2. ADEQUACY

Outline of this chapter

This chapter examines whether the retirement income system is achieving the objective of delivering adequate outcomes, against two elements (see *1C. The objective of the system and the roles of the pillars*). The system should:

1. Ensure a minimum standard of living for retirees with limited financial means that is consistent with prevailing community standards
2. Facilitate people to reasonably maintain their standard of living in retirement

First, it considers the performance of the system, especially the Age Pension and in-kind support, in providing a minimum standard of living. As the community lacks consensus on a suitable metric for a minimum standard of living in retirement, this issue is considered by looking at a range of measures.

Second, it explores the implications of increasing Commonwealth Rent Assistance on performance of the retirement income system, including on the minimum standard of living in retirement.

Third, the chapter considers the system's ability to facilitate people to reasonably maintain living standards between working life and retirement.

Finally, the chapter considers the implications of maintaining the Superannuation Guarantee (SG) rate at 9.5 per cent on the performance of the system, including the impact on facilitating people to reasonably maintain living standards between working life and retirement.

Section 2A. Achieving a minimum standard of living in retirement

Box 2A-1 Section summary

- **The level of income delivered through the Age Pension and government services provides a minimum standard of living in retirement for retirees with limited financial means that is consistent with community standards.**
- **The Age Pension has grown faster than both wages and prices since 2009.** The maximum rate compares favourably internationally and is above available absolute poverty benchmarks. Rates of financial stress for people with few other means drop substantially when entering retirement. Older Australians:
  - **Generally have lower levels of financial stress compared to the working-age population.**
  - **In lower-income households, experience improved living standards on entering retirement** as the Age Pension is higher than some working-age welfare payments and income levels.
  - **Have experienced reduced income poverty rates over the past decade,** especially singles and renters, although poverty rates remain elevated for some retirees who rent.
  - **Receive significant support from non-income sources.** Governments meet many of the health and aged care needs of older Australians. In 2015-16, households aged 65 and over accessed government services worth more than the Age Pension, with this value growing faster for retirees than any other age group. Reduced housing costs through high home ownership rates and higher levels of assets than working-age households are also significant forms of support for most retirees.
- **Renters and those who retire before Age Pension eligibility age are at higher risk of poor outcomes in retirement.** These groups experience higher levels of financial stress and poverty than the working-age population and other retirees. The additional support Commonwealth Rent Assistance provides is far below the additional housing cost private renters face compared to home owners.
- **Retirees still paying a mortgage are also at risk of poorer outcomes in retirement**. They experience higher levels of income poverty than the working-age population and are more exposed to interest rate and investment shocks than home owners.

Outline of this section

This section analyses the evidence whether the retirement income system, especially the Age Pension, provides a minimum standard of living. The section focuses on:

- The adequacy of the minimum standard of living provided by the Age Pension
- Wellbeing and poverty outcomes for recent retirees

Box 2A-2 Stakeholder views on achieving a minimum standard of living in retirement

Many submissions agreed that measuring adequacy required balancing a number of outcomes, particularly the need for an appropriate minimum level of income.

A number of submissions suggested no one should live in poverty in retirement, but opinions differed on how best to measure poverty. Submissions also recognised a need to achieve a standard of living above a basic level; however, different views emerged about how this should be defined and measured.

'The purpose of the social security pillar should be to prevent poverty. This means that minimum rates of payment should be adequate to cover the costs of essentials, including for those who face the higher costs associated with renting privately.'
(Australian Council of Social Service, 2020, p. 17)

Submissions took two main approaches for measuring poverty. Some discussed poverty with reference to a dollar-based budget standard or the poverty line, which they noted are easier for people to understand. Others discussed poverty relative to the living standards in the broader community.

' … budget standards may be used as an indicator of poverty and to assess the adequacy of social security payments to retired Australians.' (Super Consumers Australia, 2020, p. 5)

Some submissions argued that the Age Pension should be set based on alternative measures of wages. The Age Pension is currently benchmarked to male total average weekly earnings, which is unlikely to be a contemporary measure of wages for the broader community.

'It would be reasonable to start setting it (the Age Pension rate) against all full-time wages (males and females combined).' (Rice Warner, 2020, p. 8)

Assessing minimum standards

No single measure is available to determine whether the system delivers a minimum standard of living in retirement for those with limited financial means. Judgement is required, ultimately by the community as a whole.

A basket of indicators has been used to assess whether retirees are achieving minimum standards of living in line with prevailing community standards. This assessment is informed by the approach in the 2009 *Pension Review* (Harmer Review), international practices and submissions.

Looking at income alone will underestimate the adequacy of the retirement income system in providing a minimum standard of living in retirement. This is because a retiree's standard of living depends on whether they own their home, what government services they receive and if they have assets to draw on in retirement.

Two perspectives have been considered in assessing whether the system is delivering a minimum standard of living in retirement.

1. **Support provided by the maximum rate of the Age Pension**. Whether income from the Age Pension alone delivers a minimum standard of living and how the Age Pension has kept pace with community standards since the reforms in 2009 (Box 2A-3).
2. Comparing outcomes for the working-age population with those of retirees.

Assessing the adequacy of the Age Pension

Following the Harmer Review, the Age Pension was increased to better reflect community standards (Box 2A-3). The following is an assessment of whether the maximum rate of the Age Pension remains in line with community standards, based on considering a range of wage metrics, international pension systems, price changes and measures of absolute poverty.

Box 2A-3 The Harmer Review and the 2009-10 *Secure and Sustainable Pensions Budget measures*

The Harmer Review was the last major review to examine whether the level of the Age Pension was appropriate. To assess the adequacy of the Age Pension, the Harmer Review examined a range of indicators, including the value of the pension compared with prices and wages; comparisons with budget standards, international pension systems and poverty standards; and indicators of revealed wellbeing.

The Harmer Review found that:

- **Pension rates did not fully recognise the costs faced by single pensioners living alone** and that the approach of paying ad hoc bonuses did not provide financial security
- **Many pensioners who rented privately had high costs and poor outcomes**
- **Indexation arrangements for pensions needed to link pensions more transparently to community living standards** and better respond to the price changes experienced by pensioners (Harmer, 2009)

In response to the Harmer Review, the then Government implemented a suite of reforms (the *Secure and Sustainable Pensions* budget measure),[73] which included:

- **A one-off increase to the maximum value of the single Age Pension** by just over $30 per week. The maximum value for couples was also increased by around $10 per week (see below).
- **Changing the indexation arrangements of the Age Pension.** A new cost-of-living index, the Pensioner and Beneficiary Living Cost Index, was introduced to more closely measure the living costs faced by these households. Since these changes, the Age Pension has been adjusted in line with either the Consumer Price Index (CPI) or Pensioner and Beneficiary Living Cost Index, whichever is the higher.
- **Changing how the Age Pension is benchmarked to wages**. The maximum combined couple rate of pension was benchmarked to 41.76 per cent of male total average weekly earnings. The rate of the single pension was increased to 27.7 per cent of male total average weekly earnings — up from 25 per cent of male total average weekly earnings.
- **Merging pension supplements into a single supplement**. The total value of the supplements also increased by around $2.50 a week for singles and $10 a week for couples combined.

The extra support offered to age pensioners whose rent was not changed, despite the Harmer Review identifying this group as having poorer outcomes than other pensioners.

Social benchmarks

Given wages growth is commonly used as a proxy for changes in community living standards, the Age Pension should increase in line with worker incomes to maintain basic living standards in retirement.

The Age Pension compared with wages

Since the 2009 reforms, the Age Pension has grown faster than wages (Chart 2A-1) due to its indexation arrangements, which consist of two components:

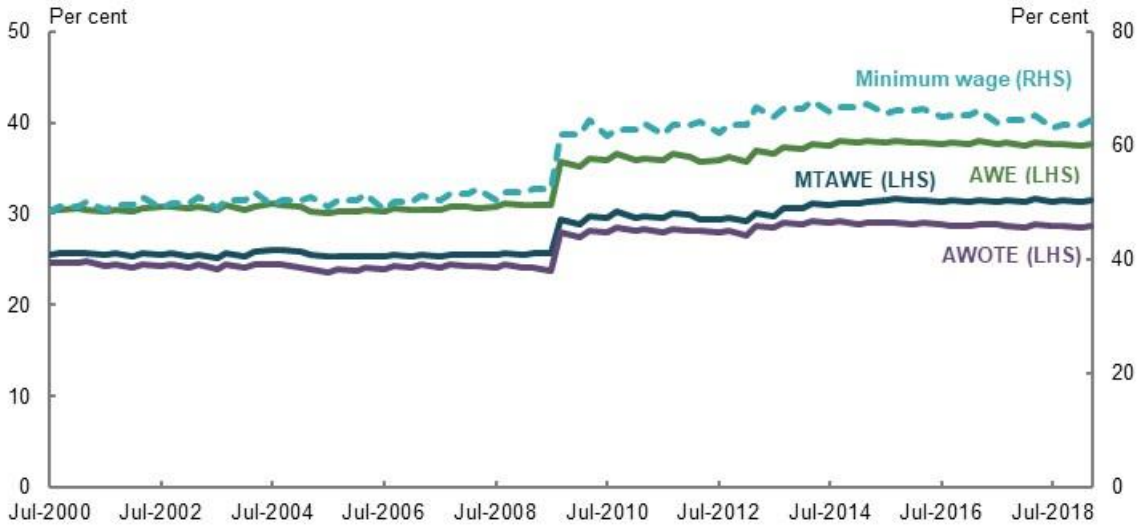
1. The Age Pension **base rate** is increased using whichever is higher of the Pensioner and Beneficiary Living Cost Index or the CPI. The rate of the Age Pension is then set based on the higher of this indexed amount or the wages benchmark, which is 27.7 per cent of male total average weekly earnings for the single rate of the Age Pension.
2. The **Pension Supplement** is provided in addition to the base rate and is indexed to the CPI.

[73] These measures were enacted in the *Social Security and Other Legislation Amendment (Pension Reform and Other 2009 Budget Measures) Bill 2009.*

Combined with low wages growth, these indexation arrangements have resulted in the Age Pension rising faster than wages from early 2014 (Chart 2A-1). The base rate of the Age Pension is currently about 4 per cent above the wages benchmark. The increase above the wages benchmark is not permanent and the Age Pension is expected to return to its benchmark rate in the long run.

For many retirees, the Age Pension provides a higher level of income than they receive during working life after adjusting for tax. For example, the maximum-rate Age Pension is higher than wages for 21 per cent of people, and 15 per cent of households, aged 25-64.

Chart 2A-1 Maximum rate of the single Age Pension as a proportion of wage benchmarks



Note: AWE: average weekly earnings, measures the total earnings of all workers. AWOTE: average weekly ordinary time earnings, measures earnings based on award, standard or agreed hours of work and excludes overtime and salary sacrificed income. MTAWE: male total average weekly earnings, measures total earnings of all male workers. AWOTE is in seasonally adjusted terms. Source: Analysis of data provided by The Treasury and (ABS, 2020d; Fair Work Commission, 2019c).

The Age Pension compared with prices

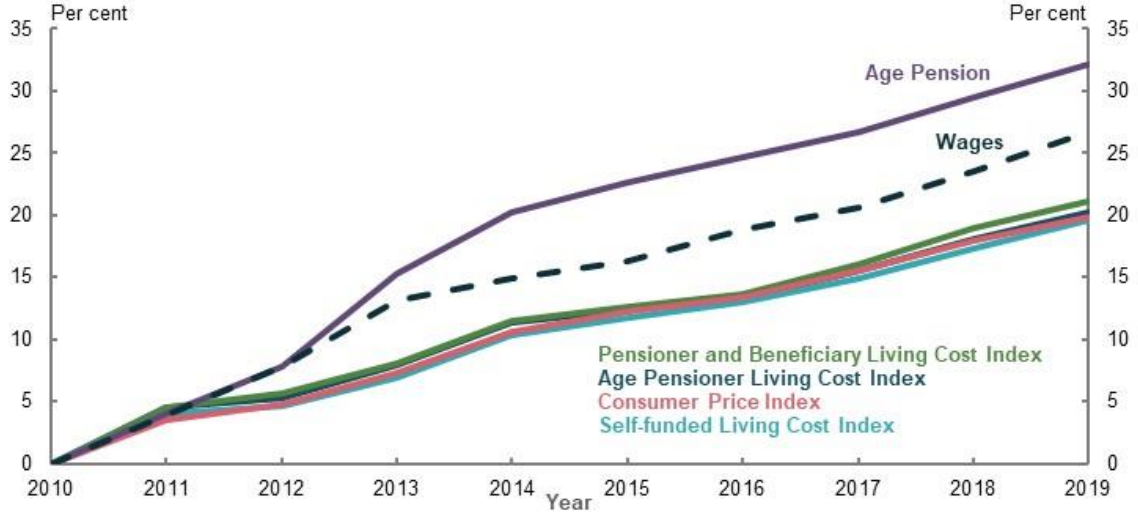
The real value of the Age Pension has increased since the 2009 reforms, up 10 per cent since 2010. In nominal (unadjusted) terms, the Age Pension has increased by 32 per cent while the CPI has increased by 20 per cent.

The ABS has three living cost indices to reflect the goods and services used by older Australians.

- **The Pensioner and Beneficiary Living Cost Index** measures the effect of changes in prices on the out-of-pocket living expenses experienced by age pensioner households and households receiving other social security benefits. Housing, food and non-alcoholic beverages are the highest weighted spending categories under this index.
- **The self-funded retiree living cost index** measures the effect of changes in prices on the out-of-pocket expenses of self-funded retirees. This index weights expenditure on recreation and culture, and alcohol and tobacco more highly than other indices. Housing costs have a relatively lower weight, reflecting high levels of home ownership among self-funded retirees.
- **The age pensioner living cost index** measures the effect of price changes on the out-of-pocket expenses of all age pensioners. This index has a similar composition to the Pensioner and Beneficiary Living Cost Index, but it places greater weight on recreation and health spending, and slightly less weight on housing costs.

These indices have all increased by around 20-21 per cent since 2010 (Chart 2A-2).

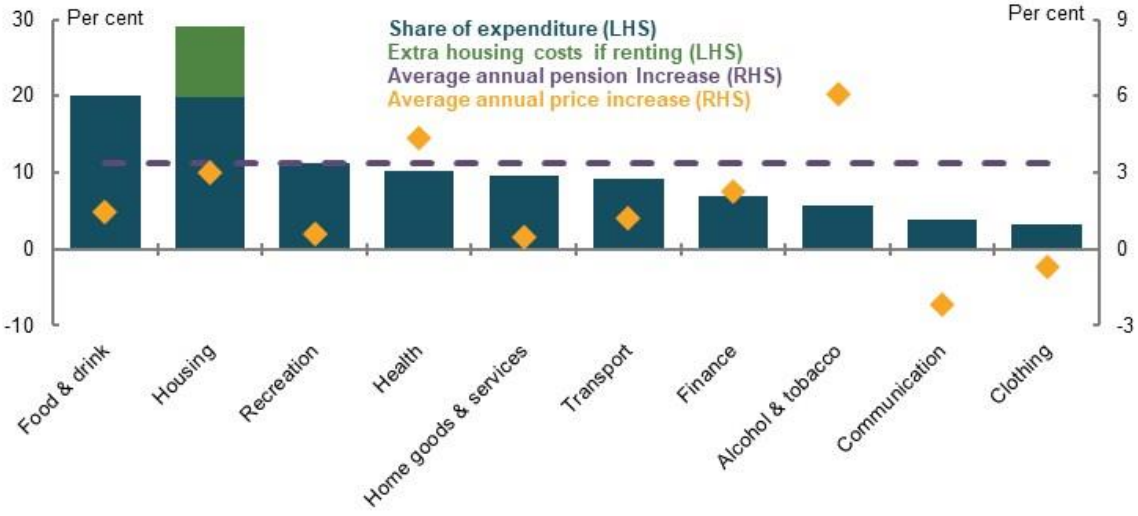
Chart 2A-2 Increase in the value of the Age Pension, wages and price indices



Note: Measures growth in value of indices since 1 July 2010. Wages is based on average weekly earnings, in original terms.
Source: Analysis of (ABS, 2020e) (ABS, 2020q), and data provided by the Treasury.

The two largest expenses for most age pensioner households (food and housing costs) have both grown below the rate of increase in the Age Pension over the past decade (Chart 2A-3). Although alcohol and tobacco price increases have grown at a faster rate than the Age Pension, these are small areas of expense for retirees. Health prices, where spending accounts for around 10 per cent of household budgets, have also outpaced increases in the Age Pension. This is not a significant issue for many retirees as the government significantly helps age pensioners meet their health costs (see Box 2A-4).

Chart 2A-3 Age pensioner expenses and price increases by category

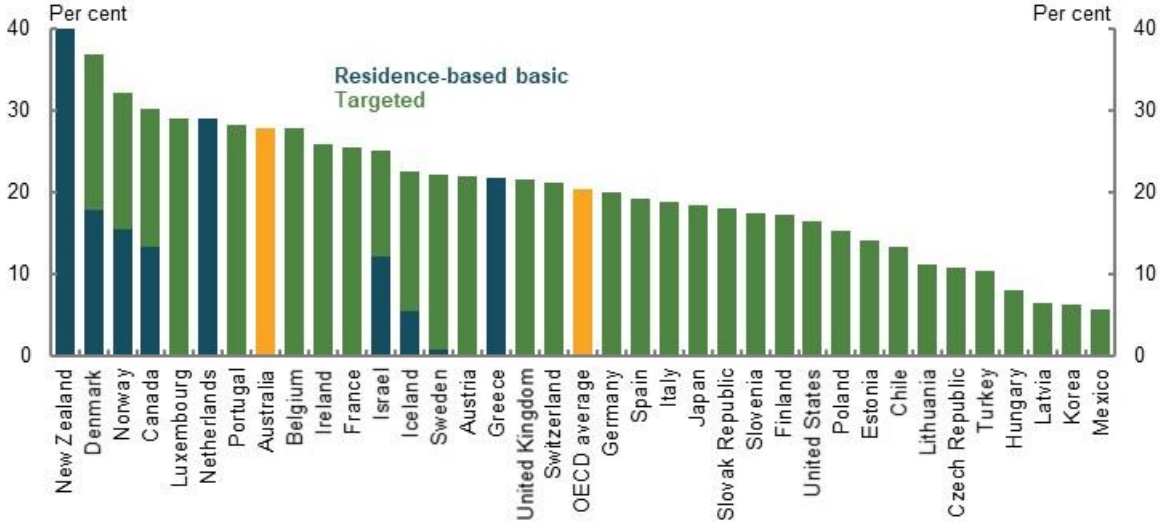


Note: Price and Age Pension increases are the average annual increase in value between 2009 and 2019. Share of expenditure is at September 2017. Source: (ABS, 2020e; ABS, 2017f; ABS, 2017e), Treasury payment parameters.

International comparison

Another indicator of the adequacy of the Age Pension is how it compares with safety net arrangements in other developed economies. **Measured as a proportion of gross earnings, at 27.8 per cent, the Age Pension places Australia eighth out of 36 OECD countries** (Chart 2A-4)**.** However, this measure misses some aspects of the Australian situation, including social transfers in kind such as Medicare and the Pharmaceutical Benefits Scheme and highly subsidised aged care services.

Chart 2A-4 Value of international safety net pensions as a proportion of average earnings



Note: Australia and OECD averaged figures highlighted in yellow. Australian system classified as 'Targeted' while OECD is the combined average. Figures are benefit value in 2018 as a proportion of average weekly earnings. 'Residence based basic' pensions typically do not apply a means test in determining eligibility for payment, though other criteria such as residency or minimum contribution requirements may apply. 'Targeted' pensions apply a means test in determining eligibility for payment. The Age Pension is a targeted pension scheme. Source: (OECD, 2019b).

Absolute poverty lines

Absolute poverty measures calculate the cost of a basket of goods and services to provide a certain minimum lifestyle. People with income below this level are considered to be living in poverty.

These measures are useful in determining whether households have access to the goods and services required to participate in society. But absolute benchmarks have limitations. An absolute benchmark reflects the cost of living in a particular location for a particular household type. It may not be universally applicable as some costs, especially housing, vary across locations.

The Henderson Poverty Line

In Australia, the Henderson Poverty Line is the most commonly used poverty benchmark. Developed in 1973 as part of the *Commission of Inquiry into Poverty*, it calculated the expenditure required to meet the basic needs of a family of four. Living costs for different households were then derived from that expenditure level.

The poverty line has since been updated for different ages and household types, and indexed regularly to per person disposable income. On this measure, the maximum rate of the Age Pension is around $80 per week above the poverty line for a couple including housing costs, and $26 per week above the poverty line for a single including housing costs (Melbourne Institute, 2019, p. 1).[74]

Absolute poverty lines highlight where households are achieving poor minimum outcomes. But they are not designed to show whether people are keeping up with broader community living standards. Income poverty, discussed subsequently below in *Assessing retirement outcomes against minimum standards*, provides a clearer picture of how well groups are keeping up with changes in community living standards.

[74] Henderson Poverty Line assumes households are renting and experience relatively high housing costs. Calculations exclude the value of any Commonwealth Rent Assistance that renter age pensioners may be eligible to receive.

Other budget standards

Budget standards may also attempt to measure an absolute poverty line. They are an estimate of what is needed, in terms of goods, services and activities, to achieve a particular standard of living and what that costs in a particular place and time (Saunders, 1999). Budget standards are usually designed to reflect the needs of a particular household type. They have the advantage of being easy to understand and based on a clear-cut basket of goods and services.

The 2009 Harmer Review examined the value of the Age Pension compared with a Low Cost Budget Standard, originally developed by the Social Policy Research Centre in 1998 (Harmer, 2009, p. 33). This standard estimated the cost of meeting a household's basic needs at a frugal level while maintaining social and economic participation in line with community expectations (Saunders, 1999).

The Harmer Review found the Age Pension was above the value of the Low Cost Budget Standard for couple households, but below the Low Cost Budget Standard for single households (Harmer, 2009, pp. 33-34) Following the Harmer Review, the Age Pension was increased.

The Low Cost Budget Standard has not been updated since 1998. It is no longer an appropriate benchmark given significant changes in technology and spending patterns over the last two decades. Given the Age Pension has outpaced price and wages growth since 2009, it may compare favourably, even to an updated Low Cost Budget Standard.

Some submissions suggested using the ASFA Retirement Standards, which were originally developed by the Social Policy Research Centre in 1998 and 2004. ASFA regularly reviews and updates these standards to reflect changes in prices and broader consumption patterns. The current ASFA 'modest standard' is described as 'better than the Age Pension, but still only allows for the basics' (ASFA, 2018a, p. 3). It is not appropriate to compare the value of the Age Pension to the ASFA modest standard as it is explicitly designed to exceed the Age Pension.

Assessing retirement outcomes against minimum standards

Many submissions noted poverty alleviation is a key minimum standard that should be delivered through the retirement income system. However, poverty can be measured and conceptualised in many ways. Following is an examination of a variety of measures to assess outcomes for different groups of retirees.

Retirees receive a broad range of non-monetary supports, including social transfers in kind, that reduce the level of income required to achieve a particular living standard (Box 2A-4). When assessing retiree poverty, these supports should be taken into account, including whether retirees are using their assets to fund their retirement. Otherwise, asset-rich households may be counted as 'living in poverty'.

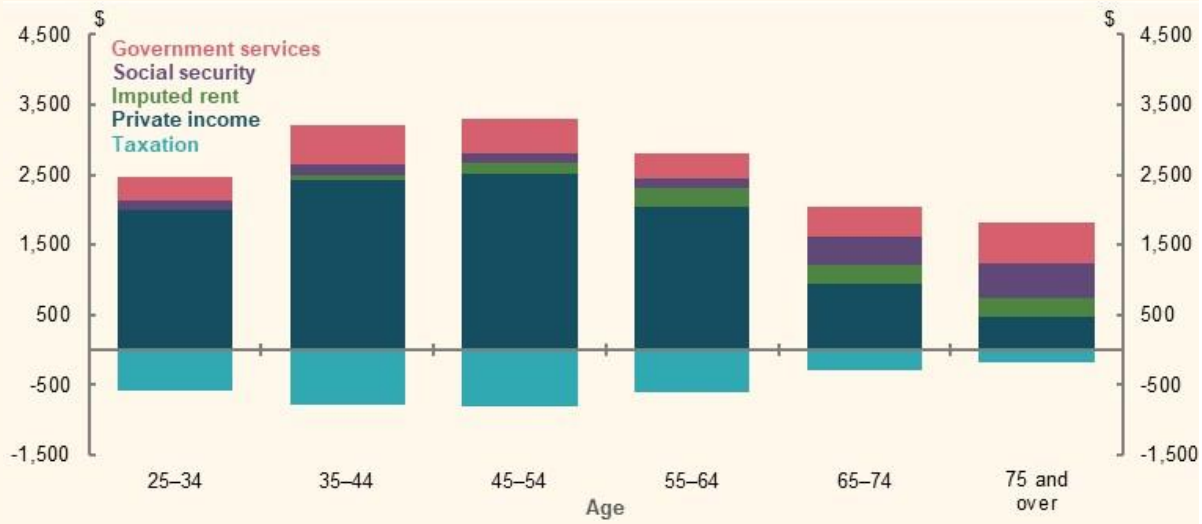
Box 2A-4 Non-income support for retirees

Non-income support that can improve a retiree's standard of living (Chart 2A-5) include:

- **Social transfers in kind.** Retirees receive relatively more support from transfers in kind than working-age households. On average, households aged 65 and above access transfers in kind worth more than the maximum rate of the single Age Pension (ABS, 2018c). This reduces out-of-pocket costs as health and care needs increase with age.
- **Concessions.** Access to concessions reduce out-of-pocket expenses. For example, the Pensioner Concession Card gives card holders access to subsidised pharmaceuticals and bulk-billed medical appointments. Other benefits include a range of discounted services through state governments and local councils, such as discounted utilities and council rates, car registration and concessional pricing for public transport (*1B. Design of Australia's retirement income system*).

- **Tax concessions.** Retirees typically pay less tax for a given amount of income. The higher tax-free threshold provided through the seniors and pensioners tax offset allows older Australians to keep more of their income than during working life. Superannuation earnings in the pension phase are also tax-free.
- **Personal assets.** Measures of income often fail to include when retirees make irregular withdrawals from superannuation; use financial assets, such as withdrawing funds from savings accounts; sell shares; or sell non-financial assets.
- **Home ownership**. Australians aged 65 and over have significantly higher rates of outright home ownership than working-age Australians (see *1D. The changing Australian landscape*). Home ownership reduces ongoing housing expenses and can act as an asset to be drawn on in retirement.

Chart 2A-5 Average weekly value of final household income by age range



Note: 2015-16 data. Final household income includes private income from labour force participation and financial assets, such as superannuation; social security payments; the value of government services, such as education or health care; and the value provided by the home for home owners (imputed rent). Imputed rent is calculated based on the market value of the rental equivalent, less housing costs (e.g. mortgage interest, rates, water rates, building insurance and repairs and maintenance). Households aged 65 and over may continue to receive income from people participating in the labour force, which will increase private income for these age ranges. Source: (ABS, 2018c).

Assessing wellbeing and poverty outcomes for retirees

Revealed wellbeing of retirees

Measures of revealed wellbeing (Table 2A-1) not only cover the adequacy of the Age Pension; they implicitly include the value of free or subsidised government services, home ownership and assets drawn on in retirement. They capture the benefits of income and non-income supports to retirees by exploring the degree to which households:

- **Feel satisfied with their circumstances,** having the resources to enjoy experiences that support wellbeing
- **Are under financial stresses,** such as having to go without goods or services or delay bill payments due to financial circumstances

Because financial stress measures capture a broad range of experiences, no category of households (by income level or age group) has zero rates of financial stress (Wilkins, 2016, pp. 86-87).

Table 2A-1 Examples of revealed wellbeing indicators

Financial stress experiences	Missing out experiences
Assistance sought from welfare/community organisations due to shortage of money	Household does not have a night out once a fortnight
Sought financial help from friends/family due to shortage of money	Household does not have a special meal once a week
Unable to heat home due to shortage of money	Household does not have friends or family over for a meal once a month
Went without meals due to shortage of money	Household does not have a holiday away from home for at least one week a year
Whether could pay gas/electricity/telephone bill on time due to shortage of money	Household buys second-hand clothes most of the time
Whether could not pay registration/insurance on time due to shortage of money	Household does not spend time on leisure or hobby activities
Ability to raise emergency money	
Pawned or sold something due to shortage of money	

Source: (ABS, 2017d).

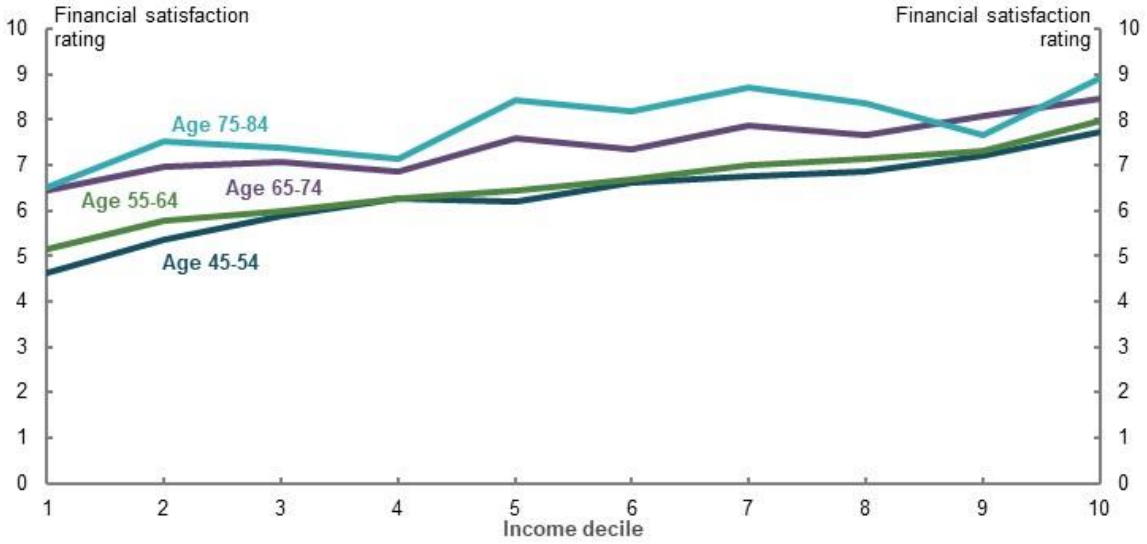
The ABS classifies households with four or more financial stress or 'missing out' experiences as being 'in financial stress' (ABS, 2017d). If retiree groups have higher levels of financial stress than the working-age average, this may indicate the retirement income system is not achieving adequate minimum standards for those retirees.

Financial satisfaction

Retirees generally report higher financial satisfaction than working-age people across the income distribution (Chart 2A-6). Cost pressures, such as mortgages and raising children, generally fall as people approach and enter retirement.

Government services help low-income retirees to reduce financial stress. Differences in financial satisfaction between retirees and working-age people are greatest for low-income households (Chart 2A-6). This may reflect the higher value of the Age Pension compared to working-age social security payments. For example, as at 1 May 2020 the maximum value of the single Age Pension was around $944 per fortnight compared to almost $574 for the JobSeeker Payment (including the Energy Supplement but excluding the temporary Coronavirus Supplement).

Chart 2A-6 Financial satisfaction, by age and income



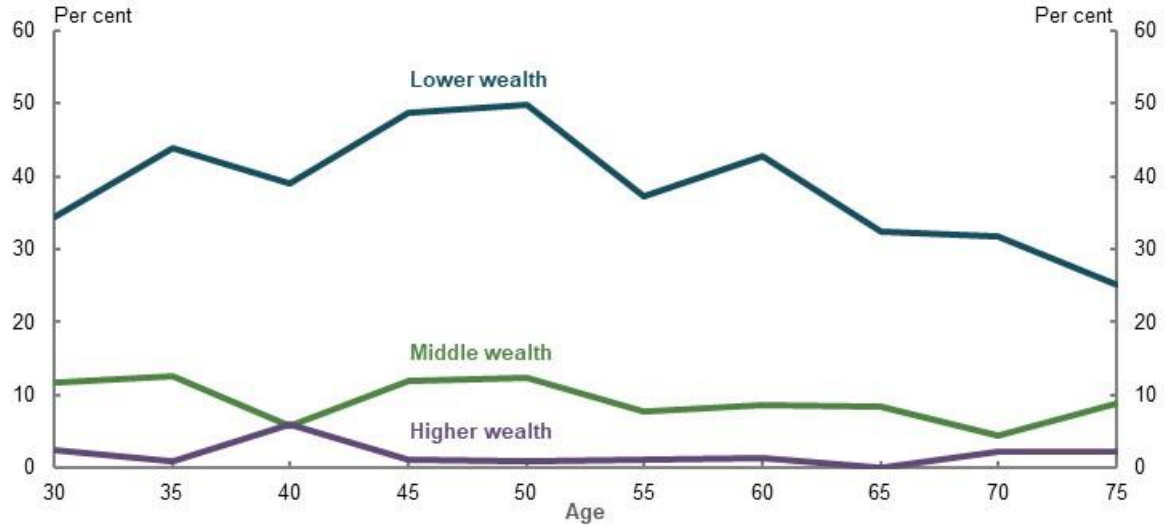
Note: Income deciles are calculated at the population level. Source: Analysis of HILDA Survey data (Wave 18).

Chart 2A-6 also suggests that income has a weaker relationship with financial satisfaction for retirees compared to working-age households. For those on higher incomes, the increase in financial wellbeing between working age and retirement is more muted.

Financial stress

Rates of financial stress decline as households approach and enter retirement. This difference is most pronounced among lower-wealth households, where rates of financial stress drop about 10 percentage points at age 65 from elevated levels between ages 40-60 (Chart 2A-7).

Chart 2A-7 Proportion of households in financial stress, by age and wealth



Note: Wealth deciles are calculated by age range rather than at a population level. Lower wealth is the bottom 20 per cent of households, middle wealth is the 40th to 59th percentiles, and higher wealth is the top 20 per cent, based on equivalised household wealth within age groups. Source: Analysis of ABS Household Expenditure Survey Confidentialised Unit Record File, 2015-16.

Retirees are less likely to be in financial stress than working-age households. About 11 per cent of retirees are in financial stress, compared with 16 per cent of working-age households or 11 per cent of employed working-age households. These rates are similar in the HILDA Survey, where 4 per cent of retirees and 9 per cent of working-age people experience financial stress.[75]

Retirees are also less likely to experience any indicators of financial stress than working-age households. Around two-thirds of retirees have no financial stress indicators, compared with 56 per cent of the working-age population aged 25 and over.

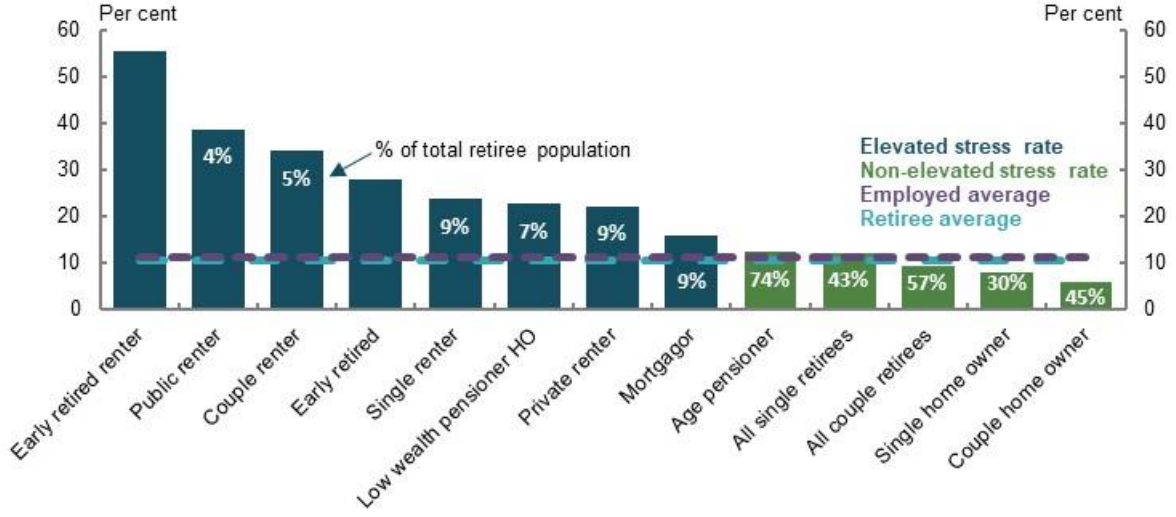
These findings are supported by a measure of wellbeing derived by the Harmer Review, based on the 5 per cent of the population with the most adverse outcomes. Using this measure, retirees in 2017-18 were half as likely to be in the most financially stressed 5 per cent of the population as working-age households.

Financial stress within groups of retirees

A number of groups of retirees experience rates of financial stress significantly above the working-age average. **In particular, the retirement income system does not appear to be delivering an appropriate minimum standard of living for renters and many who retire early** (Chart 2A-8).[76]

[75] Analysis of HILDA Survey data (Wave 18).
[76] Review analysis of HILDA Survey data also found these groups experience elevated levels of financial stress.

Chart 2A-8 Financial stress rates of retiree households



Note: Percentages in chart represent the size of the group compared with the total retired population. Some categories overlap; for example, the couple and couple renter categories. Retiree defined as household reference person being aged 65 and over. Early retired means aged 55-64 and not in the labour force. Low means households are in the bottom 20 per cent for both wealth and income. Home owner (HO) means outright home owner. Employed population includes households of working age where household reference person is in employment. Elevated stress defined as at least 5 percentage points above employed population average. Source: Analysis of ABS Household Expenditure Survey Confidentialised Unit Record File, 2015-16.

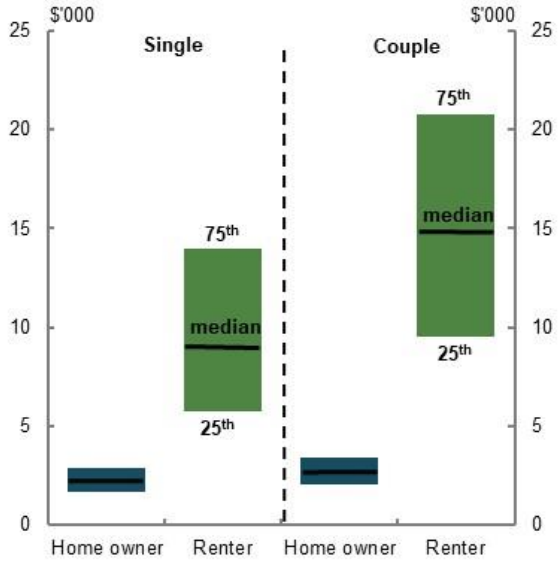
Private renters

Almost one-quarter of retirees who rent privately are in financial stress (Chart 2A-8). High housing costs are likely to be the primary driver of the financial stress experienced by this group.

Renters face higher housing costs than home owners in retirement: an additional $6,900 per year for the median single, and $12,200 per year for the median couple (Chart 2A-9).

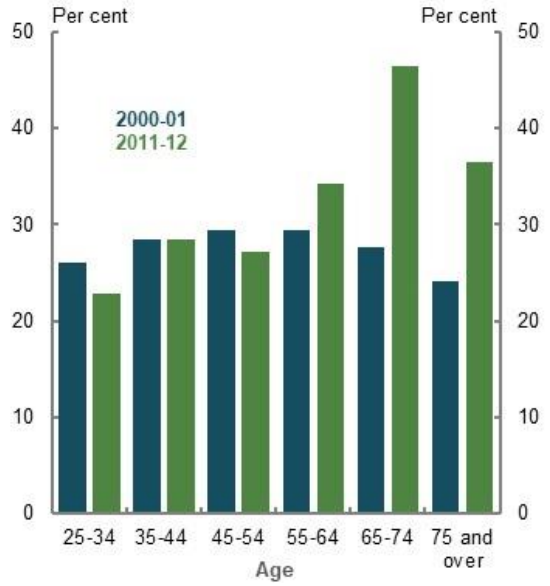
Chart 2A-9 Housing expenditure and rental stress

Retirees' housing expenditure, 2017-18



Source: Analysis of (ABS, 2019s).

Proportion of renters in rental stress, by age



Source: (Productivity Commission, 2015a)

Note: Housing expenditure is in 2017-18 dollars, on annual terms and is a comprehensive measure of net housing costs including interest component of mortgage payments, rent, maintenance payments and other related fees such as body corporate. Commonwealth Rent Assistance has not been deducted from rent payments and is included as income.

Renters in retirement are becoming more vulnerable to rental stress compared with renters in other age groups (Chart 2A-9).[77] Lower disposable income after housing costs contributes to higher financial stress among renters in retirement (Productivity Commission, 2019b).

Public renters

More than one-third of public renter retirees are in financial stress. Within the public rental system, rents are capped at a proportion of the renter's income, commonly 25 per cent. This means their housing costs are generally higher than age pensioners who own their own homes, but typically lower than for those in the private market.

This group's high rates of financial stress may also be caused by other cost of living pressures. The tight targeting of public housing means tenants may be from disadvantaged groups. About 38 per cent of households in public housing include a person with disability and 13 per cent include an Indigenous person (Australian Institute of Health and Welfare, 2019).

Retired before Age Pension eligibility age

Around 28 per cent of early retirees experience financial stress.[78] This may be because unemployment in the lead-up to retirement forces households to draw on savings and assets that would have otherwise been saved for retirement. Early retirement may also interrupt voluntary savings that households may otherwise have made in later working years as they prepared for retirement.

People with low wealth are more likely to retire involuntarily (see *3E. Age of Retirement*). These households may not have access to private financial resources. Around 10 per cent of entrants on the Age Pension between September 2018 and September 2019 were on Newstart Allowance immediately prior to qualifying for the Age Pension.[79]

Renters who retire early have the highest levels of financial stress of any retiree group. Over half of these households are in financial stress. This may be due to a combination of low financial resources and high housing costs.

Low wealth

Low wealth by itself does not appear to be a driver of high financial stress in retirement.

Financial stress rates for low-wealth households are more closely related to housing, as two-thirds of this group are renters. Controlling for housing, 33 per cent of low-wealth renters are in stress, whereas around 22 per cent of low-wealth home owners are in stress.[80]

Yet financial stress still drops significantly at retirement for low-wealth households (Chart 2A-7) and this group experiences low levels of income poverty. Low wealth exacerbates financial stress where other critical drivers are present, including renting and retiring prior to Age Pension eligibility age. A lack of outside resources to help meet high housing costs or make up for lower government payments appears to magnify financial stress. This suggests that the Age Pension and social transfers in kind improve wellbeing in retirement compared with working life for low-wealth households.

Gender

The proportion of single retired men and single retired women in financial stress is broadly similar: around 12 per cent. Single female retired renters are marginally more likely to be in financial stress than single male retired renters: 25 per cent and 22 per cent, respectively.

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[77] Lower-income earners are considered to be in 'rental stress' when they spend over 30 per cent of their gross income on rents (ABS, 2019n).

[78] Early retirement is defined as households where the reference person is unemployed and aged between 55 and Age Pension eligibility age.

[79] Department of Social Services payment data.

[80] Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

Disability status

Around 11 per cent of households with a person with disability in retirement are in financial stress, in line with the retired population average.

The proportion in financial stress only marginally changes with the severity of the disability or disabilities. Around 10 per cent of households with a person with a mild or moderate core activity limitation in retirement are in financial stress. Around 15 per cent of households with a person with a profound or severe core activity limitation in retirement are in financial stress.

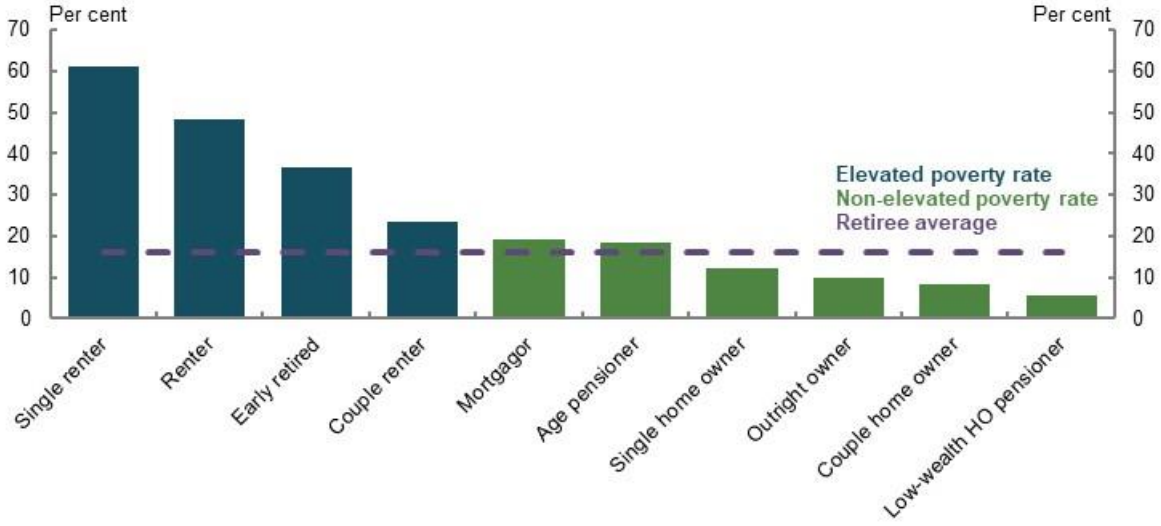
Around one-third of renting households with a person with a profound or severe core activity limitation in retirement are in financial stress, above the retired renting population average of 25 per cent.

