulsory super contributions for their whole working lives – already feel more comfortable financially than younger Australians. They can usually afford to buy what they want and need. The Age Pension provides a modest, but adequate, level of income in retirement for those with little wealth, and pensioners who own their homes are less likely to suffer financial stress than working-age Australians. People of all levels of income typically have more disposable income in retirement today than when they were working. But many retirees who rent are struggling.

#### 3.1 Retirees feel more comfortable financially than workers

Retirees today are more likely than working-age households to say they feel financially comfortable (Figure 3.1).

Financial satisfaction is only weakly linked to actual incomes. Households with much higher incomes are only a little more financially satisfied than those on low incomes (Figure 3.2 on the next page). People with the same income can have very different levels of financial satisfaction. And the link between income and financial satisfaction is even weaker for retirees than working-age households.<sup>78</sup>

#### 3.2 Most retirees in fact buy the things they want and need

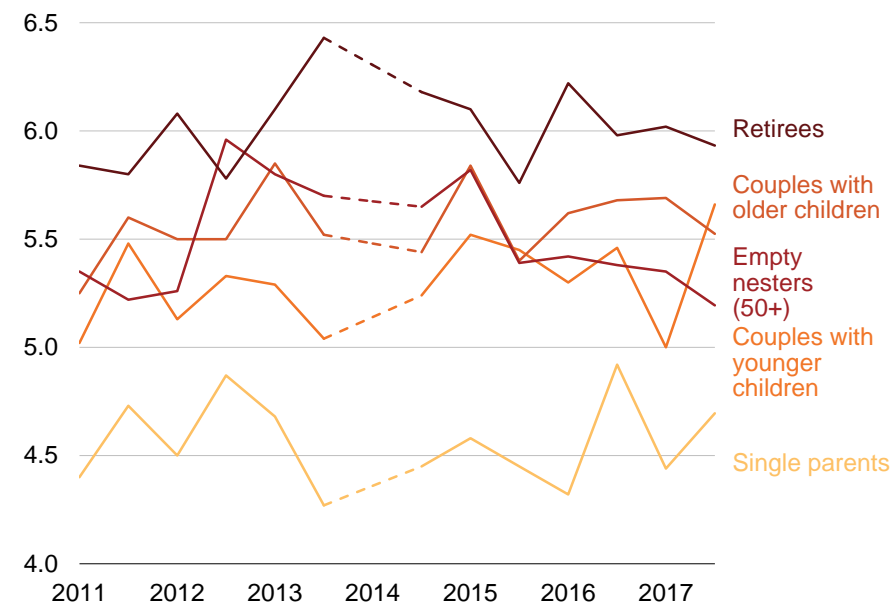
The relative financial comfort that most retirees feel is matched by objective measures of financial well-being.

Retirees are less likely to suffer financial stress such as not being able to pay a bill on time (Figure 3.3 on the next page). Even retirees

78. The correlation between income and financial satisfaction is 0.26 for working-age households, and 0.16 for retired households: Grattan analysis of the unit record data as reported in Figure 3.2 on the following page.

**Figure 3.1: Retirees today feel more comfortable financially than any other group in society**

Self-assessed financial comfort, scores out of ten



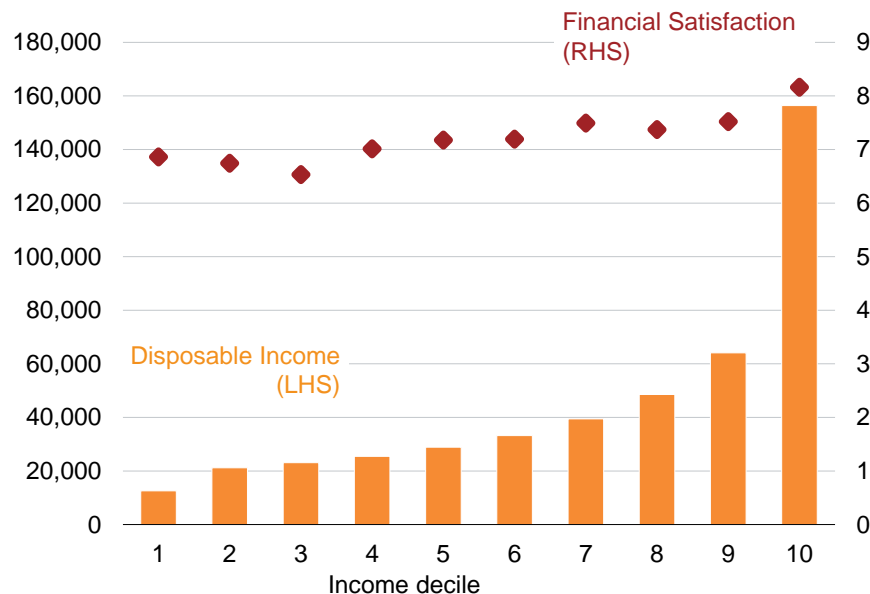
Notes: Excludes anomalous December 2014 survey. Middle-aged singles and couples without children, and younger singles and couples without children have been excluded for readability. Middle-aged households with no children are sometimes imagined as the most financially secure, but even their self-assessed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

Source: ME Bank (2018, Figure 10).



**Figure 3.2: Financial satisfaction is only weakly linked to income**

Average yearly equivalised disposable income and average financial satisfaction for households aged over 65, \$2016, scale from 0-10

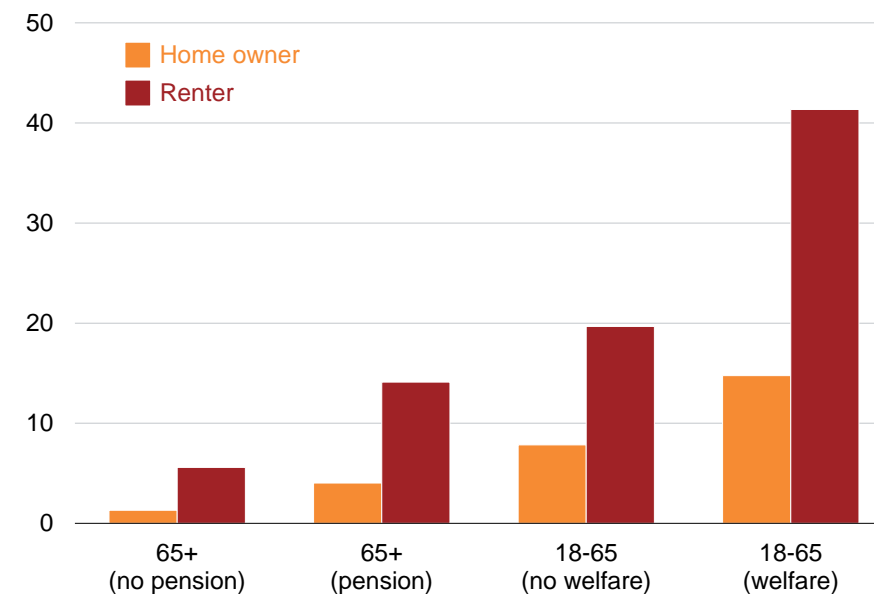


Notes: Households are weighted according to HILDA survey weights. Households with negative disposable income are coded as disposable income equal to \$0. Self-reported satisfaction with 'overall financial situation'. Financial satisfaction at the household level is the average of the financial satisfaction of all responding members of the household.

Source: Grattan analysis of Melbourne Institute (2018a).

**Figure 3.3: Renting pensioners are under more stress than home-owning retirees – but less than others**

Percentage of households facing at least one financial stress, 2015-2016



Notes: Financial stress is defined as whether, due to a money shortage, a household: 1) skipped meals; 2) did not heat their home; 3) failed to pay gas, electricity or telephone bills on time; or 4) failed to pay registration insurance on time. 'Pension' includes everyone over the age of 65 who receives social assistance benefits in cash of more than \$100 per week. 'Welfare' includes people who receive more than \$100 per week from a disability support pension, carer payment, unemployment or student allowance or other government pension. Financial stress can also be measured by asking whether households cannot afford goods and services that other survey participants evaluate as 'essential', as analysed in Saunders and M. Wong (2011), which produces similar relativities between the categories.

Source: Grattan analysis of ABS (2017a).

who rent are less financially stressed than people who are working and renting. And retirees who rent are much less stressed than working-age households that receive welfare.

Just as retirees are less stressed about essentials, their discretionary expenditure is also less financially constrained. Retirees are less likely than working-age households to miss out on discretionary expenditure, such as taking a holiday, due to cost, especially in old-age (Figure 3.4).

### 3.3 Retirees spend less as they age

Australians tend to spend less after they retire. Even the wealthy eat out less, drink less alcohol and replace clothing and furniture less often. Spending tends to slow at around the age of 70, and decreases rapidly after 80.

Successive waves of the Household Expenditure Survey conducted by the Australian Bureau of Statistics show that for a given cohort, spending falls once households are aged over 70 (Figure 3.5 on the next page). And this quasi-longitudinal analysis may understate the fall in household expenditure because of survivorship bias.<sup>79</sup>

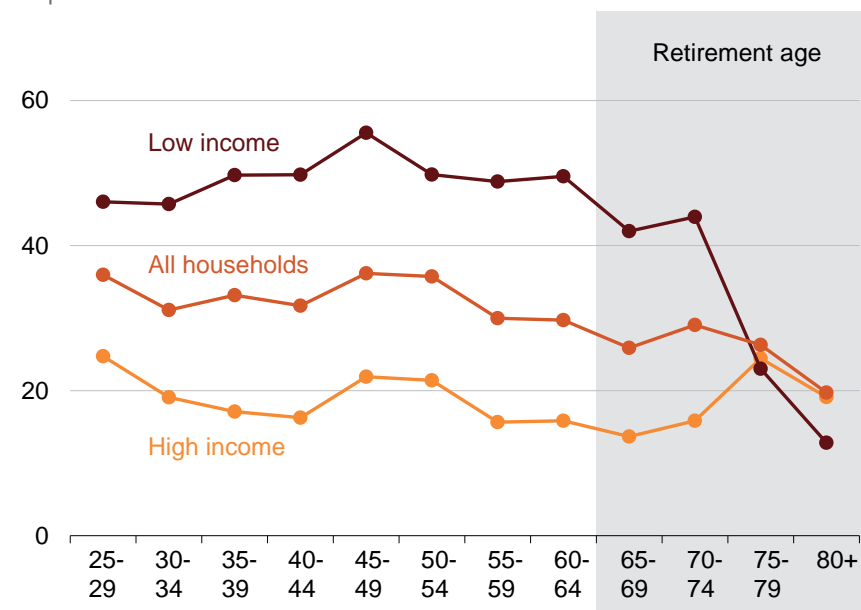
This fall in overall spending is mainly a result of lower spending on transport, recreation, food and furnishings (Figure 3.6 on the following page). Retirees who own a home tend to have paid off their mortgage by retirement (Figure 2.1 on page 24),<sup>80</sup> and no longer need to spend

79. Older households are by definition those that have survived, and those on higher incomes tend to live longer. For example, Clarke and Leigh (2011) find that at age 60 the difference in life expectancy between the wealthiest and poorest 20 per cent of income-earners was 5 years for men and 5.4 years for women. See also: Whiteford (2014) and Chomik (2018).

80. Average mortgage repayments also fall sharply for homeowners as they enter retirement, according to Grattan analysis of ABS (2017a). There is however an increase in housing costs for those in late retirement, see Figure 3.6 on the following page, which may be in part because council rates have increased faster than inflation over the past 20 years.

**Figure 3.4: Retirees miss out on fewer experiences because of cost than working-aged people**

Proportion of households that missed out on an experience because of cost in the past 12 months

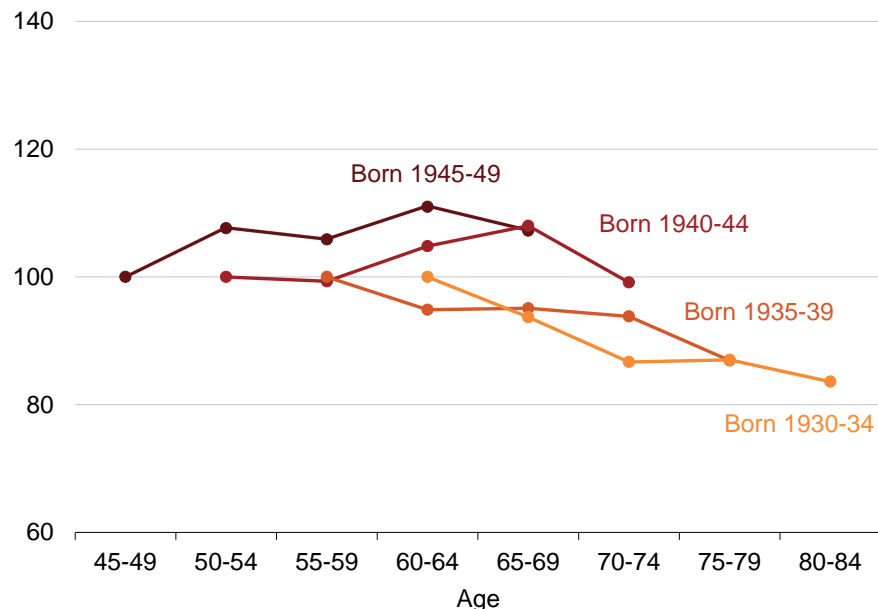


Notes: High (low) income includes all those in the top (bottom) third of incomes for that age cohort. 'Missing out experiences' includes not being able to afford a holiday once a year or not being able to afford a special meal once a week.

Sources: Grattan analysis of ABS (2017a).

**Figure 3.5: Retirees spend less as they age**

Equivalised household spending by age cohort, relative to 1993, \$2015-16, per cent

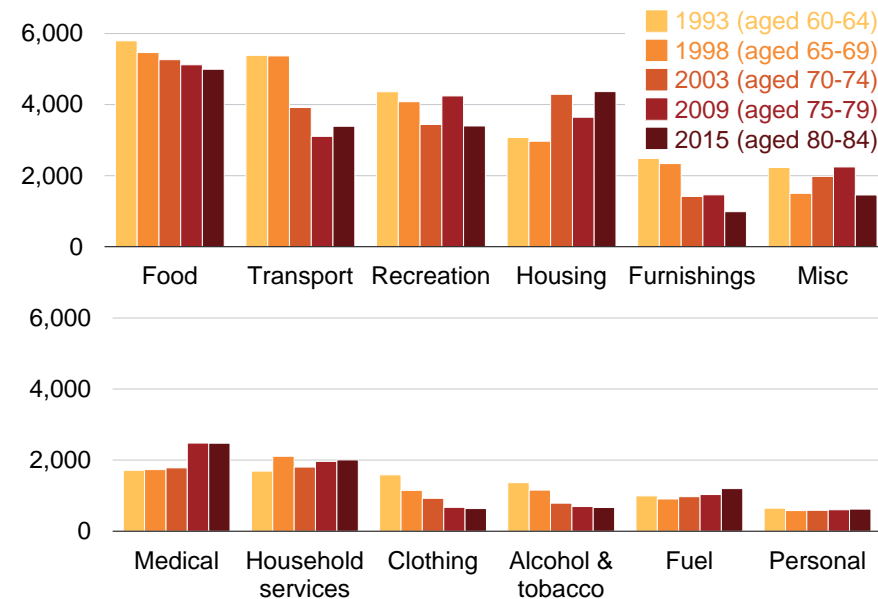


Notes: Spending from the 1993-94, 1998-99, 2003-04, 2009-10 and 2015-16 iterations of the Household Expenditure Survey. Each line represents a single cohort across time as they age. While the age cohorts are 5 years apart, there was a gap of 6 years between the past three HES surveys. Spending is deflated by CPI. This analysis of the spending patterns of age cohorts over time is consistent with analysis that compares spending of households of different ages today.

Sources: Grattan analysis of ABS (various years).

**Figure 3.6: Retiree spending on food, transport, and recreation declines**

Equivalised household annual expenditures for cohort born in 1930-34, \$2015-16



Notes: See Figure 3.5. Because of small changes in the categorisation of expenses between surveys, these results are indicative only. Expenditure on housing does not include principal repayments on mortgages. The increase in expenditure on housing is largely due to more spending on rates and insurance.

Source: Grattan analysis of ABS (various years).

money on children or on work-related expenses.<sup>81</sup> Pensioners also spend less due to discounts on council rates, motor vehicle registration, electricity and gas bills, public transport fares, and pharmaceuticals.<sup>82</sup> Public transport concessions apply to all retirees – not just those on the pension. Retirees' spending also tends to be lower because they have more time, and so cook at home more and eat out less.<sup>83</sup>

Falls in out-of-pocket spending during retirement appear to reflect declining health. Retirees' spending is highest in early retirement when they are healthiest, and seek to enjoy a range of activities including international travel.<sup>84</sup> But as health declines they spend less on recreation and travel.

While retirees do spend more on healthcare as they age, this is small relative to the falls in other categories, and is likely to reflect higher prices for the type of health costs paid directly by individuals, such as private health insurance.<sup>85</sup>

Governments foot the bill for most of the cost of health and aged care for older Australians.<sup>86</sup> More government spending on retirees means that while they might spend less of their own money overall, total

consumption increases. The average 80 to 84 year old receives double the spending on services per year of a 50 to 54 year old. For a 90-94 year old government spending triples.<sup>87</sup> The result is that while out of pocket spending for retirees falls, total consumption does not.<sup>88</sup>

Analysis of bank accounts shows that older households today spend much less than younger households today. Richer older households spend a lot less than richer younger households; poorer older households a little less (Figure 3.7 on the next page). Even a retiree aged 85-plus among the top quarter of retirees by wealth is still spending at or below the Aged Pension.<sup>89</sup>

International studies make similar findings.<sup>90</sup> Reports using the British Family Expenditure Survey<sup>91</sup> and The American Income Dynamics and the Consumer Expenditure Survey both found spending decreases into retirement.<sup>92</sup> Another prominent U.S. study found that real spending falls by around 1 per cent each year in retirement.<sup>93</sup>

These findings are not consistent with a report commissioned by the Australian Institute of Superannuation Trustees (AIST) based on the Household Income and Labour Dynamics (HILDA) survey.<sup>94</sup> But there are insurmountable problems with using the HILDA expenditure data in this way: because of excluded categories and incomplete surveying,

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81. Similarly, Chomik and Piggott (2016) find large reductions on spending on work-related clothing, motor vehicle and transport costs.

82. Department of Human Services (2018).

83. Chomik and Piggott (2016) also find large reductions on spending on pre-packaged meals and meals out. Analysing U.S. food diaries, Aguiar and Hurst (2005) noted that although food expenditures decline 17 per cent at retirement, the quantity and quality of food consumed does not change.

84. Many models of retirement income look at retirement in three stages: active retirement, passive retirement, and frail living. Cooper and Minney (2018).

85. Private health insurance premiums have risen by an average of 5.35 per cent a year since 2000, much faster than inflation overall. Silvester et al. (2018).

86. Average government spending on healthcare for households aged 65 and over was \$16,682 in 2009-10. Over the past 20 years, government health spending per person increased in real terms by about 3.7 per cent a year. Cumulatively, government health spending per person of a given age doubled, and increased the most for over-70s. Daley et al. (2014, figure 3.4.).

87. Productivity Commission (2015a, p. 3).

88. Chomik et al. (2018, p. 30).

89. Gebler (2018).

90. For example, Fisher et al. (2008) find that consumption expenditures decrease by about 2.5 per cent when individuals retire; expenditures continue to decline at about 1 per cent per year after that.

91. Banks et al. (1998).

92. Hurd and Rohwedder (2003).

93. Blanchett (2014). Even among older retirees (aged 80+) there is no increase in spending: it just stops falling. Given that a larger share of health costs in old age are funded by government, total spending at older ages is likely to be lower in Australia. See also Cooper and Minney (2018).

94. Auster and Maddock (2016).

it captures only half of the household expenditure identified by the Household Expenditure Survey (see Appendix B).

Why do people spend less in retirement than when they were working, but still feel more financially comfortable – sometimes labelled the ‘retirement satisfaction puzzle’?<sup>95</sup>

It is possible that people adapt to lower living standards, or are influenced by the expectations of their peers. Or it may be that expenditure needs in retirement are lower than commonly assumed.

It seems that expectations of income required in retirement decrease as households get closer to retirement.<sup>96</sup> Compared to the non-retired 45-49 age group, the non-retired age groups 60-64 and 65+ respectively expect to require \$11,800 and \$5,307 less a year in retirement.

Research on the psychology of ageing suggests people change their outlook as they age. Younger people tend to focus on achieving new exciting goals, but as they age they focus less on self-advancement and more on preserving the important things they already have.<sup>97</sup> Many younger people do not foresee this changing perspective. This suggests their expectations may be an unreliable guide to how much income they will need in retirement.<sup>98</sup>

### 3.4 Many Australians save in retirement

Falling spending through retirement might reflect households running out of savings. But rather than running out of money each week and eating into savings, most Australians maintain their nest egg well into retirement.

95. Bradbury and Mendiola (2012).

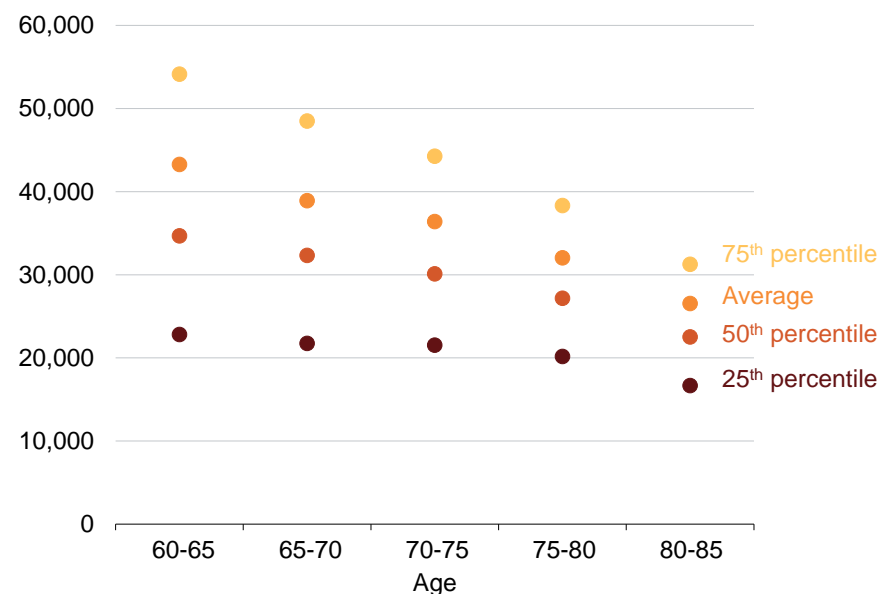
96. Wilkins (2017).

97. Robinson (2012); and Ebner et al. (2006).

98. ASFA (2018b) justifies its retirement standards on the basis that they fit the income people *expect* to need in retirement.

**Figure 3.7: Bank transaction records show that spending decreases with age**

Annual spending by wealth band and age bracket, couples, 2017



Notes: The Milliman Retirement Expectations and Spending Profiles (ESP) analysis is based on the actual spending of more than 300,000 Australian retirees, drawn from bank account and credit card data. The ‘Average’ series represents average spending across all wealth bands, for each age bracket.

Source: Gebler (2018).

### 3.4.1 The extent of saving in retirement

Most retirees could afford to spend substantially more than they do, and choose not to do so. Not only do most retirees not drawdown on their savings, many are net savers through much of their retirement. Most retirees never spend a large part of the savings that they have on the day they retire. Many retirees seem reluctant to draw down on their capital, and instead live on the income their savings generate.

Our analysis of the Survey of Income and Housing produced by the ABS shows that retirees typically maintain their non-housing wealth through their retirement (Figure 3.8). Wealth appears to have dipped only because the Global Financial Crisis reduced capital values, rather than because retirees drew down on their savings. This is true for both high- and low-wealth households: the bottom third by wealth of the cohort born in 1930-34 (aged 70-74 in 2005) increased their non-housing wealth from \$68,000 in 2005 to \$122,000 in 2015.<sup>99</sup>

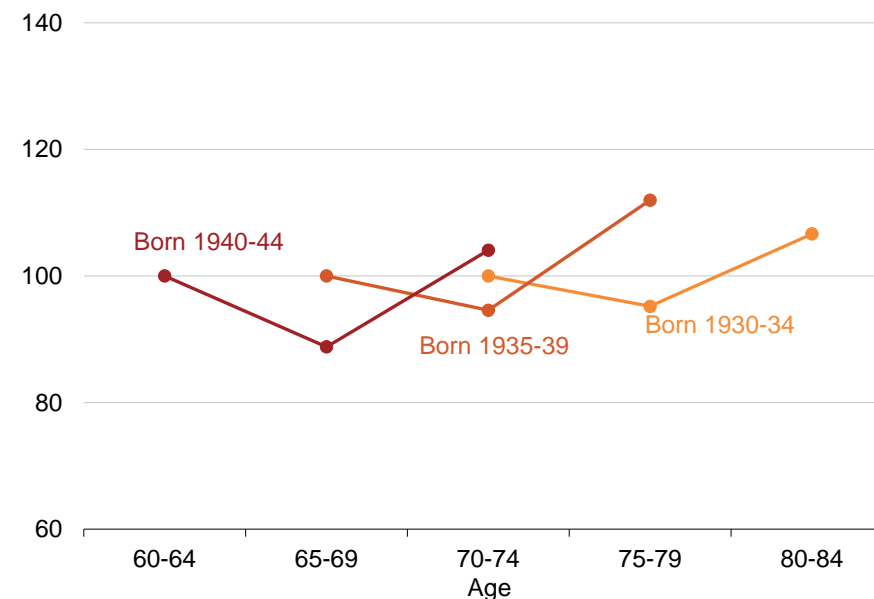
These findings are consistent with a range of other studies all showing that many pensioners don't draw down on their retirement savings. Australian Government data show that less than half of all pensioners draw down on their assets, and more than 40 per cent are net savers.<sup>100</sup> A recent study found that at death the median pensioner still had 90 per cent of their wealth as first observed.<sup>101</sup> While younger, wealthier retirees tend to draw down on their savings, and some households do draw down heavily, particularly after a divorce, most

99. Grattan analysis of ABS (2017a). This may overstate the increase in wealth because of survivorship bias: mortality is probably higher among those with lower wealth. See Clarke and Leigh (2011), Whiteford (2014) and Chomik (2018).

100. Morrison (2015a). Around 45 per cent of pensioners were net savers in the first five years of receiving the Age Pension, while 43 per cent drew down on their savings. In the final five years of receiving the pension, 43 per cent of pensioners were still net savers, while just a third drew down on their savings.

101. Asher et al. (2017) find that age pensioners preserve financial and residential wealth and leave substantial bequests.

**Figure 3.8: Retirees generally don't spend their nest egg in retirement**  
Household net financial wealth by age cohort, excluding the family home, contents and vehicles, relative to 2005, \$2015-16, per cent



Notes: Based on net financial wealth from the 2005-06, 2009-10 and 2015-16 iterations of the Survey of Income and Housing. Net financial wealth is total net wealth excluding the value of the principal place of residence (and related mortgage liabilities), personal effects and motor vehicles. Deflated by CPI.

Sources: Grattan analysis of ABS (various years).



pensioners are net savers later in life. Another study found that many Australian retired households – pensioners or otherwise – do not spend down much of their financial wealth as they age.<sup>102</sup> And the Productivity Commission found that people aged 75-79 had a higher net worth on average than people aged 50-54.<sup>103</sup>

### 3.4.2 Motivations for net saving in retirement

It's difficult to disentangle the many reasons why retirees don't spend down their savings. Some retirees might be concerned about longevity risk – the risk that they outlive their savings – especially if they live well beyond average life expectancy.

But the effect of longevity risk on retirees' savings behaviour is often overstated.<sup>104</sup> One survey of those nearing retirement found that “enjoying the best possible lifestyle while I am able to” is the number one concern when considering spending in retirement.<sup>105</sup> The Age Pension provides close to full insurance against longevity risk for low-income retirees, and partial insurance for medium-income retirees who can expect to receive at least a part-pension for most of their retirement years. Yet retirees of all incomes tend to save more as they age.<sup>106</sup> And demand for financial products that insure against longevity risk – such as annuities – remains very low in Australia.<sup>107</sup>

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102.Spicer et al. (2015).

103.Productivity Commission (2015a).

104.For example, Alonso-Garcia et al. (2017a) find that actual exposure to longevity risks does not affect motives to spend and save in retirement.

105.Participants in this study also ranked ‘To ensure my savings last my entire lifetime’ as an important factor in superannuation spending, but did not separate out these longevity risks from aged care costs. Hobman and Reeson (2018).

106.Grattan analysis of ABS (multiple years-c).

107.Productivity Commission (2015a, p. 97). Low take-up of annuities reflects a variety of factors: annuities are less flexible than account-based pensions, especially in dealing with unexpected health costs; many retirees want to provide a bequest; annuities have been unfavourably taxed until recently; and the Age Pension is a viable alternative for many, particularly late in retirement.

Other motives, such as concern about potential future health and aged care costs, appear to be important drivers of precautionary saving by retirees.<sup>108</sup> In the US and UK, where many must fund their own aged care, retirees do not draw down much on their wealth.<sup>109</sup> In contrast, retirees draw down on retirement savings much faster in countries with low out-of-pocket medical and aged care costs, such as Sweden, Norway, Denmark, Germany and Austria, where the median person aged 86-90 has only 21 per cent of the net wealth of younger retirees.<sup>110</sup>

Australia's aged care system arguably exacerbates these issues since accommodation costs in residential aged care are historically funded by aged care bonds.<sup>111</sup> These bonds are likely to be particularly salient to retirees, and often act as a de-facto guaranteed bequest since aged care facilities typically return the value of the bond to the estate when the aged care resident dies. Recent reforms have reduced the share of residential accommodation costs paid by bonds.<sup>112</sup> This may reduce retirees' motives to save in retirement in future.

In addition, Australia's legislated minimum drawdown rates from superannuation in retirement may ‘anchor’ retirees' expectations about how much they should spend.<sup>113</sup> At these minimum rates, most retirees

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108. Alonso-Garcia et al. (2017b).

109. Love et al. (2009); Banks et al. (1998); Van Ooijen et al. (2015). While the UK publicly funds health insurance via the National Health Service, not all aged-care costs are covered (Nakajima and Telyukova (2013)).

110. Nakajima and Telyukova (ibid.). More recent research on drawdown behaviour in the Netherlands finds slow drawdown of wealth during retirement. Alonso-Garcia et al. (2017b).

111. In 2015-16, 52 per cent of all bond-paying new residents paid by lump sum only, while 22 per cent paid by periodic payments and 26 per cent by a combination of the two (Tune (2017, p. 98)).

112. Ibid. (p. 97).

113. Retirees must pay tax on the earnings of a superannuation fund if they do not withdraw at least the legislated minimum each year. Hobman and Reeson (2018) find that people aged 55 to 74 who were advised of minimum drawdown rates

would leave very large legacies: the median worker would leave a bequest of \$190,000, in addition to the value of any home owned (Section 4.5.6 on page 55).

### 3.4.3 Policy implications of net saving in retirement

Thus most retirees do not in fact draw down much on their savings, even though retirement income policy is set on the assumption that savings will be consumed (see discussion on page 20, in Section 2.2). As a result many retirees are consuming much less than is implied by the purported aim of the system to smooth consumption over the lifetime (see Section 2.2 on page 19).

Although retirement income policy in the drawdown phase is outside the scope of this report (Section 1.5 on page 15), our analysis of retiree behaviour indicates some potential directions for investigation to align retiree behaviour more closely with the way that the system is intended to work. Any policy intervention would need to be mindful that the failure to draw down is as much a consequence of sub-conscious behaviour as rational decision-making. Accordingly governments might:

- Increase minimum drawdown rates given that these anchor the expectations of many people;
- Continue to shift the default basis for funding aged care so that most people do not have to lodge a substantial ‘bond’ that is typically preserved until death;

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reduced their intended drawdown from superannuation by 1 percentage point. In contrast, they did not reduce their intended drawdown when researchers focused them on the value of precautionary savings, or presented them with a scenario with children who were potential recipients of a bequest. Alonso-Garcia et al. (2017a) use an online experiment of retirement saving and spending decisions in Australia and the Netherlands to show that drawdown behaviour is influenced by legislated minimum drawdown rates for account-based pensions.

- Limit additional tax or welfare benefits to Comprehensive Income Products in Retirement (‘CIPRs’), because such products appear not to respond to a major concern of retirees – the need to be able to pay a large and unexpected lump sum;
- Message more clearly and forcefully that there is a genuine safety net for those who live long but run out of money, in the form of government support for health, aged care, and the Age Pension.

## 3.5 Retirees can afford to buy the things they want and need

Most retirees feel financially comfortable in retirement, feel fewer financial stresses than working-age households, and spend less and save more as they age. So it is no surprise that most retirees have incomes sufficient to pay for a basket of goods that we would expect retirees to be able to afford.

### 3.5.1 Typical households

The retirement standards produced by the Association of Superannuation Funds of Australia (ASFA) are often used to measure retirement income adequacy. ASFA produces a ‘comfortable’ standard for both single and couple retired households aged 65 and 85 that own their homes outright. It updates these standards regularly to take account of changes in consumer prices (Table 3.1 on the next page).<sup>114</sup>

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114. ASFA describes the ‘comfortable standard’ as one that ‘enables an older, healthy retiree to be involved in a broad range of leisure and recreational activities and to have a good standard of living through the purchase of such things as household goods, private health insurance, a reasonable car, good clothes, a range of electronic equipment, and domestic and occasionally international holiday travel’ (ASFA (2015b)). ASFA also produce a modest standard, which can ‘only [fund] basic family activities’ (ASFA (2018c); see also Daley et al. (2015)).

ASFA has argued that the goal for Australia's superannuation system should be for 50 per cent of Australians to achieve the ASFA 'comfortable' living standard in retirement by 2050.<sup>115</sup>

But ASFA's 'comfortable' standard is too high. The original designers of the standard described it as 'comfortable but affluent', and designed it to reflect a lifestyle typical for the top 20 per cent of retirees today.<sup>116</sup> So it is unsurprising that ASFA's 'comfortable' standard is more luxurious than the living standard of most working-age households today (Figure 3.9 on the following page).<sup>117</sup>

More recently, ASFA have defended the 'comfortable' standard on the basis that it prescribes an *expenditure* level after housing costs in retirement that is lower than the *income* after housing costs of median couple households aged 55-64.<sup>118</sup>

But this is a misleading comparison on three levels: it includes the income of adult children; it compares expenditure with income (ignoring the 'cost' of savings); and it ignores expenses on children, which are much higher for households aged 55-64 than retirees.

The incomes of adult children still living at home are material. Excluding their incomes, household earnings tend to peak at around age 45 (Figure 4.5 on page 51).<sup>119</sup> Disposable income of the head of the median single household aged 45-54, excluding income from adult children and other cohabitants, and subtracting housing costs, is \$31,088.<sup>120</sup> This is well below the ASFA comfortable expenditure

115. ASFA (2014, p. 2).

116. Rothman and Bingham (2004, p. 8).

117. Daley et al. (2015, p. 30).

118. ASFA (2018b, p. 5).

119. This analysis based on the Survey of Income and Housing is consistent with the Census, which shows that individual earnings for high- and low-income individuals, men and women, tend to peak around age 45 and fall rapidly from age 55: Daley et al. (2014, pp. 18, 49–50).

120. Grattan analysis of ABS (2017a).

**Table 3.1: ASFA sets living standards for retirement**  
ASFA 'comfortable' retirement standards for households aged 65

	Comfortable standard	
	Singles	Couples
Annual expenditure	\$42,764	\$60,264
Savings required at retirement	\$545,000	\$640,000

*Notes: All figures in today's dollars using 2.75 per cent growth in average weekly earnings as a deflator and an assumed investment earnings rate of 6 per cent. Based on the means test for the Age Pension in effect from 1 January 2017.*

*Source: ASFA (2018c).*

standard of \$42,764. The comparison for couples is more favourable. Disposable income for the median couple household, excluding income from adult children and other cohabitants, and subtracting housing costs, is \$81,800 for age 45-54 and \$76,500 for age 55-64. Both of these are above the ASFA expenditure standard of \$60,264.<sup>121</sup>

But this analysis still compares *incomes* before retirement with *expenditure after retirement*. Expenditure is typically lower than income, and the difference is savings.<sup>122</sup> More than 70 per cent of single households and about half of couple households aged 55-64 spend less than the ASFA standard. If spending on dependent children is taken into account, the amount that adults spend on themselves is even less, and this is a more appropriate benchmark for their retirement spending. On this basis, only 20 per cent of singles and 40 per cent of couples spend more when working than the ASFA comfortable standard (Figure 3.9 on the following page).

121. Grattan analysis of ABS (ibid.).

122. Savings rates are typically similar between the ages of 25 and 64, although for younger households this often manifests as paying down the mortgage: see Daley et al. (2014, p. 17).

The fact that many households *aspire* to this level of retirement income is irrelevant.<sup>123</sup> We would all like to be rich. With average living standards before retirement lower than the ASFA comfortable benchmark, the average household can only reach the ‘comfortable’ benchmark in retirement by living less than ‘comfortably’ before retirement.

Nevertheless, more people reach the ASFA comfortable standard today than when it was first set in 2003. This is because wages have risen much faster than inflation and the comfortable standard over the past 15 years.<sup>124</sup>

### 3.5.2 Low-income households

Minimum budget standards measure whether older Australians are living in poverty. Budget standards reflect community perceptions of what constitutes poverty.<sup>125</sup> The full Age Pension and related supplements is above most minimum budget standards according to a variety of definitions.

#### Low Cost Budget Standards

The most prominent minimum budget standards in Australia are the Low Cost Budget Standards, produced by the UNSW Social Policy Research Centre for Age Pension households (Table 3.2 on the next page).<sup>126</sup> These standards are designed – assuming prudent

123. See State Street Global Advisors and Rice Warner (2015, p. 5).

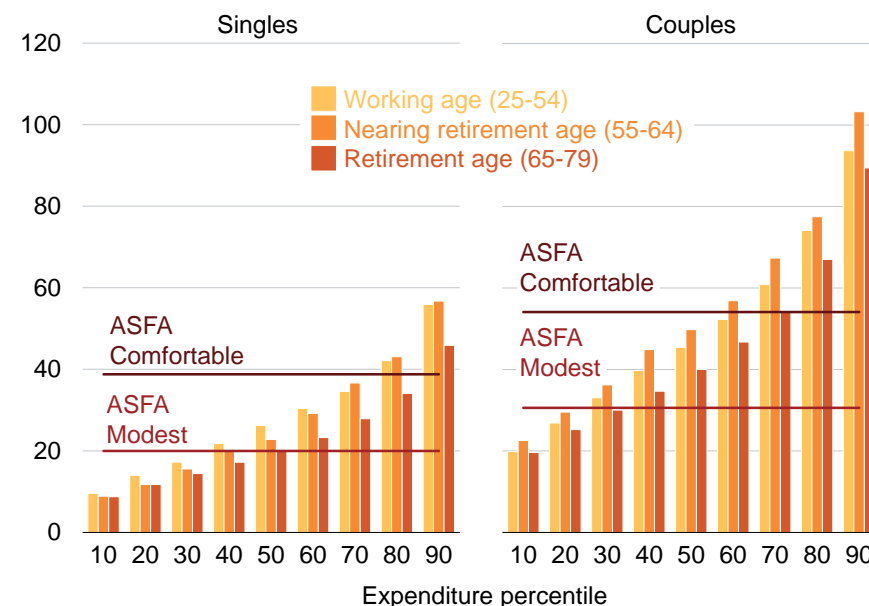
124. Through periodic updates, the ASFA ‘comfortable’ standard has only grown in line with inflation, although the ‘modest’ standard has been revised recently so that it has grown in line with wages and therefore the Age Pension: Grattan analysis of ASFA (various years), ABS (2018a) and ABS (2018b).

125. Harmer (2009, p. xiii).

126. The Commonwealth Department of Social Security (DSS) commissioned the UNSW Social Policy Research Centre in October 1995 to develop a set of indicative budget standards for Australia. See Saunders et al. (1998).

**Figure 3.9: ASFA’s ‘comfortable’ retirement standard is more affluent than most households enjoy either working or retired**

Equivalised household expenditure percentiles (excluding housing), \$000s per year, \$2015-16



Notes: Spending equivalised using the ABS preferred standard, which assumes that each adult increases the spending of a household by 50 per cent, and each child increases the spending of a household by 30 per cent. Partners not equivalised because this spending is accounted for already in their higher ASFA standard from September quarter of 2015. Household expenditure from 2015-16 Household Expenditure Survey.

Sources: Grattan analysis of ABS (2017a) and ASFA (2015b).

household management – to ‘allow social and economic participation consistent with community standards and [to] enable the individual to fulfil community expectations in the workplace, at home and in the community’.<sup>127</sup> Low Cost Budget Standards have been defined for single and couple pensioner households who are homeowners, public renters, or private renters. The maximum Age Pension, supplements, and Rent Assistance (only applicable to private renters) are greater than the Low Cost Budget Standards for all types of retired households, as shown in Table 3.2.

However, rental costs vary substantially depending on location. Consequently, many private renters in Sydney and Melbourne are likely to have living standards below the Low Cost Budget Standards.<sup>128</sup>

### ASFA modest standard

ASFA also produces a ‘modest’ standard for retirement incomes. The original designers of the standard from the UNSW described it as a ‘modest but adequate’ standard,<sup>129</sup> but ASFA now presents it as an income that is ‘only able to afford fairly basic activities’.<sup>130</sup> The ASFA standard assumes that a person owns their own home. It is substantially higher than the Low Cost Budget Standards and about \$3,500 a year more than the Age Pension, for both singles and couples (Table 3.2). It was substantially increased in 2018.<sup>131</sup> ASFA calculates that a household (single or couple) can achieve the modest standard with a full Age Pension and \$70,000 in savings. About 25 per cent of couple households and 30 per cent of single households spend less

127. Ibid. (p. v).

128. Rental stress tends to be higher, and is increasing faster, for low-income households in capital cities. Daley et al. (2018, pp. 26–27).

129. Saunders et al. (2004).

130. ASFA (2018c). For a more detailed history of the ASFA retirement standards see Rothman and Bingham (2004, p. 8).

131. Grattan analysis of ASFA (n.d.), ABS (2018a) and ABS (2018b).

**Table 3.2: Annual expenditure implied by Low Cost Budget Standards**  
Standards and poverty lines relative to Pension and Rent Assistance, 2018

	Housing tenure	Annual value (single)	Welfare payments relative to standard	Annual value (couple)	Welfare payments relative to standard
<b>Low cost budget standard</b>	Homeowner	\$22,651	105%	\$31,144	115%
	Public renter	\$20,335	117%	\$31,346	115%
	Private renter	\$26,533	102%	\$38,862	101%
<b>ASFA modest standard</b>	Homeowner	\$27,425	87%	\$39,442	91%
<b>Henderson poverty line</b>	Private renter	\$21,868	109%	\$30,975	116%
<b>OECD poverty benchmark (ABS equiv)</b>	All tenure types	\$23,372	102%	\$35,060	102%
<b>OECD poverty benchmark (new OECD equiv)</b>	All tenure types	\$26,300	91%	\$37,191	97%
<b>Max age pension + supplements</b>	Homeowner	\$23,824		\$35,916	
<b>Max age pension + supplements + CRA</b>	Private renter	\$27,105		\$39,244	

*Notes: Original Low Cost Budget Standard (LCBS) updated to \$2018 using growth in total adult earnings. Private renter LCBS created by benchmarking against the cheapest quartile of one-bedroom properties for singles, and the cheapest quartile of two-bedroom properties for couples (consistent with Saunders et al. (1998)). For homeowner and public renter standards the relevant welfare payment is age Pension + supplements. For private renter standards the relevant welfare payment also includes CRA. OECD poverty benchmarks are defined as 50 per cent of median household disposable income. For equivalisation difference between OECD metrics see Footnote 142 on page 39. OECD benchmarks apply to both home-owners and renters, hence the relevant welfare payments are Age Pension + supplement.*

*Sources: Grattan analysis of Saunders et al. (1998), ABS (2017a), ABS (2018b), Harmer (2009), ASFA (2018c), Melbourne Institute (2018b) and OECD (2018).*

than the modest standard when they are working age and when they are retired (Figure 3.9 on page 36).

### Henderson Poverty Line

Another minimum standard often used in Australia is the Henderson Poverty Line, established by the Henderson poverty inquiry in 1973.<sup>132</sup> It set a minimum standard of disposable income for a family with two adults and two dependent children. Based on this standard, it also set benchmarks for other family types. The benchmark for a couple with the head not in the workforce was set in 1973 at \$38.84 per week. This has since been updated to maintain parity with growth in per capita household disposable income. In March 2018 the benchmark for a couple with the head not in the workforce was set at \$595.69 per week (or \$30,975 per year).<sup>133</sup> The maximum rate of the Age Pension remains above the Henderson Poverty Line for both single and couple retirees (Table 3.2 on the preceding page).

But the Henderson Poverty Line is a poor measure of a minimum standard of living, particularly for pensioners. It ignores accumulated wealth, which tends to be much higher for low-income pensioners than low-income working-age households. And when it converts from a standard for working-age households to pensioners, it ignores the very large difference in housing costs due to home ownership and subsidised rental housing.

Four in five Australian households over the age of 65 own their own homes.<sup>134</sup> Even among the lowest income quintile of seniors,

home-ownership rates are above 70 per cent.<sup>135</sup> Home ownership provides them with big benefits: they have somewhere to live without paying rent, and they are insulated from rising housing costs. The benefits that a house provides to its owner-occupier – which economists call imputed rents – are worth more than \$23,000 a year to the average household aged 65 or over, roughly the same value as the maximum-rate Age Pension.<sup>136</sup>

The Henderson Poverty Line also ignores the substantial subsidies in social and public housing, which support a greater proportion of renting pensioners than working-age households (see Figure 4.10 on page 65).

### OECD 'income poverty'

Another common measure of poverty in retirement is the proportion of households with disposable incomes that are less than half of the median disposable income of all Australians. The OECD calls this 'income poverty'.

Some advocate increasing the Age Pension<sup>137</sup> on the basis of OECD research using this measure, which finds that 26 per cent of Australians aged 65 and over suffered income poverty in 2013, compared to 13 per cent across all OECD countries.<sup>138</sup> But there are a number of problems with the OECD measure. Small changes in reality produce apparently very different outcomes, calculation of the benchmark rests on arbitrary definitions of equivalisation, it does not take into account drawdowns on savings outside superannuation, and it does not adequately account for housing costs.

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132. Melbourne Institute (2018b).

133. Melbourne Institute (ibid.). Includes housing costs.

134. Daley et al. (2018, p. 71). Home ownership rates per person are lower: see Section 4.7.1 on page 62.

135. Grattan analysis of ABS (2016a). Home-ownership rates are above 80 per cent for all other income quintiles of over-65 households, rising to 90 per cent among the wealthiest 20 per cent of over-65 households.

136. Grattan analysis of ABS (2017a).

137. W. Smith and Hetherington (2016).

138. OECD (2017a).



Outcomes under the OECD measure are volatile from year to year, even with very small changes, because the full Age Pension is close to the OECD benchmark, and so a large number of Australian retirees cluster close to the benchmark. For example, old-age poverty in Australia apparently fell sharply from 22 per cent in 2011 to 13 per cent in 2016.<sup>139</sup> But the big apparent shift merely reflected the maximum rate of the Age Pension (including related supplements) oscillating around the benchmark of 50 per cent of median incomes.<sup>140</sup> The minimum pension in many other countries is much lower (Figure 3.10) – and in some is only available to people who have been employed for most of the time while they were of working age. As a result, Australia has far fewer retirees in severe poverty whose income is much less than the OECD’s benchmarks.

This clustering close to the benchmark also means that outcomes on the measure depend a lot on somewhat arbitrary definitions. For example, the apparent poverty rate in 2015-16 changes from 12 per cent to 23 per cent<sup>141</sup> depending on how households with different family sizes are compared.<sup>142</sup>

Even then, the income poverty measure can be misleading. The 12 per cent of senior Australians classified as living in poverty on the ABS preferred definition are typically people of significant means who

139. ACOSS (2016, p. 21). ACOSS uses the ABS preferred measure of equivalisation: see Footnote 142 on the current page. ACOSS (2018, p. 24) found that old age poverty decreased further to 12 per cent in 2018.

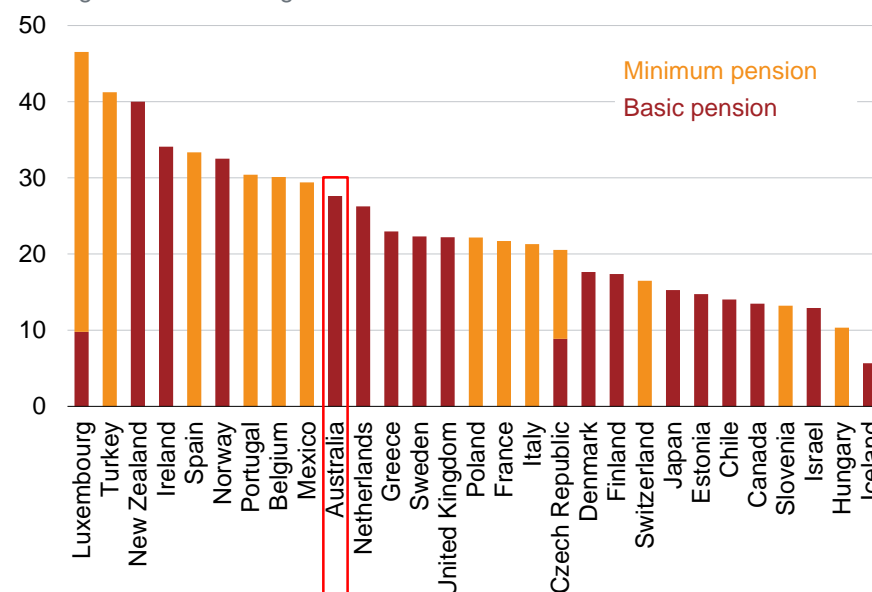
140. OECD (2017b).

