

Retirement Income Review

Final Report

July 2020

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Version notes

This version of the report was updated on 1 February 2021 to correct minor errors on pages 75 and 501.

24 July 2020

The Hon Josh Frydenberg MP
Treasurer
Parliament House
CANBERRA ACT 2600

Dear Treasurer


In accordance with the terms of reference, we are pleased to present the Final Report of the Retirement Income Review.

The report provides a fact base of the current retirement income system in the context of an ageing society. Its objective is to improve understanding of the system's operations and the outcomes it is delivering for Australians.

The evidence indicates that the Australian retirement income system is effective, sound and broadly sustainable. But it can be improved.

We thank all the individuals and organisations that gave considerable time and resources to assist the review. In particular, we thank the hardworking secretariat to the review whose support was invaluable.

Yours sincerely



Michael Callaghan



Deborah Ralston



Carolyn Kay

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Terms of reference

On 27 September 2019, the Treasurer, the Hon Josh Frydenberg MP, and the Minister for Superannuation, Financial Services and Financial Technology, Senator the Hon Jane Hume, announced the Government had commissioned an independent panel to review the retirement income system.

The review had the following terms of reference.

Retirement Income Review terms of reference

As recommended by the Productivity Commission in its report *Superannuation: Assessing Efficiency and Competitiveness*, the Government is commissioning an independent Retirement Income Review.

Australia's retirement income system is based on three pillars:

- a means tested Age Pension;
- compulsory superannuation; and
- voluntary savings, including home ownership.

It is important that the system allows Australians to achieve adequate retirement incomes, is fiscally sustainable and provides appropriate incentives for self-provision in retirement.

The review will establish a fact base of the current retirement income system that will improve understanding of its operation and the outcomes it is delivering for Australians. The Retirement Income Review will identify:

- how the retirement income system supports Australians in retirement;
- the role of each pillar in supporting Australians through retirement;
- distributional impacts across the population and over time; and
- the impact of current policy settings on public finances.

Panel members

Mr Mike Callaghan AM PSM (Chair)

Mr Mike Callaghan AM PSM is Chair of the Commonwealth Grants Commission and Chair of the replenishment of the Asian Development Bank's Asian Development Fund, and a Non-Resident Fellow at the Lowy Institute.

From 2018 to 2020, he was Chair of the Aged Care Financing Authority. In 2017, Mr Callaghan chaired the Government's review of the Petroleum Resource Rent Tax and the review of the Economic Impact of the Government's Regulation Agenda. He also chaired the Northern Australia Insurance Premiums Taskforce. From 2013-2014, he was Director of the G20 Studies Centre at the Lowy Institute.

Mr Callaghan spent 38 years in the Australian Treasury. From 2008 to 2012 he was Deputy Secretary, Macroeconomic Group, Australia's G20 Finance Deputy and the Prime Minister's Special Envoy, International Economy. From 2005-2007, he was Deputy Secretary, Revenue Group.

Mr Callaghan spent four years on the IMF Executive Board in Washington DC and served as Chief of Staff to the Australian Treasurer, the Hon Peter Costello.

Ms Carolyn Kay

Ms Carolyn Kay has more than 30 years' experience in the finance sector as an executive and non-executive director. She also has been and remains a non-executive director of enterprises across a broad range of other sectors.

Ms Kay is currently a member of The Future Fund Board of Guardians and a non-executive director of Scentre Group, and Myer Family Investments. In the not-for-profit sector, she is a non-executive director of The General Sir John Monash Scholarship Foundation and a Trustee of Sydney Grammar School.

As an executive, Ms Kay worked as a banker and lawyer at Morgan Stanley, JP Morgan, and Linklaters & Paines in London, New York and Australia.

Ms Kay holds bachelor degrees in law and arts (University of Melbourne), a Graduate Diploma in Management (AGSM), is a member of Chief Executive Women and is a Fellow of the Australian Institute of Company Directors. Ms Kay was awarded a Centenary Medal for services to Australian society in business leadership.