Income poverty

Poverty rates estimate the level of income inequality in a society and between different groups within society, in either absolute or relative terms. The following analysis focuses on relative poverty, or 'income poverty', based on wage rises and gains in community living standards. Absolute poverty is discussed in *Assessing the adequacy of the Age Pension* above.

Although the income poverty measure has limitations, in being solely income-based, it is useful to identify trends and where groups are falling behind (Chart 2A-10). Income poverty is measured based on the approaches used by ACOSS (Davidson, et al., 2018) and CEPAR (2018a), defined as 50 per cent of median equivalised weekly income once housing costs have been deducted.[81]

Chart 2A-10 Incidence of income poverty among different retiree groups, 2017-18



Note: Data relates to 2017-18 financial year. Elevated poverty rate defined as 5 percentage points above retiree average. Retirees are where household reference person is aged 65 and over. There is overlap between some categories; for example, the age pensioner and all couple retiree categories. Early retired means aged 55-64 and not in the labour force. Low-wealth HO pensioner means outright home owning retired households in receipt of government payments and in the bottom 20 per cent of the wealth distribution. Housing costs includes the value of both principal and interest components of mortgage repayments. Source: Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

An 'after housing cost' measure reflects the value that many retirees gain from lower housing expenses through home ownership. Under this approach, around 16 per cent of retirees were in

[81] Housing costs include both interest and principal of a mortgage, general and water rates for owners, rent payments, and any rates and body corporate payments for renters. Equivalising adjusts income for household size.

income poverty in 2017-18, compared with 15 per cent for the working-age population (Chart 2A-10).[82] Under this approach the proportion of retirees who are in poverty dips substantially (Box 2A-5).

Box 2A-5 How the OECD measures income poverty

The OECD uses relative poverty rates to measure the outcomes delivered by different pension systems, calculating income poverty as 50 per cent of median equivalised weekly income on a 'before housing costs' basis (OECD, 2013, p. 65). In contrast, the European Union uses 60 per cent of median equivalised disposable income (Eurostat, 2018).

Under the OECD approach, the poverty rate of Australian retirees is high compared to other countries (Chart 2A-11). However, the OECD measure of poverty is a poor fit because high rates of home ownership among Australian retirees reduce their living expenses and boost standards of living.

Chart 2A-11 Income poverty rate of older households, OECD countries

Note: Poverty rates among households aged 65 and older. Source: (CEPAR, 2018a).

Income poverty among different retiree groups

The following considers poverty rates of different groups of retirees, including those with elevated levels of stress.

Renters

One in eight households aged 65 and over are renters and around 48 per cent of renters experience income poverty (ABS, 2019n). Single renter households have even higher rates of income poverty — in excess of 60 per cent.

As renters are more likely to have lower income and wealth, they rely more on government payments such as the Age Pension and Commonwealth Rent Assistance to meet increased housing costs (see Box 2A-6 for details on Commonwealth Rent Assistance).

High levels of income poverty among these households reflects the greater housing costs incurred by renters in retirement, compared with most retirees who own their home outright.

In June 2019, the average fortnightly rent for retiree households receiving Commonwealth Rent Assistance was around $438. Maximum Commonwealth Rent Assistance covered around 34 per cent of the average single household's fortnightly rent, and 24 per cent of rent for couples (Department of

[82] Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18. Working age is defined as people aged between 18 and 64, regardless of labour force participation status.

Social Services administration data). More broadly, the maximum value of Commonwealth Rent Assistance covers less than 20 per cent of average market rents (CEPAR, 2019, p. 57).

Box 2A-6 Commonwealth Rent Assistance and the costs of renting

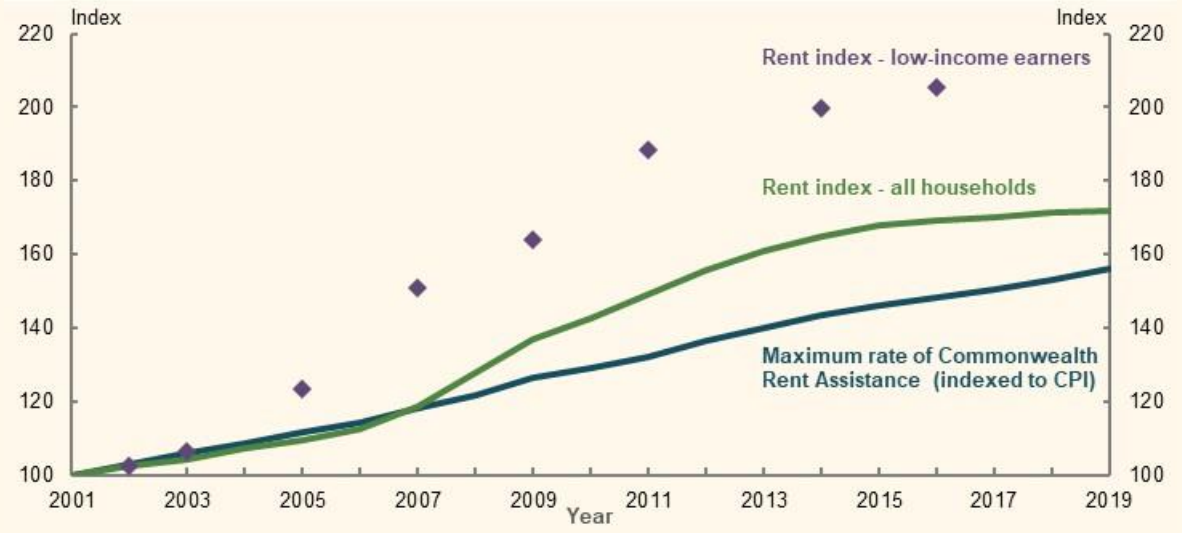
Commonwealth Rent Assistance is a supplement available to retirees who are renting and is means tested with the Age Pension. The payment covers 75 per cent of rental costs above a minimum threshold and is capped at a maximum amount (around $300 per fortnight for a single). Market rents in some areas can significantly exceed the value of these caps.

The maximum value of Commonwealth Rent Assistance has not kept pace with market rents, especially for low-income renters.

- There was a one-off 10 per cent increase in Commonwealth Rent Assistance in 2000, but since then its value has fallen relative to rental costs. Rents for lower-income earners have risen particularly quickly compared to average (Chart 2A-12).
- Commonwealth Rent Assistance is covering a smaller share of rental costs now than it did two decades ago. The payment is increasingly less effective in preventing income poverty and assisting eligible renters to secure an adequate standard of living in retirement (Productivity Commission, 2019b; Australia's Future Tax System Review, 2009).

The impact of changes to the support provided by Commonwealth Rent Assistance is considered in *2B. Policy scenario: Implications of increasing Commonwealth Rent Assistance*.

Chart 2A-12 Growth in value of Commonwealth Rent Assistance and rent costs



Source: (Department of Social Services, 2020c; ABS, 2020e; Productivity Commission, 2017).

Single households

In 2017-18, around 24 per cent of single-person retiree households were in poverty, above the retiree average. However, housing rather than relationship status is the main driver of poverty. More than 20 per cent of older single households rent, compared with around 8 per cent of older couples.[83] More than 60 per cent of single renter households experience income poverty, while 12 per cent of single home owners are in income poverty.

Households with mortgages

People who enter retirement with a mortgage also have a higher level of income poverty than the average retiree. Ten per cent of households aged 65 and over have a mortgage on their home (see

[83] Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

1D. The changing Australian landscape). In 2017-18, around 20 per cent of these households were in income poverty.

Higher poverty for this group largely reflects the costs associated with continued mortgage repayments. Despite higher than average income poverty among mortgagors, their rates of financial stress are similar to the retiree and working-age averages. Even excluding the family home, these households have a higher net worth than renters.

Mortgagors are also are exposed to a higher level of risks, including exposure to interest rate changes and greater exposure to sequencing risk[84], than other retirees (see *2C. Maintaining standards of living in retirement*). Higher house prices and rising mortgages in retirement could reduce standards of living even further for future retirees with a mortgage.

Gender

The proportion of single retired men and single retired women in income poverty is broadly similar: around 25 per cent for single men and 23 per cent for single women. Single retired renting women are marginally more likely to be in income poverty than single retired renting men: 63 per cent and 59 per cent, respectively.

Disability status

Those with disability are marginally less likely to be in income poverty than the retiree average. Fourteen per cent of households with a person with disability in retirement are in income poverty. This is broadly constant across the severity of disability.

A lower proportion of people with a profound or severe core activity limitation who rent in retirement are in income poverty (32 per cent), compared to renters across the retiree population (48 per cent). This may be due to a high proportion of this group having rent-free living arrangements, or who rent through public housing (13 per cent, compared to 6 per cent for the total retiree population) (ABS, 2019g).

Historical income poverty rates

The incidence of income poverty among older Australians has fallen in the past decade. Changes to the Age Pension in 2009 led to a large drop in poverty rates, which continued to decline (Chart 2A-13).

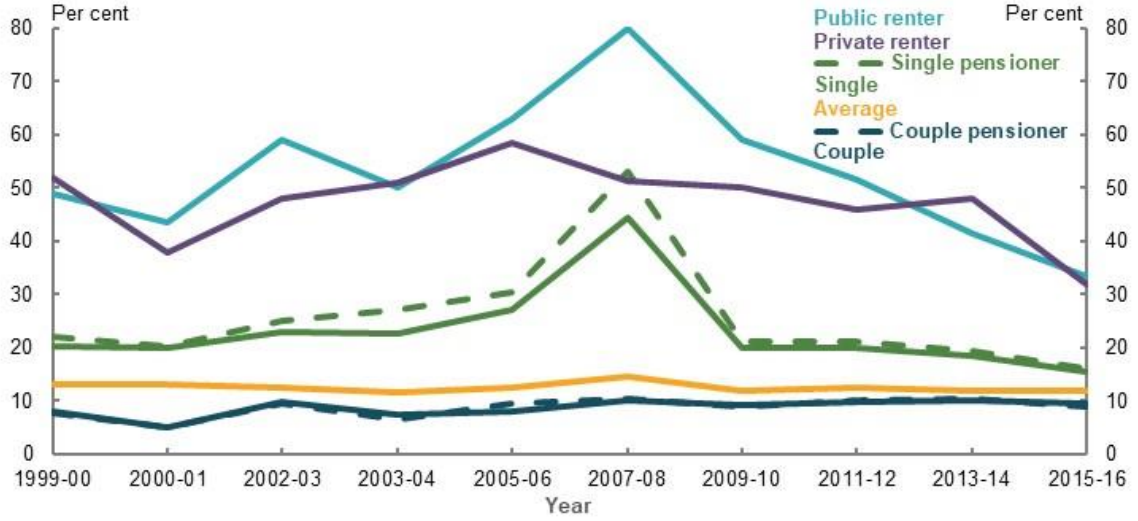
More than 40 per cent of single person retiree households and over half of renter retiree households were in income poverty in 2007-08 (Chart 2A-13). Analysis by ACOSS (Davidson, et al., 2018, p. 13) suggests poverty outcomes for most retiree groups improved following changes to the Age Pension in 2009.

Although poverty rates have improved, retiree renters continue to have income poverty levels well in excess of the average rates for retirees and working-age people, suggesting retirement incomes for renters are not meeting community standards.

Poverty measures have some limitations when comparing between groups. These differences may be due to issues with the measure itself, explored in *Limitations of income poverty*, below.

[84] Sequence risk is the danger that the timing of withdrawals from a retirement account will damage the investor's overall return.

Chart 2A-13 Historical income poverty rates, by retiree group



Note: Households aged 65 and over. 'pensioner' includes households on government social security payments. 'Average' refers to the entire population and is not confined to households aged 65 and older. Source: (Davidson, et al., 2018).

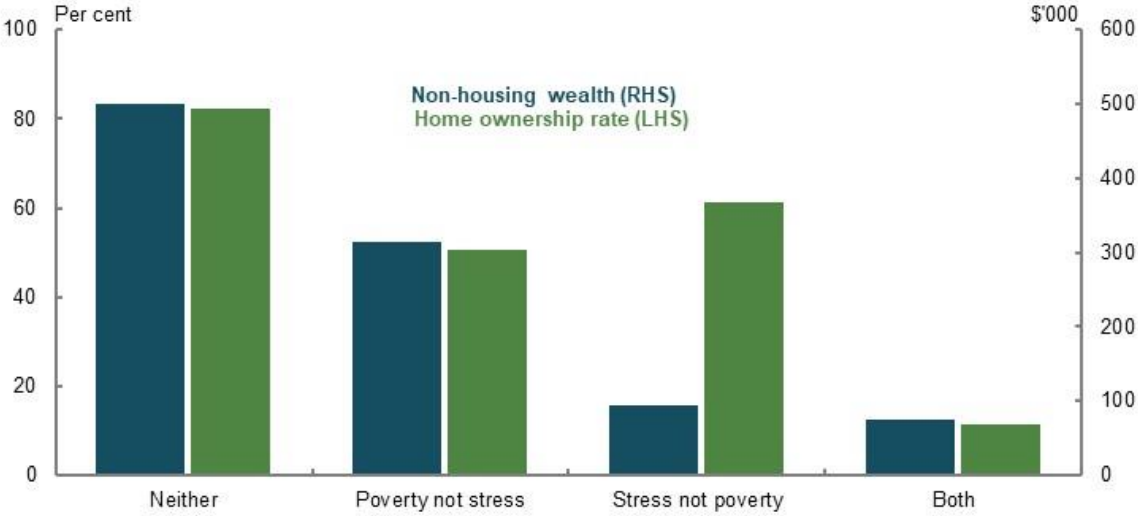
Limitations of income poverty

Measures of income poverty may overstate disadvantage among older Australians as they:

- Vary significantly depending on the definition of poverty used
- Fail to recognise both the wealth that retirees may draw on to fund their living standards and the value of social transfers in kind
- Depend on an absolute line that people are either above or below, without showing how far people are below the line

Retirees classified as being in poverty but not in financial stress tend to have significantly more non-housing wealth than retirees in financial stress (Chart 2A-14). Retirees in income poverty but not stress have equivalised median assets outside the home of $314,000 on average. These households may be drawing on their assets outside superannuation to help fund retirement, but these drawdowns are not classified as income in ABS surveys (ABS, 2019s).

Chart 2A-14 Comparison of income poverty and financial stress measures for retirees



Note: Figures are in 2015-16 dollars. Retiree defined as household reference person being aged 65 and over. Home owners are outright owners. Non-housing wealth is equivalised for household size. Source: Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2015-16; Analysis of ABS Household Expenditure Survey Confidentialised Unit Record File, 2015-16.

Box 2A-7 Impacts of policy settings on the adequacy of the minimum standard

Many submissions proposed changes affecting how retirees achieve a minimum standard of living. The following outlines some implications of some of those proposals.

- **Increase assistance for renters.** Retirees who rent experience higher levels of financial stress and income poverty than other retirees. While the indexation of the Commonwealth Rent Assistance has not kept pace with increases in rents, even large increases in Commonwealth Rent Assistance would only be a fraction of the additional housing costs faced by retiree renters (see *2B. Policy scenario: Implications of increasing Commonwealth Rent Assistance*). A new approach is required to help renters achieve a minimum standard of living in retirement and reduce levels of income poverty in retirement.
- **Increase income support for involuntary retirees.** Involuntary retirees experience higher levels of financial stress and income poverty than most retirees. Income support for households under Age Pension eligibility age is not considered to be part of the retirement income system. Whether people who retire involuntarily before Age Pension eligibility age achieve a minimum standard of living will depend on the level of the JobSeeker Payment. Any change in the rate of the JobSeeker Payment must consider its broader implications as it applies to all age groups and many recipients may re-enter the workforce (see *3E. Age of retirement*).

Section 2B. Policy scenario: Implications of increasing Commonwealth Rent Assistance

Box 2B-1 Section summary

- **Increasing Commonwealth Rent Assistance would provide some additional support to people most likely to fall below a minimum standard of living in retirement.** For the typical renter, increasing the maximum rate by 40 per cent would reduce retiree renters' housing expenditure and increase their disposable income after housing by a small amount; around $28 per week. This would marginally reduce the housing expenditure gap between renters and home owners by around 8 per cent for retirees at the median income.
- **The increase in Commonwealth Rent Assistance would only reduce financial stress among renting retirees by around 1 percentage point.** This would narrow the gap in financial stress rates between renters and home owners by 10 per cent. The effect on income poverty and retirement incomes would be minor, reflecting that most renters in income poverty have incomes substantially below poverty benchmarks.
- **The increase in Commonwealth Rent Assistance would marginally redress retirement equity for disadvantaged groups.** Some groups that experience poorer outcomes in retirement, such as women and the involuntarily retired, are more likely to rent. Increases in Commonwealth Rent Assistance would marginally benefit these groups and reduce their retirement income gap with other retirees.
- **The increase in Commonwealth Rent Assistance would slightly reduce the inequity between home owners and renters.** Home owner retirees would continue to receive higher Age Pension payments than renters with similar asset values.
- **The fiscal cost of a 40 per cent increase in the maximum rate of Commonwealth Rent Assistance is estimated to be $370 million for Age Pension recipients and $1.7 billion for all Commonwealth Rent Assistance recipients.** An increase in Commonwealth Rent Assistance is not expected to have a significant impact on market rents.
- **Even if the maximum rate is increased by 40 per cent, Commonwealth Rent Assistance remains a small proportion of the housing expenses faced by retiree renters and does not significantly alleviate stress and income poverty rates for renters in retirement.** The current design of Commonwealth Rent Assistance has limited capacity to help retiree renters achieve adequate retirement outcomes. A broader approach to support renters in retirement should be considered.

Outline of this section

Many submissions suggested increasing Commonwealth Rent Assistance. To improve understanding of how increasing Commonwealth Rent Assistance would affect outcomes for retiree renters, this section considers:

1. The purpose of Commonwealth Rent Assistance, with reference to different housing expenses for renters and home owners
2. The impact of increasing Commonwealth Rent Assistance to compensate for the disparity between the maximum Commonwealth Rent Assistance rate and market rents
3. The effect of increasing Commonwealth Rent Assistance on the adequacy, equity and sustainability of the retirement income system

Box 2B-2 Stakeholder views on Commonwealth Rent Assistance

Many submissions highlighted the need to change the policy settings of Commonwealth Rent Assistance.

Stakeholders noted that:

- **Retirement outcomes for renters were poor on average relative to home owners.** Lower-income earners renting in retirement may struggle to have adequate retirement incomes. Poverty among older Australians is concentrated among private renters.
- **The rate of Commonwealth Rent Assistance is low relative to market rents and does not help renters achieve adequate retirement incomes.** The indexation of Commonwealth Rent Assistance to CPI erodes the adequacy of the payment over time, given that growth in market rents has outpaced growth in the CPI.

Numerous submissions argued for an increase in Commonwealth Rent Assistance to improve outcomes for renters in retirement and as a targeted measure to reduce old-age poverty.

Submissions also argued that the indexation method for Commonwealth Rent Assistance should change, but had different opinions on the appropriate benchmark.

The role of Commonwealth Rent Assistance in retirement

Commonwealth Rent Assistance is a tax-free payment made to private renters who receive social security benefits, including the Age Pension. About 22 per cent of all Commonwealth Rent Assistance recipients receive the Age Pension (Department of Social Services, 2020a). Age Pension recipients who are not private renters, such as those in public housing and residential aged care, do not receive Commonwealth Rent Assistance.

Commonwealth Rent Assistance currently covers less than half of rent expenses. It provides 75 per cent of fortnightly rental expenses between $124.60 and $310.73 for single renters, and between $201.80 and $377.27 for couple renters as at 1 May 2020. Commonwealth Rent Assistance is not paid if rent is below the lower threshold. The maximum fortnightly payment is $139.60 for singles and $131.60 combined for couples if their rental expenses are at or above the upper threshold.[85] Rent thresholds and maximum payments are indexed in March and September each year to reflect changes in the CPI.

As outlined in *2A. Achieving a minimum standard of living in retirement*, the median housing cost (mainly rent expenses) for retirees is around $350 per fortnight for single renters and around $570 for couple renters. While Commonwealth Rent Assistance covers 45 per cent of retirees' rent expenses at most, for two-thirds of recipients it covers less than a third. This is because most renting retirees face rent expenses far above the upper rent threshold that Commonwealth Rent Assistance is paid on. For all renting retirees, Commonwealth Rent Assistance covers an average of 13 per cent of their rent expenses.[86]

Even with Commonwealth Rent Assistance, retired households that rent still face substantially higher housing expenses than home owners. The ratio of Commonwealth Rent Assistance rate to market rent has been declining over the past three decades because Commonwealth Rent Assistance is indexed to the CPI, which has been growing more slowly than rental inflation on average over that time (see *2A. Achieving a minimum standard of living in retirement*).

Because retired renters achieve poorer outcomes than most home owners, previous reviews suggested a considerable increase in Commonwealth Rent Assistance to reduce poverty and financial

[85] This section uses the maximum fortnightly payment rate for those without dependent children, which is received by the majority of people receiving the Commonwealth Rent Assistance in retirement. Those with dependent children (e.g. grandparent carers) may receive a higher rate.
[86] Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

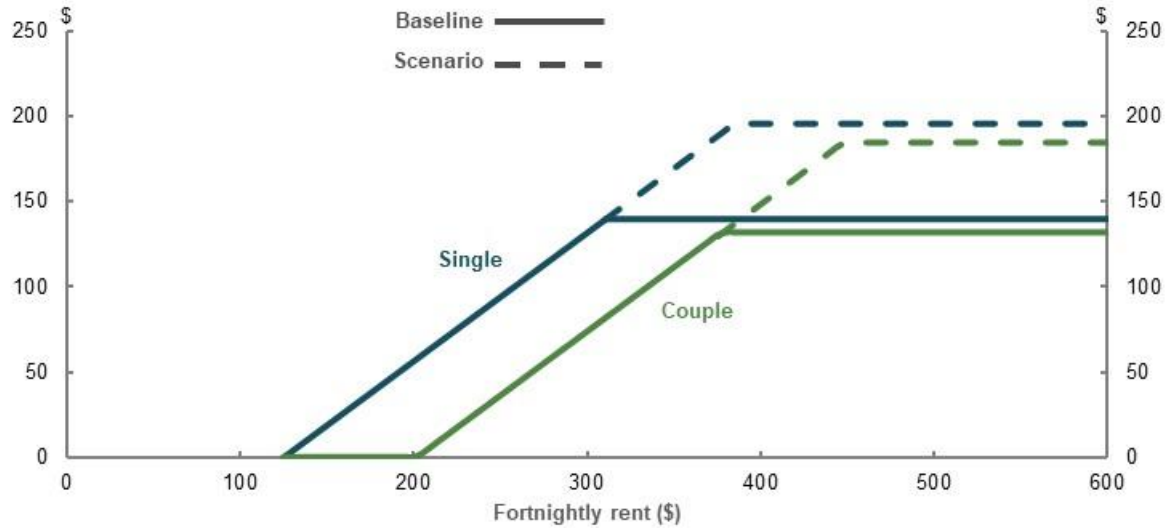
stress rates among retirees (Australia's Future Tax System Review, 2009). It was argued that increases in Commonwealth Rent Assistance payments would target those who need additional support because renters in retirement are most likely to be in the bottom three income deciles and are generally full-rate age pensioners with low asset levels.

In the course of this review, some stakeholders suggested increasing Commonwealth Rent Assistance by 20-100 per cent, while others suggested increasing the maximum rate by 40 per cent. Changing the way Commonwealth Rent Assistance is indexed was also suggested to better reflect developments in the rental market and provide consistent and adequate support for renters.

Impact of an increase in the rate of Commonwealth Rent Assistance

Following is an analysis of the effect of a 40 per cent increase in the maximum rate of Commonwealth Rent Assistance on retirement outcomes for renters. This would be an increase in the maximum payment by around $28 per week or $1,450 per year. This increase reflects the difference in the increase in the rent inflation index and the CPI over the past 15 years (see Chart 2A-12 in *2A. Achieving a minimum standard of living in retirement*). This scenario involves an increase in the maximum payment threshold to around $385 for single renters and to around $447 for couple renters per fortnight (Chart 2B-1).

Chart 2B-1 Commonwealth Rent Assistance payment by fortnightly rent



Note: Values are in 2020 dollars. Calculated based on a typical maximum-rate age pensioner household: single non-sharer and couple living together, without dependants. Solid lines represent the current policy, dashed lines represent the 40 per cent higher Commonwealth Rent Assistance scenario. Source: Calculations based on pension and Commonwealth Rent Assistance rates and thresholds as at 1 May 2020.

Given that Commonwealth Rent Assistance is a supplement to many social security payments, higher Commonwealth Rent Assistance payments would benefit many more people than just Age Pension recipients. Targeting Commonwealth Rent Assistance increases only at Age Pension recipients would also be administratively difficult. This analysis focuses only on the impact on retirees through the effect on the adequacy, equity and sustainability of the retirement income system.

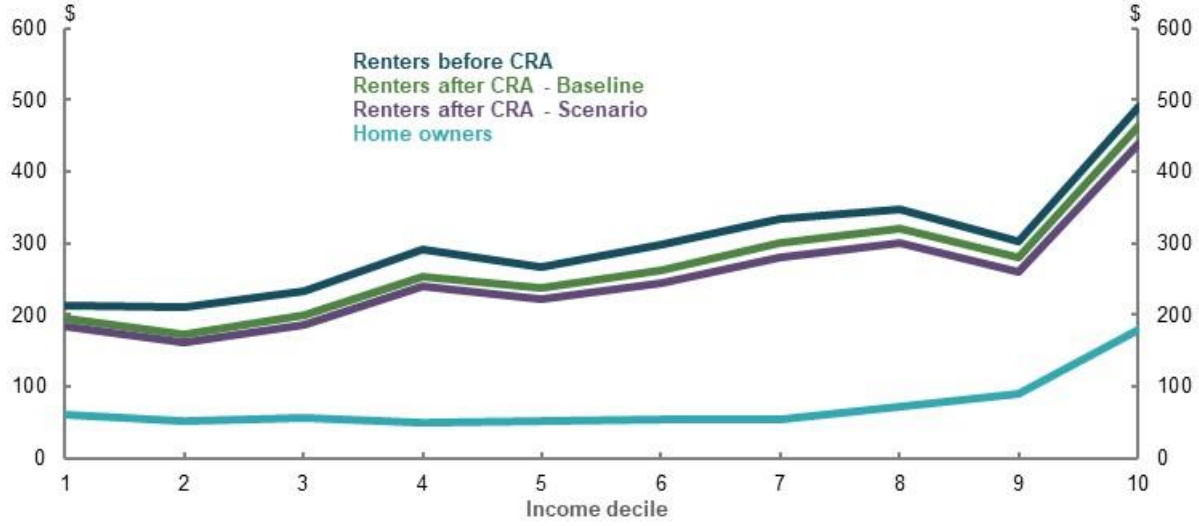
Effects of higher Commonwealth Rent Assistance on the retirement income system

Effect on adequacy

Housing expenditure

A 40 per cent increase in the maximum Commonwealth Rent Assistance rate would help reduce the housing costs for lower-income earners (Chart 2B-2). On average, renters have lower incomes. Almost two-thirds are in the bottom five income deciles in retirement. For a renter with median income, on average, the increase in Commonwealth Rent Assistance would cover 17 per cent of housing expenditure, compared with 11 per cent under current policy settings. It would only close the housing expenditure gap between renters and home owners by around 8 per cent. [87]

Chart 2B-2 Weekly housing expenditure for retired households by income decile

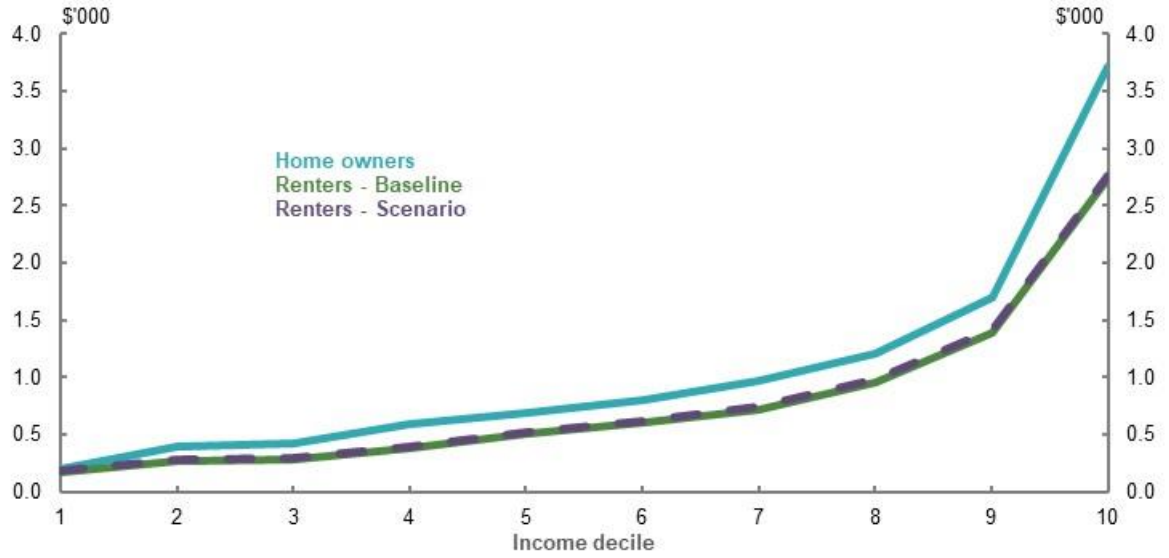


Note: CRA stands for Commonwealth Rent Assistance. Income deciles calculated using pre-Commonwealth Rent Assistance income and equivalised for household size. Population weighted. Values are in 2017-18 dollars. Source: Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

Housing expenditure takes up a large share of retired renters' disposable income.[88] Increasing the value of Commonwealth Rent Assistance payments would increase their income, after housing expenditure, but not by a significant amount (Chart 2B-3). For a renter with median income, average weekly income after housing expenditure would increase by approximately 3 per cent, from $556 to $572. At the margin, this would reduce financial stress and income poverty for retired renters, especially those with lower incomes.

[87] Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.
[88] Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

Chart 2B-3 Weekly disposable income after housing expenditure, retired households by income decile



Note: Values are in 2017-18 dollars. Source: Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

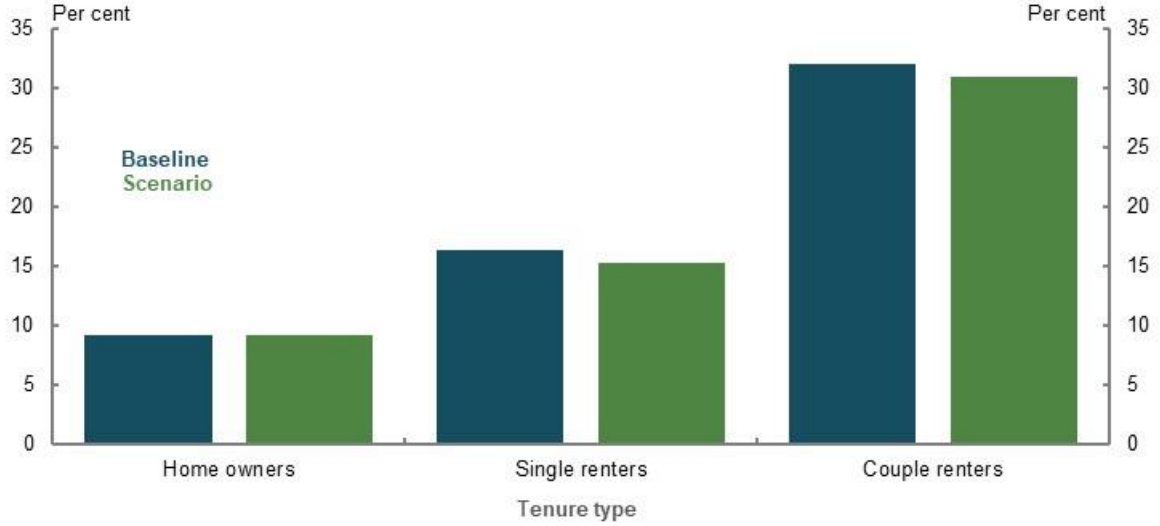
Financial stress

As discussed in *2A. Achieving a minimum standard of living in retirement*, retired renters have much higher rates of financial stress[89] than home owners. **Increasing the maximum Commonwealth Rent Assistance rate by 40 per cent is estimated to reduce retired renters' rate of financial stress by around 1.1 percentage points[90]** (Chart 2B-4). This would narrow the gap in financial stress rates between renters and home owners by around 10 per cent.

Because financial stress is self-assessed, the effect of reduced housing expenditure on stress can only be inferred from historical data. A statistical model was used to estimate the relationship between financial stress and income for retired renters, as well other key financial and demographic variables (see *Appendix 6A. Detailed modelling methods and assumptions*).[91] The estimates should be considered suggestive as they do not control for the effects of unobserved differences across households on financial stress.

[89] The ABS classifies households in financial stress as those who report four or more financial stress or 'missing out' experiences. See *2A. Achieving a minimum standard of living in retirement*.
[90] This is the weighted average of single and couple retirees.
[91] To best identify the effect on households experiencing financial stress, this analysis defines retired households as those with the household reference person aged 65 and over with no earners in the household.

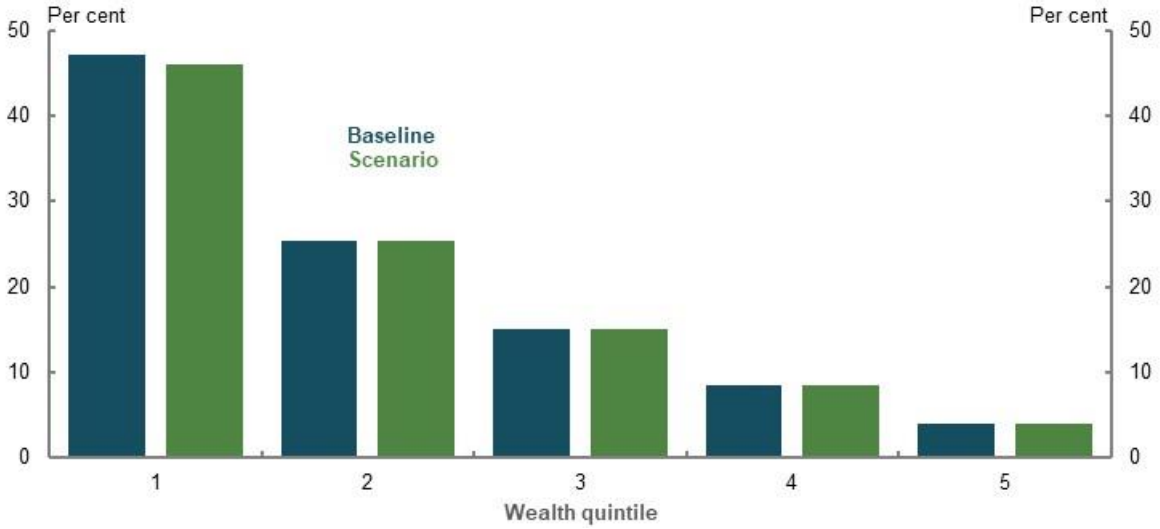
Chart 2B-4 Financial stress rates of home owner and renter households in retirement



Note: This analysis uses a multinomial probit model to explain household financial stress. Marginal effects are estimated using the income of renters in 2015-16 by family type, and then applied to data in 2019-20 to calculate the effect of the Commonwealth Rent Assistance payment increase. Control variables include wealth, disability status, household and tenure type. Home owners are unaffected. Source: Analysis of ABS Household Expenditure Survey Confidentialised Unit Record File, 2015-16.

Estimates suggest **higher Commonwealth Rent Assistance payments would marginally reduce stress for retirees in the first wealth quintile** (Chart 2B-5), where renters experiencing financial stress are concentrated. Their rate of financial stress is estimated to fall by 1 percentage point.[92]

Chart 2B-5 Financial stress rates of retired households by wealth quintile



Note: Same as Chart 2B-4. Wealth is equivalised for household size. Source: Analysis of ABS Household Expenditure Survey Confidentialised Unit Record File, 2015-16.

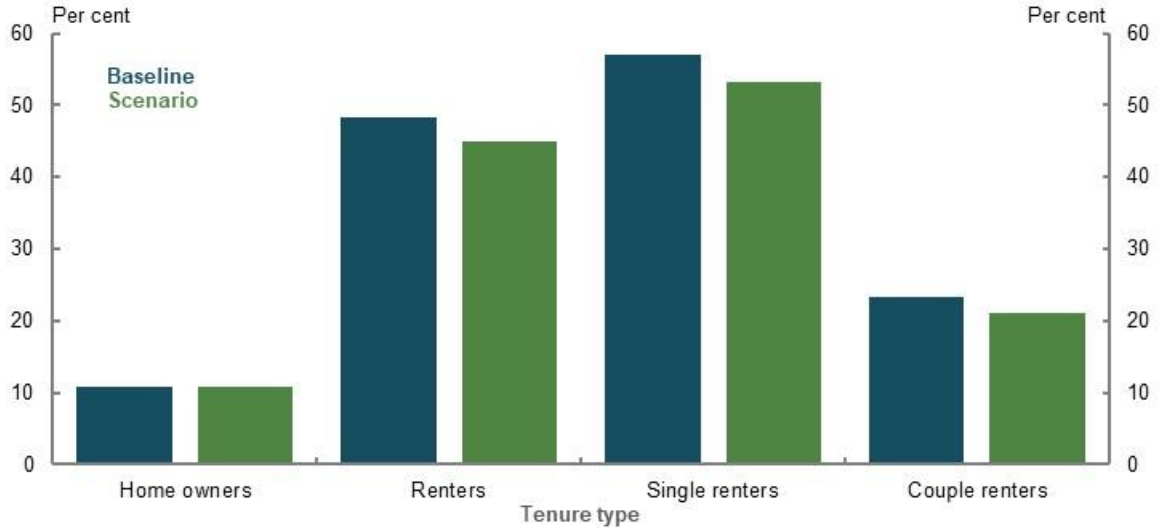
[92] Analysis of ABS Household Expenditure Survey Confidentialised Unit Record File, 2015-16.

Income poverty

Renting retirees experience high rates of income poverty.[93] This is consistent with renting retirees generally being in the bottom half of the income and wealth distributions (see *2A. Achieving a minimum standard of living in retirement).*

Increases to Commonwealth Rent Assistance would reduce these rates only moderately (Chart 2B-6). A 40 per cent increase in the maximum Commonwealth Rent Assistance rate would reduce the rate of income poverty for renting retiree households by around 3 percentage points. The largest reduction would be for single renters, with their rate of income poverty estimated to fall by almost 4 percentage points, from 57 per cent to 53 per cent.

Chart 2B-6 Income poverty rates of home owner and renter households in retirement

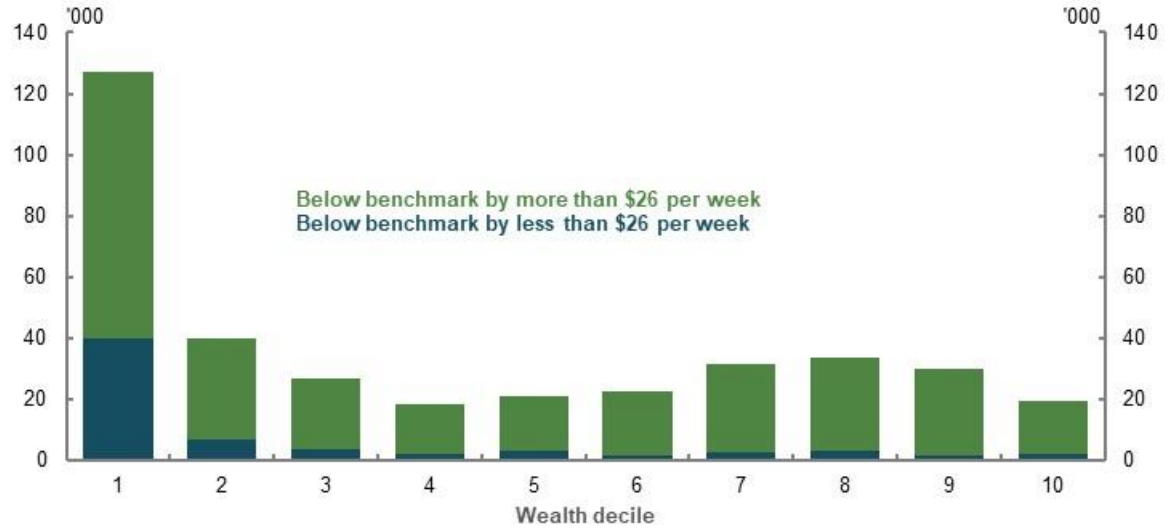


Note: Income poverty is estimated with Commonwealth Rent Assistance threshold increases in 2017-18 by family type. Home owners are unaffected. Source: Estimate based on analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

While the additional Commonwealth Rent Assistance would help to narrow the poverty gap between renters and owners in retirement, the increase is not sufficient to change most renters' income poverty classification (Chart 2B-7). Estimates suggest that most renter retiree households in income poverty are below the poverty threshold (of 50 per cent of median equivalised disposable income) by more than $28 per week, which is the increase in the maximum rate of Commonwealth Rent Assistance assessed here. The gap in income poverty rates between renters and home owners would narrow by around 11 per cent.

[93] The income definition of poverty used in the review is equivalised disposable income below half of the median, once housing costs have been deducted. See *2A. Achieving a minimum standard of living in retirement* for further details.

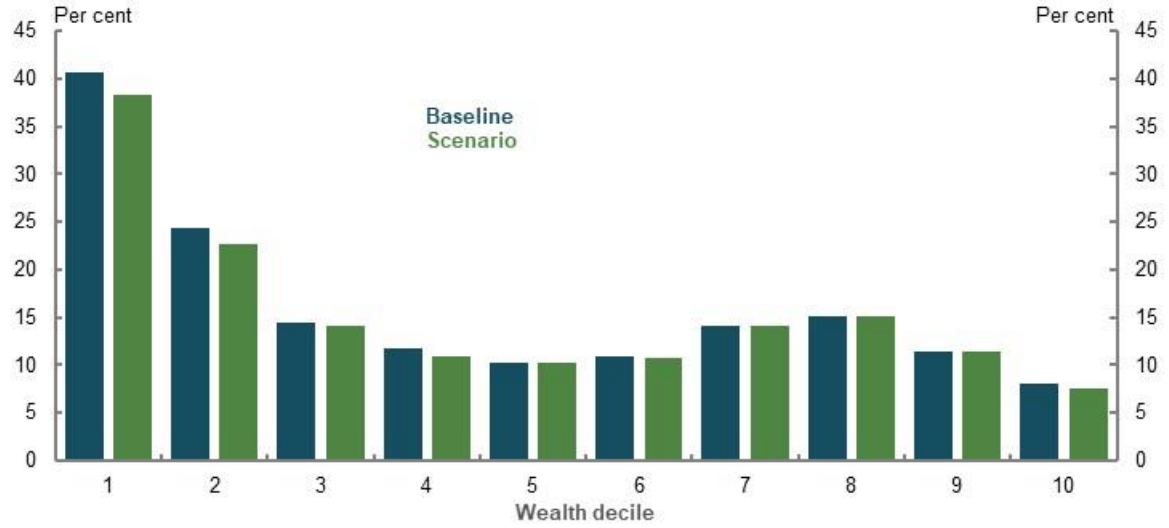
Chart 2B-7 Number of retired households below income poverty benchmark by wealth decile



Note: The chart includes all retirees. Renters affected by the Commonwealth Rent Assistance increase are mostly in the lower-wealth decides. Due to inflation, $26 in 2017-18 dollars is equivalent to $28 in 2019-20 dollars. Source: Estimate based on analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

In line with the wealth status of renting retirees, the increase in maximum rate of Commonwealth Rent Assistance would reduce income poverty rates predominantly for those in the bottom two deciles of the wealth distribution (Chart 2B-8). These decreases for these deciles are estimated to be around 2 percentage points.