141. Grattan analysis of ABS (2017a).

142. According to the ABS preferred definition of equivalisation, previously used by the OECD, households are ‘equivalent’ if they expend .5 times more for every extra adult and .3 times more for every child under 15 than a single household. According to the new OECD definition, households are ‘equivalent’ if a household of  $n$  members expends  $\sqrt{n}$  times as much as a single household. The choice of benchmark relative to median incomes is also arbitrary, but the most commonly used benchmark is 50 per cent of equivalised median disposable income.

**Figure 3.10: Australia’s Age Pension is high relative to the safety net benefits in many other OECD countries**

Value of basic and minimum pension benefits, per cent of economy-wide average full-time earnings.



Notes: ‘Basic pensions’ include benefits paid to everyone irrespective of contributions, but often based on residence, as well as benefits that are paid based on years of contributions, but not related to past earnings. ‘Minimum pensions’ are provided within contributory schemes which set a pension floor or credit individuals with higher contributions than they actually paid. The sum of both bars shows the lowest possible pension for a worker who contributes each year from age 20 to the standard national pension age. The OECD calculates average earnings using average full-time adult gross earnings, before deductions of any kind (including personal income taxes and social security contributions), and including overtime pay and other cash supplements paid to the employee. The corresponding metric from the ABS is Full Time Adult Total Earnings. For Australia average full time adult gross earnings were \$82,114 in 2016.

Source: OECD (2017b, Figure 3.4).

are ineligible to receive a maximum-rate Age Pension and whose drawdowns of existing savings are not counted as income.<sup>143</sup> Over half of over-65s classified as living in poverty in 2015-16 based on the ABS preferred definition were among the wealthiest half of all retirees.<sup>144</sup>

Like the Henderson Poverty Line, a relative poverty measure based on disposable incomes tends to overstate poverty in old age because it ignores the differences in housing costs due to Australia's relatively high levels of home ownership and significant subsidised rental housing.<sup>145</sup> One study found that Australia's old-age poverty rate in 2015-16 was 24 per cent before housing costs, (the third worst in the OECD), but only 10 to 14 per cent after housing costs (around the OECD average).<sup>146</sup> Similarly, the Harmer Pension Review found that while 47 per cent of single people aged over 65 in 2005-06 were living in 'income poverty', just 7 per cent were living in 'income poverty' after accounting for housing costs.<sup>147</sup>

Consequently, both the Henderson Poverty Line and the OECD measures of relative poverty are unreliable guides to the adequacy of retirement incomes. As the Harmer Pension Review concluded, neither of these measures is 'a particularly robust measure of well-being',<sup>148</sup> and instead the maximum rate of the Age Pension is

'broadly adequate'.<sup>149</sup> Similarly, the Henry Review concluded that the Age Pension provides a sufficient safety net for living standards in retirement.<sup>150</sup>

### 3.6 Renters are at much greater risk of poverty in retirement

While few pensioners overall appear to be suffering financial stress, many pensioners in private rental housing are struggling. Rates of financial stress among renting pensioners are much higher than among homeowners (Figure 3.3 on page 27). This is not surprising – renters typically have lower incomes. Rental stress has increased slightly for renting pensioner households, particularly in our capital cities.<sup>151</sup> The proportion of renting pensioner households spending more than 30 per cent of their gross income on rent increased from 40 per cent in 2007-08 to 42 per cent in 2015-16.<sup>152</sup>

The National Shelter Rental Affordability Index found that private rentals were 'severely' or 'extremely' unaffordable across all of Sydney and Melbourne, for single or couple pensioners.<sup>153</sup> In most cases the

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143. Drawdowns on assets other than superannuation are not captured as income by the ABS. Earnings (*i.e.* interest and dividends) on these assets are included in the definition of income, but many retirees earn low returns on their assets, especially when held in term deposits. Drawdowns on superannuation are counted as income – an historical hangover from a time when most super was paid out as defined benefit pensions.

144. Grattan analysis of ABS (2017a). Results are similar when ranking retirees by net wealth or financial wealth only (excluding owner-occupied housing, vehicles or personal effects).

145. For a similar conclusion, see Chomik and Piggott (2016, p. 18).

146. Chomik et al. (2018, p. 23), Using the new OECD measure.

147. Harmer (2009, p. 35).

148. *Ibid.* (p. 34).

149. The Harmer Pension Review found that pensioner couples had incomes above the stipulated 'Low Cost Budget Standards' for all three tenure types of households in 2008 (homeowners, private renters, and public renters). But single age-pensioners had incomes below the budget standards, with the exception of single public renters whose pension (including the Seniors bonus) was just above the budget standard (Harmer (*ibid.*, pp. 33–34)). Partly in response, the maximum payment for singles was increased by \$30 a week in September 2009 (Daniels (2011)).

150. Henry (2009, p. 1).

151. Daley et al. (2018, pp. 26–27).

152. Includes pensioners renting from state housing agencies (ABS (2017a)).

153. Based on a single pensioner earning \$26,600 a year seeking a one-bedroom dwelling, and a pensioner couple earning \$45,800 a year seeking a two-bedroom dwelling. Housing is deemed 'unaffordable' where rents exceed 30 per cent of total income, 'severely unaffordable' where rents exceed 38 per cent of total income, and 'extremely unaffordable' where rents exceed 60 per cent of total income: SGS Economics & Planning et al. (2018, pp. 18–22).

pensioner couple would need to spend at least 38 per cent of their total income on rent to secure housing in Sydney or Melbourne, and a single pensioner would typically need to spend at least 60 per cent.

Rental stress among pensioners in the private rental market has worsened for a number of reasons. First, Commonwealth Rent Assistance, which provides financial support to low-income renters, is indexed to CPI, and so it fell behind private market rents which rose roughly in line with wages.<sup>154</sup> Second, rents paid by low-income earners grew significantly faster than average rents.<sup>155</sup> Third, the stock of lower-rent social housing did not keep pace with population growth.<sup>156</sup>

### 3.7 Retirees have reasonable resources compared to when they were working

As well as ensuring a basic standard of living for all retirees, retirement incomes policy aims to smooth consumption – that is, to enable a standard of living in retirement comparable to that while working (Section 2.2 on page 19).

Replacement rates measure how much a retiree can expect to have to spend in retirement, relative to their working-age income or expenditure.

As discussed in more detail in Section 4.5 on page 49, calculating replacement rates, and setting an appropriate target, requires making significant assumptions that can substantially change the outcomes. A common benchmark, accepted by this report, is that the median household should have a post-tax income in retirement of around 70 per cent of their pre-retirement income (Section 4.5.7 on page 56).

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154. Daley et al. (2018, p. 25).

155. Productivity Commission (2018b, figure 6.1), and see Section 7.1 on page 76.

156. Daley et al. (2018, p. 62).

The median single retired household aged 65-84 today has income about 25 per cent *higher* in real terms than they did when working 20 years ago.<sup>157</sup> The median retired couple household earns about 86 per cent of what they earned 20 years ago (Figure 3.11 on the following page). Lower-income households typically have more income in retirement than when they worked. And retirees today of all incomes appear to have incomes of at least 77 per cent of their pre-retirement incomes.

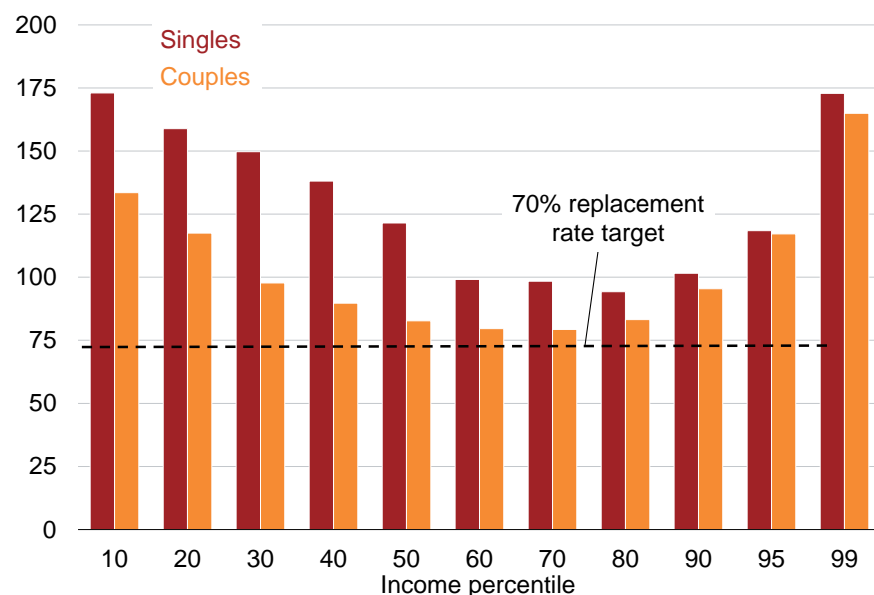
Retirees today generally spend close to what they spent 20 years ago (Figure 3.12 on the next page). This spending is equivalised, meaning that it takes account of the higher costs associated with raising children. The major exceptions are the top 30 per cent of single households, which typically spend less in retirement than they did when working.

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157. This 'quasi-longitudinal' analysis uses multiple waves of the ABS Survey of Income and Housing to infer changes in households' incomes. It is not a full longitudinal survey, because the households surveyed each time are different. But the households surveyed each time are drawn from more or less the same population of households, apart from deaths in the interim.

**Figure 3.11: Retirees today have higher incomes than when of 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

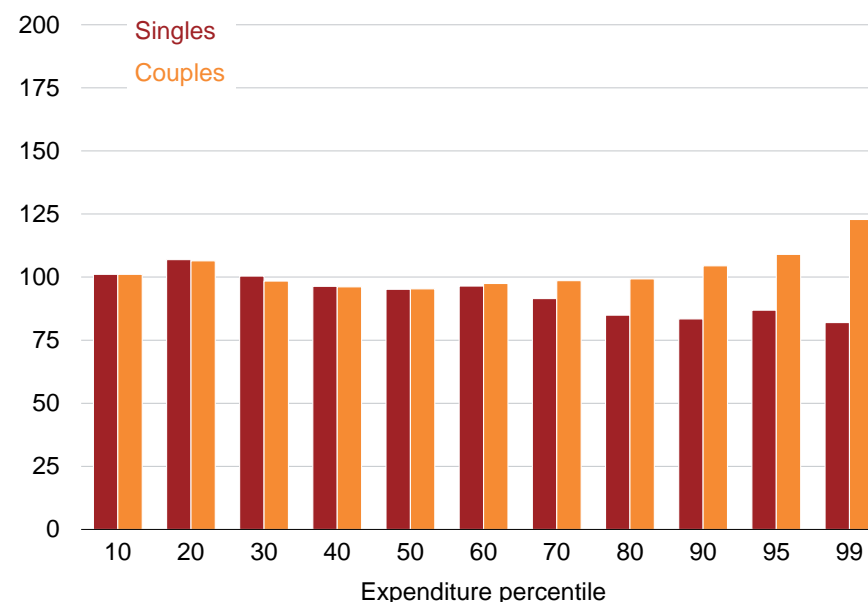


Notes: Based on disposable income from the 1995-96, and 2015-16 iterations of the Survey of Income and Housing. Disposable income includes head of household and their partner, but not children, as per Section 3.5.1. Incomes in 1995 adjusted to take account of changes in ABS definitions of income between surveys. For more information about how the ABS definition of income has changed, see Wilkins (2014).

Sources: Grattan analysis of ABS (various years).

**Figure 3.12: Retirees today spend as much as when they were of working age**

Equivalised spending by households aged 65-84 in 2015, relative to spending by households aged 45-64 in 1993, \$2015-16, per cent



Notes: Based on equivalised spending on goods and services from the 1993-94 and 2015-16 iterations of the Household Expenditure Survey. Equivalised expenditure adjusts for the number of dependents in the household, including children, as per Figure 3.9. Spending of the older members of the cohort is generally lower – see Figure 3.5 on page 29.

Sources: Grattan analysis of ABS (various years).

## 4 Retirement incomes for people entering the workforce today

The previous chapter showed that most of today's retirees already have adequate incomes in retirement. This chapter shows that, although the retirees of tomorrow might be more worried, they can expect to be even better off.

We cannot know how those working today will feel about their finances once they retire. But using current patterns of income, savings, and wealth, we can assess what they will be able to afford, and how their incomes in retirement are likely to compare to their incomes when working.

The Grattan Retirement Income Projector (GRIP) models the lifetime employment earnings and retirement income of people aged 30 in 2015-16. It projects that current policy settings will deliver adequate retirement incomes for all working people. They will have incomes higher than needed to provide an adequate standard of living. And their incomes in retirement will be comparable to their incomes before retirement. Low- and high-income earners will have particularly high incomes in retirement relative to their incomes before retirement. Many low-income Australians will get a *rise* in pay when they retire, because the Age Pension and the income they get from compulsory retirement savings will be higher than the wage they received during their working life.

These results hold even in scenarios such as lower investment returns and lower wages.

Our conclusions differ from much other work on future retirement incomes. Unlike many other analyses, our results do not aim for a standard of living in retirement higher than during working life, and they take into account material non-super savings (Table 4.4 on page 61).

But retirement incomes won't be adequate for all retirees in future. Falling rates of home ownership, rising rents for lower end housing, and static investment in social housing mean that many more low income retirees will rent privately in future, increasing their risk of poverty in retirement.

### 4.1 How future retirees feel about retirement

Unlike current retirees, we cannot know whether future retirees will feel financially comfortable.

We do know that future retirees are worried about their retirement – much more worried than people who are actually retired (see Section 1.1 on page 11). This worry is largely driven by messaging – primarily sourced from the financial services industry itself – that people won't have enough for retirement. Consequently, worries about retirement simply prove that marketing is effective; they do not prove that there is actually a problem.

Instead we should assess the adequacy of future retirement incomes by looking at future standards of living in retirement, and comparing these to future standards of living before retirement.

### 4.2 Projecting future standards of living in retirement

Retirement incomes are likely to be higher in future than today. People entering the workforce now are likely to get higher incomes over their working lives than older generations, resulting in higher retirement incomes.<sup>158</sup> And they will have more in retirement because they will

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158. Although there are concerns about a generation with lower wages than its parents, and this pattern is evident in the US and UK, it has not – yet – emerged in Australia: see Daley et al. (2014).

have made compulsory superannuation contributions at a higher rate over their entire working lives.

Results from GRIP show that current policy settings will deliver adequate retirement incomes – at least 70 per cent of pre-retirement incomes – for Australians entering the workforce today (Figure 4.1).

Since the Age Pension is benchmarked to future increases in wages, the poorest Australians will continue to receive a retirement income higher than most measures of poverty, and higher than the absolute incomes of low-income earners in retirement today (Table 3.2 on page 37). Amongst future low-income retirees, those who don't own their homes and rent privately are at greater risk of poverty in retirement (Section 4.7.4 on page 64).

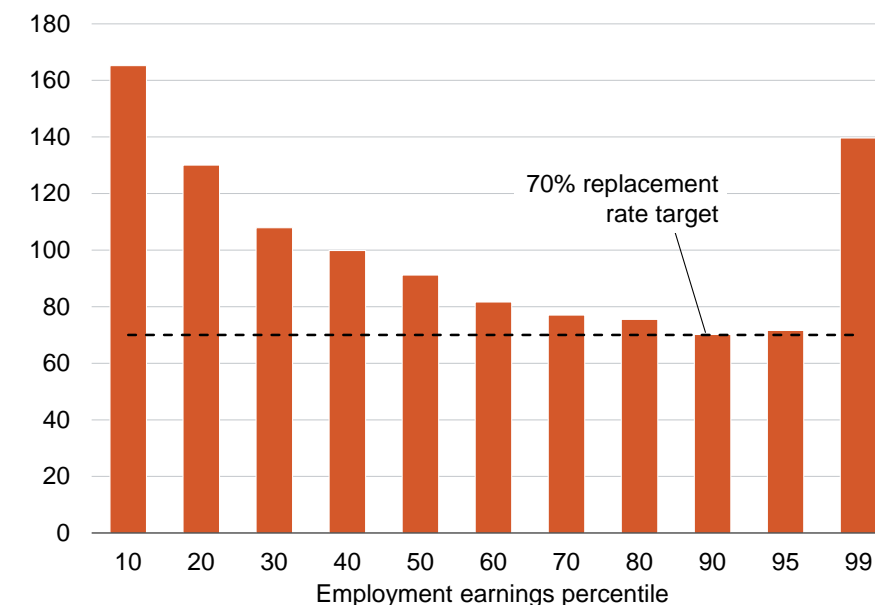
#### 4.2.1 Assumptions about incomes and wealth accumulation using the Grattan Retirement Income Projector (GRIP)

GRIP projects the distribution of lifetime incomes for future retirees. The model takes representative individuals from a starting age of 30 in 2015-16 and projects their retirement savings when they retire at age 67 after working for 37 years (Box 1 on the next page summarises the main modelling choices made in GRIP, and Appendix C provides more details). The model includes individuals' income from working, welfare, and savings, and assumes they save both inside and outside superannuation. GRIP accounts for the way a person's earnings are likely to fluctuate through their life if they, for example, take a career break, work part-time to care for young children, or get a higher (or lower) paying job (see Box 2 on page 46 and Appendix C.4.1 on page 109).

Future retirees in GRIP accumulate a significant amount in superannuation, even when they are in the lower part of the earnings distribution. Super contributions come from compulsory Super Guarantee contributions, voluntary pre-tax contributions, and voluntary

**Figure 4.1: Future workers will have retirement incomes that adequately replace pre-retirement incomes under current policy settings**

Replacement rate, whole of retirement/last five years of working life, CPI deflated, per cent



Notes: See Appendix C.

Source: GRIP.

post-tax contributions (particularly large lump-sum contributions from accumulated non-super savings just before retirement).<sup>159</sup>

#### 4.2.2 Assumptions about spending in retirement using GRIP

GRIP assumes that once a person retires, they draw down their superannuation and other savings, and may qualify for the Age Pension if they satisfy the income and assets tests, until they die at 92. Retirees are assumed to be single homeowners during their retirement for the purposes of the Age Pension means test,<sup>160</sup> but the results are also indicative for other household types (Section 2.3.2 on page 22).<sup>161</sup>

GRIP calculates future retiree incomes on the assumption they draw down 90 per cent of their private savings (excluding their home). They are expected to set aside 10 per cent of their super and non-super savings for a bequest, or for unexpected expenditures not captured in the model. GRIP assumes that future retirees do not draw down on the equity in their home, which is also left as a bequest, or used to fund aged-care expenditures. In reality retirees spend less and save more than this, but as discussed in Section 2.3.5 (on page 24), the purpose of the retirement incomes system is to provide resources for retirement, not bequests.

159. Superannuation contributions are modelled on observed contributions in the ATO's 2013-14 sample file, by age and earnings cohort (ATO (2016a)). This precedes the Government's recent changes to super tax breaks, including the \$1.6 million transfer balance cap and tighter annual caps on pre- and post-tax super contributions. However these changes are unlikely to affect the voluntary super contributions of the vast majority of workers (Daley et al. (2016b)). Non-super savings are a significant share of private savings accumulated over working life. Retirees are assumed to transfer any non-super savings into super at retirement to take advantage of the tax-preferred status of superannuation.
160. GRIP assumes that the purchase of a home is funded out of working-age income.
161. Most retirement-adequacy models predict that couples will be better off than singles in retirement (e.g. Burnett and Wilkinson (2016)) because couples can pool spending, better manage longevity risk, and meet minimum budget standards more easily.

#### Box 1: How GRIP calculates replacement rates for retirees in future

GRIP calculates replacement rates for future retirees as follows:

- People start working at age 30 and work for 37 years until retirement at age 67.
- People are assumed to move up and down the income distribution over the course of their working lives (Box 2 on the following page).
- People draw down their remaining retirement savings (including non-super savings) at a constant rate, indexed for CPI, until they reach age 92.
- People are assumed to aim to have 10 per cent of their retirement savings (CPI-adjusted) remaining at age 92, for unexpected expenses or as a bequest, in addition to their home.
- Retirees are assumed to own their home in retirement for the purposes of the Age Pension assets test.
- Replacement rates are calculated by comparing average retirement incomes throughout retirement compared to average incomes in the last five years of working life.
- Retirement incomes are deflated by inflation, so they maintain their real (CPI-adjusted) value through retirement.

These modelling choices are discussed in more detail in Section 4.5 on page 49. In contrast, many other retirement models use different assumptions, or target an inappropriately high living standard in retirement (Table 4.4 on page 61).



## Box 2: The distribution of earnings in GRIP

Future retirees in GRIP are assumed to begin working at age 30, and the model tracks their earnings for 37 years until retirement at age 67.

The initial distribution of earnings is based on Australian Taxation Office data for 2013-14. This includes everyone who submits a tax return. In practice this excludes around 15 per cent of the population, mostly those with especially low earnings while of working age, including the long-term unemployed and those receiving the Disability Support Pension, Carers Allowance, or Parenting Payment.<sup>a</sup> These people are unlikely to accumulate any material savings, will qualify for a full Age Pension, and their retirement incomes will typically be much higher than their working age incomes.

Unlike most retirement models, GRIP takes into account how people move up and down the income distribution. It models these transitions by imitating how people of a given age and income actually moved between income bands in the HILDA dataset between 2005-09 and 2010-14 (Appendix C.4.2 on page 110). Changes in position in the earnings distribution may be due to career breaks, gaining or losing skills, or caring for children. When predicted in this way, there is less spread in lifetime incomes: fewer people are expected to have very low or very high incomes, and more are predicted to be close to the average.

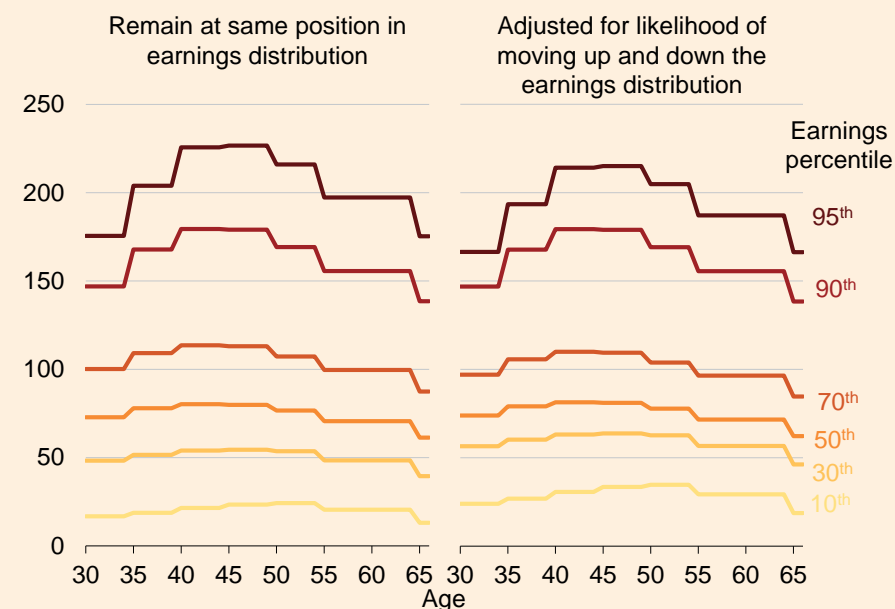
GRIP predicts that a person who starts at the 10<sup>th</sup> percentile of workers at age 30 will earn about 29 per cent of average earnings over their lifetime, the equivalent of working three days a week at the minimum wage. If the person remained at the 10<sup>th</sup> percentile of workers for their

a. In 2014-15, 83 per cent of 30-64 year-olds submitted a tax return. ATO (2016b) and ABS (2016a).

whole working life, they would earn only about 20 per cent of average earnings (Figure 4.2).

**Figure 4.2: Earnings typically peak between age 40 and 50. Adjusting for the likelihood of people moving up and down the earnings distribution compresses the earnings distribution**

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



*Note: Lifetime income adjusted using a transition matrix which reflects the likelihood of moving up and down the income distribution over the course of a person's working life. This chart has been updated since publication for greater clarity.*

*Sources: Grattan analysis of ATO Tax Statistics 2013-14; HILDA (2015).*

GRIP assumes that people draw down their savings at a constant rate, indexed for CPI, until they reach age 92. Because GRIP also projects that most people will receive a full or part Age Pension, which is indexed to wages, their retirement incomes increase in real terms throughout retirement. Retirement incomes will also rise through retirement because an individual will qualify for a larger part pension through retirement as the value of their private savings is drawn down. If people draw down on their savings more slowly, replacement rates will be lower, as shown in Appendix D.3 on page 123.

GRIP's assumption that retirees will live until 92 is based on the prediction of average life expectancy for those reaching 70 years old in 2055 from the 2015 *Inter-generational report*.<sup>162</sup> People who live past 92 years will still have a substantial portion of their incomes protected because the pension rises with income and will have increased by 26 per cent in real terms since their retirement. Retirees aged 92 will also still have 10 per cent of their retirement wealth set aside. Because people tend to spend less as they age (see Section 3.3 on page 28), the pension and any remaining savings will be an adequate replacement for less wealthy retirees, while those who own a home will also be able to use the Pension Loan Scheme to supplement their spending (see Footnote 77 on page 25).

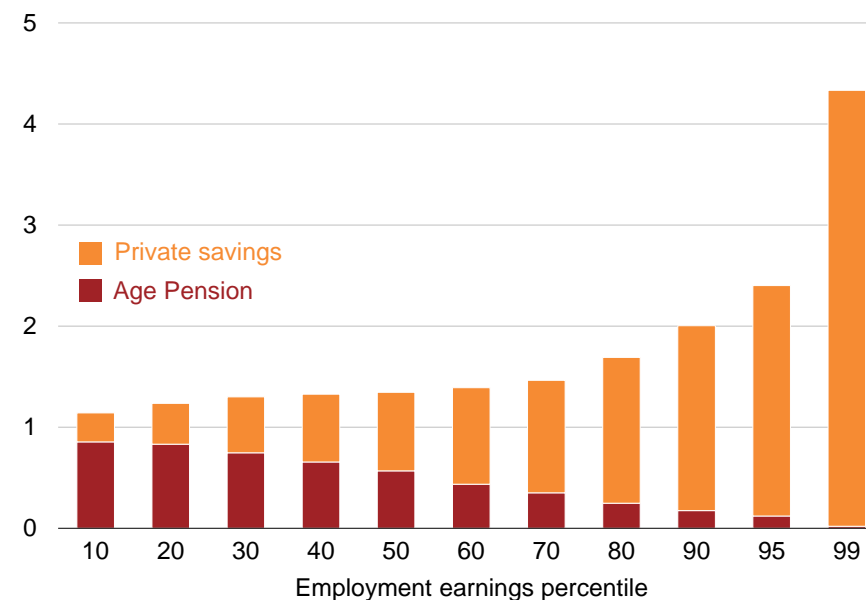
### 4.3 Incomes in retirement compared to budget standards

GRIP projects that all workers in the bottom 60 per cent of the earnings distribution will have total lifetime retirement incomes of between \$1.1 million and \$1.4 million, in 2015-16 dollars (Figure 4.3).

This equates to an annual income in retirement of \$43,000 to \$53,000 in 2015-16 dollars (over a 26-year retirement) (Figure 4.4 on the following page). This income is a mixture of drawing down

**Figure 4.3: GRIP projects Australia's retirement incomes system will generate substantial retirement incomes for all**

Lifetime retirement income by source, \$ millions, \$2015-16



Notes: The mix of superannuation and Age Pension income will vary as people age, draw down their super, and qualify for a higher Age Pension. Actual income will depend on expenditure patterns. Uses GRIP base case assumptions (see Appendix C).

Source: GRIP.

162. Hockey (2015, Table 1.1).

on superannuation and Age Pension payments.<sup>163</sup> A person at the 95<sup>th</sup> earnings percentile is projected to have an annual income of \$92,000 in retirement (in 2015-16 dollars), and a person at the 99<sup>th</sup> earnings percentile is projected to have an annual income of \$167,000 in retirement (Figure 4.4).

#### 4.4 Future retirees are likely to have reasonable incomes compared to when they were working

GRIP shows that current policy settings will deliver adequate retirement incomes, relative to pre-retirement incomes, also known as ‘replacement rates’ (Figure 4.1 on page 44). Replacement rates measure whether the retirement incomes system is delivering on its objective of lifetime consumption smoothing (see Section 2.2 on page 19).

Most retirees can expect a retirement income that is more than 70 per cent of their pre-retirement income. Lower-income Australians will typically have replacement rates *higher* than 70 per cent, because the Age Pension is substantial compared to their pre-retirement incomes. The only group that might have replacement rates *lower* than 70 per cent are those in the top 10 per cent of income earners. This is not usually seen as a mark of inadequacy – on any view they are unlikely to struggle financially in retirement. Replacement rates are also higher for people at the very top of the incomes distribution because they typically have substantial non-super savings.

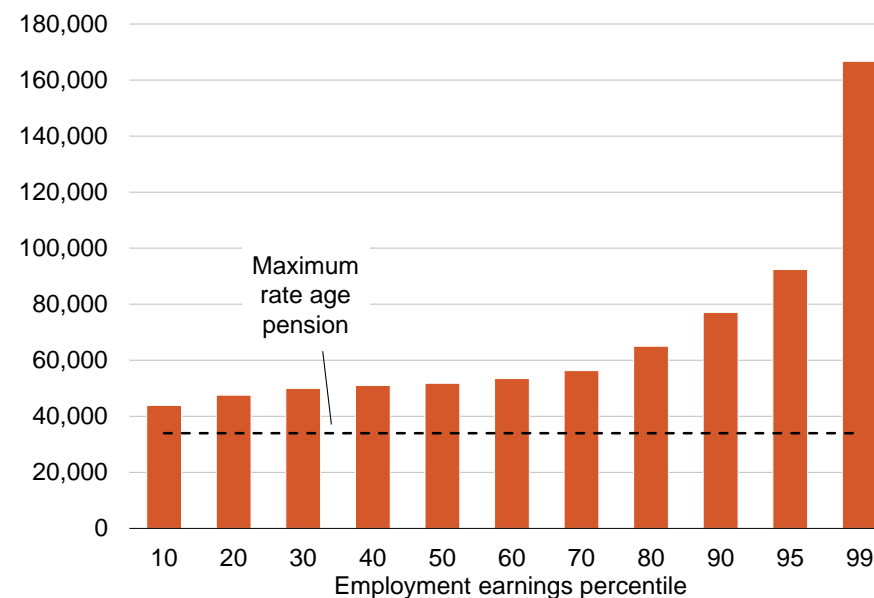
Replacement rates for the median income earner are still above the 70 per cent benchmark even if less favourable assumptions (described in the next section) are used (Table 4.3 on page 60).

As noted in Box 2 on page 46, GRIP does not include many of those on the lowest incomes, who did not submit a tax return at age 30. This

<sup>163</sup> The Age Pension is projected to grow substantially in line with wages, so future pensioners will be better off in retirement than current pensioners. Figure 4.4.

**Figure 4.4: Wage earners aged 30 today will have more income than the Age Pension in retirement**

Singles, average annual income in retirement, \$2016



Notes: Uses GRIP base case assumptions (see Appendix C), including that the Superannuation Guarantee increases to 12 per cent in line with current Government policy. Annual income is assumed to be 1/26<sup>th</sup> of lifetime retirement income, expressed in \$2016. The maximum rate Age Pension is the average over the period from 2052-53 to 2077-78, and includes the Age Pension supplement.

Sources: GRIP; DSS (2018b).

cohort will rely largely or solely on the maximum-rate Age Pension in retirement, and they are likely to have the highest replacement rate of any cohort (Figure 4.1 on page 44).

#### 4.5 How assumptions affect projected replacement rates

Replacement rates are very sensitive to assumptions, which are not always made explicit. This section outlines how these assumptions affect projected replacement rates. Our modelling of replacement rates in GRIP shows that the most important assumption is whether incomes are assumed to continue to rise in retirement in line with *wages*. GRIP assumes that spending in retirement keeps pace only with inflation in *prices*. Even this is conservative, because actual spending in retirement grows more slowly than this (Section 3.3 on page 28).

Important assumptions, discussed in this section, include the following:

- **What resources should be compared?**

Replacement rates can compare pre- and post-retirement *expenditure*, with or without housing costs; or they can compare *income*, before or after tax.

- **Over what period should resources be compared?**

Replacement rates can compare income or expenditure over the entire working life, the last five years before retirement, or the last year before retirement. And they can compare this with average resources over the entirety of retirement, or the first five years of retirement, or the first year of retirement.

- **At what age do people retire?**

Replacement rates must assume the age at which people retire. They can be calculated based on the *actual* age at which people retire today, or the age at which people qualify for the Age Pension

today, or the age at which they *might* qualify for an Age Pension given possible future changes to the Age Pension rules.

- **How should rising living standards be incorporated?**

Comparisons of pre- and post-retirement resources should take consumer price inflation into account. But some people argue that replacement rates should also take into account wage inflation, so that retirees maintain a standard of living relative to people who are still working, rather than simply maintain a standard of living comparable to when the retiree was working age.

- **What assets should be taken into account?**

Replacement rates can be calculated on the assumption that only superannuation is used to support retirement, or they can take account of other assets such as non-super investments, and household assets such as vehicles and furniture.

- **How fast are savings spent in retirement?**

Replacement rates must make an assumption about what proportion of savings for retirement are spent each year. This drawdown rate requires assumptions about how long savings should continue to contribute resources, particularly if a person outlives typical life expectancy.

- **What is the target rate?**

The target replacement rate is usually set as less than 100 per cent of pre-retirement resources. People usually have lower needs when they are retired compared to when they were working age – they are usually paying less for housing, don't have work-related expenses, and have more time to do things for themselves.

- **How are housing costs treated?**

Home owners who have paid off their mortgage have much lower housing costs in retirement than renters who may need a higher replacement rate to maintain their living standards.

- **Which households should reach the target?**

In setting retirement standards, is the aim for *every* household to meet a target replacement rate, or the *median* household, or some other proportion of households?

The following sections set out the key choices we make in projecting replacement rates for future retirees.

#### 4.5.1 Expenditure, pre-tax income, or post-tax income

Ideally, replacement rates set benchmarks for expenditure, rather than income. If replacement rates are meant to measure whether people smooth consumption over their lifetime, then expenditure is key. Expenditure benchmarks aren't affected by differences in taxation and differences in savings behaviour before and after retirement.<sup>164</sup>

Of course, expenditure is not quite the same as consumption, because it does not include free or subsidised government services (which are worth much more in retirement), home production (such as cooking meals) and leisure.

And to be truly comparable, expenditure benchmarks should exclude housing costs, because retirees typically consume the benefit of living in a home that they own, but are not paying as much for their home as they did when they were working-age and paying down the mortgage (see Section 2.3.4 on page 23).

But replacement rates often compare pre- and post-retirement *income* rather than *expenditure*. Expenditure is typically harder to measure. And of course, the expenditure of future retirees is hard to predict, because it depends on how fast they draw down their savings. Consequently income is often used as a proxy for expenditure, and

the target replacement rate is adjusted to take into account typical spending and savings patterns.

When comparing incomes, replacement rates should compare *disposable* income – that is, income after tax, and including government benefits and drawdown on savings. Disposable incomes provide more meaningful comparisons than gross (pre-tax) incomes because effective tax rates are very different before and after retirement.<sup>165</sup>

Some point to the practical shortcomings of using replacement rates in retirement income planning for individuals.<sup>166</sup> Replacement rates are difficult to calculate because they depend on future incomes, which are uncertain. Many people struggle with interpreting information such as the income replacement ratio.<sup>167</sup> However online calculators such as the ASIC *Retirement Planner* tool allow people to input their age, income and current savings. Such calculators could be amended to provide an age and income-specific retirement income target to achieve a 70 per cent replacement rate.<sup>168</sup> In any case, replacement rates remain the best mechanism for policy makers to determine whether the retirement incomes system is providing adequate retirements for people with incomes of more than just the Age Pension.

#### 4.5.2 Period

Replacement rate calculations must choose the period over which pre- and post-retirement incomes are measured. Overall replacement rates

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165. Nevertheless, Rice Warner (2015) measures replacement rates in terms of gross income, thereby understating the relative change in resources available to retirees, since their (typically) lower gross earnings in retirement are taxed more lightly under Australia's progressive personal income tax system than gross earnings while working, and tax-free superannuation withdrawals are not taxed at all.

166. Burnett et al. (2014, p. 3).

167. Reyna and Brainerd (2007).

168. Similar algorithms could be used by superannuation funds to provide guidance to their members on the adequacy of their retirement savings.

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164. Rothman and Bingham (2004, pp. 3–4).

are less likely to mislead if they compare incomes over the whole of retirement with incomes in the last five years of working life.

Comparing income in retirement with income in the **last year of working life** can be misleading because people's income can fall off sharply just before retirement.<sup>169</sup>

Comparing income in retirement with income **over the whole of a working life** can also be misleading because income varies materially, typically peaking between the ages of 40 and 50 (Figure 4.5), then falling as people tend to work fewer hours in the lead-up to retirement.<sup>170</sup> Total household expenditure follows a similar pattern. In their 40s, many households spend a lot on their children. But when household spending is 'equivalised' – that is, adjusted to take into account the costs of dependents – households typically spend more on themselves as they get closer to retirement (Figure 3.9 on page 36).

Consequently, it is best to compare income in retirement with income **over the last five years of working life**, because this probably gives a better indication of the amount that people spend on themselves.<sup>171</sup>

Comparing **income in the first few years of retirement** with income while working<sup>172</sup> can be misleading in a number of ways.

First, the timing of income during retirement is very dependent on the assumptions made about drawing down on savings. If it is assumed

169. The age-wise earnings distribution in GRIP is adjusted from that observed in the ATO Taxation Statistics 2013-14 to reflect later retirement in future. See Appendix C for more details.

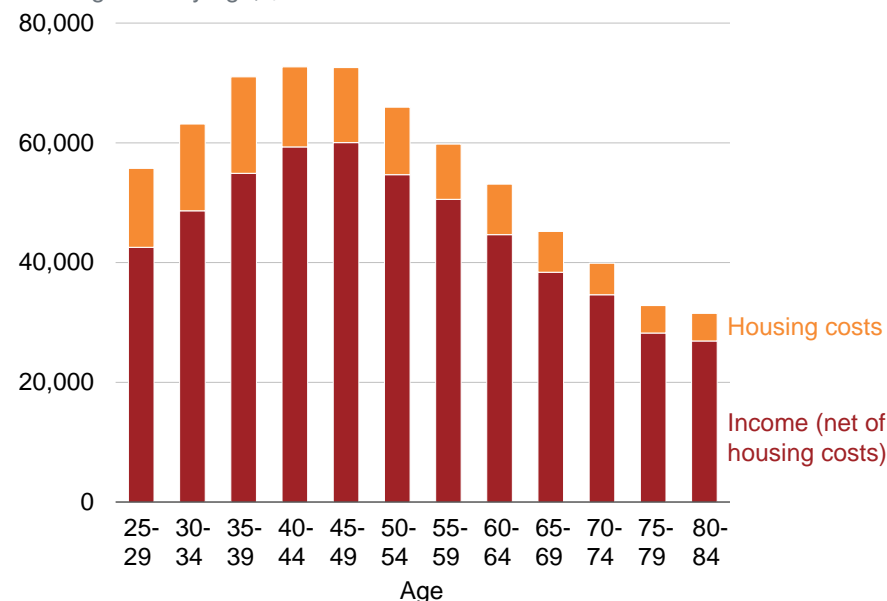
170. Grattan analysis of ATO (2018a). See Appendix C.

171. Other models such as OECD (2017b) simply assume that incomes do not vary as workers age. Instead they assume that individuals remain at the same point in the earnings distribution, earning the same percentage of average earnings in every year of their working life, adjusted for annual growth in real earnings of 1.25 per cent a year. If the same inflator is used during retirement, then the choice of period doesn't make any difference.

172. Rothman and Bingham (2004, pp. 4,11).

**Figure 4.5: Earnings and housing costs peak around the age of 45 and then fall**

Average equivalised household disposable income (net of housing costs) and housing costs by age, \$2015-16



Notes: Income includes head of household and their partner, but not children. Equivalised without reference to children.

Source: Grattan analysis of ABS (2017a).



(as we do) that savings are constantly drawn down over retirement, then net income gradually increases for many retirees, because as they draw down their savings, they qualify for more Age Pension. Different assumptions (such as assuming a constant income with higher drawdown earlier in retirement, and a smaller drawdown but more Age Pension later) lead to much higher replacement rates.

Second, focusing on income over only the first few years of retirement makes no allowance for the rising real value of the Age Pension, which is bench-marked to wages.

Third, expenditure (for which income is ultimately a proxy in this analysis) tends to peak around about retirement age, and to fall significantly in later retirement (see Section 3.3, particularly Figure 3.5 on page 29).

For all these reasons, it is better to calculate replacement rates based on **average income over the whole of retirement** compared with working life incomes.

Consequently this report calculates replacement rates by comparing income over the whole of retirement with income in the last five years of working life.

The choice of period can make a material difference. Using GRIP's base case assumptions, replacement rates for the median person vary between 58 per cent and 96 per cent depending on which time periods are compared (Table 4.1).

The choice of period interacts with the choice of deflator (discussed in Section 4.5.3 on the following page). Replacement rates appear much lower if they are calculated taking into account both the whole of retirement, and also deflating future income by wages rather than consumer prices. The deflator doesn't make much difference if replacement rates are calculated on the basis of the first five years of retirement.

**Table 4.1: Replacement rates vary depending on the periods compared**  
Replacement rate for median worker, by periods compared

		Retirement period		
		Whole retirement (67-92)	First 5 years (67-71)	First year (67)
Working period	Lifetime (30-66)	0.96	0.66	0.62
	Last 10 years (57-66)	0.91	0.63	0.58
	Last 5 years (62-66)	0.91	0.63	0.58
	Last year (66)	0.96	0.66	0.61

*Notes: See Appendix C. Deflated by CPI. These calculations depend on how people choose to draw down on their savings. GRIP assumes constant drawdown on accumulated assets, which results in higher incomes later in retirement as retirees qualify for a higher pension. Consequently, GRIP projects higher replacement rates over the whole of retirement than in the first five years of retirement. If a retiree adopted a drawdown strategy to deliver a constant retirement income (deflated by CPI), then they would draw down on their savings faster than we project in the early years of retirement, and slower in the later years. Their replacement rate for the whole of retirement would then be a little higher than shown in the table, and replacement rates based on the first five years of retirement would be much higher – above 91 per cent.*

*Source: GRIP base case assumptions, except for period for calculation of replacement rates.*



This report assumes that future retirees retire at 67, the age at which they will qualify for an Age Pension from 2023. In 2014, the Abbott government proposed increasing the retirement age to 70 by 2035.<sup>173</sup> But this change was never legislated, and was abandoned by the Morrison government in September 2018.<sup>174</sup>

Increasing the age of access to the Age Pension makes more difference than almost any other policy change to economic growth,<sup>175</sup> and to budget outcomes.<sup>176</sup> It would also make more difference to retirement incomes than any other identified policy change: if the retirement age increased from 67 to 70, replacement rates for a median worker under the GRIP base case assumptions would rise from 91 per cent to 104 per cent of pre-retirement earnings.

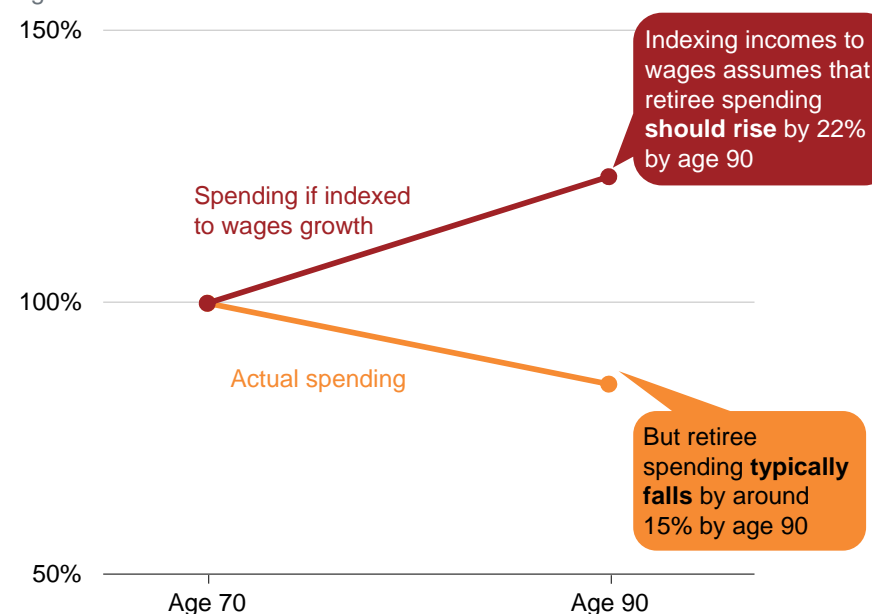
#### 4.5.3 Deflator

Replacement rates need to choose an index to compare the value of a dollar before and after retirement. Given the actual behaviour and apparent psychology of retirees, prices should be compared using a consumer price index (CPI) rather than a wage price index. A wage price index implies increased expenditure in retirement that diverges a long way from actual behaviour (Figure 4.6).

Historically, Treasury has deflated future expenditures by CPI, on the basis that living standards are driven by consumption, and CPI measures the change in the cost of purchasing a given basket of goods and services over time.<sup>177</sup> This approach is consistent with the principle of lifetime consumption smoothing (Section 2.2 on page 19). It is also

**Figure 4.6: Retirees should expect their incomes to rise in line only with inflation, 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 Figure 3.5.

Source: GRIP.

173. Parliamentary Library (2015).

174. Yaxley (2018).

175. Daley (2012).

176. Daley et al. (2013, p. 6).

177. See Rothman and Bingham (2004, pp. 6–7), Henry (2009, chart 4.1.) and Gallagher (2011, p. 4). For example, in evidence to the Senate Select Committee on Superannuation in 2002, then Treasury analyst Phil Gallagher noted that

consistent with a retiree determining a living standard that can be afforded at retirement, and then seeking to maintain *that* living standard through the rest of their life.<sup>178</sup> Most importantly, deflation using CPI is consistent with the reality of retiree spending, which does *not* increase in line with community living standards, but tends to fall as people age and they choose to save more (Figure 4.6 on the previous page, and see also Section 3.3 on page 28).<sup>179</sup>

Other approaches assume that living standards will only rise with inflation once a person retires. Most defined benefit pension plans in Australia index pension payments to inflation rather than wages. And the OECD recommends that pension plans be indexed to inflation.<sup>180</sup> In calculating replacement rates, the World Bank deflates future retirement expenditures by consumer prices.<sup>181</sup>

Some people argue that replacement rates should use a wage price index.<sup>182</sup> This approach aims to ensure that retirees keep up with living

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the appropriate way to deflate expenditure for the purposes of calculating replacement rates is CPI (Select Committee on Superannuation (2002)).

178. A HSBC survey found that only 22 per cent of workers expect their standard of living to increase in retirement. HSBC (2017).

179. 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.

180. Antolin (2009, p. 13).

181. World Bank (1994, pp. 293–294).

182. See Table 4.4 on page 61. This includes calculations using ASFA's 'comfortable' standard of living, which deflates retirement incomes using wage inflation. In effect, this methodology assumes that the ASFA 'comfortable' standard of living rises with consumer price inflation between now and retirement (see Footnote 124 on page 36), and then once a person retires, the standard starts to increase at the faster rate of wage inflation. For example, a couple retiring at age 65 today and spending at the ASFA comfortable standard of \$60,604 a year would be expected to be spending \$77,721 by age 90 (assuming 1 per cent real wages growth), after adjusting for inflation. This is at odds with actual retirement behaviour, where spending falls (Section 3.3 on page 28) and savings increase

standards prevalent as they age.<sup>183</sup> Because wages tend to grow faster than inflation, these approaches effectively aim for higher standards of living in retirement than during working age. They imply that 90 year olds will spend 22 per cent more than they did at age 70, when in fact it is likely their spending will be 15 per cent lower (Figure 4.6 on the previous page).

Wage indexation is consistent with indexation of the Age Pension, which is benchmarked to wages. But the Age Pension is linked to wages for other reasons. The Age Pension is designed to ensure older Australians do not fall into poverty in retirement. Since poverty is experienced relative to community living standards,<sup>184</sup> the Age Pension is indexed to wages so that it keeps up with rising living standards as each generation reaches retirement.

The choice of index makes a big difference. Using GRIP's base case assumptions, replacement rates for the median worker are 91 per cent using CPI, and 77 per cent using a wage price index.<sup>185</sup>

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as retirees age (Section 3.4 on page 31). The OECD deflates retirement incomes by wages, and assumes that wages will grow 1.25 percentage points faster than consumer prices: OECD (2017b, p. 100).

183. Clare (2008, p. 29); and OECD (2017b).

184. For example, both low-cost budget standards and relative poverty benchmarks such as the OECD's poverty line of 50 per cent of median equivalised household disposable income are set with reference to community living standards.

185. As noted above, the choice of index matters less if replacement rates are calculated on the basis of expenditure in the first few years of retirement rather than over the whole of retirement. But a wage deflator produces particularly low replacement rates if they are calculated by comparing income for the whole of retirement with income for the whole of working age life. The wage deflator effectively reduces the value of income late in retirement, and *increases* the calculated value of income early in working age life.