Dr Deborah Ralston

Dr Deborah Ralston has more than 25 years of board-level experience across commercial and public sectors, with experience in education, banking, superannuation and fintech sectors.

She is currently a member of the Reserve Bank of Australia Payments System Board and is a Professorial Fellow at Monash University. Dr Ralston is also a member of the Steering Committee for the Melbourne Mercer Global Pension Index and the YBF Fintech Hub Advisory Board.

Dr Ralston has held senior executive roles in Australian universities, most recently as Executive Director of the Australian Centre for Financial Studies and as a Professor of Finance with the Monash University Business School. She was the Principal Investigator of the CSIRO-Monash Superannuation Research Cluster, and inaugural Chair of ASIC's Digital Finance Advisory Committee. In 2018, Dr Ralston was appointed to the Comprehensive Income Products for Retirement Framework Advisory Committee.

Dr Ralston holds a Master of Economics, a Doctor of Philosophy in financial regulation and is a Fellow of CPA Australia (FCPA), and the Australian Institute of Company Directors (FAICD).

Secretariat

Robb Preston (Head of secretariat)

Grace Anthony

Kylie Bourke

Anne-Line Giudicelli

Tamara Linehan

Tremayne Mellersh

Cameron Robinson

Tony Wiskich

Bianca Bauer

Yi Yong Cai

Tegan Holt

Darren Magennis

Joseph Moloney

Jonathan Rush

William Young

Ryan Baxter

Luke Dorahy

Cate Le Mesurier

Rebecca McCallum

Sam Pelly

Paul Ryan

Foreword

The Government commissioned the Retirement Income Review following a recommendation by the Productivity Commission in its report *Superannuation: Assessing Efficiency and Competitiveness*.

In keeping with its terms of reference, the review has developed an evidence base of the operation of the retirement income system, with the aim of improving the understanding of how the system operates and the outcomes it delivers for Australians. The review was not asked to recommend changes to the system.

The review's assessment of the evidence regarding the operation of the retirement income system is framed around the panel's suggestion as to what could be the broad objective for the system, namely, *'to deliver adequate standards of living in retirement in an equitable, sustainable and cohesive way'*.

A consultative and research-based approach was undertaken. The panel invited submissions from the public in response to the consultation paper released in November 2019. Public interest was broad and over 430 submissions were received. The panel and secretariat consulted widely, holding more than 100 meetings with stakeholders, including academics, regulators, industry bodies, superannuation funds and consumer groups. The meetings ranged from large forums to small groups of stakeholders. Details regarding the submissions and consultation can be found in *Appendix 6E. Consultation process*.

The review conducted its own extensive research and modelling, commissioned analysis from a number of organisations and drew on a wide range of existing research reports, to consider how the system performs today and how it will perform in an ageing society. The review commissioned research by the Monash Centre for Financial Studies at Monash University, Bankwest Curtin Economics Centre at Curtin University, and the Tax and Transfer Institute at ANU. These commissioned reports are available on the review's website. The review also benefited from data and analysis provided by the Treasury, Australian Government Actuary, Australian Taxation Office, Department of Social Services, Behavioural Economics Team of the Australian Government (BETA), and Rice Warner.

The COVID-19 Pandemic occurred during the review. The approach taken by the review in considering the impacts is outlined below.

The retirement income review in the context of the COVID-19 Pandemic

The economic impacts of the COVID-19 Pandemic were beginning to be observed during the course of the review. However, the pandemic's full effects and any long-term economic consequences will not be known for some time. Predicting the economic impacts of a pandemic is difficult and outside the scope of this review.

The initial detrimental impact of COVID-19 on financial and labour markets is not reflected in the quantitative analysis of the long-term performance of the retirement income system. Where the COVID-19 Pandemic is likely to affect analysis in the short- to medium-term, this is noted in the relevant chapter.

Short-term factors should not materially affect the analysis of very long term outcomes (e.g. see Box 4A-4 in *4. Sustainability*). They may, however, result in substantial short-run deviations from the long-term trends.