Chart 2B-8 Retired household income poverty rates by wealth decile



Note: Income poverty is estimated with Commonwealth Rent Assistance threshold increases in 2017-18 by family type. Wealth deciles of retired households and equivalised for household size. Home owners are unaffected. Population weighted. Source: Estimate based on analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

Replacement rates

Increasing the maximum rate of Commonwealth Rent Assistance would have a small effect on renters' income replacement rates. Calculations using a hypothetical cameo model suggest those in the bottom half of the income distribution in 2060 would see their income replacement rates increase by less than 2 percentage points, with smaller increases for higher-income renters. The small size of these effects is consistent with the maximum additional payments totalling only around $1,450 per year (around 3 per cent of the median wage).

This analysis assumes Commonwealth Rent Assistance continues to be indexed to CPI after the 40 per cent increase in the maximum Commonwealth Rent Assistance rate. Changes to Commonwealth Rent Assistance indexation arrangements that resulted in higher increases would have larger effects on future income replacement rates.

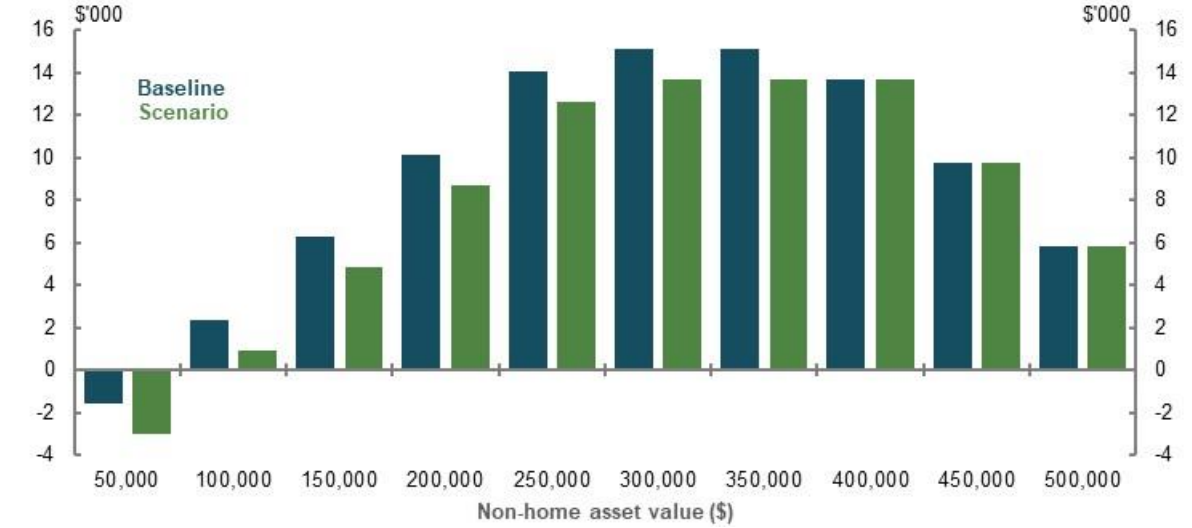
Effect on equity

Home ownership status

Home owners, in general, receive higher Age Pension payments than renters with similar asset values. Commonwealth Rent Assistance provides a significantly smaller benefit than exempting the principal residence from the Age Pension assets test for all retirees, except those with very low wealth levels (see *3C. Home ownership status)*.

Increasing the maximum Commonwealth Rent Assistance rate by 40 per cent would not change this significantly (Chart 2B-9). Retirees with a median-valued home in retirement would continue to receive higher Age Pension payments than renters with the same total wealth, when their non-home assets are worth more than around $90,000. This gap would be reduced by the $1,450 per year increase in Commonwealth Rent Assistance for retirees with non-home asset values below around $350,000. **The increase in Commonwealth Rent Assistance has little effect on reducing the inequity between home owners and renters due to the Age Pension assets test**.

Chart 2B-9 Annual value of exempting the principal residence from the Age Pension assets test



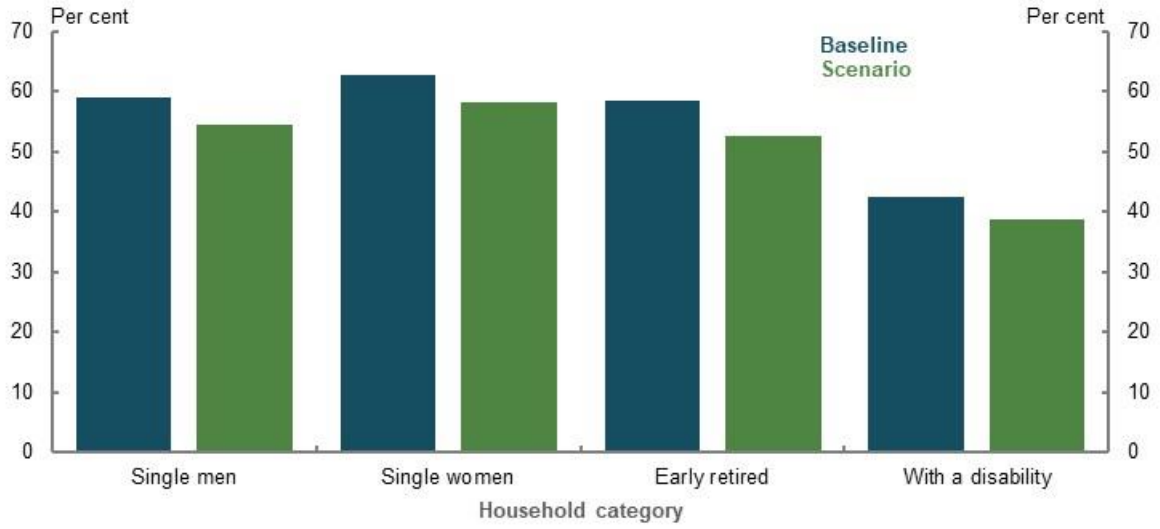
Note: Values are in 2019-20 dollars. This chart is a theoretical comparison, which shows the differential value of annual Age Pension payments in the year 2019-20 for single home owners with a $450,000 home compared with renters with the same total asset value, by non-housing deemed asset value. Based on Age Pension payment rates and thresholds as at 20 March 2020. Source: Cameo modelling undertaken for the review.

Groups affected

Increases in Commonwealth Rent Assistance would benefit those in need. Groups that experience poorer outcomes in retirement are more likely to be renters. For example, women retirees are expected to gain from Commonwealth Rent Assistance increases. As shown in *3B. Gender and partnered status*, a larger number of renters in retirement are women. Higher Commonwealth Rent Assistance payments would have a small effect on improving gender equity in retirement.

Modelling suggests increasing the maximum Commonwealth Rent Assistance rate would reduce income poverty more for single women renters than it would for men (Chart 2B-10). The rate of income poverty for single women retirees is estimated to fall from 63 to 58 per cent.

Chart 2B-10 Income poverty rates of retired renting households



Note: Income poverty is estimated with Commonwealth Rent Assistance threshold increases in 2017-18 by family type. Population weighted. Source: Estimate based on analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

Early retired households, those not in the labour force aged 55-64 and retirees with disability are also likely to benefit from the Commonwealth Rent Assistance increase because they are more likely to rent. These renters have some of the highest rates of income poverty among retirees, and a significant number of them report being in financial stress. Estimates suggest a 40 per cent increase of the maximum Commonwealth Rent Assistance rate would marginally reduce income poverty rates for these groups, by around 5 percentage points (Chart 2B-10).

Similarly, Aboriginal and Torres Strait Islander retirees have a much higher rate of renting than the rest of the population (see *3F. Aboriginal and Torres Strait Islander people*). Changes to Commonwealth Rent Assistance may therefore redress some equity balance in retirement for these households.

Effect on sustainability

Fiscal costs

The total fiscal costs of increasing the maximum rate of Commonwealth Rent Assistance by 40 per cent is estimated to be around $1.7 billion in 2019-20 (0.1 per cent of GDP). Most of this cost reflects additional support accruing to working-age social security payment recipients. The estimated fiscal cost of increasing the maximum Commonwealth Rent Assistance rate for Age Pension recipients by 40 per cent, or about $28 per week, is around $370 million in 2019-20.[94]

Impact on the broader economy

When this issue has been considered on previous occasions, concerns have been raised that Commonwealth Rent Assistance increases could increase rental rates (Senate Economics Reference Committee, 2015).This would negate some of the benefits of higher payments for Commonwealth Rent Assistance recipients.

[94] Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

Commonwealth Rent Assistance recipients do not form a large portion of renters in the market segments where they rent. Three-quarters of Commonwealth Rent Assistance recipients are in the bottom half of the income distribution. They comprise around only 7 per cent of all renters in these income groups.[95] **Providing social security recipients with additional Commonwealth Rent Assistance in the order of $28 per week is unlikely to have a large effect on the total demand for rental properties or aggregate rents**.

Implications for the retirement income system

Commonwealth Rent Assistance has a limited ability to redress differences in adequacy outcomes for renters compared to home owners. For the 40 per cent increase in the maximum rate assessed, retirement outcomes for renters would be little changed as:

- The increase covers a fraction of their additional housing costs
- Their financial stress rates are estimated to remain more than twice that of home owners
- Around 45 per cent of them would continue to be in income poverty

Alternative changes to Commonwealth Rent Assistance would not materially change these results. Estimates suggest increasing the maximum payment threshold by 60 to 100 per cent would reduce income poverty by a modest amount (Table 2B-1). Removing the lower threshold completely (to cover the 75 per cent of rent costs from the first dollar of rent) would have only slightly larger effects. Under both approaches, a significant share of renting retirees remain in income poverty.

Table 2B-1 Effects and indicative fiscal costs of alternative Commonwealth Rent Assistance scenarios

Change	Maximum payment increase		Retiree income poverty (per cent)			Indicative fiscal cost ($million)	
	Per cent	$ per year	All renters	Single renters	Couple renters	Total	Age Pension recipients
Increased upper threshold	0	0	48.3	56.9	23.2	0	0
Increased upper threshold	20	730	46.1	54.2	22.6	870	180
Increased upper threshold	40	1,450	45.0	53.2	21.1	1,740	370
Increased upper threshold	60	2,180	44.0	51.9	20.9	2,610	550
Increased upper threshold	80	2,900	42.6	50.3	20.5	3,470	740
Increased upper threshold	100	3,630	41.8	49.7	19.0	4,340	920
Removed lower threshold	n/a	3,730	40.9	49.2	16.8	4,080	960

Source: Estimate based on analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

This reflects that renters have significantly higher housing costs than home owners (see *2A. Achieving a minimum standard of living in retirement*). While Commonwealth Rent Assistance benefits renters as a disadvantaged group, even large increases in Commonwealth Rent Assistance would only cover a small proportion of the housing expenses faced by a large number of renting retirees. In addition, a significant share (31 per cent) of renting retirees in income poverty reside in public housing and do not receive Commonwealth Rent Assistance benefits.[96]

[95] Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18. These estimates assume current Commonwealth Rent Assistance recipients receiving the maximum payment — around 92 per cent — receive the full additional payment.

[96] Analysis of ABS Household Expenditure Survey Confidentialised Unit Record File, 2015-16.

The alternative options outlined in Table 2B-1 involve increased fiscal costs. A significant amount of this would support working-age renters, as Commonwealth Rent Assistance is a component of the broader income support system. A change in Commonwealth Rent Assistance would have effects beyond the retirement income system, including the way the broader income support and housing support systems operate.

Even at a higher rate (e.g. an additional $3,630 per year after a 100 per cent increase in the maximum rate of Commonwealth Rent Assistance), Commonwealth Rent Assistance still provides a smaller benefit for renters than the annual value of exempting the principal residence from the Age Pension assets test for most home owners (Chart 2B-9).

In light of these considerations, a broader approach to assisting renters in retirement appears necessary.

Section 2C. Maintaining standards of living in retirement

Box 2C-1 Section summary

- **The retirement income system should seek to balance working life and retirement incomes**. Without government intervention, many people would not save enough for their retirement. But saving too much can reduce lifetime wellbeing, particularly for lower-income people. The aim should be to maintain a person's living standard in their working life through into their retirement.
  - **The weight of evidence suggests higher SG contributions mostly come at the cost of lower wage growth.** This relationship means SG policy should aim to smooth consumption over working life and retirement.
  - **Replacement rates are the most appropriate tool for assessing whether people can maintain living standards in retirement.** They measure the objective directly and acknowledge the trade-offs between working life and retirement incomes.
  - **Retirees can maintain their living standards with lower income than when working**. Housing and other costs generally fall, while Government support increases. Therefore, to assess adequacy, a benchmark replacement rate of 65-75 per cent of pre-retirement income has been used.
- **Most people who have retired in recent years appear to have adequate outcomes.** Qualitative surveys suggest recent retirees generally feel happier than in working life and typically have the same level of satisfaction with their finances compared to just before retirement. They also tend to be less financially stressed than employed people.
- **Projections show that, under current policy settings, including the legislated increase in the SG rate to 12 per cent, people with typical workforce patterns can achieve replacement rates that meet or exceed the 65-75 per cent benchmark.** The results are consistent for different households (singles, couples and women) and across most income levels. Most lower- to middle-income workers will have replacement rates that exceed the benchmark. They may be forgoing more working-life income than is necessary to maintain living standards in retirement.
  - **These outcomes assume people draw down their savings in retirement.** If they only draw down their superannuation at the legislated minimum rates, which many people currently do, those in the upper half of the income distribution will not achieve the 65-75 per cent benchmark.
  - **Assisting retirees to use existing assets more efficiently, and draw down their assets in retirement, can have a bigger impact on improving retirement incomes than changes to the SG rate.** Without improving the way retirees draw down their assets, extra contributions to superannuation will not result in most retirees maintaining their living standards. It will lead to larger bequests. Fully drawing down superannuation can substantially boost retirement incomes, without having to increase contributions. Other options to improve retirement incomes include strategies and products to achieve greater certainty around income or drawing on equity in the principal residence.
  - **The Age Pension will continue to provide significant retirement income for lower- and middle-income earners, even in a mature superannuation system.**
- **The focus of assessing universal policy settings like the SG should be on middle-income earners.** This group needs the most assistance as they cannot rely on the Age Pension alone to maintain their living standards and they have relatively low rates of voluntary saving. The bottom 30 per cent of retirees by income have their working-life living standards maintained, or exceeded by, the Age Pension. Higher-income earners have retirement incomes that exceed the ASFA comfortable standard.
- **Review projections assume retiree spending grows in line with prices, rather than wages.** The weight of domestic and international evidence points to retirees' spending falling or staying flat relative to prices, even for those who can afford to spend more.

- **Offering prudent and limited access to superannuation prior to retirement is consistent with the objective of balancing living standards pre- and post-retirement.** Early access in limited circumstances allows the system to respond to severe financial pressures people may face in their working lives while still achieving adequacy targets.
- **The assessment that living standards can be maintained in retirement holds true under a wide range of different circumstances.** Households estimated to have replacement rates below the 65-75 per cent replacement rate benchmark would typically have careers of 25 years or less and retire before superannuation preservation age. But even then, their outcomes would be adequate if they retire for disability-related reasons or to care for someone, provided they access the associated welfare payments.
- **The COVID-19 Pandemic has highlighted the impact investment risk can have on retirement outcomes**. Australia's superannuation system exposes people to market risk. For most people invested in a fund with good returns, exposure to market returns is a strength of the system. Fund diversification and the Age Pension have moderated the short-term impact of market downturns on retirement incomes.
- **The increase in the SG rate to 12 per cent will not reduce the gap in superannuation balances between men and women**. The increase will benefit men more than women.

Outline of this section

This section analyses whether the retirement income system enables people to reasonably maintain standards of living in retirement. This measure of adequacy is appropriate because:

- A relatively stable lifetime standard of living maximises wellbeing
- It recognises the trade-off between consumption in either working life or retirement

Box 2C-2 Stakeholder views on helping people to reasonably maintain their standard of living in retirement

Some submissions suggested adequacy analysis should focus on maintaining people's working-life living standards in retirement. They argued that relative measures, such as replacement rates, are the appropriate measure for assessing this goal as they recognise the trade-off between working life and retirement income. Many stakeholders agreed absolute standards were useful in assessing adequacy but suggested they should be confined to assessing if the system is delivering minimum standards.

> *'Absolute and relative measures of adequacy serve different purposes. Absolute measures are often used to assess to what extent the retirement income system relieves poverty. Relative measures are often used when assessing whether the system would allow retirees to maintain the standard of living they experienced during their working years.' (Actuaries Institute, 2020, p. 4)*

Some submissions argued for achieving a particular income level in retirement and favoured using an absolute measure, such as a budget standard. They noted that replacement rates approaches are not suitable for lower-income earners and the system should aim to deliver objective levels of comfort and security in retirement. Many superannuation bodies suggested using the ASFA budget standards as they are well-known, established benchmarks.

> *'ASFA Comfortable is an objective income benchmark that is consistent with community expectations.' (ASFA, 2020a, p. 5)*

Other submissions suggested further research on retiree spending needs was required to determine an appropriate standard. They also noted that people find dollar-based approaches easy to understand.

> *'They [budget standards] are valuable for those planning for retirement in that they detail the quality and quantity of different consumption items a retiree will be able to afford given a certain level of expenditure.' (Super Consumers Australia, 2020, p. 5)*

Maintaining a stable lifetime standard of living maximises wellbeing

Maintaining living standards in retirement is a goal for retirement income systems in most countries (OECD, 2019b).

Achieving a similar living standard in retirement and working life involves a trade-off between consuming during working life and consuming in retirement. Economic theory suggests that people should save in periods of higher-income, such as when working, and draw on their assets in periods of lower income, including in retirement (Browning & Crossley, 2001).

In reality, complex decisions make retirement planning difficult. Apart from uncertainty about how long they will live, people have behavioural biases that mean their decisions are not always in their long-term interest (Box 2C-3). For example, without intervention retirees may fall well short of achieving the level of saving needed to maintain their standard of living in retirement (Munnell, et al., 2007). Concern that they may outlive their retirement savings may prevent them drawing down their savings to support their living standards (see *5A. Cohesion*).

Policy intervention is needed because people find it difficult to make complex, long-term decisions. Without assistance, many Australians would experience a drop in their living standard when they retire. Policies that make people save, like the SG, can improve lifetime wellbeing.

Yet saving to improve retirement incomes needs to be balanced with the cost imposed during working life. Encouraging people to save too much, and reducing their standard of living in their working life, can harm their overall wellbeing. The standard of living achieved in retirement should not come at the cost of forgoing spending to an excessive degree during working life.

Many people aspire to a high standard of living in retirement. However, with compulsory superannuation adequacy targets are system-wide goals that apply to everyone and need to account for a range of incomes and preferences. Therefore, **a goal based on maintaining, rather than improving, living standards in retirement is appropriate.** People who aspire to higher living standards in retirement than when they were working should achieve these higher standards through voluntary savings.

Box 2C-3 Behavioural biases affect saving decisions

Lifetime consumption smoothing assumes that people make rational, calculated decisions about how they save for retirement. But households do not actually make decisions this way. A number of biases lead to undersaving, including:

- **Bounded rationality.** Lifetime decisions are complicated. People find it hard to calculate how much they would need to save to support their needs in retirement. For example, the savings someone needs will depend on how long they live. Yet people tend to underestimate how long they are likely to live, increasing the risk of a financial shortfall later in retirement (longevity bias).
- **Present bias.** People tend to overvalue the present and undervalue the future. They may not save enough for retirement because they (wrongly) think that whatever they do later is not as important as what they are doing now.
- **Status quo bias (inertia).** People tend to continue their current behaviour even when they want, or have agreed, to change. If they are unaccustomed to saving, they may find it hard to start saving for retirement, even when they know they should.

Source: Adapted from (Thaler & Benartzi, 2004).

The trade-off between working life and retirement income

The retirement income system has to accommodate the trade-off between working life and retirement living standards. Governments and individuals both facilitate this trade-off:

- The Government taxes people more during their working lives and provides higher levels of support in retirement, including income support, more services and lower taxes.
- Individuals make trade-offs when saving for retirement. They forgo spending today to increase their spending in retirement. People can be compelled to make this trade-off, such as via the SG, or choose it voluntarily.

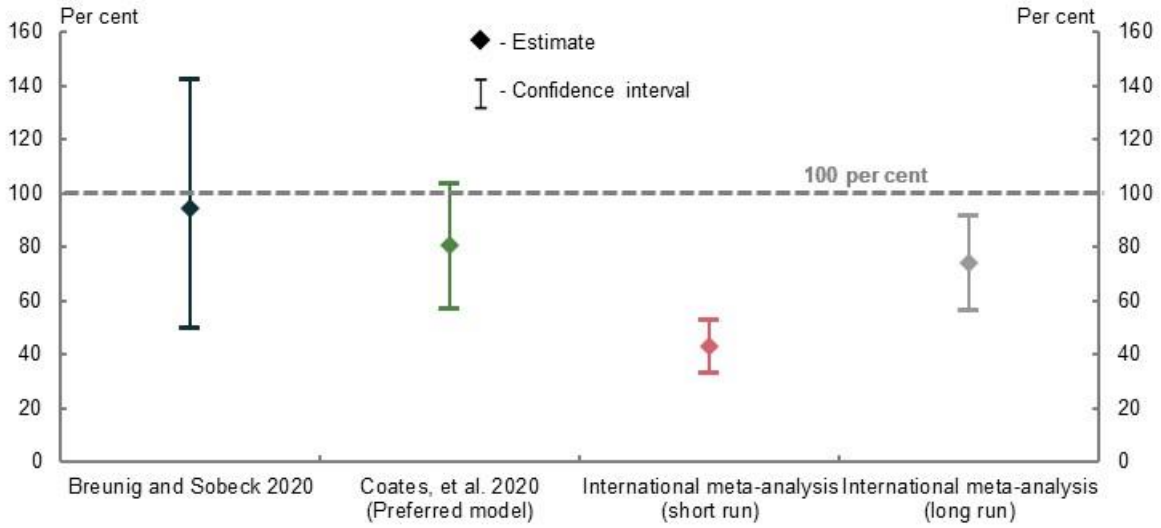
Some stakeholders did not accept the concept that a balance must be achieved between pre- and post-retirement living standards. As outlined in *1C. The objective of the system and the roles of the pillars*, some submissions advocated that an objective of the retirement income system should be to achieve an aspirational standard of living.

A key factor influencing this view was the belief that the SG does not come at a cost of wage increases and, as such, it does not involve a trade-off between pre- and post-retirement living standards.

Whether an increase to the SG is offset by forgone wages growth or results in additional compensation for workers is central to determining the adequacy objective of the retirement income system.

Reflecting policy intent and economic theory, governments, Treasury and other analysts have typically assumed full pass-through of SG increases to lower wage growth (Gallagher, 2012; Rothman, 2011; Australia's Future Tax System Review, 2009). In 2007, Paul Keating remarked that 'the cost of superannuation was never borne by employers. It was absorbed into the overall wage cost' (Keating, 2007).

Chart 2C-1 Estimates of how much increases in SG or mandated benefits reduce wages growth, 95 per cent confidence intervals



Note: 100 per cent implies all the costs of SG or mandated benefits changes are passed through as reductions in wages growth. Breunig and Sobeck's (2020) estimate relates to the SG change for 2002-03. Coates, et al.'s (2020) estimate uses the authors' preferred model. International meta-analysis of mandated benefits is based on 52 empirical studies looking at the incidence of labour taxes and social security contributions (Melguizo & González-Páramo, 2013). Source: Review analysis.

In addition to policy intent, **the weight of evidence suggests the majority of increases in the SG come at the expense of growth in wages** as outlined in detail in *Appendix 6A. Detailed modelling*

methods and assumptions (Chart 2C-1). This result is consistent with the SG's original policy purpose that it involved a trade-off between working life and retirement income:

> *'A major challenge for retirement incomes policy is the need for current consumption to be deferred in favour of future research income in retirement … Real take home pay will increase but at a correspondingly lower rate than would otherwise be the case.' (Dawkins, 1992, pp. 17,40)*

The relationship between SG rate increases and wages growth is supported by two micro-econometric studies, which use different data sources and approaches:

1. Breunig and Sobeck (2020) found that changes to the SG causally lower wages growth, with a pass-through of close to 100 per cent. This study used an extensive dataset of linked taxpayer records that has only recently become available to researchers (see *Appendix 6C. Outcomes of research*).
2. Another study found that about 80 per cent of SG increases is passed to workers through lower wage growth over a two- to three-year period (Coates, et al., 2020). This study analysed data on federal workplace agreements.

In contrast, work by Taylor (2019) and Stanford (2019) using macro-econometric approaches, found no significant pass-through of SG costs to wages. However, such approaches have difficulty estimating the long-run incidence of increases in the SG on wages (European Commission, 2015). Macroeconomic data relies on a limited number of observations and cannot identify drivers of the SG and wages relationship.

The assessments identifying a trade-off between the SG and wages growth are consistent with economic theory and international evidence of other benefits that employees receive on top of their take-home wages.

- Research shows the cost of 'mandated benefits' are more likely to be paid for by employees when, like compulsory superannuation, they provide strong, direct benefits (Melguizo & González-Páramo, 2013).
- Evidence across a number of countries supports this conclusion, suggesting that the trade-off is larger in the long run (Melguizo & González-Páramo, 2013). This research indicates that the costs to employees are higher for programs like superannuation where employees receive most of the benefits, but are lower for programs with weaker benefits.

Further analysis of the trade-off is in *Appendix 6A. Detailed modelling methods and assumptions*.

Measuring if living standards are maintained

Submissions proposed two ways of measuring adequacy: budget standards, which set a dollar value target; and replacement rates, which set targets based on working-life income. This section examines which of these is the appropriate metric for determining if the system appropriately maintains living standards in retirement.

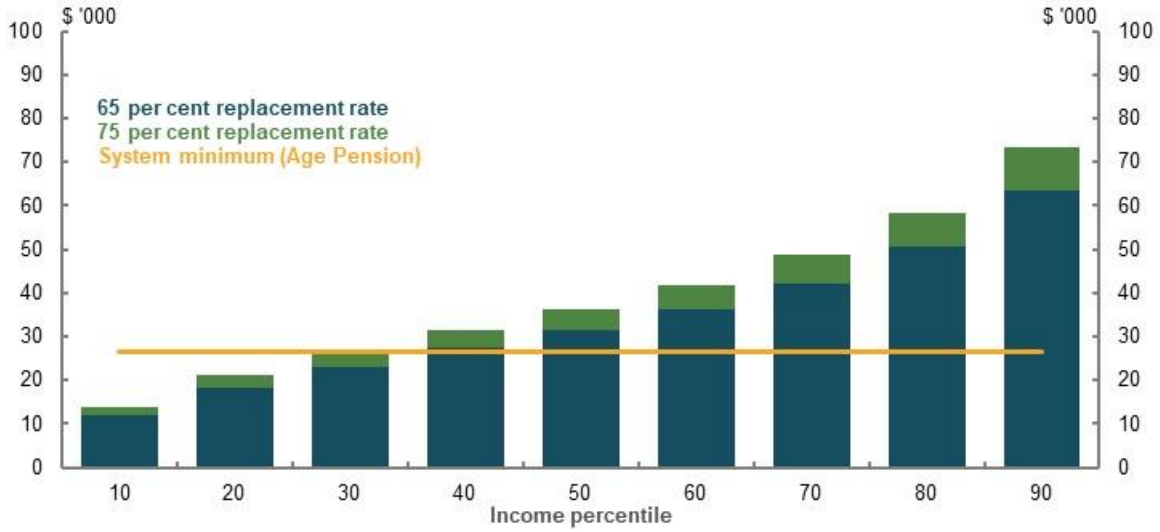
Replacement rates

Replacement rates compare income in retirement with income while working. They are the main measure used by the OECD to assess the adequacy of retirement income systems (OECD, 2019b) and by reviews in other countries (Pensions Commission, 2004).

Replacement rates are a preferred metric because they provide adequacy targets based on the income a person earned while they were working (Chart 2C-2). Since replacement rates are a proportion of working-life income, changes in working-life income and retirement income both affect

the measure. They can account for the trade-off required between working-life and retirement income. For this reason, replacement rates align with the view that the appropriate objective for adequacy in the retirement income system is maintaining living standards in retirement.

Chart 2C-2 Projected target retirement income using replacement rates



Note: Target retirement income is based on the average in the 10 years before retirement and 'system minimum' is the maximum Age Pension for singles. Uses the review's adequacy benchmark replacement rate of 65-75 per cent. Deflated to 2019 dollars using wages. Source: Cameo modelling undertaken for the review.

Replacement rates do have some limitations. They are:

- **Poorly suited to lower-income earners** who need higher rates of replacement to avoid poverty. Replacement rates of 65 per cent, for example, would not be enough to prevent poverty for retirees at the bottom 20 per cent of the income distribution (Chart 2C-2). To address this issue, the first element of the adequacy objective of the retirement income system is that: 'The system should ensure a minimum standard of living *for retirees with limited financial means* that is consistent with prevailing community standards' (see *1C. The objective of the system and the roles of the pillars*). This is provided through the Age Pension and other Government support. For some lower-income earners, the Age Pension results in them achieving replacement rates in retirement above 100 per cent.
- **More difficult for people to understand than an income target** (Rice Warner, 2019d). Discussing retirement targets in terms of a basket of goods or level of expenditure may be clearer to people planning their retirement. To address this issue, different tools can be used for advising individual consumers.

Budget standards

Budget standards estimate the cost of purchasing a basket of goods and services consistent with a given standard of living. Baskets of goods and services are usually constructed by analysing spending patterns of households with the relevant standard of living (Saunders & Bedford, 2017). While they are often used to estimate the income needed to avoid poverty (*2A. Achieving a minimum standard of living in retirement*), budget standards can also be set at higher levels for more aspirational targets.

The main benefit of budget standards is as a communication tool, helping people to plan for retirement and specifically budget for a certain living standard.

For assessing the adequacy of a retirement income system, budget standards have several weaknesses:

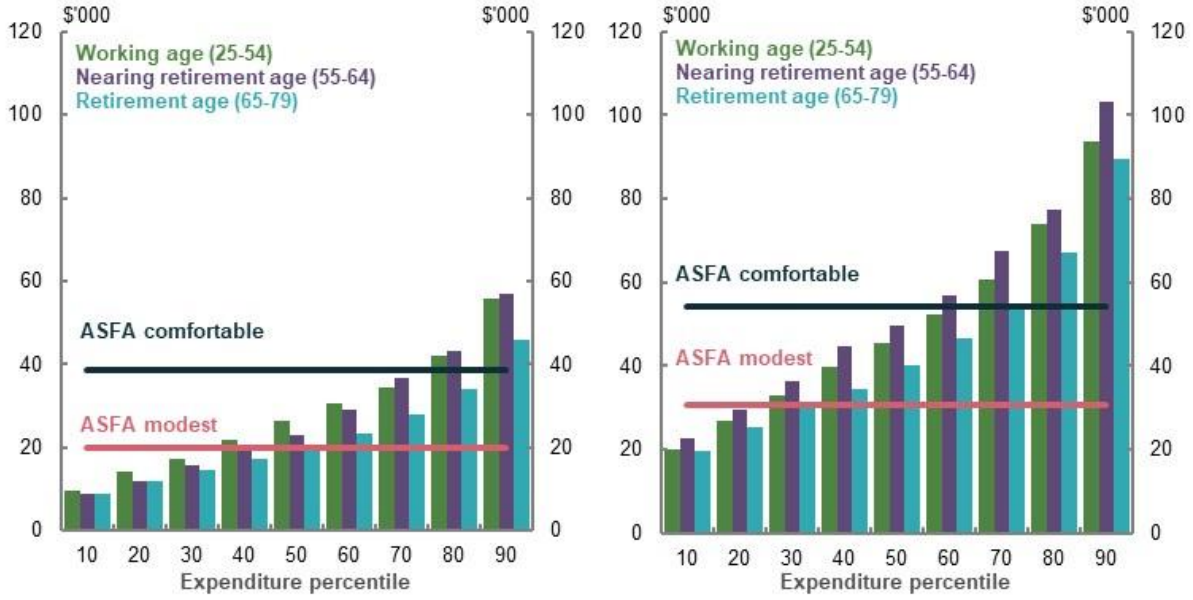
- **They are designed for a specific cohort**, in a specific location at a given point in time.
- **They are subjective**. A specific bundle of goods and services and the lifestyle it delivers may not be adequate or preferred for all groups.
- **They do not measure the trade-off between retirement and working-life living standards**. A retirement objective is not effective if achieving it requires inappropriate sacrifices during working life.

For example, the 'comfortable' retirement standard used by ASFA was originally designed for the top 20 per cent of income earners and exceeds the working-life living standards of 70 per cent of singles and 60 per cent of couples of working age (Chart 2C-3). ASFA's modelling shows that middle-income earners would require significant sacrifices in working life to achieve the standard:[97]

- A median earner starting work today would require an SG rate of 16.5 per cent to achieve the ASFA comfortable standard.[98]
- A median-income male could only achieve the standard by working every year from age 19 to age 67. In 2018, less than half of men who had recently retired had careers of 48 years or more.[99]
- Fewer women will achieve the standard given their lower incomes and shorter working lives (see *Appendix 6A. Detailed modelling methods and assumptions*).

While not appropriate as a universal target for middle-income earners, the ASFA comfortable standard may be of relevance for higher-income earners as this is the income group that the standard was originally based on.

Chart 2C-3 Working-life annual expenditure compared with the ASFA standards



Note: Expenditure is equivalised except for partners because this spending is accounted for in their higher ASFA standard. ASFA standards are as at September 2015 to align with collection of expenditure data. Source: (Daley, et al., 2018b) based on analysis of Analysis of ABS Household Expenditure Survey Confidentialised Unit Record File, 2015-16.

Replacement rates are the preferred tool for assessing the objective of maintaining living standards in retirement. By definition, they compare income in working life and retirement, allowing for an assessment of whether the system is delivering the correct balance.

[97] Cameo modelling undertaken for the review using ASFA assumptions from (ASFA, 2020a).
[98] Assumes the current rate of SG rises by 0.5 per cent per year and otherwise uses review assumptions.
[99] This is based on HILDA General Release 18: average years in the workforce for men aged over 65.

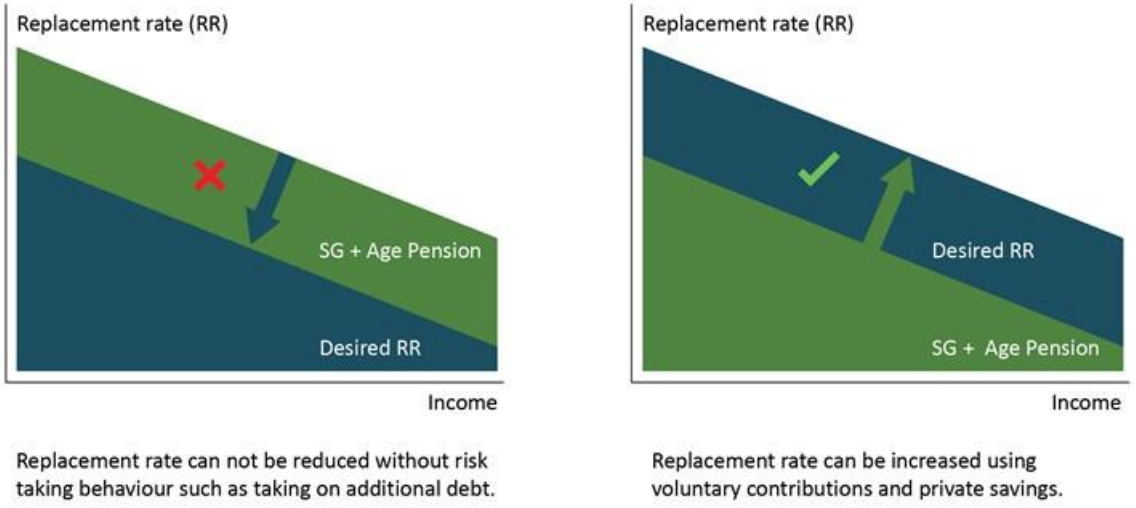
How the system maintains living standards

A retirement income system based on compulsory superannuation needs to deliver a default retirement income that is adequate for as many people as possible but does not force people to save too much in their working life.

Getting the balance right is difficult, requiring consideration of two dynamics:

1. **Middle-income earners are the primary target group** for the default retirement income delivered by the combination of the Age Pension and the SG. Based on review projections, they will not be able to maintain their living standard in retirement by relying on the Age Pension alone, and they save for retirement mainly through compulsory superannuation (aside from their home). Lower-income earners can maintain (if not improve) their retirement living standards through the Age Pension alone. Higher-income earners are more likely to accumulate sufficient wealth through superannuation and other voluntary saving to meet their income needs in retirement.
2. **Universal policy settings under the Age Pension and SG are asymmetric**. If default saving is too low, people can save more voluntarily; if too high, it can be hard for people to save less (Figure 2C-1). This highlights the importance of balance when setting the default level of retirement income. People with lower incomes are particularly vulnerable to compulsory savings rates set too high. These groups tend not to save voluntarily. They have limited flexibility to reduce other savings in response to higher default savings levels (see *5A. Cohesion*).

Figure 2C-1 Illustrative example of asymmetry of retirement income system policy setting



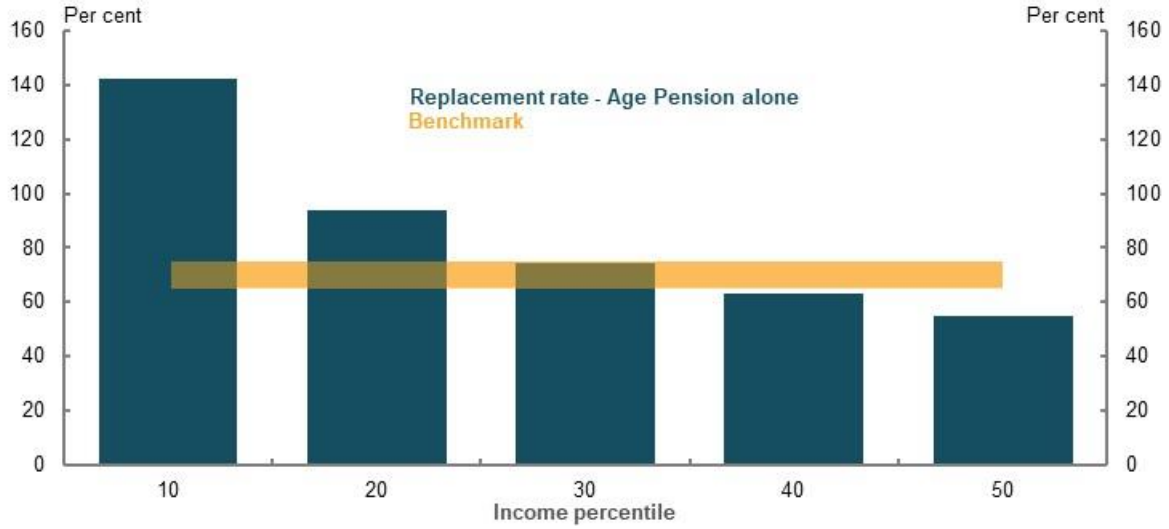
Lower-income earners are defined as those in the bottom 30 per cent of all earners, higher-income earners are in the top 20 per cent and middle-income earners are those in between. This section examines the retirement outcomes for these income groups. It uses projections based on cameo modelling under current policy settings, including legislated incremental increases in the SG rate to 12 per cent.[100]

[100] Adjusted by the review's deflator to 2019 dollars, lower-income earners have average annual earnings over their working life of up to $48,000, while higher-income earners have average annual earnings of $112,900 and above.

Lower-income earners

For lower-income earners, the Age Pension alone will maintain living standards in retirement for incomes up to the 30th percentile, with the 40th percentile marginally below the replacement rate benchmark (Chart 2C-4). The Age Pension either maintains or increases retirement living standards for groups with little or no labour market participation.

Chart 2C-4 Projected income replacement delivered by the Age Pension alone



Note: Assumes only source of retirement income is the Age Pension. Source: Cameo modelling undertaken for the review.

Many lower-income earners make SG contributions. These savings supplement the Age Pension and are important for giving lower-income earners access to a lump sum of assets in retirement.

Lower-income earners make limited voluntary savings and are the least likely to own their home.[101] They may need further support to maintain a minimum standard of living in retirement.

Given living standards in retirement are higher than in working life for many lower-income earners, this group would benefit from prudent early release of their superannuation to cover certain financial stresses. For example, those caused by periods of unemployment, illness, or for large and unexpected expenses.

Middle-income earners

Middle-income earners require a combination of superannuation, voluntary savings and the Age Pension to maintain their living standards in retirement. Their main voluntary saving is through buying a home. Home ownership rates for middle wealth retirees currently exceed 95 per cent, although rates of home ownership are declining (see *1D. The changing Australian landscape*).

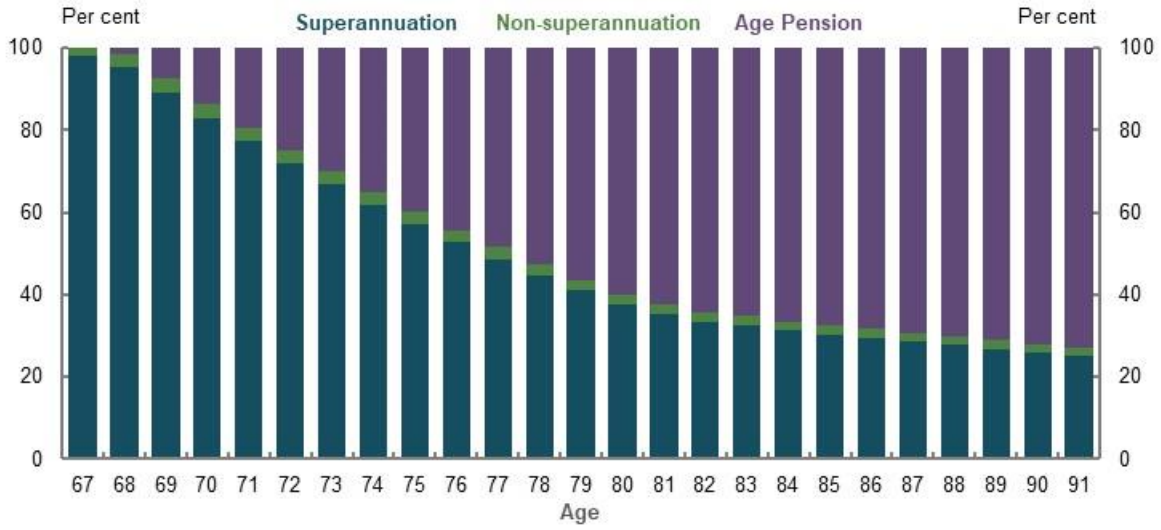
While the Age Pension alone is not sufficient to maintain the standard of living of middle-income earners in retirement, it does play a significant role in supplementing the retirement incomes of this group. In a mature system, middle-income earners are still expected to rely on some level of the Age Pension for much of their retirement, particularly in older ages as they draw down other assets (Chart 2C-5).

Middle-income earners have modest voluntarily savings or wealth outside of their home (*1B. Design of Australia's retirement income system*). As the SG matures, this should significantly boost the non-housing wealth of this group.

[101] Less than half of retirees in the bottom three wealth deciles own a home (ABS, 2019s).

Compulsory superannuation contributions are important for middle-income earners. **The SG is necessary to help this group achieve adequate retirement outcomes.**

Chart 2C-5 Projected retirement income by source, median-income earner



Source: Cameo modelling undertaken for the review.