#### 4.5.4 Retirement age

Replacement rates depend a lot on the age at which people retire. If people retire later, they earn for longer, and only need to fund a shorter retirement. The age of retirement depends on a number of factors, but many people are influenced by the age at which they qualify for an Age Pension, or can withdraw superannuation without substantial tax penalties.<sup>186</sup>

#### 4.5.5 Non-super assets

Including non-super assets only marginally increases replacement rates for the median worker from 90.9 per cent to 91.2 per cent. However, non-super assets affect replacement rates for higher earners much more. At the 70<sup>th</sup> percentile, they increase the replacement rate from 74 per cent to 77 per cent, at the 90<sup>th</sup> percentile from 64 per cent to 70 per cent, and at the 95<sup>th</sup> percentile from 60 per cent to 72 per cent (Figure D.7 on page 127).

The current distribution of non-super savings is described in Appendix A. For further details of how households are assumed by GRIP to save outside superannuation, see Appendix C.4.4 on page 115.

#### 4.5.6 Drawdown assumptions

Retirement incomes depend a lot on whether retirees draw down on their savings or largely retain their capital throughout retirement.

The base case in GRIP assumes that a person aims to have 10 per cent of their retirement savings (CPI-adjusted) remaining at age 92. This buffer may be thought of as longevity insurance, or a bequest. With this target in mind, GRIP assumes that people withdraw from their superannuation accumulation and pension accounts, as well as

from non-super assets, in equal (CPI-adjusted) amounts across the 26 years between retirement and age 92. On this basis, the top 30 per cent of workers would leave a bequest of at least \$78,000 in today's dollars (Figure 4.7 on the following page), in addition to the value of their home. Obviously, these calculations depend on assumptions about typical life expectancies in the future.

Total retirement income may be higher if people drew down on their assets faster, and became entitled to more Age Pension earlier in their retirement (see Appendix C.5.1 on page 116). This would imply higher spending early in retirement and lower spending later – which is closer to how people in fact spend during retirement (Section 3.3 on page 28).

Alternatively, people might draw down on their assets in line with legislated minimum drawdowns from superannuation.<sup>187</sup> This would result in much lower retirement incomes, but higher bequests. It would imply much lower replacement rates – the rate for the median earner would be 80 per cent, compared to 91 per cent on GRIP's base case assumptions (for impact across the distribution, see *sec:retirement-incomes-are-much-lower-if-people-choose-to-draw-down-on-their-savings-at-legislated-minimum-drawdown-rates*). On this basis, the median retiree would leave a legacy of \$190,000 in today's dollars, 33 per cent of their savings at retirement, in addition to any home they own.

Retirement incomes policy might be criticised if it assumes that people draw down their savings faster than they really do. But, as discussed on page 20, in Section 2.2, retirement incomes policy should be set so that individuals have enough resources to fund an adequate retirement on the expectation that they draw down on their wealth. The alternative would effectively set policy to substantially subsidise inheritances.

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186. Daley (2012, pp. 52–54).

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187. ATO (2018b).

#### 4.5.7 Target rate

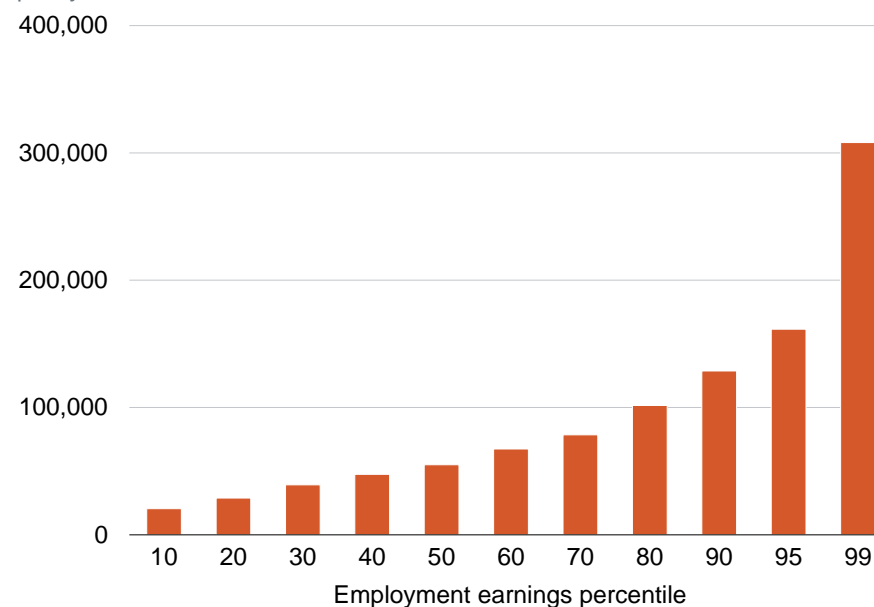
Less spending is needed in retirement than when working to deliver the same standard of living.<sup>188</sup> Retirees' expenditure is usually substantially less than their pre-retirement expenditure, but probably delivers a roughly similar standard of living (Section 3.3 on page 28). The spending of retirees today is roughly 80 per cent of working-age households today (excluding housing costs) (Figure 3.9 on page 36), yet retirees report lower rates of financial stress than younger Australians (Figure 3.3 on page 27). So the retirement incomes system should not be expected to sustain 100 per cent of pre-retirement income, or expenditure.

Targeting a lower replacement rate, which allows some people to save less, but allows others who are especially worried about their retirement savings to save more, provides flexibility. Target replacement rates have been proposed by a variety of sources, including the OECD, the World Bank, and Mercer. Often their models use different assumptions that conceal big differences in these benchmarks. To meet the specified benchmarks, and using the assumptions they specify, the replacement rate for the median-income earner that would be required in GRIP varies between 50 per cent and 91 per cent (Table 4.2 on the next page).

In 2002, the Senate Committee on Superannuation noted a strong consensus among superannuation industry representatives that an adequate retirement income was between 70 and 80 per cent of pre-retirement expenditure.<sup>189</sup> In 2011, then Minister for Financial Services and now Federal Opposition Leader, Bill Shorten, nominated a target replacement rate of between 65 and 70 per cent of average earnings prior to retirement as the 'winning tape for adequate

**Figure 4.7: People leave a modest financial bequest, in addition to the home, under GRIP's assumed drawdown rates**

Bequest left at death, \$2015-16, excluding the home, under GRIP's 'current policy' scenario



*Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. Retirement savings drawn down so that a small bequest is left in addition to the home. The person leaves a bequest worth 10 per cent of their super balance and 10 per cent of their non-super savings at the start of their retirement (in addition to their home).*

*Source: GRIP.*

188. Rothman and Bingham (2004, p. 6); and Chomik and Piggott (2016, p. 14).

189. Senate (2002, p. xv).

retirement'.<sup>190</sup> In 2013, the Cooper Review noted a replacement rate of between 60 and 70 per cent of pre-retirement income was a common benchmark for an adequate retirement.<sup>191</sup> The current Federal Government has not nominated a retirement income benchmark.

This report uses a benchmark replacement rate of 70 per cent on the basis that most retirees who own their own homes in retirement,<sup>192</sup> no longer incur expenses related to work and substitute eating out for eating more at home. Retirees that rent will need to replace a higher share of their pre-retirement incomes in order to cover their higher housing costs through retirement (Section 4.5.8).

#### 4.5.8 Housing costs

Common replacement rate benchmarks assume that retirees will own their own home, and therefore have lower housing costs in retirement. But home ownership rates for retirees are likely to fall (Section 4.7.1 on page 62), and so more will need a replacement rate closer to 100 per cent to maintain the same standard of living after retirement as before, assuming that they are spending 30 per cent of their incomes on housing in retirement.

Nevertheless, retirement living standards are unlikely to be lower than working age living standards for most people that won't own their homes in future. Home ownership rates are falling fastest for low-income workers. These low-income workers typically have

190. Shorten (2011). Although not specified, it is likely that Mr Shorten was referring to a replacement rate of 65-to-70 per cent of disposable income over the retiree's lifetime, and excluding non-super savings, deflated at CPI, as this was the modelling approach adopted by the Australian Treasury at the time. For example, see: Henry (2009) and Rothman (2011).

191. Cooper Review (2013, p. 21).

192. Retirees spend an average of 5 per cent of their incomes on housing (mainly council rates), compared to 20-25 per cent on average for working-age Australians (Figure 2.1 on page 24).

**Table 4.2: The recommended benchmark replacement rate is around 70 per cent of pre-retirement earnings**

Target replacement rate for median-income earner

Institution	Replacement rate benchmark		Equivalent GRIP replacement rate for median worker to deliver benchmark
	Measure	Per cent	Per cent
OECD	Net final earnings	70	77
World Bank	Net lifetime earnings	78	74
World Bank (alternate)	Net final earnings	53	50
Melbourne Mercer Global Pension Index	Net lifetime earnings	70	91

Notes: 'Net lifetime earnings' is the ratio of disposable income (after tax and transfers) across retirement compared to net lifetime earnings pre-retirement. Both the OECD and the Melbourne Mercer Global Pension Index include income from government pensions and compulsory superannuation contributions, but exclude voluntary super contributions and non-super savings. OECD and Mercer deflate retirement earnings by wage deflation; World Bank deflates them using CPI. OECD assumes 2 per cent CPI inflation and 1.25 per cent real wage growth. The World Bank assumes 2.5 per cent CPI inflation and 2 per cent real wage growth. GRIP assumes 2.5 per cent CPI inflation and 1 per cent real wage growth. The average net lifetime replacement rate across OECD countries for a median income earner is 66 per cent.

Sources: OECD (2017b, pp. 98–100), OECD (2012, p. 161) and World Bank (1994, p. 293); Mercer (2017, p. 38).

replacement rates well above 100 per cent of pre-retirement incomes (Figure 4.1 on page 44), and so they are likely to be able to maintain their pre-retirement living standards even if paying rent in retirement. Although renting retirees will be at much higher risk of financial stress and poverty. Boosting the maximum rate of Rent Assistance would be the most targeted way to reduce the remaining risk of low-income earners suffering poverty in retirement (see Chapter 7).

#### 4.5.9 Target household

Replacement rates will vary depending on people's incomes (Figure 4.1 on page 44). In general, people with lower incomes will have higher replacement rates than the median income earner. High-income earners will typically have even lower replacement rates. It is generally accepted that the retirement incomes system should not seek to fully replace the pre-retirement living standard of the wealthiest Australians.

Our approach aims for a 70 per cent replacement rate for retirees up to the 80<sup>th</sup> percentile of the employment earnings distribution, as reported in GRIP. For those above the 90<sup>th</sup> percentile of the earnings distribution – earning an average of at least 1.5 times average full-time weekly earnings throughout their working lives, or \$120,000, a replacement rate of 50-60 per cent of pre-retirement earnings is deemed appropriate.<sup>193</sup>

#### 4.5.10 Sensitivity of replacement rates to assumptions

Using the most plausible bases for calculation, the GRIP model predicts that people entering the workforce today aged 30, and working for 37 years, will have incomes in retirement between 70 per cent and 165 per cent of their pre-retirement incomes. A median-income worker will have a replacement rate of 91 per cent (Figure 4.1 on page 44). These outcomes exceed the replacement rate benchmarks for

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193. Grattan analysis of ABS (2018b).

#### Box 3: GRIP presents a more realistic picture of the retirement incomes system than other models

GRIP has a number of features that make it more realistic than other retirement income adequacy models:

- It includes part-time and casual workers.
- It accounts for career breaks of up to 7 years, assuming a potential working life from age 23 until retirement at age 67.
- It accounts for an individual's movements up and down the earnings distribution over their working life, rather than assuming the individual stays at the same point in the distribution throughout their working life.
- It accounts for typical incomes falling as people age.
- It includes non-super savings.
- It assumes that people leave a material bequest, in addition to the home.

Of course, even with these features, GRIP is a model that relies on assumptions, so it is only indicative of future retirement income adequacy.



median workers set by the World Bank, the Melbourne Mercer Global Pension Index and the OECD (Table 4.2 on page 57).

Replacement rates will still be adequate even if the model uses alternative bases for calculation and assumptions. As shown in Table 4.3 (on the next page), the median-income earner will still have a replacement rate above the 70 per cent target even if:

- retirement earnings are expected to grow with wages;
- retirement earnings are compared with earnings just before retirement;
- investment returns are lower;
- people do not save outside of superannuation;
- drawdown rates are lower (implying greater bequests or greater expected longevity);
- the Superannuation Guarantee remains at 9.5 per cent, instead of rising to 12 per cent as currently legislated;
- a range of other policy changes are implemented, as discussed in Chapter 10, such as further tightening superannuation tax breaks, and winding back age-based tax breaks such as the Senior Australian and Pensioner Tax Offset (SAPTO) and the Medicare levy.

As Table 4.3 (on the following page) shows, replacement rates are most sensitive to the assumption about whether retirement incomes should be deflated by future prices or future wage inflation. Even if future incomes are deflated using wage inflation – implying that retirement incomes will keep up with living standards as they rise across the community – replacement rates reach the 70 per cent target up to the 60th percentile of the earnings distribution, falling to 60 per cent for higher income workers (Figure 4.8 on page 62).

And even if retirees draw down on their retirement savings more slowly – motivated by the risks of living longer – replacement rates would still exceed our 70 per cent benchmark for the median worker, although they would be lower for the 70th percentile and above (Figure D.5 on page 125). This is a reasonable balance between providing adequate replacement incomes in retirement and subsidising a lot of bequests (Section 2.2 on page 19).

#### 4.6 Alternative analyses of retirement incomes

In contrast to our analysis, several high-profile Australian studies claim that most Australians face an inadequate retirement income (Table 4.4 on page 61). They are inconsistent with the findings of the GRIP model either because they assume that spending in retirement should keep up with wages growth, contrary to actual behaviour (see Section 4.5.3 on page 53); or they compare retirement incomes to the ASFA ‘comfortable’ standard, which is inappropriate (see Section 3.5.1 on page 34); or they ignore non-super savings, which are material for high income earners (Figure D.7 on page 127). Few explain how their findings are very sensitive to their assumptions, particularly the choice of deflator.

#### 4.7 Housing and future retirement incomes

The replacement rate target of 70 per cent assumes that retirees own their home, and so have materially lower housing costs in retirement. But on current trends, more retirees in future will be renting – and more of them will depend on the private rental market rather than social and public housing. And future retirees who do own their own home are less likely to have paid it off by the time they retire.

Falling home ownership is likely to increase inequality of incomes in retirement. More retirees are likely to be financially stressed if they rent, or experience poverty, particularly if Rent Assistance does not



**Table 4.3: Retirement incomes will meet target replacement rates even under less favourable bases for calculation and assumptions**

Replacement rate for median-income worker (lighter colours indicate higher replacement rates)

	Whole of retirement/last 5 years of working life	Whole of retirement/whole of working life	Whole of retirement/last 5 years of working life	Whole of retirement/whole of working life
	CPI deflation	CPI deflation	Wage deflation	Wage deflation
<b>Current policy</b>	<b>0.91</b>	<b>0.96</b>	<b>0.77</b>	<b>0.71</b>
<b>Assumptions</b>				
Lower investment returns	0.88	0.93	0.75	0.68
Minimum drawdown	0.80	0.85	0.68	0.62
No non-super savings	0.91	0.96	0.77	0.70
<b>Policy changes</b>				
SG remains at 9.5 per cent	0.90	0.95	0.76	0.69
Assets test taper rate falls to \$2.25	0.96	1.02	0.82	0.75
SG remains at 9.5 per cent and assets test taper rate falls to \$2.25	0.94	0.99	0.80	0.73
As above + super tax breaks + SAPTO + Medicare Levy	0.91	0.97	0.78	0.71
Retirement age increases to 70 (on its own)	1.04	1.05	0.90	0.77
All of the above	1.04	1.06	0.90	0.77

Notes: 'Current Policy' refers to policy as currently legislated, including: the 12 per cent Superannuation Guarantee from 2025; retirement age at 67; and existing superannuation tax breaks with indexation of relevant caps and thresholds. The interaction between choice of period to compare and choice of deflator is discussed in Footnote 185 on page 54.

Source: GRIP.

**Table 4.4: Much of the Australian literature on retirement incomes adequacy uses wage inflation, and uses the ASFA comfortable standard**

Study	Metric	Assets included	Drawdown strategy assumed	Deflator in retirement	Do median-income retirees meet the standard today?	Will younger median-income earners meet the standard when they retire?
Rothman and Bingham (2004)	Individual replacement rates, five years either side of age 65. No 'adequate' rate defined.	Superannuation only	Full drawdown by life expectancy	CPI		
Rothman (2011) and Rothman (2012)	Individual replacement rates, five years either side of age 65. No 'adequate' rate defined.	Superannuation, non-super financial assets, and non-home property	Moderate drawdown with some inheritance	CPI and wages		
Henry (2009)	Individual replacement rates for both working life and final working year	Compulsory and salary sacrifice super contributions	Full drawdown through purchase of annuity	CPI		
Rice Warner (2015)	62.5% of pre-retirement gross earnings	Superannuation only, with small additional estimate of investment property value for high-income earners	Full drawdown by life expectancy, with additional model for 75th and 90th percentile of age expectancy	Wage index	Not reported for median earner	No (median figures only given for population of all ages)
Gallagher (2016), as cited in CSRI (2016)	ASFA comfortable standard, replacement rates and other measures	Superannuation only	Age based minimum plus 7%	Wage index	Most scenarios are below ASFA comfortable standard or a 70 per cent replacement rate	Single females achieve standard, but single males and couples do not
Burnett et al. (2014)	ASFA comfortable standard	Superannuation, non-super financial assets, and non-home property	Full drawdown by life expectancy	Wage index	No	Couples aged 40-64 today meet standard, but not singles
Actuaries Institute (2015)	ASFA comfortable and modest standards	Superannuation, non-super financial assets, and non-home property	Full drawdown by life expectancy	Wage index	Couples – comfortable Singles – modest	Couples and men – comfortable Women – modest
Industry Super Australia (2015b)	ASFA comfortable standard	Superannuation, non-super financial assets, and non-home property	Savings drawn down, leaving 'some bequest'	Not stated – but wages used elsewhere	No	Couples and men but not women

Notes: Grey shade indicates assumptions different from those used in this report. Dark orange shade implies retirees fall short of designated adequacy benchmark. Light orange shade implies some retirees fall short of designated adequacy benchmark. While some Treasury work such as Rothman and Bingham (2004) and Henry (2009) did not include private savings, other Treasury work such as Rothman (2011) did include non-super assets. Industry Super Australia (2015b) does not specify which deflator was used, but in other publications such as Industry Super Australia (2015a), wage deflation has been used.

Sources: Actuaries Institute (2015); Burnett et al. (2014); Gallagher (2016) as cited in Committee for Sustainable Retirement Incomes (2016); Henry (2009); Rice Warner (2014); Rice Warner (2015); Rothman (2011), Rothman (2012) and Industry Super Australia (2015b); Grattan analysis.

keep pace with future increases in rents paid by low-income renters. But future retirees who rent are still likely to have adequate incomes in retirement, compared to their pre-retirement incomes.

#### 4.7.1 Falling home-ownership rates

Owning a home increasingly depends on who your parents are, a big change from 35 years ago when home-ownership rates were high for all levels of income.<sup>194</sup> Home-ownership is falling among younger and lower-income Australians. As this cohort ages, it is likely that fewer older Australians will own their own home. Between 1981 and 2016, home-ownership rates among 25-34 year-olds fell from more than 60 per cent to 45 per cent, and to 22 per cent for the bottom quintile of income earners.<sup>195</sup> Home-ownership has also fallen for middle-age Australians. On these trends, the share of over-65s who own their home will fall from 76 per cent today to 70 per cent by 2036, 64 per cent by 2046 and 57 per cent by 2056.<sup>196</sup>

#### 4.7.2 Rising household debt at retirement

Among homeowners, fewer and fewer own their home outright when they retire. The proportion of 55-64 year-olds who owned their houses outright fell from 72 per cent in 1995-96 to 42 per cent in 2015-16

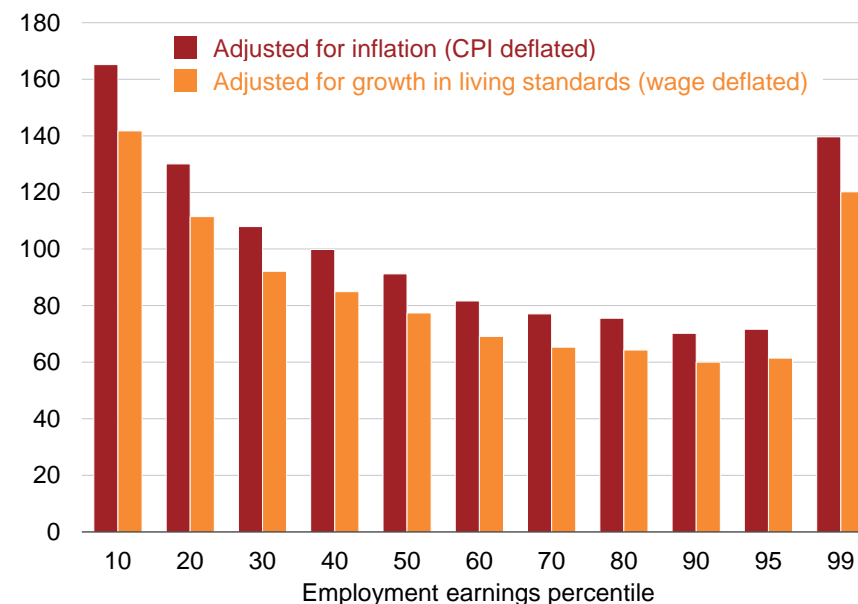
194. Daley et al. (2018, Figure 4.3).

195. Ibid. (p. 70).

196. Grattan analysis of ABS (2006), ABS (2016a) and ABS (2013a). Figures differ to Daley et al. (2018, Figure 4.2), because home-ownership is calculated on a by-person basis, instead of a by-household basis, given available data. Assumes home-ownership rates of younger cohorts continue to rise in line with past increases in home ownership as households age, but recognising that a smaller share of Australians aged 25-44 own their homes today than in the past. Our forecasts based on 2016 data expect home-ownership rates to fall by 18 percentage points in 40 years to 2056. These compare with Yates and Bradbury (2010) who forecast, based on 2006 data, that home-ownership rates for over-65s would fall by 10 percentage points to 2046.

**Figure 4.8: Replacement rates are higher when future income is deflated by CPI rather than wages**

Whole of retirement/last 5 years of working life replacement rate, per cent



Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 70, and dies at age 92. Retirement savings are drawn down so that a small bequest is left in addition to the home.

Source: GRIP.

(Figure 4.9 on the next page). Housing debt was around 70 per cent of household disposable income in 2000; it is now more than 130 per cent.<sup>197</sup> *Total* household debt is now a record 190 per cent of household after-tax income, up from about 170 per cent between 2007 and 2015.<sup>198</sup>

Increasing household debt, especially among older retirees, is raising concerns about the adequacy of retirement incomes.<sup>199</sup> Some 9 per cent of homeowners aged 65 and over still had outstanding mortgages in 2015-16, compared with just 4 per cent in 1995-96, with a median outstanding mortgage debt of \$84,000.<sup>200</sup> There is a growing risk that more retirees will draw on their super or other retirement savings to pay down debt, thereby reducing retirement incomes and replacement rates. Those still paying off their home often use a portion of their retirement savings to pay off the remaining mortgage debt or other outstanding debts at retirement.<sup>201</sup>

Rising household debt reflects the fact that housing is increasingly unaffordable. House prices have outstripped growth in incomes. Median prices have almost doubled – from 4 to 7 times median incomes – in the past two decades.<sup>202</sup> As a result, people are spending

more of their lifetime income to accumulate more valuable homes, either by paying down larger mortgages during their working lives, or using some of their retirement savings to pay off any remaining mortgage at retirement.

To the extent that future retirees can expect retirement incomes to exceed the benchmark of 70 per cent of their pre-retirement earnings, they can spend some portion of their savings at retirement to discharge any outstanding mortgage debts and still have an adequate retirement. For those receiving a part-rate Age Pension, any decline in retirement income from using super to pay down debt at retirement would be replaced in-part by a higher Age Pension. And government policy should continue to encourage retirees to draw down on the equity of their home to help fund their retirement, either by downsizing, or making use of the expanded Pension Loans Scheme to borrow against the value of their home to boost their retirement income. After all, rising household debt has been matched by an even larger increase in net wealth for many households as the value of their housing assets increased.<sup>203</sup>

Nor would boosting compulsory retirement savings necessarily help (Chapter 9). Increasing the rate of compulsory super contributions to 12 per cent will simply take away more money from working-age Australians that could be used to pay down the mortgage, potentially leading to larger mortgage debts at retirement that will need to be discharged using superannuation savings at retirement. In fact rising mortgage debts in the later years of working life may be a sign that we are already making many Australians save too much via the compulsory Superannuation Guarantee, especially low- and middle-income earners who can expect a higher living standard in retirement than they had during their working lives (Figure 4.1 on

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197. It is closer to 120 per cent after subtracting balances in offset accounts (RBA (2017a, Graph 2.5)).

198. RBA (2017b). This ratio is higher than most developed countries, but the trend of increasing household debt is apparent in many developed countries (Simon and Stone (2017, Figure 1)).

199. Daley et al. (73 2018, p. 75); and Eslake (2017).

200. Eslake (2017, p. 10), updated to 2015-16 using ABS (2017b, Table 2.2).

201. Productivity Commission (2015a, p. 87). Results from the ABS *Retirement and Retirement Intentions Survey* in 2012-13 suggest that around one quarter of superannuation lump sums taken are used to repay mortgages, purchase new homes or make home improvements, and a further 20 per cent of lump sums are used to retire other debt. But most lump-sum withdrawals appear to be made by lower-income earners who are likely to rely predominately on the Age Pension in retirement.

202. Daley et al. (2018, p. 16).

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203. Ibid.

page 44), and who are already struggling to gain a foothold in the housing market.

#### 4.7.3 Financial stresses for renters

If more retirees rent in future, more people are likely to be financially stressed in retirement. Among retirees today, those that rent privately are the least likely to have adequate retirement incomes (Section 3.6 on page 40).

Among renters, fewer retirees in future will be in social housing (Figure 4.10 on the following page). In the past, more than half of retirees who rented did so from housing authorities. In recent years that proportion has fallen to less than 40 per cent.<sup>204</sup> But just 11 per cent of all households that rent are in public and social housing.<sup>205</sup>

Social housing subsidises housing more than Commonwealth Rent Assistance.<sup>206</sup> So retirees who don't own their home are much more likely to feel the pinch in future. Consequently, measures to boost the incomes of retirees should focus on those that rent privately.<sup>207</sup>

#### 4.7.4 Financial adequacy for renters

While the maximum rate of the Age Pension and Rent Assistance is higher *on average* than standard measures of income poverty across Australia, many future retirees renting privately in Sydney and Melbourne are likely to suffer financial stress and poverty in retirement (Section 3.5.2 on page 36). If the maximum rate of Rent Assistance

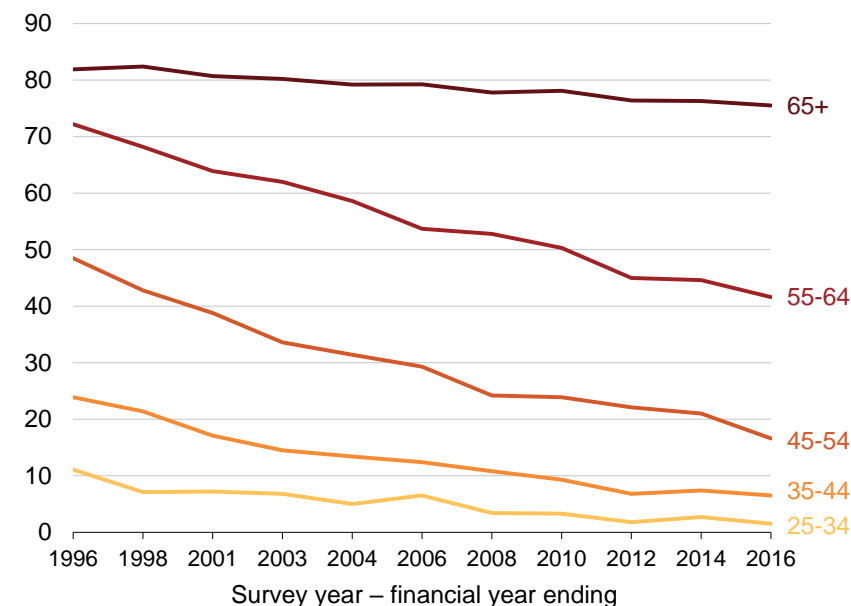
204. Eslake (2017, p. 13).

205. Grattan analysis of ABS (2017a).

206. For example, people living in public housing in Victoria are estimated to be about \$2,500 per household better off than if instead they paid market rent and received Commonwealth Rent Assistance (Productivity Commission (2018c, p. 177)).

207. Making housing more affordable will also help. See our recommendations in Daley et al. (2018).

**Figure 4.9: Fewer Australians own their home outright than in the past**  
Per cent of households that own their home outright, by age group



Notes: By age of household reference person. Chart shows data from all available surveys. Data for 65+ for 2006, 2008, 2010 and 2012 is estimated using population shares of five-year age groups, due to lack of data.

Source: Daley et al. (2018, Figure 4.5).

remains bench-marked to inflation, rather than actual rents which have historically grown faster than inflation, rates of financial stress and poverty among low-income retirees in the private rental market are likely to rise even higher (Chapter 7).

Nevertheless, future renters are likely to have adequate retirement incomes relative to their working-age incomes. Renters tend to have lower incomes – but they also tend to have high replacement rates, with retirement incomes *higher* than incomes while working (Section 4.2 on page 43 and Section 5.5 on page 70).

The bottom 60 per cent of workers by income would still have more than 70 per cent of their pre-retirement income in retirement, even after assuming they pay an extra 25 per cent of their income on housing in retirement (see Figure 4.11 on the following page).<sup>208</sup> High-income retirees who rent would not reach a 70 per cent replacement rate, but our modelling also assumes that renters do not save the money they would otherwise be using to pay down a mortgage while working. In practice, their retirement savings would probably be higher if not paying off a mortgage while working. If they did so, it is likely their replacement rates would be higher.

#### 4.7.5 Housing and the inequality of retirement incomes

Future retirement incomes will also become more unequal as a result of home ownership trends.

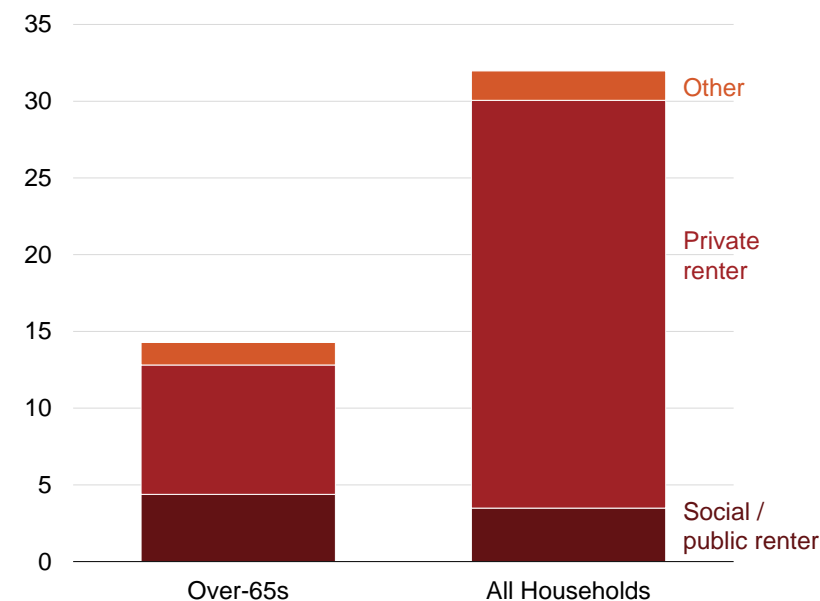
In general, homeowners tend to have higher incomes, in part because they tend to have more investment income than non-homeowners.<sup>209</sup>

208. On the basis that retirees who own their home typically spend around 5 per cent of their income on housing costs, such as council rates (Figure 2.1 on page 24), and assuming low-income renters are paying 30 per cent of their incomes on rent. In practice many renting retirees in capital cities are spending much more than 30 per cent of their incomes on rent (Grattan analysis of ABS (2017a)).

209. Daley et al. (2018, pp. 72–73).

**Figure 4.10: Future retirees are more likely to be living in private rental housing**

Renters as a percentage of all households by age, 2015-16



*Note: Household ages are determined by the 'Age of Household reference person' in the ABS Survey of Income and Housing.*

*Source: Grattan analysis of ABS (2017a).*



For people of a given income, the value of home ownership in retirement depends on the interaction between house prices, rents and incomes. If rents are less than mortgage costs for equivalent housing, then renters might accumulate larger non-housing savings than home owners, which would help to fund rents in retirement. But in practice, renters tend to accumulate *less* non-housing wealth than homeowners of a given income.<sup>210</sup>

#### 4.8 Women and poverty in retirement

While retirement incomes overall appear adequate, Australia has a persistent gender gap in retirement savings and incomes. On average, men have almost double the superannuation balance of women at retirement. As of 2015-16, a man aged 60-64 could expect to retire with average superannuation savings of \$270,710, whereas a woman of the same age could expect only \$157,050.<sup>211</sup> Men also have much larger non-superannuation savings.<sup>212</sup> This means that women, particularly single women, are at greater risk of poverty, housing stress and homelessness in retirement.

The gender retirement savings gap has several causes. The biggest is that women have lower average lifetime earnings. On average, women

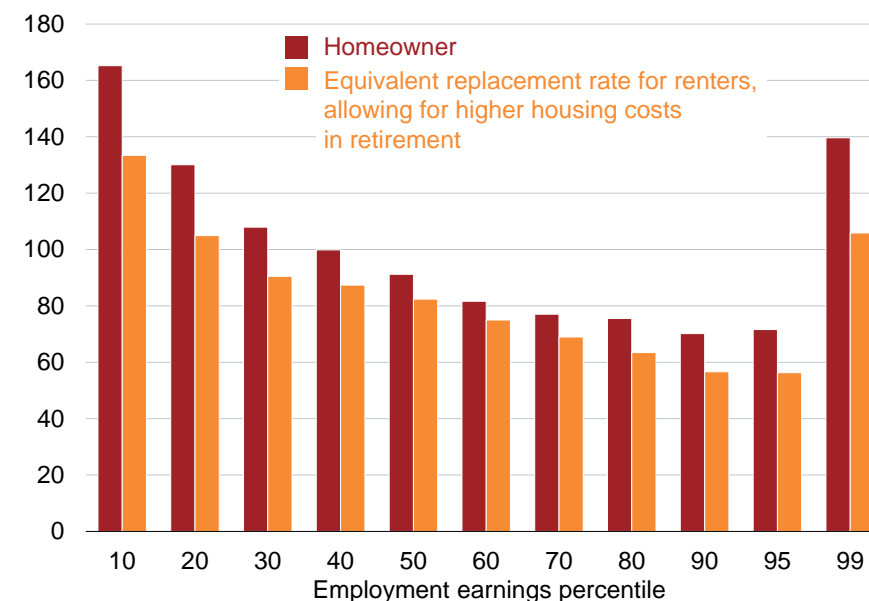
210. For households aged 35-44 in 2015-16 in the middle income tertile, between 2005-06 and 2015-16, those who owned their own home increased their net wealth (excluding the principal place of residence, and any offsetting mortgage liabilities) more than renting households: Grattan analysis of ABS (multiple years-c).

211. Median account balances are much lower, especially for women, reflecting the larger portion of women who report no superannuation savings at retirement. The median account balance for a man age 60-64 was \$110,000 in 2015-16, compared to just \$36,000 for women of the same age. Clare (2017, p. 5).

212. Although research on this issue remains limited, according to one study the accumulated wealth of single men in 2006 was, on average, 14.4 per cent higher than that of single women. The gender wealth gap between single men and single women more than doubled between 2002 and 2010, from 10.4 per cent to 22.8 per cent. Cassells et al. (2015, pp. 4-5).

**Figure 4.11: Most renters will still be above replacement rate benchmarks even after allowing for higher housing costs**

Replacement rate, whole of retirement/last five years of working life, CPI deflated, per cent



*Notes: The equivalent replacement rate for renters is calculated as retirement income less the additional housing costs that renters pay relative to home owners in retirement, divided by the pre-retirement income without any allowance for housing costs. The housing costs in retirement for renters relative to home-owners are estimated at 25 per cent of income, on the basis that rents are about 30 per cent of income, and housing costs for home-owners are about 5 per cent of income (see Figure 2.1 on page 24). So calculated, a 70 per cent replacement rate for a homeowner would deliver a similar standard of living as a 70 per cent equivalent replacement rate for a renter. For more detail regarding calculation of replacement rates, see Appendix C.*

Source: GRIP.

spend less of their working lives in paid work, are more likely to work part-time, and earn lower wages per hour, than men. Beyond the Age Pension, Australia has a *contributory* retirement income system. Since women tend to earn less than men over their working lives, they accumulate fewer retirement savings, and receive lower incomes in retirement.

Single-woman households aged 55-59 and not yet retired had median financial assets of \$99,000 in 2013-14, compared to \$130,000 for single-man households and \$330,000 for couple households.<sup>213</sup> Women can also expect to live longer than men, and so may spend longer in retirement.

This report does not explicitly model the future retirement incomes of men and women separately. Since women will have lower retirement incomes than men, they are likely to be over-represented in the lower employment earning percentiles of GRIP. Lower-income workers inherently have lower retirement incomes, albeit above standard poverty benchmarks (Table 3.2 on page 37 and Figure 4.1 on page 44).

However, women who rely on the Age Pension and rent privately will be at high risk of financial stress and poverty in retirement. More than 80 per cent of older single-woman households that rent<sup>214</sup> are what the ABS calls 'low economic resource' (LER) households – income- and asset-poor households that are at risk of high levels of financial hardship.<sup>215</sup> Of elderly couples that rent privately, 76 per cent are in the

same category.<sup>216</sup> Increasing Commonwealth Rent Assistance, as this report recommends, will make the greatest difference to their retirement incomes.<sup>217</sup>

Another problem, which is beyond the scope of this report, is ensuring that women's interests are protected under family law in the event of separation. The Family Law Act was amended in 2002 to enable retirement savings in the form of superannuation to be evaluated and divided after separation.<sup>218</sup> A survey of divorcees separated after June 2001 found that more separating spouses are now either dividing superannuation or taking it into account when dividing other property, compared to before the law was amended.<sup>219</sup>

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213. AIFS (2015, p. 19).

214. Grattan analysis of ABS (2013b).

215. ABS (ibid.). The ABS defines low economic resource (LER) households as those who are both in the lowest two quintiles of equivalised disposable household income and in the lowest two quintiles of equivalised net worth. Unlike the ABS, but consistent with Yates (2015), we exclude imputed rents from the definition of disposable income.

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216. Just 4 per cent of elderly home-owning couples are low economic resource households.

217. Coates and Emslie (2018). Boosting Rent Assistance can deliver more targeted support to women at greatest risk of poverty in retirement, including existing retirees, without worsening the gender gap in retirement incomes. See Coates (2018a) for a discussion.

218. Attorney-General's Department (2016).

219. Sheehan et al. (2008).

## 5 Retirement incomes for people already working

Chapter 3 showed that most retirees have adequate incomes today, provided they own their own home or live in social housing. Chapter 4 showed that people aged 30 today, who will contribute to super for their entire working life, will also have adequate retirement incomes. What about the generation in between?

GRIP shows that no generation will be left behind. People who will retire over the next two decades may not have saved as much out of their pay packets as the younger generation, but they have benefited from an unusual increase in wealth and historically high returns on their superannuation savings. This generation, like older and younger generations, will have retirement incomes comparable to their pre-retirement incomes.

But again, those who retire in the next two decades and don't own their home are at greater risk of poverty in retirement.

### 5.1 Superannuation for the middle generation

The compulsory Super Guarantee did not begin until 1992. As a consequence, many workers in their 40s and 50s have made compulsory super contributions for only part of their working lives. This has led to much concern about whether retirement savings for this group are adequate.<sup>220</sup> For example, the 2002 Senate inquiry report, *Superannuation and standards of living in retirement*, noted that:

“given that the compulsory superannuation scheme has only been in operation since 1992, the Committee notes that most baby boomers will not have the benefit of a full working life under the compulsory superannuation system and, other savings aside, that their incomes

in retirement are likely to fall well short of the consensus target level of 70-80 per cent of pre-retirement expenditure.”<sup>221</sup>

### 5.2 The wealth windfall

Nonetheless, Australians who will soon retire can expect a much more comfortable retirement than existing retirees. People now in their late-40s, 50s and early-60s are likely to retire with much higher savings than earlier generations. They benefited from being the right age at the right time.

Australians' wealth has increased rapidly over the past decade, especially among older Australians. Savings account for only a relatively small share of the increase.<sup>222</sup> The fall in interest rates to record lows delivered windfall gains in the form of higher asset prices to those who already owned substantial assets before interest rates fell – typically households aged 45 and over today (Figure 5.1 on the next page).<sup>223</sup> While the public may be more aware of rapid growth in house prices, the value of other assets such as equities has also risen rapidly, reflecting the fall in interest rates. Superannuation fund returns have averaged 7.5 per cent or more over the past 15-30 years, after tax and investment fees, higher than the average net returns of 6.5 per cent a year assumed in GRIP.<sup>224</sup> Households aged 55-64 today increased their wealth by almost \$390,000 over the past ten years, mainly through increased home equity (\$145,000) and superannuation (\$171,000).<sup>225</sup> But not all households benefited equally from this increase in wealth:

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221. Senate (2002, p. xv).

222. Daley et al. (2014, figure 1.1.).

223. Rachel and T. Smith (2015).

224. ASFA (2018a).

225. Wiltshire and Wood (2017).

220. Parliamentary Library (2006, p. 12).

wealthier Australians have seen more rapid increases in their wealth than poorer Australians over the past decade.<sup>226</sup>

### 5.3 Retirement incomes are likely to be adequate compared to minimum standards

This increase in wealth was widely shared. About 75 per cent of households aged 50-54, 79 per cent of 55-59 year-olds, and 74 per cent of 60-64 year-olds already have net wealth (excluding the family home, vehicles and household effects) of \$70,000 or more, the level needed by retirement to meet the ASFA modest retirement standard.<sup>227</sup>

One recent study found that more than 90 per cent of households aged 40-64 today can expect to achieve the ASFA modest retirement standard.<sup>228</sup> This is consistent with Grattan modelling using GRIP.

According to that study, just 4.6 per cent of households aged 40-64 today can expect to rely solely on the Age Pension in retirement, with a median retirement income of \$55,000 in 2015-16 dollars.<sup>229</sup> In comparison, 80 per cent of current retirees spend less than the ASFA modest retirement standard, which is only a little more than the Age Pension.<sup>230</sup>

Many of the poorest Australians in their 40s and 50s – such as those not already in the workforce – will have lower retirement incomes. This cohort, which is not captured by GRIP, will rely largely or solely on the

226. Coates (2018b, p. 5).

227. Excludes wealth held in owner-occupied housing, vehicles and household effects, but including any outstanding mortgage on the family home as well as debts related to vehicles or other debts: Grattan analysis of ABS (2017a).

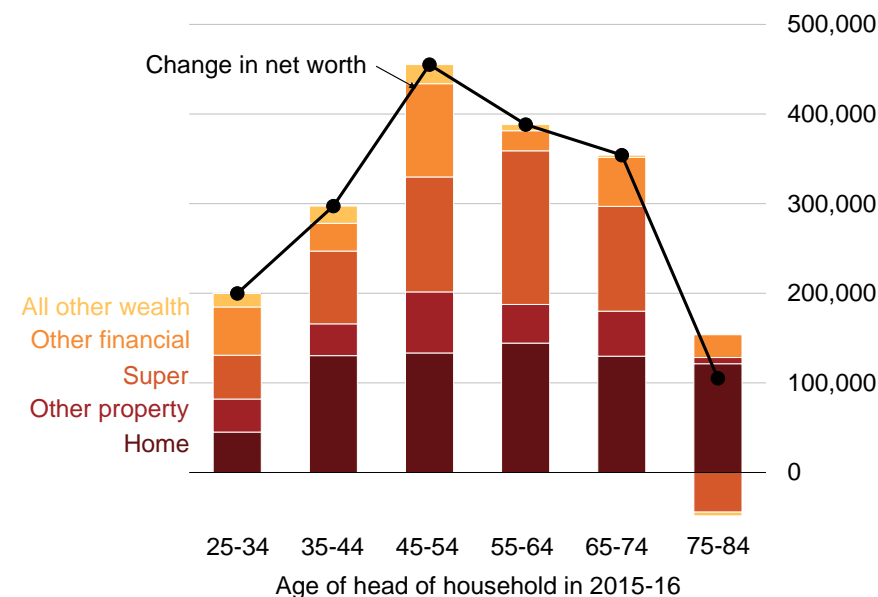
228. Burnett et al. (2014, Table 8.) The authors also evaluate retirement incomes against the ASFA comfortable standard, but as discussed in Section 3.5.1 on page 34, that standard entails expenditure higher than most Australians enjoy during their working life or retirement.

229. Burnett et al. (2014, Table 9.); and ABS (2017c).

230. Grattan analysis of ABS (2017a).

**Figure 5.1: Older households got wealthier because of rising property and superannuation assets**

Change in mean net worth per household, 2005 to 2015, \$2015-16



Notes: Some data points gave a standard error of greater than 50 per cent, including 'Other financial' for 45-54 year-olds in 2015-16 and 'Other property' for 75+ year-olds. Households not equivalised. Excludes defined-benefit superannuation schemes. Note that this figure excludes extreme outliers removed from the micro data sample file, which were included in the ABS summary statistics used to construct Daley et al. (2018, Figure 4.9).

Source: Grattan analysis of ABS (2017a).

maximum-rate Age Pension in retirement. But since the Age Pension is benchmarked to future increases in wages, the poorest Australians will continue to receive a retirement income higher than most measures of poverty, provided they own their own homes (Table 3.2 on page 37).

#### 5.4 Many are likely to have ‘comfortable’ retirement incomes

Grattan Institute modelling predicts that workers aged 40 and 50 today will have much higher retirement incomes than retirees today, including low-income workers who will benefit from the wage-indexed Age Pension (Figure 5.2). More than 70 per cent of today’s 40-year-olds in the workforce, and 40 per cent of today’s 50-year-olds in the workforce, can expect an income sufficient to meet the ASFA comfortable retirement standard as defined today.<sup>231</sup> As discussed above in Section 4.4 (on page 48), although the ASFA standard is set above typical expenditure today, it will mostly be met by future retirees, primarily because their wages are projected to increase faster than inflation and faster than the cost of the bundle of goods which forms the basis of the ASFA standard.

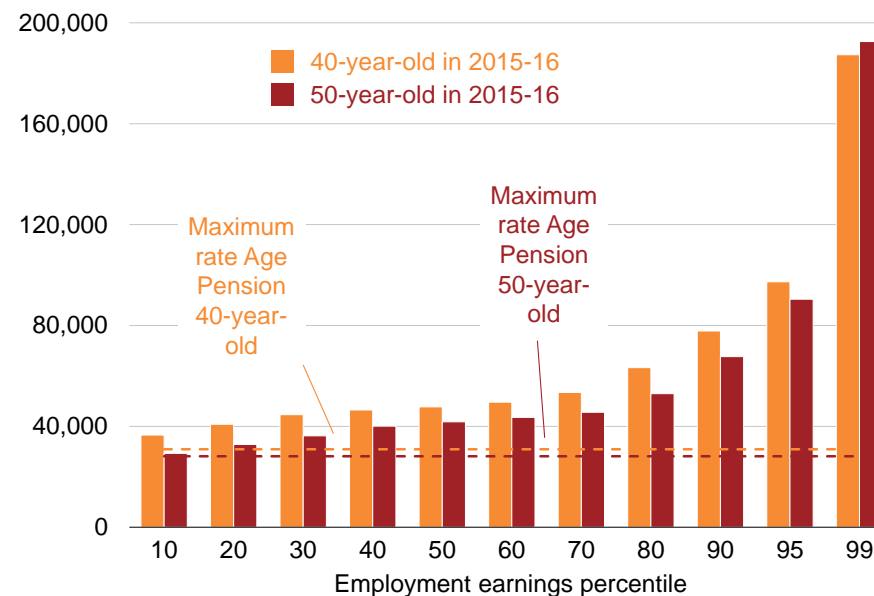
#### 5.5 Most are likely to have retirement incomes comparable to pre-retirement incomes

GRIP also predicts that middle-aged people today are likely to have retirement incomes comparable to their pre-retirement incomes (Figure 5.3 on the following page). Workers of all incomes will enjoy a retirement income of at least 80 per cent of their pre-retirement earnings – higher than the 70 per cent replacement rate benchmark used in this report. This generation can expect to enjoy higher

231. This finding differs from other studies such as Burnett et al. (2014) and Industry Super Australia (2015b, p. 3) that find only around half of retirees in future will meet the ASFA comfortable standard, but assume the ASFA comfortable standard should increase in line with wages through retirement such that it is worth around 28 per cent more at age 92 than it is at age 67.

**Figure 5.2: Today’s older workers will enjoy higher incomes in retirement than today’s retirees**

Average annual income in retirement, \$2015-16



*Notes: Results from modelling the retirement income of a person born in 1975 and a person born in 1965, who works uninterrupted until age 67, and dies at age 92. Assumptions otherwise as detailed in Appendix C. The maximum-rate Age Pension is the average over the period from 2042-43 to 2067-68 for 40-year-olds, and the average over the period from 2032-33 to 2057-58 for 50-year-olds. The Age Pension calculation includes the Age Pension supplement, and assumes the Superannuation Guarantee increases to 12 per cent in line with current government policy.*

*Source: GRIP.*

replacement rates than workers starting out today (Figure 1.2 on page 13), despite not making compulsory super contributions for their whole working lives. While their total savings at retirement will be lower, the Age Pension will account for a larger share of their retirement incomes.