Given the uncertainty associated with the effects of the COVID-19 Pandemic, this report includes sensitivity analysis to assess the potential impact of deviations from the assumed long-term trends. For example, *2C. Maintaining standards of living in retirement*, and *4. Sustainability*, assess the effects of negative short-term shocks to wage growth and investment returns on outcomes for individuals and to the cost and performance of the system. The short-term effects of market volatility for people in or nearing retirement are explored in *2C. Maintaining standards of living in retirement*.

Topics not covered

A range of topics were not considered by the review. These included aspects of the retirement income system covered in detail in recent reviews and inquiries. For example, the Productivity Commission considered in detail the issues of superannuation fund performance and efficiency, as well as the competitiveness of the industry, in its report *Superannuation: Assessing Efficiency and Competitiveness*. That inquiry considered a range of competition, governance and regulatory issues, including the effects of underperformance and high fees on people's superannuation balances. While this review drew on the Productivity Commission's report, it did not consider in detail the material covered in that report. Similarly, the Australian Prudential Regulation Authority's (APRA) regulation of superannuation was covered in-depth in the 2019 *APRA Capability Review*. The conduct of superannuation trustees and the regulatory architecture of the superannuation system was covered by the 2019 *Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry*. Conditions for early release of superannuation were considered by the Treasury in the 2019 *Review of the early release of superannuation benefits*. The material covered in these reviews was not included in this review. The role of the retirement income system in delivering indirect macroeconomic outcomes such as increased national savings has not been considered. The role of insurance in superannuation was not considered as its benefits are predominantly paid to working-age people.

Acronyms and abbreviations

ABS	Australian Bureau of Statistics
APRA	Australian Prudential Regulation Authority
ASIC	Australian Securities and Investments Commission
ASFA	Association of Superannuation Funds of Australia
ASX	Australian Securities Exchange
ATO	Australian Taxation Office
AWOTE	average weekly ordinary time earnings
CPI	Consumer Price Index
EMORI	Excel Model of Retirement Income
FTB	Family Tax Benefit
GFC	Global Financial Crisis
GDP	Gross Domestic Product
HILDA	Household, Income and Labour Dynamics in Australia Survey
MARIA	Model of Australian Retirement Incomes and Assets
OECD	Organisation for Economic Co-operation and Development
RBA	Reserve Bank of Australia
SG	Superannuation Guarantee
SIH	Survey of Income and Housing
SMSF	Self-managed superannuation fund
SPRC	Social Policy Research Centre

Glossary

Aboriginal and Torres Strait Islander	A person of Aboriginal or Torres Strait Islander descent who identifies as Aboriginal, Torres Strait Islander, or both.
Age Pension	<p>A means-tested Commonwealth Government income support payment. To be eligible for the Age Pension, a person must be of Age Pension eligibility age or older and meet residency requirements.</p> <p>The amount of Age Pension an eligible person can receive is dependent on their personal income and assets. As at 1 May 2020, the maximum Age Pension an eligible person can receive per year is \$24,552 for singles and \$37,014 for couples.</p> <p>Further information relating to the Age Pension can be found in <i>1B. Design of Australia's retirement income system</i>.</p>
Age Pension eligibility age	<p>The age at which a person becomes eligible for the Age Pension. The Age Pension eligibility age for men and women was increased to 65 and 6 months on 1 July 2017. It is scheduled to increase by 6 months every 2 years until it reaches 67 years on 1 July 2023.</p> <p>Further information relating to the Age Pension eligibility age can be found in <i>1B. Design of Australia's retirement income system</i>.</p>
Assets test cut-off value	The maximum amount of assessable assets a person can hold before they are ineligible for the payment. A person who holds assessable assets above the cut-off value will be ineligible for the payment under the assets test.
Assets test free area	The maximum amount of assessable assets a person can hold before their payment is reduced. A person who holds assessable assets of less than or equal to the free area will be eligible for the maximum rate of the payment under the assets test.
Assets test taper rate	The amount a person's payment is reduced due to holding assessable assets above the assets test free area. Since 2017, the Age Pension taper rate reduces payments by \$3 a fortnight for every \$1,000 of assets above the assets test free area.
Average weekly earnings	The average weekly before-tax earnings of employees. Includes ordinary time earnings and overtime earnings. Estimates of average weekly earnings are derived by dividing estimates of weekly total earnings by estimates of numbers of employees.
Behavioural bias	Subconscious beliefs and behaviours that are commonly relied on when making a decision.