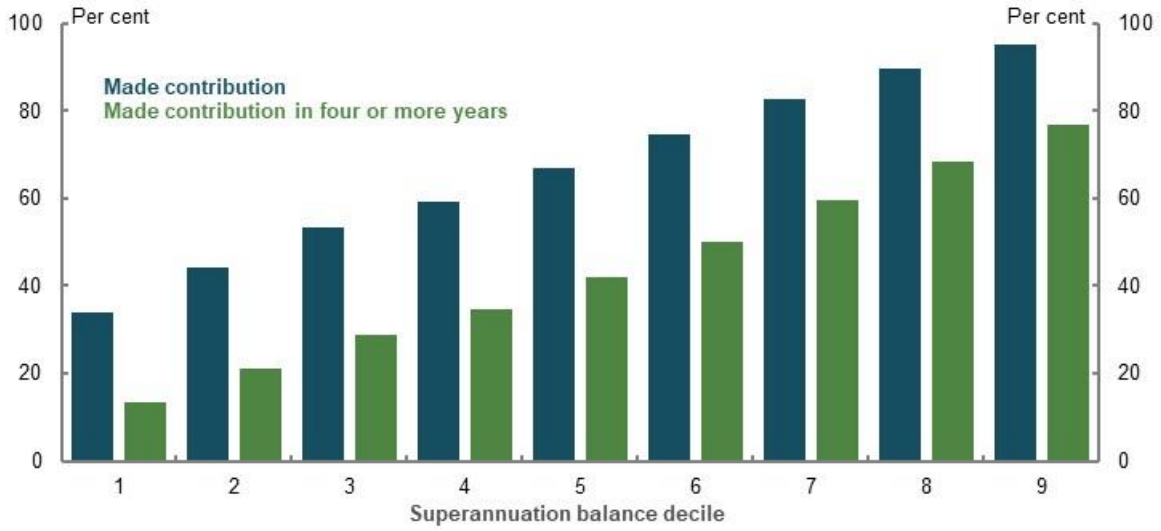
Higher-income earners

Higher-income earners will generally not receive the Age Pension until late in their retirement due to the means test. They rely on the SG and voluntary contributions (including the home and other savings) for their retirement income.

Higher-income earners are more likely to make voluntary savings. Their saving rates are higher than other income groups (Chart 2C-6) and their financial literacy levels tend to be higher (Productivity Commission, 2018a). These outcomes suggest higher-income earners are better able to save for retirement without the need to rely solely on compulsory SG compared with other groups. For example, of people aged 55 with superannuation balances at the 80th percentile, 68 per cent contributed voluntarily in at least four out of eight years.

Higher-income earners are expected to have significantly higher retirement incomes than other groups. For example, the average retirement income for an 80th percentile income earner retiring in 2060 is projected to be 25 per cent higher than the median retiree and above the ASFA comfortable standard.

Chart 2C-6 Proportion of 55-year-olds in 2010 that made a voluntary superannuation contribution over an eight-year period



Note: Data follows a cohort who were aged 55 in 2010 over an eight-year period. Average includes men and women. Includes all voluntary contributions to superannuation. Deciles refer to superannuation balance as at 2010. Source: ATO Longitudinal Information Files (ALife), 2020.

Income needs in retirement

The adequacy of retirement incomes depends on what retirees need to spend to maintain their living standards in retirement. Estimating this has two components:

1. The proportion of working-life income needed in retirement.
2. How this income needs to grow during retirement.

The proportion of working-life income needed in retirement

A replacement rate benchmark of 65-75 per cent of disposable income has been used to measure the adequacy of retirement incomes. Using a range rather than a single number avoids false precision. It also reflects that no one level of retirement income is appropriate for all retirees.

Evidence suggests 65-75 per cent of working-life income will allow most retirees to maintain their standards of living in retirement. This benchmark:

- Is consistent with most industry and international benchmarks. Typical benchmarks vary from 50-85 per cent, with 70 per cent being the most common.
- Matches the share of income people spend during their working lives, excluding costs that are unlikely to be present in retirement.
- Is slightly higher than the actual replacement rates achieved by current retirees, who generally achieved adequate retirement outcomes (see *Assessing outcomes for recent retirees*, below).
- Reflects that future retirees will spend more of their working-life income on housing (see *1D. The changing Australian landscape*). Consequently, future retirees will have reduced working-life incomes after housing costs, requiring a downward adjustment from the standard 70 per cent replacement rate benchmark, which is based on historical housing costs.

A 65-75 per cent replacement benchmark is broadly applicable for a wide group of retirees, especially middle-income earners. Nevertheless, this replacement rate range may not be appropriate for some retirees:

- **Renters** require higher replacement rates than most home owners because they have higher housing costs in retirement. Accounting for these costs, an appropriate benchmark for renting retirees is around 90 to 100 per cent.
- **Higher-income earners** save significantly more than lower- to middle-income earners and achieve higher retirement incomes. They are likely to maintain their living standard with replacement rates 10 to 20 percentage points lower than middle-income retirees.
- **Lower-income earners** need higher replacement rates than the benchmark to achieve a minimum standard of living in retirement. (See *2A. Achieving a minimum standard of living in retirement*).

See *Appendix 6A. Detailed modelling methods and assumptions* for further research on the appropriate replacement rate benchmark.

How to assess replacement rate outcomes

A well-functioning system should aim for average-income earners with typical working lives to achieve replacement rates within the benchmark. Missing the benchmark in either direction implies the system is not correctly balancing incomes between working lives and retirement.

- **Replacement rates below the benchmark** mean retirees will experience a drop in their living standards when they reach retirement, which would be a poor outcome for lifetime wellbeing. Falling below the benchmark is more concerning than exceeding the benchmark. People tend to be loss averse, meaning negative shocks have a particularly large impact on wellbeing (Tversky & Kahneman, 1992).
- **Replacement rates above the benchmark** imply retirees may be better off with more income available to them during their working lives. Exceeding the benchmark means lower spending and wellbeing during around 40 years of working life. Where possible, a system based on compulsory superannuation contributions should prevent unnecessary reductions to spending in working life.

Universal policy settings (the Age Pension and the SG) mean the system cannot deliver perfect outcomes for all incomes groups and personal circumstances. Some differences in replacement rates between groups are unavoidable.

How spending needs grow in retirement

The rate of growth of spending in retirement is important in determining whether retirees' income is adequate for all their retirement years. **Domestic and international evidence points to retirees' spending needs growing in line with prices.**

On this basis, retirement income projections in the review have been deflated by the CPI. The outcomes are significantly different if retirement incomes are deflated by assumed growth in wages (Chart 2C-7).

Chart 2C-7 Wage versus price growth in retirement, median retiree

Note: Values are in 2019-20 dollars. Assumes retirement at 67. Working-life income is deflated by average weekly earnings. Replacement rate is in the middle of the 65-75 per cent benchmark. Source: Cameo modelling undertaken for the review.

Wage growth in retirement

Proponents of wage-linked growth for retirement incomes argue that adequacy should be measured relative to prevailing living standards. Under this view, growing retirement incomes using prices is problematic because of the significant changes to society's living standards over long timeframes.

An argument sometimes raised in favour of wage-linked growth is that, because the Australian Government indexes public pensions to wages, all retirement income should be assessed on this basis (Industry Super Australia, 2020, p. 347). But the goal of helping people to maintain their living standards in retirement is different from the goal of delivering a minimum standard of living in retirement for people with limited financial means.

A minimum standard of living is a *society-wide goal* that no retiree should fall below and the minimum standard is set in line with prevailing community standards. This is achieved by benchmarking Age Pension to wages. In contrast, maintaining living standards in retirement is an *individual-level goal*, where a person aims to have a similar standard of living both pre- and post- retirement.

Basing replacement rates on wage-linked spending growth in retirement, would require a level of saving that comes at a significant cost to working-life living standards. Because of this trade-off, a system should only deliver higher spending growth if that is the preference of retirees.

Price growth in retirement

Spending in retirement that grows with prices is consistent with people having a similar standard of living in their retirement as they had in their working life.

The evidence that points to retiree spending needs rising with prices includes:

- **Spending tends to fall or remain flat as people age.** This pattern holds across multiple generations of retirees and is consistent with other research (CEPAR, 2020).
- **Spending falls or remains flat even among higher-wealth retirees**, suggesting falls in spending are due to preferences not budget constraints. Current retirees in the top 20 per cent will have a similar amount of assets to a median retiree in a mature system, suggesting they could behave in a similar way.

- **Health costs in retirement increase but not enough to increase overall spending**. Health expenses increase as people age but government transfers in Australia limit out-of-pocket costs. A prominent US study appeared to contradict falling expenditure by showing U-shaped expenditure patterns, under very different health policy settings compared with Australia. Yet results still showed real consumption falls at older ages, just not as fast as declines in the real spending in the middle of retirement (Blanchett, 2014).
- **Most OECD countries with comparable schemes index to prices**. Almost two-thirds of OECD countries index their retirement incomes predominantly to prices.
- **Most financial products available to Australian retirees are indexed to prices.**

See *Appendix 6A. Detailed modelling methods and assumptions* for further discussion of spending needs for retirees.

Using the measure of retirement incomes growing in line with prices does not mean future cohorts of retirees miss out on improvements in standards of living. Modelling by Treasury and Rice Warner shows that superannuation balances for successive cohorts of retirees will grow faster than wages[102]. Combined with the Age Pension being indexed to wages, retirement incomes for successive cohorts of retirees will rise with living standards.

Evidence suggests that retirement incomes growing by prices does not increase financial stress. Older retirees have maintained their spending in real terms throughout retirement, despite their incomes growing significantly faster (see *Appendix 6A. Detailed modelling methods and assumptions*). These older retirees have the lowest rates of financial stress of any group of retirees (see *2A. Achieving a minimum standard of living in retirement*).

Assessing outcomes for recent retirees

Traditionally, retirement income modelling has used long-term models to project outcomes for people starting work today and retiring in 40 or so years.[103] Relying solely on this approach has limitations, as results depend on assumptions. In addition to projecting future retirement incomes, the adequacy of retirement outcomes for current retirees have also been assessed using two approaches:

1. Income survey data to estimate replacement rates of recent retirees.
2. Qualitative surveys on the impact of retirement on general and financial wellbeing.

Future reviews of the retirement income system will be able to use data-based approaches to assess retirement outcomes as superannuation matures and datasets improve.

Although outcomes for current retirees reflect previous policy settings and are affected by data limitations, they provide useful insights into retirement adequacy. With a maturing superannuation system, future retirement outcomes should generally improve compared with outcomes for current retirees. These outcomes also reflect the circumstances of retirees at a specific point in time and do not include the impact of the COVID-19 Pandemic.

Replacement rates for recent retirees

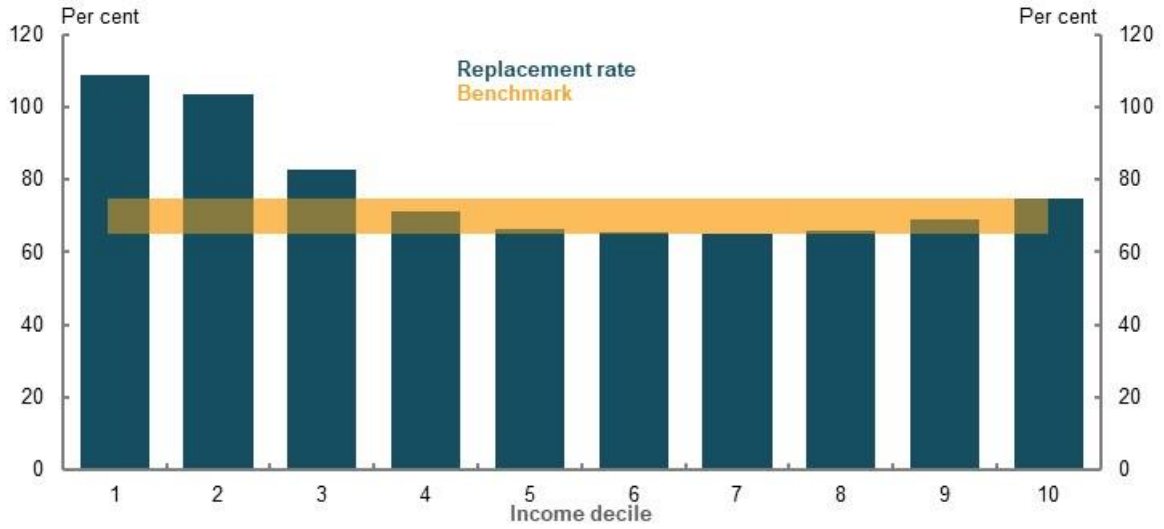
The outcomes for recent retirees can provide an indication of the performance of the retirement income system under past policy settings. Yet due to data limitations, replacement rates for recent retirees are difficult to calculate and should be considered indicative only.

[102] Treasury estimates for the review using MARIA and analysis of Rice Warner estimates for the review.
[103] Examples of using this approach include (OECD, 2019b), (Rice Warner, 2019d), (ASFA, 2020a).

Replacement rates for people born from 1943-1952 have been calculated by comparing retirement incomes for those aged 65-74 in 2017-18, with working-life income for those aged 55-64 in 2007-08. The estimates suggest that middle- to higher-income households (those in the 40th percentile and above) have replacement rates around 65 per cent or higher (Chart 2C-8). Lower-income earners have replacement rates around 100 per cent.

This analysis is informative for the outcomes of existing retirees but has significant limitations. It compares a cohort of people, rather than specific people before and after their retirement. In addition, members of the household may have already retired by age 55 to 64 or may still be working past age 65, which could create an upward bias in the estimates.

Chart 2C-8 Replacement rates for households aged 65-74 in 2017-18



Note: Uses a cohort methodology where households aged 55-64 surveyed in 2007-08 are compared with households aged 65-74 surveyed in 2017-18. This will not be the same household but is broadly indicative given the household belongs to the same age cohort. This approach may include some people who are retired but aged 55-64 and not retired aged 65-74. Incomes from 2007-08 have been inflated using wages, consistent with the review's mixed deflator methodology. The income measure is equivalised disposable household income, which includes actual drawdowns from superannuation. Source: Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2007-08 and 2017-18.

An alternative approach to calculating replacement rates of recent retirees using HILDA data shows broadly comparable results (see *Appendix 6A. Detailed modelling methods and assumptions*).

While the longitudinal approach better reflects the experience of people who retire, it also has data limitations. The number of years available and sample size of the HILDA Survey means that calculations are based on a small number of years before and after retirement. Longer periods would have been more accurate as they are less affected by events like transitioning to retirement or uneven drawdown of superannuation. Longitudinal surveys are also affected by people dropping out of the survey, and this could also bias results.

Qualitative surveys on retirement outcomes

Wellbeing surveys can also help to assess whether retirees maintain their standard of living in retirement, tracking self-assessed levels of general and financial satisfaction. Such surveys provide explicit feedback on how wellbeing changes due to retirement. However, responses are subjective and can be sensitive to how questions are asked. These surveys were conducted prior to the COVID-19 Pandemic and, just as the uncertainty associated from the Pandemic is impacting on all aspects of society, it will also be influencing current retirees' perceptions around the adequacy of their retirement incomes.

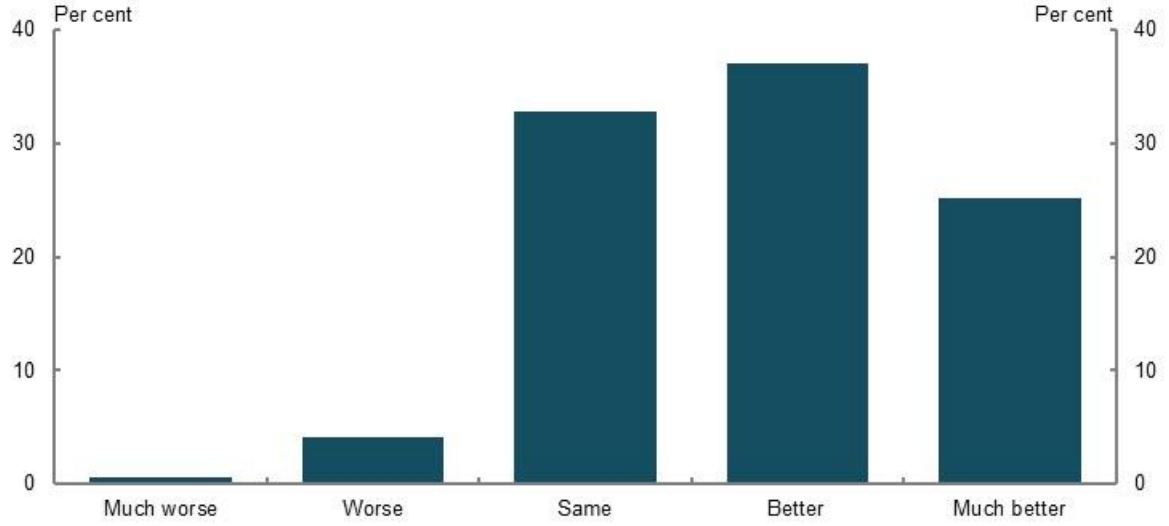
Surveys undertaken prior to the COVID-19 Pandemic suggest that most people maintain or improve their wellbeing in retirement:

- **General wellbeing.** Most retirees feel happier in retirement, more satisfied with their lives and do better than working-age people in wellbeing indices.
- **Financial wellbeing.** On average, retirees assess themselves as at least as well-off financially as they were during working life. Multiple financial wellbeing indices suggest retirees are the most financially secure age group. Surveys tend to show most retirees either maintain or improve their financial security in retirement. That said, some groups suffer a loss of financial wellbeing, particularly if they retire early for reasons outside their control.

General wellbeing

HILDA data shows that people mostly feel happier when they retire: 62 per cent of surveyed retirees reported their level of happiness was 'better' or 'much better' in retirement, while only 5 per cent said they felt 'worse' or 'much worse' (Chart 2C-9).

Chart 2C-9 Happiness in retirement compared to when working



Note: Proportion of responses to 'Better or worse since you retired — your overall happiness?' last asked in 2015.
Source: Analysis of HILDA Survey data (Wave 15).

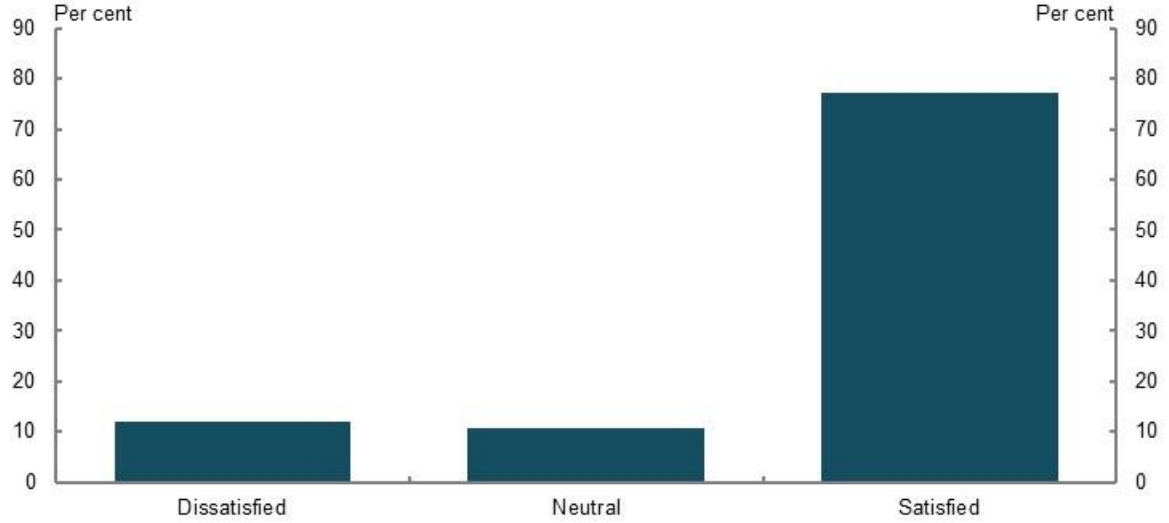
Health and disability issues, which tend to worsen with age, may be a significant driver for those who experience worse wellbeing outcomes in retirement. For example, about half of Australians over 65 have a disability (ABS, 2019g). The Australian Unity wellbeing index also shows better life satisfaction and higher personal wellbeing for retirees in all categories except health (Khor, et al., 2019).

Financial wellbeing

Australians who recently retired are generally financially satisfied: 88 per cent were satisfied with, or neutral about, their financial circumstances (Chart 2C-10). A major drive of dissatisfaction appears to be due to renting in retirement (*see 2A: Achieving a minimum standard of living in retirement)*.

In general, rates of financial satisfaction tend to improve as Australians age. Satisfaction is lowest for households in their 40s and then consistently increases with age from 50 onwards (Australian Centre for Financial Studies, 2016, p. 19).

Chart 2C-10 Financial satisfaction among recent retirees



Note: Recent retirees refers to people who retired in the five years up to 2018. 'Satisfied' refers to retirees who reported a financial satisfaction score of 6 or greater in 2018, 'Neutral' is a score of 5 and 'Dissatisfied' is 4 or less. Source: Analysis of HILDA Survey data (Wave 18).

Multiple surveys suggest retirees tend to be more financially comfortable compared with working-age people. More retirees say they have enough money to do the things they want compared with non-retired people (Core Data, 2020). Survey data from Core Data indicates about half of Australian retirees have enough money to do the things they want to do most or all of the time compared with a third of non-retired Australians aged 45 and above. A substantial proportion of retirees, about 30 per cent, rarely or never have enough money to do the things they want. This is about 8 per cent lower than the same figure for non-retirees.

In a 2019 survey of almost 700 retirees, 67 per cent said they were either comfortable or were able to afford basic expenses, with a little left over for extras. For Australians aged over 40 but yet to retire, 52 per cent believe they would be able to do so.[104]

Survey data from Susan Bell Research (2020) found similar results regarding financial comfort: 62 per cent of retirees had spare cash or were comfortable; 38 per cent described their circumstances as not making ends meet or on a very tight budget.

A qualitative 2019 study conducted by Challenger on behalf of National Seniors Australia found that most people considered themselves financially comfortable in retirement (McCallum, et al., 2019).

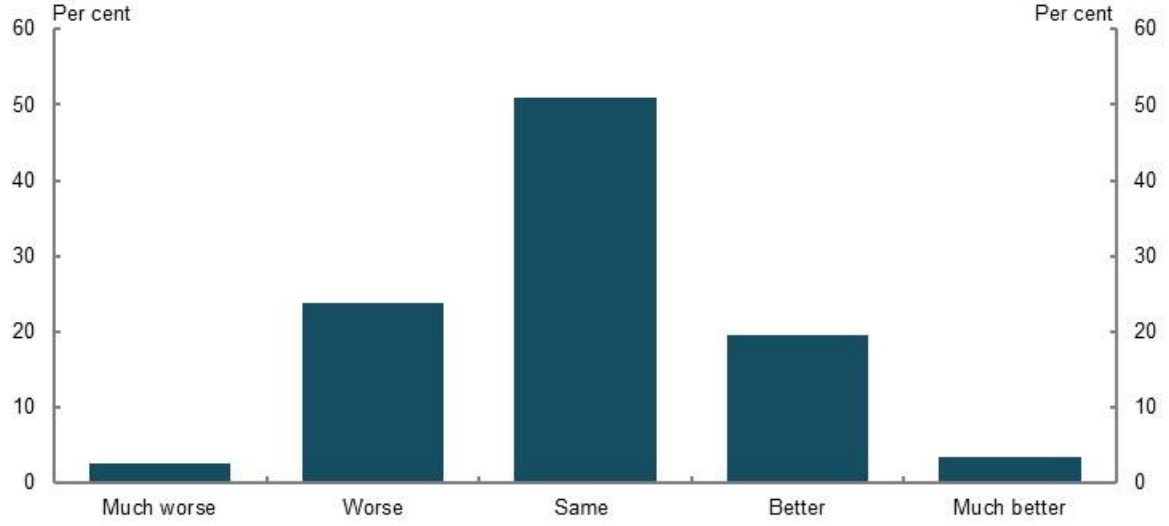
Financial wellbeing indices also point to improved levels of wellbeing as people age.

- ANZ's financial wellbeing index suggests that Australians of retirement age are better off financially than young and middle-aged people in all the categories they measure (Russell, et al., 2018). Australians aged 65 and over had a financial wellbeing score of 71 versus 59 for people across all age categories.
- A recent survey by ME Bank found that retirees are the most well-off cohort in terms of financial wellbeing (ME Bank, 2020). This result has been consistent over the past seven years.

Most retirees maintain their level of financial comfort when they enter retirement, with 51 per cent reporting a level of financial comfort equal to before they retired (Chart 2C-11). About 26 per cent say their financial security is worse or much worse than it was before retirement. A significant portion of this is explained by involuntary retirement: 34 per cent of people who retired involuntarily said their financial security had declined (see *3E. Age of Retirement* for further details).

[104] Investment Trends October 2019 Retirement Income Report.

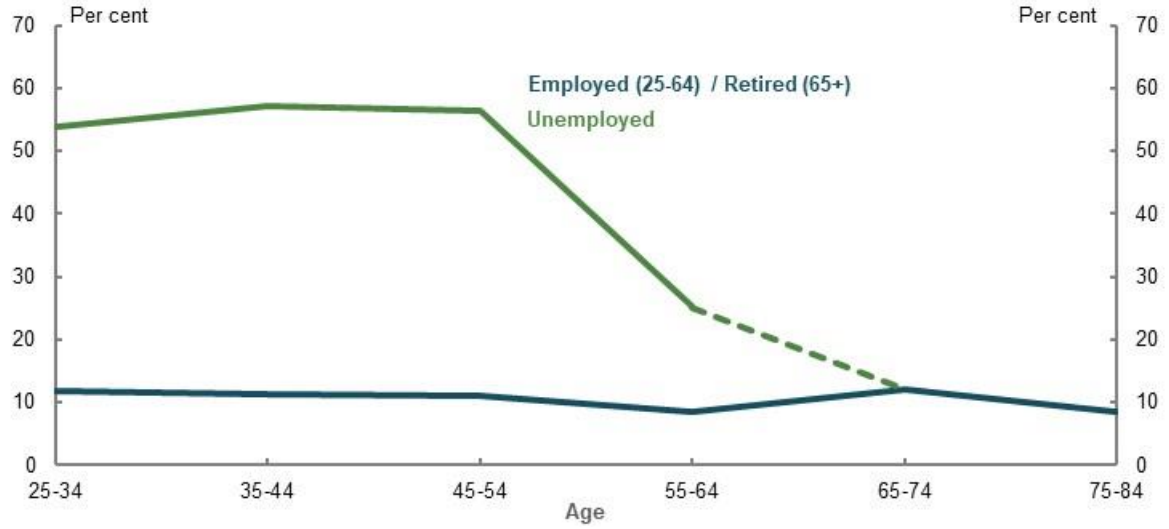
Chart 2C-11 Perceived change in financial security after retiring



Note: Proportion of responses to 'Better or worse since you retired — your financial security?' last asked in 2015. Source: Analysis of HILDA Survey data (Wave 15).

Financial stress rates stay broadly constant throughout working life when comparing employed Australians with retirees (Chart 2C-12). Comparing retirees to employed people, rather than all Australians, is a better comparison for assessing whether living standards are being maintained (CEPAR, 2020, p. 8). Unemployed Australians typically experience improved wellbeing in retirement as the Age Pension provides more support than they received in working life (See *2A. Achieving a minimum standard of living in retirement*).

Chart 2C-12 Financial stress rate by age and employment status



Note: All people age 65 and above classified as retired. Source: Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

Early release of superannuation

The SG and superannuation tax concessions are designed to encourage people to save for their retirement. Similarly, superannuation benefits are generally preserved to provide income in retirement. **But some people experience adverse events during their working lives that are difficult to foresee.** Examples include unemployment, illness and unexpected large expenses.

A range of government programs assist with some of these adverse events. For example, JobSeeker Allowance provides income support for people who are unemployed and the public health system provides free health care.

People facing genuine hardship may also be able to access their superannuation before preservation age. **Early release of superannuation recognises that, in some individual circumstances, the benefits of early access to superannuation will exceed the benefits of preserving balances until retirement.** This is consistent with the approach that saving for retirement should not come at an excessive cost to people's standard of living in working life, which is particularly relevant when people do not have the option to reduce their compulsory superannuation savings.

Five sets of circumstances are recognised as compassionate grounds for early release:

1. Medical treatment and medical transport
2. To prevent foreclosure or forced sale of home
3. Modifying a home or vehicle or buying disability aids for a severe disability
4. Palliative care
5. Funeral expenses

Early release is also allowed on severe financial hardship grounds if a person has received qualifying Commonwealth income support payments for 26 continuous weeks and they are not able to meet reasonable and immediate family living expenses.

Accessing superannuation early has a more significant effect on superannuation balances for younger age groups due to the loss of compound returns. Although, the Age Pension ameliorates some of this effect on retirement income, particularly for the median-income earner.

For example, a person withdrawing $10,000 in two consecutive years from age 30 would lower their superannuation at retirement by $40,300 in wage-adjusted terms. The same withdrawals at age 55 would lower their superannuation balance at retirement by $24,600 (Table 2C-1).

Table 2C-1 Projected effect on retirement incomes of early release of superannuation, median earner retiring in 2060

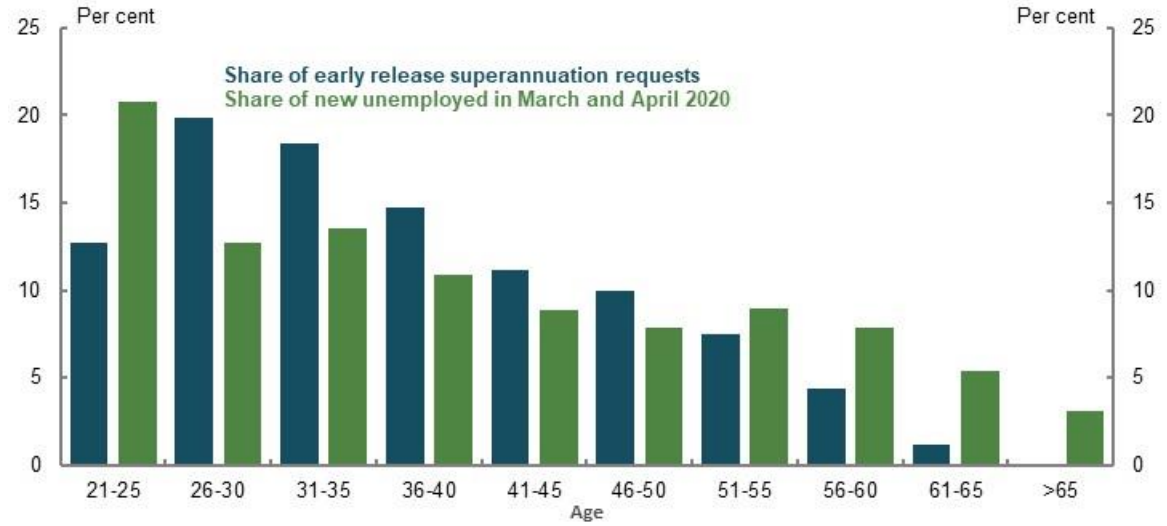
Age	Early release amount ($)*	Change in superannuation balance at retirement ($, deflated by average weekly earnings)	Change in superannuation balance at retirement ($, deflated by CPI)	Change in retirement income (per cent)
30	20,000	-40,300	-69,300	-2.1
35	20,000	-36,300	-62,500	-1.9
40	20,000	-33,000	-56,700	-1.7
45	20,000	-29,900	-51,400	-1.7
50	20,000	-27,100	-46,600	-1.4
55	20,000	-24,600	-42,200	-1.2

Note: Values are in 2018-19 dollars. $20,000 early release is split between two financial years, with $10,000 withdrawn in each year. Individuals commence work in 2020 at age 27 and draw down super at specified ages. Results are rounded to the nearest $100. CPI-deflated results are presented for comparative purposes. The amount drawn down early is indexed to average weekly earnings. *Withdrawal amounts are indexed to average weekly earnings meaning more than $20,000 is withdrawn in CPI-deflated terms for later ages and impact on balances at retirement is larger as a result. Source: Cameo modelling undertaken for the review.

Recognising the unprecedented nature of the COVID-19 Pandemic on the economy and on people's incomes, the Government allowed early release of up to $20,000 of superannuation (up to $10,000

prior to July 2020 and up to a further $10,000 from 1 July until 24 September in 2020).[105] People requesting early release of their superannuation aligned with the age groups most affected by unemployment in the early months of the COVID-19 Pandemic (Chart 2C-13).

Chart 2C-13 Comparison of utilisation of COVID-19 Pandemic early release of superannuation with the share of newly unemployed people, by age



Note: Share of people applying for COVID-19 early release of superannuation who were aged 20 or over as at 11 May 2020, share of new unemployed in March and April 2020 who are aged 21 or over. Age brackets shown on the chart are for the share of early release of superannuation. Age brackets for the share of new unemployed are five-year brackets starting from age 20 (rather than 21). Source: (ABS, 2020i) and (Senate Standing Committee on COVID-19, 2020).

Other circumstances that might justify the early release of superannuation were considered as part of the *Review of the early release of superannuation benefits* (The Treasury, 2018c). Examples explored included paying rental arrears (as opposed to mortgage arrears) and situations of family or domestic violence.

Some countries have a more open approach to early access to retirement savings. For example, in the US there is an option to access retirement funds early without any assessment of need, but the funds released are taxed as income at marginal rates plus a 10 per cent penalty.

Offering prudent and limited access to superannuation prior to retirement is consistent with the objective of balancing living standards pre- and post-retirement. Early access allows the system to respond to financial pressures people may face while still facilitating saving for retirement. Equally, superannuation is not intended to solve every financial problem experienced in working life. Shifting the balance too far in that direction would compromise its main objective of providing retirement income.

Assessing outcomes for future retirees

Future outcome for retirees were modelled to assess whether the retirement income system is on track to deliver adequate outcomes.

[105] People could access their superannuation as a result of the COVID-19 Pandemic if they were unemployed, receiving a specified Government income support payment, experiencing a 20 per cent reduction in working hours, or a sole trader whose business has been suspended or had turnover reduced by more than 20 per cent.

How cameo modelling works

The cameo model

A hypothetical lifetime cameo retirement income model was used to measure retirement outcomes. The model incorporates current policy settings, including the legislated increase in the SG rate to 12 per cent.

The model simulates the income of hypothetical individuals or couples starting work today for each year of their working life and retirement (see *Appendix 6A. Detailed modelling methods and assumptions*). Income earned each year is the average for employees adjusted for age and a person's point in the income distribution. Based on their age and income, people save over their working life to both superannuation and private savings. Upon retiring, they draw down these assets and could be eligible for the Age Pension.

The model used has been adapted from Treasury's Excel Model of Retirement Incomes (EMORI). EMORI was extended, including by building in new data and assumptions and expanding the functionality for sensitivity analysis (see *Appendix 6A. Detailed modelling methods and assumptions*).

Model results were tested to ensure they capture how typical Australians save for retirement. This testing shows the model produces similar superannuation balances to people who are currently working and superannuation balances at retirement that are similar to other long-term models (see *Appendix 6A. Detailed modelling methods and assumptions*).

Groups analysed

The cameo modelling covered a representative range of Australians. The central case covered people with typical working lives and analysed outcomes for individuals, couples and women. Analysis was also conducted for multiple household types, including singles, couples and women.

Significant sensitivity testing was conducted as no one set of assumptions can cover Australia's diverse population. Where possible, these sensitivity tests were informed by the actual distribution of outcomes in the population.

The cameo modelling does not include some segments of the population, such as:

- **Individuals with little or no wage income**. For example, people with marginal attachment to the workforce or with a disability that limits their ability to work. Data from the Department of Social Services Priority Investment Approach to Welfare Actuarial Modelling shows that around 10 per cent of the population do not work much for at least 15 years prior to retirement (*Appendix 6A. Detailed modelling methods and assumptions*). Assessment of adequacy outcomes compared to a minimum standard is more appropriate for this group.
- **People in self-employment**. Significantly different SG rules apply to people in non-standard employment. See *3D. SG coverage* for a detailed explanation of the complex issues surrounding the retirement outcomes for self-employed people.

Assumptions

All retirement income models use assumptions to project future outcomes. **The assumptions used in the modelling in this review are evidence-based, use leading data sources and align with the intent of government policy.**

Consistent with the policy intent that superannuation is to provide income in retirement, the modelling assumes retirees use all their superannuation assets to support their living standards in retirement. This assumption shows what the system is able to deliver under current policy settings

and recognises efforts to develop appropriate products to assist people to draw down their assets in retirement. The assumption that people use their assets is frequently used in retirement modelling including in *Australia's Future Tax System Review*, and submissions to the review from the superannuation industry and other stakeholders.[106] Most retirees, however, do not efficiently use their assets in retirement. This is discussed in *5A. Cohesion*.

Major assumptions for the central case and associated sensitivity analysis are included below (Table 2C-2). In addition to the assumption that retirees draw down their superannuation in retirement, two other assumptions that have a big impact on replacement rates are:

1. How spending needs grow in retirement (see *How spending needs grow in retirement*, above).
2. Whether individuals retire before or after preservation age (see *Years in the workforce*, below).

See the *Appendix 6A. Detailed modelling methods and assumptions* for further details of evidence behind the assumptions.

Table 2C-2 Major central case modelling assumptions

Assumption	Central case	Basis	Sensitivity testing
Life expectancy	92 years	Projections from 2015 Intergenerational Report (IGR)	Longer life expectancy
Length of working life	40 years	Median in HILDA, checked against labour force trends and MARIA modelling.	Testing of different career lengths, checked against careers of retirees today.
Incomes	By age and income	Tax return data	N.A.
Nominal wages growth	MYEFO 2019-20 for forward estimates Long run ~4%[i]	Projections from IGR 2015; average weekly ordinary time earnings growth averaged 4% over past 20 years	0.5% lower
Investment returns (before fees and taxes)	7.5% Accumulation phase 6.2% Retirement phase	Forward-looking investment return targets	Higher/lower investment returns
Voluntary superannuation contributions	Salary sacrifice contributions only	ATO income and tax data	No voluntary saving
Superannuation drawdowns	Optimal draw down to exhaust at life expectancy	Aligns with system purpose	Minimum and observed drawdown rates
Management of longevity risk	Purchase of a deferred pooled longevity product	Aligns with system direction	No longevity protection Different pricing
Replacement rate calculation	Average annual whole of retirement disposable income divided by average annual disposable income 10 years before retirement[ii]	Analysis of spending needs	Alternative deflators and calculation periods
Home ownership	Home owner	Home ownership rates for middle and higher-wealth retirees exceed 95 per cent	Renter

Note: Central case assumptions for review modelling. Particular settings or sensitivities are analysed as deviations from the central case. [i]Long-run inflation of 2.5 per cent and productivity growth of 1.5 per cent gives nominal wages growth just over 4 per cent. See (Commonwealth of Australia, 2015). [ii]Replacement rates are deflated using the review's mixed deflator.

[106] (Rice Warner, 2019d; Grattan Institute, 2020, p. 50; Australia's Future Tax System Review, 2009, p. 68; Dawkins, 1992; The Treasury, 2002, p. 25).

Adequacy for future retirees

Replacement rates

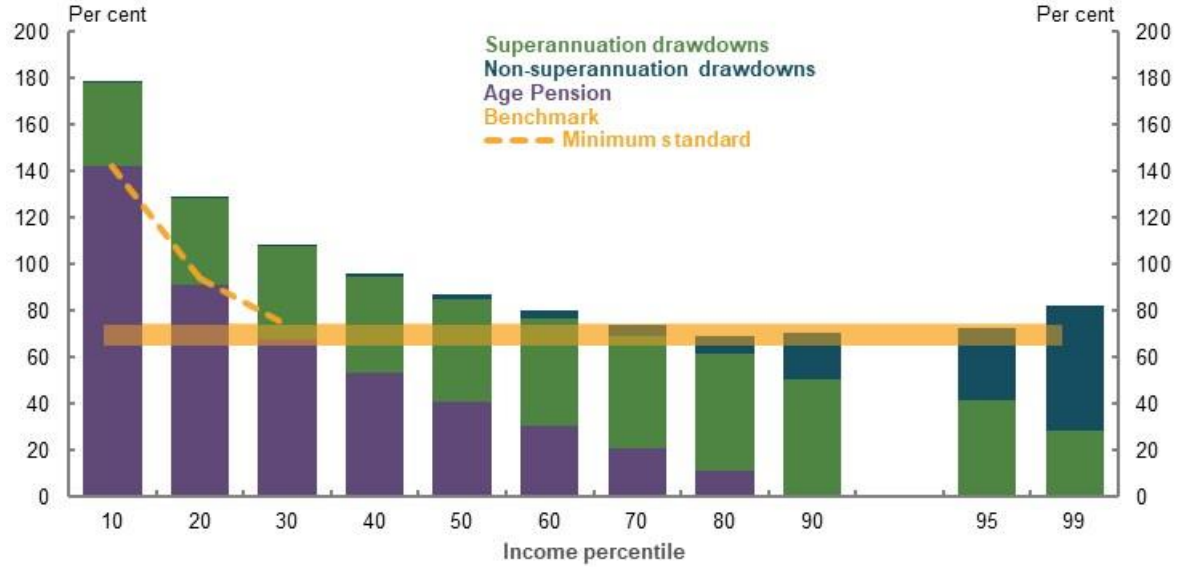
Replacement rates are projected to exceed or meet the 65-75 per cent benchmark for all income levels when considering employees regardless of relationship status or gender (Chart 2C-14). This widely used approach is representative, capturing the broadest population. It does not factor in the circumstances of specific groups, such as women and couples, which are covered in modelling of other household types below.

Modelling shows that people with incomes in the 60th percentile and below exceed the replacement rate benchmark, largely due to them receiving the Age Pension and income through the SG. This suggests the system may be leading people in the bottom half of the distribution to over-save for retirement.

Superannuation is projected to be a main source of income for median-income earners and above. **Drawing down superannuation assets efficiently is critical for these groups to achieve replacement rate benchmarks.** Non-superannuation assets are a large proportion of incomes for the 90th percentile and above.

The Age Pension is projected to contribute to retirement incomes for most income levels. Lower- and middle-income earners will receive a large proportion of their retirement income from the Age Pension.

Chart 2C-14 Projection of replacement rates



Note: Minimum standard is the maximum rate of Age Pension. Based on all-employees model. Replacement rates are projected for individuals commencing work in 2020 and retiring in 2060. Source: Cameo modelling undertaken for the review.

Replacement rates for couples

Outcomes were also modelled for couples, given their careers, savings patterns and Age Pension rules differ from singles. **Outcomes are broadly similar for couples and individuals, with some differences.**

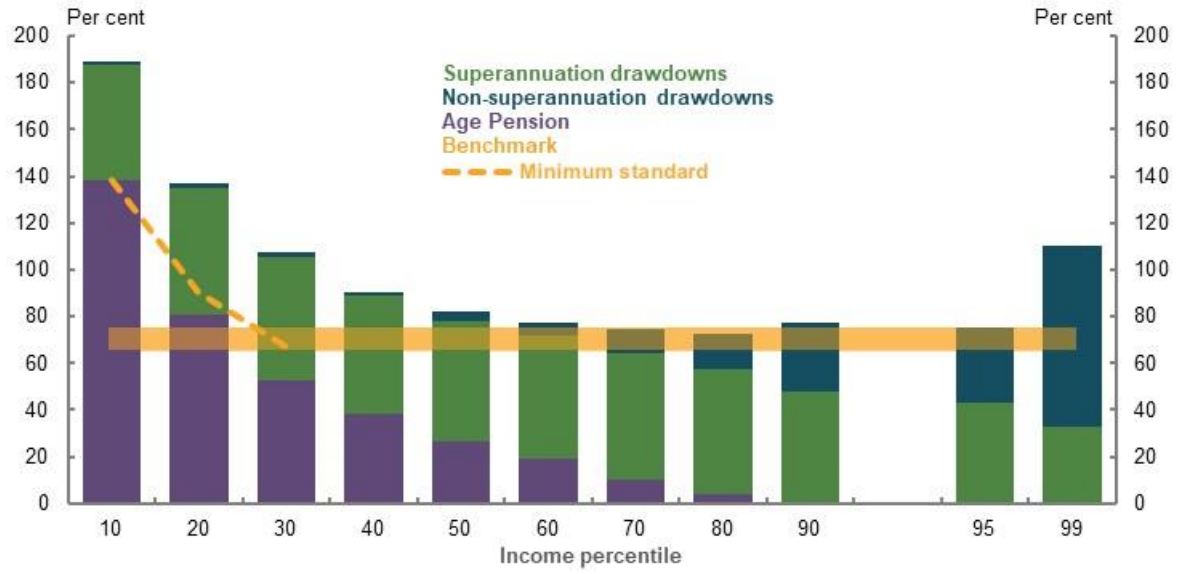
The couples model captures the circumstances of people in a relationship while in retirement. Around 70 per cent of people are part of a couple at the start of retirement, although this proportion declines with age.

Couples in the central scenario are projected to exceed or meet the replacement rate benchmark across all income levels (Chart 2C-15). Outcomes tend to be lower than those for individuals, with less over-saving for some middle-income earners.

