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Introducing the Grattan Retirement Incomes Model (GRIM)

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(with John Daley, CEO, and Trent Wiltshire, Associate)
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Introducing the Grattan Retirement Incomes Model (GRIM)

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Motivation for GRIM: will retirement incomes be adequate in future?

- Past approaches have tended to: use the ASFA comfortable standard; or ignore non-super savings

The Grattan Retirement Income Model

- Cameo model projecting future retirement incomes of 30 year olds in 2015
- Key features: Pachinko machine; wage deflation; inclusion of non-super savings; retirees' draw down behaviour provides for longevity insurance

Are retirement incomes adequate?

- Most retirees can expect a comfortable retirement in future, while retirees today are less financially stressed than workers
- But renting retirees are struggling, and there will be more in the future

There is little rationale for raising the Super Guarantee to 12 per cent

- Raising the SG lowers working incomes; doesn't help low-income earners
- And there is a better way to boost retirement incomes for middle-earners

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What should our retirement incomes system aim to achieve?

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- Ensure some *minimum* standard of living in retirement
- Facilitate lifetime consumption smoothing
- Not about boosting inheritances
- Be fiscally sustainable
- Maintain incentives to work, save and invest
- Manage risks: investment; longevity etc.

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GRIM is a 'cameo' model that takes a representative individual from a starting age of 30 in 2015-16 and projects their retirement income when they retire at 70

Earnings

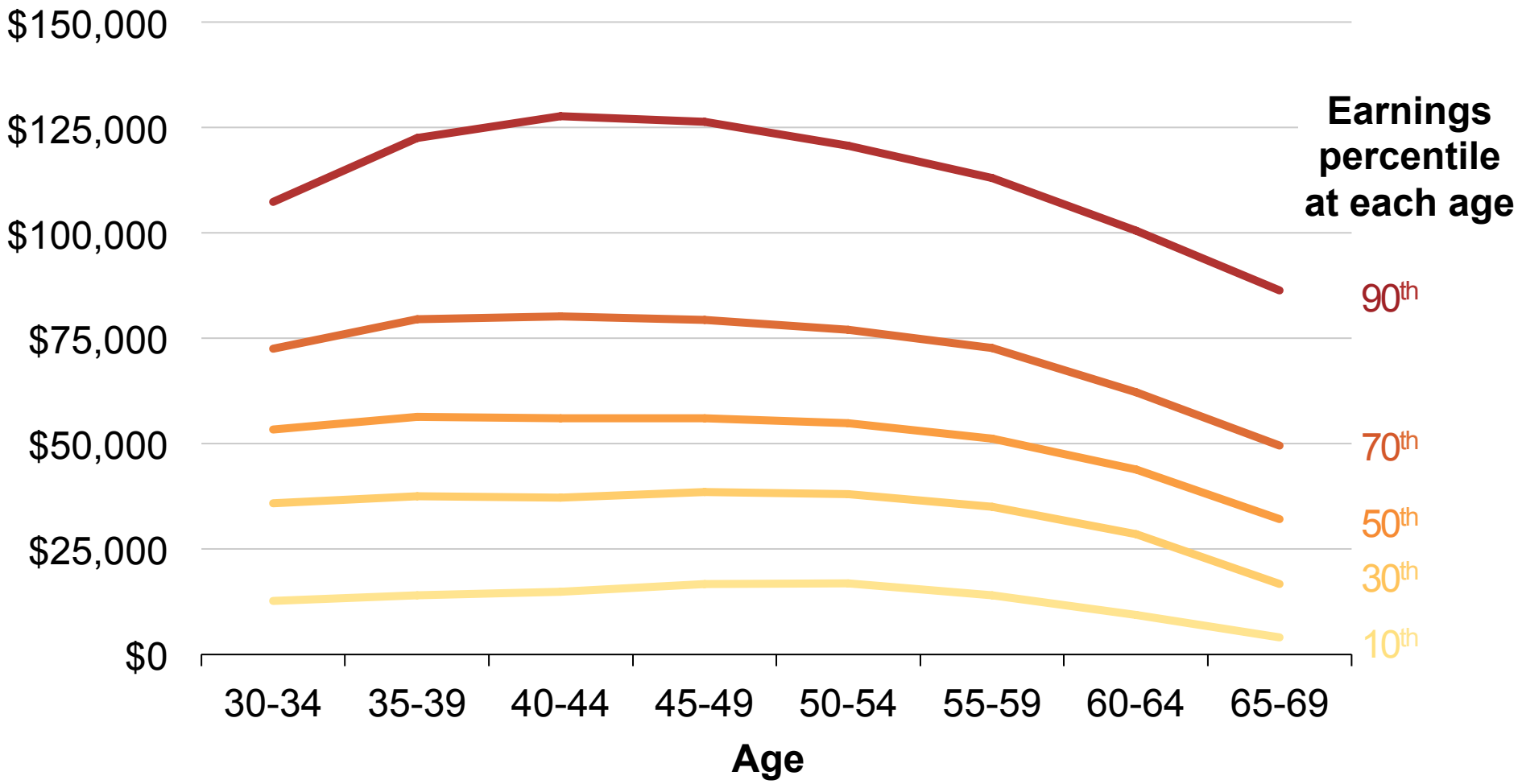
- Age-wise earnings distribution drawn from ATO 2 per cent sample file for 2013-14
- Wages grow at 3.5 per cent in the long-run