Cameo modelling/ Excel Model of Retirement Income (EMORI)	<p>Modelling of the outcomes a hypothetical person would likely receive based on a range of assumptions and factors. Cameo modelling shows how these factors affect likely outcomes. Cameo modelling for the review has used The Treasury's EMORI.</p> <p>Further detail of the specifics and methodology underpinning the review's use of cameo modelling and EMORI can be found in <i>Appendix 6A. Detailed modelling methods and assumptions.</i></p>
Carer Payment	<p>A means-tested Commonwealth Government income support payment for carers who because of the demands of their caring role, are unable to support themselves through substantial paid employment. The maximum rate of Carer Payment is the same as the maximum rate of Age Pension.</p>
Centrelink	<p>The Commonwealth Government agency that manages the administration and payment of income support payments and supplements, including the Age Pension.</p>
Commonwealth Rent Assistance	<p>A Commonwealth Government supplement to other income support payments for eligible people, including most age pensioners, who rent through the private market or community housing.</p> <p>Further information relating to Commonwealth Rent Assistance can be found in <i>2B. Policy scenario: Implications of increasing Commonwealth Rent Assistance.</i></p>
Community Development Program	<p>A Commonwealth Government-supported remote-area employment and community development program. The program has around 30,000 participants, the majority of whom are Aboriginal or Torres Strait Islander people.</p>
Consumer Price Index (CPI)	<p>An index that measures changes in retail prices of a constant basket of goods and services. It is used to track changes in prices for consumer goods and services. Commonly used as a measure for inflation in Australia.</p>
Contributions cap(s)	<p>Limits on the amount of money that can be contributed to a person's superannuation account in a given period.</p> <p>Further information relating to the contributions caps can be found in <i>1B. Design of Australia's retirement income system.</i></p>
Deeming rates	<p>Rates used to calculate the assumed income earned on an income support recipient's assets, including those of age pensioners, irrespective of the actual income earned on those assets.</p> <p>Assumed income based on these rates (deemed income) is used by Centrelink for means testing to calculate how much of a social security payment, including the Age Pension, a person is entitled to.</p> <p>Further information relating to deeming rates can be found in <i>1B. Design of Australia's retirement income system.</i></p>

Defined benefit (superannuation) scheme	A scheme in which the member is generally paid a defined amount in retirement based on certain factors (such as years of work and final salary). Usually paid by the member’s previous employer as a regular income for the duration of retirement.
Defined contribution (superannuation) scheme	A scheme in which the member is generally paid a defined contribution to their superannuation account by their employer for the duration of their employment with that employer.
Disability Support Pension	<p>A Commonwealth Government income support payment for people who are deemed unable to support themselves financially (through means testing) and have a permanent physical, intellectual or psychiatric impairment. The maximum rate of Disability Support Payment is the same as the maximum rate of Age Pension.</p> <p>Further information relating to the Disability Support Pension can be found in <i>3. Equity</i>.</p>
Discouraged job seeker	A person without employment who is otherwise available and willing to work but is not actively looking for work as they believe they will not find employment.
Division 293 tax	<p>An additional 15 per cent tax on contributions for people whose combined income and contributions exceed the prescribed threshold. Currently the threshold is \$250,000. This effectively increases the tax on contributions for these people to 30 per cent.</p> <p>Further information relating to Division 293 tax can be found in <i>1B. Design of Australia’s retirement income system</i>.</p>
Drawdown	The amount of wealth withdrawn from savings and assets (including by asset liquidation) to support living standards and consumption.
Effective marginal tax rate	The net effect of taxes imposed and income support removed when a person earns an additional dollar of income.
Equivalisation	<p>Equivalisation is a way to compare households of different sizes and compositions. Equivalisation accounts for larger households being able to share resources, such as housing space. It effectively converts outcomes for multi-person households to be equivalent to outcomes in single-person households.</p> <p>The report uses the ‘modified OECD’ equivalence scale. This scale determines a household weight with the first adult person counting as one, adds 0.5 for each additional person in the household aged 15 or over, and adds 0.3 for each person aged under 15. For example, a household of two adults and one child aged 10, with income of \$180,000, is assumed to have equivalent income to a single-person household with income of \$100,000 per year.</p>
Generational transfer cost	The annual cost per working-age person of the Age Pension and superannuation earnings tax concessions retirees receive.