### 5.6 Many older workers that rent will be at risk of poverty in retirement

But again, retirement incomes will not be adequate for all of those currently in their 40s and 50s. In particular, low-income workers who don't own their homes and rent privately are at greater risk of financial stress and poverty in retirement (Figure 3.3 on page 27).

Home ownership rates are much lower among 40- and 50-year-old workers than current retirees. Just 62 per cent of 35-44 year-olds own their homes today, compared to 72 per cent of 45-54 year-olds.<sup>232</sup> Home ownership rates are lower still among the poorest 40 per cent of retirees in each age group. Less than half of the poorest 20 per cent of households aged 45-54 owned their homes in 2016. Few Australians who don't own their home by age 45 can expect to do so by retirement, especially those on low incomes. As a result, around one-third of all those aged in their 40s and 50s today can expect to rent in retirement, and more among the low-income earners of that age.<sup>233</sup>

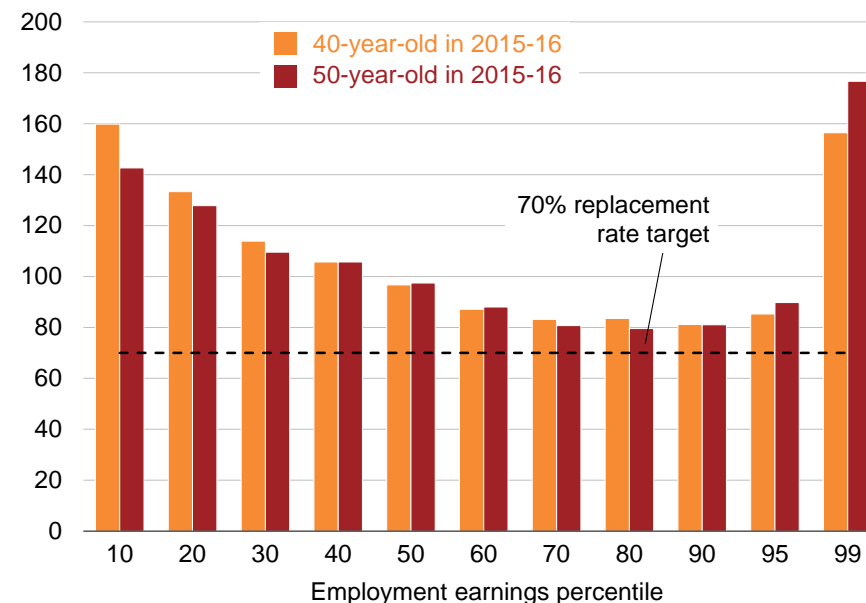
Figure 5.4 (on the following page) shows the impact on the projected replacement rates of 40- and 50-year-old workers today if they are still renting. Renters in the bottom 70 per cent of the earnings distribution will still have replacement rates of 70 per cent or higher, after allowing

232. Daley et al. (2018, Figure 4.2).

233. Grattan Institute projections of by-person home-ownership show that just 64 per cent of those aged 35-44 today will own their homes by the time they reach age 65, compared to 70 per cent among those currently aged 45-54. Grattan analysis of ABS (2006), ABS (2016a) and ABS (2013a).

**Figure 5.3: Current 40- and 50-year-old workers are likely to have adequate retirement incomes**

Replacement rates (whole of retirement/last 5 years of working life), by employment earnings percentile, CPI deflated



Notes: Results from modelling the retirement income of a person born in 1975 and a person born in 1965, who works uninterrupted until age 67, and dies at age 92. Assumptions otherwise as detailed in Appendix C.

Source: GRIP.



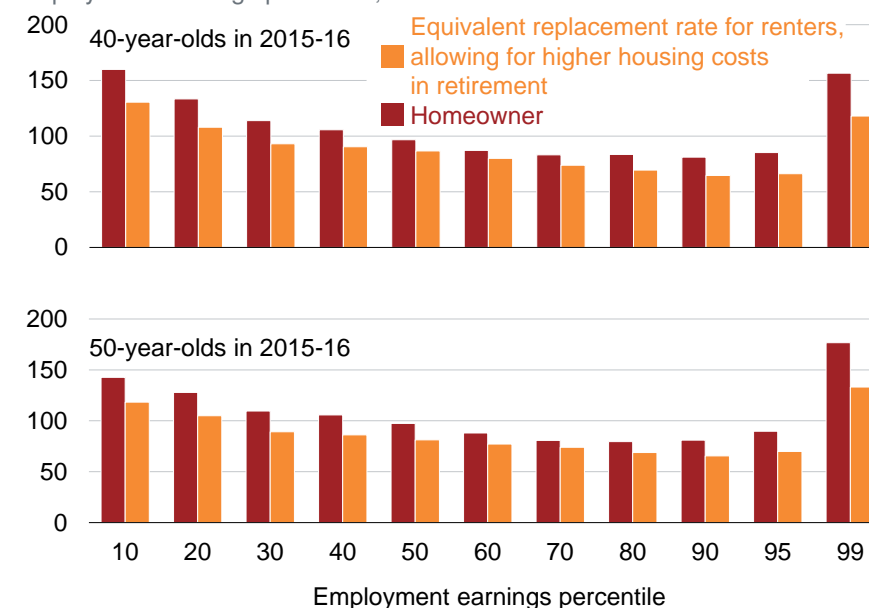
that they will spend an additional 25 per cent of their retirement income on housing costs than home-owners.

It's possible that renters might accumulate larger non-housing savings than home owners with similar working age incomes, and that these savings would fund rental costs in retirement. But in practice, renters tend to accumulate *less* non-housing wealth than homeowners of a given income (Section 4.7.5 on page 65).

As discussed in Chapter 7, boosting the maximum rate of Rent Assistance, and benchmarking Rent Assistance to increases in rents paid by low-income earners in the private rental market, would be the most targeted way to reduce the remaining risk of low-income earners suffering poverty in retirement.

**Figure 5.4: Replacement rates will be lower for future workers if they are still paying rent in retirement**

Replacement rates (whole of retirement/last 5 years of working life), by employment earnings percentile, CPI deflated



Notes: As for Figure 4.11 on page 66.

Source: GRIP.

## 6 The implications of adequate retirement incomes

As the previous three chapters have shown, retirement incomes in Australia are more than adequate for most retirees today, tomorrow, and for the foreseeable future. People who are actually retired feel and are reasonably secure financially. The incomes of retirees today and in the future are likely to be substantial relative to their pre-retirement incomes. This is true even if incomes grow more slowly in future, and investment returns are weaker.

Nevertheless, many people who are still working are worried about their retirement incomes. In part this is because they fail to anticipate that their expectations will change as they age. And in part it is because a fear factory bombards the public with messages that they will not have enough for retirement, based on a living standard that is appropriate for only a minority of workers, and that is presumed to grow in line with wages throughout retirement.

Overall, Australia's retirement incomes system is serving us well. It delivers adequate retirement incomes to most citizens at lower budgetary cost than in most other 'rich world' countries. Tight targeting of pension payments via income and assets tests means that Australia spends just 3.5 per cent of GDP on pension benefits, compared to the OECD average of 7.9 per cent.<sup>234</sup> Australia's retirement incomes system ranks fourth out of 27 countries in the Melbourne Mercer Global Pension Index on measures of adequacy, sustainability and integrity.<sup>235</sup>

But our system can be improved, and the remainder of this report examines potential reforms to do so.

Our retirement incomes system does not always work for low-income Australians who won't own their home in retirement. Senior Australians

who rent in the private market are more likely to suffer financial stress than homeowners, or renters in public housing. And this problem will get worse because younger generations on lower incomes are less likely to own their own home than in the past.

Consequently the real policy priority should be to boost Commonwealth Rent Assistance (Chapter 7). This would provide a material boost to the retirement incomes of the poorest Australians, and at much lower budgetary cost than raising the Age Pension (Figure 6.1 on the following page). We recommend a 40 per cent increase in the maximum rate of Rent Assistance – worth \$1,410 a year for a single retiree. This would cost \$300 million a year if provided just to retirees, or \$1.2 billion a year total if extended to working-age Australians who are on income support and who rent.

But given the reality that most will have more than enough money in retirement, there is no need to boost retirement incomes across the board. Even if governments wanted to boost retirement incomes, the planned increase in compulsory super contributions to 12 per cent is the worst way to get there. Raising the Superannuation Guarantee to 12 per cent will reduce wages today and do little to boost the retirement incomes of many low-income workers tomorrow. It will lead to *lower* pensions for both current and future retirees. Pushing for more retirement savings when they are not needed is simply a recipe for larger bequests, leading to widening wealth inequality over time as those unused savings are passed on to future generations. Scrapping the increase to 12 per cent would also save the Budget \$2 billion a year (Figure 6.1 on the next page).

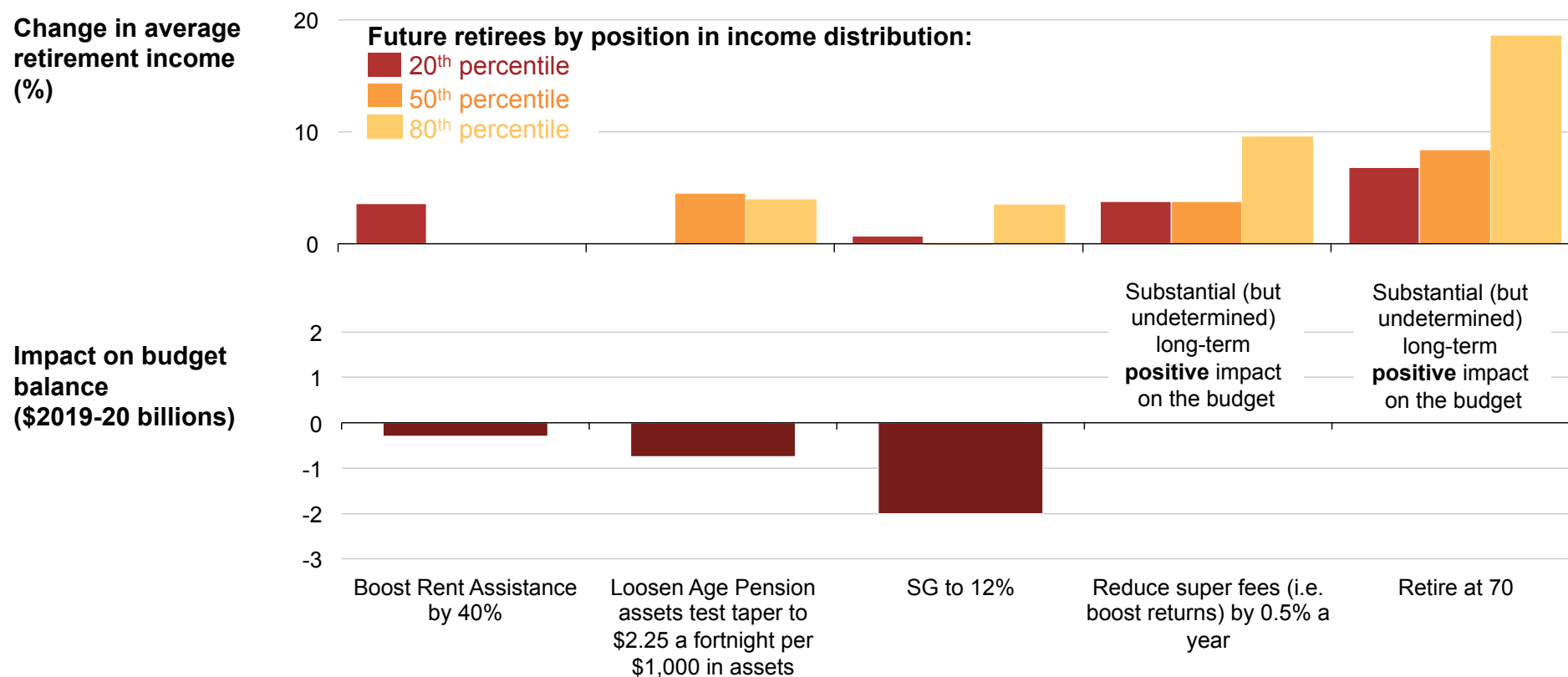
While retirement incomes are adequate for most retirees, recent moves to tighten the Age Pension assets test taper have gone too far, excessively penalising people who save more for their retirement. We

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234. OECD (2017c).

235. Mercer (2018).

Figure 6.1: Changing the Age Pension taper rate would have the biggest impact on retirement incomes per government dollar, whereas boosting the Superannuation Guarantee is poor value for money



Notes: Budgetary impacts of all reforms assume the policy is implemented in full in 2019-20. The long-term budgetary costs of some measures will differ significantly from their short-term costs: Super Guarantee will cost less, cost of reforms to the Age Pension assets test and Rent Assistance will grow with an ageing population; cost of Rent Assistance will also rise as rates of home ownership decline. Budgetary costs of Rent Assistance increase are for retirees only. Rent Assistance scenario assumes a retiree at the 20<sup>th</sup> percentile of the income distribution is a renter and eligible for the maximum rate of Commonwealth Rent Assistance for a single, whereas 50<sup>th</sup> and 80<sup>th</sup> percentile retirees are home-owners. All other scenarios assume all retirees own their homes for the purposes of determining Age Pension entitlements. We assume Commonwealth Rent Assistance increases with wages between 2015-16 and 2052-53, reflecting above-CPI increases in rents. All retirement income scenarios use the Grattan Retirement Income Projector described in Chapter 4 and are for a person born in 1985, who works uninterrupted to age 67 (or age 70 in the 'retire at 70' scenario) and dies at age 92. Reform to Age Pension asset test is as recommended in Chapter 9. 'Retire at 70' scenario assumes both the Age Pension eligibility age and the superannuation preservation age are raised to 70 years. Superannuation Guarantee (SG) scenario compares the retirement income impact and budgetary cost of raising the Super Guarantee to 12 per cent, compared to leaving it at 9.5 per cent. Budgetary costs of reforms described in Chapter 7 to 10.

Source: GRIP.

recommend that the Age Pension be withdrawn at a rate of \$2.25 per fortnight for each \$1,000 of assets above the 'asset free' area, rather than the current rate of \$3 per fortnight. For low- and middle-income workers, this change would have a bigger impact on retirement incomes per government dollar expended than increasing the Super Guarantee. This change would cost the Budget \$750 million a year (Figure 6.1 on the preceding page).

Reducing average super fees, and increasing investment returns, by channelling people into the better performing superannuation funds would also boost retirement incomes by more than raising the Super Guarantee to 12 per cent, while saving the Budget in the long-term via lower pension payments (Section 9.9 on page 95). And working for an extra three years would provide the biggest boost of all to retirement incomes (Section 10.3 on page 102).

Financial security in retirement is not threatened by inadequate savings, but it might be threatened if the budget cannot sustain current arrangements for health care and aged care. Australia's population is ageing, and budgetary spending *per person* on seniors is increasing, particularly for health care and aged care. Meanwhile a shrinking proportion of Australians are paying taxes to fund these growing expenditures. The *Intergenerational Report 2015* projects that the share of Australians in paid work – the labour force participation rate – will fall from 64.6 per cent in 2014-15 to 62.4 per cent in 2054-55.<sup>236</sup> And age-based tax concessions will increasingly drag on budgets, as more people qualify for them.

The generosity of retirement tax arrangements for some retirees could be wound back without threatening the adequacy of retirement incomes. Further scaling back unnecessary super tax breaks could save the Budget more than \$4 billion a year. Curbing age-based tax breaks could save another \$1 billion a year.

And including more of the value of the family home in the Age Pension assets test above some threshold – such as \$500,000 – could save the Budget between \$1 billion and \$2 billion a year.<sup>237</sup> This reform would have no impact on potential retirement incomes as measured in this report. Instead it would primarily reduce inheritances (Section 8.3 on page 83).

These reforms are discussed in more detail in the remaining chapters of this report.

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236. Hockey (2015, p. 1).

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237. Daley et al. (2018).

## 7 Commonwealth Rent Assistance should be increased

While most retirees in Australia are experiencing a comfortable retirement, many retirees who rent are struggling, including many older women. As shown in Figure 3.3 on page 27 and Section 3.6 on page 40, rates of financial stress are much higher among renters than home-owners. If current trends continue, a greater proportion of people reaching retirement age will be renting – and more of them will depend on the private rental market rather than social and public housing. More households are under rental stress,<sup>238</sup> and these rates are likely to rise among retirees in future as fewer Australians own their home (Section 4.7.1 on page 62).

Boosting the rate of Commonwealth Rent Assistance is the most cost-effective way to help low-income retirees with their housing costs, and to reduce poverty among retirees more generally. A 40 per cent increase in the maximum rate of Rent Assistance – worth \$1,410 a year for single retirees – would cost \$300 million a year if provided just to retirees, or \$1.2 billion a year if also extended to working-age Australians who are on income support and who rent.<sup>239</sup> This increase would restore the real value of Commonwealth Rent Assistance, relative to the rents paid by low-income earners, to the level of 15 years ago. In future, Rent Assistance should be indexed to changes in rents typically paid by people receiving income support, so that its value is maintained, as recommended by the Henry Tax Review.<sup>240</sup>

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238. Ibid. (p. 28).

239. Grattan analysis of Parliamentary Budget Office (2016).

240. Treasury (2009, p. 595). While the rental component of the CPI is a readily available and transparent measure, use of an index of rents paid by Rent Assistance recipients would provide a more accurate assessment of their rental costs.

### 7.1 Rent Assistance has not kept pace with rent increases

Rent Assistance is a non-taxable income supplement, payable fortnightly to income support recipients in the private rental market.<sup>241</sup> Rent Assistance is paid at 75 cents for every dollar above a minimum rental threshold until a maximum rate (or ceiling) is reached. The minimum threshold and maximum rates vary according to the household or family situation, including the number of children.

In June 2016, 68 per cent of Rent Assistance recipients would have paid more than 30 per cent of their income on rent if Rent Assistance were not provided. With Rent Assistance provided, this proportion was reduced to 41 per cent.<sup>242</sup>

The value of Rent Assistance has not kept pace with rent increases. The maximum Rent Assistance payment is indexed in line with CPI, but rents have been growing faster than CPI for a long time. Between June 2003 and June 2017, CPI increased by about 41 per cent, while average rents increased by about 64 per cent.<sup>243</sup> Average rents for low-income households went up even faster: by 100 per cent between 2003 and 2016 (the last year that data are available). The maximum Rent Assistance payment today for singles living alone is \$3,531 a year. It would need to be 15 per cent higher – an extra \$530 a year – to compensate for its decline relative to average rents since 2003. It would need to be 37 per cent higher – an extra \$1,300 a year – to compensate for its decline relative to average rents for low-income

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241. Certain social housing tenants are eligible for Rent Assistance such as those living in community housing or Indigenous community housing and, in some jurisdictions, state-owned and managed Indigenous housing. Rent Assistance is generally not payable to public rental housing tenants, because state and territory housing authorities already subsidise their rent.

242. AIHW (2017).

243. Productivity Commission (2018b, p. 203).

households since 2003 (and of course most households receiving Rent Assistance are low-income).<sup>244</sup>

About 80 per cent of households receiving Rent Assistance now receive the maximum amount, up from about 67 per cent in 2007.<sup>245</sup> These households must fund from other sources 100 per cent of their rent above the Rent Assistance ceiling. For example, a couple with no children receives the maximum Rent Assistance payment if they are renting a property with market rent of about \$180 per week or more. In Melbourne, only 10 per cent of one-bedroom apartments rent for \$235 per week or less.<sup>246</sup> If they rented an apartment for \$180 per week, the couple would effectively pay \$118 per week from other income sources. But renting at \$235 per week, they would pay \$173 per week from other sources.

## 7.2 Boosting Rent Assistance would reduce poverty in retirement

Boosting Rent Assistance by 40 per cent – or roughly \$1,400 a year for singles – would reduce poverty among retirees, both now and into the future. It would help people already suffering poverty in old age – unlike boosting superannuation savings, which would help only those who are yet to retire.

Boosting Rent Assistance would also help people much more likely to be financially stressed than renting pensioners: namely younger Australians who are on income support and who rent (Figure 3.3 on page 27). Concerns about this group lie behind widespread calls for an increase in the Newstart Allowance.<sup>247</sup>

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244. Grattan analysis of Productivity Commission (2018b, figure 6.1) and ABS (2018a).

245. Productivity Commission (2017).

246. Productivity Commission (2018b, p. 203).

247. For example, see: Iggulden (2018) and Bagshaw (2018).

Boosting Rent Assistance would help women in retirement a little more than men: 56 per cent of rent assistance is given to women – both working and retired, and 67 per cent of those aged 65+ and living alone are women.<sup>248</sup>

But of course boosting Rent Assistance would not solve all the issues around housing affordability. Boosting Rent Assistance by 40 per cent would only modestly reduce the proportion of low-income retirees in after housing poverty. Depending on the measure used, poverty after housing amongst those receiving rent assistance would fall by 5 to 10 per cent, leaving 31 per cent still in poverty.<sup>249</sup> Many of these low-income retirees are spending up to 50 per cent of their incomes on housing,<sup>250</sup> reflecting rising rents in our major cities, especially for cheaper homes.

## 7.3 Boosting Rent Assistance would be unlikely to raise rents much

A common concern is that boosting Rent Assistance would lead to higher rents, eroding much of the gains in living standards for low-income retirees.<sup>251</sup> But an increase in Rent Assistance is unlikely to substantially increase rents. Households are unlikely to spend all of the extra income on housing. Households receiving Rent Assistance are only a small proportion of low-income renting households. And only half of low-income renters actually receive Rent Assistance, since eligibility is linked to receiving an income support payment (Figure 7.1 on the following page).

While Rent Assistance is ostensibly paid to cover housing costs, retirees are free to spend the money as they wish. Some may choose

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248. Grattan analysis of ABS (2017a).

249. Chomik et al. (2018, p. 24).

250. Grattan analysis of ABS (2017a).

251. Senate Economics References Committee (2015, chapter 22).



to spend some of the extra support on more and better housing. But many will not.<sup>252</sup> When incomes increase, households tend to spend only a small portion of the extra income – about 30 per cent – on housing.<sup>253</sup> Since low-income renting retirees currently spend between 30 per cent and 50 per cent of their incomes on housing,<sup>254</sup> each dollar of additional Rent Assistance should only lead to an increase in spending on housing of between 9 and 15 cents.<sup>255</sup>

It is possible that higher Rent Assistance would to some extent flow through into rent increases. But the value of extra Rent Assistance payments – \$1.3 billion (not all of which would be spent on rent) – would only be a fraction of the \$18 billion in private rents paid by those in the bottom 40 per cent of income earners each year.<sup>256</sup> Only half of low-income renters actually receive Rent Assistance since eligibility is linked to receiving an income support payment (Figure 7.1).

252. For example, the 1992 Department of Social Security Survey of Rent Assistance Recipients found that people on low incomes renting privately budget to achieve an acceptable housing standard, but they allocate any extra monies (in the form of additional assistance or income from working) to spending on food, clothing and paying off outstanding bills. Similarly, analysing the 1991 data on housing costs and incomes, Foard (1995) found that renters generally are likely to spend almost all additional net income on other goods and services rather than housing, leading him to conclude that increases in Rent Assistance are unlikely to induce demand-driven rent increases. Hulse (2002) and R. Bray (1997).

253. For example, see: L. Wong et al. (2016, p. 816) and Sinai and Waldfogel (2002).

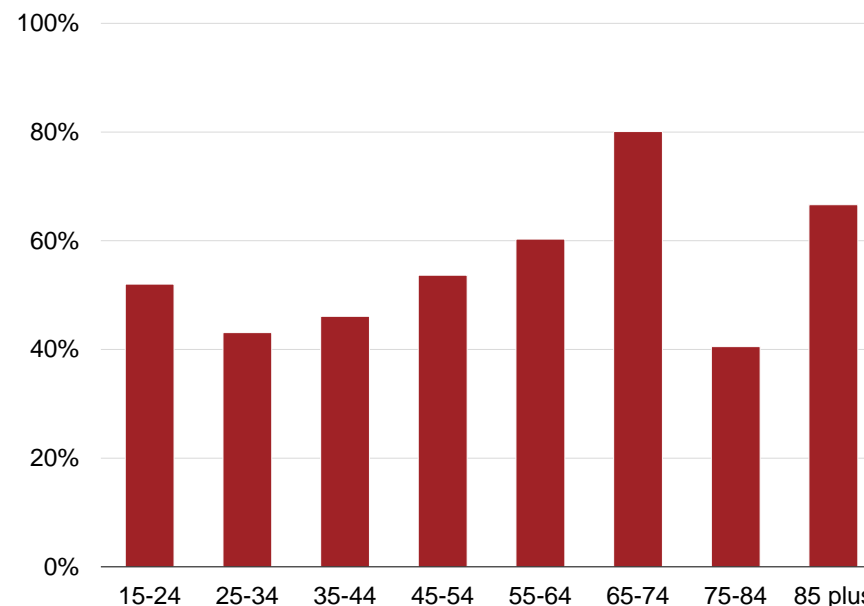
254. Grattan analysis of ABS (2017a). This is consistent with roughly 60 per cent of low-income renters spending at least 30 per cent of their incomes on housing.

255. These are consistent with earlier Australian estimates. For example, R. Bray (1997) estimated that a \$1,000-a-year increase in the maximum rate of Rent Assistance would result in an increase in rents of up to 18 cents for each dollar of extra Rent Assistance paid under a 'worst case scenario', with more plausible estimates in the range of 1 to 5 cents of rent increase per dollar of extra Rent Assistance.

256. ABS (2017d, table 42.) The poorest 40 per cent of all households paid rents of \$18.3 billion a year (Grattan analysis of ABS (2017a)).

**Figure 7.1: Only half of low-income private renters receive Rent Assistance**

Proportion of low-income private renter households receiving Rent Assistance, by age, 2015-16



Notes: Age groups are determined by the 'Age of Household reference person' category given in the Survey of Income and Housing. Low-income households are defined as those in the bottom 40 per cent by equivalised household disposable income.

Source: Grattan analysis of ABS (2017a).

Any potential impact on rents could be further reduced by reforming land use planning rules to allow more homes to be built in the inner and middle- ring suburbs of our major cities to boost the supply of housing. For example, Grattan Institute's 2018 report, *Housing affordability: re-imagining the Australian dream*, found that building an extra 50,000 homes a year for a decade could result in Australian house prices and rents 5 to 20 per cent lower than they would be otherwise.<sup>257</sup>

#### 7.4 Boosting Rent Assistance is the most targeted way to help retirees at risk of poverty

Increasing Rent Assistance would do more to alleviate poverty in retirement per government dollar spent than the alternatives.

Increasing the Age Pension does not reduce poverty as much as increasing Rent Assistance, because the Age Pension is not particularly well targeted. Because the family home is largely exempted from the Age Pension assets test, half of all pension payments go to households with net wealth of more than \$500,000.<sup>258</sup> Almost 20 per cent of all pension payments go to households with net wealth of more than \$1 million.<sup>259</sup> As a result, raising the Age Pension (as currently constituted) to boost the incomes of people most at risk of poverty

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257. Daley et al. (2018).

258. Under current pension rules only the first \$207,000 of home equity is counted in the Age Pension assets test. Home-owning singles are allowed \$258,500 in assessable assets before their pension is reduced, compared to \$465,500 for singles without a home. Home-owning couples are allowed \$387,500 in assessable assets before their pension is reduced, compared to \$594,500 for couples without a home. DHS (2018).

259. Daley et al. (2018, p. 35). This excludes the impact of changes to the Age Pension assets test that took effect from 1 January 2017, which reduced the entitlements of 326,000 Age Pensioners. However these changes will only reduce overall Age Pension payments to part-rate pensioners by around \$1 billion in 2017-18, which is unlikely to substantially change the distribution of pension payments by net wealth, given total Age Pension spending was \$45 billion in 2017-18.

in retirement would cost the budget much more than increasing Rent Assistance, because many of the benefits would flow to higher-wealth households (Figure 7.2 on the following page).

In contrast, a boost to Rent Assistance for pensioners – which would specifically target support to retirees who don't own their own home – would provide a much larger boost per budgetary dollar to the retirement incomes of low-income earners, especially women (Figure 7.2).<sup>260</sup>

Other alternatives to increasing Rent Assistance, such as substantially increasing the stock of social and affordable housing, have significant pitfalls. Social and affordable housing are important for helping those at the very bottom, as an alternative to the private rental market.<sup>261</sup> But they need to be targeted towards those households with the greatest needs, and older households may not necessarily be more deserving than younger households.<sup>262</sup>

A low-income household that is allocated social housing receives much larger public benefits than other low-income households. Public housing provides a much greater average level of assistance than Rent Assistance.<sup>263</sup> And no plausible quantity of funding will be enough to provide subsidised housing for all of the 20 per cent of households typically classified as low-income. Boosting the stock of social housing by 100,000 dwellings – broadly sufficient to return the total affordable housing stock to its historical share of 6 per cent of the total housing stock – would require additional ongoing public funding of around \$900

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260. Targeting is assessed on the basis of wealth, rather than that year's income, because in retirement wealth is a better proxy for the household's *lifetime* income, and the resources available to the household for expenditure in retirement.

261. A full analysis of social housing for all low-income earners is beyond the scope of this report.

262. Daley et al. (2018, p. 71).

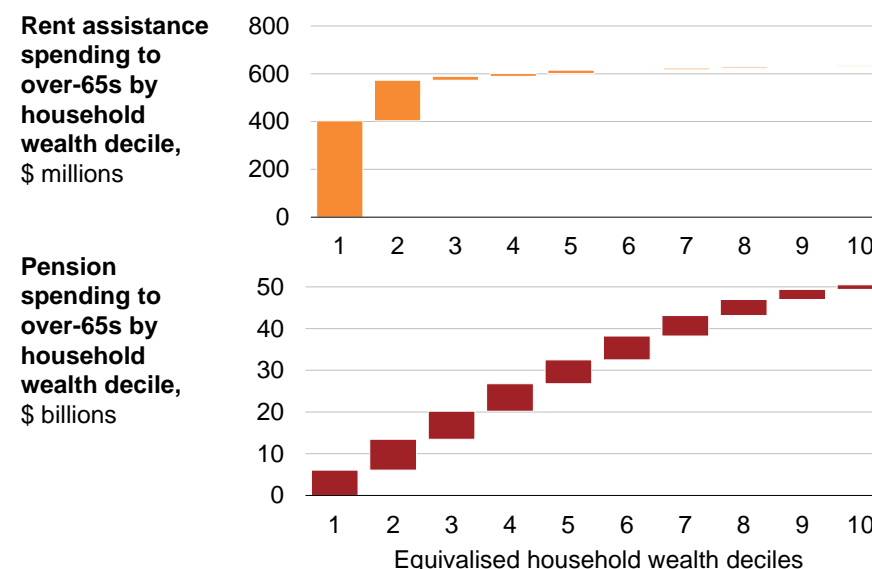
263. Productivity Commission (2018b).

million a year.<sup>264</sup> And even then, by definition it will still house less than a third of households in the bottom 20 per cent.

Beyond ensuring a flow of additional social housing for people most at risk of long-term homelessness, further support for low-income housing should be focused on direct financial assistance for low-income renters rather than building more social housing.<sup>265</sup>

**Figure 7.2: Boosting Rent Assistance would better target support to low-income retirees than increasing the Age Pension**

Distribution of benefits from Rent Assistance and the Age Pension by equivalised household wealth decile of over-65s, 2015-16



*Note: 'Pension' includes the Age Pension and other government pensions and allowances, such as disability, carer or family support payments received by younger people in a household with a household head aged 65 and over.*

*Source: Grattan analysis of ABS (2017a).*

264. Coates and Wiltshire (2018) and Daley et al. (2017, p. 8). \$900m yearly spending is equivalent to a one-off upfront capital contribution of \$18 billion (assuming a 5 per cent discount rate). Alternatively, boosting the supply of affordable housing (where rent is set at 75 per cent of market rent) by 100,000 dwellings would cost \$310 million a year, based on estimates that the annual public subsidy required is around \$3,100 a year. While less costly to government, affordable housing inherently provides less benefit, and is often less targeted to those most in need, than social housing.

265. Daley et al. (2018, p. 132).

## 8 The Age Pension assets test taper rate should be reset

The Age Pension means test aims to ensure government support for retirement incomes is provided to those most in need, while minimising the overall cost to government. Tight targeting of pension payments via income and assets tests means that Australia spends just 3.5 per cent of GDP on pension benefits, compared to the OECD average of 7.9 per cent.<sup>266</sup>

But recent changes to tighten the Age Pension assets test taper have gone too far, excessively penalising people who save more for their retirement. Under the changes, retirees lose \$3 of pension payments every fortnight for every \$1,000 of assets they own above the asset threshold.

The withdrawal rate of pension benefits in the assets test should be reduced to \$2.25 a fortnight for every \$1,000 in assets. This would materially boost the retirement incomes of middle-income workers, at much less budgetary cost than planned increases in the Superannuation Guarantee to 12 per cent.

More of the value of the family home should also be included in the Age Pension assets test. This reform would make pension arrangements fairer between homeowners and renters, producing budgetary savings of \$1-2 billion a year, without compromising the incomes of retirees. Instead it would primarily reduce inheritances.

### 8.1 Recent tightening of the Age Pension assets test went too far

Recent reforms to the Age Pension assets test boosted the assets retirees could own without losing any pension (the 'asset free area'), while tightening the rate of withdrawal of the pension for those with assets above the asset-free area (Table 8.1).

**Table 8.1: Assets test thresholds for receiving the maximum Age Pension**

Household type	Homeowner	Non-homeowner
<b>Single</b>	\$258,500	\$465,500
<b>Couple</b>	\$387,500	\$594,500

*Notes: Thresholds as at 1 July 2018. Excludes value of the family home.*

*Source: DHS (2018).*

Before 1 January 2017, retirees with assets above the asset free area lost \$1.50 of pension payments every fortnight for every \$1,000 of assets they owned above the asset threshold, or \$39 a year. The Government lifted the taper rate on the Age Pension to \$3 of pension lost for every \$1,000 in assets, or \$78 a year, reducing the Age Pension for about 370,000 part pensioners.<sup>267</sup> But the increase in the asset free area boosted retirement incomes for around 170,000 part pensioners

266. OECD (2017c).

267. About 92,300 part pensioners no longer qualified for the pension and a further 277,700 had their part pension reduced. Community Affairs Legislation Committee (2018).

with fewer assets.<sup>268</sup> Overall the package saved the budget around \$1 billion a year in 2017-18.<sup>269</sup>

However the changes also resulted in very high effective marginal tax rates on long-term retirement savings. The median income worker who saves an extra \$1,000 at age 40, and retires at age 67, would only increase their retirement income by \$25 each year, or \$658 over 26 years of retirement.<sup>270</sup> This is a negative real return on money saved for more than 30 years, including compulsory savings under the Superannuation Guarantee.

Of course retirees in this situation will still have more retirement income than those who don't – since they can draw down on the value of their savings. But they will have less to spend while of working age, and less to spend over their lifetime. This is because their savings have negative returns in retirement – what they lose in pension is higher than what their assets are likely to earn. The current assets test taper rate is equivalent to a wealth tax of 7.8 per cent, which is higher than long-run average gross investment returns.<sup>271</sup> Assuming a 6 per cent real rate of return on savings, effective marginal tax rates on the earnings from extra savings are 130 per cent for people receiving a part-rate pension.<sup>272</sup>

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268. Morrison (2015b). In the initial reforms the asset free area increased from \$202,000 to \$250,000 for single homeowners and from \$286,500 to \$375,000 for couple homeowners. Couples were better off if they had assets less than \$699,000 and didn't own their own home, or if they had assets less than \$451,500 and did own their own home. Singles were better off if they had assets less than \$537,000 and didn't own their own home, or if they had assets less than \$289,500 and did own their own home.

269. Treasury (2015, p. 169).

270. In 2015-16. Assumes an assets test taper of \$3 per \$1,000 in assets, and that the \$1,000 is invested at age 40 in 2025-26. GRIP.

271. Ingles and Stewart (2015, p. 15). Note this 'wealth tax' applies only to assessable assets in excess of the asset free area for singles and couple-combined pensioners.

272. Ibid. (p. 15).

Most studies have found that tax incentives for retirement savings have little effect on the total amount saved.<sup>273</sup> But an effective tax rate of more than 100 per cent on savings once a person has retired is hard to justify. Middle-income earners should get at least some reward – in terms of additional income – from not spending all of their savings the day they retire. And effective tax rates are more likely to affect the savings behaviour of middle-income earners<sup>274</sup> – precisely those affected by the Age Pension means test (Figure 8.1 on the following page).

## 8.2 Relaxing the assets test taper rate would boost retirement incomes for middle-income workers

The withdrawal rate of pension benefits in the assets test should be reduced to \$2.25 a fortnight for every \$1,000 in assets.<sup>275</sup> This change would cost the budget \$750 million a year,<sup>276</sup> and better balance the need to target pension benefits to ensure fiscal sustainability while ensuring that middle-income Australians benefit from saving more for their retirement.

Part-rate pensioners would still face high effective marginal tax rates on the earnings from their savings, but lower than at present. Part-rate pensioners would pay an implicit wealth tax on their savings of 5.85

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273. Daley et al. (2015, figure 2.4.).

274. OECD (2007). A review of the experience of tax-preferred savings accounts in 11 OECD countries suggests that high-income people are most likely to participate in tax-preferred savings plans, but tax-preferred accounts only lead to additional savings when people of moderate incomes participate in them.

275. Others argue for a maximum taper rate of \$2 of pension foregone each fortnight for each \$1,000 of assets (Industry Super Australia (2015c)).

276. When the Howard Government reduced the Age Pension assets test taper from \$3 per \$1,000 in assets to \$1.50 in 2007, the budgetary cost was almost \$1 billion a year (Morrison (2015b)). Accounting for inflation and population growth since 2007, the cost of reversing this change would be closer to \$1.5 billion a year. Therefore we estimate lowering the taper rate to \$2.25 would cost about \$750 million a year.

per cent, down from 7.8 per cent under the current taper rate. Saving for retirement would provide a bigger pay-off in terms of a higher retirement income. The median income worker who saved \$1,000 at age 40, and retires at age 67, would increase their retirement income by \$56 each year, or \$1,444 over their lifetime.<sup>277</sup>

Reforming the pension assets test in this way would materially boost the retirement incomes of middle-income earners, at much less budgetary cost than planned increases in the Superannuation Guarantee to 12 per cent (Figure 8.1). In future many retirees will be receiving a part-rate pension (Figure 8.2 on the following page). Meanwhile many middle-income retirees today would receive a higher Age Pension than currently.<sup>278</sup> Lowering the assets test taper rate would also increase the retirement income of some upper-middle income earners because fewer would have assets above the threshold that disqualifies them from receiving any part pension (Table 8.2 on page 85).

### 8.3 More of the value of the family home should be included in the Age Pension assets test

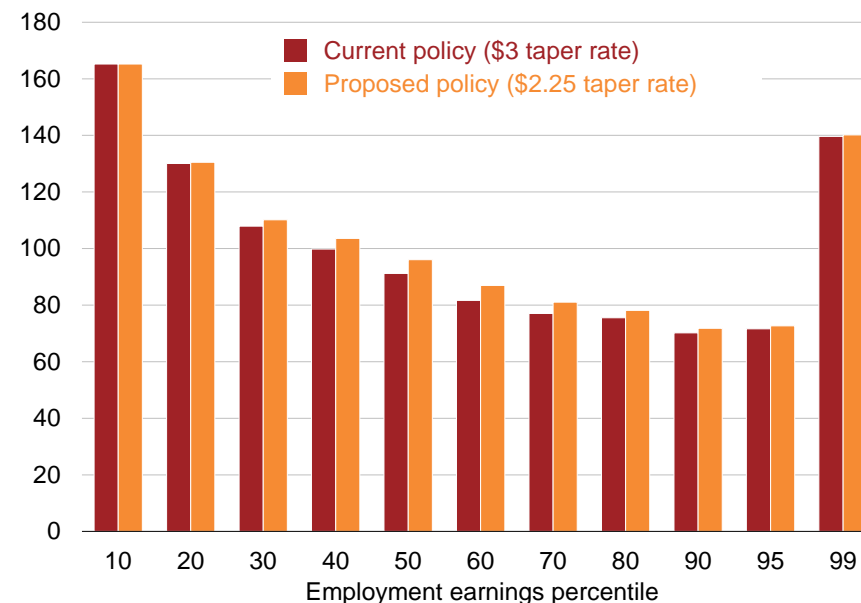
Grattan Institute's 2018 report, *Housing affordability: re-imagining the Australian Dream*, showed that more of the value of the family home

277. In \$2015-16. Based on GRIP, assuming an assets test taper of \$2.25 per \$1,000 in assets, and that the \$1,000 is invested at age 40 in 2025-26. Somewhat perversely, the effective tax rate on savings would *increase* for high-income earners, although they would still earn a positive real return. Under a \$3 taper, the maximum assets threshold is lower, and higher-income earners do not qualify for an Age Pension for many years of their retirement, so there is no effective marginal tax rate from the Age Pension on savings. But under a \$2.25 taper, more higher-income earners qualify for an Age Pension for more years of their retirement, and then the withdrawal rates affect the value of their savings more despite the lower taper rate. This assumes that the pension assets test is binding, rather than the income test.

278. Currently 38 per cent of those receiving any pension are part-rate pensioners. Of those, the current assets test is binding for one-third. DSS (2018c).

**Figure 8.1: Lowering the assets test taper rate boosts replacement rates for middle-income earners**

Whole of retirement/last 5 years of working life replacement rate, by employment earnings percentile, CPI deflated



Note: See Appendix C.

Source: GRIP.



should be included in the Age Pension assets test. This reform would make pension arrangements fairer without compromising the incomes of retirees, contribute between \$1 billion and \$2 billion a year to the budget,<sup>279</sup> and also improve the allocation of housing assets a little.

Under current rules only the first \$203,000 of home equity is counted in the Age Pension assets test; the remainder is ignored.<sup>280</sup> Inverting this so that all of the value of a home is counted above some threshold – such as \$500,000 – would be fairer, and contribute to the budget.

It would also encourage a few more senior Australians to downsize to more appropriate housing, although the effect would be limited given that research shows downsizing is primarily motivated by lifestyle preferences and relationship changes.<sup>281</sup> According to surveys, no more than 15 per cent of down-sizers are motivated by financial gain. Only 1 per cent of seniors listed the impact on their pension as their main reason for not downsizing. Stamp duty costs (which are analogous to the threat of losing pension entitlements) were a barrier for a further 5 per cent of those thinking about downsizing.<sup>282</sup>

Many Age Pension payments are made to households that have substantial property assets. Half of the government's spending on the Age Pension goes to people with more than \$500,000 in assets.<sup>283</sup>

279. Daley et al. (2018, p. 99).

280. Home-owning singles are allowed \$258,500 in assessable assets before their pension is reduced, compared to \$456,500 in assets for a single without a home. Home-owning couples are allowed \$387,500 in wealth before their full pension is reduced, while a couple without a home can have \$594,500 (Section 8.1 on page 81).

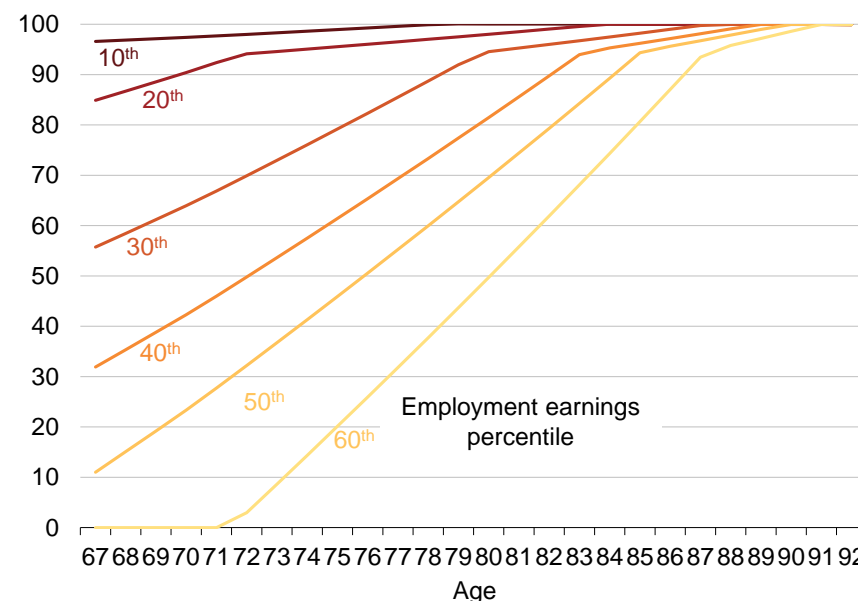
281. Daley et al. (2018, p. 38); Productivity Commission (2015b); and Valenzuela (2017).

282. Judd et al. (2014).

283. Daley et al. (2018, p. 98). Excludes impact of changes to the Age Pension assets test that took effect from 1 January 2017, reducing the pension entitlements of 326,000 pensioners. However these changes will only reduce overall pension payments to part-rate pensioners by around \$1 billion in 2017-18, which is

**Figure 8.2: GRIP projects that all low- and middle-income workers receive a part-pension for a large part of their retirement**

Per cent of full-rate Age Pension received in retirement, by employment earning percentile, per year



*Note: These lines have two angles because if a person receives more than 95 per cent of the full Age Pension (that is, when their assets are less than \$250,000 in 2015-16 dollar values), the precise amount of pension received depends on the deemed income of those assets (which uses a lower taper rate) rather than the value of the assets. For discussion of why so few will qualify for a full Age Pension at retirement in future, see Appendix C.5.3 on page 118.*

*Source: GRIP.*

This reform would have no impact on potential retirement incomes as measured in this report. Low-income retirees with high-value houses could continue to receive the pension, but reclaiming the over-payment when their house is eventually sold under recent changes to the Government's *Pension Loans Scheme*.<sup>284</sup> If retirees responded rationally, the reform would have no effect on their *actual* retirement incomes – instead it would primarily reduce inheritances.

It might be argued that such changes to the Age Pension are unfair because people have already organised their retirement finances. But this is less of a concern with a reform that primarily affects inheritances rather than retirement incomes. This reform reduces the unfairness of the current system that treats homes and other assets very differently. And it seems unfair that the current system pays welfare to retirees who own homes that many in a younger generation will never be able to buy.

The impact of the change could also be mitigated if the value of owner-occupied housing that is included in the pension assets test was only increased gradually, giving retirees more time to decide how to respond to the new rules.

Alternatively a greater portion of the family home could be included in the means tests for residential aged care. The current test incorporates only the first \$162,815 of the aged care resident's home, and only when there are no remaining protected residents such as a spouse or dependent children still living in the family home.<sup>285</sup> When assessing

unlikely to substantially change the distribution of pension payments by net wealth, given total pensions spending of \$45 billion in 2017-18 (Morrison (2015a) and Treasury (2017a)).

284. Changes to the Pension Loans Scheme announced in the 2018-19 Budget may result in a few more retirees drawing down on the value of their home. The Government plans to expand access to everyone over Age Pension age and increased the maximum fortnightly income stream to 150 per cent of the Age Pension rate: Treasury (2018a, p. 175).

285. Productivity Commission (2015b, p. 22).

**Table 8.2: Assets test cut-outs for receiving at least some pension**

Household type	Part-pension cut-out at current \$3 taper rate		Part-pension cut-out at proposed \$2.25 taper rate	
	Homeowner	Non-homeowner	Homeowner	Non-homeowner
<b>Single</b>	\$564,000	\$771,000	\$665,700	\$872,700
<b>Couple</b>	\$848,000	\$1,055,000	\$1,001,500	\$1,208,500

Note: \$2.25 taper rate from Grattan calculations. Rounded to nearest hundred for readability.

Sources: Grattan analysis of DHS (2018).

residents' capacity to contribute to their aged care costs, the means test could include the full value of the home, or its value above a threshold.

Since residential care is typically a person's final place of accommodation, the family home is no longer an accommodation option, nor a vehicle for precautionary saving. Instead the primary motivation for retaining the home in such situations is for bequests.

Commonwealth Government spending on aged care costs is growing rapidly, and is expected to double as a share of GDP over the next 40 years as the population ages.<sup>286</sup> More than 40 per cent of residents in aged care have their accommodation costs subsidised, and virtually everyone receives a subsidy for the care component.<sup>287</sup> Including more of the value of the family home in the aged care means test would improve equity between homeowners and non-homeowners, and help

286. Commonwealth Government aged care spending – including both residential and home-based care – totalled 0.9 per cent of GDP in 2014-15, and is projected to rise to 1.7 per cent of GDP in 2054-55 (Hockey (2015)).

287. Productivity Commission (2015b, p. 22).

to ensure that care recipients with the financial ability to do so pay for their own accommodation.

#### **8.4 A single pension means test is attractive, but would be complex**

While this report focuses on a change to the pension taper rate and the treatment of the family home under the Age Pension assets test, some call for more wholesale reforms. For example, some commentators argue for a more uniform treatment of income and assets in the Age Pension means test.<sup>288</sup> The Henry Tax Review recommended abolishing the separate income and assets tests and replacing them with a single income means test, including deemed income from assets.<sup>289</sup>

Within the current two-part means test – the income test and the assets test – some assets are assessed under both tests, while others are assessed only under the assets test. For example, the home is exempt from the pension means test, while other assets such as term deposits are treated differently under the income and assets means tests.<sup>290</sup> This results in people receiving different levels of government payments even though they have the same level of wealth. This reduces the fairness of the means testing system, and can also affect where people choose to hold their assets.