Drivers of differences between couples and other households include:

- Couples have higher incomes on average than an individual at an equivalent point in the individual income distribution (see *Appendix 6A. Detailed modelling methods and assumptions*)
- The couple rate of the Age Pension is less than double that for singles, meaning it makes up a smaller proportion of retirement income for couples than for individuals with similar means
- Couples have higher savings than singles at an equivalent point in the income distribution. This includes higher concessional contributions and higher savings outside of superannuation

Chart 2C-15 Replacement rates for couples by income source



Note: Minimum standard is the maximum rate of Age Pension. Replacement rates are projected for couples commencing work in 2020 and retiring in 2060. Source: Cameo modelling undertaken for the review.

Replacement rates for women

A specific cameo model was developed for women, adjusting the default assumptions to reflect a shorter working life (38 years instead of 40), generally lower female wages, differences in rates of voluntary savings and different life expectancy (see *Appendix 6A. Detailed modelling methods and assumptions*).

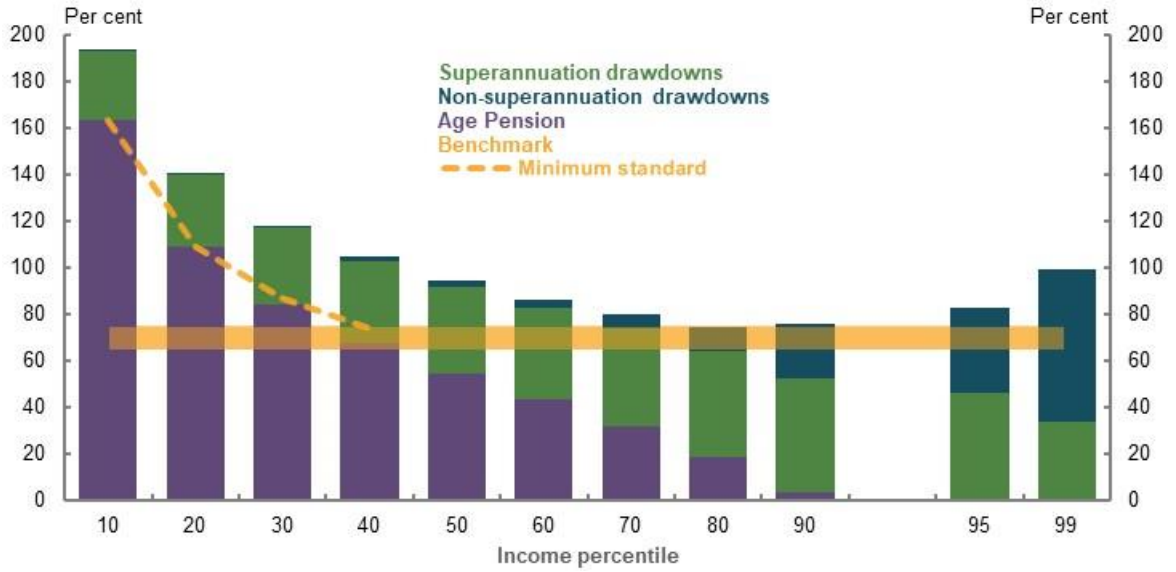
Women have, on average, replacement rates above the benchmark across all income percentiles (Chart 2C-16). This result is due to:

- Women's lower working-life incomes and superannuation balances mean the Age Pension replaces a larger proportion of their working-life income than for men.
  - Due to lower incomes and lower rates of workforce participation, women also benefit relatively less from the SG. For example, the increase in the SG rate to 12 per cent is expected to benefit men more than women and not reduce the gender gap in retirement incomes (see *3B. Gender and partnered status* and *2D. Policy scenario: Implications of maintaining the SG rate*).
- Women having relatively higher voluntary savings rates. On average, women make higher voluntary contributions to superannuation as a proportion of their incomes than men.

- For women, voluntary contributions are largely made by those with higher balances, or those partnered to people with higher balances (see *Appendix 6D. Supplementary equity charts*).
- The main form of voluntary savings for women is through non-concessional contributions and is not included in this modelling.

Higher replacement rates do not mean women have better outcomes than men in retirement, as their total retirement incomes are lower, given lower working-life incomes. Differences in retirement outcomes by gender are discussed in *3B. Gender and partnered status*.

Chart 2C-16 Replacement rates for women by income source



Note: Minimum standard is the maximum rate of Age Pension. Replacement rates are projected for women retiring 40 years after starting work with a two-year career break. Source: Cameo modelling undertaken for the review.

Box 2C-4 Options to boost adequacy

Drawing down assets efficiently is crucial for many retirees to be able to maintain their living standards in retirement. Moreover, using assets more efficiently can boost retirement incomes without the need to save more during working life.

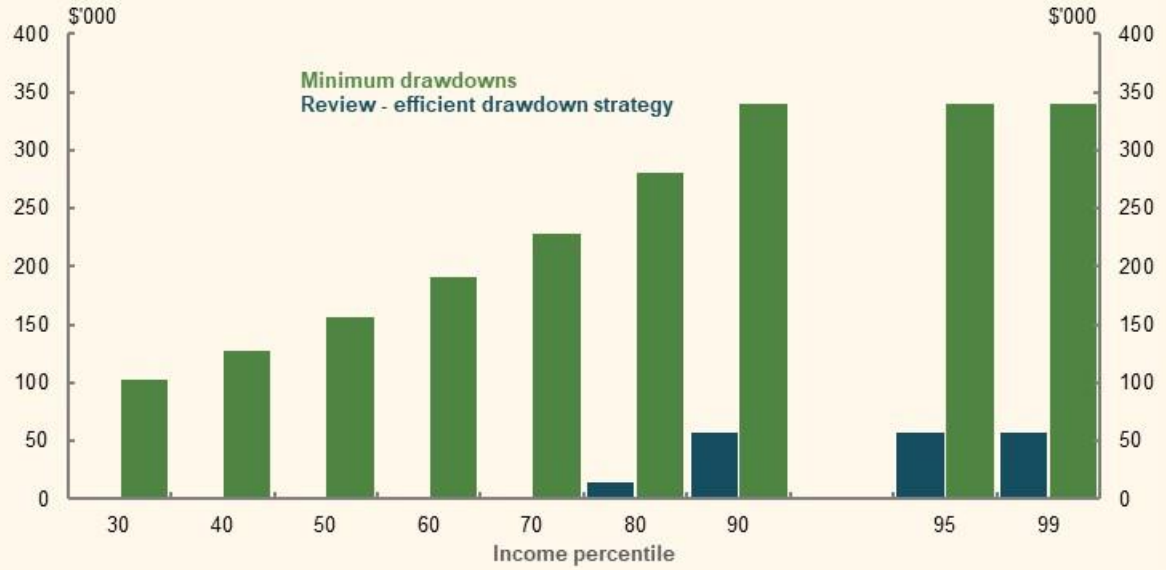
Fully using superannuation assets

Whether retirees draw down at minimum rates or effectively use their superannuation is critical for adequacy outcomes (Chart 2C-18). Middle-income earners in the 60th and 70th percentiles have replacement rates below the benchmark if they draw down their superannuation at the statutory minimum rates.

More than half of retirees older than 65 currently draw down at the minimum rate (Rice Warner, 2019b), although retirees who do not use minimums draw down at faster rates, such as about 10 per cent a year for members aged 65-79 (First State Super, 2020b). Longevity products can help protect retirees from the risk of outliving their assets, but their take-up is low (see *5A. Cohesion*).

The purpose of superannuation is to provide income in retirement. Drawing down superannuation assets throughout retirement is consistent with its policy purpose. Superannuation is not intended to provide significant bequests through a concessionally taxed environment. However, most retirees currently leave the bulk of their wealth as a bequest (see *5A. Cohesion*).

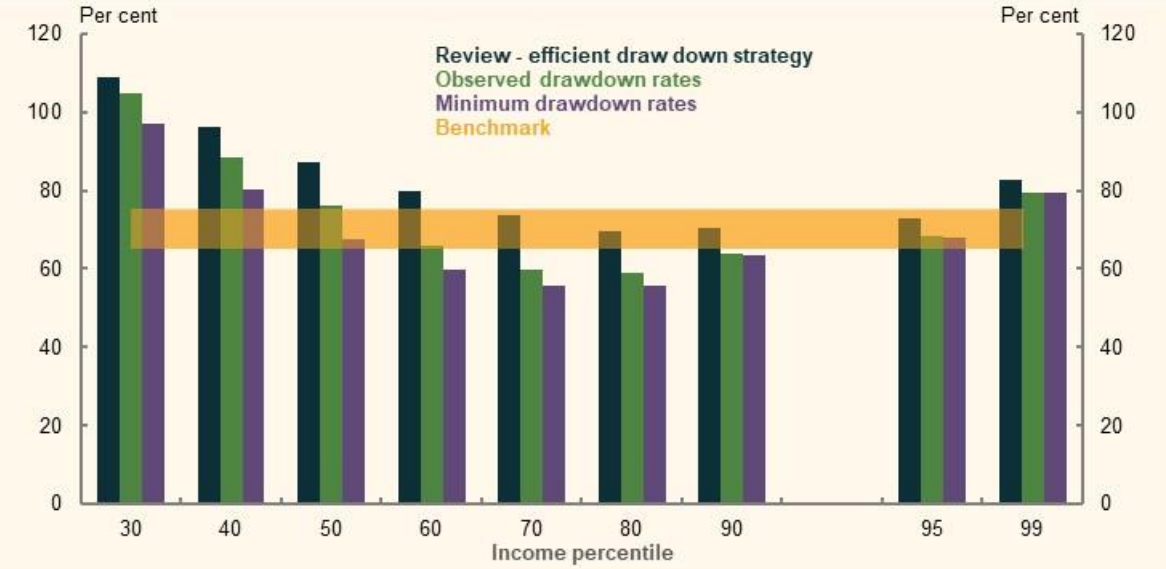
Chart 2C-17 Projected superannuation bequests at age 92; different drawdown rates



Note: Bequests estimated based on remaining superannuation balance at life expectancy. Bequests do not include non-super assets. Values are in 2019-20 dollars, deflated using the review's mixed deflator. Minimum drawdown rates are consistent with legislated minimums by age. Minimum drawdown rate scenario does not include purchase of a longevity product. Review drawdowns exhausts superannuation balance at age 92 (with longevity protection) except for higher-income earners. Source: Cameo modelling undertaken for the review.

If drawdown rates increase from those currently observed to match those assumed in the modelling, replacement rates could rise by 11 percentage points for the median earner retiring in 2060.

Chart 2C-18 Projected replacement rates under different drawdown rates



Note: Replacement rates are calculated using the review's mixed deflator. Minimum and observed drawdown rate scenarios do not include purchase of a longevity product. Source: Cameo modelling undertaken for the review.

Achieving better after-fee returns

Improving after-fee investment returns in superannuation can significantly boost retirement incomes. **A 0.5 per cent increase in after-fee returns could boost replacement rates for the median earner by 4 percentage points (Chart 2C-19).**

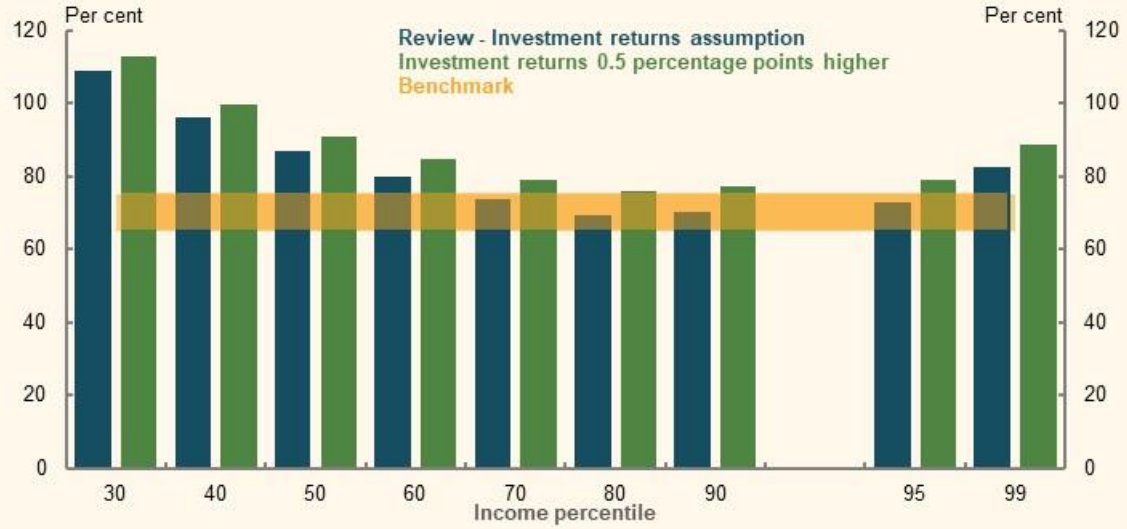
Options for improving net returns include:

- Implementing the reforms suggested in the Productivity Commission's report *Superannuation: Assessing Efficiency and Competitiveness*, intended to reduce costs for members. For example, moving from a

MySuper fund in the bottom 20 per cent for fees to one in the top 20 per cent could boost after-fee returns by 0.5 percentage points (review analysis of (Australian Prudential Regulation Authority, 2020a)).

- Using investment strategies that mitigate sequencing risk, such as dynamic lifecycle strategies, to improve adequacy with lower downside risks (Drew, et al., 2014).

Chart 2C-19 Projected impact of higher returns on replacement rates



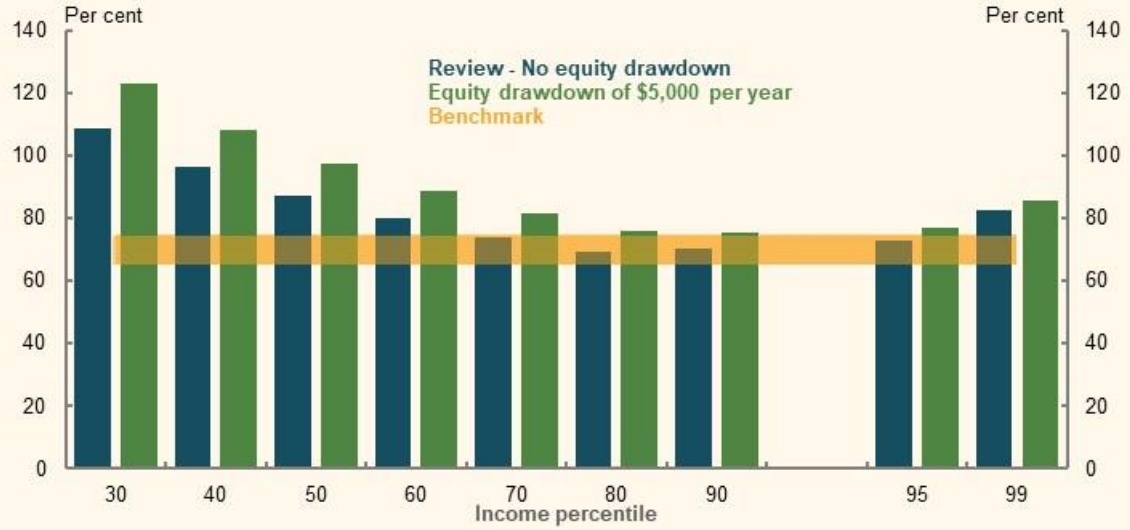
Note: Review assumption for investment returns is 7.5 per cent during the accumulation phase and 6.2 per cent in retirement. Source: Cameo modelling undertaken for the review.

Accessing equity in the home

For most retirees, the family home is their main asset. **Using relatively small portions of home equity can substantially improve retirement incomes.** For example, using the Pension Loans Scheme to add $5,000 to annual income increases the replacement rate of the median earner by 10 percentage points (Chart 2C-20).

Releasing home equity can boost retirement incomes with a modest impact on debt. Withdrawing $5,000 a year would mean that retirees still have about three-quarters of the value of their home at age 92, for a house worth $500,000 at retirement. Retirees with higher value homes would maintain even higher proportions of home equity while still benefiting from significant improvements in replacement rates.

Chart 2C-20 Projected impact of home equity release on replacement rates



Note: Values are in 2019-20 dollars, deflated using the review's mixed deflator. Home is worth $500,000 at retirement in wage-deflated terms and house prices are assumed to grow with wages for the purpose of this scenario. Equity drawdown assume that the Pension Loans Scheme is used to add an extra $5,000 to annual income each year of retirement. Calculations assume Pension Loans Scheme interest rate and loan-to-value ratios at 1 January 2020. Source: Cameo modelling undertaken for the review.

Impact of different assumptions

Assessing whether the system is robust to risk requires sensitivity analysis to find out what happens when assumptions deviate from those made in the central case. The following sensitivity analysis was conducted across a range of factors, such as different career lengths, investment strategies and risks, and how people save and draw down their assets. The aim was to incorporate reasonable risks faced by an average person.

Outcomes under sensitivity analysis

For median (Table 2C-3) and average (Table 2C-4) earners, outcomes remain above or within the replacement rate benchmark for many deviations from the central case. For example, median singles or couples can have a 25-year career and still achieve the benchmark provided they work to age 65. More than 80 per cent of people retiring today had careers of 25 years or longer.

The Age Pension is a major reason that retirement incomes for median-income earners remain adequate under different sensitivities. The Age Pension offsets the reduction in retirement income for middle-income earners if negative shocks affect their superannuation balances (Box 2C-5). Replacement rates for average and median earners with typical careers are also above the replacement benchmark range, providing an additional buffer should negative risks reduce their retirement incomes.

Some median- or average-income earners are below the benchmark in cases where:

- People have careers of 25 years or less *and* retire before superannuation preservation age, particularly for couples
- Couples only draw down their superannuation at the minimum rates

Under sensitivity analysis, replacement rates are relatively lower for couples than for individuals and higher for women compared with individuals.

Detailed modelling of sensitivity analysis is included in the *Annex — detailed sensitivity analysis* at the end of this section. Modelling includes the impact of different assumptions on retirement outcomes across the population.

Table 2C-3 Projected replacement rates, median earner sensitivity analysis (50th percentile)

	All employees (per cent)	Female only (per cent)	Singles only (per cent)	Couples only (per cent)
Review replacement rate	87	94	88	82
Sensitivity analysis				
Investment risks				
Investment returns 1.0 ppt lower	81	89	82	74
Investment returns 0.5 ppt lower	84	92	85	77
Low wage growth and lower investment returns[i]	87	95	89	82
25 per cent investment shock[ii]	82	90	83	74
Drawdown strategies				
Minimum drawdown[iii]	68	81	71	61
Observed drawdown[iii]	76	n/a	n/a	n/a
Voluntary saving[iv]				
No non-super savings	88	95	89	82
No salary sacrificing	85	93	87	78
No non-super or salary sacrificing	85	93	87	78

	All employees (per cent)	Female only (per cent)	Singles only (per cent)	Couples only (per cent)
Working career and longevity[v]				
Shorter working life				
(25 years) Retirement at 67	78	87	79	70[viii]
(30 years) Retirement at 67	81	90	83	73[viii]
(35 years) Retirement at 67	84	93	86	77[viii]
(25 years) Retirement at 60	69	79	71	65[viii]
(30 years) Retirement at 60	73	81[vii]	73	68[viii]
(35 years) Retirement at 60[vi]	76	82[vii]	77	70[viii]
Early Retirement			Primary only/both	
Job-related (57 years)	72	79	74	73/68[ix]
Job-related (62 years)	78	85	80	75/72[ix]
Disability-related (57 years)	79	90	82	73/70[ix]
Disability-related (62 years)	80	90	82	75/72[ix]
Retirement at 70 (start age 27)	92	98	93	90
Low SG coverage (8 years less)[x]	82	90	84	75
Living to 102	88	99	89	83
Living to 102 no longevity product[iii]	84	93	86	78
Calculation differences in replacement rates				
5 years before/5 years after	90	95	90	91
15 years before/15 years after	84	91	86	75
Wage deflator	73	79	74	69
CPI deflator	95	103	96	89

Note: All sensitivities assume working life of 27-67, starting in 2019-20, unless otherwise specified. Income distributions are based on relevant cohorts, for example the median couple is based on the income distribution of couples. [i]Low wage-growth scenario assumes 3.5 per cent nominal wages growth from 2032-33 and 0.5 percentage point lower investment returns. [ii]A once-off 25 per cent reduction of super balances at retirement that does not recover. [iii]Assumes no longevity product purchase. [iv]Working-life income from the central case is used as the replacement rate denominator to ensure consistency between results. [v]Working-life income from the central case is used as the replacement rate denominator to ensure consistency between results. People who retire earlier than 67 draw down super from age 60 at the higher of the maximum Age Pension less any income support they receive or minimum legislated rates until age 67. Review drawdowns assumptions used from age 67. Age Pension eligibility is for home owners and couples based on partnered eligibility; all other household types assume the person is single. [vi]Assumes people start work aged 25 in 2019-20, and retire at age 60 in 2062. [vii]Assumes a two-year career break for women from ages 30-31. Women therefore work two years less in these scenarios. [viii]Assumes both members of the couple have shorter working lives. [ix]Coupled early retirement scenarios include: 1) the primary earner retires early, while the secondary earner works to age 67; 2) both members of the couple retire early. [x]Low SG coverage assumes no SG from ages 35-42. Source: Cameo modelling undertaken for the review.

Table 2C-4 Projected replacement rates, average earner sensitivity analysis (60th percentile)

	All employees (per cent)	Female only (per cent)	Singles only (per cent)	Couples only (per cent)
Review replacement rate	80	86	81	77
Sensitivity analysis				
Investment risks				
Investment returns 1.0 ppt lower	73	81	75	67
Investment returns 0.5 ppt lower	76	83	78	72
Low wage growth and lower investment returns[i]	80	87	81	76
25 per cent investment shock[ii]	73	82	76	68

	All employees (per cent)	Female only (per cent)	Singles only (per cent)	Couples only (per cent)
Drawdown strategies				
Minimum drawdowns[iii]	60	69	62	59
Observed drawdowns[iii]	66	n/a	n/a	n/a
Voluntary saving[iv]				
No non-super savings	80	87	81	76
No salary sacrificing	76	84	79	71
No non-super or salary sacrificing	77	84	80	70
Working career and longevity[v]				
Shorter working life				
(25 years) Retirement at 67	70	80	72	63[viii]
(30 years) Retirement at 67	73	83	75	67[viii]
(35 years) Retirement at 67	77	85	78	72[viii]
(25 years) Retirement at 60	64	71	65	59[viii]
(30 years) Retirement at 60	67	73[vii]	69	62[viii]
(35 years) Retirement at 60[vi]	69	75[vii]	71	64[viii]
Early Retirement				Primary/both
Job-related (57 years)	66	73	69	66/61[ix]
Job-related (62 years)	71	79	74	69/66[ix]
Disability-related (57 years)	70	81	74	66/62[ix]
Disability-related (62 years)	71	81	74	69/66[ix]
Retirement at 70	87	91	88	87
Low SG coverage[x]	74	82	76	69
Living to 102	81	91	82	77
Living to 102 no longevity product[iii]	77	85	78	73
Calculation differences in replacement rates				
5 years before/5 years after	82	87	78	82
15 years before/15 years after	77	83	78	72
Wage deflator	67	72	68	65
CPI deflator	87	94	88	84

Note: All sensitivities assume working life of 27-67, starting in 2019-20, unless otherwise specified. Income distributions are based on relevant cohorts, for example the median couple is based on the income distribution of couples. [i]Low wage growth scenario assumes 3.5 per cent nominal wages growth from 2032-33 and 0.5 percentage point lower investment returns. [ii]A once-off 25 per cent reduction of super balances at retirement that does not recover. [iii]Assumes no longevity product purchase. [iv]Working-life income from the central case is used as the replacement rate denominator to ensure consistency between results. [v] Working-life income from the central case is used as the replacement rate denominator to ensure consistency between results. People who retire earlier than 67 draw down super from age 60 at the higher of the maximum Age Pension less any income support they receive or minimum legislated rates until age 67. Review drawdowns assumptions used from age 67. Age Pension eligibility is for home owners and couples based on partnered eligibility; all other household types assume the person is single. [vi]Assumes people start work aged 25 in 2019-20, and retire at age 60 in 2062. [vi]Assumes a two-year career break for women from ages 30-31. Women therefore work two years less in these scenarios. [viii]Assumes both members of the couple have shorter working lives. [ix]Coupled early retirement scenarios include: 1) the primary earner retires early, while the secondary earner works to age 67; 2) both members of the couple retire early. [x]Low SG coverage assumes no SG from ages 35-42. Source: Cameo modelling undertaken for the review.

Box 2C-5 The Age Pension means test and sensitivity analysis

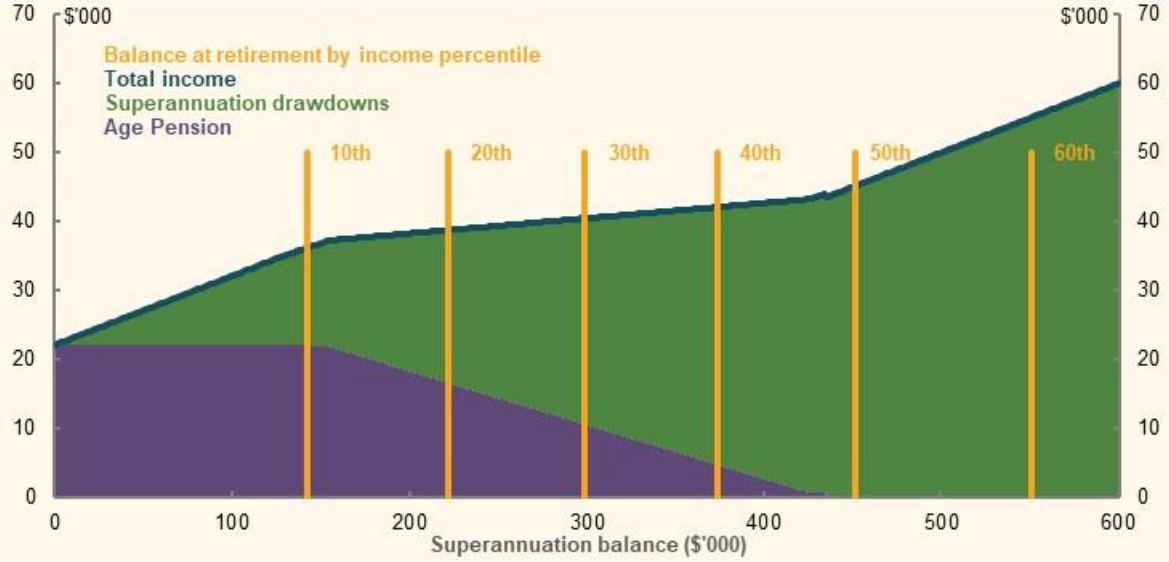
Because of the Age Pension, even using different modelling assumptions, many retirees are expected to achieve adequate outcomes. This reflects that:

- The maximum rate of the Age Pension gives retirees a minimum level of support. The Age Pension alone can replace about half the income for the median earner retiring in 2060 (Chart 2C-4).
- The means test increases retirement incomes if assets (or incomes) are lower. The taper rate under the assets test compensates for a large portion of the lost income from lower asset balances.

Sensitivity analysis shows that, even when retirees have lower assets at retirement, they only experience minor changes in replacement rates. The impact of lower assets is offset by higher Age Pension payments, which can rise significantly due to the taper rate under the assets test (*see 5B. Policy scenario: Implications of changing Age Pension means test settings*).

For example, an investment shock that reduces the median earner's superannuation balance from around $450,000 to $300,000 (bringing their retirement balance into the bottom 30 per cent) would only reduce their retirement income by about $5,000.

Chart 2C-21 Projected annual retirement income by superannuation balance



Note: Assumes people draw down 10 per cent of their superannuation assets, values are for 2060 and deflated to today's dollars using review deflator. Assumes no non-superannuation assets for illustrative purposes. First year of retirement in 2060 only. Source: Cameo modelling undertaken for the review.

The importance of means testing in determining people's retirement outcomes is expected to grow in the future. The proportion of age pensioners receiving part-rate Age Pensions is estimated to increase from 38 per cent of age pensioners today, to 63 per cent of age pensioners in 2060 (*see 4. Sustainability*).

The retirement income system and the risk of economic shocks

Box 2C-6 Retirement income adequacy and economic shocks

- **Exposure to market returns is a strength of Australia's superannuation income system.** Most Australians are invested in a superannuation fund that yields solid market returns in the long term. But markets are vulnerable to investment and sequencing risk, which can impair retirement outcomes.
- **The system provides significant protection from stock market falls.**
  - Superannuation fund returns, on average, are less affected than the stock market (Chart 2C-22).
  - The Age Pension provides a risk buffer for many retirees during market downturns.
  - The benefits of home ownership are largely unchanged during market downturns.
- **Stakeholders in the system can assist individuals to transition through significant market downturns.** Discretionary policy changes by the Government can assist retirees during economic shocks. Superannuation funds have an important role to help guide retirees through the stress and complexity of significant financial market volatility.
- **If downturns affect workforce participation, retirement incomes may fall.** Yet younger people who go through periods of unemployment or underemployment can still meet or exceed the replacement rate benchmark. They may also have the option of accessing some superannuation early to tide them over the economic shock.

Market volatility can be stressful for retirees and people approaching retirement. They are forced to make decisions in market downturns that may have a permanent impact on their retirement income. These issues have become prominent in the context of the COVID-19 Pandemic.

Retirement incomes in a market downturn

Market volatility affecting retirement incomes is a fundamental feature of Australia's defined contributions system.

Among other benefits, Australia's defined contribution scheme lets people enjoy the benefits of higher returns available on financial markets. The retirement income system is highly regarded worldwide and was robust to risks during the GFC, largely due to the Age Pension (Bateman, 2009).

However, the same feature means Australians face greater investment risk compared to those in other retirement systems. Market downturns from economic shocks can significantly affect retirees' asset balances. The retirement income system, through superannuation, the Age Pension and housing, provides a significant buffer for retirees from market volatility.

Superannuation funds and investment risk

Superannuation funds help protect members from investment risk through prudent and diversified investment strategies. As a result, **falls in superannuation fund returns are typically significantly lower than those in equity markets.**

This was seen during the GFC. Between September 2007 and March 2009, the ASX accumulation index (which incorporates total returns by including dividend payments) fell by 41 per cent. Yet the fall in superannuation fund returns over the same period was 24 per cent (Chart 2C-22).

Chart 2C-22 Superannuation fund and share market returns

Note: The ASX accumulation series includes dividends and is more comparable to fund returns. Index 100 = Dec 2006. Source: (Australian Prudential Regulation Authority, 2020c; Market Index, 2020).

The Age Pension and net retirement incomes

The Age Pension provides significant automatic assistance during downturns. Lower incomes and asset levels in these periods increase Age Pension entitlements because of the means test.

Consider a hypothetical scenario where equity markets drop 25 per cent in the year after an individual retires and a superannuation fund's returns fall 12.5 per cent in the same year (Chart 2C-23). Asset values are then assumed to recover to trend over the next five years, similar to the GFC.

In the case of a median-income earner who retires the year before the shock, the Age Pension provides a buffer against an immediate drop in income. The 25 per cent market fall reduces retirement income by just 5 per cent in the following year. The reduction in superannuation drawdowns (-19 per cent) is largely offset by higher pension entitlements (+14 per cent).[107]

The permanent effect of the downturn is about a 1 per cent fall in income over the course of retirement. In this scenario, selling financial assets below their trend value means people realise losses and miss out on elevated returns in the years following the downturn. In reality, the returns following a market shock are uncertain and will depend on the specific circumstances.

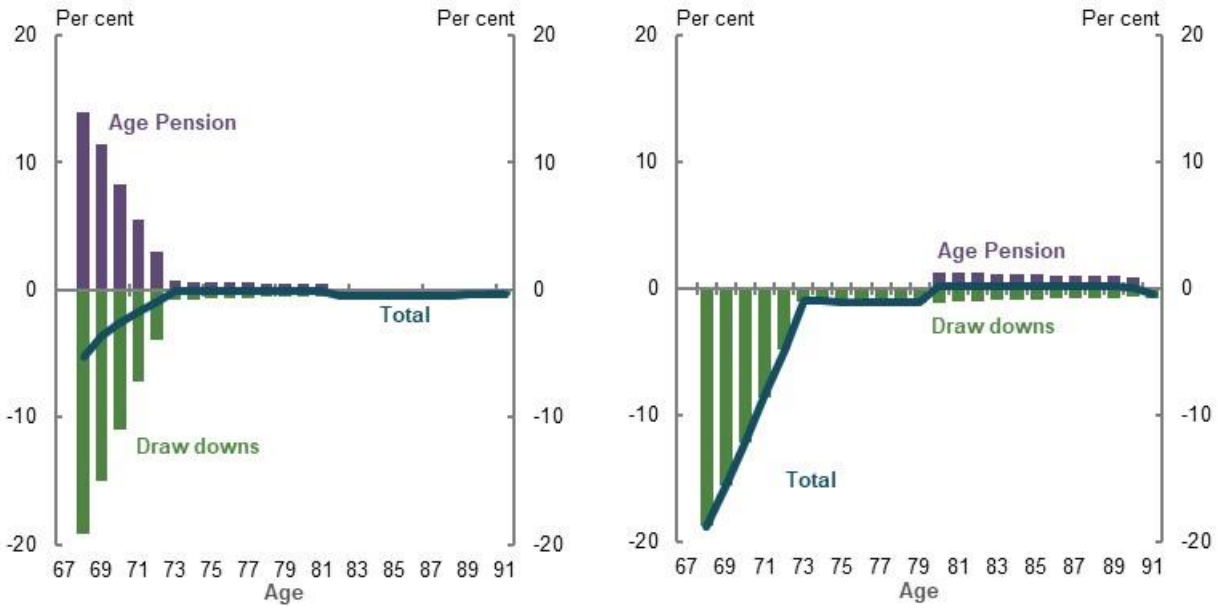
In this scenario, higher-wealth retirees have a different experience than median earners. For someone in the 80th percentile, their income drops 19 per cent during the downturn with no higher Age Pension payments. Retirement income remains under pre-shock levels for longer than a median earner and does not fully recover until higher-wealth retirees begin to receive the Age Pension.

Neither outcome factors in individuals using investment risk management strategies. Permanent losses under these scenarios could be reduced through the strategies outlined in *Responsibilities for managing risk* below.

Long-run system-level effects from a short-run shock, including aggregate Age Pension payments, are discussed in Box 4A-4 in *4. Sustainability*.

[107] Note: the impact of the scenario on superannuation drawdowns is larger than the market fall of 12.5 per cent as returns would have be positive 6.2 per cent without the fall.

Chart 2C-23 Impact of a 25 per cent market fall on retirement incomes



Note: Based on a 25 per cent fall in market returns in a single year, which results in a 12.5 per cent fall in superannuation balances and non-superannuation assets instead of the standard return of 6.2 per cent before fees. Asset prices recover to long-term levels in five years. Source: Cameo modelling undertaken for the review.

Owner-occupied housing

The principal residence is the most significant asset for more than 80 per cent of retirees (see *1B. Design of Australia's retirement income system*), acting as a form of risk mitigation. A mortgage is a form of forced saving and the principal residence is the largest store of wealth for most retirees.

While a downturn may affect the value of the home, the ability of retirees to enjoy the benefits of living in their home is largely unaffected. The home can also act as a source of wealth to be drawn on to cover potential shortfalls in other income sources.

Box 2C-7 Economic downturn: impact on retirement incomes of working-age people

The retirement incomes of young people can be affected by economic downturns, such as if they become unemployed or release their superannuation early.

The following scenario examines the impact of an illustrative economic downturn on a 32-year-old. This person is unemployed for three years and draws $20,000 from their superannuation over two years. After three years, the person finds work but is underemployed for five more years.

In this example, lower- and middle-income earners still achieve replacement rates above the benchmark (Chart 2C-24). Some higher-income earners could fall below the benchmark but would have incomes that exceed the ASFA comfortable standard.

The economic downturn reduces superannuation balances at retirement, predominantly due to lower employment income for median earners (see Table 2C-5). Age Pension payments rise as a result of lower balances.

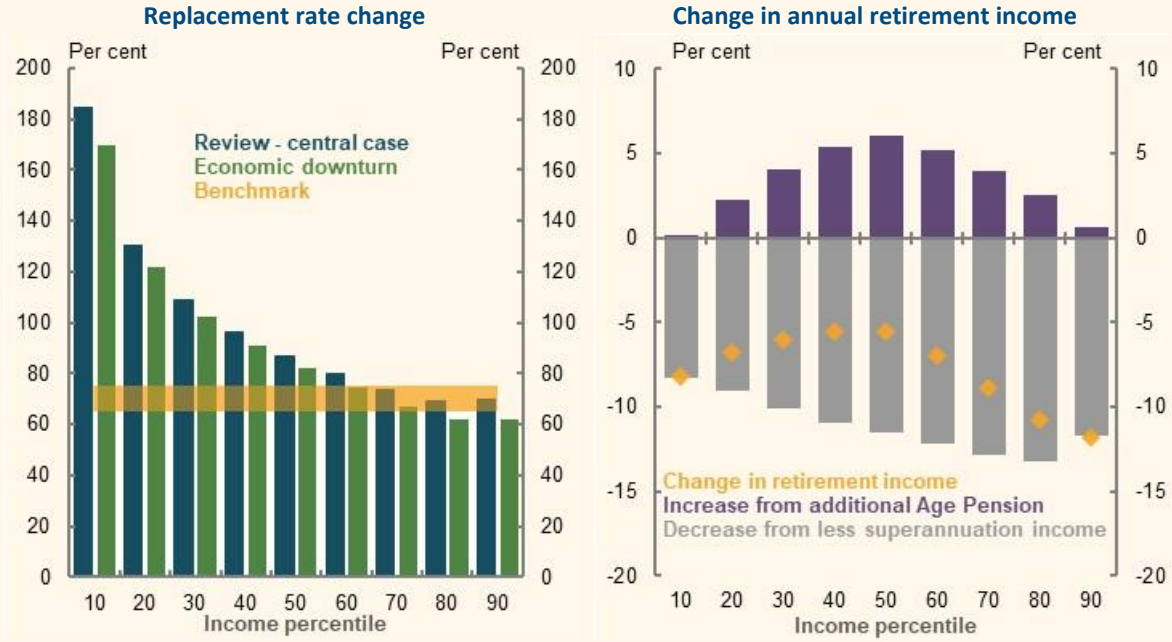
This scenario shows that prudent early release can assist people to manage negative working-life events without significantly reducing their retirement income. The significant period between the economic downturn and retirement allows affected people to adjust their behaviour to improve their retirement incomes if they wish. For example, they could make higher voluntary contributions towards retirement to boost their retirement incomes.

Table 2C-5 Projected change in retirement incomes from a hypothetical economic downturn

	20th percentile	50th percentile	80th percentile
Change in replacement rate (percentage points)	-9	-5	-7
Change in annual average retirement income ($)	-2,500	-2,300	-5,800
Change in annual average working-life income ($)	-2,500	-5,100	-8,600
Change in superannuation balance at retirement ($)	-69,300	-104,000	-147,200
Change in balance due to early release only ($)	*-38,600*	*-38,600*	*-38,600*

Note: Values are in 2019-20 dollars using the review's mixed deflator and rounded to the nearest $100. Person is eligible for JobSeeker Payment (excluding the Coronavirus Supplement) when unemployed. Lower-income earners do not have $20,000 superannuation at age 32. Around $5,000 is added to lower-income earner superannuation balances in both central case and economic downturn scenarios for comparability with other income percentiles. Underemployment in the scenario reduces incomes by 40 per cent for three years and 20 per cent for a further two years. The person re-enters employment earning the wage they received before the downturn and catches up to where their wage would have otherwise been over a five-year period. Source: Cameo modelling undertaken for the review.

Chart 2C-24 Projected change in retirement incomes due to economic downturn



Note: Lower-income earners do not have $20,000 superannuation at age 32 under normal assumptions for review cameo modelling. Around $5,000 is added to lower-income earner superannuation balances in the central and downturn cases to examine the impact of a $20,000 withdrawal on retirement balances. Source: Cameo modelling undertaken for the review.

Responsibilities for managing risk

In addition to the automatic risk management features in the system, individuals, funds and government can all help to alleviate the impact of market shocks to retirement outcomes.

Asset prices fall in response to economic shocks and tend to recover in later years. Individual retirement incomes will suffer if people sell their assets at market lows.

Individuals can mitigate risk by using:

- **Adaptable drawdown strategies** where retirees draw down based on a proportion of their balance, rather than fixed amounts. For example, the 10 per cent drawdown strategy used in Industry Super Australia modelling (Industry Super Australia, 2020). Such strategies lower drawdowns if assets are lower, reducing the need to sell assets at the bottom of the market. Whereas, strategies that rely on a fixed dollar draw down could result in retirees running out of money when there is a market downturn.
- **Bucketing strategies** where retirees create a reserve of cash to provide income for a fixed period as part of a retiree's portfolio. This allows people to draw down cash during market downturns, avoiding the need to sell growth assets at market lows. The effectiveness of this strategy depends on the cash bucket being sufficient to outlast the market downturn.
- **Lifecycle portfolio strategies** that reduce investment risk as people age, by weighting their portfolios towards cash and defensive assets. This strategy blunts the effect of negative shocks since defensive assets are less affected in market downturns. It can be effective for older retirees for whom long-term growth is less important.

Central to managing these risks is people being informed and appropriately advised where necessary.

Some people will also be able to delay retirement. Older Australians may have responded to the GFC by working longer (Plumb, et al., 2010). But delaying retirement may not be an option for people with poor health or who are made redundant in the downturn.

Government can:

- **Continue to support the development of default retirement products** that help retirees manage their drawdowns. Sensible retirement defaults could reduce volatility and protect retirees from longevity risk.
- **Adjust policy settings** in a market downturn, by:
  - Temporarily lowering minimum drawdown rates, reducing the need for retirees to sell financial assets at market lows.
  - Adjusting deeming rates to ensure they are in line with market returns.

Superannuation funds can:

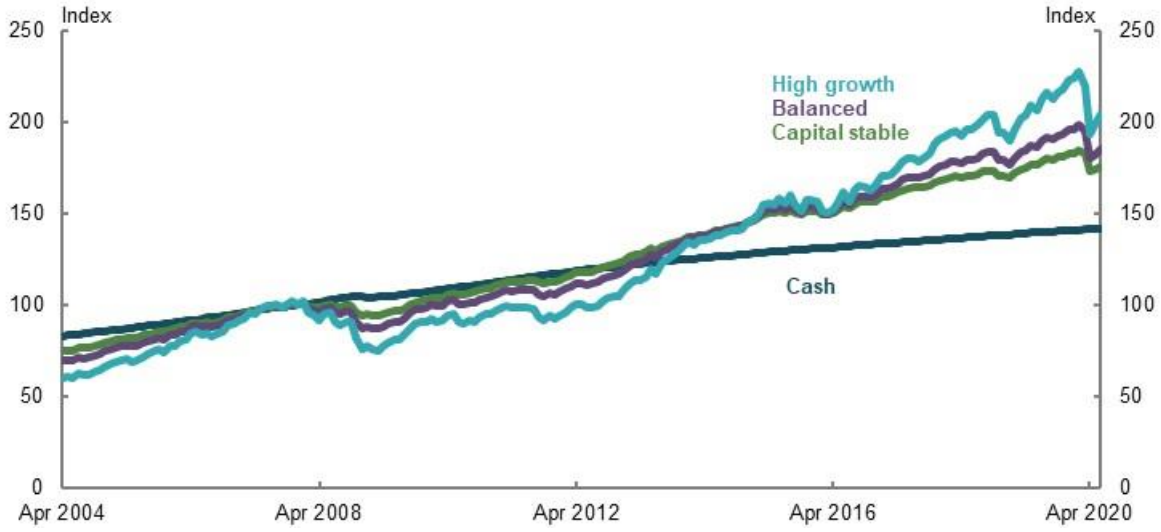
- **Provide guidance to people**. Falling markets can be stressful and the complexity of navigating the system is an issue during downturns (Bateman, 2009). Complexity, combined with fear and uncertainty, can result in people making poor choices. Unadvised members are particularly susceptible to this risk (Sharpe, 2020).

For example, forthcoming research by First State Super points to the importance of guidance and advice in reassuring members and helping them stay the course when markets fall. The research compared largely unadvised retirees with those receiving more advice.[108] Among the largely unadvised retirees, 7.7 per cent switched investment options between February and April 2020, moving 84 per cent of their account balance on average. This was 4.3 times higher than the level of switching observed among those receiving more advice. Only 1.8 per cent of retirees receiving advice switched and when they did, they only switched 33 per cent of their account on average. Across both groups, close to 80 per cent of switches were into a more defensive investment option, with about half of these being switches to cash.