Gig economy	The gig economy provides short-term, temporary or independent contracts through one or a variety of employers.
Gross Domestic Product (GDP)	The total value of goods and services produced in a country. Commonly used as measure of economic growth.
Household(s) aged 65 (and over)	Households with a reference person (the person in the household selected for the study or survey) aged 65 or over.
Imputed rent	The amount that a home owner saves in terms of lower housing costs by not paying rent for housing.
Income/Income distribution	<p>For the purpose of the review, unless otherwise defined, income is defined as a person’s average working-life income (wage deflated). For retirement cameo modelling undertaken for the review, income is disposable (after tax) unless explicitly stated otherwise.</p> <p>References to income distribution across working lives are determined using income data collected by the ATO.</p> <p>Lower-income/Lower-end of the income distribution — people earning in the bottom 30 per cent of the income distribution.</p> <p>Middle-income/Middle of the income distribution — people earning between 30 and 80 per cent of the income distribution.</p> <p>Higher-income/Higher-end of the income distribution — people earning in the top 20 per cent of the income distribution.</p> <p>Greater detail of the specifics and methodology underpinning the review’s definition of income can be found below in <i>Income groups in the review</i> and <i>Appendix 6A. Detailed modelling methods and assumptions</i>.</p>
Income test cut-off value	The maximum amount of assessable income a person can receive before they become ineligible for the payment. A person with assessable income above the cut-off value will be ineligible for the payment under the income test.
Income test free area	The maximum amount of assessable income a person can receive before their payment is reduced. A person with assessable income of less than or equal to the free area amount will be eligible for the maximum rate of the payment under the income test.
Intergenerational report	<p>The Commonwealth Government releases an Intergenerational Report every five years, which assesses the long-term fiscal sustainability of Government policies. Intergenerational Reports have previously been released in 2002, 2007, 2010 and 2015. The next report is due to be released in 2021.</p> <p>Intergenerational Reports provide a basis for considering the Commonwealth’s fiscal outlook over the next 40 years and identifying the implications of demographic, population and workforce participation changes over time.</p>
Investment risk	Investment risk relates to variability in returns and the possibility that returns on investments are below expectations.