There are merits to broader reforms to the pension means test, including creating a single means test. However, such changes would raise substantial design questions, and have significant distributional consequences, which are beyond the scope of this report.

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288. For example, see: Treasury (2009, p. 533) and Commission of Audit (2014, p. 84).

289. Deeming assumes that financial investments earn a certain rate of income, regardless of their actual earnings. For example, see: DSS (2018d).

290. Treasury (2009, pp. 538–539).

## 9 The Superannuation Guarantee should not be increased

Chapter 3, Chapter 4 and Chapter 5 demonstrated that the current 9.5 per cent Super Guarantee is sufficient to deliver adequate retirement incomes to the vast majority of Australians, together with the Age Pension and other private savings.

The bipartisan plan to increase compulsory super contributions to 12 per cent should therefore be abandoned. Increasing the Super Guarantee as planned would effectively compel most people to save for a higher living standard in retirement than they enjoy during their working lives.

Lifting the compulsory Super Guarantee would also reduce wages today and do little to boost the retirement incomes of many low-income workers. And scrapping the 12 per cent Super Guarantee would save the budget \$2 billion a year now, and well into the future.

As Chapter 7 and Chapter 8 demonstrated, boosting Commonwealth Rent Assistance and reforming the Age Pension are much better ways to reduce income poverty in retirement, especially for women.

### 9.1 The role of compulsory super

As noted in Section 2.2 on page 19, the retirement incomes system helps to smooth lifetime consumption, so people maintain a more consistent standard of living across their lives.<sup>291</sup> Superannuation encourages people to save while they are working so they have more to spend in retirement. People tend to focus disproportionately on the short term, and so without a compulsory savings scheme, many would save less for their retirement than is required to maintain relatively consistent consumption levels across a lifetime. Although superannuation leads people to save less outside of super than they

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291. Daley et al. (2015, p. 16).

would otherwise, it leads to higher total savings at retirement (including superannuation).<sup>292</sup>

Superannuation also requires governments to give up tax revenue today so that governments do not have to spend so much on the Age Pension in future. This encourages inter-generational equity since each generation pays more of the costs of its own retirement, rather than imposing this burden on the next generation.

Overall, the superannuation system is designed to promote retirement savings, so that people enjoy a higher standard of living in retirement, but with less support from government through the Age Pension, reducing the burden on future taxpayers.

However, superannuation does not and should not aim to provide limitless support for savings that increase retirement incomes. We would all like to be rich. But the benefits of higher retirement incomes must be balanced against the costs of achieving them.<sup>293</sup>

Therefore, the primary objective for the superannuation system, first articulated by the Financial System Inquiry,<sup>294</sup> and adopted by the *Superannuation (Objective) Bill 2016*, is to 'provide income in retirement to substitute or supplement the Age Pension'.<sup>295</sup>

### 9.2 The Superannuation Guarantee is scheduled to rise to 12 per cent by 2025

The Super Guarantee was introduced in 1992-93, with compulsory contributions rising at regular intervals from 3 per cent of wages in that

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292. Ibid. (pp. 20–21).

293. Daley and Coates (2016, p. 3).

294. Financial System Inquiry (2015, p. 4).

295. *Superannuation (Objective) Bill 2016*, cl.5(1)

year to 9 per cent in 2002-03 and 9.5 per cent in 2013-14. Under policy changes set in train by the Rudd and Gillard Labor governments, the Super Guarantee is scheduled to rise incrementally from 9.5 per cent of wages today to 12 per cent by July 2025.<sup>296</sup> The Coalition Government has twice delayed a scheduled increase in the Super Guarantee, but has stuck to the overall goal (Figure 9.1).<sup>297</sup>

### 9.3 Lifting the Superannuation Guarantee lowers living standards during a person's working life

The Super Guarantee forces people to save while they are working, so they have more to spend in retirement. But there is no magic pudding when it comes to superannuation. Higher compulsory super contributions are ultimately funded by lower wages, which means lower living standards for workers today.<sup>298</sup> When the Super Guarantee increases, this is wholly or mostly borne by workers who receive smaller pay rises and lower take-home pay.<sup>299</sup>

This is more than just economic theory. When the Super Guarantee rose by from 9 per cent to 9.25 per cent in 2013, the Fair Work Commission stated in its minimum wage decision that the proposed minimum wage increase was 'lower than it otherwise would have been in the absence of the Super Guarantee increase'.<sup>300</sup>

296. ATO (2017).

297. Treasury (2014, p. 17); and Treasury (2016b).

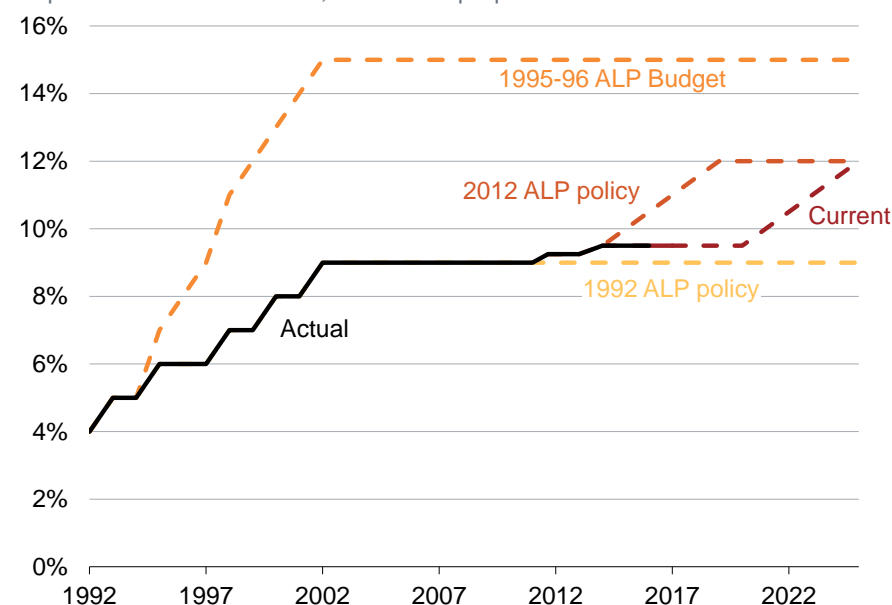
298. Increases to the Super Guarantee Charge are mostly passed through to workers in the form of lower wages (Treasury (2009, pp. 109–110)). Although employers are required to make Super Guarantee contributions, employees bear the cost of these contributions through lower wage growth. This means the increase in the employee's retirement income is achieved by reducing their standard of living before retirement. For example, see: O'Dwyer (2018), Freebairn (2007), Potter (2016), Keegan and Brown (2012) and Onselen (2018).

299. The assumption that a higher Super Guarantee is fully borne by workers in the form of lower wage growth is included in Treasury's modelling of retirement income adequacy. See: Rothman (2012).

300. Fair Work Commission (2013, p. 2).

**Figure 9.1: Under current legislation, the Super Guarantee will increase to 12 per cent**

Superannuation Guarantee, actual and proposed



Notes: The ALP's 2012 policy on the SG increase trajectory is now obsolete, and its current position is uncertain. The party platform simply states an intention to 'fast-track' the increase in a 'prudent' timeframe.

Sources: Superannuation Guarantee (Administration) Act 1992 as amended; 1995-96 Budget speech to Parliament; Treasury (2014).

It is particularly difficult to square claims that increasing the Super Guarantee won't affect wages, with concerns that a lack of workers' bargaining power is one of the reasons for current low wages growth.<sup>301</sup> If employers are unwilling to give employees wage rises, why would they absorb an increase in the compulsory Super Guarantee?

#### 9.4 Lifting the Superannuation Guarantee won't help low- and middle-income workers in retirement

Chapter 4 and Chapter 5 showed that most Australians can expect a comfortable retirement even if compulsory superannuation contributions remain at 9.5 per cent. Consequently, there is no good reason to compel households to save 12 per cent of their income through the Super Guarantee as currently legislated. In effect, most people would be compelled to save for a higher living standard in retirement than they enjoy during their working lives.

GRIP assumes that Superannuation Guarantee increases will be offset by lower wage growth. As a result, it projects that total working life income would be 1.5-to-2.0 per cent lower if the Super Guarantee rises to 12 per cent compared to staying at 9.5 per cent. In addition, some of the extra super savings of low-income workers will be eaten up by superannuation administration costs, especially if spread across multiple super accounts.<sup>302</sup>

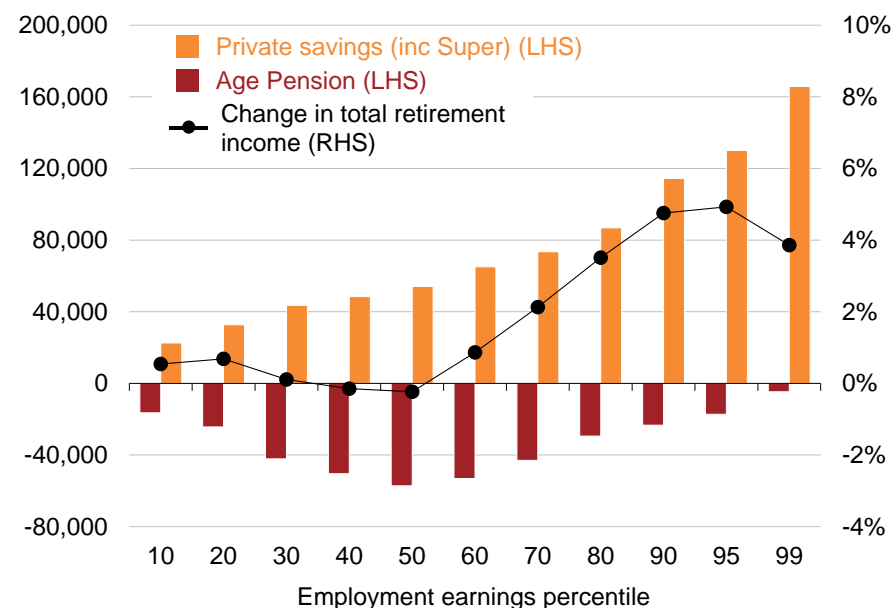
The main beneficiaries from a higher Super Guarantee will be high-income workers, who receive a much larger tax concession than low-income workers and who will receive a relatively small share of their total income in retirement from Age Pension payments. But for the bottom half of workers, retirement incomes will not rise materially, because lower Age Pension payments will outweigh the increase in income from savings (Figure 9.2).

301. Stanford (2018); and Lowe (2018).

302. Minifie et al. (2015); and Productivity Commission (2018a).

**Figure 9.2: Raising the Super Guarantee to 12 per cent won't help low-income workers**

Change in total retirement income if the Super Guarantee increases to 12 per cent compared to staying at 9.5 per cent, \$2015-16, CPI deflated



Note: Base case as described in Appendix C.

Source: GRIP.



Age Pension payments would fall for two reasons.

First, increasing the Super Guarantee reduces wage growth, and thus reduces Age Pension indexation, which is linked to wages.<sup>303</sup> Our research shows increasing the Super Guarantee to 12 per cent could lower future pension payments by 1.7 per cent.<sup>304</sup> In other words, raising the Super Guarantee could make both *existing* and future pensioners worse off by up to \$360 a year for singles and \$545 a year for couples, by suppressing the value of their pension payments (Figure 9.3).<sup>305</sup>

Second, the more superannuation you have, the less Age Pension you will receive in retirement. For each \$1,000 of assets above the Age Pension assets test threshold – currently \$258,500 for a single homeowner and \$465,500 for a single renter – a pensioner now loses \$78 a year in pension payments, up from \$39 a year before the Turnbull Government’s 2017 changes to the assets test (Figure 9.3). As a result the additional super savings due to increasing the Superannuation

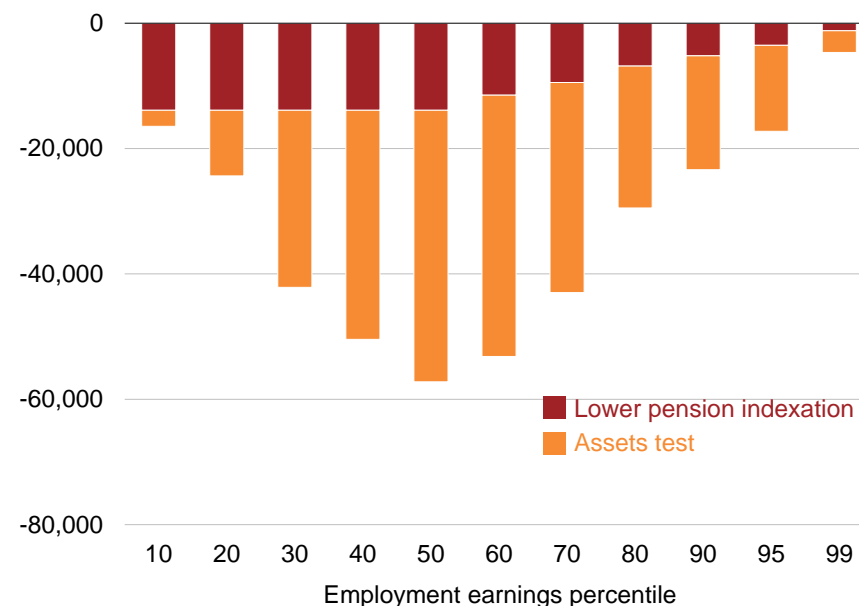
303. The Age Pension is indexed twice a year, on 20 March and 20 September, to reflect changes in pensioners’ costs of living, and wage increases. The pension is increased to reflect growth in either the Consumer Price Index or the Pensioner and Beneficiary Living Cost Index, whichever is higher. When wages grow more quickly than prices, the pension is increased to the wages benchmark. The wages benchmark sets the combined couple rate of pension at 41.76 per cent of Male Total Average Weekly Earnings. The single rate of pension is two-thirds of the couple rate. DSS (2018b).

304. GRIP assumes that, in years that the Superannuation Guarantee increases, wage growth is reduced by the amount of the increase in the Super Guarantee, but only 75 per cent of the reduction in wage growth will pass through to Male Total Average Weekly Earnings, and hence to the maximum rate of the Age Pension. So, for each 1 per cent increase in the Superannuation Guarantee, the maximum rate of the Age Pension is 0.75 per cent lower than otherwise (see Appendix C.5.3 on page 118). This differs slightly from the assumptions used in Coates et al. (2018b).

305. Impacts are for pensioners in 2025-26, when the Superannuation Guarantee has increased to 12 per cent. Expressed in \$2015-16.

**Figure 9.3: If the Super Guarantee rises to 12 per cent, future pension income will be lower**

Change in lifetime pension income if the Super Guarantee increases to 12 per cent compared to staying at 9.5 per cent, \$2015-16, CPI deflated



Note: Base case as described in Appendix C.

Source: GRIP.

Guarantee would reduce the lifetime Age Pension for the median income worker by around \$57,000.

Our modelling predicts that increasing the Super Guarantee to 12 per cent will increase replacement rates for high-income workers (Figure 9.4) – at the cost of lower earnings during their working lives. And although replacement rates would be higher for lower-income workers, this would be due to lower working-life incomes rather than higher retirement incomes.

### 9.5 Raising the Super Guarantee won't close the gender retirement gap

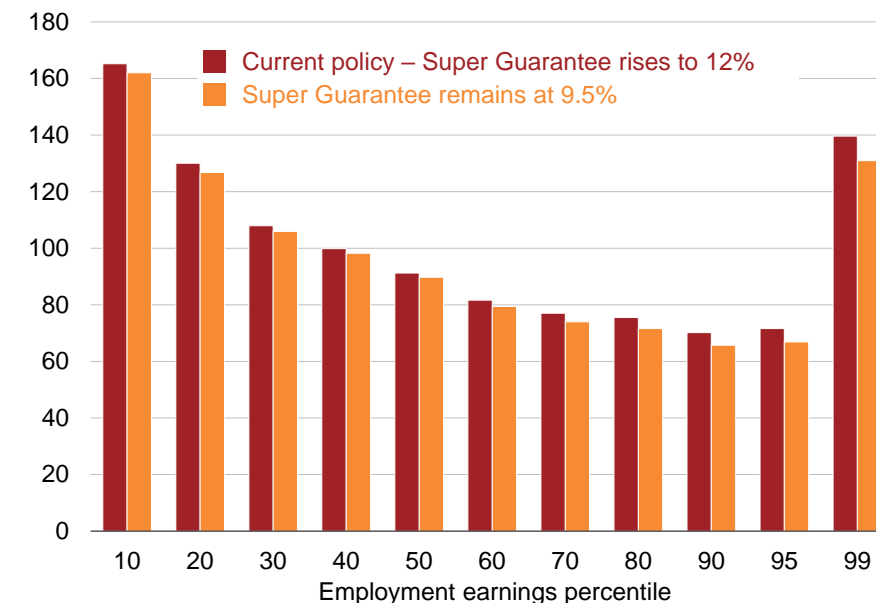
Nor would an increase in the Super Guarantee do much to close the *relative* gender gap in retirement incomes.<sup>306</sup>

Many argue that the Super Guarantee needs to rise to help people with broken work histories achieve an adequate retirement income.<sup>307</sup> But the Super Guarantee is the wrong tool to improve the retirement incomes of women. To ensure *everyone* saves enough for their retirement via compulsory super, including those with broken work histories, the Super Guarantee would have to be set so high that *everyone else* saved too much for their retirement, reducing their living standards during their working life.

Since Super Guarantee contributions are paid as a fixed proportion of workers' earnings, any boost to superannuation savings will be broadly in line with the lifetime earnings of men and women, leaving the gender gap in retirement savings unchanged. Lifting the Super Guarantee may help close the relative gender gap in retirement incomes since women

**Figure 9.4: Increasing the Super Guarantee doesn't increase replacement rates much**

Whole of retirement/last 5 years of working life replacement rate, by employment earnings percentile, CPI deflated



Note: Base case as described in Appendix C.

Source: GRIP.

306. Coates (2018a).

307. Ibid.

currently save a smaller share of their income than men,<sup>308</sup> but those extra savings will be largely offset by lower Age Pension payments.

Women retire with less because they earn less. While this is particularly the case for older women who earned less and did not benefit from compulsory superannuation contributions for much of their careers, it is also true for younger women today. For example, the average woman aged 30-49 makes pre-tax superannuation contributions of \$4,500 a year, one-third less than a man of the same age (\$6,600).<sup>309</sup> As a result, men aged 35-39 had average superannuation savings of \$64,590 in 2015-16, compared to less than \$48,874 for women of the same age.<sup>310</sup>

Closing the gender gap in lifetime earnings would do the most to improve the retirement savings of women. This would require a range of policy responses that go well beyond the scope of retirement incomes policy, including cultural changes to promote gender wage equality and achieve a better balance in caring responsibilities between men and women, as well as measures to further improve the workforce participation of women. For example, if Australian women did as much paid work as Canadian women, Australia's GDP would be about \$25 billion higher.<sup>311</sup>

Other proposals to pay super contributions on government-funded parental leave<sup>312</sup> sound good, but would provide only a minuscule boost to women's retirement incomes. A woman earning the median Australian income, who took two stints of leave in her early 30s, would get an extra \$73 a year – less than \$1.50 a week – or a boost to her average retirement income of just 0.14 per cent. Most of the value of

the extra super contributions would be clawed back by the Age Pension assets test. Low- and high-earning women who took the same leave would end up with retirement incomes up to 0.5 per cent higher.<sup>313</sup> And by itself it won't do anything for women already struggling in retirement, or for older working-women who've already had children.

Single women who are retired and do not own their own home are the group most likely to rely almost solely on the Age Pension, and are at the greatest risk of poverty in retirement. Concerns about inadequate retirement incomes for people with broken work histories are best tackled using the Age Pension, and especially Rent Assistance (Chapter 7).

Better targeting super tax breaks to the purposes of superannuation would also reduce the gender gap in superannuation savings. As Grattan Institute's 2015 report, *Super tax targeting*, shows, super tax breaks provide the greatest boost to high-income workers who don't need them.<sup>314</sup> Most of these high-income workers are men. Better targeting of super tax breaks could free-up revenue to provide more targeted support for retirement incomes for people who need it most, and reduce marginal effective tax rates for low- and middle-income workers to encourage greater female participation in the workforce. Reforms to super tax breaks are discussed further in Chapter 10.

## 9.6 Lifting the Superannuation Guarantee is expensive

Raising the Super Guarantee doesn't just reduce workers' take-home pay. It also hits the Federal Budget. Instead of workers receiving wages that are then taxed at full marginal rates of personal income tax, the extra compulsory contributions to their super fund are taxed at 15 per cent.<sup>315</sup> The 2010-11 Budget predicted that increasing the

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308. Men of a given age save a larger share of their disposable income than women: Grattan analysis of ABS (2017a).

309. Clare (2017, p. 9).

310. Ibid.

311. Daley and McGannon (2014, p. 4).

312. Shorten (2018).

313. Coates and Emslie (2018).

314. Daley et al. (2015, p. 26).

315. The tax rate varies somewhat depending on income.

Super Guarantee by 0.5 percentage points would cost the budget \$240 million in 2013-14.<sup>316</sup> The 2014-15 Budget calculated that delaying an increase to the Super Guarantee of 0.5 percentage points saved \$440 million in 2017-18.<sup>317</sup> These costings suggest that raising the Super Guarantee to 12 per cent could cost the budget \$2 to \$2.5 billion a year in additional super tax breaks, and more in future.

The purpose of superannuation is to save for the future and reduce future Age Pension payments (see Section 2.2 on page 19). But in both the short and long term, superannuation tax breaks cost the budget more than they save in pension payments. Estimates by Treasury as part of the 2009 Harmer Pension Review concluded that a maturing Superannuation Guarantee would reduce Age Pension spending by only 6 per cent.<sup>318</sup>

Treasury analysis in 2013 estimated that the revenue foregone from superannuation tax breaks as a result of moving to a 12 per cent Super Guarantee, together with past increases in the Super Guarantee, exceed the budgetary savings from lower Age Pension spending by 0.4 per cent of GDP a year.<sup>319</sup> Eventually – by 2050 – the net budgetary cost of super tax breaks will “only” be 0.2 per cent of GDP a year (Figure 9.5). The cumulative increase in Commonwealth public debt from a 12 per cent Superannuation Guarantee would exceed 10 per cent of GDP by 2050.<sup>320</sup>

316. Treasury (2010, p. 42).

317. Treasury (2014, p. 17). These cost estimates predated recent policy changes: a higher pension assets test taper rate and tighter super tax breaks. But these changes are unlikely to substantially affect the budgetary costs of raising the Super Guarantee.

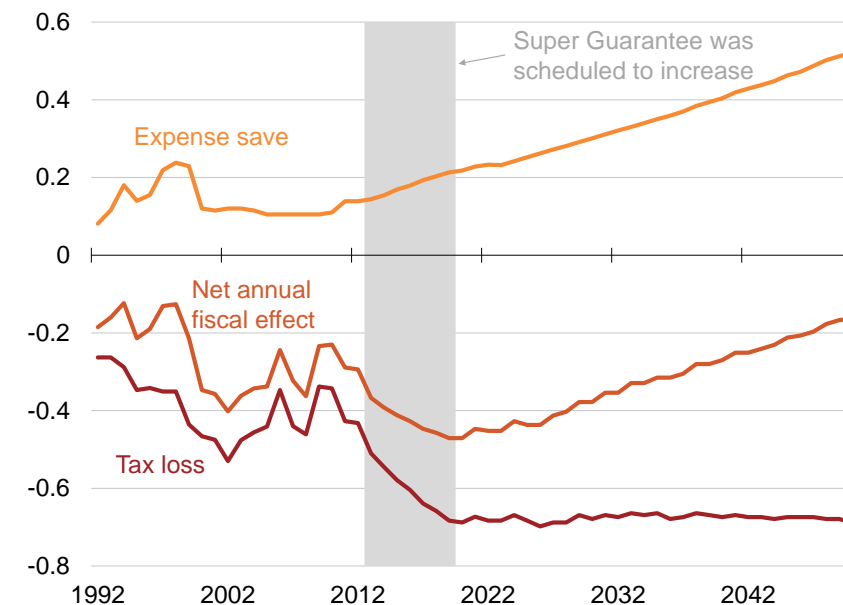
318. Harmer (2009, p. 9).

319. Cooper Review (2013, figure 2.1.).

320. Cooper Review (ibid., p. 11). Recent changes to curb super tax breaks and tighten the Age Pension assets test will reduce the annual budgetary cost of support for retirement incomes by around 0.1 per cent of GDP.

**Figure 9.5: Lifting the Super Guarantee to 12 per cent costs the Budget – in both the short and long term**

Per cent of GDP



Sources: Cooper Review (2013, figure 2.1), Treasury (2010, p. 42) and Treasury (2014, p. 17), Grattan analysis.

On these trends, superannuation won't start saving the budget money until about 2060 – and by then there will be 80 years of budget costs to pay back before government is in front.

### 9.7 The Super Guarantee should not be increased to 12 per cent

The 9.5 per cent Super Guarantee rate is already sufficient to deliver adequate retirement incomes, in concert with the other parts of the retirement income system. Increasing the Super Guarantee will not help low-income workers in retirement: most of the benefits will flow to high-income workers, while low-income Australians could cop lower incomes while working and lower incomes in retirement, both today and in future. It would effectively compel most people to save for a higher living standard in retirement than they enjoy during their working lives. Given typical retiree spending patterns, a 12 per cent Super Guarantee will primarily result in larger bequests. And it will cost the budget money.

Governments need to act soon if they want to cancel the incremental increase in the Super Guarantee scheduled for July 2021, because new Enterprise Agreements now being negotiated will take into account the increase in the Guarantee when setting wage rates.

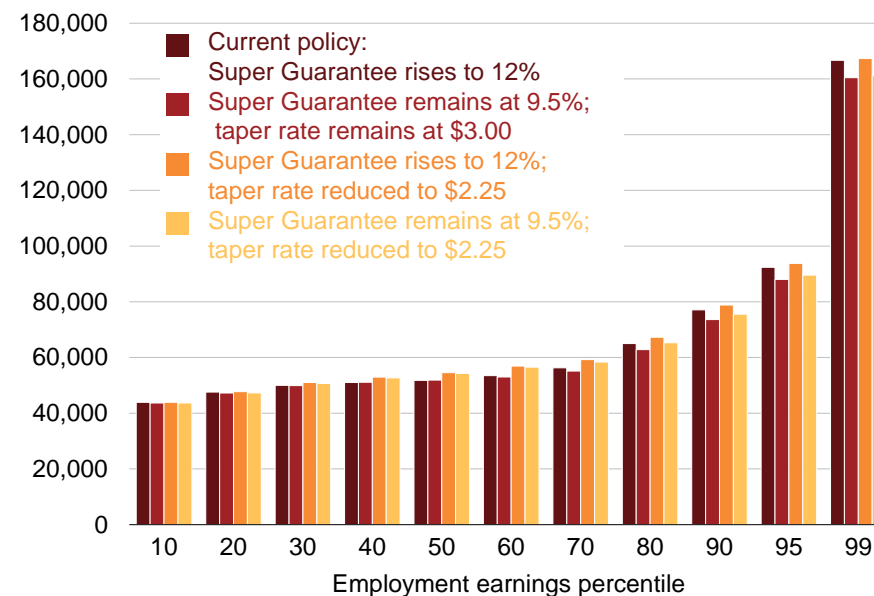
### 9.8 A lower taper rate would cost less than raising the Super Guarantee and do more to help low-income retirees

If the Age Pension taper rate were relaxed (Chapter 8), then the planned increase in the Super Guarantee to 12 per cent would do more to boost retirement incomes. But there would still be no reason to increase the Super Guarantee. As shown in Chapter 4, retirement incomes would remain broadly adequate even without it. With it, many Australians would be poorer when working.

As Figure 9.6 shows, relaxing the Age Pension assets test taper rate provides a larger boost than increasing the Super Guarantee to the

**Figure 9.6: Lowering the assets test taper rate will help low- and middle-income workers more than increasing the Super Guarantee**

Average annual retirement income, \$2015-16, CPI deflated



Note: See Appendix C.

Source: GRIP.

retirement incomes of 70 per cent of retired workers. And it would cost the budget only \$750 million a year rather than \$2 billion a year. Of course, in the very long run, increasing the Super Guarantee might cost the budget less, but as shown in Section 9.6 (on page 92), governments will be waiting a long time for this budget dividend.

### 9.9 Reducing superannuation fees and increasing returns would boost retirement incomes more than increasing the Super Guarantee

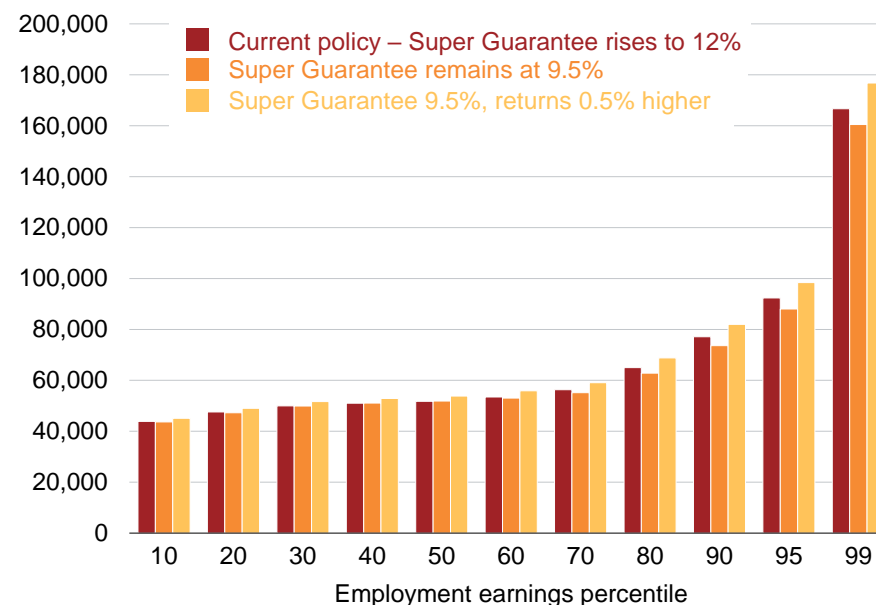
Although superannuation returns don't have a huge effect on replacement rates, they make more difference than increasing the Superannuation Guarantee from 9.5 per cent to 12 per cent – and they cost both workers and government less.

If superannuation returns were 0.5 per cent higher, then the median income earner would have about 4 per cent more income in retirement. This is larger than the boost to retirement incomes as a result of increasing the Superannuation Guarantee from 9.5 per cent to 12 per cent (Figure 9.7).

Reducing superannuation fees would also produce substantial budgetary savings in the long-term via reduced spending on the Age Pension.<sup>321</sup>

Superannuation funds charge widely varying administration and management fees that range from around 0.5 per cent to 2.0 per cent

**Figure 9.7: Reducing superannuation fees would boost retirement incomes more than increasing the Super Guarantee to 12 per cent**  
Average retirement income per year by employment earnings percentile, \$2015-16, CPI deflated



*Note: Base case as described in Appendix C. Higher returns are also applied to assets held outside super in retirement, which will only affect the 99<sup>th</sup> percentile.*

*Source: GRIP.*

321. For example, Rothman (2012) estimated that if super returns were 1 per cent lower than expected then annual government pension outlays would rise by 0.3 per cent of GDP by 2050. Lifting net returns by the same magnitude (by reducing super fees) could generate similar budgetary savings in the long term.

of assets.<sup>322</sup> The higher-priced funds typically produce *worse* returns before fees – and therefore much worse returns after fees.<sup>323</sup>

Many (but not all) of the high-price, low-return, super funds have been specifically chosen by workers. But a significant proportion of employees are defaulted into superannuation funds. Grattan Institute's reports, *Super sting*<sup>324</sup> and *Super savings*,<sup>325</sup> showed how a tender for the default funds would probably lead to lower administrative and management fees. It would promote competition on fees between those superannuation funds vying to be nominated as default funds. And this competition might well flow into the pricing for non-default funds. The 'best in show' list of just 10 default funds proposed by the Productivity Commission would have similar effects.<sup>326</sup>

The costs of superannuation administration and fund management would also be lower if individuals consolidated their superannuation accounts.<sup>327</sup> This is the objective of current proposed legislation and Productivity Commission draft recommendations. The proposed legislation would sweep all 'inactive' accounts – typically secondary accounts – to the ATO, which would consolidate them with active primary accounts.<sup>328</sup> And the Productivity Commission's proposals would reduce multiple accounts in future: under its scheme an individual would be defaulted only into their first superannuation fund, and would remain with this fund when they changed jobs.

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322. See: Minifie et al. (2015, figure 9) and Productivity Commission (2018a, figure 5 and 6).

323. Minifie et al. (2014, p. 11), Productivity Commission (2018a, Figure 3.24) and Productivity Commission (2018d).

324. Minifie et al. (2014).

325. Minifie et al. (2015).

326. Productivity Commission (2018a).

327. Minifie et al. (2015, p. 12). Productivity Commission (2018a, p. 2) estimates that one-third of all super accounts are unintended multiple accounts, which erode members' super balances by \$2.6 billion a year.

328. *Tax Laws Amendment (Protecting Your Superannuation Package) Bill 2018*.



## 10 Other reforms to improve budget sustainability

Several previous Grattan Institute reports have recommended reforms to aspects of Australia's retirement incomes system to support budget repair and restore the intergenerational fiscal bargain.<sup>329</sup>

This chapter examines the combined impact of our proposed reforms on the retirement incomes of current and future retirees. It shows that even if all these reforms were enacted, Australians would still have adequate retirement incomes.

### 10.1 Super tax breaks should be curbed further

Three previous Grattan Institute reports – *Super tax targeting* in 2015,<sup>330</sup> *A better super system* in 2016,<sup>331</sup> and *What's the best way to close the gender gap in retirement incomes* in 2018<sup>332</sup> – recommended that tax breaks for superannuation contributions and earnings should be targeted more tightly at their policy purpose. The current system is expensive and unfair, while substantially worsening the gender gap in retirement incomes. Superannuation tax breaks cost a lot – almost \$35 billion a year in foregone revenue, or well over 10 per cent of income tax collections – and the cost is growing fast.<sup>333</sup> Half the benefits flow to

the wealthiest 20 per cent of households, who already have enough resources to fund their own retirement, and whose savings choices aren't affected much by tax rates.<sup>334</sup>

Curbs to superannuation tax breaks announced in the 2016-17 Budget and subsequently passed with minor amendments are a big step in the right direction, because those affected by the changes are overwhelmingly high-income earners who are unlikely to ever qualify for the Age Pension in retirement.<sup>335</sup> But even after these reforms, super tax breaks will still flow overwhelmingly to high-income earners who do not need them. People in the top 20 per cent of income earners will still receive about half of all pre-tax super contribution tax breaks.

Treasury projections in the 2016-17 Budget show that the lifetime value of tax breaks to high-income earners remains much higher than the value of the Age Pension for low-income earners, even after the reforms (Figure 10.1 on the following page).<sup>336</sup> And these

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the cost at \$16.9 billion for contribution tax breaks, while the earnings regime provides a *gain* to the budget of \$9.5 billion. Yet these estimates show that Australia's superannuation tax breaks cost \$7.5 billion more in foregone tax revenue than if Australia adopted such a EET system for taxing superannuation savings, which is widely recognised as an amply generous tax treatment for taxing retirement saving. For a more detailed discussion of measuring the cost of super tax breaks see Daley et al. (Ibid., Box 1).

334. Ibid. (Figure 2.4).

335. The reforms included: a new 15 per cent tax on super earnings in retirement for people with super account balances of more than \$1.6 million; a lower annual cap of \$25,000 on pre-tax contributions; a lower income threshold of \$250,000 at which tax on super contributions will rise from 15 per cent to 30 per cent; and a lower \$100,000 annual cap on post-tax contributions. Coates (2018a, p. 27).

336. The value of superannuation tax breaks is calculated against a comprehensive income tax benchmark. While some commentators argue that an expenditure tax approach is a desirable structural feature of the tax system, arguments about the best policy for taxing savings should not be confused with questions about how to

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329. See: Daley et al. (2013), Daley et al. (2014), Daley et al. (2015), Daley et al. (2016c) and Daley et al. (2016b).

330. Daley et al. (2015).

331. Daley et al. (2016a).

332. Coates (2018a).

333. Treasury (2018b). It is often cautioned that one cannot simply add together the Treasury's 'revenue foregone' tax expenditure estimates for contributions and earnings tax breaks into one figure. However, we estimate the degree of 'double counting' in combining the 'revenue gain' tax expenditure estimates from abolishing each of these tax breaks at less than \$1 billion a year over that period (Daley et al. (2015, p. 23)). Alternative approaches to measuring the value of super tax breaks against a pre-paid expenditure tax (EET) benchmark, where contributions are taxed in full but earnings and withdrawals are tax-free, put

projections are likely to be conservative since they ignore post-tax super contributions, which are largely made by high-income earners, boosting the super earnings tax breaks they receive.<sup>337</sup>

Three reforms would better align tax breaks with the goals of superannuation, while saving the Budget around \$4 billion to \$5 billion a year.<sup>338</sup>

First, contributions from pre-tax income should be limited to \$11,000 a year. Such a level would allow someone earning up to around 1.5 times average full time weekly earnings to make compulsory super contributions (assuming compulsory contributions of 9.5 per cent of annual earnings).<sup>339</sup> This would improve budget balances by \$1.7 billion a year.<sup>340</sup> There would be little increase in future Age Pension payments, since the reductions in tax breaks would mainly affect people unlikely to receive an Age Pension anyway.

Second, annual contributions from post-tax income should be limited to \$250,000, or an annual cap on post-tax contributions of \$50,000

measure their cost. The income tax benchmark remains the best measure of how much tax breaks cost. In the absence of superannuation, savings would be taxed at rates of personal income tax. Daley et al. (2015, Box 1).

337. Different assumptions about life expectancy and drawdown rates generate much higher estimates of the lifetime benefits of super. Assuming a lower discount rate than 5 per cent boosts the net present value of both government support provided to low-income earners via the Age Pension, and earnings tax breaks for high-income earners.

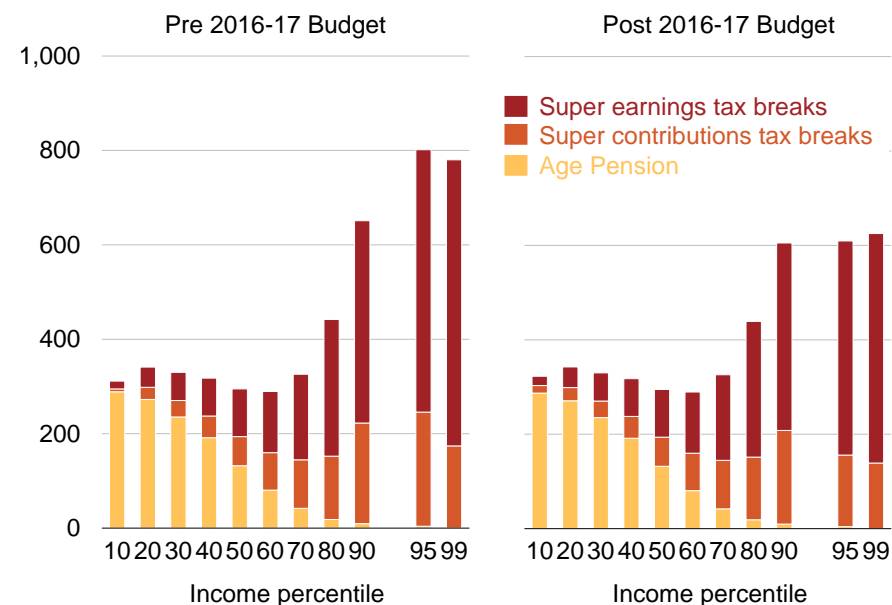
338. Ibid. (p. 2).

339. Daley et al. (Ibid., p. 29). Those earning more than 1.5 times average weekly full-time earnings are unlikely to receive any Age Pension for much or all of their retirement.

340. This estimate is updated from Daley et al. (Ibid.) to reflect the recent passage of reforms to superannuation tax breaks.

**Figure 10.1: Lifetime income support will remain unequally distributed even after the Government's changes**

Net present value of total government support over a lifetime through the Age Pension and super tax breaks, \$2016, thousands



Notes: Individuals are assumed to commence work in 2016 at age 30 and work until age 70, with a predicted life expectancy of 92. Accumulated superannuation benefits are invested in an account-based pension and individuals are assumed to draw down their assets at the current age-based minimum drawdown rates. The level of tax assistance and Age Pension entitlements are discounted by 5 per cent per year to calculate a net present value in 2016 dollars. Annual incomes are calculated for each percentile based on the distribution of earners at each single year of age. Assumes no post-tax contributions.

Sources: Grattan analysis of Treasury (2016c, p. 4).

a year.<sup>341</sup> It won't save the budget much in the short term, but in the longer term it will plug a large hole in the personal income tax system.

Third, earnings in retirement – currently untaxed for people with superannuation balances below \$1.6 million – should be taxed at 15 per cent, the same as superannuation earnings before retirement. A 15 per cent tax on all super earnings would improve budget balances by around \$2 billion a year today, and much more in future.

### Further curbs to super tax breaks would not threaten the adequacy of retirement incomes

The super industry claims that tightening super tax breaks would compromise the adequacy of retirement incomes.<sup>342</sup> But Grattan Institute research shows that tightening super tax breaks would largely affect the top 20 per cent of income earners, who are unlikely to ever receive the Age Pension.<sup>343</sup>

Reducing the cap on pre-tax super contributions to \$11,000 a year, and reducing the non-concessional contributions cap to \$50,000 a year, would not affect the retirement incomes of the overwhelming majority of low- and middle income-earners (Figure 10.2). Less than 5 per cent of median-income earners make pre-tax contributions of more than \$10,000 a year. Instead, the current generous annual caps on pre-tax contributions are predominately used by older, high-income men to reduce their tax bills.

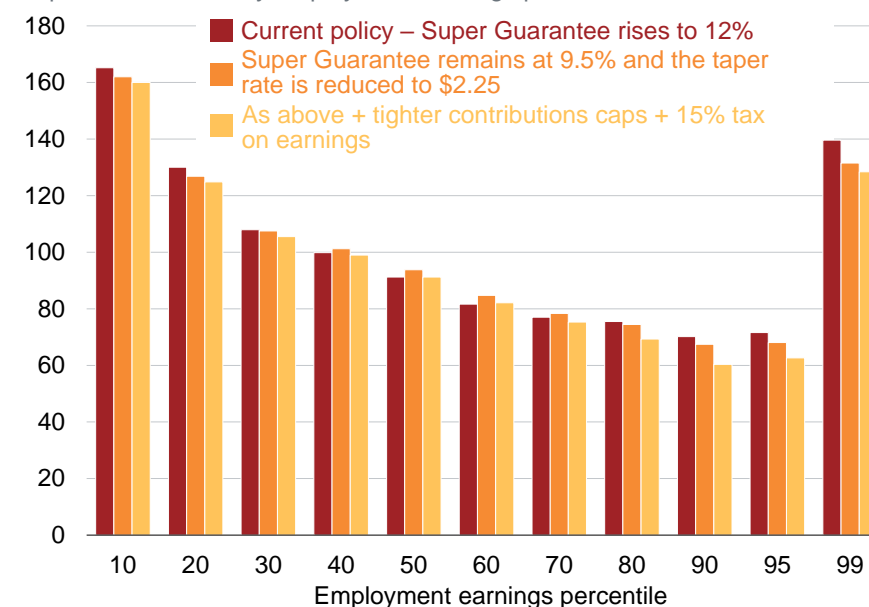
341. A lifetime cap would be superior to an annual cap in ensuring those with broken work histories are not disadvantaged. But since three quarters of post-tax contributions are made by people aged over 55, there is likely to be little difference in practice between a lifetime cap or an annual cap (Daley et al. (2015, p. 54)).

342. For example, see: ASFA (2018d) and Podger (2016).

343. See: Daley et al. (2015) and Coates (2018a).

**Figure 10.2: A tax on earnings in super during the retirement phase and lower contributions caps would lower replacement rates only slightly for middle- and low-income earners**

Replacement rates, by employment earnings percentile, CPI deflated



Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from age 30 to 67, and dies at age 92. Retirement savings drawn down so that a small bequest is left, in addition to the home. Scenario with earnings tax assumes no change in behaviour from lowest-income earners (who may have a lower marginal tax rate outside super).

Source: GRIP.

For a small proportion of women with higher incomes later in life, the changes would reduce their catch-up contributions. Yet the changes would reduce the tax breaks far more for older, wealthier men. About 69 per cent of men (and 61 per cent of women) in the top taxable income decile contribute more than \$10,000 a year.<sup>344</sup> Only 234,000 women earning less than \$80,000 make pre-tax contributions of more than \$10,000. In contrast, almost 950,000 men earning more than \$80,000 contribute more than \$10,000 from pre-tax income.<sup>345</sup>

A 15 per cent tax on super earnings would affect the retirement incomes of low- and middle-income earners a little, since the tax would apply to the first dollar of super earnings. Assuming no behaviour change, many people in lower-income deciles would pay around \$1,000 in tax, and people in the highest income decile would pay an average of \$11,000 in tax on their super earnings.<sup>346</sup>

But as Figure 10.2 (on the preceding page) shows, replacement rates for low- and middle-income earners would still be adequate after our proposed reforms to super tax breaks, in combination with keeping the Super Guarantee at 9.5 per cent and lowering the Age Pension assets test taper rate. For a median-income earner, the net lifetime replacement rate would be unchanged at 91 per cent.

These replacement rates are conservative since they assume no behaviour change in response to the 15 per cent tax on super earnings. We assume that low-income earners are subject to the tax, because we assume people do not re-arrange their affairs to take advantage of the tax-free threshold outside super. But in reality those with super but on low and middle incomes could maintain a zero tax rate on earnings by moving savings out of super. Their total taxable earnings would be below the tax-free threshold, which would still be around

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344. Daley et al. (2015, p. 43).

345. Coates (2018a, figure 7).

346. Daley et al. (2015, p. 64).

\$27,000 for people aged over 65 who qualify for our reformed Senior Australian and Pensioner Tax Offset (see Section 10.2).<sup>347</sup> Accounting for behavioural change, replacement rates are unlikely to fall for low- and middle-income earners.

Low-income earners and younger people would also pay less in other taxes if super tax breaks for the wealthy were wound back. Those already retired would pay *some* tax on their superannuation savings, but they would pay much less tax than wage earners on similar incomes.

## 10.2 Age-based tax breaks should also be wound back

Grattan Institute's 2016 report, *Age of Entitlement*,<sup>348</sup> showed why age-based tax breaks for seniors should be wound back. Two generous age-based tax breaks were introduced in the past 20 years: the Seniors and Pensioners Tax Offset (SAPTO), and a higher Medicare levy income threshold for senior Australians. They are part of a series of policy choices that result in seniors paying less tax than younger workers on the same income.

### Existing age-based tax breaks are hard to justify

The tax-free thresholds for seniors and for younger people have diverged over the past 20 years. Seniors do not pay tax until they earn \$32,279 a year, whereas younger households have an effective tax-free threshold of \$20,542 (Figure 10.3 on the following page). These outcomes are hard to justify. A retired couple pay about \$4,000 a year in tax on annual earnings of \$70,000 from their assets (assuming their

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347. ATO (2015a). As discussed in the next section, SAPTO should be reduced so that seniors pay some income tax unless they qualify for a full Age Pension – that is, unless their taxable income from the pension (including supplements) and other sources is less than \$27,000 (for singles) or \$42,000 (for couples), see Daley et al. (2016b, p. 4).

348. Daley et al. (2016a).

assets outside of super are worth \$1.4 million). Any extra income they draw from a super account is tax-free. By contrast a working couple with both people earning the minimum wage would have the same income of \$70,000 a year but pay tax of about \$7,000 a year. Unlike the retired couple, they probably don't own their own home, and they have little chance of accumulating \$1.4 million in assets, or accruing significant super savings, or owning their home before they retire.<sup>349</sup>

As discussed in *Age of entitlement*, these tax breaks actually *reduce* incentives for workforce participation, only benefit middle-income earners, and are part of a package of government benefits much larger than provided to previous generations.

Government should wind back SAPTO so that it is available only to pensioners, and so that those whose income bars them from receiving a full Age Pension pay some income tax. Seniors should also start paying the Medicare levy at the point where they are liable to pay some income tax. They would then pay a similar amount of tax to younger workers with similar incomes. This package would improve budget balances by about \$700 million a year.<sup>350</sup>

### Reforming age-based tax breaks wouldn't threaten the adequacy of retirement incomes

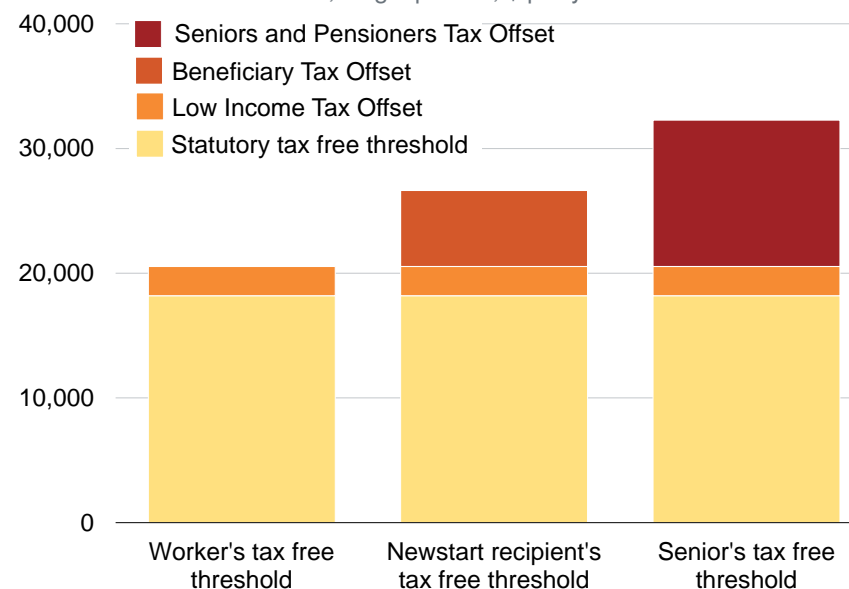
These proposed reforms to SAPTO and the higher Medicare levy threshold for senior Australians would have minimal impact on retirement incomes for low- and middle-income earners (Figure 10.4 on the next page), particularly the 40 per cent of seniors who receive a full Age Pension. Almost all the impact would be borne by middle- and high-income retirees. Most seniors affected will be wealthy enough to receive no pension at all for most or all of their retirement years.