[108] The advised group is retirees who typically invest through the StatePlus financial planning practice. Unadvised group includes retirees in First State Super who are largely self-directed and invest in the First State Super Retirement Income Stream and Transition to Retirement Income Stream products. Key member characteristics and aggregate asset allocations are otherwise broadly similar across the two groups.

Earlier research by First State Super found that 83 per cent of First State Super members over age 50 who switched to a more defensive option during the GFC missed the rebound in markets and had not switched back by the end of 2009-10. This suggests that members who switch during periods of market stress may not switch back without prompting, further emphasising the value in ready access to advice and guidance. Switching can protect funds from further falls, but cash performs significantly worse in the long run than balanced funds (Chart 2C-25).

Chart 2C-25 Index of unit prices by investment strategy



Note: Index 100 = values as at pre-GFC peak as at December 2007, value based on first day in month. Source: (Rest Super, 2020).

Box 2C-8 Impacts of certain policy settings on maintaining living standards in retirement

A significant number of submissions raised policy suggestions to improve people's ability to maintain their living standards in retirement. The following outlines some implications of some of those proposals.

- **Maintain the SG rate at 9.5 per cent:** Whether the majority of people maintain their standard of living in retirement if the SG remains at 9.5 per cent will depend on whether they efficiently draw down their superannuation balances in retirement. If they do, they can have higher living standards in their working life while maintaining their living standards in retirement. This is further examined in *2D. Policy scenario: Implications of maintaining the SG rate*.
- **Lower the assets test taper rate for the Age Pension:** Lowering the taper rate would increase replacement rates for most retirees. It would increase replacement rates further above the benchmark for many middle-income earners. The largest increases in replacement rates are projected to occur in the 60th to 80th income percentiles. It would reduce the incentive for retirees to draw down their assets. This is examined further in *5B. Policy scenario: Implications of changing Age Pension means test settings*.
- **Increase the standard payment rate and change the indexation of JobSeeker Payment:** These changes would improve outcomes for many early and involuntary retirees. Any change to the payment rate of JobSeeker Payment should also consider the broader policy objectives of working-age payments (see *3E. Age of Retirement*).
- **Narrow the SG compliance gap:** Continuing to narrow the SG compliance gap, including helping employees and the ATO to identify underpayment more quickly, will help people get the SG to which they are entitled. Improved employer compliance with the SG will particularly benefit lower-income workers and those in certain industries, such as construction, and accommodation and food services (see *3D. SG coverage*).

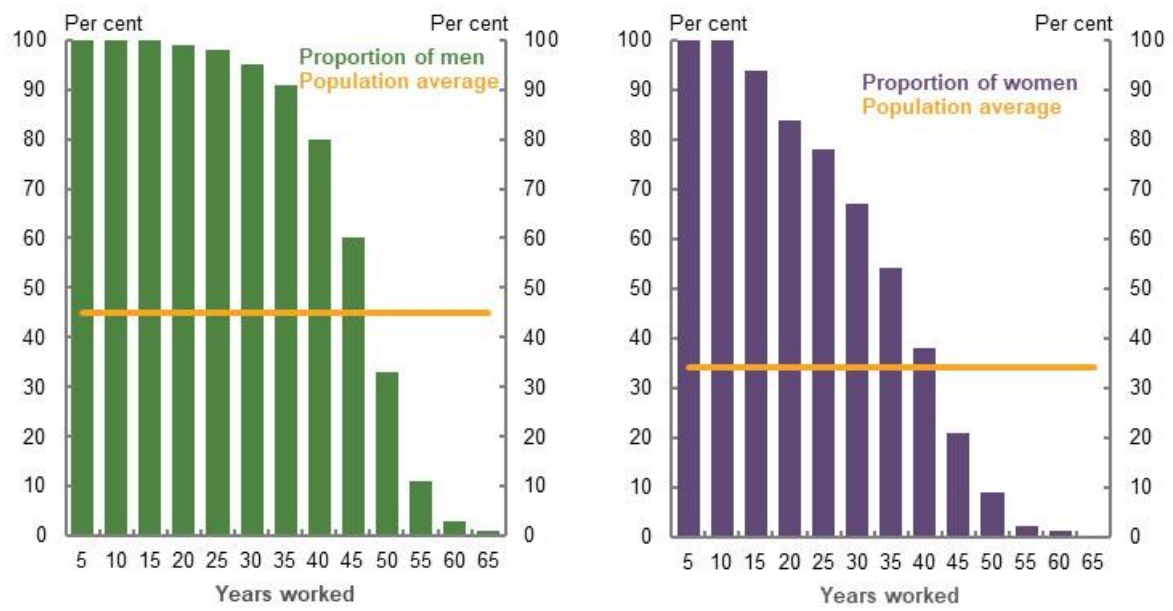
Annex — detailed sensitivity analysis

This section includes detailed modelling on the sensitivity of replacement rates and retirement outcomes to different assumptions.

Years in the workforce

The cameo modelling focuses on people with typical working lives. It does not cover people with less than 10 years in the workforce. Australia's contributory SG system means this group will mostly likely rely on the Age Pension and, provided they have low incomes, would experience improved living standards in retirement.

Chart 2C-26 People working more than a certain number of years

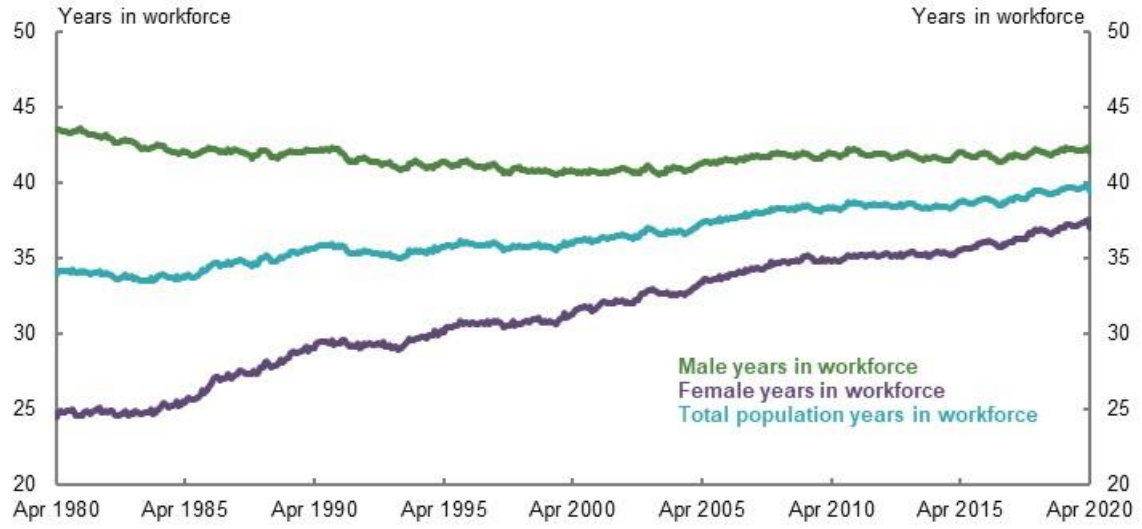


Note: Includes people aged 65 and above who work more than 10 years. Source: Analysis of HILDA Survey data (Wave 18).

The modelling assumes a career of 40 years to reflect the population average for people with significant workforce attachment (Chart 2C-26). Assumptions for gender-based modelling are 38 years for women and 42 years for men, based on the following data:

- Men aged 65 and over today worked 45 years on average. About 80 per cent worked for 40 years or more.
- Women aged 65 and over today worked 34 years on average. This figure is likely grow due to rising female workforce participation (see *1D. The changing Australian landscape*). For example, a trend measure shows average female years in the workforce has increased from approximately 24 years in 1980, to 37 years in 2020 (Chart 2C-27). An average woman entering the workforce today could work around 40 years in total if female participation continues to increase.
- Treasury's MARIA model projects median careers of 37.9 years for women and 43.5 years for men for those starting work in 2020 and retiring in 2060 (see *Appendix 6A. Detailed modelling methods and assumptions*).

Chart 2C-27 Years in workforce by gender and total population



Note: Data expressed as a four-quarter moving average. Years in workforce is calculated by adding participation rates by age and gender for ages 15-70. Participation rates for ages 65-70 are based on rates for people aged 65 and over. Source: Analysis of (ABS, 2020g).

Sensitivity analysis for different career lengths

Although people starting work today expect to have a 40-year working life, some people may retire early due to:

- **Personal choice.** People may retire as soon as they feel they have sufficient savings or choose to trade-off a shorter working life for a relatively lower incomes in retirement.
- **Involuntary retirement**. People may be retrenched, acquire a disability or have to provide care. Modelling shows outcomes are adequate for those early retirees who are able to access the Disability Support Pension or Carer Payment, pointing to the importance of the broader social security system in supporting people who retire involuntarily.

See *3E. Age of Retirement* for a detailed discussion of how the age, and degree of choice in the timing of retirement affects retirement outcomes.

Median-income earners with significant variation in the number of years they work can still achieve adequate retirement outcomes. Even if the median earner works only 25 years, they will still have adequate retirement income, providing they do not retire before preservation age. Someone in the 60th income percentile only has a replacement rate below the benchmark if they work 25 years to age 60.

The age that people start work does not greatly impact their replacement rate (Table 2C-6). A median earner can achieve the benchmark if they take career breaks provided they work at least 25 years.

Retirement age has a bigger impact on replacement rates than starting age. For example, a person working 40 years from 20-60 has a replacement rate of 77 per cent. This is a lower outcome than for a person who works 40 years retiring at age 67, whose replacement rate is 87 per cent. Reasons for this difference include:

- Retiring earlier means that people must make their retirement savings last longer and draw down on them at a slower rate. For example, someone retiring at 67 in 2060 can expect around 25 years in retirement, compared with 32 years for someone retiring at age 60 (see *Appendix 6A. Detailed modelling methods and assumptions*).

- People generally make larger voluntary contributions later in life such as in their late 50s and early 60s. Retiring early, especially involuntarily, may mean people miss out on the opportunity to make these savings.

Table 2C-6 Median earner replacement rates, various start and retirement ages

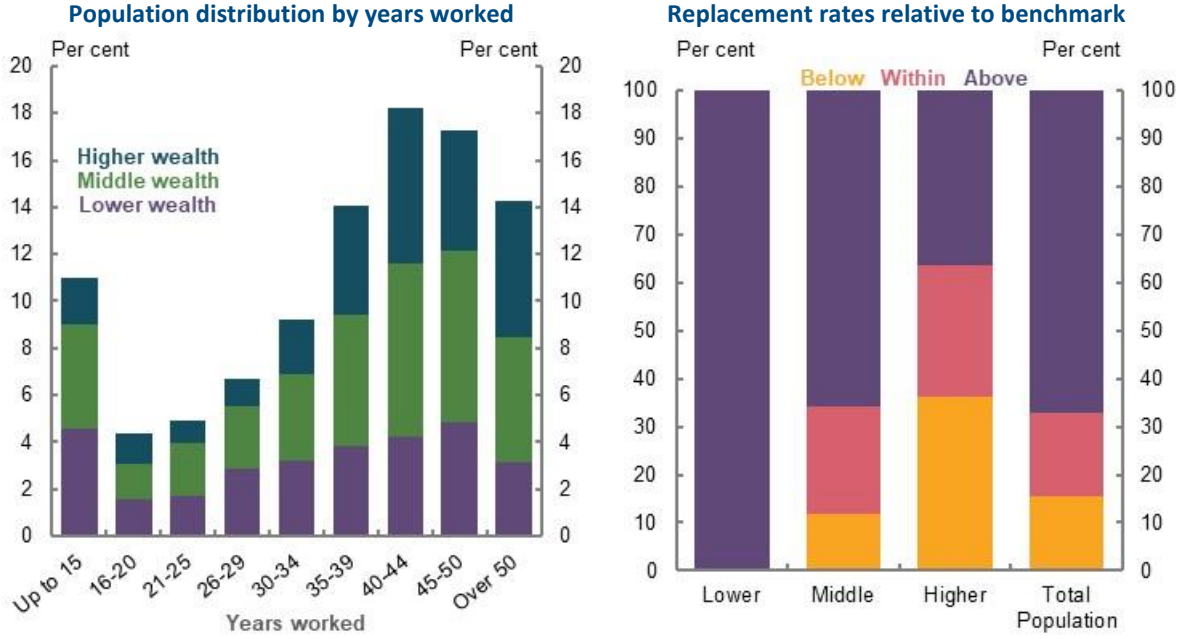
Starting age of work	Retirement age				
	55	60	65	67	70
35	66%	69%	79%	83%	87%
30	68%	73%	82%	85%	90%
27	71%	76%	83%	87%	92%
25	72%	76%	84%	88%	93%
20	74%	77%	85%	89%	96%

Note: Early retirement scenarios assume people receive working-life income support if eligible according to means testing and access their superannuation from preservation age. People who retire earlier than age 67 draw down superannuation from age 60 at the higher of the maximum Age Pension or minimum legislated rates until age 67 using use review drawdown rates thereafter. For comparability, the level of working-life income to be replaced is the same for sensitivities.
Source: Cameo modelling undertaken for the review.

Distribution of outcomes based on working life and retirement age

If the current distributions of retirement age, working-life length and income remain stable, modelling suggests about 90 per cent of the population will have replacement rates within or above the benchmark in a mature system (Chart 2C-28). **Few retirees currently have career lengths that would lead to inadequate outcomes in a mature retirement income system.**

Chart 2C-28 Projected distribution of outcomes, entire population



Note: Lower-income earners are in the 30th percentile and below, higher-income earners in the 80th percentile and above.
Source: Review analysis of HILDA (Wave 18), cameo modelling undertaken for the review.

The population of people who would not have adequate replacement rates consists entirely of middle- and higher-income earners. Lower-income earners will always exceed the benchmark as the Age Pension provides higher-income than the amount needed to maintain their living standards in retirement.

Of the 16 per cent of people projected to have replacement rates below the benchmark:

- About a quarter are middle- and higher-income earners who work 15 years or less.
- Two-thirds are higher-income earners who work less than 40 years. Higher-income earners can maintain standards of living at replacement rates significantly lower than the benchmark and are less likely to retire involuntarily.

About three-quarters of middle-income earners are projected to exceed the benchmark, suggesting that, even taking into account variance in careers and retirement ages, this group may be over-saving for retirement. Higher-income earners are the most likely to achieve within the benchmark, with about 27 per cent projected to have retirement incomes that fall within the benchmark.

Career breaks

The central case assumes that an individual works a 40-year career from age 27-67. This is a simplifying assumption for modelling purposes. Many people would start work at a younger age but have a mid-career break.

Sensitivity analysis shows that the timing of career breaks does not substantially affect replacement rates. For example, working from age 20-67 with a career break from age 30-36 gives a replacement rate of 84 per cent, 3 percentage points lower than the central case. In this example, lower incomes earned during younger ages are offset by longer accumulation periods.

Life expectancy

The average Australian commencing work today can expect to live to age 92 (Commonwealth of Australia, 2015) and people retiring at age 67 can expect about 25 years in retirement.

Longevity risk protection is important as it allows people to confidently draw down assets to fund their retirement. **Without longevity protection, concern about running out of savings may contribute to retirees undertaking costly strategies to protect against the risk of running out of money,** including:

- Drawing down the minimum from their superannuation assets and lowering their potential retirement living standards
- Saving more when working, lowering their working-life living standards

To account for longevity risk (the risk of outliving savings), the modelling assumes that people purchase a deferred longevity product that starts paying an income stream at age 92 (around life expectancy) and maintains income in real terms in combination with the Age Pension.

The assumption is that people will invest 5 per cent of upfront balances to provide a consistent real income stream from age 92. A relatively small proportion of upfront balances can provide longevity protection as:

- The accumulation of investment returns is substantial over 25 years between 67 and 92, even with conservative assumptions regarding after-fee investment returns for the product
- Many people will not reach the age where the product begins to pay an income stream, leading to 'mortality credits' that are paid to people who did reach that age, supporting higher payments
- The Age Pension is also a substantial longevity protection product, providing a significant proportion of incomes at later ages in life

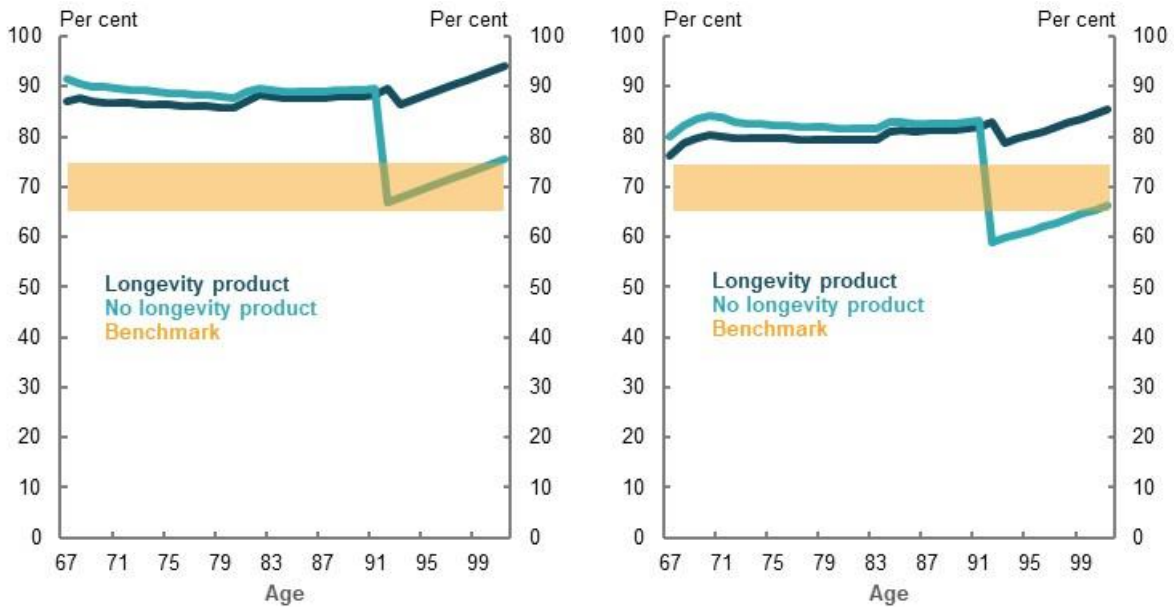
The benefit of longevity products is demonstrated by assessing the impact of longevity risk on retirement income with and without a longevity product (Chart 2C-29) (*see Appendix 6A. Detailed modelling methods and assumptions* for more details on the longevity product).

Even without longevity protection, retirement incomes remain within or exceed the replacement rate benchmark for median earners across all ages. For average earners in the 60th percentile, incomes drop below the benchmark after age 92. Replacement rates begin to rise after this point as the Age Pension is indexed to wages and grows in real terms.

Arguably, without longevity protection people would not have the confidence to completely use their assets. A slower drawdown strategy would reduce incomes in early retirement and boost incomes after age 91 compared to the central case assumption.

Few people in Australia purchase longevity products in retirement. To help address this, the Government has proposed the Retirement Income Covenant. The covenant would ensure funds have a strategy to provide high and stable retirement incomes for retirees, improving the market for longevity products (*5A. Cohesion).* The approach modelled throughout the review illustrates what the covenant could achieve.

Chart 2C-29 Projected annual replacement rates with and without longevity protection



Note: Annual replacement rate refers to the proportion of working-life income replaced at that particular age. Source: Cameo modelling undertaken for the review.

Investment risk

Variations in investment returns alter retirement outcomes. The central case assumes investment returns are calibrated to how retirees typically invest their portfolios: with 40 per cent in defensive assets and 60 per cent equities. The impact of investment returns on retirement incomes is estimated using a model by the Australian Government Actuary.[109]

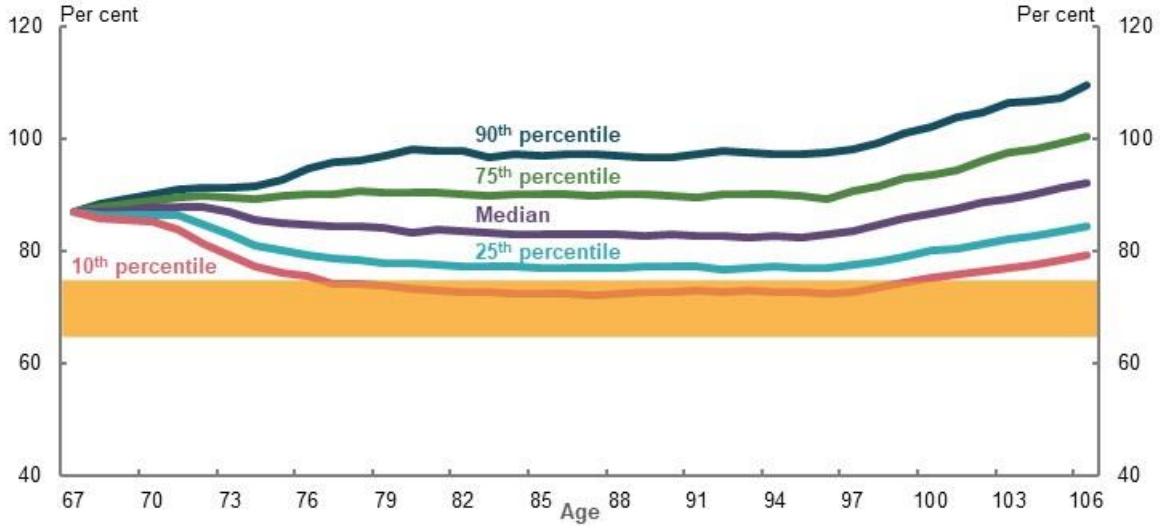
The modelled portfolio has a mean return of 6.2 per cent (equal to the retirement phase earnings assumption in the review's modelling) and a standard deviation of 8.3 per cent. This standard deviation is similar to that for the average annual superannuation return (Australian Prudential Regulation Authority, 2020a).

Even when investment returns vary, replacement rates still exceed the benchmark for the median earner. Average replacement rates at age 85 range from 77-90 per cent for the 25th and

[109] Further information on the Australian Government Actuary model is available at https://treasury.gov.au/sites/default/files/2019-03/Retirement-Income-Risk-Measure-FINAL-Consultation-1.pdf.

75th percentile investment return results (compared with 87 per cent with no variability). The Age Pension means testing narrows the range of replacement rates as lower returns are partially offset by higher pension payments, and vice versa (Chart 2C-30).

Chart 2C-30 Projected replacement rates under variable investment returns, median earner



Note: Results are based on the Australian Government Actuary model calibrated to results for the median earner in 2060 under review modelling. Drawdown strategy is based on the review's drawdown assumption with the purchase of a longevity protection product that begins to pay at age 92 and does not increase real incomes. Source: Review analysis using Australian Government Actuary modelling provided to the review.

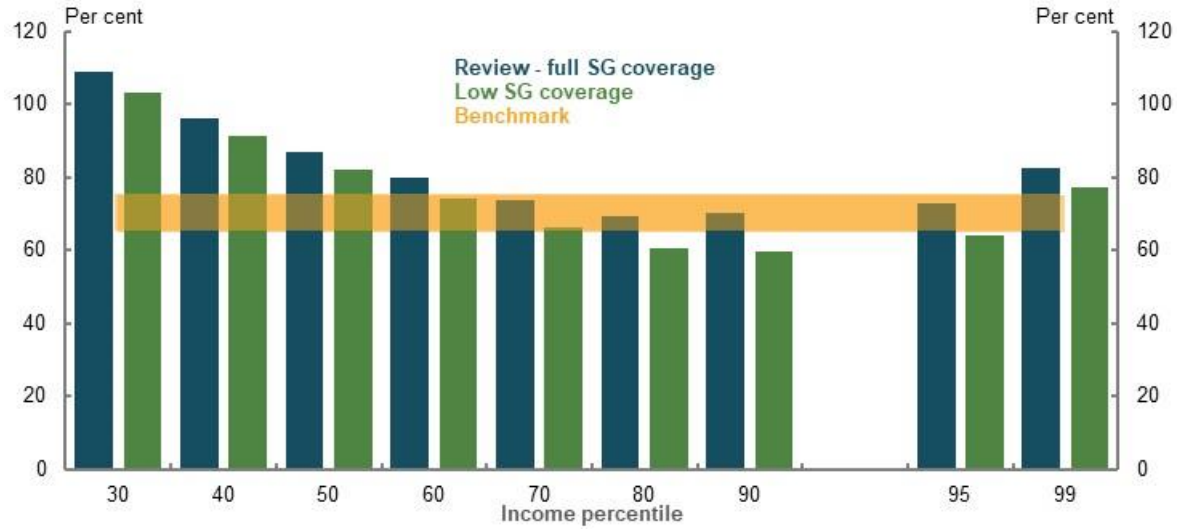
Low Superannuation Guarantee coverage

The central case assumes employees are paid full SG contributions. But some people may not receive SG payments due to either their employment arrangements or non-compliance by their employer. The ATO estimates 3.9 per cent of superannuation was unpaid in 2016-17, down from 6.5 per cent in 2011-12 (ATO, 2020e). For further discussion of non-payment of superannuation see *3D. SG coverage*.

To assess the sensitivity of SG non-payment, the modelling assumes people are not paid SG contributions for eight years, or one-fifth of their working life, between ages 35 and 42.

Under this scenario, low- and middle-income earners with low coverage can still expect replacement rates above the benchmark (Chart 2C-31). The Age Pension replaces around a third to a half of the income for middle-income earners. Higher-income earners have larger reductions in their replacement rates as they receive smaller offsets from the Age Pension.

Chart 2C-31 Projected replacement rates with low SG coverage



Note: Low SG coverage scenario removes SG contributions for eight years from age 35-42. Source: Cameo modelling undertaken for the review.

Salary sacrificing

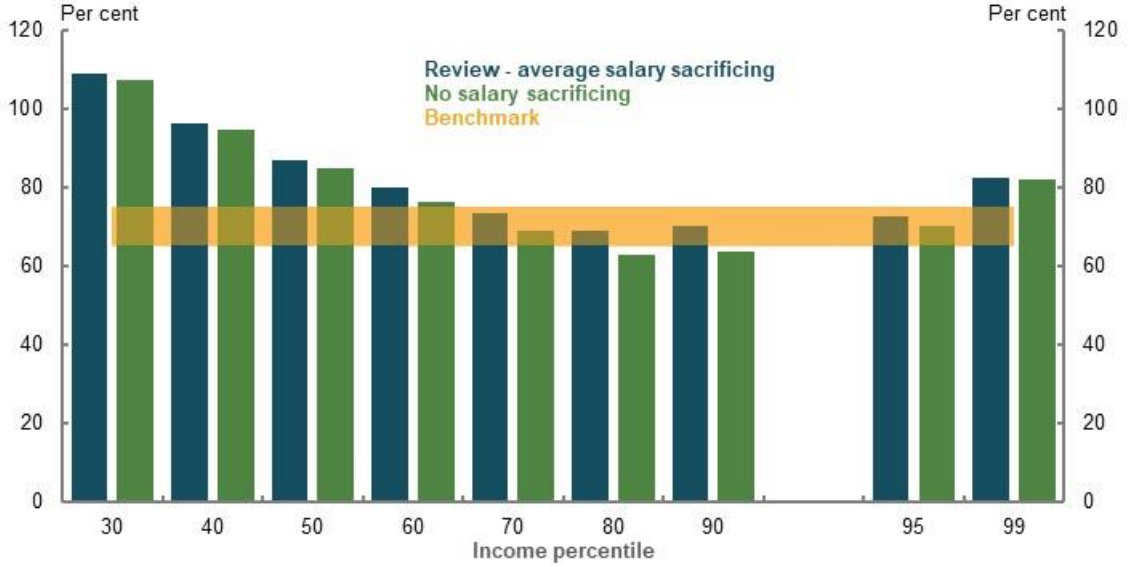
The central case assumes employees make extra concessional contributions (salary sacrifice) into superannuation. ATO ALife longitudinal tax data shows that most people consistently make salary sacrifice contributions at higher incomes, where these contributions matter most to retirement incomes.

However, some people do not make voluntary contributions, whether due to choice or financial constraints. To cover this situation, a scenario is included with no salary sacrificing.

Without salary sacrificing, lower- and middle-income earners can still expect replacement rates above the 65-75 per cent replacement benchmark. For example, the median earner's replacement rate falls about 2 percentage points but remains above the benchmark (Chart 2C-32). Salary sacrifice contributions for lower- and middle-income earners are small relative to their SG contributions. The Age Pension also partially compensates for the lower saving with higher pension payments.

The fall in replacement rates is larger for higher-income earners who tend to make larger salary sacrifice contributions. Higher-income earners are the most likely to make salary sacrifice contributions, around 68 per cent made voluntary contributions in half the years of an eight-year period. This group is also less likely to receive higher Age Pension payments to compensate for lower savings.

Chart 2C-32 Projected replacement rates by salary sacrificing



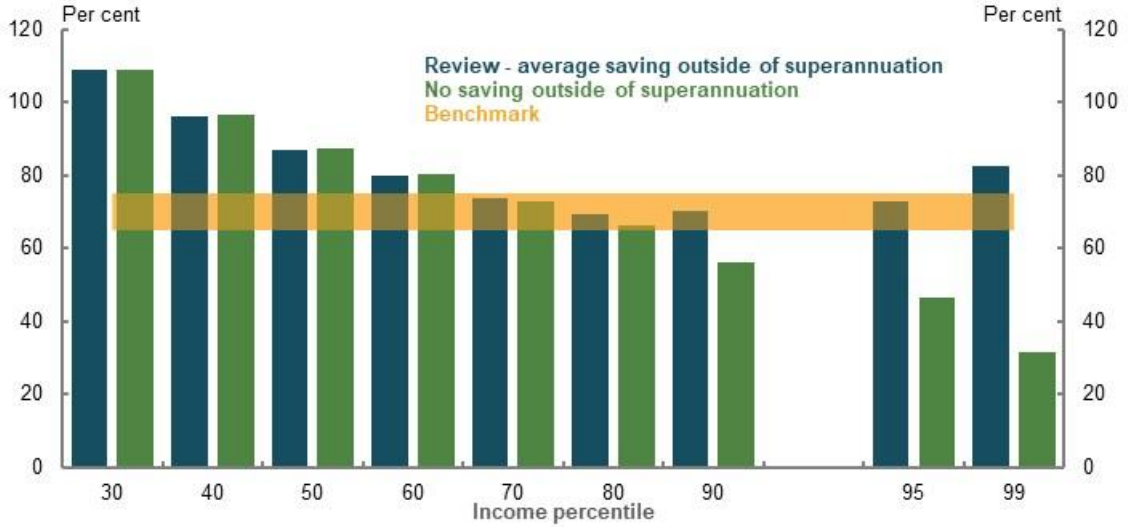
Note: Salary sacrificing based on tax file data on averages rates by age and income percentile. Source: Cameo modelling undertaken for the review.

Saving outside of superannuation

For those able to do so, voluntary savings can contribute significantly to retirement incomes. But individual circumstances mean some people will not save outside of superannuation.

Modelling shows not saving outside superannuation has little impact on projections for lower- and middle-income earners, who typically have little non-superannuation savings outside their own home on average (Chart 2C-33). Non-superannuation assets are most significant for retirees in the top wealth decile (see *1B. Design of Australia's retirement income system*). **Without savings outside superannuation, some higher-income earners in the 90th percentile and above fall below the benchmark but still achieve the ASFA comfortable standard.** Other percentiles are not substantially affected.

Chart 2C-33 Projected replacement rates by saving outside of superannuation



Note: Average saving outside of superannuation is applied at retirement, based on Survey of Income and Housing data (see *Appendix 6A. Detailed modelling methods and assumptions*). Source: Cameo modelling undertaken for the review.

Low investment returns

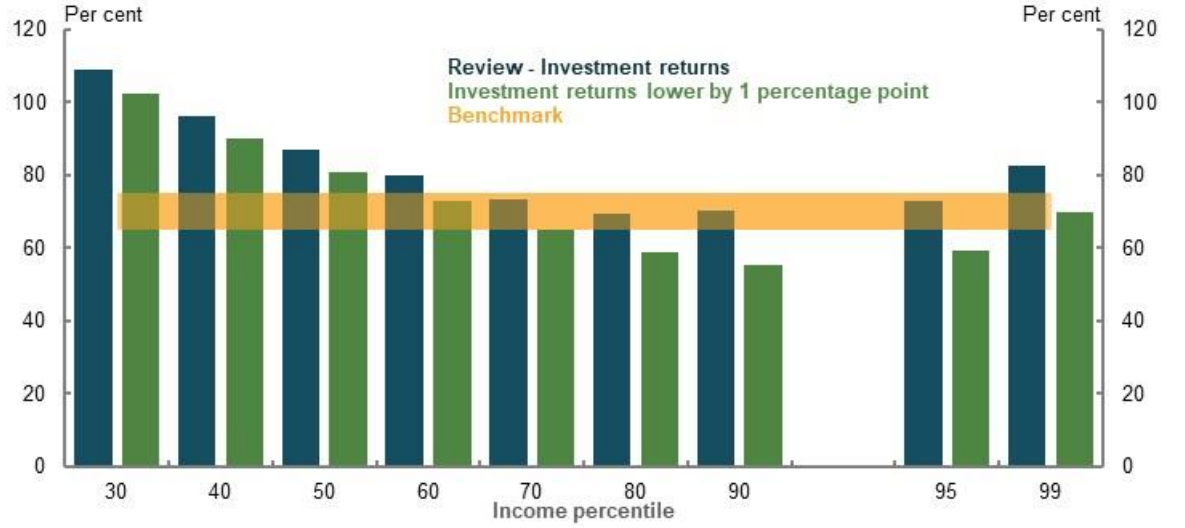
Modelling assumes investment returns of 7.5 per cent during the pre-retirement phase, and 6.2 per cent during the retirement phase, before fees and taxes. These returns are based on fund investment targets and fees are based on those for the average fund (see *Appendix 6A. Detailed modelling methods and assumptions*). These returns are around 1 percentage point lower than historic average fund returns.

But people could receive lower returns due to variety of factors. For example, an individual could be in a poorly performing fund with high fees or their investments could suffer an economic shock, as seen during the COVID-19 Pandemic, which could reduce returns for everyone.

This scenario looks at the impact of a 1.0 percentage point lower investment return in both the accumulation and retirement phases. For comparison, a reduction in net returns of 0.5 percentage points might occur by shifting from a MySuper fund with fees in the lowest 20 per cent of funds to one with fees in the highest 20 per cent (review calculations using (Australian Prudential Regulation Authority, 2019a)).

Modelling shows that middle-income earners still achieve adequate replacement rates under a low investment return scenario, partly due to higher Age Pension payments (Chart 2C-34). Higher-income earners experience the largest falls due to higher balances and a lower compensating increase from Age Pension payments.

Chart 2C-34 Projected replacement rates when investment returns lower by 1 percentage point



Note: Replacement rates using the review's mixed deflator. Review assumption for investment returns is 7.5 per cent during the pre-retirement phase and 6.2 per cent in retirement. Source: Cameo modelling undertaken for the review.

Home ownership status

Home ownership rates for households above the 2nd wealth decile exceed 95 per cent. Renting is currently concentrated among retirees with the lowest wealth. Renters require higher replacement rates of around 90-100 per cent to maintain living standards as their housing costs do not fall in retirement (see the *Appendix 6A. Detailed modelling methods and assumptions*).

Adequacy outcomes for renters are best assessed against the minimum retirement standards. Modelling shows low-income renters are at risk of not achieving a minimum that meets community standards (see *2A. Achieving a minimum standard of living in retirement*). A combination of Commonwealth Rent Assistance and more generous means-test limits improve replacement rates for renters relative to home owners.

For median-income retirees who rent, analysis indicates replacement rates would be above 90-100 per cent; enough that they should be able to maintain their standard of living in retirement.

Middle- and higher-income groups who rent are expected to have significant superannuation and other non-housing assets. They are unlikely to face the significant rates of poverty that lower-income renters do in retirement.

Although renting is currently rare for middle- and higher-income earners in retirement, these groups may rent at higher rates in future. The impact of falling home ownership on adequacy will depend on the working-life incomes of new renters and whether people save more to compensate for not purchasing a home.

Retiring with a mortgage

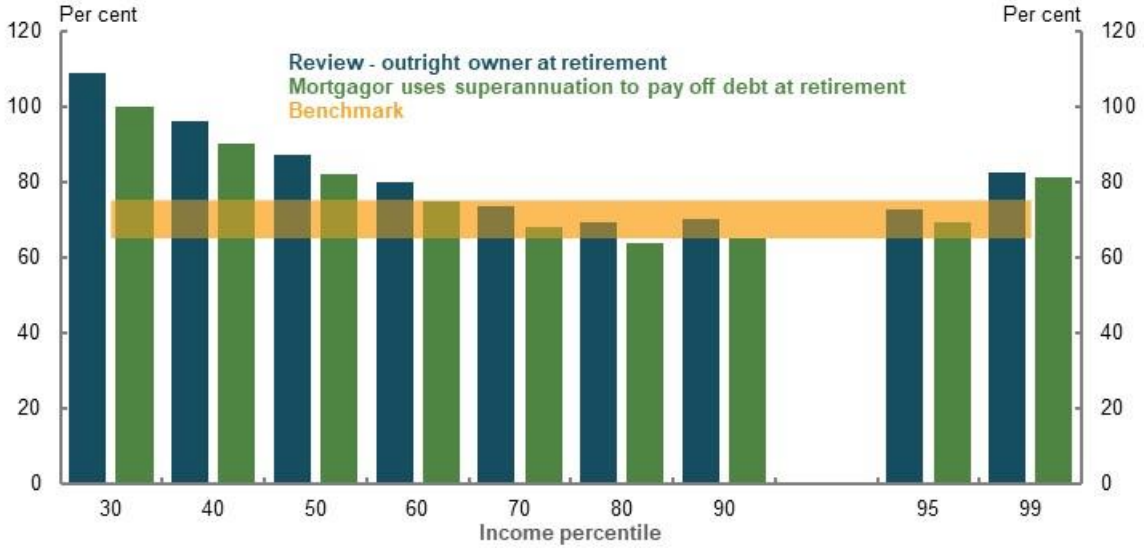
Most people retire as outright owners of their home, with 10 per cent of households age 65 and over having a mortgage in 2017-18 (see *1D: The changing Australian landscape)*. However, larger mortgages and delays in paying off a mortgage have caused concerns about using superannuation to pay off debt.

The drivers of higher mortgages are multifaceted, including higher house prices and people buying homes later in life. Some studies show a correlation between net household debt and pension assets (like superannuation) as a per cent of GDP, although the cause is unclear (Mercer, 2019b).

For example, consider someone who decides to pay off their mortgage with superannuation. This person has 10 years of mortgage repayments remaining at retirement worth about 23 per cent of the median person's superannuation balance.

Using this example, **even with mortgage worth about $100,000 outstanding at retirement, middle-income earners have retirement incomes that exceed the benchmark (Chart 2C-35)**. Using superannuation to pay off this mortgage only modestly reduces replacement rates for a median-income earner. In this case, the replacement rate remains well above the benchmark as Age Pension payments rise to compensate for much of the lost superannuation income.

Chart 2C-35 Projected replacement rates after using superannuation to pay off mortgage debt



Note: Outright owner takes out a home loan of $400,000 in wage-adjusted terms at age 42, and pays off the mortgage over 25 years so that it is paid off by age 66. Mortgagor scenario is a $500,000 home loan in wage-adjusted terms, paid off over 35 years with 10 years of repayments left at retirement. Super balance is used to pay off the remaining principal with no other fees, totalling around $103,000 in wage-adjusted terms. Source: Cameo modelling undertaken for the review.

Carrying a larger mortgage into retirement has issues including:

- **Increased exposure to sequencing risk**. If asset values fall significantly just before retirement, then a larger proportion of their superannuation is required to pay off the debt.
- **Older mortgagors have higher financial stress than outright owners**, although less than renters. One study found mortgage size was less important than difficulty making repayments, which is often due to shocks, such as divorce or unemployment (Ong, et al., 2019).

That said, the more valuable homes associated with larger mortgages can have retirement benefits including:

- **Allowing the transfer of wealth into housing**, increasing eligibility for the Age Pension. Higher Age Pension payments help offset the impact of higher housing costs on retirement incomes.
- **Creating additional home equity that can be accessed to boost income in retirement** (see *Box 2C-4)*. Accessing home equity can help offset the impact on people's liquid assets from using superannuation to pay off a mortgage.

Section 2D. Policy scenario: Implications of maintaining the SG rate

Box 2D-1 Section summary

- **Projections based on maintaining the SG rate at 9.5 per cent highlight that efficient use of savings can have a major impact on the adequacy of retirement outcomes.** Efficiently drawing down assets in retirement provides people with the opportunity to save less for retirement and maintain higher working-life incomes. Insufficient attention has been given to assisting people to optimise their retirement income through the efficient use of their savings.
- **Balancing people's standard of living between working life and retirement with a universal SG is challenging.** There is a diverse range of incomes and working-life experience across the population that affect how the SG will impact their retirement and working-life incomes.
- **Maintaining the SG at 9.5 per cent, instead of increasing to 12 per cent, would lead to lower superannuation balances at all income levels.**
- **If people efficiently use their assets, then with the SG rate remaining at 9.5 per cent, most could achieve adequate retirement incomes when combined with the Age Pension.** They could achieve a better balance between their working life and retirement incomes.
  - **For lower- and middle-income earners, retirement incomes would be lower than with the SG going to 12 per cent, but would remain above or within the replacement rate benchmark of 65-75 per cent.** If these groups draw down their savings in retirement, they could have higher incomes during their working life while still being able to maintain living standards in retirement if the SG stayed at 9.5 per cent.
  - **Some higher-income earners would fall marginally below the benchmark replacement rate with a 9.5 per cent SG rate.** These groups still achieve a level of retirement income that exceeds the ASFA comfortable standard.
  - **Maintaining the SG rate at 9.5 per cent would allow for higher living standards in working life**. Working-life income for most people would be around 2 per cent higher in the longer run.
  - **Across a lifetime, the increase in total working-life income could be similar to the fall in total retirement income for middle-income earners, if people draw on their savings in retirement.** Lower- and higher-income earners lose more retirement income than they gain in working-life income.
  - **Many people in the top half of incomes would not achieve benchmark replacement rates under either a 9.5 per cent or 12 per cent SG rate if they drew down on superannuation at minimum legislated rates.**
- **Maintaining the SG at 9.5 per cent would avoid the increases in inequities associated with the SG rate rising to 12 per cent.** Since increases in the SG benefit men more than women, maintaining the SG rate at 9.5 per cent would not contribute to widening the retirement income gap between men and women.
- **Maintaining the SG rate at 9.5 per cent would improve the sustainability of the system.** Higher tax revenues from lower superannuation tax concessions are projected to outweigh higher Age Pension expenditure until the late 2050s. The cumulative saving by 2060 of the change is projected to be about 2.0 per cent of GDP.

Outline of this section

A number of submissions advocated maintaining the SG rate 9.5 per cent. Many others supported the legislated increase in the rate to 12 per cent in five equal instalments commencing from July 2021. Towards improving understanding of the impact of increasing the SG rate, this section assesses the implications of an SG rate at 9.5 per cent compared with the legislated increase to 12 per cent.

Analysis focuses on projected retirement outcomes in 2060 for an individual commencing in the workforce in 2020. Consistent with the analysis in *2C. Maintaining living standards in retirement*, it assumes people efficiently draw down their superannuation assets in retirement. The effect on the adequacy of outcomes should people draw down their superannuation at lower rates is also explored.

Box 2D-2 Stakeholder views on the SG rate

Many submissions noted the importance of SG in improving retirement incomes. Submissions expressed a range of views on the appropriate level of SG and the associated trade-offs.

Submissions that supported a 12 per cent or higher SG rate suggested the following range of benefits:

- **Higher superannuation balances at retirement**. Higher lifetime superannuation contributions increase the potential for higher retirement incomes and improved adequacy outcomes for groups who may otherwise be at risk of lower living standards in retirement.
- **A higher proportion of the population achieving the ASFA comfortable standard**. Several superannuation funds and unions noted that a higher SG rate would increase the proportion of the population who achieve the ASFA comfortable standard under a mature system.

> *'Increasing the SG to 12 per cent will help workers in the middle-income cohorts reach ASFA Comfortable, by the time of retirement, who otherwise might not attain that benchmark.' (ASFA, 2020a, p. 12)*

- **Improve retirement outcomes for women.** A range of views were put forward concerning the impact of higher SG on women. Some submissions noted that by improving retirement incomes for all lower-income earners, higher SG would improve adequacy for women. Other submissions suggested that higher SG will help women with broken work patterns to build superannuation balances, reducing the gender retirement income gap.
- **Improve long-term fiscal sustainability through lower Age Pension expenditure**. Submissions noted that higher SG would lead to a smaller proportion of the population relying on the Age Pension in retirement, with more pensioners relying on a part-rate rather than full-rate pension. Lower Age Pension reliance would reduce the fiscal cost to future governments.