JobSeeker Payment	<p>A means-tested Commonwealth Government income support payment for unemployed people who are generally of working age. The JobSeeker Payment replaced the payment formerly known as Newstart Allowance on 20 March 2020.</p> <p>Further information relating to the JobSeeker Payment can be found in <i>3. Equity</i>.</p>
Longevity risk	<p>The risk of a person outliving their savings.</p>
Low income superannuation tax offset	<p>A superannuation tax offset available to some lower-income earners that is usually paid directly into their superannuation accounts.</p> <p>Further information relating to the low income superannuation tax offset can be found in <i>1B. Design of Australia’s retirement income system</i> and <i>3. Equity</i>.</p>
Male total average weekly earnings	<p>The total average weekly before-tax earnings of male employees. Includes ordinary time earnings and overtime earnings. Age Pension rates are benchmarked to male total average weekly earnings.</p>
Means tested/testing	<p>Describes a government benefit where the rate is determined by a recipient’s income and/or wealth. Most income support payments are means tested.</p>
Minimum drawdown	<p>The minimum legislated amount that must be withdrawn from a superannuation account when it is in the retirement phase. The minimum drawdown rate is generally determined by the member’s age.</p> <p>Further information relating to the minimum drawdown and rates can be found in <i>1B. Design of Australia’s retirement income system</i> and <i>5A. Cohesion</i>.</p>
Not in the labour force	<p>A person who is not employed and is not looking for employment.</p>
Ordinary Time Earnings	<p>The earnings in respect of ordinary hours of work. It does not include overtime and other payments not related to a person’s ordinary hours.</p> <p>Refer to www.ato.gov.au/Business/Super-for-employers/How-much-to-pay/check-list--salary-or-wages-and-ordinary-time-earnings/ for a list of what is covered by ordinary time earnings.</p>
Pension Work Bonus	<p>The Work Bonus provides an incentive for eligible pensioners over Age Pension eligibility age to work by allowing them to keep more of their pension when they have income from work.</p> <p>The Work Bonus increases the amount an eligible pensioner can earn from work before it affects their pension rate. From 1 July 2019, the first \$300 of fortnightly income from work is not assessed and is not counted under the pension income test.</p>

Preservation age	The age at which a person can generally access their superannuation if they are retired. The preservation age is 58 as of 1 July 2020 and is scheduled to gradually increase to 60 from 1 July 2024. Further information relating to preservation age can be found in <i>1B. Design of Australia's retirement income system</i> .
Real wage growth	The amount by which wage growth exceeds CPI growth.
Retirement	
Early	In this report, early retirement is defined as retiring before Age Pension eligibility age.
Late	In this report, late retirement is defined as retiring after Age Pension eligibility age.
Retirement income	Income during retirement, including income streams and withdrawals from superannuation, the Age Pension, and drawdown of non-superannuation assets. Retirement income projections presented in the report generally relate to disposable (after-tax) income unless otherwise stated.
Retirement Income Covenant	The proposed Retirement Income Covenant to sit in the <i>Superannuation Industry (Supervision) Act 1993</i> , will require trustees to consider the needs and preferences of their members and ensure retirees have greater choice in how they take their superannuation benefits in retirement.
Seniors and pensioners tax offset	An income tax offset generally available to people who are eligible for the Age Pension. The offset effectively raises the tax-free threshold for these people.
Sequencing risk	The risk of lower returns and losses occurring when a person needs to withdraw their capital.
Sham contracting	Sham contracting is an illegal activity where a person working as an employee is told they are an independent contractor (when they are not) and may be required to have an ABN and submit invoices. Sham contracting may be done intentionally or carelessly by an employer. These types of arrangements are sometimes set up by employers who are seeking to avoid responsibility for paying legal entitlements to employees.
Single Touch Payroll	Compliance regulation set out by the ATO that requires employers to send employee payroll information including salary, wages, pay-as-you-go withholding and superannuation, to the ATO at the same time as their standard pay run.
Social transfers in kind	Subsidised or free goods and services provided by governments to households, such as aged care and health care.
Subjective wellbeing	A person's own evaluation of their life and wellbeing.