349. Daley et al. (2016c).

350. Daley et al. (2016b, p. 3).

**Figure 10.3: Seniors can earn more before they begin to pay personal income tax**

Effective tax-free thresholds, single person, \$ per year



Notes: The Low Income Tax Offset applies to all Australian with incomes below \$37,000, and reduces tax payable by up to \$445. The Beneficiary Tax Offset applies to people receiving income support payments such as the Newstart Allowance. The Beneficiary Tax Offset is based on the maximum Newstart rate for a single person over age 22.

Source: Daley et al. (2016a, Figure 2.1).

And they would not pay any more tax on their incomes than younger households on similar incomes.

### 10.3 Government should investigate raising the pension and super ages to 70

Previous Grattan Institute reports have shown that increasing the age of access to 70 years would be one of the largest boosts to economic growth<sup>351</sup> and to budget balances<sup>352</sup> in the long term. Increasing the super preservation age to 65 (from 60) could improve the budget bottom line by around \$7 billion (in 2015 prices) in 2055 – mainly due to tax revenue increases from wealthier households – while also boosting old-age workforce participation by 2 per cent.<sup>353</sup> Increasing the age of retirement also makes a bigger difference to retirement incomes than any other reforms (Figure 6.1 on page 74). Once the substantial increases in life expectancy of the past 30 years have been incorporated into the access ages as proposed, then it may be appropriate to index the access age for age pension and superannuation to life expectancy.<sup>354</sup>

Older workers in Australia are less likely to work than in many comparable economies.<sup>355</sup> The age at which people can access superannuation or the age pension affects retirement decisions of at least some workers.<sup>356</sup>

In 2014, the Abbott government proposed increasing the pension eligibility age to 70 by 2035.<sup>357</sup> But this change was never legislated,

351. Daley (2012).

352. Daley et al. (2013, pp. 29–32).

353. Productivity Commission (2015a, p. 2).

354. Daley et al. (2013, p. 30).

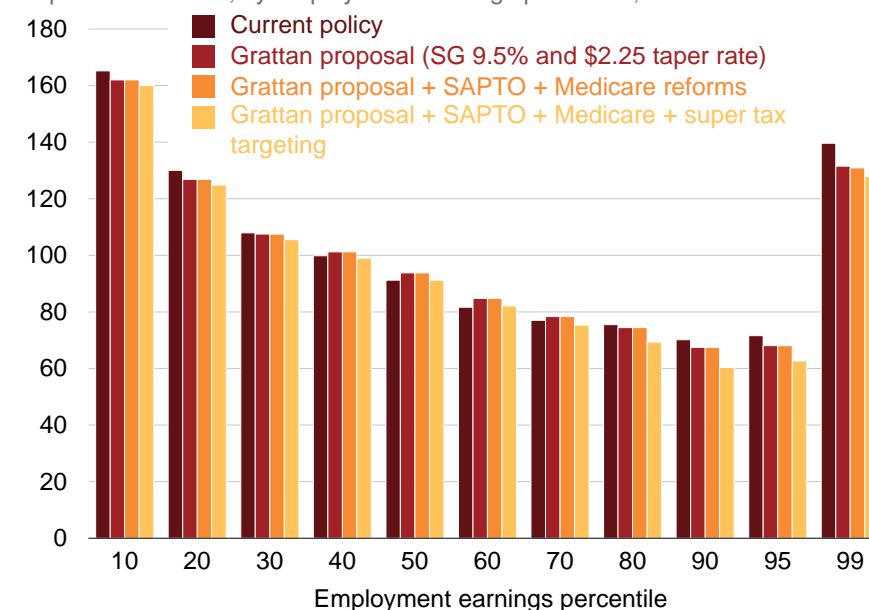
355. Daley et al. (2016d, p. 17).

356. Daley et al. (2013, p. 30).

357. Parliamentary Library (2015).

**Figure 10.4: Winding back SAPTO and the Medicare levy concession has minimal impact on replacement rates of high-income earners**

Replacement rates, by employment earnings percentile, CPI deflated



Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. Retirement savings are drawn down so that a small bequest is left in addition to the home. SAPTO and Medicare levy changes as recommended in 'Age of entitlement'. 'Super tax targeting' includes \$11k cap on concessional contributions, \$50k annual cap on non-concessional contributions, and 15 per cent tax on earnings in the pension phase.

Source: GRIP.

and was abandoned by the Morrison government in September 2018.<sup>358</sup>

Opposition to raising the pension access age focuses on concerns that people on lower incomes are more likely to retire younger, are less likely to be able to work to the age of 70, and have shorter life expectancies.<sup>359</sup> But the needs of this group would be best addressed by allowing earlier access to superannuation for people who have a disability. Assessments of eligibility for the disability pension might also use less stringent tests of whether a person aged over 60 has such a severe impairment that they are unable to work. Meanwhile raising the super preservation age would have little, if any, impact on the workforce participation of individuals who retire involuntarily – almost half of men and more than one-third of women who retire between the ages of 60 and 64.<sup>360</sup>

The Productivity Commission should therefore investigate the economic, social and budgetary costs and benefits of gradually raising the age of access to the Age Pension and superannuation to 70 years. The inquiry should consider whether there should be a new regime for easier access to the pension and superannuation for people aged over 60 whose health has been so impaired that it is difficult to work.

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358. Yaxley (2018).

359. See: Whiteford (2014); Chomik (2014).

360. Productivity Commission (2015a).



## Appendix A: The pillars of the retirement incomes system

Australia's retirement incomes system has four pillars (Section 2.1 on page 17). Although many commentators equate retirement savings with superannuation, super is in fact the least important pillar of Australia's retirement incomes system (Figure A.1).<sup>361</sup> In reality most Australians rely on all four pillars to adequately fund their retirement.

Superannuation savings account for only 20 to 25 per cent of the wealth of households (Figure A.2 on the following page). Even without counting the family home, many Australians save as much outside as inside the super system. For older households in particular, the value of assets other than super is often even larger than the value of homes.<sup>362</sup> And women save less via superannuation than men.<sup>363</sup>

It is true that many people with little wealth report a larger share of savings in superannuation than in other assets, but only because their total savings are small. For such low-wealth households, the Age Pension will always be their main source of retirement income.

Owner-occupied housing remains the most important source of wealth for most households of any age or wealth. High-wealth households of a given age hold comparatively less of their wealth in housing, reflecting their larger financial asset holdings, both inside and especially outside of superannuation.

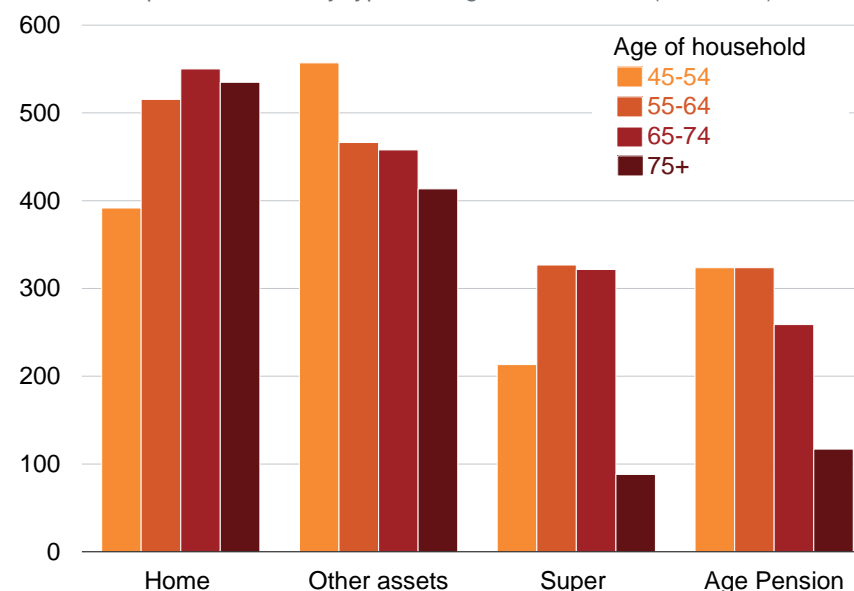
361. As noted in Section 2.1 on page 17, the four pillars are: the Age Pension; compulsory superannuation; other private savings; and the home.

362. This analysis includes non-investment assets in net wealth, notably vehicles and household effects, since these assets support living standards in retirement, either as a potential source of income, or by providing in-kind services to their owners (what economists call imputed rents). Yet even when these components of household wealth are excluded, many households report significant non-super assets (Daley et al. (2016e)).

363. Senate Economics References Committee (2016, p. 10).

**Figure A.1: Superannuation is the smallest 'pillar' in Australia's retirement incomes system**

Mean wealth per household by type and age, \$ thousands (\$2015-16)



Notes: 'Home' is net of related mortgage liabilities; 'other assets' are net of other liabilities; 'super' excludes at least some defined benefit schemes. Net present value of Age Pension is based on average annual pension payments received by households in each age group in 2015-16. The annual average Age Pension payment is converted into a capital value using a discount rate equal to the Age Pension indexation rate of 4 per cent and an average life expectancy for those aged 65 now of 89 years for women and 86 years for men. The net present value of lifetime Age Pension payment assumes that the average real pension currently received by households in each age group continues to life expectancy. It does not account for future expected increases in private retirement saving before retirement, especially for households aged 45-54 and 55-64, where the bulk of households are not yet retired. Also does not account for the impact of reforms to the Age Pension assets test taper from 1 January 2017 on the average pension entitlements of over-65s.

Sources: Daley et al. (2015, figure 2.1), updated to 2015-16 using ABS (2017a).

Some commentators have claimed<sup>364</sup> that presenting averages of household savings, even across narrowly defined age, income and wealth cohorts, obscures how most households save for retirement. Yet a closer look at the *proportion* of particular cohorts that have particular levels of non-super wealth shows that more than half of households in each age group hold more than 50 per cent of their non-home wealth outside of super.<sup>365</sup>

Nor will superannuation replace the Age Pension as the most important component of retirement incomes for the vast majority of retirees. The capital annuity value of the average Age Pension payments that households aged 65 years and over can expect to receive over their remaining lives is larger than the average superannuation savings of these households.<sup>366</sup> The present value of Age Pension payments that will be received by those aged 55-64 and set to retire in the next few years is also as large as the average superannuation savings of these households.

These patterns partly reflect the immaturity of Australia's superannuation system. It will be another two decades before typical retirees have been contributing at least 9 per cent of their wages to super for their entire working lives. But even many younger Australians who have been paying the 9 per cent Superannuation Guarantee since they started work tend to save more outside superannuation (Figure A.2).<sup>367</sup>

364. Industry Super Australia (2016a).

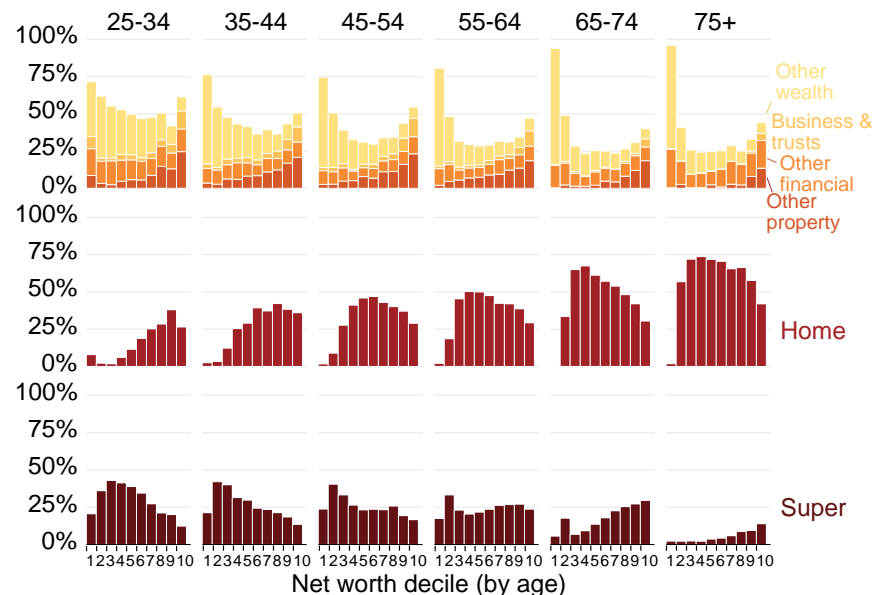
365. Daley and Coates (2017a, figure 3).

366. This is consistent with estimates by the Actuaries Institute (2015, p. 7), which estimates the value of the full-rate Age Pension for people retiring today at age 65 at \$816,000 for couples, \$419,000 for a single man and \$482,000 for a single woman – far more than expected *average* super balances.

367. For a more detailed analysis of trends in asset holdings by age, see Daley et al. (2016c), Daley et al. (2016e) and Daley et al. (2016b).

**Figure A.2: Many Australians save as much outside superannuation as they do inside, across most ages and levels of wealth**

Household net wealth by wealth percentile, age and source, 2015-16, per cent



Notes: 'Home' is net of related mortgage liabilities; 'other property' is net of other property loans; 'business assets & trusts' are net of related liabilities; 'other wealth' is net of all other liabilities; 'super' assets excludes some defined benefit schemes.

Source: Grattan analysis of ABS (2017a).

The enduring importance of non-super savings should come as no surprise. While compulsory superannuation forces people to save more via superannuation, there's little evidence that non-super savings have fallen very much in response.

A Reserve Bank of Australia study found that each extra dollar of compulsory superannuation savings was accompanied by an offsetting fall in non-super savings of between only 10 and 30 cents.<sup>368</sup> As a result, compulsory super has added a lot to private savings in Australia – an estimated 1.5 per cent of GDP a year over the past two decades.<sup>369</sup>

There is little reason to expect this pattern of non-super saving to change radically. Households hold a material portion of their wealth outside of super so that they have an option to use it before turning 60, and because they are nervous that government may change the superannuation rules before they retire.

Other asset classes, such as negatively geared property, are taxed lightly and so are likely to remain an attractive vehicle for accumulating wealth.<sup>370</sup> Whatever the motivation, many households heading towards retirement have substantial non-super, non-home assets to draw on.

The fact that many Australians save for their retirement through vehicles outside of superannuation has important implications for the role of superannuation in our retirement incomes system, and the amount of superannuation people need for an adequate retirement. Many people do not rely on just their superannuation savings to fund an adequate, or even a 'comfortable', living standard in retirement. Rather, most retired Australians draw on a range of assets to support their retirement – including housing and other investments outside

of superannuation. These assets are included in our assessment of retirement income (Section 2.3.3 on page 23) and in calculating replacement rates (Section 4.5.5 on page 55).

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368. Connolly (2007). That is, there was only a small offsetting fall in other savings in response to the introduction of the compulsory Superannuation Guarantee.

369. Gruen and Soding (2011).

370. Daley et al. (2016c).

## Appendix B: Australian surveys on household expenditure

The Household Expenditure Survey conducted by the ABS provides much more reliable data on household expenditure than the HILDA survey conducted by the Melbourne Institute.

HILDA captures only half of the household expenditure identified by the Household Expenditure Survey. HILDA does not attempt to account for all household spending. It captures only around \$20,000 a year for households of almost all ages (Figure B.1), which is implausibly low compared to median household incomes of \$74,776.<sup>371</sup> The HES implies much higher household expenditure, and after accounting for measurement differences, captures around 82 per cent of household spending in the National Accounts.<sup>372</sup> The problems arise because the HILDA survey ignores some categories of expenditure, and collects data on a number of expenditures in less reliable ways.

The Melbourne Institute acknowledges that the HILDA survey omits several important spending categories such as recreation (Table B.1 on the next page).<sup>373</sup> Some of these categories are material: recreation, for example, is the third-largest category of household spending (Figure 3.6 on page 29).<sup>374</sup>

HILDA collects less reliable data on the categories that it does cover. For a number of items the HILDA survey asks respondents to estimate

371. ABS (2017e).

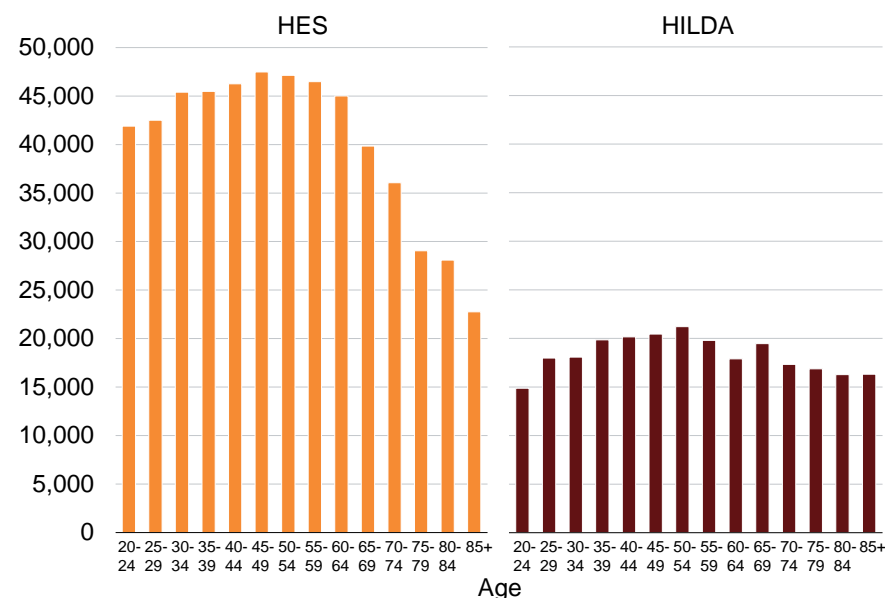
372. ABS (2017a), excluding from the National Accounts household expenditure on super, income taxes, rent, mortgage repayments, and other capital housing costs. The National Accounts also include imputed charges for life insurance, spending by non-profits supporting households, spending by those in remote areas, as well as spending by non-private dwellings, which may explain some of the variation still unaccounted for. ABS (2016b).

373. Wilkins and Sun (2010) estimate that the HILDA self-completion questionnaire theoretically accounts for 80 per cent of household expenditure.

374. Ibid. (table 1).

**Figure B.1: The Household Expenditure Survey captures much more household expenditure than HILDA**

Average yearly equivalised household expenditures on goods and services, \$2016



Notes: Households are weighted according to ABS and HILDA survey weights.

Negative expenditures coded as null expenditures.

Sources: ABS (2017a) and Wilkins and Sun (2010).

their expenditure over a recent survey period.<sup>375</sup> In contrast, the HES is specifically designed to measure household spending. Respondents are asked to keep a diary of every item they buy during a two-week survey period. HILDA also appears to suffer from a high degree of variance in reported household expenditures from different responding members of the household, which are then averaged, which could lead to under-reporting of some expenditures.<sup>376</sup>

375. Weekly spending is imputed from questions asked about a usual week (groceries, meals, alcohol and tobacco, petrol), month (petrol, clothing, telecommunications) and year (health costs, electricity/gas, motor vehicle repairs, education fees, home repairs).

376. Wilkins and Sun (2010, p. 9). The HILDA Self-Completion Questionnaire is administered to every household member over 15 years of age, and the expenditure questions ask every respondent with 'any responsibility for the payment of household bills, such as electricity, gas, water and council rates' to report total household expenditure on each expenditure item. Since many households will have more than one person with some responsibility for household bills, this creates the opportunity to compare responses to the household expenditure questions across members of the same household. In producing expenditure estimates, the HILDA data managers take the mean of reported expenditure for each item.

**Table B.1: Comparison of expenditure items in HES and HILDA**

HES	HILDA
Alcoholic beverages	Alcohol
Clothing and footwear	Clothing and footwear (women/men/children)
Communication	Telephone rent and calls / Internet charges
Current housing costs	Home repairs, renovations, and maintenance
Domestic fuel and power	Electricity, gas, and heating fuel bills
Education	Education fees paid to schools, universities and other education providers
Food and non-alcoholic beverages	Groceries / Meals eaten out
Household services and operation	N/A
Medical care and health expenses	Fees paid to health practitioners / Medicines, prescriptions and pharmaceuticals / Private health insurance
Miscellaneous goods and services	N/A
Personal care	N/A
Recreation	N/A
Tobacco products	Cigarettes and other tobacco products
Transport	Public transports and taxis / Motor vehicle repairs / Motor vehicle fuel

Sources: ABS (2017a); Melbourne Institute (2018a); Wilkins and Sun (2010).

## Appendix C: The Grattan Retirement Income Projector (GRIP)

### C.1 Overview

The Grattan Retirement Income Projector (GRIP) is a 'cameo' model that takes an individual from when they begin working at age 30 in 2015-16 and projects their retirement income after they retire at age 67.

The representative individual is assumed to be a homeowner, and single for their whole life. The model includes the person's income from working and welfare. The person saves money inside and outside superannuation. In retirement, the individual begins to draw down on their superannuation and other savings, and may qualify for the Age Pension if they pass the means tests, until death at 92.

### C.2 Life expectancy

The individual is assumed to die at age 92, which is the conditional life expectancy for someone reaching the age of 70 in 2055, contained in the 2015 Intergenerational Report, averaged across males and females.<sup>377</sup>

### C.3 Home ownership

The individual is a homeowner, which affects eligibility for the Age Pension because homeowners face different assets test thresholds. The individual does not draw down on their home's equity in retirement, so the full value of the home is left as a bequest.

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377. Hockey (2015, Table 1.1). A future extension could incorporate the 'social gradient' into life expectancy. For example, Clarke and Leigh (2011) find a life-expectancy gap of 5-to-6 years between the top and bottom income quintiles.

### C.4 Earnings, savings and superannuation accumulation during working life

#### C.4.1 Working life

The individual is assumed to begin working at age 30, in 2015-16, and work uninterrupted for 37 years until retirement at age 67.<sup>378</sup>

We assume earnings change over an individual's life in two important ways.

First, we account for the differences in the distribution of earnings at different age bands. Income tends to peak between the ages of 40 and 50, and then fall as people tend to work fewer hours in the lead-up to retirement.<sup>379</sup>

Second, GRIP accounts for the likelihood that people move up and down the income distribution over their working life (see Appendix C.4.2 on the next page).

#### Breaks in earning over lifetime

GRIP allows for career breaks in two ways. Firstly, GRIP explicitly accounts for the likelihood that people move up and down the income distribution over their working life (see Appendix C.4.2 on the following page). Much of this movement is due to career breaks, for example working part-time while studying, or taking time off to raise children.

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378. The assumption of retirement at age 67 is based on current Coalition and ALP policy (Coalition policy changed in September 2018, having previously been to raise the pension age to 70 by 2035). The assumption of 37 years spent in the labour force is consistent with European predictions for young people today, although many countries similar to Australia (The UK, The Netherlands, Norway, Switzerland and Germany) are predicting longer working lives. Eurostat (2018).

379. Grattan analysis of ATO (2016a).

Those in the bottom earnings percentiles typically earn less than the full time minimum wage,<sup>380</sup> indicating that people in the lower earning deciles are mostly working part-time.

GRIP also approximately accounts for career breaks via the assumption that people start working at age 30. That is, GRIP allows for a maximum of 37 years in the workforce. In reality, many people will start work much earlier than 30 and possess a super balance at age 30. For an individual starting work at age 25, GRIP implicitly allows for five years of career breaks, in addition to the allowance for movements up and down the earnings distribution.

There remains a risk that GRIP overestimates the superannuation balances of some low-income women, who are in the workforce for less than 37 years. The impact on modelled replacement rates for these individuals is unclear, since both the numerator (average income over the whole of retirement) and denominator (incomes in the last five years of working life) of the replacement rate may be overstated. But in practice the impact is likely to be small for low- and middle-income women since any decline in income from private savings is largely offset by more Age Pension. For example, for someone at the 50<sup>th</sup> earning percentile, taking a ten-year career break from age 35 to 45 (in addition to career breaks implicit in GRIP), then returning to full time work, would reduce their replacement rate from 91 per cent to 88 per cent of their pre-retirement earnings.

### C.4.2 Income throughout lifetime

#### Employment and other income

Many retirement income models assume that a person's earnings remain constant throughout their working life, only varying in line with

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380. Someone in the 10<sup>th</sup> percentile of earners at age 30 is expected to earn around two thirds of the full time minimum wage on average across their working life.

wage inflation – that is, the representative individual earns a certain proportion of Average Weekly Ordinary Time Earnings throughout their working life.<sup>381</sup> This will not give an accurate representation of an individual's lifetime income patterns. Slightly better would be a cameo model that assumes that the person remains at the same point of the income distribution throughout their working life.<sup>382</sup>

Grattan Institute research, and other studies, show that the assumption that people's incomes remain the same throughout their working life is unrealistic.<sup>383</sup> While most people's earnings do not fluctuate that much, people do move enough that it is unrealistic to assume someone stays in the exact same position throughout their entire working life. These movements may occur because people gain or lose skills, transition between full-time and part-time work, or take career breaks. For example, a 35-year-old working full-time may sit in the 70<sup>th</sup> income percentile, but may work part-time while caring for young children and so drop to the 30<sup>th</sup> income percentile for a few years.

To account for income changes during the individual's working life, we created a 'transition matrix' using observed changes in income from the HILDA survey. From this transition matrix we obtained a lifetime income (in terms of multiples of AWOTE) for each individual at age 30 starting at a point on the earnings distribution (over the following 37 years) (Table C.1 on the next page). Across the working population, total lifetime incomes remain similar after the impact of the transition matrix. The effect of the transition matrix is to reflect a more accurate distribution of total lifetime incomes.

To create this transition matrix, we analysed the movements within the earnings distribution of individuals in HILDA between two time periods:

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381. OECD (2017b, p. 100); and World Bank (1994, p. 294).

382. Burnett et al. (2014) and Actuaries Institute (2015) use a percentile method. Committee for Sustainable Retirement Incomes (2016) uses both.

383. Daley et al. (2015, pp. 33–34); and Wilkins (2017).



2005-2009 and 2010-2014.<sup>384</sup> First, we calculated the average income of the individual in both time periods. Then we determined the income percentile of each individual in each period. We then constructed the observed transition matrix of income for each age transition for each five-year age bracket from 25-29 to 30-34 and from 55-59 to 60-64. This transition matrix gives the probability of an individual moving from their current position in the income distribution to another point on the income distribution. For example, a 30-year-old in the 2<sup>nd</sup> decile has a 24 per cent chance of being in the 2<sup>nd</sup> decile in five years, and 10 per cent chance of being in the 5<sup>th</sup> decile in five years. This matrix of all movements was then smoothed.<sup>385</sup>

The lifetime earnings output of the transition matrix is applied to employment earnings data from the Australian Taxation Office's 2013-14 sample file. Employment earnings are obtained for each five-year age bracket and income percentile.<sup>386</sup> Earnings are expressed as a percentage of Average Weekly Ordinary Time Earnings (*e.g.* a person aged 30-34 in the 40<sup>th</sup> earnings percentile has earnings of

384. Analysis included only individuals whose weekly salary from their main job exceeded \$100 in: at least three years in 2005-2014; at least one year in 2005-2009; and at least one year in 2010-2014. The analysis also included only individuals with longitudinal weight greater than zero in 2014, that is individuals identified as having sufficient longitudinal data from which to draw sound inferences. For more detail on how this earnings transition matrix was constructed, see Parsonage and Young (2018).

385. A tensor product smooth was used to smooth the matrix. For more details, see Parsonage and Young (*ibid.*).

386. To account for the likelihood of people working for longer in the future (due to the legislated increase in the Age Pension access age to 67, and higher life expectancy), the earnings of future 65-69 year-olds (the five years of working prior to retirement) are assumed to be the same as the earnings of today's 60-64 year-olds, and the earnings of future 60-64 year-olds are assumed to be the same as the earnings of today's 55-59 year-olds. In 2015, about 44 per cent of 60-64 year-olds were retired and 76 per cent of 65-69 year-olds were retired (ABS (2017)).

**Table C.1: The transition matrix produces a lifetime income for individuals at different points on the income distribution at age 30**  
Predicted lifetime income from transition matrix (as a multiple of AWOTE)

Percentile at age 30	10	20	30	40	50	60	70	80	90	95	99
<b>Life-time income</b>	10.8	16.4	21.9	24.6	28.1	33.3	37.6	45.1	60.4	71.7	87.1

Source: Grattan analysis of Melbourne Institute (2018a).

60 per cent of AWOTE).<sup>387</sup> The transition matrix adjusts this actual earnings data by multiplying the earnings at each five-year age bracket for each earnings percentile by the ratio of the lifetime earnings from the transition matrix (see Table C.1) and the lifetime income from the ATO sample file.

Applying the transition matrix to account for movement up and down the income distribution over a working life flattens the lifetime earnings distribution. High-income workers at age 30 have a good chance of moving down the earnings distribution at some stage during their working life, and low-income workers at age 30 are likely to move up the distribution, at least for a period – for example, if they switch from part- to full-time work. (see Figure C.1 on the next page).

Applying the transition matrix to the actual earnings distribution means a person starting at the 10<sup>th</sup> percentile at age 30 will earn around 11 times AWOTE over their working life. Without the transition matrix, a person starting at the 10<sup>th</sup> percentile at age 30 and remaining at the 10<sup>th</sup> percentile will earn only eight times AWOTE. To put this

387. ABS (2018b). We use the term 'employment earnings distribution' rather than 'income distribution' because we obtain wage and salary data from the ATO sample file.

lifetime earnings into context, the national minimum wage was \$34,251 in 2015-16, or about 44 per cent of AWOTE. Someone at the 10<sup>th</sup> percentile has an income equivalent to working three days a week at the minimum wage. A person on the full-time minimum wage for 37 years has lifetime earnings of 16.3 AWOTE, which is around what the person starting at the 20<sup>th</sup> percentile at age 30 would earn over their life (after applying the transition matrix).

### Average wage growth

We assume wage growth of 2 per cent in 2015-16, increasing to 3.5 per cent in 2020-21, in line with forecasts in the 2018 Budget.<sup>388</sup> Wages then grow at the long-term rate of 3.5 per cent a year from 2021-22. The long-run growth in wages is 0.5 percentage points lower than the projection in the Intergenerational Report.<sup>389</sup> The AWOTE proportion for each age and income combination obtained from the transition matrix is then multiplied by the wage index obtained from these wage growth assumptions.

In years where the legislated rate of the Superannuation Guarantee increases, wage growth is reduced by the amount of the increase in the Super Guarantee.<sup>390</sup> For example, when the Super Guarantee increases by 0.5 percentage points in July 2021, wages growth falls from the long-run forecast of 3.5 per cent to 3 per cent for that year only.

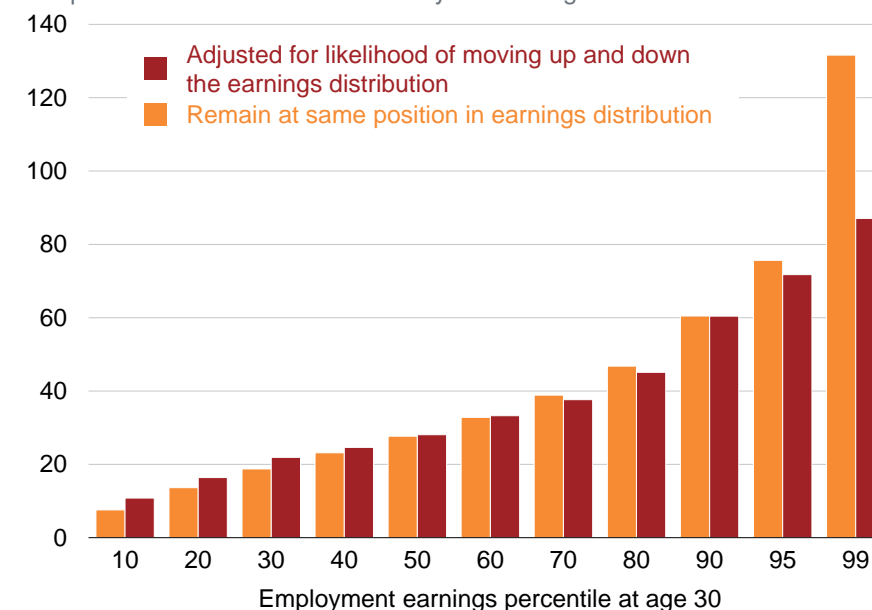
388. Treasury (2018c, Table 2).

389. Hockey (2015). The long-run wage assumption in the Intergenerational Report is made up of 2.5 per cent inflation and 1.5 per cent productivity growth per year (nominal wage growth = (1+CPI growth) × (1+productivity growth)-1). Our assumption of long-run wage growth of 3.5 per cent implicitly assumes long-run productivity growth of approximately 1 per cent.

390. Increases to the Super Guarantee Charge are mostly passed through to workers in the form of lower wages: Potter (2016), Keegan and Brown (2012), Freebairn (2007) and Treasury (2009).

**Figure C.1: Lifetime incomes are more equal when adjusted for likely moves up and down the income distributions**

Multiple of AWOTE earned over a 37-year working life



Notes: Lifetime income adjusted using a transition matrix which reflects the likelihood of moving up and down the income distribution over the course of a person's working life.

Sources: Grattan analysis of ATO (2016); ABS (2018a); HILDA (2017); Fair Work Commission (2015).

## Personal income tax

We model personal income tax, the Low Income Tax Offset (LITO), the Medicare levy, and the Seniors and Pensioners Tax Offset. The personal income tax rates and thresholds are as legislated in 2015-16. Personal income tax thresholds increase in line with wage growth outside the forward estimates.<sup>391</sup> After retirement, personal income tax liabilities are paid using non-super savings. While working, taxes are paid using employment income.

### C.4.3 Superannuation – accumulation phase

#### Superannuation Guarantee

The Superannuation Guarantee Charge is set at 9.5 per cent in 2015-16, and rises in 0.5 percentage-point increments from July 2021 to reach 12 per cent in July 2025. To account for the Super Guarantee not being paid on overtime and not being paid to very-low income earners,<sup>392</sup> the observed effective rate in the 2013-14 ATO sample file is used (see Table C.2).<sup>393</sup>

A report from Industry Super Australia (ISA) has suggested that underpayment of super is significant.<sup>394</sup> However, we have not made an allowance for underpayment beyond any which is contained in the ATO sample file. The Superannuation Guarantee Cross Agency Working Group found that the ISA report is likely to substantially overstate the actual size of the Superannuation Guarantee gap.<sup>395</sup>

For high-income workers, if the Super Guarantee payments by employers are above the legislated maximum that needs to be paid

391. That is, from 2020-21.

392. An employer is only required to pay their employee the Superannuation Guarantee if they pay them \$450 or more in a calendar month. ATO (2015b).

393. ATO (2017).

394. Industry Super Australia (2016b).

395. Superannuation Guarantee Cross Agency Working Group (2017).

**Table C.2: The effective Super Guarantee rate is lower than the legislated rate**

Per cent

<b>Legislated SG rate</b>	9.5	10	10.5	11	11.5	12
<b>Effective SG rate</b>	9.2	9.7	10.2	10.6	11.1	11.6

Source: Grattan analysis of ATO (2016a).

by an employer (\$19,307.80 per year in 2015-16), we assume that the employer continues to pay the effective Super Guarantee rate.<sup>396</sup> This occurs even if the additional contributions are above the pre-tax (concessional) contributions cap.

#### Voluntary pre-tax super contributions

GRIP includes voluntary pre-tax super contributions made by the individual through their working life. These contributions are based on observed pre-tax contributions from the 2013-14 ATO sample file.<sup>397</sup> These pre-tax contributions are added to the model as a proportion of employment earnings, by five-year age groups and employment earnings percentiles. For example, a person aged 55-59 in the 60<sup>th</sup> employment earnings percentile contributes 6.5 per cent of their employment earnings as voluntary pre-tax contributions.

This assumption is based on mean contributions from the ATO sample file rather than the median, because the mean will be a better proxy of lifetime voluntary contributions behaviour. For example, many older people will make a large voluntary contribution to super in only a small number of years, and using the median annual contribution would not accurately capture the impact of this behaviour.

396. ATO (2018c).

397. Only includes employees who earn more than \$100 per week.

In years where the Super Guarantee increases, we reduce voluntary pre-tax contributions by 30 per cent of the increase in Super Guarantee contributions. This is in line with the evidence that an increase in the Super Guarantee reduces other non-super savings by about 30 per cent.<sup>398</sup> For individuals whose voluntary contributions would normally be close to zero, we do not assume any offsetting reduction in saving outside super.

### Total pre-tax super contributions

The government imposed a concessional contributions cap of \$25,000 per annum from 1 July 2017.<sup>399</sup> This cap is indexed in line with AWOTE, rounded down to the nearest \$2,500. If voluntary pre-tax contributions plus Super Guarantee contributions exceed this cap, then the contributions are counted as excess contributions and are taxed at the individual's marginal tax rate. Unused concessional contributions 'carry-forward' on a rolling basis for five years. Catch-up concessional contributions are also restricted if the individual's total superannuation balance is greater than \$500,000.<sup>400</sup>

### After-tax super contributions

GRIP does not model after-tax (non-concessional) contributions during working life. This has the effect of underestimating voluntary super savings, especially among wealthier workers,<sup>401</sup> reducing their replacement rates in GRIP.

Instead, after-tax super contributions are calculated as a residual of accrued non-super savings during the person's working life, and are

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398. Connolly (2007) and Potter (2016). Calculated as  $0.3 \times (\text{Change in Super Guarantee rate})$ .

399. ATO (2018d).

400. ATO (2018e).

401. For example, those with super balances of more than \$500,000 made more than half of all post-tax super contributions (Daley et al. (2015, Figure 5.2)).

imputed to the person five years before retirement (see Appendix C.4.4 on the next page). From an individual's accumulated non-super savings at age 64, individuals transfer as much as possible into their superannuation accumulation account as an after-tax contribution.

There are limits on non-concessional super contributions. There is an annual non-concessional contributions cap (\$100,000 from 1 July 2017, indexed to four times the pre-tax annual contributions cap). This cap can be brought forward by three years in a single year (so a maximum of \$300,000 in one year). Any excess contributions made in the previous three years before the lump sum contribution made at age 65 are counted as part of the three-year bring forward (this reduces the lump sum after-tax contribution).

The individual is also restricted from making after-tax contributions if their total superannuation balance is above the transfer balance cap.

After putting as much as possible into their superannuation account, any remaining non-super savings are left outside of super.

### Super fees

A fixed annual fee of \$320, indexed to CPI, applies each year a super contribution is made during the accumulation phase. If the person does not make a super contribution in a particular year they do not incur a fixed fee.<sup>402</sup> In the pension phase, the fixed fee is charged when the individual has a positive superannuation balance (if the individual has a super pension and a super accumulation account in retirement then the fixed fee is charged on both accounts).

Variable fees are implicit in the assumed net rate of return of 6.5 per cent (before tax) in the accumulation phase.

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402. This prevents the model from giving negative super balances for individuals with nil or low contributions.

## Insurance

We have assumed that a flat amount of \$340, indexed to CPI, is subtracted from superannuation contributions in each year of working life to fund insurance premiums. This includes life insurance, total and permanent disablement insurance and income protection insurance.

This assumption is consistent with cameos used by the Productivity Commission based on 'light blue collar' death and disability insurance premiums, calibrated from Rice Warner data.<sup>403</sup> Our assumed level of insurance premiums is somewhat higher than that used in a cameo by Treasury in the Commonwealth Budget.<sup>404</sup> The sensitivity to higher insurance premiums is illustrated in Appendix D.2 on page 122.

## Superannuation taxes

GRIP includes various superannuation taxes: the contributions tax of 15 per cent, excess contributions (beyond the legislated concessional and non-concessional contributions caps) tax, and Division 293 tax. Low-income earners are also eligible for the Low Income Superannuation Tax Offset (LISTO).

Taxes on earnings within the superannuation fund are also modelled. Capital gains discounts, franking credits and other factors in the tax system mean that the level of actual earnings tax within a superannuation account will be lower than the headline earnings tax rate of 15 per cent. This model assumes that the effective tax rate for a superannuation account is 53 per cent of the headline rate. Grattan's 2015 report, *Super Tax Targeting*, discusses this assumption in more detail.<sup>405</sup>

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403. Productivity Commission (2018a, Box 1.6).

404. Treasury (2018d, p. 15).

405. Daley et al. (2015).

## Earnings

The assumed superannuation earnings rate is 6.5 per cent while working. This is before tax and after fees (excluding the annual fixed fee). Our earnings parameter is comparable to the earnings parameter used in other retirement incomes models.<sup>406</sup> Sensitivity to lower returns is illustrated in Appendix D.1 on page 122.

### C.4.4 Non-super savings

As recognised in earlier Grattan Institute work, many (particularly wealthier) individuals save a significant amount outside of superannuation (Appendix A).<sup>407</sup> To account for this, GRIP includes non-super savings of the representative individual accrued during their working life.

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. Household assets included are: non-super financial assets, other property equity, and business and trusts.<sup>408</sup> Non-super savings 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. The median value of non-super savings of each earnings percentile is calculated at age 60-64 (Figure C.2 and Figure C.3 on

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406. For example, Rothman (2012, p. 14) assume 6.5 per cent; Burnett et al. (2014, p. 15) assume 6.4 per cent pre-retirement and 6.5 per cent post-retirement; Actuaries Institute (2015, p. 42) assume 7.2 per cent; Rice Warner (2015, p. 26) assume 6.85 per cent. ASFA (2018a) find that superannuation returns have averaged 8.0 per cent over the 30 years to 2018.

407. For example, see Grattan's submission to the Inquiry into the Superannuation (Objective) Bill 2016. Daley and Coates (2016).

408. Personal effects are not included in non-super savings (which are drawn down in retirement), but are included in the Age Pension assets test.

the following page). Non-super savings in 2013-14 are expressed as a proportion of AWOTE (so future non-super savings grow in line with wages for future retirees).

The wealth of the individual is used, rather than income, because wealth is a better proxy for lifetime income at age 60-64, where individuals could have reduced hours or could be retired (*i.e.* the assets for a modelled individual in the 10<sup>th</sup> income percentile at age 60-64 are based on the assets of someone in the 10<sup>th</sup> percentile by wealth at age 60-64).<sup>409</sup> Using wealth as a proxy for lifetime income could lead to some mis-allocation of non-super savings by income percentile. For example, it may be the case that many business owners will have relatively low wage and salary income at age 30, but high wealth at age 60. These individuals are also likely to hold significant levels of non-super assets (particularly property). If this is the case, we may be allocating non-super savings to a higher income decile than that of the person who actually holds them. The likely effect of a mis-allocation would be that GRIP overstates replacement ratios at high-income deciles and understates replacement ratios at low-income deciles. Figure D.7 on page 127 shows the impact on replacement rates were non-super savings completely excluded from GRIP, and thus gives an upper limit for the impact of a mis-allocation of non-super savings (which is quite small for all except for the 95<sup>th</sup> and 99<sup>th</sup> percentiles). Any bias will be offset by the exclusion of post-tax super contributions behaviour from GRIP (Appendix C.4.3 on page 114).

We impute an individual's non-super savings five years before retirement. Individuals then transfer as much of these non-super

savings into superannuation as they can, subject to non-concessional contributions caps and the total superannuation balance restrictions.<sup>410</sup>

Individuals receive returns on these non-super savings from age 65 onwards. The earnings return is 6.5 per cent while working and 5.5 per cent in retirement (after fees), and the earnings are taxed at personal income tax rates.

## C.5 Income in retirement

The individual draws down on their accumulated superannuation and non-super savings in retirement. The person does not draw down on the equity in their home.

### C.5.1 Superannuation – retirement phase

Individuals transfer their accumulation balance into a pension phase account, subject to the transfer balance cap (\$1.6 million in 2017), when they retire at age 67.<sup>411</sup> Any remaining super above the transfer balance cap is left in the individual's super accumulation account.

The base case involves constant (CPI-adjusted) withdrawals from accumulated super in the pension account and the accumulation account (and from non-super savings). This is a similar income stream to that from a CPI-indexed annuity. In addition, the individual receives Age Pension payments (if eligible). As the Age Pension is indexed to wage growth, the individual's retirement income increases in real terms during their retirement (particularly for lower-income earners that receive a larger share of their retirement income from the Age Pension).<sup>412</sup>

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409. The sorting of non-super savings by age and wealth percentile is according to the whole wealth distribution (from the Survey of Income and Housing), not the wealth distribution of those with employment earnings. This is a conservative estimate and probably understates the true amount of non-super savings for each employment earnings percentile.

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410. ATO (2018e).

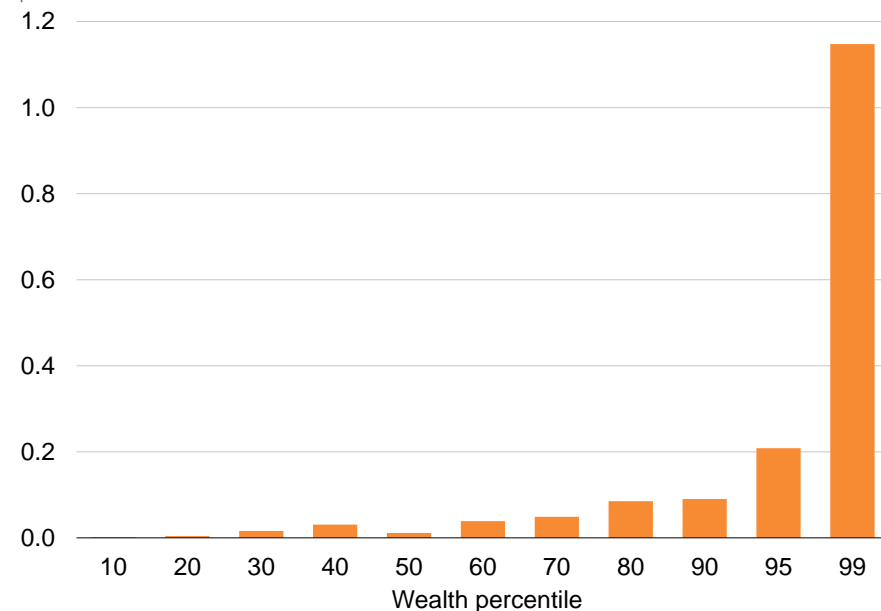
411. ATO (2018f).

412. An alternative is to index the income stream to wage growth, but this creates an even bigger increase in income in retirement in constant dollar terms, because the initial withdrawals are much lower.



**Figure C.2: Assets outside of super are much larger for wealthier individuals**

Non-super assets for individuals aged 60-64 in 2015-16, by wealth percentile, \$2015-16 millions

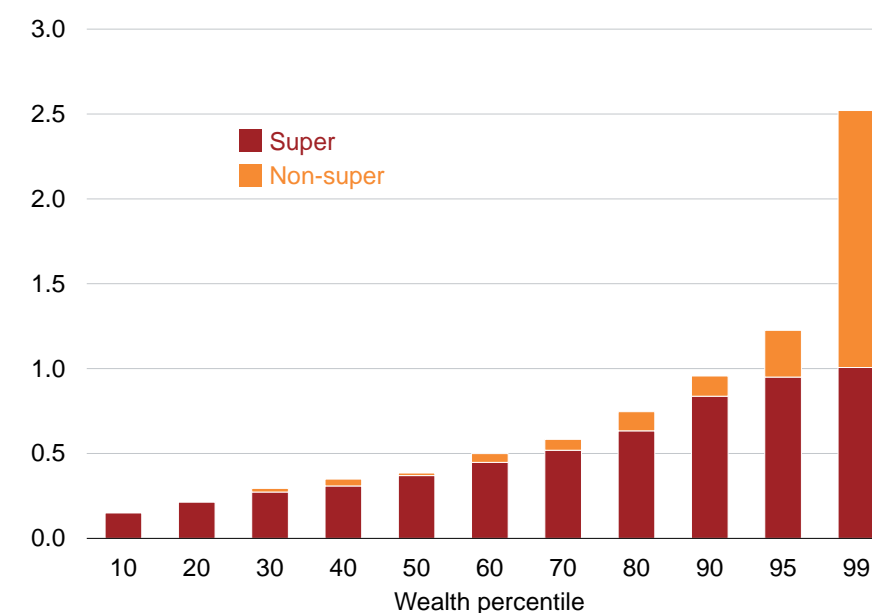


*Notes: Average of the medians of five percentiles around each wealth percentile shown. Value of investment property is only available at the household level, so is apportioned equally to every adult member of the household.*

*Sources: Grattan analysis of ABS (2017c) and Melbourne Institute (2018a).*

**Figure C.3: Non-super assets will be less important than super assets for future retirees**

Assets for individuals aged 60 in 2045-46, by wealth percentile, \$2015-16 millions



*Note: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from age 30 to 67, and dies at age 92.*

*Source: GRIP.*



In the base case, the individual sets a target amount of 10 per cent of their super balance (accumulation plus pension accounts) just after retirement to leave as a bequest.<sup>413</sup>

In the base case, total incomes increase in real terms throughout retirement, due to increases in the amount of Age Pension received. This is both because the maximum pension amount is indexed with wages, and because drawing down savings means the person is eligible for a larger proportion of the full pension.