Other submissions drew attention to:

- **Replacement rates with a 9.5 per cent SG rate are adequate for most incomes.** Submissions noted that for most incomes, replacement rates being delivered to retirees at least meet replacement rate targets.
- **Higher SG rates may make the system relatively less equitable** by amplifying income inequality experienced during working life. A higher SG could increase pressure on lower-income earners during working life through lower incomes, while providing higher-income earners with much of the benefit of an increase through higher relative tax concessions.

> *'To the extent that compulsory superannuation contributions are offset by lower wage increases, a Superannuation Guarantee at 12% could exacerbate financial pressures for people with persistently low incomes during working life, including many workers with limited qualifications, women with broken employment patterns, and people with disabilities or chronic illness.' (Australian Council of Social Service, 2020, p. 27)*

- **Higher SG may negatively impact the sustainability of the system.** The cost of higher superannuation tax concessions may exceed the reduction in Age Pension expenditure.

The impact of maintaining the SG at its current rate

Effect on adequacy

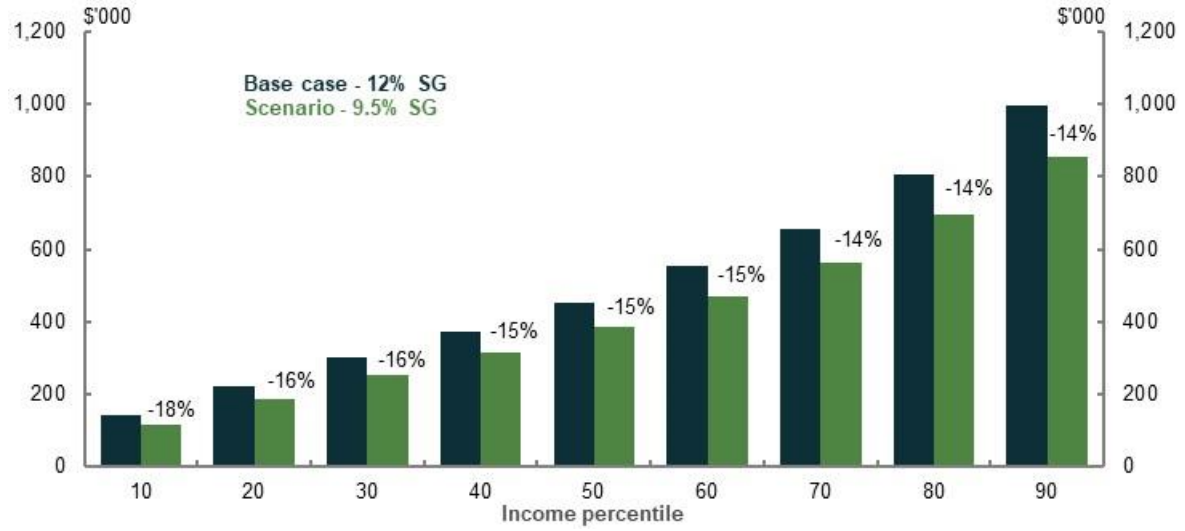
Aggregate impact on superannuation balances

Maintaining the SG rate at 9.5 per cent would lead to lower superannuation balances in retirement at all income levels compared with a 12 per cent SG rate (Chart 2D-1). For middle- and higher-income earners, superannuation balances at retirement would be around 14-15 per cent lower than they would be with an SG rate of 12 per cent.

For lower-income earners, balances at retirement are projected to be around 16-18 per cent lower than under a 12 per cent SG rate. Impacts would be higher for this group as they:

- Keep more of their SG contributions after factoring in the low income superannuation tax offset
- Are less able to adjust voluntary savings in response to different SG rates

Chart 2D-1 Projected superannuation balance at retirement, by SG rate

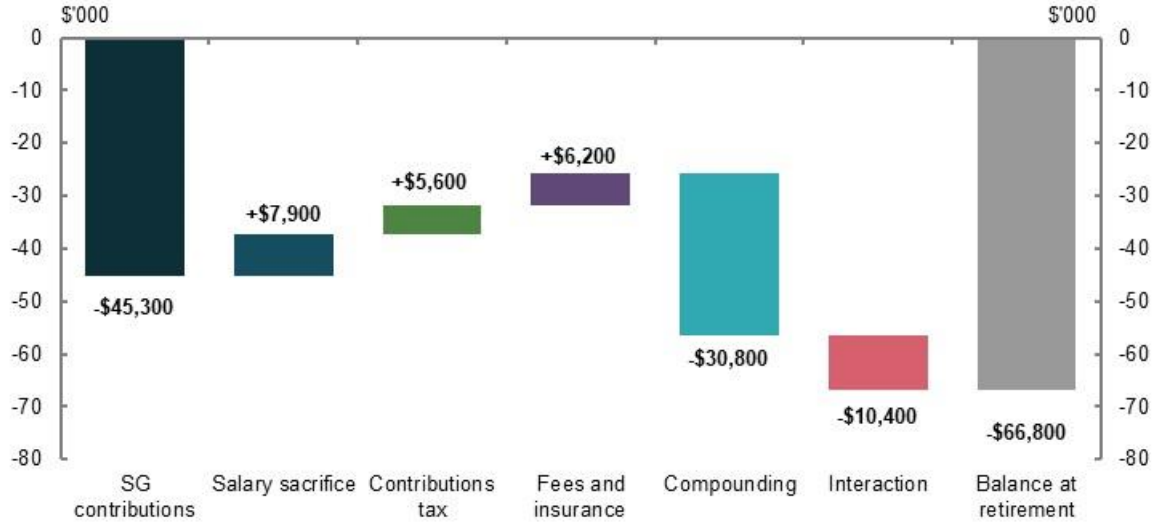


Note: Modelling is for an individual who commences work in 2020 and retires in 2060 after a 40-year career. Values are in 2019-20 dollars deflated by average weekly earnings. Percentage change in balance under 9.5 per cent SG is noted for each income percentile. Source: Cameo modelling undertaken for the review.

With a 9.5 per cent SG rate, lower balances would be offset by some other consequent changes, including likely increased voluntary contributions, lower contributions taxes and lower fees.

For example, with a 9.5 per cent SG rate, a median earner would receive around $45,000 less in SG contributions, compared with a 12 per cent SG rate (Chart 2D-2). Factors including likely higher voluntary contributions, lower fees and lower taxes would offset this decrease by about 43 per cent ($20,000). As a consequence of net lower contributions, the median earner would also forgo about $41,000 in net compounding (includes the interaction effect). This would reduce their total superannuation balance at retirement by about $67,000 (Chart 2D-2). The degree to which the above factors offset the forgone superannuation contributions would vary by income level. They are estimated to offset almost two-thirds of the forgone SG payments for income earners in the 99th percentile, falling to about 20 per cent for lower-income earners.

Chart 2D-2 Composition of change in superannuation balance at retirement with a 9.5 per cent SG rate relative to a 12 per cent SG rate, median earner



Note: Values are in 2019-20 dollars deflated by average weekly earnings and rounded to the nearest $100. Change in balance at retirement compares retirement at age 67 in 2060, under current policy settings and SG held constant at 9.5 per cent. 'Compounding' is the impact of real investment returns on superannuation balance accumulation during working life. The 'Interaction' field is the interaction between elements. Source: Cameo modelling undertaken for the review.

Impact on salary sacrifice contributions

Maintaining the SG rate at 9.5 per cent would likely result in some people making higher salary sacrifice contributions than they would have under a 12 per cent SG rate.

Research suggests that each additional dollar of compulsory contributions increases net savings by around 60-80 cents, as households reduce non-superannuation financial assets by about 20-40 cents in response to each additional dollar of compulsory contributions (Connolly, 2007; Ruthbah & Pham, 2020a).[110] The effect is likely to be larger for higher-income households that may have greater capacity to adjust voluntary savings behaviour, and smaller for lower-income and financially constrained households (Connolly, 2007).

Research suggests that maintaining the SG rate at 9.5 per cent would mean higher voluntary savings (through salary sacrifice) relative to a 12 per cent SG rate. The effect varies depending on income level:

- People in the 10th income percentile are the least likely to make salary sacrifice contributions under any SG rate. Their estimated offsetting rise in salary sacrifice contributions is the smallest, at 4 per cent of the forgone SG.
- Median-income earners are estimated to offset about 15 per cent of the forgone SG through higher salary sacrifice contributions.
- Income earners in the 99th percentile have the greatest capacity to adjust their savings behaviour. They are estimated to offset about one-fifth of the change in SG contributions through higher salary sacrifice contributions.

For the purpose of modelling adequacy outcomes, the model does not account for any other changes in voluntary savings that may occur. Specifically, the analysis assumes no non-concessional contributions at either 9.5 per cent or 12 per cent SG, and no effect on savings outside superannuation.

[110] See also methodology used by (Gruen & Soding, 2011) in estimating the effect of SG on private savings.

Impact on working-life incomes

Maintaining the SG rate at 9.5 per cent would mean that people keep more of their total remuneration as wages instead of SG contributions. The effect on take-home pay depends on the:

- Degree to which higher SG payments are passed through to lower wage growth
- Impact of higher relative wage growth on personal income tax and payments, such as Family Tax Benefit and HELP repayments

Impact on working-life income

The weight of evidence suggests the majority of SG increases results in lower growth in wages (see *Appendix 6A. Detailed modelling methods and assumptions*). Cameo modelling in this section has assumed 80 per cent pass-through.

Estimates suggest that maintaining the SG at 9.5 per cent will result in working-life incomes about 2 per cent higher than under a 12 per cent SG rate in the longer term.

The current economic environment associated with COVID-19 Pandemic has resulted in elevated levels of unemployment and underemployment. This could reduce worker bargaining power in the short-term making it more likely for pass through to wages to occur.

However, given that wage levels are sticky downwards, it is not expected that nominal wage reductions would result from SG increases. Should very low wage growth occur in response to the COVID-19 Pandemic, more of the short-term incidence of SG increases legislated to occur in 2021 could, in some instances, initially fall on employers. Where employers bear more of the SG increase there could be changes to the demand for labour and/or investment.

The impact of the COVID-19 Pandemic on the economy over the next few years is uncertain. However, the modelling is aimed at assessing the long-term implications of different SG rates. Over the long term, the research suggests most of the impact of SG changes will be passed on to workers (Melguizo & González-Páramo, 2013).

Impact of personal tax and other payments

The impact on a person's take-home pay of maintaining the SG rate at 9.5 per cent depends on their marginal tax rate. Total tax paid would increase for most people, as personal income is taxed more progressively than SG. The analysis in this chapter is based on incomes after tax.

Impacts on other government payments would reduce the extra income people receive:

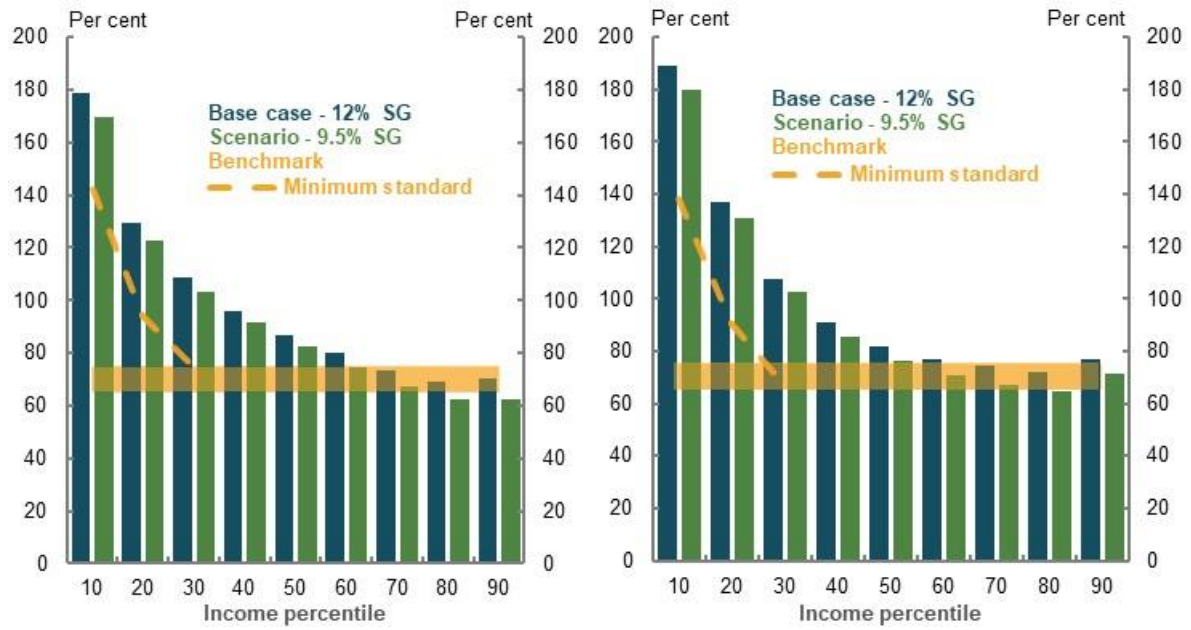
- Maintaining the SG rate at 9.5 per cent means that people would have higher incomes, lowering their entitlements to Family Tax Benefit and childcare assistance (see *Annex — modelling supplement,* below). The impact of these payments differs over family type and how they access childcare.
  - Modelling suggests changes in these payments are most significant for dual-income families in the bottom two income deciles, and single-income families in about the middle of the income distribution. Reductions in Family Tax Benefit (FTB) payments offset between 12-22 per cent of the higher disposable income for these households (see *Chart 2D-15* in *Annex — modelling supplement,* below).
  - If the SG rate stays at 9.5 per cent, the impact on family and childcare payments for most other groups is a 1-5 per cent offset of the increase in their income (see *Chart 2D-15*).
- Higher income from the SG rate staying at 9.5 per cent would increase HECS/HELP repayments. Faster repayment of debt does not affect the principal required to be repaid.

Impact on retirement income

Replacement rates

Replacement rates are considered the appropriate way to assess whether the retirement income system appropriately balances working life and retirement living standards. Modelling assumes superannuation assets are fully drawn down in retirement.

Chart 2D-3 Replacement rates by SG rate and household type



Note: Deflated using review's mixed deflator. Source: Cameo modelling undertaken for the review.

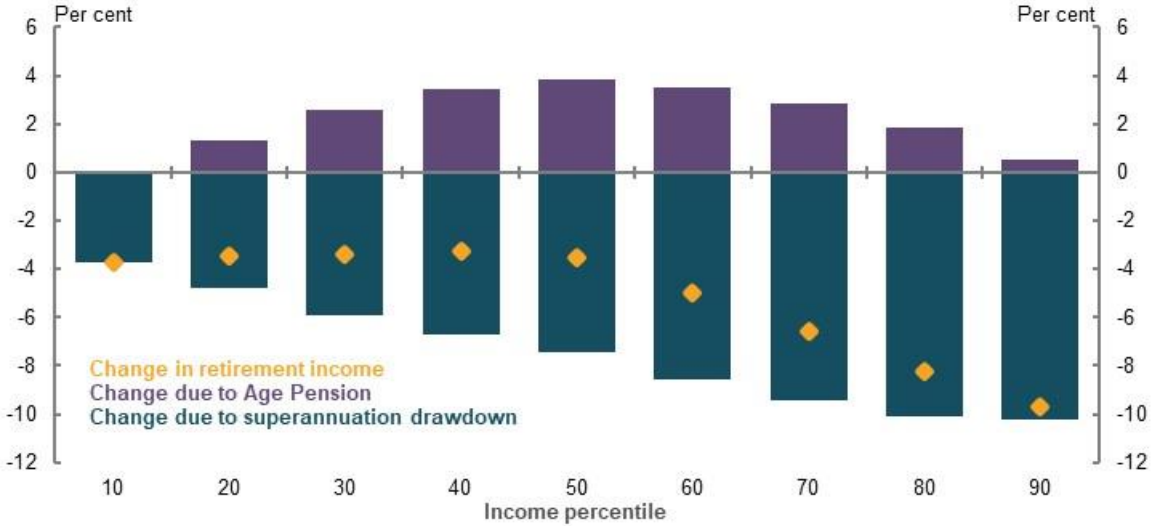
Replacement rates are projected to be lower if the SG rate is maintained at 9.5 per cent. However, depending on how savings are used in retirement, most people starting work today with a 9.5 per cent SG rate could have a replacement rate within or above the 65-75 per cent benchmark when they retire (Chart 4). If the SG stayed at 9.5 per cent rather than increasing to 12 per cent, they would also have higher incomes in their working life.

- Lower-income earners up to the median income would have reduced replacement rates, but still exceed the 65-75 per cent benchmark. They would have higher income in their working life. Workers up to the 30th income percentile would achieve replacement rates above 100 per cent under both a 9.5 per cent and a 12 per cent SG rate due to a combination of high Age Pension eligibility and superannuation savings.
- Replacement rates for upper middle-income earners (60th and 70th percentiles) would fall but remain within the 65-75 per cent benchmark.
- The replacement rates for individuals in the 80th and 90th percentiles and 80th percentile couples are projected to fall below the benchmark range. This may be at least partly due to the conservative assumptions applied on non-concessional contributions (see *Appendix 6A. Detailed modelling methods and assumptions*). With the SG rate maintained at 9.5 per cent, higher-income earners are projected to receive retirement incomes that exceed the ASFA comfortable standard (see *2C. Maintaining standards of living in retirement*).

Lower replacement rates from maintaining the SG rate at 9.5 per cent are not just due to people having a lower income in retirement. In the longer run, working-life income for most people would be higher, which increases the target income for replacement. For example, because disposable

incomes during working life are projected to be about 2 per cent higher in the longer run under a 9.5 per cent SG rate than under a 12 per cent SG rate, the level of retirement income considered to be adequate is also about 2 per cent higher. For people in the bottom half of the income distribution, the higher working-life income accounts for about a third of the fall in replacement rates.

Chart 2D-4 Projected change in retirement income with a 9.5 per cent SG rate



Note: Modelling assumes superannuation assets are drawn down efficiently, resulting in higher-income earners receiving some Age Pension income at the end of retirement. Source: Cameo modelling undertaken for the review.

Change in superannuation draw downs

How people draw down their superannuation balances in retirement is central to determining the adequacy of their retirement income. If they use their savings effectively in retirement, most people could achieve 65-75 per cent replacement rates with the SG rate maintained at 9.5 per cent (Chart 2D-5).

If they only draw down their superannuation at the legislated minimum rates, which many people currently do, those in the upper half of the income distribution would not achieve the 65-75 per cent replacement rates at either a 9.5 or 12 per cent SG rate (see *Impact on cohesion*, below).

With the SG rate maintained at 9.5 per cent, most people's superannuation balances would be around 15 per cent lower than under a 12 per cent SG rate (Chart 2D-1). While the impact on balances is generally a reduction of around 15 per cent, the effect on retirement incomes is lower as superannuation is only one part of retirement income (along with the Age Pension and non-superannuation assets).

For example, the median-income earner has a 3.5 per cent reduction in retirement income (Chart 2D-4) comprising:

- About a 7.5 per cent reduction due to lower superannuation income. The impact is about half the 15 per cent reduction in superannuation balances as superannuation is about half of the total retirement income of the median-income earner (in combination with their Age Pension income).
- About a 4 per cent increase due to higher Age Pension payments. This impact is due to lower superannuation balances increasing people's Age Pension entitlements.

Change in Age Pension income

Under the 9.5 per cent SG rate scenario, most income earners would receive more Age Pension income, with the size of the increases varying across the income distribution (Chart 2D-4).

- Lower-income earners would receive relatively little additional Age Pension. They are more likely to be full-rate age pensioners under either a 12 or 9.5 per cent SG rate.
- Middle-income earners would have the greatest offsetting increase in Age Pension income as lower superannuation balances would increase their eligibility for payment under the Age Pension assets test. For households in the 30th to 60th income percentiles, higher Age Pension payments offset around 40-50 per cent of the forgone superannuation income.
- Higher-income earners would have a smaller change to their Age Pension income under a 9.5 per cent SG rate compared with a 12 per cent SG rate. This group is more likely to have assets that make them ineligible for the Age Pension under either scenario.

Impact on Age Pension indexation

The Age Pension is benchmarked to 27.7 per cent of male total average weekly earnings (for singles). Higher relative wage growth under a 9.5 per cent SG rate would flow through to higher male total average weekly earnings, increasing the Age Pension rate.

The degree to which wage growth impacts male total average weekly earnings is debated. Estimates of the impact suggest the Age Pension may be between 0.51-1.44 per cent higher under a 9.5 per cent SG rate (Coates, et al., 2020; Gallagher & Bastian, 2019).

Regardless of the exact impact of changes in the SG rate on Age Pension indexation, the effect on replacement rates is less than a percentage point increase for the median earner. Given the effect on adequacy is small, the impact of higher aggregate wages on Age Pension indexation has been excluded from the analysis.

Total working life and retirement income trade-off

While replacement rates are useful in assessing whether working-life living standards can be maintained in retirement, they do not indicate the trade-off in income between working life and retirement under different SG rates. An alternative measure is to look at how much total retirement income people give up for the total increase in working-life income they receive. This measure allows the impact to be compared over a lifetime. Assuming assets were drawn down efficiently in retirement, if the SG rate did not increase:

- Working-life income would be higher because SG increases reduce wage growth
- Retirement income would be lower due to lower superannuation balances, which are only partly offset by higher Age Pension payments

Comparison over a lifetime can factor in differences in length of working life and retirement. For example, people spend roughly two-thirds as long in retirement as they do in working life (25 years and 40 years, respectively).

When making judgements around the trade-off between working-life income and retirement income, adjustments must be made for the probability that someone is alive to receive their retirement income. This is called ‘mortality weighting’. Mortality weighting adjusts the value of income received in a given year by the likelihood that an individual is alive to receive the income. Mortality weighting is used in measures that assess lifetime impacts (Khemka, et al., 2020).

From a mortality-weighted perspective, the increase in working-life income for median-income earners by maintaining the SG rate at 9.5 per cent would be around the same as the fall in their retirement income (Table 2D-1). For lower- and higher-income earners, the reduction in retirement income would be larger compared with the gain in working-life income.

For example, if the SG rate were maintained at 9.5 per cent, a median earner retiring in 2060 is projected to receive:

- $32,400 more disposable income over their working life, as in the longer run working-life income would be around 2 per cent higher for most people
- About $32,900 less income in retirement, due to the combined effect of:
  - $70,800 less income from superannuation drawdowns during retirement[111]
  - An additional $37,900 in Age Pension income over the course of their retirement

This retirement income impact assumes efficient drawdown of superannuation assets. For example, if superannuation assets were drawn down at observed drawdown rates, retirement income would be $7,400 lower than it would have been under a 12 per cent SG rate for a median earner.

The extent to which people may wish to trade-off working-life income for retirement income may vary depending on their income level, life circumstances and replacement rates delivered in retirement. Whether an individual's wellbeing would increase if they had a higher income in working life rather than in their retirement is a matter of judgement. Influencing this trade-off will be the drawdown approach people use and the extent to which, even with a lower income in retirement, they can maintain their living standards. However, in a system where the SG rate is compulsory, the employees it covers do not have the opportunity to make a choice regarding this trade-off.

Table 2D-1 Projected change in working life and retirement income under 9.5 per cent SG by income percentile, mortality weighted

Income percentile	Working-life income ($)	Retirement income		
		Total retirement income ($)	Superannuation drawdowns ($)	Age Pension income ($)
10	12,200	-28,100	-28,200	200
20	17,300	-27,900	-39,600	11,700
30	22,600	-28,500	-52,100	23,600
40	27,500	-29,000	-61,900	32,800
50	32,400	-32,900	-70,800	37,900
60	38,100	-50,600	-86,500	36,000
70	45,000	-71,800	-102,100	30,400
80	53,900	-101,300	-122,300	21,200
90	58,200	-147,400	-142,200	7,800

Note: Values are in 2019-20 dollars, deflated using the review's mixed deflator and rounded to the nearest $100. Mortality weighting derived from Australian Government Actuary projections based on a female aged 27 in 2019. Change in lifetime income is modelled for an individual living to 102 with a life expectancy of 92. 'Superannuation drawdown' includes the value of deferred group self-annuity product payments from age 92. All other specifications are consistent with the review's central case. The difference in retirement income and superannuation drawdowns and Age Pension income is explained by lower drawdowns of assets outside of superannuation. Changes are sensitive to the deflator and how assets are drawn down, see *Annex — modelling supplement*. Source: Cameo modelling undertaken for the review and Australian Government Actuary mortality projections.

Box 2D-3 Balancing universal policy settings and flexibility

The universal policy settings under the Age Pension and SG deliver a default level of retirement income. Universal policy settings will not suit all Australians given the diversity in career lengths, retirement ages, incomes and voluntary savings levels.

[111] Includes the value of payments from a deferred group self-annuity product from age 92 to death at 102. The lower superannuation balance and drawdowns are similar as the earnings on superannuation are similar to the discount rate when combining the mortality discount and the discount rate.

The universal policy settings in the retirement income system are asymmetric (see *2C. Maintaining standards of living in retirement*). People have flexibility to save more voluntarily if they wish to achieve a higher standard in retirement. But the compulsory nature of the SG makes it difficult for people to save below the default savings level. Lower-income earners can expect replacement rates above the benchmark under both a 9.5 and a 12 per cent SG rate. People with lower incomes are particularly vulnerable when compulsory savings rates are set too high. This highlights the importance of balance when setting the default level of retirement income.

Recognising this trade-off, several stakeholders proposed alternative mechanisms. These included an opt-out mechanism for contributions above a minimum compulsory contribution rate (Warren, et al., 2020, p. 10) or allowing members to access modest amounts of their superannuation to meet non-retirement needs (Australian Council of Social Service, 2020, pp. 32-33). The merits of any such approach would need to balance the additional flexibility and choice with appropriate protections of retirement balances. Consideration should also be given to the fiscal costs associated with the concessional taxation of savings consumed during working life.

Effect on cohesion

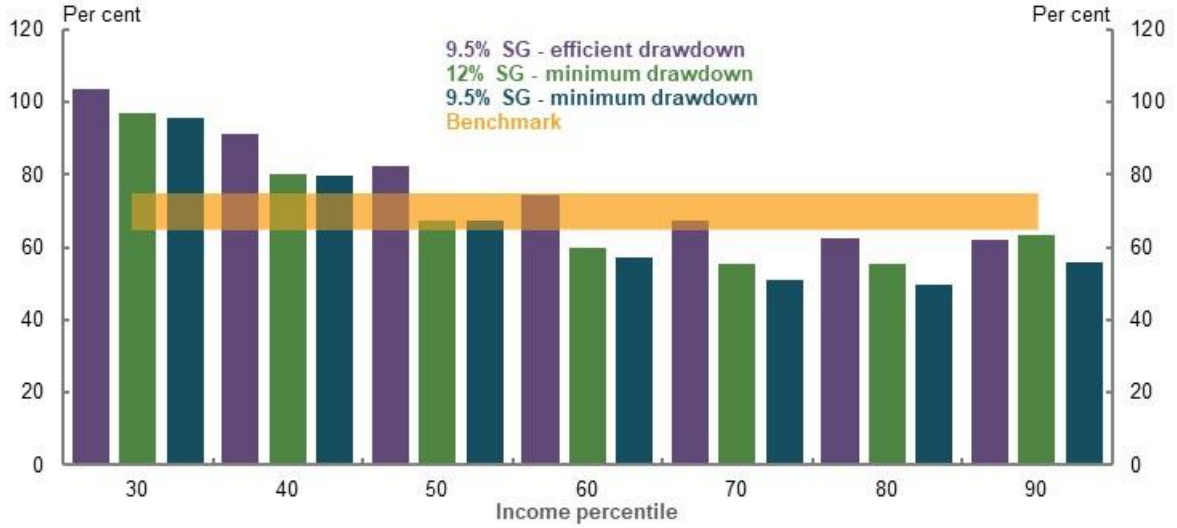
Effective use of superannuation balances for retirement incomes

The importance of effectively using superannuation assets to fund retirement income is discussed in *5A. Cohesion*. The following analysis highlights that how people use their superannuation savings in retirement is important in determining the adequacy of their retirement incomes.

The projections assume retirees draw down all their superannuation in retirement. Drawing down superannuation assets in retirement is consistent with the policy intent of the retirement income system: to provide income in retirement (see *2C. Maintaining standards of living in retirement*).

Drawing down superannuation at minimum legislated rates would result in lower replacement rates under both a 9.5 per cent and a 12 per cent SG rate (Chart 2D-5). With drawdowns at minimum rates, people above the median income fail to meet the 65-75 per cent replacement rate benchmarks at either SG rate. Drawdowns at the minimum rate would result in large bequests to dependants, rather than delivering retirement incomes for the individual.

Chart 2D-5 Projected replacement rates by SG rate and drawdown strategy



Note: Minimum drawdown based on legislated minimum rates by age. Minimum drawdown rate scenarios do not include people purchasing a longevity product. Efficient drawdown based on review strategy where superannuation assets are fully consumed by age 92 and a longevity product. Source: Cameo modelling undertaken for the review.

Higher levels of SG would have a minimal impact on lifting replacement rates if superannuation is drawn down at minimum legislated rates (Chart 2D-5). For income earners below the 90th percentile,

higher replacement rates can be achieved by more efficiently drawing down superannuation assets at the 9.5 per cent contributions rate, compared with drawing superannuation at minimum rates with a 12 per cent SG rate. If the SG rate remained at 9.5 per cent rather than increasing to 12 per cent, and retirees drew down their superannuation balances efficiently, they could achieve a higher standard of living in working life while still being able to maintain living standards in retirement. The reasons why retirees may not effectively use their assets is discussed in *5A. Cohesion.*

Transitional issues in maintaining the SG rate

There could be some transitional issues from maintaining the SG rate at 9.5 per cent and how these interact with already certified Enterprise Bargaining Agreements.

Some certified Enterprise Bargaining Agreements have already determined the pay and entitlements for workers based on the legislated increases to the SG taking place from July 2021. These agreements may incorporate lower wage growth based on increases to the SG rate. Subsequent policy changes to the SG rate may not be incorporated immediately into already signed agreements.

This could affect the short-term pass-through as a result of maintaining the SG rate at 9.5 per cent.

Effect on equity

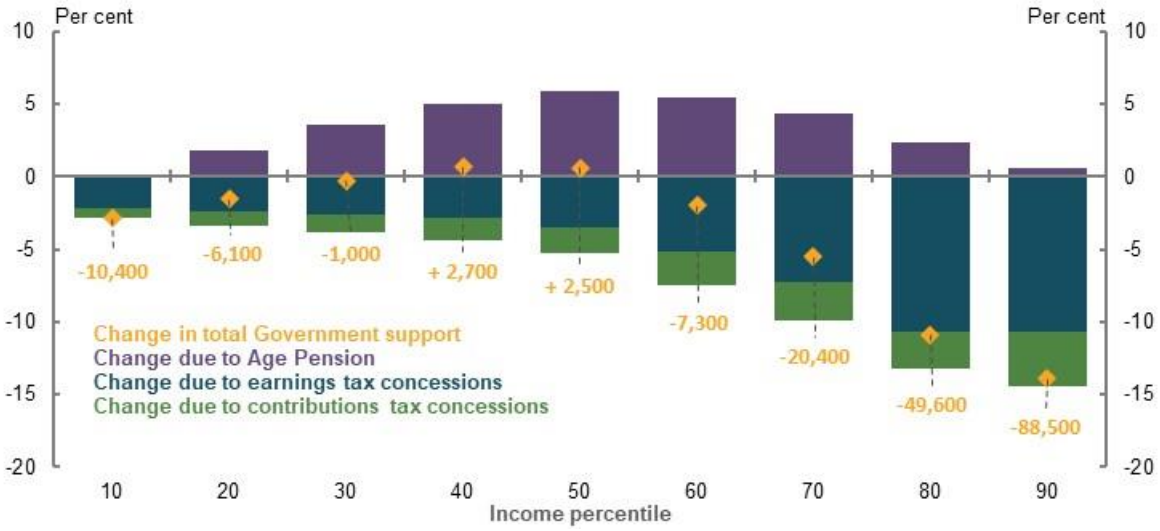
The following analysis examines the impact of maintaining the SG rate at 9.5 per cent on the equity of outcomes experienced by income and wealth, gender, home ownership status and age of retirement.

Income and wealth

The increase in the SG to 12 per cent would result in higher-income earners receiving larger tax concessions. This would not occur if the SG rate remained at 9.5 per cent (Chart 2D-6). Under a 9.5 per cent SG rate:

- Higher-income earners would receive lower tax concessions on superannuation contributions and earnings, and minimal additional Age Pension payments. While Government support for higher-income groups would be lower than with a SG rate of 12 per cent, they would continue to receive more lifetime Government support than lower- or middle-income earners.
- Middle-income households would receive lower superannuation tax concessions, which would be offset with higher Age Pension payments. The net result is that maintaining the SG rate at 9.5 per cent would have little impact on the total Government lifetime support the median earner receives.
- Lower-income households would see a small reduction in lifetime Government support. Their Age Pension payments would not be significantly affected as they are typically on the maximum rate. Maintaining the SG rate at 9.5 per cent would modestly reduce their superannuation tax concessions.

Chart 2D-6 Projected change in lifetime Government support by maintaining a 9.5 per cent SG rate



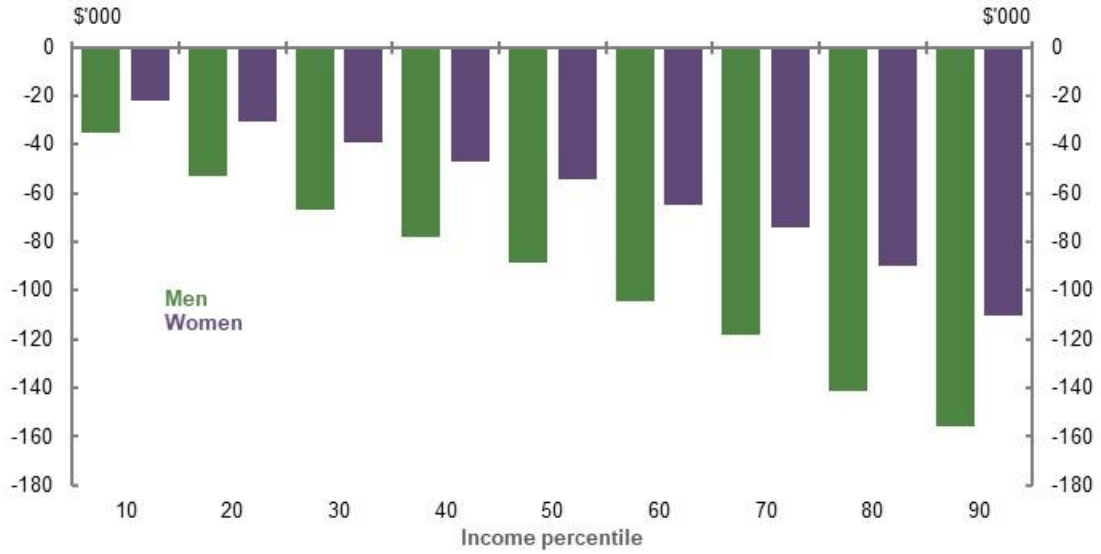
Note: Values are in 2019-20 dollars, rounded to the nearest $100 and GDP deflated. Modelling assumes people draw down superannuation assets efficiently, resulting in higher-income earners receiving some Age Pension income at the end of retirement, see *Appendix 6A. Detailed modelling methods and assumptions* for details. Source: Cameo modelling undertaken for the review.

Gender

Superannuation balances at retirement

The median woman's superannuation balance at retirement would be around $54,400 (or 16.1 per cent) lower with a 9.5 per cent SG rate compared with a 12 per cent SG rate. The median man's balance would be around $88,400 (or 15.2 per cent) lower (Chart 2D-7).

Chart 2D-7 Projected change in superannuation balance at retirement when maintaining a 9.5 per cent SG rate, by gender and income



Note: Values are in 2019-20 dollars, deflated by average weekly earnings. The chart compares the 10th percentile for men to the 10th percentile for women, and so on. Gaps in superannuation balances at retirement do not factor in the effect of voluntary superannuation contributions not made through salary sacrifice. Source: Cameo modelling undertaken for the review.

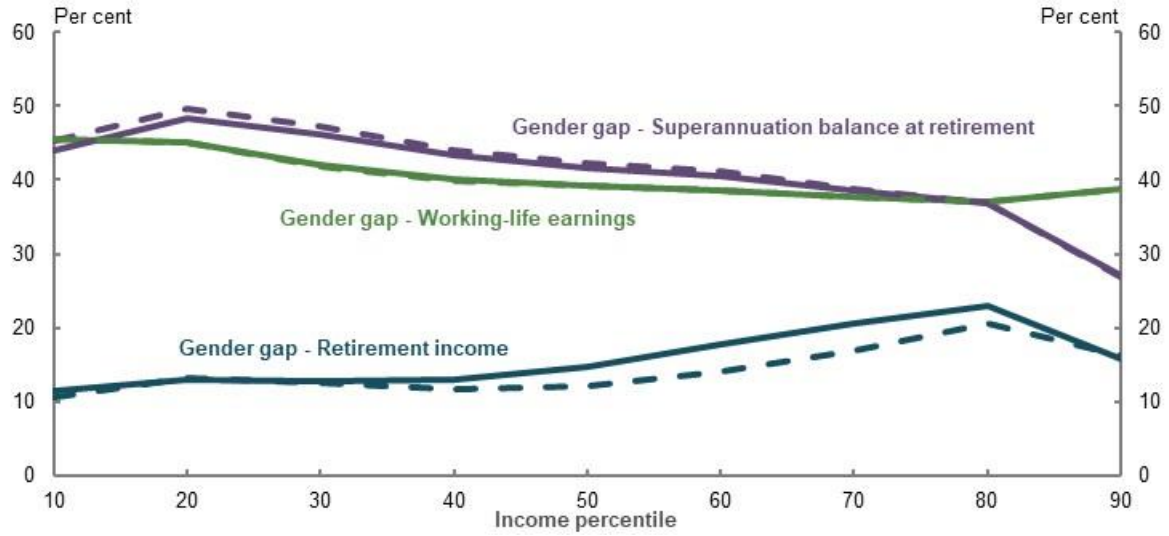
Gender-based income gaps

Cameo analysis in *3B. Gender and partnered status* is reproduced here to examine the effect of the SG on gender gaps in superannuation balances, retirement and working-life outcomes.

If the SG rate was maintained at 9.5 per cent instead of increasing to 12 per cent, at almost all income levels, men would experience a larger percentage reduction in retirement income than women (Chart 2D-8). This is due to men having a larger decrease in income from superannuation than women, which would only be partially offset by higher Age Pension payments. The median woman would see her average retirement income reduce by 3.0 per cent, compared with a 5.7 per cent fall for the median man.

Retirement outcomes for women are largely determined by factors outside the retirement income system, which are not affected by a change in SG rate. Women tend to have lower wages and are more likely to work part-time and take more career breaks (*3B. Gender and partnered status)*. These factors contribute to the working-life earnings gap between men and women, which in turn drives the gender gap in superannuation balances at retirement.

Chart 2D-8 Projected gender gap in incomes and superannuation balances at retirement, with 12 per cent SG rate (solid line) and 9.5 per cent SG rate (dotted line)



Note: Gender gaps are calculated relative to the relevant figure for men — that is, a 10 per cent gender gap in earnings means that women's earnings are 90 per cent of men's earnings. See *3B. Gender and partnered status*. The chart compares the 10th percentile for men to the 10th percentile for women, and so on. Does not factor in voluntary superannuation contributions not made through salary sacrifice. If included, these would reduce the gaps between men and women. Source: Cameo modelling undertaken for the review.

Home ownership

Home ownership improves retirement outcomes by reducing ongoing housing costs and acting as a store of wealth that may be drawn upon to help fund retirement (see *2A. Achieving a minimum standard of living in retirement*).

Maintaining the SG rate at 9.5 per cent may impact future home ownership trends in a number of ways. Ultimately the impact of a change in the SG on housing is unclear.

- Studies show a correlation between net household debt and pension assets (such as superannuation) as a per cent of GDP, although the cause of the relationship is unclear (Mercer, 2019b, p. 10). Historically, increasing levels of superannuation wealth may have increased household confidence about finances and wealth, encouraging them to take on more debt. Research commissioned for the review suggests that higher SG rates result in more investment in

housing, with $1 of additional employer contributions increasing housing investment by $0.24 (Ruthbah & Pham, 2020a). These factors may cause a constant 9.5 per cent SG rate to deter borrowing compared with a higher SG rate.

- Maintaining the SG rate at 9.5 per cent could marginally increase households' capacity to save for a home deposit as working-life income could be about 2 per cent higher than otherwise in the longer run. This additional income may support people's ability to save for a deposit and pay down mortgage debt during their working lives. However, any effect is likely to be modest.

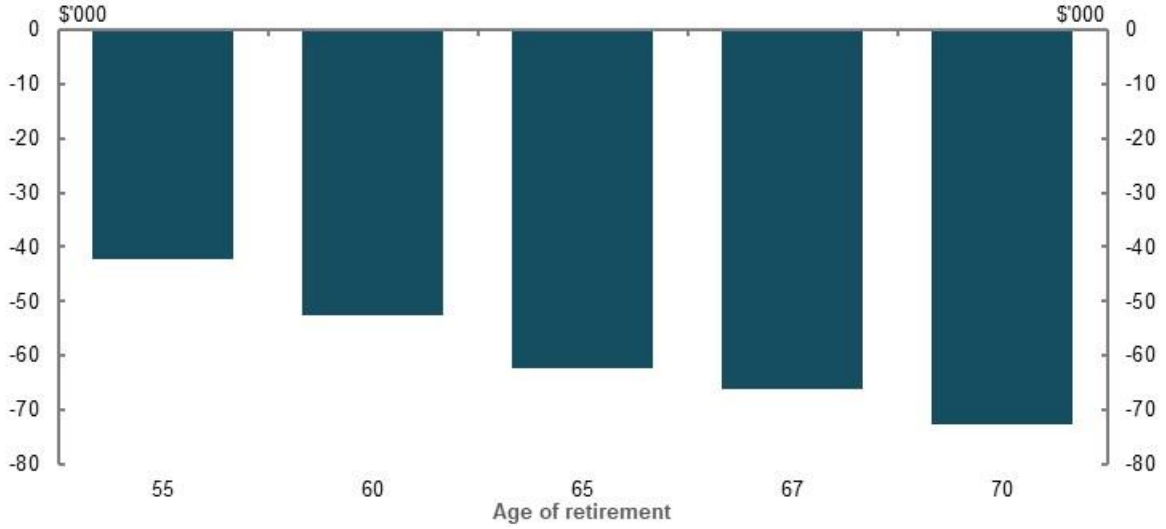
Age of retirement

Impact on balance at retirement

Superannuation balances of early retirees are less sensitive to maintaining the SG rate at 9.5 per cent due to this group contributing less and a shorter time period for returns to accumulate (Chart 2D-9).

Maintaining the SG rate at 9.5 per cent would lower superannuation balances at retirement for people retiring at age 55, by around $42,000 for the median-income earner. This is 64 per cent of the impact for a median-income earner retiring at age 67 ($66,000).

Chart 2D-9 Projected change in superannuation balance, by retirement age, median earner



Note: Values are in 2019-20 dollars, deflated by average weekly earnings. Superannuation balance at retirement is calculated for people starting work at age 27 in 2019-20. Projected change in balance at retirement compares legislated changes to SG, and SG at 9.5 per cent. Source: Cameo modelling undertaken for the review.

Replacement rates and retirement age

For the median-income earner, maintaining the SG rate at 9.5 per cent would reduce their replacement rates. But projections suggest they would still have replacement rates within or above the 65-75 per cent benchmark for most career lengths (Table 2D-2).

Under both a 9.5 SG rate and a 12 per cent SG rate, and assuming savings are drawn down efficiently in retirement, the median-income earner retiring from preservation age would maintain their living standards in retirement (Table 2D-2).

People who work 20 years or less and retire at age 55 are projected to fall below the 65-75 per cent benchmark under a 9.5 per cent SG rate.