Superannuation coverage	A person is considered to have superannuation coverage if they have a superannuation balance above zero, receive regular income from superannuation, or have received a lump sum superannuation payment in the past two years.
Superannuation death benefits	A payment to a dependent beneficiary or to the trustee of a deceased estate after the member has died.
Superannuation Guarantee (SG)	<p>The minimum amount of money an employer must contribute to a superannuation fund on behalf of an eligible employee. Generally, an employee must meet the \$450-a-month threshold before SG is payable. SG is calculated as a percentage of the ordinary time earnings of the employee and is payable on top of the earnings of the employee.</p> <p>Currently, the SG rate is 9.5 per cent. It is scheduled to increase to 10 per cent as of 1 July 2021, gradually increasing to 12 per cent as of 1 July 2025.</p> <p>Further information relating to SG can be found in <i>1B. Design of Australia's retirement income system</i>.</p>
Superannuation Guarantee (SG) coverage	A person is considered to have SG coverage if they receive the SG from their employer.
Tax concessions	Reduction in the tax otherwise payable. The superannuation system provides two main tax concessions compared to personal income tax to encourage savings in superannuation.
- Contributions tax concessions	
- Earnings tax concessions	<p>Contributions made to superannuation below the concessional contributions cap are generally taxed at a flat 15 per cent instead of the person's marginal income tax rate. For people subject to Division 293 tax, the effective tax rate on their contributions is 30 per cent.</p> <p>Earnings on superannuation funds in accumulation-phase are taxed at a flat 15 per cent, instead of the person's marginal income tax rate. Earnings on superannuation funds are tax-free when they are in pension-phase, subject to the transfer balance cap. Funds over the Cap can stay in accumulation-phase and any earnings on those funds taxed at 15 per cent.</p> <p>Further information relating to tax concessions can be found in <i>1B. Design of Australia's retirement income system</i>.</p>
Total and permanent disability insurance	Insurance that pays a benefit if the policy holder becomes totally and permanently disabled.
Transfer balance cap	<p>A limit on how much superannuation can be transferred from accumulation-phase to tax-free pension-phase. The Cap is currently \$1.6 million.</p> <p>Further information relating to the transfer balance cap can be found in <i>1B. Design of Australia's retirement income system</i>.</p>

Widow Allowance	The Widow Allowance was paid to women who were no longer partnered, or who became separated, divorced or widowed after turning 40 years of age and who had little or no recent workforce experience. New claims for the Widow Allowance closed on 1 July 2018.
Workers' compensation schemes	A compulsory statutory form of insurance for all employers that provides a benefit to workers if they suffer a work-related injury or disease.
\$450-a-month threshold	<p>Where an employee is paid \$450 or more (before tax) in a calendar month by a single employer, the SG must be paid on top of their wages.</p> <p>Further information relating to the \$450-a-month threshold can be found in <i>1B. Design of Australia's retirement income system</i> and <i>3D. SG coverage</i>.</p>

Income groups in the review

The review uses income groups to discuss how the retirement income system delivers different outcomes for certain cohorts. Lower-income earners are defined as those in the bottom 30 per cent of all earners, higher-income earners in the top 20 per cent and middle-income earners are in between.

These groups are used for explanatory purposes. They are not intended to be value judgements about what constitutes a 'high' or 'low' income. Lower-income earners have their retirement needs met by the Age Pension (2A. *Achieving a minimum standard of living in retirement*), and the threshold for higher-income earners is the point where, on average, people start to make significant voluntary savings.

Incomes for each group from the cameo modelling are included in Table 1. These incomes are higher than other series, such as the ABS 'Characteristics of employment', as they are based on income tax return data from the ATO (ABS, 2019f). This data may not include some people such as those who earn incomes below the tax-free threshold.

The median earner in review modelling has an average income over their lifetime of \$68,400, similar to average earnings (ABS, 2020d) and to the average income of a plumber or teacher (ATO, 2019e).

Lower-income earners have average annual earnings over their working life of \$48,000 and below. This income is broadly comparable to the average wages of hospitality workers and carers in the aged or disability sectors.

Higher-income earners have average annual earnings over their working life of \$112,900 and above. Occupations with average incomes in the upper end of this range include dentists, lawyers, and finance managers.

Table 1. Average working-life taxable income by income percentile

Income group	Percentile	Gross income (\$)
Lower-income earners	10	22,100
	20	36,300
	30	48,000
Middle-income earners	40	58,100
	50	68,400
	60	80,200
	70	94,500
Higher-income earners	80	112,900
	90	144,900

Note: Values are in 2019-20 dollars, deflated by average weekly earnings and rounded to the nearest \$100. Income is average earnings for the whole of working life (ages 27-67) before tax. Incomes differ from the working-life income target used for replacement rates, which is based on average annual disposable income in the last 10 years of working-life. For more information on how the review has modelled working-life income see *Appendix 6A. Detailed modelling methods and assumptions*. Source: Cameo modelling undertaken for the review.