The effects of lower drawdown throughout retirement are illustrated in Appendix D.3 on page 123.

An alternate scenario might involve a retiree maintaining a constant retirement income in real terms, by drawing down their savings faster in the early years of retirement, then slowing their withdrawals as the amount of pension they receive increases. We have not attempted to model this complex scenario, but it is likely that total CPI-adjusted retirement incomes (and thus replacement rates) under this scenario would be quite close to those in GRIP. Differences would be due to two offsetting effects:

- Age Pension amounts received would be higher, since, in every year of retirement, the person would have less savings than in GRIP, since they draw more down from their savings in the early years.
- Earnings on savings would be lower across retirement, for the same reason.

The net impact is likely to be small and marginally positive.

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413. An alternative scenario we have modelled is draw down of savings at legislated minimum drawdown rates.

### C.5.2 Non-super savings

In the base case, the individual draws down a CPI-indexed constant income stream from accumulated non-super savings. The individual sets a target amount of 10 per cent of their non-super savings just before retirement to leave as a bequest. As most people can transfer all non-super savings into super just before retirement, in the base case only income-earners at or above the 90<sup>th</sup> percentile on the income distribution draw down on non-super savings in retirement.

### C.5.3 Age Pension

Individuals receive the Age Pension if they are older than the Pension Access age (67 in 2055-56) and pass the pension means test. GRIP projects that all low- and middle-income workers will receive a part-pension for a significant portion of their 26-year retirement (see Figure C.4 on the following page).

Figure C.4 on the next page also shows that someone who is at the 10<sup>th</sup> percentile of the earning distribution at age 30 will commence retirement with only a part-pension.<sup>414</sup> In contrast, around 39 per cent of over-65s receive the maximum-rate Age Pension today.<sup>415</sup> GRIP projects a lower proportion of retirees in future commencing retirement with a maximum-rate Age Pension:

- The Age Pension assets test and income test thresholds are indexed to CPI, while GRIP assumes population incomes grow in line with wages. Thus, by the time the current 30-year-old cohort

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414. A cross-check against the ASIC *Money Smart* Retirement Planner tool also shows that someone starting work earning \$25,000 at age 30, and working for 37 years until age 67, will receive a part-rate pension for the first 9 years of their retirement when using the same baseline assumptions as GRIP (ASIC (2018b)).

415. Rice (2018).

reach retirement, a far lower proportion of retirees will be eligible for the maximum-rate Age Pension.<sup>416</sup>

- Earning percentiles in GRIP are based on the ATO sample file, and thus do not include people who do not file a tax return – around 15 per cent of working-age Australians, generally the lowest earners, who will mostly receive the maximum-rate Age Pension in retirement (See Box 2 on page 46). Many below the 10th percentile will also start retirement receiving the maximum-rate Age Pension.
- The share of retirees aged 67 receiving a maximum-rate Age Pension will be much lower than the share of *all* retirees receiving a maximum-rate Age Pension.

Other projections of pension take-up generally expect the share of retirees receiving the maximum-rate Age Pension to fall to around 30 per cent by 2040.<sup>417</sup> By 2055, this proportion would be expected to fall further again as the Age Pension means test thresholds are indexed to CPI, while population incomes will generally grow faster than CPI.

The Age Pension access age increases from 65 in 2015-16 to 67 in 2023, in line with current government policy.<sup>418</sup>

The pension base rate is benchmarked to the maximum of CPI growth or 27.7 per cent of Male Total Average Weekly Earnings (MTAWE).<sup>419</sup>

In general, we assume MTAWE is indexed to wage growth. An exception is made in years that the Superannuation Guarantee increases. In these years, wage growth is reduced by the amount of the

416. For example, relative to real wages, the value of the Age Pension income and assets test thresholds in 37 years time will be just 69 per cent of what they are now, assuming real wages grow at 1 per cent a year.

417. Rice (2018, Graph 7); and Commission of Audit (2014, Chart 7.1).

418. Baxendale (2018).

419. DSS (2017).

**Figure C.4: GRIP projects that all low- and middle-income workers receive the part-pension for a large part of their retirement**

Per cent of full-rate Age Pension received in retirement, by employment earnings percentile, per year



Note: Pension receipts include Age Pension supplement.

Source: GRIP.

increase in the Super Guarantee, but GRIP assumes that only 75 per cent of the reduction in wage growth will pass through to MTAW. So, for each 1 per cent increase in the Superannuation Guarantee, MTAW is 0.75 per cent lower than otherwise.

Increases in the Superannuation Guarantee are not fully reflected in decreases in MTAW, as some wage earners will have employer contributions that are already higher than the Superannuation Guarantee level: Commonwealth public servants, permanent university staff and some other awards. Also, the Superannuation Guarantee is not always paid on overtime earnings, which are around 5 per cent of MTAW, so a 1 per cent change in ordinary time earnings will cause about a 0.95 per cent change in total earnings.<sup>420</sup>

Age Pension means test thresholds are indexed by CPI (as per current policy). All individuals are single and homeowners for the purpose of the pension payment.

Assessable assets for the purpose of the assets test are calculated as the sum of non-super savings, superannuation assets (in both the accumulation or retirement phase) and personal effects. The value of personal effects at age 60-64 is obtained from the 2013-14 Survey of Income. This value of personal effects is maintained as a proportion of AWOTE during working life. Personal effects are imputed to the individual at age 64 (as with non-super savings), and then grown in line with CPI. Typically only 30 per cent of the value of personal effects is considered as part of the Age Pension assets test.<sup>421</sup>

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420. Previous Treasury modelling of the impact of Superannuation Guarantee increases on pensions also assumed that government pensions don't rise quite as quickly in years when the Superannuation Guarantee increases. Rothman (2011).

421. This is a rule-of-thumb, obtained from discussions with stakeholders.

Assessable income is calculated as employment income plus the deemed income of assessable assets. Deeming rates are assumed to stay at their current level.

The assets test taper is \$1.50 per fortnight for each \$1000 of assets over the threshold in 2015-16 and assumed to rise to \$3 in January 2017 as per government policy (so the taper rate is \$2.25 in 2016-17 and \$3 in all future years).

The Work Bonus is not considered, as the individual does not earn income from work during retirement.

## C.6 Earnings in retirement

In the base case, earnings during retirement are set at 5.5 per cent, after fees and before tax, for funds in the super pension account, the super accumulation account, and non-super savings. Earnings in retirement are lower than earnings during the individual's working life, reflecting a lower risk appetite in retirement.

As per current policy settings, earnings in a super pension account are untaxed. Earnings in a super accumulation account are taxed at 15 per cent, with the effective rate of 53 per cent of the headline rate (approximately 8 per cent) (see Appendix C.4.3 on page 113). Earnings on non-super savings are taxed at the individual's marginal tax rate.

## C.7 Economic parameters

Economic parameters, including wage growth and CPI growth, are based on the outcomes and forecasts published in the 2017-18 Mid-Year Economic and Fiscal Outlook.<sup>422</sup>

After the end of the forward estimates period in 2020-21, wage and CPI growth revert to their assumed long-run growth rates. For CPI, this

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422. Treasury (2017b).

is 2.5 per cent, which is the middle of the RBA's inflation target. For wage growth, the assumed rate is 3.5 per cent, which is the CPI rate multiplied by the assumed level of productivity growth of 1 per cent.<sup>423</sup>

### C.8 Bequests / longevity insurance

The base case in GRIP assumes that a person aims to have 10 per cent of their retirement savings (CPI-adjusted) remaining at age 92.

Individuals draw down their superannuation and non-super assets in equal (CPI-adjusted) amounts to reach this target savings balance.

The target savings balance can be thought of as a target bequest (in addition to the home), or as longevity insurance.

Under the minimum drawdown scenario, individuals leave a substantial bequest, because the individuals all own a home, which is not drawn down on in retirement, and legislated minimum drawdown rates allow for longevity risk (and people in GRIP die at the average life expectancy).

### C.9 Future retirement incomes of today's 40- and 50-year-olds

An extension of the base model is projecting the retirement incomes of working 40- and 50-year-olds in 2015-16.

This model has one key difference from the main model, described above: the super balance of the individual is not \$0 as it is for a 30-year-old, whom we assume begins working at age 30. Super balances by age and employment earnings percentile are obtained from the ATO 2 per cent sample file and imputed to the 40- and 50-year-old individuals in 2015-16.

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423. To account for the general consensus of lower future productivity growth, we assume wages growth of 3.5 per cent rather than the 4.04 per cent that is used in the 2015 Intergenerational Report.

#### C.9.1 Life expectancy

The 40-year-old individual is assumed to die at age 91, which is the life expectancy for someone reaching the age of 70 in 2045, contained in the 2015 Intergenerational Report, averaged across males and females.<sup>424</sup>

The 50-year-old individual is assumed to die at age 90, which is the equivalent life expectancy for someone reaching the age of 70 in 2035.

#### C.9.2 Superannuation

In the base model, the individual is assumed to begin working at age 30 and have a super balance of \$0. In the 40- and 50-year-old models, the individual has accrued superannuation during their working life. Using data from the ATO's 2013-14 2 per cent sample file, we assign a superannuation balance by age and earnings percentile at age 40 and 50.

#### C.9.3 Income throughout lifetime

In determining an expected level of future earnings for a 40- or 50-year-old, we allow for proportionally less overall movement between income deciles than for a 30-year-old.

So, for example, a person in the 10<sup>th</sup> percentile at age 30 will earn 43 per cent more across their working life after applying the transition matrix than without applying the transition matrix. For a person in the 10<sup>th</sup> percentile at age 50, the equivalent increase in future earnings is only 18 per cent, reflecting the lower likelihood of large movements along the earnings distribution after age 50.

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424. Hockey (2015, Table 1.1).

## Appendix D: Sensitivity analysis

### D.1 Lower future investment returns

Policy makers are concerned that future returns on savings may be lower than in the past. A number of studies have pointed to risks of lower returns for future retirement incomes.<sup>425</sup>

While lower returns are a risk to retirement incomes, it does not follow that more generous retirement income policies should make up the difference. Instead, lifetime incomes will be lower across the board.<sup>426</sup>

Given the tight taper rate for the Age Pension assets test, the main impact of lower future returns will be higher Age Pension payments. However, that is better (and cheaper) than boosting the Super Guarantee to offset the risk of lower future returns (see Chapter 9).

Lowering investment returns lowers replacement rates for future retirees (Figure D.1). But lower returns are unlikely to occur without a corresponding decrease in real wages growth (*i.e.* lower productivity growth), and lower inflation.<sup>427</sup> These combinations result in higher replacement rates than with lower investment returns on their own.

### D.2 Insurance costs

A number of reports have highlighted that insurance funded from superannuation can lower future retirement incomes.<sup>428</sup> The GRIP base case allows for fixed annual costs of \$340, indexed to CPI, for insurance premiums.<sup>429</sup> An alternate scenario might assume people

425. See Burnett and Wilkinson (2016).

426. Lower returns to saving imply lower lifetime consumption for those that save for retirement. There is no reason why retirement living standards should be sacrosanct at the expense of living standards during people's working lives.

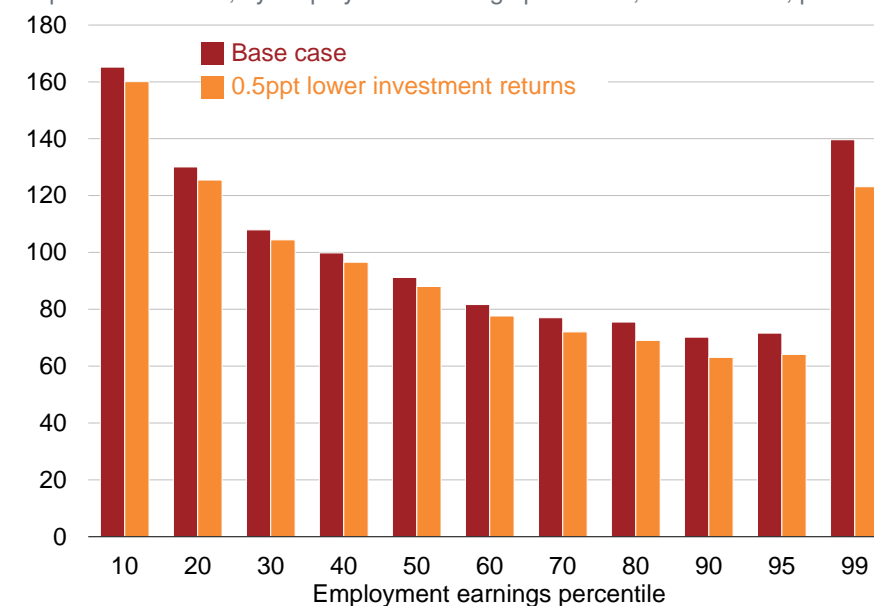
427. Rachel and T. Smith (2015).

428. KPMG (2018).

429. Productivity Commission (2018a, Box 1.6).

**Figure D.1: Lower investment returns reduce replacement rates, particularly for higher-income earners**

Replacement rates, by employment earnings percentile, CPI deflated, per cent



Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. Retirement savings drawn down so that a small bequest is left, in addition to the home.

Source: GRIP.

have, on average, two superannuation accounts, so pay \$680 in insurance premiums. In this scenario, replacement rates would be only slightly lower (see Figure D.2).

### D.3 Retirement incomes are much lower if people choose to draw down on their savings at legislated minimum drawdown rates

The base case assumes a bequest is left at death.<sup>430</sup> In the base case the bequest is 10 per cent of the person's super savings and 10 per cent of non-super savings at retirement, benchmarked to CPI to retain their real value through retirement, plus their home.<sup>431</sup>

An alternative scenario is the person drawing down on their super and non-super savings at legislated minimum drawdown rates, which are much lower than drawdown rates in the base case.<sup>432</sup> Under this scenario, replacement rates are much lower, and bequests are even larger (Figure D.5 on page 125). This is more consistent with the behaviour of *current* retirees, many of whom do not draw down on much of their savings in retirement (Section 3.4 on page 31). However, as noted in Section 2.2 on page 19, the retirement income system should ensure individuals have the resources to sustain their pre-retirement living standard, and should not try to subsidise inheritances.

### D.4 Leaving a larger bequest reduces replacement rates

GRIP assumes the individual leaves a bequest (or it can be considered as longevity insurance) worth 10 per cent of their super and non-super

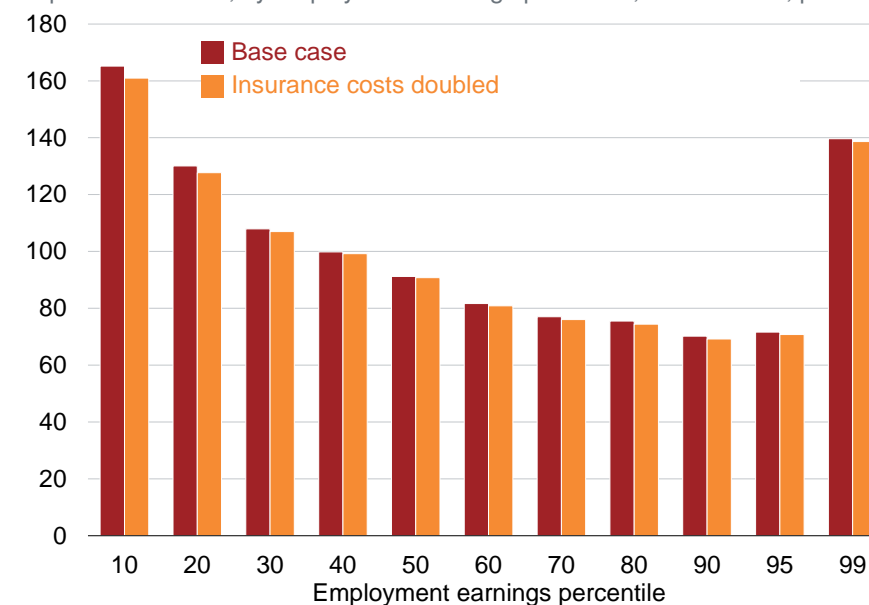
430. This bequest can also be thought of as longevity insurance.

431. For all but the highest-income earners, all non-super savings are put into super five years before retirement. This is realistic as the highest-income earners are likely to leave a proportionally larger bequest.

432. Superannuation industry (supervision) regulations (1994, Schedule 7).

**Figure D.2: Higher insurance premiums within super reduce replacement rates only slightly**

Replacement rates, by employment earnings percentile, CPI deflated, per cent

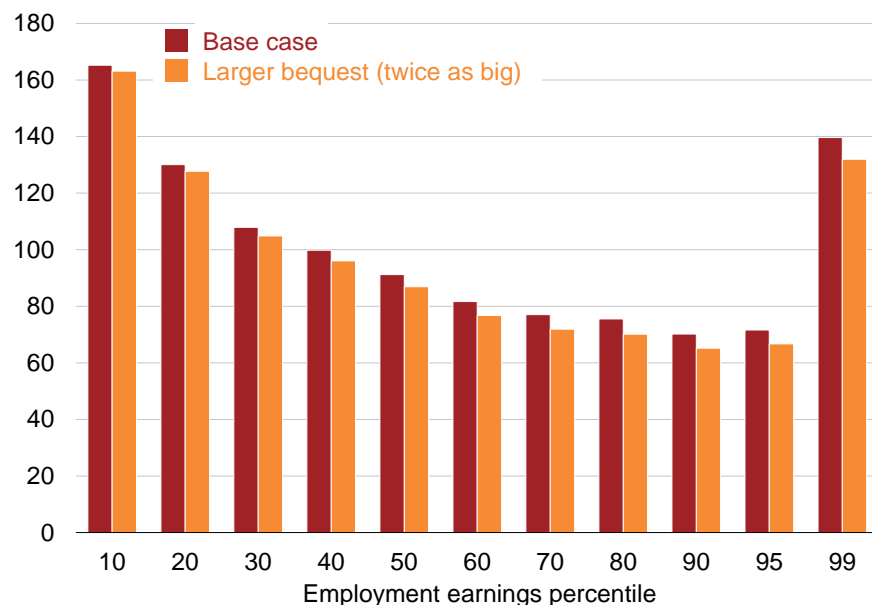


Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. Retirement savings drawn down so that a small bequest is left, in addition to the home.

Source: GRIP.

**Figure D.3: A larger bequest reduces replacement rates, particularly for higher-income earners**

Replacement rates, by employment earnings percentile, CPI deflated, per cent

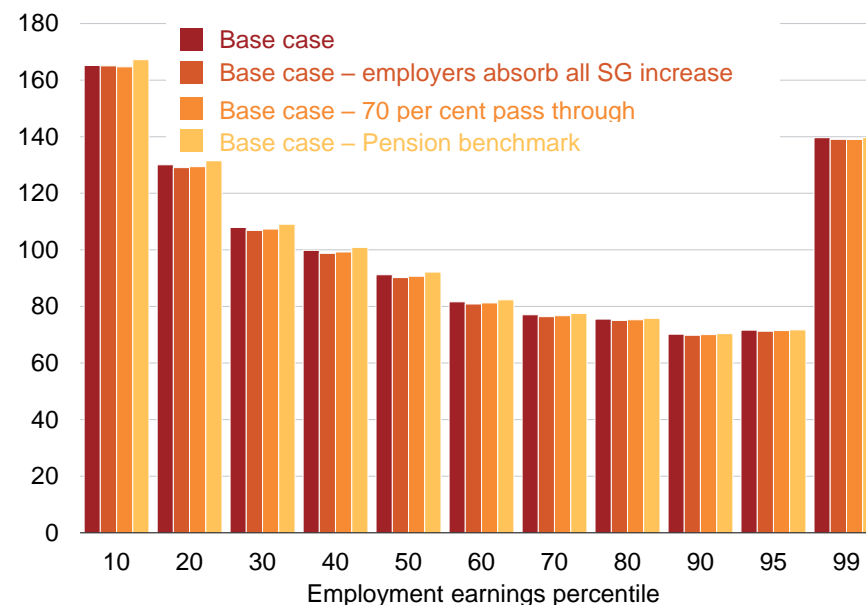


Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. Retirement savings drawn down so that a small bequest is left, in addition to the home.

Source: GRIP.

**Figure D.4: When employers absorb some of the increase in the Super Guarantee, replacement rates are higher**

Replacement rates, by employment earnings percentile, CPI deflated, per cent



Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. Retirement savings drawn down so that a small bequest is left, in addition to the home.

Source: GRIP.



savings at retirement (CPI-adjusted). Doubling this bequest results in lower replacement rates, because less income is drawn from superannuation accounts (Figure D.3 on the previous page).

### D.5 Replacement rates are higher if employers absorb some of the increase in the Super Guarantee

GRIP's base case assumes that wages fall in proportion to the amount of an increase in the Super Guarantee. As some employees have more bargaining power, or may be getting a Super Guarantee above the legislated minimum, employers may absorb some of any increase in the Super Guarantee.

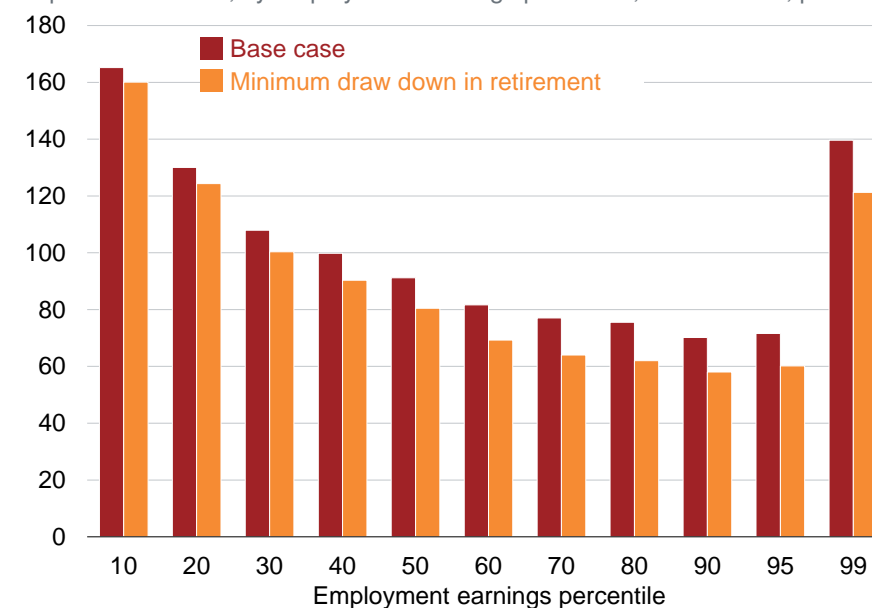
In the case that employers absorb some of the increase, both retirement incomes and working life incomes will be higher than in our base case, because wages are higher. Replacement rates will move only slightly, because the numerator and denominator of the replacement ratio are both higher (Figure D.4 on the preceding page).

We also consider a scenario where wage growth decreases during the years the Super Guarantee increases (as per the base case), but the level of the Age Pension is adjusted by legislation to take into account this fall in wage growth, so that, in effect, the Age Pension ends up at the same level it would have reached had the Super Guarantee remained at 9.5 per cent.

In this case, retirement incomes are higher than in the base case, but working life incomes are no higher. Thus, replacement rates are slightly higher than in the base case, particularly for low- and middle-income earners who benefit from the higher Age Pension.

**Figure D.5: If people don't draw down on their accumulated savings, replacement rates are much lower**

Replacement rates, by employment earnings percentile, CPI deflated, per cent



*Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. In the minimum drawdown scenario, the individual draws down on their super and non-super savings at legislated minimum drawdown rates. In the base case, retirement savings are drawn down so that a small bequest is left, in addition to the home.*

*Source: GRIP.*

## D.6 Replacement rates are lower if a person lives an extra five years

GRIP's base case assumes that individuals draw down their super and non-super assets at a CPI-indexed annuity to leave a target bequest, at age 92.

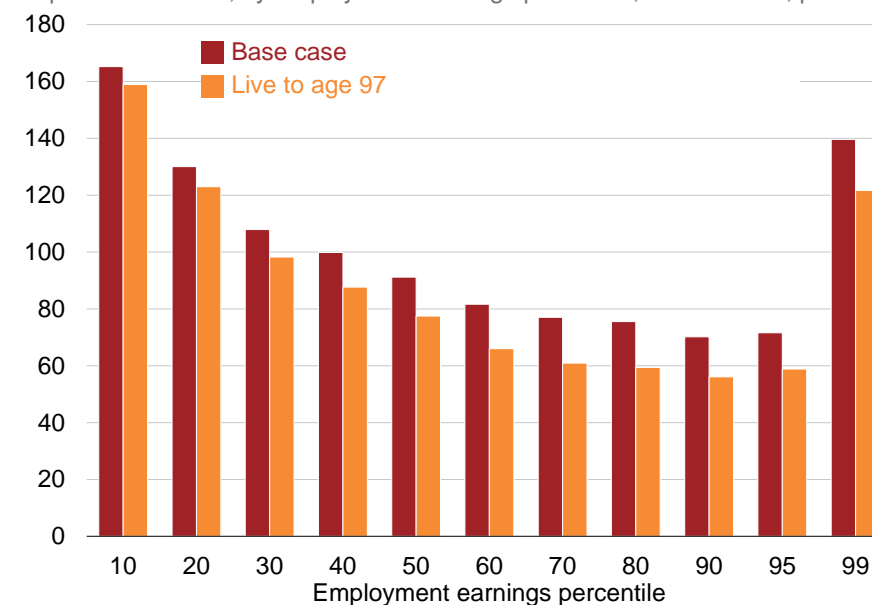
If the individual instead plans their drawdowns to leave the same target bequest, but at a date five years later – that is, they expect to live to 97 – their replacement rate will be significantly lower, because retirement income is spread over a longer period (Figure D.6).

## D.7 Replacement rates are lower for high-income earners if non-super savings are excluded

Including non-super savings boosts replacement rates substantially for high-income earners, but makes relatively little difference in replacement rates for low- and middle-income earners (Figure D.7 on the following page).

**Figure D.6: Replacement rates are lower if a person lives an extra five years**

Replacement rates, by employment earnings percentile, CPI deflated, per cent

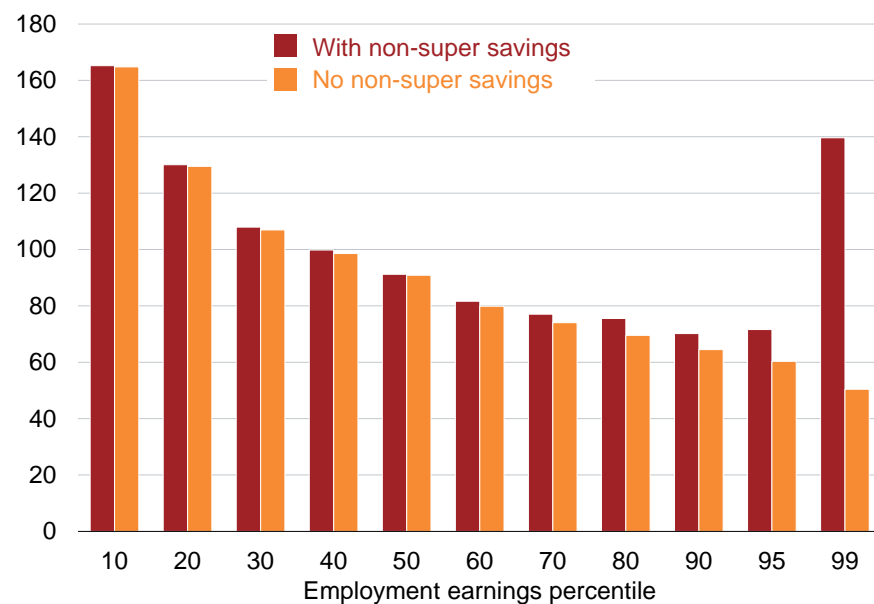


*Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. Retirement savings drawn down so that a small bequest is left, in addition to the home. The alternative scenario assumes retirement savings drawn down so that the same bequest is left at age 97, rather than 92.*

*Source: GRIP.*

**Figure D.7: Replacement rates are lower for high-income earners if non-super savings are excluded**

Replacement rates, by employment earnings percentile, CPI deflated, per cent



*Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 67, and dies at age 92. Retirement savings drawn down so that a small bequest is left, in addition to the home.*

*Source: GRIP.*

## Bibliography

- ABS (2006). *Census of Population and Housing, 2006*. Canberra.
- (2013a). *Population Projections, Australia, 2012 (base) to 2101*. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3222.0>.
- (2013b). *Household Income and Income Distribution, Australia, 2011-12*. <http://www.abs.gov.au/ausstats/abs@.nsf/featurearticlesbytitle/4CAD319AF704B5C7CA257BB80023DE80?OpenDocument>.
- (2016a). *Census of Population and Housing, 2016*. Canberra.
- (2016b). *Household Expenditure Survey and Survey of Income and Housing, User Guide*. <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/6503.0%7B~%7D2015-16%7B~%7DMain%20Features%7B~%7DExpenditure%20comparison%7B~%7D10003>.
- (2017a). *Microdata: Household Expenditure, Income and Housing, 2015-16*.
- (2017b). *Housing Occupancy and Costs, 2015-16*. <http://abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4130.02015-16?OpenDocument>.
- (2017c). *Household Income and Wealth, Australia*. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6523.02015-16?OpenDocument>.
- (2017d). *Australian System of National Accounts, 2016-17*. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5204.02016-17?OpenDocument>.
- (2017e). *Census Quickstats*. [http://quickstats.censusdata.abs.gov.au/census%7B%5C\\_%7Dservices/getproduct/census/2016/quickstat/036](http://quickstats.censusdata.abs.gov.au/census%7B%5C_%7Dservices/getproduct/census/2016/quickstat/036).
- (2018a). *Cat. 6401.0 Consumer Price Index, Australia, March 2018*. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6401.0>.
- (2018b). *Average Weekly Earnings, Australia, May 2018*. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6302.0Main+Features1May%202018?OpenDocument>.
- ACOSS (2016). *Poverty in Australia 2016*. <https://www.acoss.org.au/wp-content/uploads/2016/10/Poverty-in-Australia-2016.pdf>.
- (2018). *Poverty in Australia 2018*. [https://www.acoss.org.au/wp-content/uploads/2018/10/ACOSS\\_Poverty-in-Australia-Report\\_Web-Final.pdf](https://www.acoss.org.au/wp-content/uploads/2018/10/ACOSS_Poverty-in-Australia-Report_Web-Final.pdf).
- ACTU (2016). *Objective of Superannuation*.
- Actuaries Institute (2015). *For richer, For Poorer, Retirement Incomes*. Sydney. <https://www.actuaries.asn.au/Library/Opinion/2015/ForRicherForPoorerRetirementIncomes2WEB.pdf>.
- Aguiar, M. and Hurst, E. (2005). "Consumption vs. Expenditure". *Journal of Political Economy* 113.5, pp. 919–948. <http://www.nber.org/papers/w18693>.
- AIFS (2015). *Inquiry into Economic Security for Women in Retirement: Submission from the Australian Institute of Family Studies*. [http://www.aph.gov.au/Parliamentary%7B%5C\\_%7DBusiness/Committees/Senate/Economics/Economic%7B%5C\\_%7Dsecurity%7B%5C\\_%7Dfor%7B%5C\\_%7Dwomen%7B%5C\\_%7Din%7B%5C\\_%7Dretirement/Submissions](http://www.aph.gov.au/Parliamentary%7B%5C_%7DBusiness/Committees/Senate/Economics/Economic%7B%5C_%7Dsecurity%7B%5C_%7Dfor%7B%5C_%7Dwomen%7B%5C_%7Din%7B%5C_%7Dretirement/Submissions).
- AIHW (2017). *Housing Assistance in Australia 2017*. <https://www.aihw.gov.au/reports/housing-assistance/housing-assistance-in-australia-2017/contents/social-housing-dwellings>.
- Alessie et al. (2013). Alessie, R., Angelini, V. and Santen, P. van. "Pension wealth and household savings in Europe: Evidence from SHARELIFE". *European Economic Review* 63, pp. 308–328.

- Alonso-Garcia et al. (2017a). Alonso-Garcia, J., Bateman, H., Bonekamp, J. and Stevens, R. *Retirement drawdown defaults: the role of implied endorsement*. [https://cepar.edu.au/sites/default/files/2017%7B%5C\\_%7DWP20%7B%5C\\_%7DRetirement%7B%5C\\_%7Ddrawdown%7B%5C\\_%7Ddefaults%7B%5C\\_%7Dthe%7B%5C\\_%7Drole%7B%5C\\_%7Dof%7B%5C\\_%7Dimplied%7B%5C\\_%7Dendorsement.pdf](https://cepar.edu.au/sites/default/files/2017%7B%5C_%7DWP20%7B%5C_%7DRetirement%7B%5C_%7Ddrawdown%7B%5C_%7Ddefaults%7B%5C_%7Dthe%7B%5C_%7Drole%7B%5C_%7Dof%7B%5C_%7Dimplied%7B%5C_%7Dendorsement.pdf).
- Alonso-Garcia et al. (2017b). Alonso-Garcia, J., Bateman, H., Bonekamp, J., Soest, A. van and Stevens, R. *Saving preferences in retirement: the impact of pension policy design and health status*. [http://www.icpmnetwork.com/wp-content/uploads/2017/10/Saving-preferences-in-retirement%5C\\_Aug-2017%5C\\_AlonsoGarcia%5C\\_Bateman-et-al.pdf](http://www.icpmnetwork.com/wp-content/uploads/2017/10/Saving-preferences-in-retirement%5C_Aug-2017%5C_AlonsoGarcia%5C_Bateman-et-al.pdf).
- Antolin, P. (2009). *Private Pensions and the Financial Crisis: How to Ensure Adequate Retirement Income from DC Pension Plans*. OECD. <https://www.oecd.org/daf/fin/44628862.pdf>.
- ASFA (n.d.). *ASFA Retirement Standard*. <http://www.superannuation.asn.au/resources/retirement-standard/>.
- (2014). *Response to the Financial System Inquiry Interim Report*. [http://www.superannuation.asn.au/ArticleDocuments/1229/ASFA%7B%5C\\_%7DResponseFSI%7B%5C\\_%7DAugust2014%7B%5C\\_%7DSummary.pdf.aspx..](http://www.superannuation.asn.au/ArticleDocuments/1229/ASFA%7B%5C_%7DResponseFSI%7B%5C_%7DAugust2014%7B%5C_%7DSummary.pdf.aspx..)
- (2015a). *Submission to the Senate Standing Committees on Economics Inquiry into Economic Security for Women in Retirement*. [http://www.aph.gov.au/Parliamentary%7B%5C\\_%7DBusiness/Committees/Senate/Economics/Economic%7B%5C\\_%7Dsecurity%7B%5C\\_%7Dfor%7B%5C\\_%7Dwomen%7B%5C\\_%7Din%7B%5C\\_%7Dretirement/Submissions](http://www.aph.gov.au/Parliamentary%7B%5C_%7DBusiness/Committees/Senate/Economics/Economic%7B%5C_%7Dsecurity%7B%5C_%7Dfor%7B%5C_%7Dwomen%7B%5C_%7Din%7B%5C_%7Dretirement/Submissions).
- (2015b). *ASFA Retirement Standard*. <http://www.superannuation.asn.au/resources/retirement-standard/>.
- (2018a). *Another good year for Australia's super savers*. <https://www.superannuation.asn.au/media/media-releases/2018/media-release-30-august-2018>.
- (2018b). *2018 ASFA Retirement Standard Budgets Review*. <https://www.superannuation.asn.au/ArticleDocuments/269/2018-ASFA-Retirement-Standard-Budgets-Review.pdf.aspx?Embed=Y>.
- (2018c). *ASFA Retirement Standard*. <https://www.superannuation.asn.au/ArticleDocuments/269/ASFA-RetirementStandard-Summary-2018.pdf.aspx?Embed=Y>.
- (2018d). *Grattan condemns women to relying on rental handouts in later life*. <https://www.superannuation.asn.au/media/media-releases/2018/media-release-9-february-2018>.
- Asher et al. (2017). Asher, A., Meyricke, R., Thorp, S. and Wu, S. "Age pensioner decumulation: Responses to incentives, uncertainty and family need". *Australian Journal of Management* 42.4, pp. 583–607.
- ASIC (2018a). *How much is enough?* <https://www.moneysmart.gov.au/superannuation-and-retirement/how-super-works/super-contributions/how-much-is-enough>.
- (2018b). *Retirement Planner*. <https://www.moneysmart.gov.au/tools-and-resources/calculators-and-apps/retirement-planner>.
- ATO (2015a). *Beneficiary tax offset and seniors and pensioners tax offset calculator*. <https://www.ato.gov.au/Calculators-and-tools/Beneficiary-tax-offset-and-seniors-and-pensioner-tax-offset-calculator/>.
- (2015b). *Working out if you have to pay super*. <https://www.ato.gov.au/Business/Super-for-employers/Working-out-if-you-have-to-pay-super/>.
- (2016a). *The 2013–14 individuals' sample file*. Ed. by A. G. Australian Taxation Office. <https://data.gov.au/dataset/taxation-statistics-individual-sample-files/resource/39678fd4-26b3-41fc-8a61-b63c029fa93a>.
- (2016b). *The 2015–16 individuals' sample file*. Ed. by A. G. Australian Taxation Office.
- (2017). *Super guarantee*. <https://www.ato.gov.au/Rates/Key-superannuation-rates-and-thresholds/?page=23>.

- ATO (2018a). *The 2014–15 individuals' sample file*. Ed. by A. G. Australian Taxation Office. <https://data.gov.au/dataset/taxation-statistics-2014-15/resource/beffd0d1-d852-4470-8598-836edf7caeb7>.
- (2018b). *Minimum annual payments for super income streams*. <https://www.ato.gov.au/Rates/Key-superannuation-rates-and-thresholds/?page=10>.
- (2018c). *Maximum super contribution base*. <https://www.ato.gov.au/Rates/Key-superannuation-rates-and-thresholds/?page=25>.
- (2018d). *Concessional contributions cap*. <https://www.ato.gov.au/rates/key-superannuation-rates-and-thresholds/?anchor=Concessionalcontributionscap#Concessionalcontributionscap>.
- (2018e). *Total superannuation balance*. <https://www.ato.gov.au/individuals/super/in-detail/withdrawing-and-paying-tax/super-contributions---too-much-can-mean-extra-tax/?page=5>.
- (2018f). *Contributions caps*. <https://www.ato.gov.au/Rates/key-superannuation-rates-and-thresholds/?anchor=Contributionscaps#Contributionscaps>.
- Attorney-General's Department (2016). *Superannuation Splitting Laws – Frequently Asked Questions*. <https://www.ag.gov.au/FamiliesAndMarriage/Families/SuperSplitting/Documents/Superannuation%20splitting%20frequently%20asked%20questions.pdf>.
- Austen, S. and Sharp, R. (2017). "Budgeting for women's rights in retirement". *Tax, Social Policy, and Gender*. ANU Press, pp. 293–324. <http://press-files.anu.edu.au/downloads/press/n3959/pdf/book.pdf?referer=3959>.
- Auster, A. and Maddock, E. (2016). *Expenditure Patterns in Retirement*. [http://www.aist.asn.au/media/16660/AIST%7B%5C\\_%7DExpendsRetirement%7B%5C\\_%7DAug16%20WEB.pdf](http://www.aist.asn.au/media/16660/AIST%7B%5C_%7DExpendsRetirement%7B%5C_%7DAug16%20WEB.pdf).
- Bagshaw, E. (2018). 'Freeze has gone on too long': John Howard calls for dole increase. <https://www.smh.com.au/politics/federal/freeze-has-gone-on-too-long-john-howard-calls-for-a-dole-increase-20180509-p4ze83.html>.
- Banks et al. (1998). Banks, J., Blundell, R. and Tanner, S. "Is there a retirement-savings puzzle?" *American Economic Review* 88.4, pp. 769–788. <https://www.jstor.org/stable/117005>.
- Baxendale, R. (2018). "Scott Morrison to ditch Coalition policy to raise retirement age to 70". *The Australian*. <https://www.theaustralian.com.au/national-affairs/scott-morrison-to-ditch-coalition-policy-to-raise-retirement-age-to-70/news-story/9e9ebceddee344daf61110596d3e4158>.
- Blanchett, D. (2014). "Exploring the Retirement Consumption Puzzle". *Journal of Financial Planning*.
- Bowden, E. (2014). *Maximise your super contributions at any income*. <https://thenewdaily.com.au/money/superannuation/2014/08/13/maximise-super-contributions/>.
- Bradbury, B. (2004). "Consumption and the Within-household Income Distribution: Outcomes from an Australian "Natural Experiment"". *CESifo Economic Studies* 50.3, pp. 501–540. <https://ideas.repec.org/a/oup/cesifo/v50y2004i3p501-540..html>.
- Bradbury, B. and Mendiola, S. (2012). *Living standards after retirement: perceptions and expenditure patterns*. [https://www.melbourneinstitute.com/downloads/hilda/Bibliography/Other%7B%5C\\_%7DPublications/2012/Bradbury%7B%5C\\_%7DExpenditureCostsFinalReport.pdf](https://www.melbourneinstitute.com/downloads/hilda/Bibliography/Other%7B%5C_%7DPublications/2012/Bradbury%7B%5C_%7DExpenditureCostsFinalReport.pdf).
- Bray, R. (1997). *Estimating the Impact of Increased Expenditure on Rent Assistance on Rental Prices & Demand*.
- Bray, J. R. and Gray, M. (2016). *Ageing and Money - Public opinion on pensions, inheritance, financial wellbeing in retirement and caring for older Australians*. [http://csrcm.cass.anu.edu.au/sites/default/files/docs/ANUPoll-ageing-money-feb-2016%7B%5C\\_%7D0.pdf](http://csrcm.cass.anu.edu.au/sites/default/files/docs/ANUPoll-ageing-money-feb-2016%7B%5C_%7D0.pdf).

- Breunig, R. and McKibben, R. (2012). "Income Pooling between Australian Young Adults and Their Parents". *Review of Labour Economics & Industrial Relations* 26.2, pp. 235–265. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-9914.2011.00541.x>.
- Burnett et al. (2014). Burnett, J., Davis, K., Murawski, C., Wilkins, R. and Wilkinson, N. *Measuring adequacy of retirement savings*. Melbourne. [https://www.melbourneinstitute.com/downloads/working%7B%5C\\_%7Dpaper%7B%5C\\_%7Dseries/wp2014n05.pdf](https://www.melbourneinstitute.com/downloads/working%7B%5C_%7Dpaper%7B%5C_%7Dseries/wp2014n05.pdf).
- Burnett, J. and Wilkinson, N. (2016). *Retirement income adequacy - are we still making progress?* Melbourne. <https://www.towerswatson.com/DownloadMedia.aspx?media=%7B%5C%7D7B63745DB9-A879-4FC1-8386-76B04B48CBDA%7B%5C%7D7D>.
- Carling, R. (2015). *Right or Rort? Dissecting Australia's Tax Concessions*. <http://www.cis.org.au/images/stories/research-reports/rr2.pdf>.
- Cassells et al. (2015). Cassells, R., Duncan, A. and Ong, R. *Submission to the Senate Standing Committees on Economics Inquiry into Economic Security for Women in Retirement*. <http://bcec.edu.au/assets/BCEC-Submission-Economic-Security-for-Women-Final.pdf>.
- Chomik, R. (2014). *The pension age is rising to 70: a case of one size fits some*. <https://theconversation.com/the-pension-age-is-rising-to-70-a-case-of-one-size-fits-some-25537>.
- Chomik, R. (2018). *Retiring at 70 was an idea well ahead of its time*. <https://theconversation.com/retiring-at-70-was-an-idea-well-ahead-of-its-time-102704>.
- Chomik, R. and Piggott, J. (2016). *Retirement Income Adequacy: Concepts and Measurement*. [https://www.cepar.edu.au/sites/default/files/Retirement%7B%5C\\_%7DIncome%7B%5C\\_%7DAdequacy.pdf](https://www.cepar.edu.au/sites/default/files/Retirement%7B%5C_%7DIncome%7B%5C_%7DAdequacy.pdf).
- Chomik et al. (2018). Chomik, R., Graham, S., Bateman, H., Piggott, J. and Yan, S. *Retirement income in Australia: Part II – Public support*.
- Chung, F. (2016). *Super funds launch 'pledge drive'*. <https://www.news.com.au/finance/superannuation/super-funds-launch-pledge-drive/news-story/994650ea593c07441c8b3cdd67170177>.
- Clare, R. (2008). *The Age Pension, superannuation and Australian retirement incomes*. <https://www.superannuation.asn.au/ArticleDocuments/359/rc0901-age-pension.pdf.aspx?Embed=Y>.
- (2017). *Superannuation account balances by age and gender*. [https://www.superannuation.asn.au/ArticleDocuments/359/1710%7B%5C\\_%7DSuperannuation%7B%5C\\_%7Daccount%7B%5C\\_%7Dbalances%7B%5C\\_%7Dby%7B%5C\\_%7Dage%7B%5C\\_%7Dand%7B%5C\\_%7Dgender.pdf.aspx?Embed=Y](https://www.superannuation.asn.au/ArticleDocuments/359/1710%7B%5C_%7DSuperannuation%7B%5C_%7Daccount%7B%5C_%7Dbalances%7B%5C_%7Dby%7B%5C_%7Dage%7B%5C_%7Dand%7B%5C_%7Dgender.pdf.aspx?Embed=Y).
- Clarke, P. and Leigh, A. (2011). "Death, dollars and degrees: socio-economic status and longevity in Australia". *Economic Papers* 30.3, pp. 348–355. <http://andrewleigh.org/pdf/DeathDollarsDegrees.pdf>.
- Coates, B. (2018a). *What's the best way to close the gender gap in retirement incomes?* Grattan Institute. <https://grattan.edu.au/news/whats-the-best-way-to-close-the-gender-gap-in-retirement-incomes/>.
- (2018b). *Housing tax reform: What will make a difference?* <https://grattan.edu.au/wp-content/uploads/2018/07/NSW-Affordable-Housing-Conference-Housing-taxation-27-June-2018-Grattan-web.pdf>.
- Coates et al. (2018a). Coates, B., Daley, J. and Chen, T. *To make housing more affordable this is what state governments need to do*. <https://theconversation.com/to-make-housing-more-affordable-this-is-what-state-governments-need-to-do-105050>.
- Coates, B. and Emslie, O. (2018). *Super. If Labor really wanted to help women in retirement, it would do something else*. <https://theconversation.com/super-if-labor-really-wanted-to-help-women-in-retirement-it-would-do-something-else-103603>.
- Coates, B. and Wiltshire, T. (2018). *The Conventional Wisdom Is Wrong: Building More Housing Does Help Low-Income Earners*. Inside Story. <http://insidestory.org.au/the-conventional-wisdom-is-wrong-building-more-housing-does-help-low-income-earners/>.
- Coates et al. (2018b). Coates, B., Daley, J. and Wiltshire, T. "Not so super". *Inside Story*. <http://insidestory.org.au/not-so-super/>.



- Cole, A. (2015). *Estate and Inheritance Taxes around the World*. Tax Foundation.  
[https://files.taxfoundation.org/legacy/docs/TaxFoundation\\_FF458.pdf](https://files.taxfoundation.org/legacy/docs/TaxFoundation_FF458.pdf).
- Collett, J. (2016). *Australians dream of early retirement but can't afford it*.  
<https://www.smh.com.au/money/australians-dream-of-early-retirement-but-cant-afford-it-20160225-gn3hph.html>.
- Commission of Audit (2014). *Towards responsible government: The report of the National Commission of Audit: phase one*.
- Committee for Sustainable Retirement Incomes (2016). *Pursuing Adequate Retirement Incomes for All: Policy Recommendations*.  
<https://cfsri.files.wordpress.com/2015/09/csri-adequacy-position-paper-final-20161006.pdf>.
- Community Affairs Legislation Committee (2018). *Official Committee Hansard*. The Senate.  
[https://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/a5d869b6-8275-46ad-837b-54c362066f4a/toc\\_pdf/Community%20Affairs%20Legislation%20Committee\\_2018\\_03\\_01\\_5948\\_Official.pdf](https://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/a5d869b6-8275-46ad-837b-54c362066f4a/toc_pdf/Community%20Affairs%20Legislation%20Committee_2018_03_01_5948_Official.pdf).
- Connolly, E. (2007). *The Effect of the Australian Superannuation Guarantee on Household Savings Behaviour*.  
<http://www.rba.gov.au/publications/rdp/2007/2007-08.html>.
- Cooper Review (2013). *A Super Charter: Fewer Changes, Better Outcomes*.  
[http://www.treasury.gov.au/Policy-Topics/SuperannuationAndRetirement/supercharter/%7B~%7D/media/Treasury/Policy%20Topics/Superannuation/supercharter/Downloads/PDF/super%7B%5C\\_%7Dcharter%7B%5C\\_%7Dreport.ashx](http://www.treasury.gov.au/Policy-Topics/SuperannuationAndRetirement/supercharter/%7B~%7D/media/Treasury/Policy%20Topics/Superannuation/supercharter/Downloads/PDF/super%7B%5C_%7Dcharter%7B%5C_%7Dreport.ashx).
- Cooper, J. and Minney, A. (2018). *Household spending patterns in retirement*.
- Craston, A. (2018). *Superannuation balances of the self-employed*.  
[https://www.superannuation.asn.au/ArticleDocuments/359/1803-Superannuation\\_balances\\_of\\_the\\_self-employed.pdf.aspx?Embed=Y](https://www.superannuation.asn.au/ArticleDocuments/359/1803-Superannuation_balances_of_the_self-employed.pdf.aspx?Embed=Y).
- Daley, J. (2012). *Game-changers: economic reform priorities for Australia*. Melbourne.
- Daley et al. (2013). Daley, J., McGannon, C., Savage, J. and Hunter, A. *Balancing budgets: tough choices we need*.  
[http://grattan.edu.au/static/files/assets/ceacf10a/801%7B%5C\\_%7DBalancing%7B%5C\\_%7DBudgets.pdf](http://grattan.edu.au/static/files/assets/ceacf10a/801%7B%5C_%7DBalancing%7B%5C_%7DBudgets.pdf).
- Daley et al. (2014). Daley, J., Wood, D., Weidmann, B. and Harrison, C. *The wealth of generations*.  
<http://grattan.edu.au/report/the-wealth-of-generations/>.
- Daley, J. and McGannon, C. (2014). *Submission to the Productivity Commission Inquiry on Childcare and Early Childhood Learning*.  
[http://grattan.edu.au/wp-content/uploads/2014/05/228%7B%5C\\_%7Ddaley%7B%5C\\_%7Dmcgannon%7B%5C\\_%7Dsubmission%7B%5C\\_%7Dpc%7B%5C\\_%7Dchildcare.pdf](http://grattan.edu.au/wp-content/uploads/2014/05/228%7B%5C_%7Ddaley%7B%5C_%7Dmcgannon%7B%5C_%7Dsubmission%7B%5C_%7Dpc%7B%5C_%7Dchildcare.pdf).
- Daley et al. (2015). Daley, J., Coates, B., Wood, D. and Parsonage, H. *Super tax targeting*. <http://grattan.edu.au/wp-content/uploads/2015/11/832-Super-tax-targeting.pdf>.
- Daley, J. and Coates, B. (2016). *Submission to Senate Standing Economics Committee Inquiry into the Superannuation (Objective) Bill 2016*.  
<https://grattan.edu.au/news/submission-to-senate-standing-economics-committee-inquiry-into-the-superannuation-objective-bill-2016/>.
- Daley et al. (2016a). Daley, J., Coates, B., Young, W. and Parsonage, H. *Age of Entitlement: age-based tax breaks*.  
<https://grattan.edu.au/report/age-of-entitlement/>.
- Daley et al. (2016b). \_\_\_\_\_. "A better super system: Assessing the 2016 tax reforms". <http://grattan.edu.au/wp-content/uploads/2016/09/876-A-better-super-system.pdf>.
- Daley et al. (2016c). Daley, J., Wood, D. and Parsonage, H. *Hot property: negative gearing and capital gains tax*.  
<https://grattan.edu.au/report/hot-property/>.
- Daley et al. (2016d). Daley, J., Duckett, S., Goss, P., Minfie, J., Norton, A., Terrill, M. and Wood, T. *Orange Book 2016: Priorities for the next Commonwealth Government*. <https://grattan.edu.au/report/orange-book-2016-priorities-for-the-next-commonwealth-government/>.