Table 2D-2 Projected replacement rates with 9.5 per cent SG for different working-life periods, median earner

Starting age	Retirement age				
	55	60	65	67	70
35	63% (↓ 3ppt)	66% (↓ 3ppt)	75% (↓ 4ppt)	79% (↓ 4ppt)	82% (↓ 5ppt)
30	66% (↓ 3ppt)	68% (↓ 5ppt)	78% (↓ 4ppt)	81% (↓ 4ppt)	85% (↓ 5ppt)
27	66% (↓ 4ppt)	70% (↓ 6ppt)	79% (↓ 4ppt)	83% (↓ 4ppt)	87% (↓ 6ppt)
25	67% (↓ 5ppt)	71% (↓ 5ppt)	80% (↓ 4ppt)	83% (↓ 5ppt)	87% (↓ 6ppt)
20	69% (↓ 5ppt)	73% (↓ 5ppt)	80% (↓ 5ppt)	83% (↓ 6ppt)	88% (↓ 8ppt)

Note: Early retirement scenarios assume people receive working-life income support if eligible according to means testing and access their superannuation from preservation age. People who retire earlier than age 67 draw down superannuation from age 60 at the higher of the maximum Age Pension or minimum legislated rates until age 67 using use review drawdown rates thereafter. For comparability, the level of working-life income to be replaced is the same for sensitivities. Figures in brackets are relative to a 12 per cent SG rate. Source: Cameo modelling undertaken for the review.

Workers at greater risk of early involuntary retirement are those with low wealth and low education levels (see *3E. Age of retirement*). They are more likely to be lower-income workers who generally have replacement rates above the benchmark.

Effect on sustainability

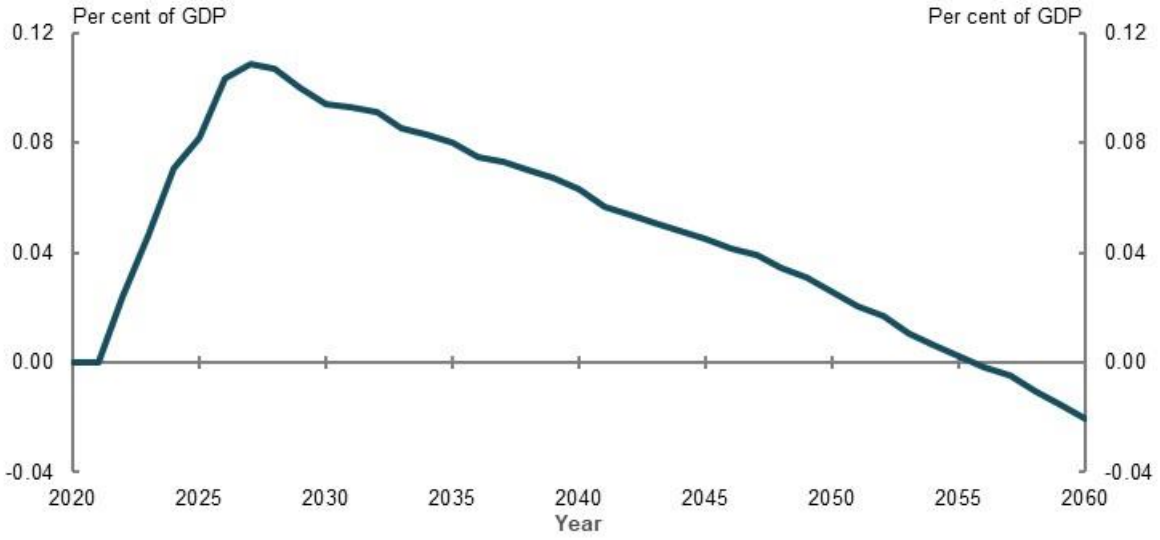
Analysing the overall fiscal impact of maintaining the SG rate at 9.5 per cent over the medium- to long-term combines historical data, projections and assumptions from a range of sources to illustrate general trends. Treasury's MARIA model was used to project the impact on some, but not all aspects, of taxation revenue. Details on the how MARIA modelling was used in this fiscal analysis are in *Appendix 6A. Detailed modelling methods and assumptions.*

Net fiscal impact

Maintaining the SG rate at 9.5 per cent is projected to have a positive net fiscal impact. Higher tax revenues from lower superannuation tax concessions are expected to outweigh higher Age Pension expenditure until around 2055. The cumulative saving by 2060 of the change is expected to be about 2.0 per cent of GDP (Chart 2D-10).

There would be an increasing positive fiscal impact over the coming decade if the phased increase in the SG to 12 per cent did not occur. These savings would gradually rise to about $3 billion per year in the late 2020s.

Chart 2D-10 Projected net fiscal impact of maintaining the SG rate at 9.5 per cent



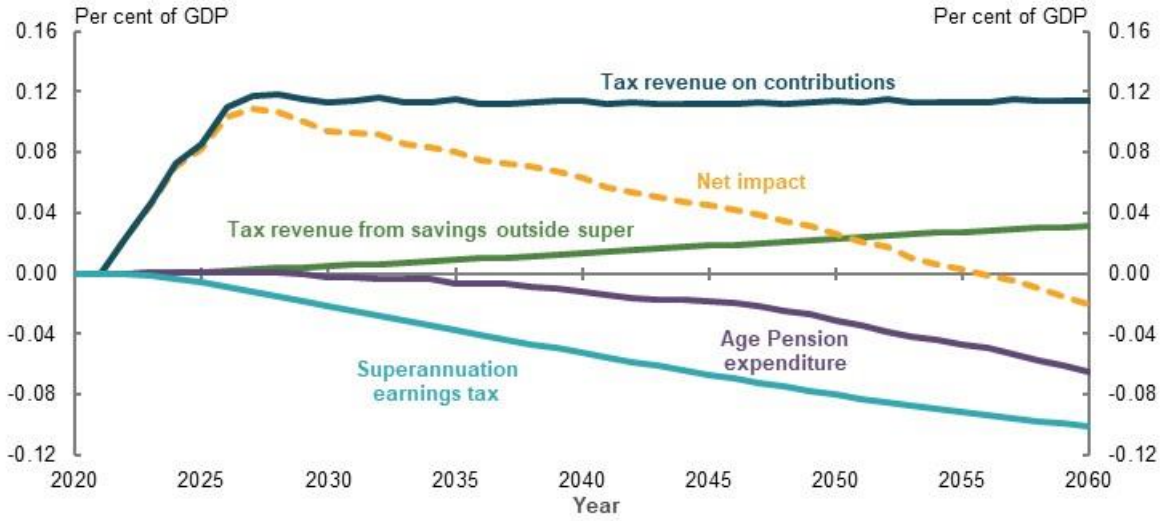
Note: Modelling assumes 100 per cent pass-through to employees. Source: Estimates prepared by the review; Treasury estimated changes in taxes on contributions, earnings and Age Pension expenditure using MARIA.

Break down of fiscal impact

Maintaining the SG rate at 9.5 per cent impacts the sustainability of the retirement income system in several ways (Chart 2D-11), including:

- Increased Age Pension expenditure due to lower assets at retirement. Initial impacts are small but grow over time as the system matures.
- Higher tax revenue would be collected immediately. Money that would have been paid as SG contributions is instead taxed at marginal income tax rates.
- Broader implications from taxing assets, as savings would likely be shifted out of superannuation into other savings vehicles. The exact impact would depend on how much people save of the extra money that would have otherwise been an SG contribution.

Chart 2D-11 Projected budget impact of maintaining the SG rate at 9.5 per cent



Note: 'Tax revenue on contributions' includes the impact on personal income tax and taxes on superannuation contributions. Modelling assumes 100 per cent pass-through to employees; Source: Estimates prepared by the review; Treasury estimated changes in taxes on contributions and earnings and Age Pension expenditure using MARIA.

Box 2D-4 Modelling fiscal impacts of maintaining the SG rate

To assess impacts on the adequacy of individual outcomes under a 9.5 per cent SG rate, cameo modelling assumed 80 per cent pass-through of SG to wages.

Analysis of budget impacts presented in this section requires a broader view of the economic impacts of an SG increase. Costs associated with an increase in SG can either be borne by wages, company profits, employment or prices. In the absence of broader economic effects, the remaining 20 per cent of the cost of increasing SG is most likely to be borne by companies, with flow-on impacts to company income tax.

For modelling purposes, the average tax rate paid on company profits is more similar to the average tax rate paid by workers, compared to assuming the remaining 20 per cent has no tax implications. Not assuming full pass-through is unrealistic as it would mean that 20 per cent of the impact is not passed through to any part of the economy and is untaxed in any form. Modelling of budget effects therefore assumes 100 per cent pass-through.

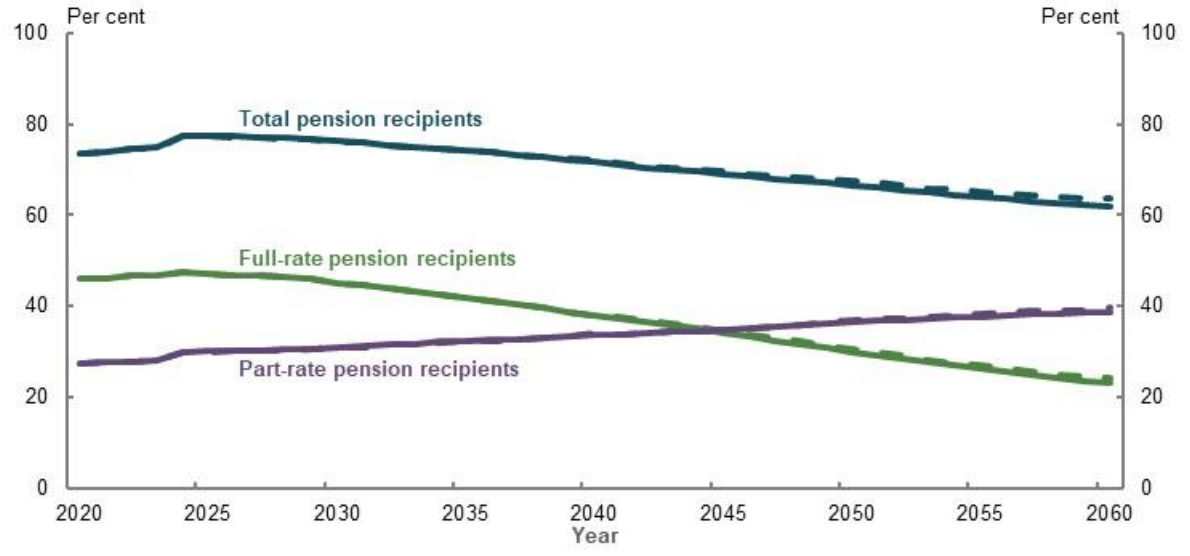
Age Pension reliance and costs

Under both a 12 per cent and 9.5 per cent SG rate, Age Pension reliance and expenditure decline over time as the retirement income system matures.

Over the long term, maintaining the SG rate at 9.5 per cent is projected to result in the proportion of people receiving the Age Pension increasing by around 1.8 percentage points by 2060 (Chart 2D-12). The proportion of people over Age Pension eligibility age on the full-rate Age Pension are projected to increase by 0.9 percentage points. Part-rate Age Pension recipients are expected to increase by 0.9 percentage points.

Maintaining the SG rate at 9.5 per cent is projected to increase Age Pension expenditure in 2060 by less than 0.1 percentage points of GDP compared with a 12 per cent SG rate (from 2.3 to 2.4 per cent of GDP).

Chart 2D-12 Projected proportion of eligible population receiving the Age Pension, 12 per cent SG rate (solid line) and 9.5 per cent SG rate (dotted line)



Source: Treasury estimates for the review using MARIA.

Impact of the change in contributions

Projections suggest that reduced superannuation contributions under a 9.5 per cent SG rate would increase government revenue (Chart 2D-11) due to the combined effect of:

- Lower taxes on concessional superannuation contributions
- Higher personal income tax rates on the increase in wages that would have otherwise been paid as SG contributions

Switching SG contributions to wages increases total taxes as marginal income tax rates are generally higher than contributions taxes on superannuation (as contributions are taxed concessionally). The projected annual fiscal impact of this component is 0.1 per cent of GDP, with the majority of the increase in revenue occurring during the period in which the 12 per cent SG rate is phased in, reflecting the higher income tax collections from maintaining the SG rate at 9.5 per cent.

The modelling assumes that some people would increase their voluntary concessional contributions (salary sacrifice or personal deductible contributions) as a result of the SG change. Only people who make voluntary contributions are assumed to make this adjustment. As a result, about 20 per cent of the lower SG contributions would be offset by higher voluntary contributions.

The modelling also allows for a small interaction between the SG and voluntary savings, where people may save less through non-concessional contributions. In particular, some people are expected to switch from non-concessional contributions to concessional contributions because the contributions caps will allow for more voluntary contributions under a lower SG rate. The decline in non-concessional contributions also arises due to a wealth effect in the model. That is, because people have lower assets due to a lower SG rate, they also save less through other savings mechanisms.

Impact of change in earnings

Maintaining the SG rate at 9.5 per cent would reduce the size of superannuation balances. This, in turn, would result in a lower level of concessional earnings tax. Taxes on superannuation earnings are projected to be about 0.1 per cent of GDP lower per year by 2060 (Chart 2D-11).

In addition, people would likely save more outside superannuation. An indicative estimate from higher savings outside superannuation is about a third of 0.1 per cent of GDP a year by 2060. This is affected by:

- The proportion of additional income that would otherwise have been contributed as SG.
  - Modelling in this section uses results from (Connolly, 2007) and (Ruthbah & Pham, 2020a), which show about 30 per cent of a change in SG is offset by voluntary savings. People are assumed to save 30 per cent, on average, of the change in SG contributions.[112] In the modelling of non-superannuation savings, earners in the top two tax brackets are assumed to save 40 per cent of the forgone SG contributions, whereas lower-income earners save less than average. Differences across income are consistent with (Connolly, 2007) and how savings rates differ across income (Finlay & Price, 2014).
  - The extra income is otherwise assumed to be spent, including possibly on the family home. Where additional income is spent, consumption taxes such as the GST may apply, but these are not factored into the fiscal estimates. Revenue collected as GST is ultimately distributed to state and territory governments.
- The tax arrangements on savings vehicles and the return on those savings. For example, savings in a bank account are taxed at marginal tax rates, while savings in domestic shares may be subject to capital gains discount and receive franking credits.

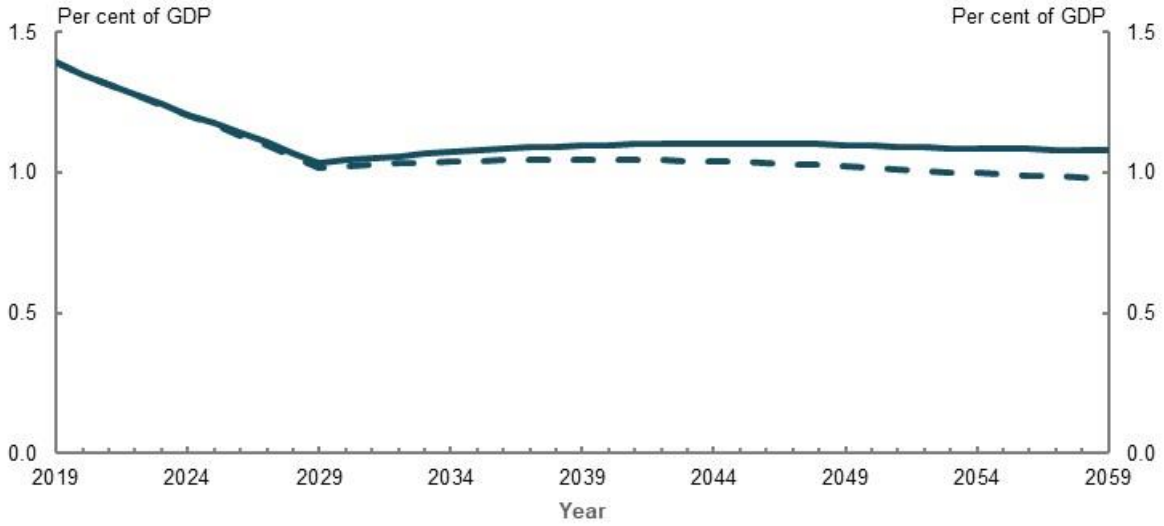
[112] People are assumed to save 30 per cent of the forgone SG payments in total. The 30 per cent is the total impact from extra savings in salary sacrifice contributions, non-concessional contributions and savings outside superannuation.

- Tax paid on investments outside superannuation are based on modified results from data provided to the review by the Tax and Transfer Policy Institute. Tax rates by investment vehicle are adjusted to be consistent with the fiscal impacts on the Commonwealth budget and assume a 15-year holding period. Investment portfolios are based on people's actual assets.[113] Both tax rates and investment portfolios are adjusted for income tax brackets. As a result, just over half of earnings are assumed to flow through to taxable income.

Superannuation assets and fees

Superannuation fees are a cost of the retirement income system, which is borne directly by fund members. Maintaining the SG rate at 9.5 per cent is projected to reduce superannuation fees by 0.1 per cent of GDP by 2059 as a result of lower total funds under management (Chart 2D-13). The reduction in total fees borne by members would be larger than the projected increase in Age Pension expenditure.

Chart 2D-13 Projected superannuation fees as a percentage of GDP, with 12 per cent SG rate (solid line) and 9.5 per cent SG rate (dotted line)

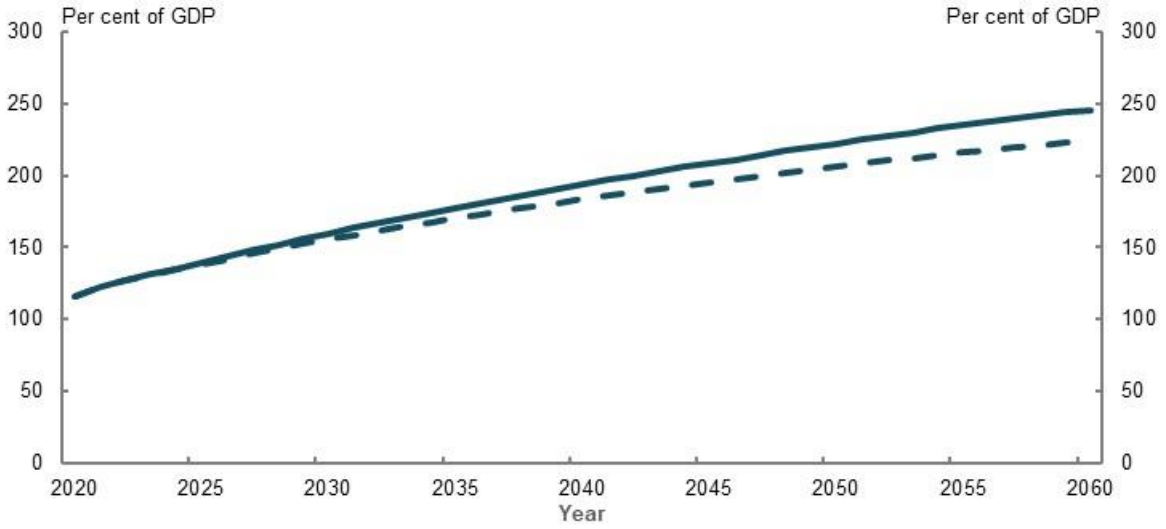


Source: Analysis of Rice Warner estimates for the review.

Over time, maintaining the SG rate at 9.5 per cent would reduce the level of superannuation assets held in defined contribution accounts (Chart 2D-14).

[113] Analysis of ABS Survey of Income and Housing Confidentialised Unit Record File, 2017-18.

Chart 2D-14 Projected value of total superannuation assets, with 12 per cent SG rate (solid line) and 9.5 per cent SG rate (dotted line)



Note: Includes superannuation balances for defined contribution funds for people over 25 years. Excludes defined benefits, regulatory capital and life office statutory funds. Source: Treasury estimates for the review using MARIA.

Annex — modelling supplement

This Annex provides additional detail that extends the analysis provided in *2D. Policy scenario: Implications of maintaining the SG rate*. It includes:

- Additional analysis of the impact on receipt of other payments
- Sensitivity analysis of replacement rates delivered under a range of circumstances
- Sensitivity analysis of the working life–retirement income trade-off
- Sensitivity analysis of the fiscal impact of maintaining the SG rate at 9.5 per cent
- Additional modelling by Rice Warner

Changes in other payments due to an SG change

A change to the SG can affect people's eligibility for certain government payments. For example, FTB and HECS/HELP repayments are calculated using an alternative income definition called Adjusted Taxable Income. This definition includes wages as income, but it excludes the value of SG payments.

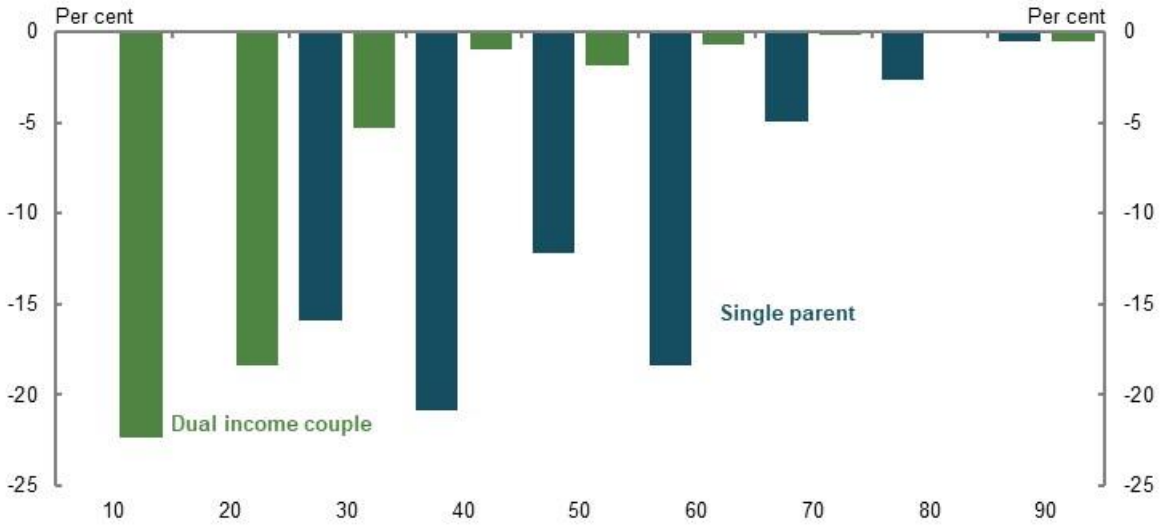
Maintaining the SG rate at 9.5 per cent would result in people having more wage income and, in turn, a higher Adjusted Taxable Income, which may reduce FTB and Child Care Subsidy (CCS) entitlements (Chart 2D-15). The means-testing arrangements result in different impacts across the income distribution.

- Lower-income couples in the 10th percentile would lose 22 per cent of their additional disposable income with the SG rate staying at 9.5 per cent due to lower FTB and CCS payments. The effect falls as income increases, with the 30th percentile couple having a 5 per cent offset through lower FTB payments. Lower-income single parents would be less affected as their incomes are more likely to be below thresholds where payments begin to withdraw.
- Middle-income couples would have a small reduction in FTB and CCS income as a result of higher relative working-life income over the longer run, equivalent to 1-2 per cent of the increase in disposable income. Middle-income single parents would have 5-21 per cent of the SG impact offset through lower family payments.
- Higher-income families would have little impact on their family payments as they only access family payments for a limited number of years.

The rate at which family payments are withdrawn can exceed 40 per cent when combined across FTB Part A and B, and the Child Care Subsidy. In practice, actual impacts on working-life income are lower as:

- Families only access payments for about half of their careers when their children meet qualifying ages for the benefits (typically under 18 for family payments, and below school age for childcare).
- Across certain income ranges, families can earn more without reducing their childcare or family payments. For example, families can earn up to $54,677 a year before having their FTB Part A payment affected. Parents can earn up to $68,163, or $173,163-$252,453 without having their Child Care Subsidy payment affected.
- Families may not receive all payments depending on their circumstances. For example, dual-income families typically do not receive FTB Part B.

Chart 2D-15 Projected increase in working-life income offset by lower family payments



Note: Offset is calculated as the reduction in family payments across working life due to higher incomes under a 9.5 per cent SG, divided by the increase in disposable income across working life under a 9.5 per cent SG. Both families have two children, born when the secondary earner/single parent is 30 and 33. The secondary earner/single parent takes two years off work after each birth. The secondary earner/single parent then earns 60 per cent of their normal wages, and accesses two days a week of childcare, until the youngest child turns five. For the couple, the primary earner has no change in earnings. All family payment parameters are indexed according to current policy. Child care costs assumed to increase by CPI consistent with indexation of the hourly Child Care Subsidy cap. Increase in offset for single parents at the 60th percentile is due to the increase in income making them ineligible for FTB Part B in one additional year. Source: Cameo modelling undertaken for the review.

Sensitivity analysis

Replacement rates

Replacement rate sensitivity analysis presented in *2C. Maintaining standards of living in retirement* is reproduced below under a 9.5 per cent SG rate to demonstrate the potential impact on people in a range of circumstances.

Table 2D-3 Sensitivity analysis of replacement rates, with 9.5 per cent SG rate, median-income earner

	All employees (per cent)	Female only (per cent)	Singles only (per cent)	Couples only (per cent)
Replacement rate	83	90	84	76
Sensitivity analysis				
Investment risks				
Investment returns 1.0 ppt lower	77	85	79	69
Investment returns 0.5 ppt lower	80	87	81	72
Low wage growth and lower investment returns[i]	83	90	84	76
25 per cent negative investment shock[ii]	78	86	79	70
Draw down strategies				
Minimum drawdown[iii]	67	81	71	57
Observed drawdown[iii]	74	n/a	n/a	n/a
Voluntary saving[iv]				
No non-superannuation savings	83	90	84	77
No salary sacrificing	80	88	82	72
No non-superannuation or salary sacrificing	80	87	82	73

	All employees (per cent)	Female only (per cent)	Singles only (per cent)	Couples only (per cent)
Working career and longevity[v]				
Shorter working life				
(25 years) Retire at 67	75	83	75	67[viii]
(30 years) Retire at 67	77	86	78	70[viii]
(35 years) Retire at 67	80	89	81	72[viii]
(25 years) Retire at 60	66	75	67	62[viii]
(30 years) Retirement at 60	68	77[vii]	70	64[viii]
(35 years) Retirement at 60[vi]	71	77[vii]	71	66[viii]
Early retirement			Primary only/both	
Job-related reason (57 years)	68	75	70	69/64[ix]
Job-related reason (62 years)	74	80	75	71/68[ix]
Disability-related reason (57 years)	76	86	79	69/67[ix]
Disability-related reason (62 years)	77	86	79	71/68[ix]
Retirement at 70 (start age 27)	87	93	88	82
Low SG coverage (8 years less)[x]	79	86	80	71
Living to age 102	84	94	85	77
Living to age 102, no longevity product[iii]	80	89	82	74
Calculation differences				
5 years before / 5 years after retirement	85	91	85	78
15 years before / 15 years after retirement	80	87	82	69
Wage deflator	69	75	70	64
CPI deflator	90	98	91	83

Note: All sensitivities assume working life of 27-67, starting in 2019-20, unless otherwise specified. Income distributions are based on relevant cohorts, for example the median couple is based on the income distribution of couples. [i]Low wage growth scenario assumes 3.5 per cent nominal wages growth from 2032-33 and 0.5 percentage point lower investment returns. [ii]A once-off 25 per cent reduction of super balances at retirement that does not recover. [iii]Assumes no longevity product purchase. [iv]Working-life income from the central case is used as the replacement rate denominator to ensure consistency between results. [v]Working-life income from the central case is used as the replacement rate denominator to ensure consistency between results. People who retire earlier than 67 draw down super from age 60 at the higher of the maximum Age Pension less any income support they receive or minimum legislated rates until age 67. Review drawdowns assumptions used from age 67. Age Pension eligibility is for home owners and couples based on partnered eligibility; all other household types assume the person is single. [vi]Assumes people start work aged 25 in 2019-20, and retire at age 60 in 2062. [vii]Assumes a two-year career break for women from ages 30-31. Women therefore work two years less in these scenarios. [viii]Assumes both members of the couple have shorter working lives. [ix]Coupled early retirement scenarios include 1) the primary earner retires early, while the secondary earner works to age 67, 2) both members of the couple retire early. [x]Low SG coverage assumes no SG from ages 35-42. Source: Cameo modelling undertaken for the review.

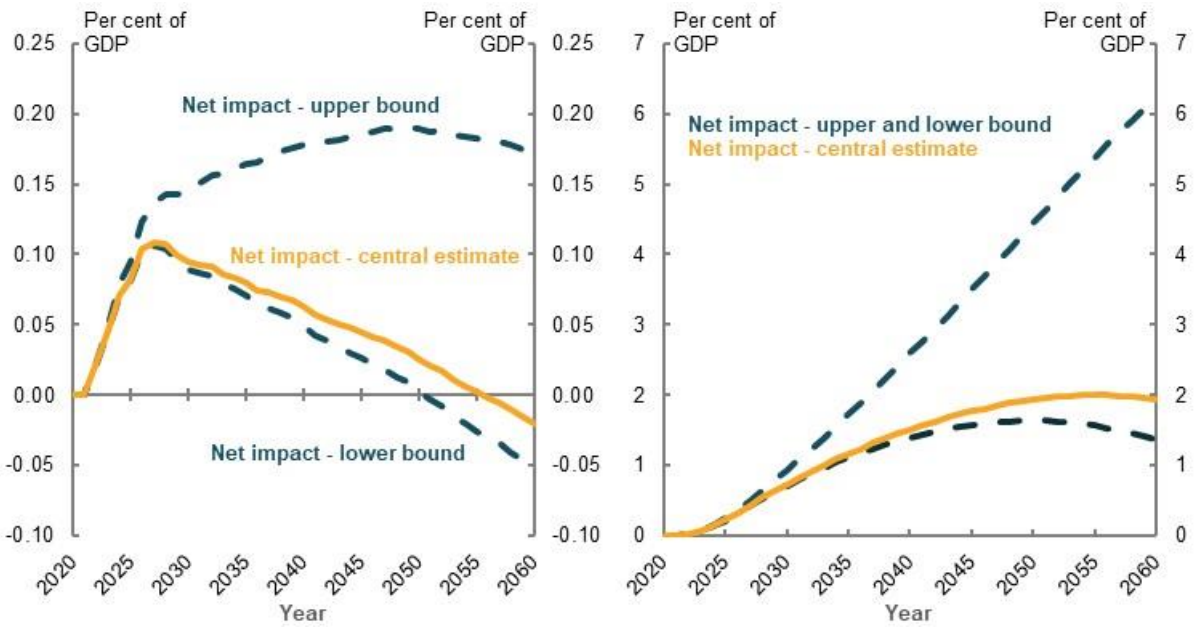
Fiscal impact and earnings tax sensitivities

The projected fiscal impact of a 9.5 per cent SG rate is sensitive to assumptions regarding how people use the additional disposable income that would otherwise have been contributed to superannuation.

Modelling in *Net fiscal impact* presents a central estimate based on likely savings behaviour. People are assumed to offset 30 per cent of the change in their SG contributions through higher voluntary savings. Higher voluntary savings are partly assumed to occur within superannuation through additional superannuation contributions such as salary sacrifice contributions. Modelling then assumes voluntary non-superannuation savings offsets the shortfall between the 30 per cent assumption and the change in voluntary superannuation contributions.

Chart 2D-16 presents the upper and lower bounds of the potential net fiscal impact, in addition to the central estimate. The upper bound assumes that all additional disposable income is saved, with earnings taxed at marginal personal income tax rates. The lower bound assumes that all additional income is consumed or saved in a tax-exempt vehicle, such as the family home.

Chart 2D-16 Fiscal impact of maintaining the SG rate at 9.5 per cent



Note: Assumes 100 per cent pass-through from the SG to wages over the longer term. Source: Estimates prepared by the review; Treasury estimated changes in taxes on contributions and earnings and Age Pension expenditure using MARIA.

Working life–retirement income trade-off

Assessments of changes to working life and retirement income are sensitive to choice of deflator. Analysis in Table 2D-1 presents results based on a mixed deflator (see *Appendix 6A. Detailed modelling methods and assumptions*). Results under different deflators are presented in Table 2D-4 to demonstrate the impact of deflators on projected income.

Table 2D-4 Change in working-life and retirement income with a 9.5 per cent SG rate, by income and deflator type, mortality weighted

Income percentile	Mixed deflator		CPI		Average Weekly Earnings	
	Working-life ($)	Retirement ($)	Working-life ($)	Retirement ($)	Working-life ($)	Retirement ($)
10	12,200	-28,100	16,100	-49,000	12,200	-24,500
20	17,300	-27,900	22,900	-48,700	17,300	-23,300
30	22,600	-28,500	30,000	-49,700	22,600	-23,300
40	27,500	-29,000	36,500	-50,600	27,500	-23,700
50	32,400	-32,900	43,000	-57,400	32,400	-27,600
60	38,100	-50,600	50,500	-88,100	38,100	-44,300
70	45,000	-71,800	59,700	-125,200	45,000	-63,500
80	53,900	-101,300	71,600	-176,600	53,900	-88,800
90	58,200	-147,400	77,700	-256,900	58,200	-124,600

Note: Values are in 2019-20 dollars, rounded to the nearest $100. Mortality weighting derived from Australian Government Actuary projections based on a female aged 27 in 2019. Change in lifetime income is for an individual living to 102. Modelling assumes draw down of all assets during retirement. See *Appendix 6A. Detailed modelling methods and assumptions* for more. Source: Cameo modelling undertaken for the review and Australian Government Actuary mortality projections.

Non-mortality-weighted projections of the change in working life and retirement income earner are presented below. Under this scenario, income received in retirement is weighted more heavily than in Table 2D-4, which discounts income by the probability a person is alive to receive it.

Table 2D-5 Change in working-life and retirement income with 9.5 per cent SG rate, by income and deflator type

Income percentile	Mixed deflator		CPI		Average weekly earnings	
	Working-life ($)	Retirement ($)	Working-life ($)	Retirement ($)	Working-life ($)	Retirement ($)
10	12,400	-30,800	16,500	-53,700	12,400	-26,900
20	17,600	-31,800	23,400	-55,400	17,600	-26,500
30	23,100	-32,600	30,600	-56,900	23,100	-26,800
40	28,000	-33,200	37,300	-57,900	28,000	-27,200
50	33,100	-37,200	44,000	-64,800	33,100	-31,200
60	38,800	-55,900	51,600	-97,400	38,800	-48,900
70	45,900	-78,700	61,000	-137,100	45,900	-69,600
80	54,900	-110,200	73,200	-192,200	54,900	-96,900
90	59,400	-165,800	79,400	-289,100	59,400	-140,300

Note: Values are in 2019-20 dollars, rounded to the nearest $100. Assumes death at age 92 and draw down of all assets during retirement. Source: Cameo modelling undertaken for the review.

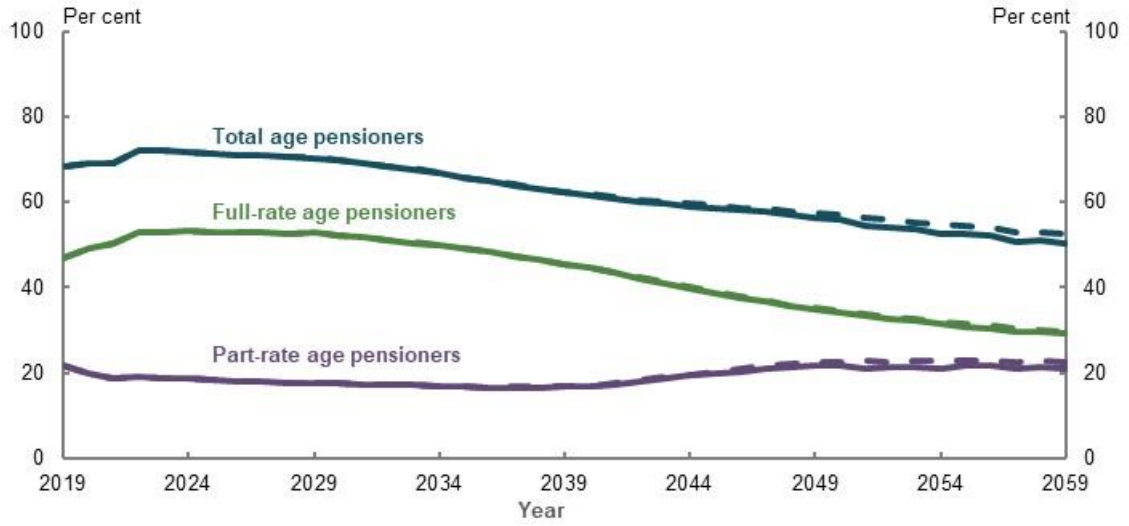
Different modelling approaches

The net fiscal projections in this chapter have been prepared by the review. Some components of the fiscal analysis in this section use Treasury's MARIA model. For the purposes of comparison, modelling was commissioned from Rice Warner on maintaining the SG rate at 9.5 per cent. Detailed discussion of differences in methodology are at *Appendix 6A. Detailed modelling methods and assumptions.*

Age Pension reliance

Modelling from Rice Warner suggests a lower level of Age Pension reliance under both 12 per cent and 9.5 per cent SG rates. Rice Warner modelling suggests that the proportion of retirees on the Age Pension increases by 2.1 percentage points under a 9.5 per cent SG rate by 2059 (52.4 per cent compared with 50.3 per cent under a 12 per cent SG rate (Chart 2D-17)).

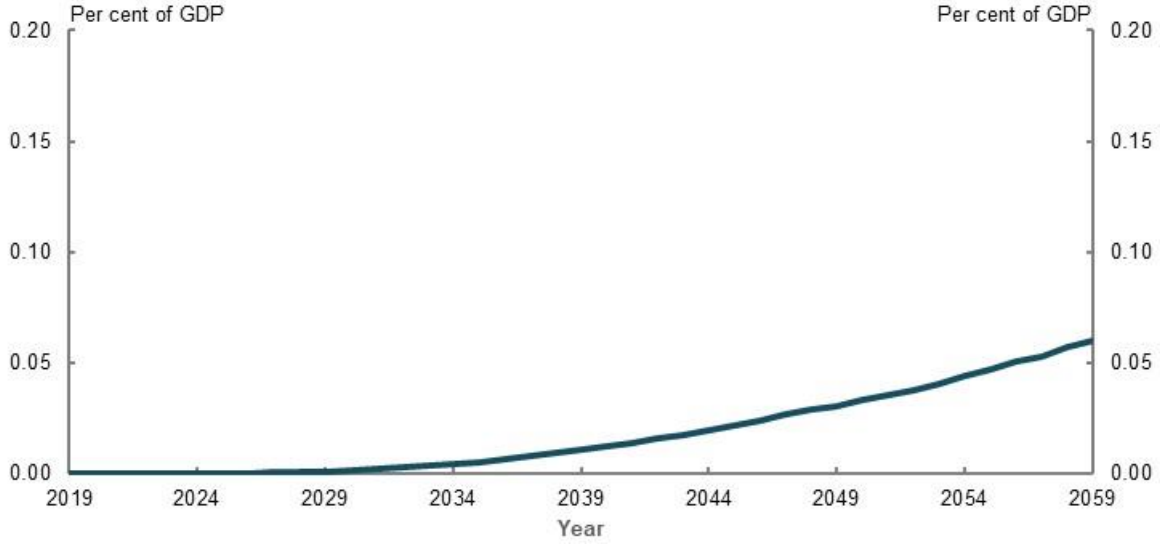
Chart 2D-17 Projected proportion of eligible population receiving the Age Pension with a 12 per cent SG rate (solid line) and a 9.5 per cent SG rate (dashed line)



Source: Analysis of Rice Warner estimates for the review.

Age Pension expenditure is projected to increase by 0.06 per cent of GDP by 2059 (Chart 2D-18).

Chart 2D-18 Change in Age Pension expenditure with a 9.5 per cent SG rate



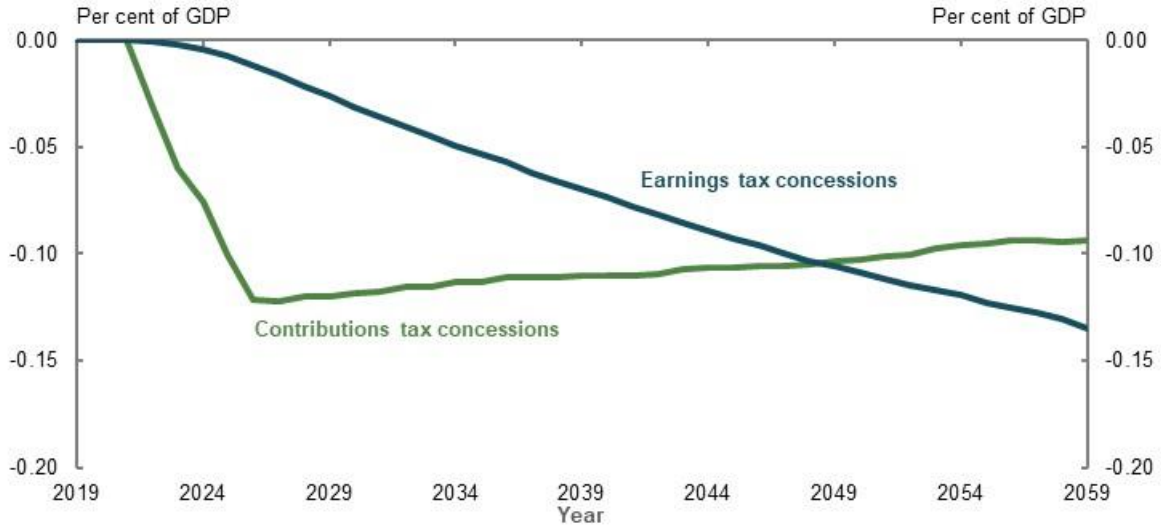
Source: Analysis of Rice Warner estimates for the review.

Change in tax concessions

Rice Warner estimated the impact on superannuation tax concessions, which are projected to be lower under a 9.5 per cent SG rate. Contributions concessions are projected to decrease by 0.1 per cent of GDP by 2059, while earnings concessions are projected to be about 0.1 per cent of GDP lower (Chart 2D-19).

Superannuation tax concessions are not the same as the impact on the budget, as they do not estimate all behavioural changes that people may undertake in response to a change in policy. For this reason, fiscal modelling presented in the *Net fiscal impact* section above is a better indicator of the impact on the budget of the Australian Government than the impact on tax concessions presented here.

Chart 2D-19 Projected change in superannuation tax concessions with a 9.5 per cent SG rate

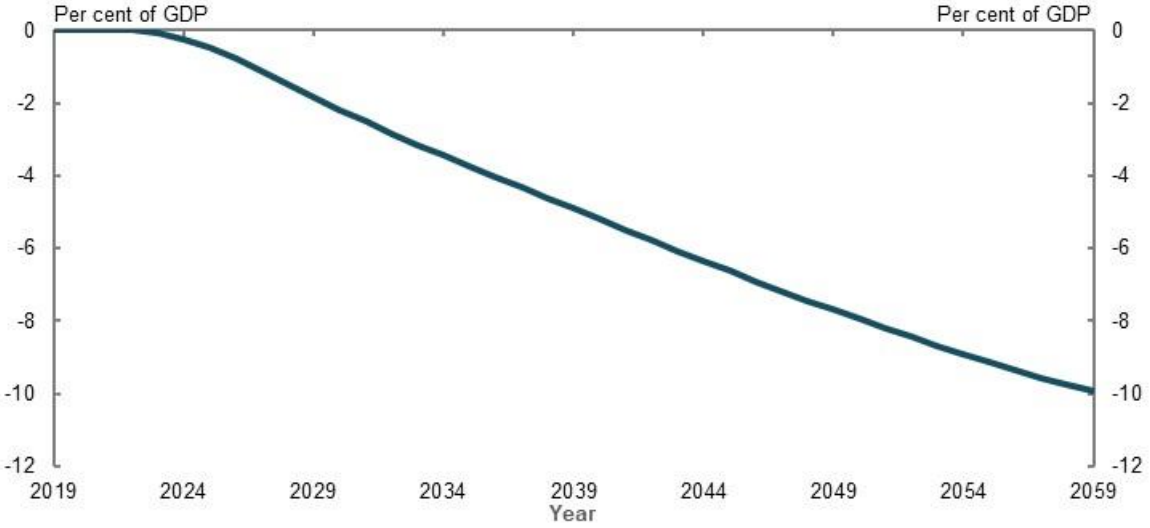


Source: Analysis of Rice Warner estimates for the review.

Change in value of superannuation assets

Rice Warner modelling suggests a smaller change in the value of funds under management, with projections suggesting that a 9.5 per cent SG rate will result in superannuation assets declining by 10 per cent by 2059 (Chart 2D-20).

Chart 2D-20 Projected change in value of total superannuation funds under management



Source: Analysis of Rice Warner estimates for the review.