- Daley et al. (2016e). Daley, J., Coates, B. and Parsonage, H. *How households save for retirement*. <http://grattan.edu.au/wp-content/uploads/2016/09/How-households-save-for-retirement.pdf>.
- Daley, J. and Coates, B. (2017a). *Supplementary Submission to Senate Standing Economics Committee Inquiry into the Superannuation (Objective) Bill 2016*. <https://grattan.edu.au/wp-content/uploads/2017/02/Supplementary-Submission-to-inquiry-into-Superannuation-Objective-13-February-2017-FINAL.pdf>.
- (2017b). *Why older Australians don't downsize and the limits to what the government can do about it*. <https://theconversation.com/why-older-australians-dont-downsize-and-the-limits-to-what-the-government-can-do-about-it-76931>.
- Daley et al. (2017). Daley, J., Coates, B. and Wiltshire, T. *Making housing more affordable: Submission to the National Housing Finance and Investment Corporation consultation paper*. <https://grattan.edu.au/news/making-housing-more-affordable-submission-to-the-national-housing-finance-and-investment-corporation-consultation-paper/>.
- Daley et al. (2018) ———. *Housing affordability: re-imagining the Australian dream*. <https://grattan.edu.au/report/housing-affordability-re-imagining-the-australian-dream/>.
- Daley, J. and Coates, B. (2018a). "We need to switch off these superannuation rorts". *The Australian*. <https://grattan.edu.au/news/we-need-to-switch-off-these-superannuation-rorts/>.
- Daley, J. and Coates, B. (2018b). *Submission to Senate Standing Economics Committee Inquiry into the Superannuation (Objective) Bill 2016*. <https://grattan.edu.au/wp-content/uploads/2018/07/Grattan-submission-to-Senate-economics-protecting-your-super-FINAL1.pdf>.
- Daniels, D. (2011). *Social security payments for the aged, people with disabilities and carers 1901 to 2010*. [https://www.aph.gov.au/About%7B%5C\\_%7DParliament/Parliamentary%7B%5C\\_%7DDepartment%7B%5C\\_%7DLibrary/pubs/BN/1011/SSPayments1](https://www.aph.gov.au/About%7B%5C_%7DParliament/Parliamentary%7B%5C_%7DDepartment%7B%5C_%7DLibrary/pubs/BN/1011/SSPayments1).
- Department of Human Services, A. G. (2018). *Benefits of a Pensioner Concession Card*. <https://www.humanservices.gov.au/individuals/enablers/benefits-pensioner-concession-card/39031>.
- DHS (2016). *Assets test limits for part pensions*. <https://www.humanservices.gov.au/customer/enablers/assets>.
- (2018). *Assets test limits for part pensions*. %7B%5C%7D7BDHS,%202016%20%7B%5C#%7D4498%7B%5C%7D7D.
- Drew, M. and Stanford, J. (2016). *A Review Of Australia's Compulsory Superannuation Scheme After A Decade*. <http://www.uq.edu.au/economics/abstract/322.pdf>.
- DSS (2017). *Social Security Guide: Common Provisions Affecting Indexation of Pensions*. Ed. by Department of Social Security. Canberra. <http://guides.dss.gov.au/guide-social-security-law/5/1/8/50>.
- (2018a). *More Choices for a Longer Life - finances for a longer life*. Department of Social Services. [https://www.dss.gov.au/sites/default/files/documents/05\\_2018/d18\\_13635\\_budget\\_2018-19\\_-\\_factsheet\\_-\\_more\\_choices\\_for\\_a\\_longer\\_life\\_-\\_finances\\_for\\_a\\_longer\\_life.pdf](https://www.dss.gov.au/sites/default/files/documents/05_2018/d18_13635_budget_2018-19_-_factsheet_-_more_choices_for_a_longer_life_-_finances_for_a_longer_life.pdf).
- (2018b). *Pension Rates*. <https://www.dss.gov.au/our-responsibilities/seniors/benefits-payments/pension-rates>.
- (2018c). *DSS demographics March 2018*. <https://data.gov.au/dataset/dss-payment-demographic-data/resource/c9bcd6ed-b6bd-423b-abc5-86b54bd7a591>.
- (2018d). *Deeming information*. <https://www.dss.gov.au/our-responsibilities/seniors/benefits-payments/age-pension/deeming-information>.
- Duckett, S. and Breadon, P. (2014). *Out-of-pocket costs: hitting the most vulnerable hardest - Grattan Institute submission to the Senate Standing Committee on Community Affairs Inquiry into the out-of-pocket costs in Australian healthcare*. English. Melbourne, Vic.: Grattan Institute.

- Ebner et al. (2006). Ebner, N. C., Freund, A. M. and Baltes, P. B. "Developmental changes in personal goal orientation from young to late adulthood: from striving for gains to maintenance and prevention of losses". *Psychology and aging* 21.4, p. 664.
- Elsworth, S. (2015). *Australian superannuation savings won't be enough for retirement, HSBC report shows*. <https://www.news.com.au/finance/superannuation/australian-superannuation-savings-wont-be-enough-for-retirement-hsbc-report-shows/news-story/e0e3785dd9e2594625a1c9341f112c28>.
- Elsworth, S. (2016). *Are your savings on track to give you a comfortable retirement?* <https://www.news.com.au/finance/money/budgeting/are-your-savings-on-track-to-give-you-a-comfortable-retirement/news-story/83467ea7b9d74aaedbb05034589f650f>.
- (2017a). *One in three Australian women have less than one month's worth of savings, MLC research shows*. <https://www.dailytelegraph.com.au/business/one-in-three-australian-women-have-less-than-one-months-worth-of-savings-mlc-research-shows/news-story/8e6fecec9148a41675d69f125b2a277d>.
- (2017b). *Superannuation changes: Australians left with thousands of dollars less*. <https://www.heraldsun.com.au/news/superannuation-changes-australians-left-with-thousands-of-dollars-less/news-story/634ee413b672769481dd18a26f51293a>.
- (2017c). *How much should you have in superannuation now in order to have a comfortable retirement?* <https://www.heraldsun.com.au/business/how-much-should-you-have-in-superannuation-now-in-order-to-have-a-comfortable-retirement/news-story/346d5fff2b6eb1f76d06a0d57c96e901>.
- (2017d). *Superannuation Shortfall Prompts Australians To Review Retirement Savings*. <https://www.dailytelegraph.com.au/business/retirement-savings-set-to-fall-well-short-of-what-aussies-need/news-story/702ce1db0fa108ab8f2ccd8a9d7b44e0>.
- (2017e). *Retirement savings set to fall well short of what Aussies need*. <https://www.dailytelegraph.com.au/business/retirement-savings-set-to-fall-well-short-of-what-aussies-need/news-story/702ce1db0fa108ab8f2ccd8a9d7b44e0>.
- (2018). *How much super do you need to retire comfortably on?* <https://www.heraldsun.com.au/business/how-much-super-do-you-need-to-retire-comfortably-on/news-story/294176a264d736876ff2bbc880a0cef9>.
- Eslake, S. (2017). *No place like home: the impact of declining home ownership on retirement*. [http://www.aist.asn.au/media/20734/AIST%7B%5C\\_%7DHousing%20affordability%20and%20retirement%20incomes%7B%5C\\_%7DFINAL%2021032017.pdf](http://www.aist.asn.au/media/20734/AIST%7B%5C_%7DHousing%20affordability%20and%20retirement%20incomes%7B%5C_%7DFINAL%2021032017.pdf).
- Eurostat (2018). *Expected duration of working life in the EU: 36 years*. <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/DDN-20181011-1>.
- Fair Work Commission (2013). *Annual Wage Review 2012-13*. [https://www.fwc.gov.au/documents/sites/wagereview2013/decisions/2013fwcfb4000%7B%5C\\_%7Dstatement.pdf](https://www.fwc.gov.au/documents/sites/wagereview2013/decisions/2013fwcfb4000%7B%5C_%7Dstatement.pdf).
- Financial System Inquiry (2015). *Financial System Inquiry, Final Report*. [http://fsi.gov.au/files/2014/12/FSI%7B%5C\\_%7DFinal%7B%5C\\_%7DReport%7B%5C\\_%7DConsolidated20141210.pdf](http://fsi.gov.au/files/2014/12/FSI%7B%5C_%7DFinal%7B%5C_%7DReport%7B%5C_%7DConsolidated20141210.pdf).
- Fisher et al. (2008). Fisher, J., Johnson, D. S., Marchand, J., Smeeding, T. M. and Torrey, B. B. "The Retirement Consumption Conundrum: Evidence from a Consumption Survey". *Economics Letters* 99.3, pp. 482–485.
- Foard, G. (1995). "The efficacy of rent assistance: toward an affordability benchmark in the year 2000?" *Just Policy* 2, pp. 26–31. <https://search.informit.org/documentSummary;dn=200702627;res=IELAPA>.
- Freebairn, J. (2007). *Some Policy Issues in Providing Retirement Incomes*. [https://melbourneinstitute.unimelb.edu.au/downloads/working%7B%5C\\_%7Dpaper%7B%5C\\_%7Dseries/wp2007n06.pdf](https://melbourneinstitute.unimelb.edu.au/downloads/working%7B%5C_%7Dpaper%7B%5C_%7Dseries/wp2007n06.pdf).

- Gallagher, P. (2011). *Treasury approaches to measuring retirement income adequacy*. <https://actuaries.asn.au/Library/Phil%20Gallagher.pdf>.
- Gebler, J. (2018). *Analysis: Retirees' spending falls faster than expected into old age*. Milliman. [http://au.milliman.com/insight/2018/Analysis-Retirees-spending-falls-faster-than-expected-into-old-age/?utm%7B%5C\\_%7Dsource=individual-newsletter%7B%5C\\_%7Dutm%7B%5C\\_%7Dmedium=email%7B%5C\\_%7Dutm%7B%5C\\_%7Dcampaign=life-insurance%7B%5C\\_%7D%7B%5C\\_%7Dcldee=Y2hyaXMuY29ybmlzaEBhdmFudGZpbmFuY2lhbC5jb20uYXU%7B%5C\\_%7D3D%7B%5C\\_%7Drecipientid=lead--%7B%5C\\_%7Ddesid=cbbe308f-d147-e811-8122-e0071b6ae251](http://au.milliman.com/insight/2018/Analysis-Retirees-spending-falls-faster-than-expected-into-old-age/?utm%7B%5C_%7Dsource=individual-newsletter%7B%5C_%7Dutm%7B%5C_%7Dmedium=email%7B%5C_%7Dutm%7B%5C_%7Dcampaign=life-insurance%7B%5C_%7D%7B%5C_%7Dcldee=Y2hyaXMuY29ybmlzaEBhdmFudGZpbmFuY2lhbC5jb20uYXU%7B%5C_%7D3D%7B%5C_%7Drecipientid=lead--%7B%5C_%7Ddesid=cbbe308f-d147-e811-8122-e0071b6ae251).
- Gordon, R. (2016). *The Rise and Fall of American Growth: The U.S. Standard of Living since the Civil War*. Princeton University Press.
- Gruen, D. and Soding, L. (2011). "Compulsory Superannuation and National Saving". *Economic Roundup Issue 3, 2011*. <http://www.treasury.gov.au/PublicationsAndMedia/Publications/2011/Economic-Roundup-Issue-3/Report/Compulsory-superannuation-and-national-saving>.
- Gurria, A. (2016). *Launch of the 2016 Pensions Outlook*. <http://www.oecd.org/finance/launch-of-the-2016-pensions-outlook.htm>.
- Harmer, J. (2009). *Pension Review Report*. [https://www.dss.gov.au/sites/default/files/documents/05%7B%5C\\_%7D2012/pensionreviewreport.pdf](https://www.dss.gov.au/sites/default/files/documents/05%7B%5C_%7D2012/pensionreviewreport.pdf).
- Henry, K. (2009). *Australia's future tax system - The retirement income system: Report on strategic issues*.
- Hobman, E. and Reeson, A. (2018). "Superannuation Drawdown: Motivations and Behaviour". *forthcoming*.
- Hockey, J. (2015). *2015 Intergenerational Report*. <http://www.treasury.gov.au/PublicationsAndMedia/Publications/2015/2015-Intergenerational-Report>.
- HSBC (2017). *The Future of Retirement*. <https://www.hsbc.com/-/media/hsbc-com/newsroomassets/2017/pdfs/170426-the-future-of-retirement-shifting-sands.pdf>.
- Hulse, K. (2002). *Demand subsidies for private renters: a comparative review*. [https://www.ahuri.edu.au/%7B%5C\\_%7D%7B%5C\\_%7Ddata/assets/pdf%7B%5C\\_%7Dfile/0020/2873/AHURI%7B%5C\\_%7DPositioning%7B%5C\\_%7DPaper%7B%5C\\_%7DNo32%7B%5C\\_%7DDemand%7B%5C\\_%7Dsubsidies%7B%5C\\_%7Dfor%7B%5C\\_%7Dprivate%7B%5C\\_%7Drenters.pdf](https://www.ahuri.edu.au/%7B%5C_%7D%7B%5C_%7Ddata/assets/pdf%7B%5C_%7Dfile/0020/2873/AHURI%7B%5C_%7DPositioning%7B%5C_%7DPaper%7B%5C_%7DNo32%7B%5C_%7DDemand%7B%5C_%7Dsubsidies%7B%5C_%7Dfor%7B%5C_%7Dprivate%7B%5C_%7Drenters.pdf).
- Hurd, M. and Rohwedder, S. (2003). *The retirement-consumption puzzle: Anticipated and actual declines in spending at retirement*. <http://www.nber.org/papers/w9586>.
- Hurd et al. (2012). Hurd, M., Michaud, P.-C. and Rohwedder, S. "The displacement effect of public pensions on the accumulation of financial assets". *Fiscal studies* 33.1, pp. 107–128.
- Iggulden, T. (2018). *Budget repair less urgent than raising dole payments, leading economist Chris Richardson says*. <http://www.abc.net.au/news/2018-05-02/budget-repair-less-urgent-than-raising-dole-economist-says/9717140>.
- Industry Super Australia (2015a). *Inquiry into economic security for women in retirement: ISA submission*. <http://www.industrysuperaustralia.com/assets/Submission/Inquiry-into-economic-security-of-women-in-retirement-ISA-Submission.pdf>.
- (2015b). *Nearly half of Australians will not have a comfortable retirement*. <http://www.industrysuperaustralia.com/publications/reports/nearly-half-of-australians-will-not-have-a-comfortable-retirement/>.
- (2015c). *Refocus*. <http://www.industrysuperaustralia.com/assets/Submission/ISA-supplemental-tax-submission.pdf>.
- (2016a). *Briefing note: why the Grattan Institute's analysis of superannuation and household saving is misleading*. <https://www.theguardian.com/australia-news/2016/oct/06/superannuation-lobby-says-grattan-institute-report-has-statistical-sins>.

- Industry Super Australia (2016b). *Overdue: time for action on unpaid super*. <http://www.industrysuperaustralia.com/assets/Reports/Final-Unpaid-Super-January-2017.pdf>.
- (2018). *How the super freeze could be costing you thousands*. <https://thenewdaily.com.au/sponsored/2018/06/13/super-freeze-costing-thousands/>.
- Ingles, D. and Stewart, M. (2015). *Superannuation tax concessions and the age pension: a principled approach to savings taxation*. [https://taxpolicy.crawford.anu.edu.au/files/uploads/taxstudies%7B%5C\\_%7Dcrawford%7B%5C\\_%7Danu%7B%5C\\_%7Dedu%7B%5C\\_%7Dau/2015-12/m%7B%5C\\_%7Dstewart%7B%5C\\_%7Dd%7B%5C\\_%7Dingles%7B%5C\\_%7Dretirement%7B%5C\\_%7Dincome%7B%5C\\_%7Dfinal.pdf](https://taxpolicy.crawford.anu.edu.au/files/uploads/taxstudies%7B%5C_%7Dcrawford%7B%5C_%7Danu%7B%5C_%7Dedu%7B%5C_%7Dau/2015-12/m%7B%5C_%7Dstewart%7B%5C_%7Dd%7B%5C_%7Dingles%7B%5C_%7Dretirement%7B%5C_%7Dincome%7B%5C_%7Dfinal.pdf).
- Judd et al. (2014). Judd, B., Liu, E., Easthope, H., Davy, L. and Bridge, C. *Downsizing amongst older Australians*. 214. Australian Housing and Urban Research Institute. [https://www.ahuri.edu.au/\\_data/assets/pdf\\_file/0012/2181/AHURI\\_Final\\_Report\\_No214\\_Downsizing-amongst-older-Australians.pdf](https://www.ahuri.edu.au/_data/assets/pdf_file/0012/2181/AHURI_Final_Report_No214_Downsizing-amongst-older-Australians.pdf).
- Kakulas, V. (2014). *Super problem: West Australians leave workforce with less than \$1 million for comfortable retirement*. <https://www.perthnow.com.au/lifestyle/superannuation/super-problem-west-australians-leave-workforce-with-less-than-1-million-for-comfortable-retirement-ng-86465ed059779614f2cdc8cd3be8107b>.
- Keane, A. (2016). *Not enough Australians take superannuation seriously*. <https://www.news.com.au/finance/superannuation/not-enough-australians-take-superannuation-seriously/news-story/6ee875c2618416c43d48efda27179855>.
- Keegan, M. and Brown, L. (2012). *Impact of the increase in the Superannuation Guarantee on wage costs in the health sector*. <http://www.natsem.canberra.edu.au/storage/1-Keegan%20%7B%5C%20%7D%20Brown-%20Impact%20of%20increase%20in%20super%20guarantee.pdf>.
- KPMG (2018). *Insurance in superannuation: The impacts and unintended consequences of the proposed Federal Budget changes*. <https://assets.kpmg.com/content/dam/kpmg/au/pdf/2018/insurance-in-superannuation-impact-2018-federal-budget.pdf>.
- Lancaster, G. and Ray, R. (2002). “Tests of Income Pooling on Household Budget Data: The Australian Evidence”. *Australian Economic Papers* 41.1, pp. 99–114. <https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-8454.00152>.
- Liew, R. (2015). *Superannuation alert: \$1 million isn’t enough to retire in comfort*. <https://www.smh.com.au/business/the-economy/superannuation-alert-1-million-isnt-enough-to-retire-in-comfort-20150419-1modsc.html>.
- Love et al. (2009). Love, D. A., Palumbo, M. G. and Smith, P. A. “The trajectory of wealth in retirement”. *Journal of Public Economics* 93.1-2, pp. 191–208.
- Lowe, P. (2018). *Remarks to the A50 Dinner*. <https://www.rba.gov.au/speeches/2018/sp-gov-2018-02-08.html>.
- Maragna, O. (2017). *How much do you need in retirement?* <https://www.smh.com.au/business/how-much-do-you-need-in-retirement-20170803-gxon8u.html>.
- ME Bank (2018). *ME Household financial comfort report*. Melbourne. [https://www.mebank.com.au/getmedia/2046702b-39c0-457b-8950-80d75e716bcd/ME-s-14th-Household-Financial-Comfort-Report\\_August-2018.pdf](https://www.mebank.com.au/getmedia/2046702b-39c0-457b-8950-80d75e716bcd/ME-s-14th-Household-Financial-Comfort-Report_August-2018.pdf).
- Melbourne Institute (2018a). *HILDA Survey*. <http://www.melbourneinstitute.com/hilda/>.
- (2018b). “Poverty Lines: Australia - March Quarter 2018”. [https://melbourneinstitute.unimelb.edu.au/\\_data/assets/pdf\\_file/0010/2844487/Poverty-lines-Australia-March-Quarter-2018.pdf](https://melbourneinstitute.unimelb.edu.au/_data/assets/pdf_file/0010/2844487/Poverty-lines-Australia-March-Quarter-2018.pdf).



- Mercer (2017). *Melbourne Mercer Global Pension Index 2017*.  
[https://www.mercer.com.au/content/dam/mercer/attachments/asia-pacific/australia/mmmpi-2017/au-2017-mmmpi-report.pdf?utm%7B%5C\\_%7Dmedium=referral%7B%5C%7Dutm%7B%5C\\_%7Dsource=web%7B%5C%7Dutm%7B%5C\\_%7Dcampaign=mmmpi](https://www.mercer.com.au/content/dam/mercer/attachments/asia-pacific/australia/mmmpi-2017/au-2017-mmmpi-report.pdf?utm%7B%5C_%7Dmedium=referral%7B%5C%7Dutm%7B%5C_%7Dsource=web%7B%5C%7Dutm%7B%5C_%7Dcampaign=mmmpi).
- (2018). *Melbourne Mercer Global Pension Index 2018*.  
<https://info.mercer.com/rs/521-DEV-513/images/Mercer%5C%20-%5C%20MMGPI%5C%20Report%5C%202018.pdf>.
- Minifie et al. (2014). Minifie, J., Savage, J. and Cameron, T. *Super sting: how to stop Australians paying too much for superannuation*.  
<https://grattan.edu.au/report/super-sting-how-to-stop-australians-paying-too-much-for-superannuation/>.
- Minifie et al. (2015) ———. *Super savings*. <http://grattan.edu.au/wp-content/uploads/2015/04/821-super-savings2.pdf>.
- Minifie et al. (2017). Minifie, J., Chisholm, C. and Percival, L. *Stagnation nation? Australian investment in a low growth world*.  
<https://grattan.edu.au/report/stagnation-nation/>.
- Morrison, S. (2015a). *Fairer access to a more sustainable pension*.  
<https://formerministers.dss.gov.au/15866/fairer-access-to-a-more-sustainable-pension/>.
- (2015b). *The Best Form of Welfare*. Canberra.  
<http://www.formerministers.dss.gov.au/15959/address-to-the-national-press-club-the-best-form-of-welfare/>.
- Mumbrella (2017). *Money Magazine brings back Super Booster Day*.  
<https://mumbrella.com.au/money-magazine-brings-back-super-booster-day-459491>.
- Myer, R. (2017a). *Up to 94 per cent of Gen X and Y won't have retirement comfort, report finds*. The New Daily.  
<https://thenewdaily.com.au/money/superannuation/2017/10/11/gen-x-y-retirement-comfort/>.
- Myer, R. (2017b). *You're dreaming: retirement expectations are way beyond reality*. The New Daily.  
<https://thenewdaily.com.au/money/retirement/2017/08/09/retirement-expectations-beyond-reality/>.
- NAB – Group Economics (2017). *MLC Quarterly Australian Wealth Behaviour Survey: Q1 2017*.  
<http://nabnews.efront-flare.com.au/wp-content/uploads/2017/08/MLC-Wealth-Sentiment-Survey-Q1-2017.pdf>.
- Nakajima, M. and Telyukova, I. (2013). "Housing in retirement across countries".
- Neal, D. (2016). *Long-term investing and grappling with shorter term influences*. Melbourne. <http://www.futurefund.gov.au/news-room/2016/06/02/Stockbrokers-Association-of-Australia-Conference>.
- News.com.au (2012). *Tips on how to fatten your superannuation*.  
<https://www.news.com.au/finance/superannuation/tips-on-how-to-fatten-your-superannuation/news-story/89e2551c1b97d4fc3320ca5c15b76c2d>.
- O'Dwyer, K. (2018). *'Building Wealth and Self-Reliance - A Liberal Legacy', Address to the AFR Banking and Wealth Summit*.  
<http://kmo.ministers.treasury.gov.au/speech/008-2018/>.
- OECD (2007). *Encouraging Savings through Tax-Preferred Accounts*.  
[http://www.oecd-ilibrary.org/taxation/encouraging-savings-through-tax-preferred-accounts%7B%5C\\_%7D9789264031364-en;jsessionid=60b9gq4a3mgk.x-oecd-live-01](http://www.oecd-ilibrary.org/taxation/encouraging-savings-through-tax-preferred-accounts%7B%5C_%7D9789264031364-en;jsessionid=60b9gq4a3mgk.x-oecd-live-01).
- (2012). *OECD Pensions Outlook 2012*. Paris.  
[https://www.oecd-ilibrary.org/finance-and-investment/oecd-pensions-outlook-2012%7B%5C\\_%7D9789264169401-en](https://www.oecd-ilibrary.org/finance-and-investment/oecd-pensions-outlook-2012%7B%5C_%7D9789264169401-en).
- (2017a). *OECD Pensions at a Glance 2017: how does Australia compare?* <https://www.oecd.org/australia/PAG2017-AUS.pdf>.
- (2017b). *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).

- OECD (2017c). *Pension spending (indicator)*. Paris. doi:%2010.1787/a041f4ef-en.
- (2018). *OECD.Stat - Income Distribution and Poverty*. OECD. <https://stats.oecd.org/viewhtml.aspx?datasetcode=IDD&lang=en>.
- Onselen, L. V. (2018). *Labor urged to hold off raising super guarantee*. Macrobusiness. <https://www.macrobusiness.com.au/2018/04/labor-urged-hold-off-raising-super-guarantee/>.
- Palmer, D. and White, A. (2016). *Challenging times ahead for investment: Future Fund's Peter Costello*. <http://www.theaustralian.com.au/business/financial-services/challenging-times-ahead-for-investment-future-funds-peter-costello/news-story/9c330290ca2fdbd53f08da9217ddbc86?nk=21bd5293c6c9bf91e73e578611f79538-1488416859>.
- Parliamentary Budget Office (2016). *Policy Costing - Increasing Rent Assistance by 30 per cent*. Ed. by P. of Australia. <https://www.aph.gov.au/%7B~%7D/media/05%20About%20Parliament/54%20Parliamentary%20Depts/548%20Parliamentary%20Budget%20Office/2016%20general%20election/Greens%20costings/PBO%20-%20GRN079%20-%20Increasing%20Rent%20Assistance%20by%2030%20per%20cent%20-%201%20July%202016.pdf?la=en>.
- Parliamentary Library (2006). *An adequate superannuation-based retirement income?* <http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%7B%5C%7D3A%7B%5C%7D22library%7B%5C%7D2Fprspub%7B%5C%7D2F116J6%7B%5C%7D22>.
- (2015). *Social Services Legislation Amendment (Fair and Sustainable Pensions) Bill 2015*. [https://www.aph.gov.au/Parliamentary%7B%5C\\_%7DBusiness/Bills%7B%5C\\_%7DLegislation/bd/bd1415a/15bd129](https://www.aph.gov.au/Parliamentary%7B%5C_%7DBusiness/Bills%7B%5C_%7DLegislation/bd/bd1415a/15bd129).
- Parsonage, H. and Young, W. (2018). *Life as a Pachinko machine: modelling lifetime income using HILDA data*. <https://github.com/HughParsonage/CRIMpp/blob/master/vignettes/Pachinko.pdf>.
- Patten, S. (2015). *Why you need to save \$1 million each in super for your retirement*. <https://www.afr.com/personal-finance/superannuation-and-smsfs/why-you-need-to-save-1-million-each-in-super-for-your-retirement-20150423-1mrz6h>.
- Podger, A. (2016). *Why superannuation concessions are no budget goldmine*. Sydney. <https://www.afr.com/opinion/why-superannuation-concessions-are-no-budget-goldmine-20160107-gm1841>.
- Potter, M. (2016). *Don't Increase The Super Guarantee*. <https://www.cis.org.au/app/uploads/2016/08/32-3-potter-michael.pdf>.
- Prior, N. (2017). *Sandgroppers not so super at retirement saving*. <https://thewest.com.au/lifestyle/retirement/sandgroppers-not-so-super-at-retirement-saving-ng-b88585857z>.
- Productivity Commission (2011). *Caring for older Australians*. <https://www.pc.gov.au/inquiries/completed/aged-care>.
- (2015a). *Superannuation Policy for Post-Retirement*. <http://www.pc.gov.au/research/completed/superannuation-post-retirement>.
- (2015b). *Housing Decisions of Older Australians*. <http://www.pc.gov.au/research/completed/housing-decisions-older-australians/housing-decisions-older-australians.pdf>.
- (2017). *Report on government services 2017 volume G: housing and homelessness*. <https://www.pc.gov.au/research/ongoing/report-on-government-services/2017/housing-and-homelessness/rogs-2017-volumeg.pdf>.
- (2018a). *Superannuation: assessing efficiency and competitiveness*. <https://www.pc.gov.au/inquiries/current/superannuation/assessment/draft>.
- (2018b). *Introducing Competition and Informed User Choice into Human Services: Reforms to Human Services - Social Housing in Australia*. <https://www.pc.gov.au/inquiries/completed/human-services/reforms/report/02-human-services-reforms-housing.pdf>.



- Productivity Commission (2018c). *Report on Government Services 2018, Chapter 18: Housing*. <https://www.pc.gov.au/research/ongoing/report-on-government-services/2018/housing-and-homelessness/housing/rogs-2018-partg-chapter18.pdf>.
- (2018d). *Superannuation: assessing efficiency and competitiveness. Supplementary Paper – Investment performance: Supplementary analysis*. [https://www.pc.gov.au/\\_\\_data/assets/pdf\\_file/0020/232526/superannuation-assessment-investment-performance-supplement.pdf](https://www.pc.gov.au/__data/assets/pdf_file/0020/232526/superannuation-assessment-investment-performance-supplement.pdf).
- Rachel, L. and Smith, T. (2015). *Secular drivers of the global real interest rate*. London. <http://www.bankofengland.co.uk/research/Documents/workingpapers/2015/swp571.pdf>.
- RBA (2017a). *Financial Stability Review - October 2017*. Reserve Bank of Australia. <https://www.rba.gov.au/publications/fsr/2017/oct/pdf/financial-stability-review-2017-10.pdf>.
- (2017b). *Statistical Tables, Household Finances – Selected Ratios – E2*. <http://www.rba.gov.au/statistics/tables/>.
- Reyna, V. and Brainerd, C. (2007). “The importance of mathematics in health and human judgment: Numeracy, risk communication, and medical decision making”. *Learning and Individual Differences* 17.2, pp. 147–159. <https://www.sciencedirect.com/science/article/pii/S1041608007000416>.
- Rice, M. (2018). *The Age Pension in the 21st Century*. Paper prepared for the Financial Services Forum 2018. <https://www.ricewarner.com/wp-content/uploads/2018/05/The-Age-Pension-in-the-21st-century-220518.pdf>.
- Rice Warner (2014). *Retirement Savings Gap as at 30 June 2013*. <http://www.fsc.org.au/downloads/file/policy/FSCRetirementSavingsGap.pdf>.
- (2015). *Retirement Savings Gap as at 30 June 2014*. <http://ricewarner.com/wp-content/uploads/2015/12/Retirement-Savings-Gap-as-at-30-June-2014.pdf>.
- Robinson, O. (2012). “Values and adult age: findings from two cohorts of the European Social Survey”.
- Rothman, G. (2007). *The Adequacy Of Australian Retirement Incomes - New Estimates Incorporating The Better Super Reforms*. [http://www.docs.fce.unsw.edu.au/fce/Research/ROTHMAN\\_George.pdf](http://www.docs.fce.unsw.edu.au/fce/Research/ROTHMAN_George.pdf).
- (2011). *Projecting the Adequacy of Australian Retirement Incomes: for whole of population, income and gender groups*. [https://static.treasury.gov.au/uploads/sites/1/2017/06/Projecting\\_the\\_adequacy\\_of\\_Aus\\_retirement\\_incomes.pdf](https://static.treasury.gov.au/uploads/sites/1/2017/06/Projecting_the_adequacy_of_Aus_retirement_incomes.pdf).
- (2012). *Modelling the sustainability of Australia's retirement income system*.
- Rothman, G. and Bingham, C. (2004). *Retirement income adequacy revisited*.
- Saunders et al. (1998). Saunders, P., Chalmers, J., McHugh, M., Murray, C., Bittman, M. and Bradbury, B. *Development of Indicative Budget Standards For Australia*. [https://www.dss.gov.au/sites/default/files/documents/06%7B%5C\\_%7D2012/policyresearchpaper74.pdf](https://www.dss.gov.au/sites/default/files/documents/06%7B%5C_%7D2012/policyresearchpaper74.pdf).
- Saunders et al. (2004). Saunders, P., Patulny, R. and Lee, A. *Updating and extending indicative budget standards for older Australians: prepared for the Association of Superannuation Funds of Australia*.
- Saunders, P. and Wong, M. (2011). *Pension adequacy and the pension review*.
- Select Committee on Superannuation (2002). *Official Committee Hansard*. The Senate. [https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;orderBy=\\_fragment\\_number;query=\(\(Dataset:commsen\)%20SearchCategory\\_Phrase:%22committees%22\)%20CommitteeName\\_Phrase:%22select%20committee%20on%20superannuation%22%20Questioner\\_Phrase:%22senator%20cherry%22;rec=0](https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;orderBy=_fragment_number;query=((Dataset:commsen)%20SearchCategory_Phrase:%22committees%22)%20CommitteeName_Phrase:%22select%20committee%20on%20superannuation%22%20Questioner_Phrase:%22senator%20cherry%22;rec=0).
- Senate (2002). *Superannuation and standards of living in retirement*.

- Senate Economics References Committee (2015). *Out of reach? The Australian housing affordability challenge*. [http://www.aph.gov.au/Parliamentary%7B%5C\\_%7DBusiness/Committees/Senate/Economics/Affordable%7B%5C\\_%7Dhousing%7B%5C\\_%7D2013/Report](http://www.aph.gov.au/Parliamentary%7B%5C_%7DBusiness/Committees/Senate/Economics/Affordable%7B%5C_%7Dhousing%7B%5C_%7D2013/Report).
- (2016). *A husband is not a retirement plan: achieving economic security for women in retirement*. Canberra. [http://www.aph.gov.au/Parliamentary%7B%5C\\_%7DBusiness/Committees/Senate/Economics/Economic%7B%5C\\_%7Dsecurity%7B%5C\\_%7Dfor%7B%5C\\_%7Dwomen%7B%5C\\_%7Din%7B%5C\\_%7Dretirement/Report](http://www.aph.gov.au/Parliamentary%7B%5C_%7DBusiness/Committees/Senate/Economics/Economic%7B%5C_%7Dsecurity%7B%5C_%7Dfor%7B%5C_%7Dwomen%7B%5C_%7Din%7B%5C_%7Dretirement/Report).
- SGS Economics & Planning et al. (2018). SGS Economics & Planning, National Shelter and Community Sector Banking. *Rental Affordability Index, May 2018 Release*. [https://www.shelter.org.au/sites/natshelter/files/public/documents/RAI%20Report%20May%202017%20-%20Small%7B%5C\\_%7D3.pdf](https://www.shelter.org.au/sites/natshelter/files/public/documents/RAI%20Report%20May%202017%20-%20Small%7B%5C_%7D3.pdf).
- Sheehan et al. (2008). Sheehan, G., Banks, J. and Wakefield, M. “Superannuation and Divorce in Australia: An Evaluation of Post-Reform Practice and Settlement Outcomes”. *International Journal of Law, Policy and the Family* 22.2, pp. 206–230.
- Shorten, B. (2011). *Superannuation Guarantee (Administration) Amendment Bill 2011, Second Reading*. Canberra. [http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/3641b583-a42e-4045-9472-07db51574a42/0017/hansard%7B%5C\\_%7Dfrag.pdf;fileType=application%7B%5C\\_%7D2Fpdf](http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/3641b583-a42e-4045-9472-07db51574a42/0017/hansard%7B%5C_%7Dfrag.pdf;fileType=application%7B%5C_%7D2Fpdf).
- (2018). *Labor’s Plan To Improve Womens’ Super Security*. [http://www.billshorten.com.au/%7B%5C\\_%7Dlabor%7B%5C\\_%7Ds%7B%5C\\_%7Dplan%7B%5C\\_%7Dto%7B%5C\\_%7Dimprove%7B%5C\\_%7Dwomen%7B%5C\\_%7Ds%7B%5C\\_%7Dsuper%7B%5C\\_%7Dsecurity%7B%5C\\_%7Dwednesday%7B%5C\\_%7D19%7B%5C\\_%7Dseptember%7B%5C\\_%7D2018](http://www.billshorten.com.au/%7B%5C_%7Dlabor%7B%5C_%7Ds%7B%5C_%7Dplan%7B%5C_%7Dto%7B%5C_%7Dimprove%7B%5C_%7Dwomen%7B%5C_%7Ds%7B%5C_%7Dsuper%7B%5C_%7Dsecurity%7B%5C_%7Dwednesday%7B%5C_%7D19%7B%5C_%7Dseptember%7B%5C_%7D2018).
- Silvester et al. (2018). Silvester, B., Jeyaratnam, E. and Jackson-Webb, F. *Private health insurance premium increases explained in 14 charts*. <https://theconversation.com/private-health-insurance-premium-increases-explained-in-14-charts-92825>.
- Simon, J. and Stone, T. (2017). *The Property Ladder after the Financial Crisis: The First Step Is a Stretch but Those Who Make It Are Doing OK*. Research Discussion Paper. Reserve Bank of Australia. <http://www.rba.gov.au/publications/rdp/2017/pdf/rdp2017-05.pdf>.
- Sinai, T. and Waldfoegel, J. (2002). “Do Low-Income Housing Subsidies Increase Housing Consumption?” *NBER Working Paper Series* 8709. <http://www.nber.org/papers/w8709>.
- Smith, W. and Hetherington, D. (2016). *The adequacy of the age pension in Australia*. [https://percapita.org.au/wp-content/uploads/2018/05/Pension-Adequacy%7B%5C\\_%7DFinal.pdf](https://percapita.org.au/wp-content/uploads/2018/05/Pension-Adequacy%7B%5C_%7DFinal.pdf).
- Spicer et al. (2015). Spicer, A., Stavrunova, O. and Thorp, S. *How Portfolios Evolve After Retirement: Evidence from Australia*. [https://cama.crawford.anu.edu.au/sites/default/files/publication/cama%7B%5C\\_%7Dcrawford%7B%5C\\_%7Danu%7B%5C\\_%7Dedu%7B%5C\\_%7Dau/2015-11/39%7B%5C\\_%7D2015%7B%5C\\_%7Dspicer%7B%5C\\_%7Dstavrunova%7B%5C\\_%7Dthorp.pdf](https://cama.crawford.anu.edu.au/sites/default/files/publication/cama%7B%5C_%7Dcrawford%7B%5C_%7Danu%7B%5C_%7Dedu%7B%5C_%7Dau/2015-11/39%7B%5C_%7D2015%7B%5C_%7Dspicer%7B%5C_%7Dstavrunova%7B%5C_%7Dthorp.pdf).
- Stanford, J. (2018). *Wages Crisis Has Obvious Solutions*. [https://www.futurework.org.au/wages%7B%5C\\_%7Dcrisis%7B%5C\\_%7Dhas%7B%5C\\_%7Dobvious%7B%5C\\_%7Dsolutions](https://www.futurework.org.au/wages%7B%5C_%7Dcrisis%7B%5C_%7Dhas%7B%5C_%7Dobvious%7B%5C_%7Dsolutions).
- State Street Global Advisors and Rice Warner (2015). *The Australian Retirement Vision Survey*. <https://www.professionalplanner.com.au/wp-content/uploads/2015/08/SSGA-Retirement-Vision-Report.pdf>.
- Stewart, M. (2009). *Gender Equity in Australia’s Tax System*. [http://law.unimelb.edu.au/%7B%5C\\_%7D%7B%5C\\_%7Ddata/assets/pdf%7B%5C\\_%7Dfile/0011/1550666/Stewart%7B%5C\\_%7DGender%7B%5C\\_%7DTax%7B%5C\\_%7DPolicy%7B%5C\\_%7D20-11-091.pdf](http://law.unimelb.edu.au/%7B%5C_%7D%7B%5C_%7Ddata/assets/pdf%7B%5C_%7Dfile/0011/1550666/Stewart%7B%5C_%7DGender%7B%5C_%7DTax%7B%5C_%7DPolicy%7B%5C_%7D20-11-091.pdf).
- Superannuation Guarantee Cross Agency Working Group (2017). *Superannuation Guarantee Non-compliance: A report to the Minister for Revenue and Financial Services*. <https://treasury.gov.au/publication/superannuation-guarantee-non-compliance/>.

- Superannuation industry (supervision) regulations (1994). *Superannuation industry (supervision) regulations 1994*. [http://classic.austlii.edu.au/au/legis/cth/consol\\_reg/sir1994582/](http://classic.austlii.edu.au/au/legis/cth/consol_reg/sir1994582/).
- Taylor, M. (2016). *Lift the bar on super objective says ASFA*. <https://www.superreview.com.au/news/superannuation/lift-bar-super-objective-says-asfa>.
- Treasury (2009). *Australia's future tax system, Report to the Treasurer, Part Two Detailed analysis*. [https://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](https://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).
- (2010). *Commonwealth Budget 2010-11, Budget Paper No.2*. Canberra. [http://budget.gov.au/2010-11/content/bp2/download/bp2%7B%5C\\_%7Dv2.pdf](http://budget.gov.au/2010-11/content/bp2/download/bp2%7B%5C_%7Dv2.pdf).
- (2014). *Budget 2014-15: Budget Paper No. 2*. [https://www.budget.gov.au/2014-15/content/bp2/download/BP2%7B%5C\\_%7Dconsolidated.pdf](https://www.budget.gov.au/2014-15/content/bp2/download/BP2%7B%5C_%7Dconsolidated.pdf).
- (2015). *Commonwealth Budget 2015-16, Budget Paper No. 2: Budget Measures. Part 1: Revenue Measures*. <http://www.budget.gov.au/2015-16/index.htm>.
- (2016a). *Development of the framework for Comprehensive Income Products for Retirement*. <https://consult.treasury.gov.au/retirement-income-policy-division/comprehensive-income-products-for-retirement/>.
- (2016b). *Budget 2016-17: Budget Measures Budget Paper No. 2*. Ed. by C. Governemnt. [https://www.budget.gov.au/2016-17/content/bp2/download/BP2%7B%5C\\_%7Dconsolidated.pdf](https://www.budget.gov.au/2016-17/content/bp2/download/BP2%7B%5C_%7Dconsolidated.pdf).
- (2016c). *Budget 2016-17: Superannuation fact sheets*. [http://www.budget.gov.au/2016-17/content/glossies/tax%7B%5C\\_%7Dsuper/downloads/FS-Super/SFS-Combined.pdf](http://www.budget.gov.au/2016-17/content/glossies/tax%7B%5C_%7Dsuper/downloads/FS-Super/SFS-Combined.pdf).
- (2017a). *Budget 2017-18: Budget Paper 1*. Treasury. [http://www.budget.gov.au/2017-18/content/bp1/download/bp1\\_bs6.pdf](http://www.budget.gov.au/2017-18/content/bp1/download/bp1_bs6.pdf).
- (2017b). *Mid-year economic and fiscal outlook 2017-18*. [https://www.budget.gov.au/2017-18/content/myefo/download/MYEFO\\_2017-18.pdf](https://www.budget.gov.au/2017-18/content/myefo/download/MYEFO_2017-18.pdf).
- (2018a). *Budget 2018-19: Budget Paper 2*. [https://www.budget.gov.au/2018-19/content/bp2/download/bp2%7B%5C\\_%7Dcombined.pdf](https://www.budget.gov.au/2018-19/content/bp2/download/bp2%7B%5C_%7Dcombined.pdf).
- (2018b). "Tax Expenditures Statement 2017". <https://treasury.gov.au/publication/2017-tax-expenditures-statement/>.
- (2018c). *Budget 2018-19: Budget Paper 1*. <https://www.budget.gov.au/2018-19/content/bp1/index.html>.
- (2018d). *Budget 2018-19: Budget Overview*. [https://www.budget.gov.au/2018-19/content/sections/overview/downloads/Budget\\_2018-19\\_Budget\\_Overview.pdf](https://www.budget.gov.au/2018-19/content/sections/overview/downloads/Budget_2018-19_Budget_Overview.pdf).
- Tune, D. (2017). *Legislated Review of Aged Care 2017*. [https://agedcare.health.gov.au/sites/g/files/net1426/f/documents/08\\_2017/legislated\\_review\\_of\\_aged\\_care\\_2017.pdf](https://agedcare.health.gov.au/sites/g/files/net1426/f/documents/08_2017/legislated_review_of_aged_care_2017.pdf).
- Valenzuela, R. (2017). "It's about time, not money: the real reason retirees keep their big homes". *The Age*. <http://www.theage.com.au/money/its-about-time-not-money-the-real-reason-retirees-keep-their-big-homes-20170825-gy4kbp.html>.
- Van Ooijen et al. (2015). Van Ooijen, R., Alessie, R. and Kalwij, A. "Saving behavior and portfolio choice after retirement". *De Economist* 163.3, pp. 353–404.
- Whiteford, P. (2014). *Work till you drop?* <https://insidestory.org.au/work-till-you-drop/>.
- Wilkins, R. (2014). "Evaluating the Evidence on Income Inequality in Australia in the 2000s". *Economic Record* 90.288, pp. 63–89.

- Wilkins, R. (2017). *The Household, Income and Labour Dynamics in Australia Survey: Selected findings from waves 1 to 15. The 12th Annual Statistical Report of the HILDA Survey*.  
[http://melbourneinstitute.unimelb.edu.au/%7B%5C\\_%7D%7B%5C\\_%7Ddata/assets/pdf%7B%5C\\_%7Dfile/0010/2437426/HILDA-SR-med-res.pdf](http://melbourneinstitute.unimelb.edu.au/%7B%5C_%7D%7B%5C_%7Ddata/assets/pdf%7B%5C_%7Dfile/0010/2437426/HILDA-SR-med-res.pdf).
- Wilkins, R. and Sun, C. (2010). *Assessing the quality of the expenditure data collected in the self-completion questionnaire*.  
<https://melbourneinstitute.unimelb.edu.au/assets/documents/hilda-bibliography/hilda-discussion-papers/hdps110.pdf>.
- Wiltshire, T. and Wood, D. (2017). *Three charts on: the great Australian wealth gap*. <https://theconversation.com/three-charts-on-the-great-australian-wealth-gap-84515>.
- L. Wong et al. (2016). Wong, L., Selvanathan, E. A. and Selvanathan, S. "Empirical analysis of Australian consumption patterns". *Empirical Economics* 52, pp. 799–823.  
<https://eds-a-ebscohost-com.ezp.lib.unimelb.edu.au/eds/pdfviewer/pdfviewer?vid=8%7B%5C&%7Dsid=67e979b3-0747-4cd5-b5df-3cec411305ab%7B%5C%7D40sessionmgr4006>.
- World Bank (1994). *Averting the Old Age Crisis*.
- Yates, J. (2015). "Living income- and asset-poor in retirement". *The super challenge of retirement income policy*. Ed. by Committee for Economic Development of Australia. CEDA. Chap. Chapter 4, pp. 65–81. <http://adminpanel.ceda.com.au/FOLDERS/Service/Files/Documents/27922%7B~%7DCEDATheSuperChallengeofRetirementIncomePolicySept2015FINAL.pdf>.
- Yates, J. and Bradbury, B. (2010). "Home ownership as a (crumbling) fourth pillar of social insurance in Australia". *Journal of Housing and the Built Environment* 25.2, pp. 193–211.
- Yaxley, L. (2018). *Scott Morrison scraps Government plans to raise pension age to 70*. <http://www.abc.net.au/news/2018-09-05/scott-morrison-scraps-plans-to-raise-pension-age-to-70/10202678>.