Super contributions

- Starting super balance of $0 at age 30
- The individual makes compulsory super contributions:
  - The Superannuation Guarantee is 9.5 per cent in 2015-16, and rises to 12 per cent by 2025-26, as legislated
  - The effective SG rate is the observed effective rate in the sample file – lower than legislated rate (i.e. super is not paid on overtime etc.)
- The individual also makes voluntary pre-tax super contributions based on observed values from the ATO 2013-14 sample file (less 30% fall in voluntary savings for future increases in the SG rate, as per Connolly (2007))

A sample of the age-wise earnings distribution

Salary income at different ages, $2013-14



Source: Grattan analysis of ATO Tax Statistics 2013-14

The Grattan Retirement Income Model (GRIM)

Super earnings

- Pre-tax, after fees, earnings during accumulation phase = 6.5 per cent
- Pre-tax, after fees, earnings during retirement phase = 5.5 per cent

- Variable fees are implicit in the assumed (net) rate of return
- Annual fixed fees of $320 ($2015-16, indexed)

- Effective tax rate on superannuation earnings (during accumulation phase) is 8 per cent (as per Grattan's 2015 report, *Super Tax Targeting*)

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Retirement

- The retirement age increases from 65 in 2015-16 to 67 in 2023, and then increases by six months every two years to reach 70 in 2035-36
- The person qualifies for the Age Pension if they pass the means tests (assuming that are homeowners).
- Maximum amount of super is transferred to a retirement account, subject to transfer balance cap
- Draws down an indexed pension from total retirement savings
- Sets aside 10 per cent of savings at retirement as longevity insurance, and does not draw down on their home's equity
- Death at age 92

Model output

- Net lifetime replacement rate =

$$\frac{\text{Average disposable income during retirement}}{\text{Average disposable income during working life}}$$

- **Alternative output** is replacement rates calculated using income one or five years either side of retirement

The Grattan Retirement Income Model (GRIM) – key features

Model design options	Option chosen / output
1. Earnings by age and income – accounting for the likelihood of moving up and down the earnings distribution	GRIM incorporates a 'transition matrix', modelled from HILDA data, which flattens the lifetime income distribution
2. Wage vs CPI deflation of future income	Strong case for CPI deflation, but wage deflation used in base case
3. Treatment of non-super savings	GRIM includes non-super savings

GRIM accounts for the likelihood of moving up and down the earnings distribution using a 'transition matrix'

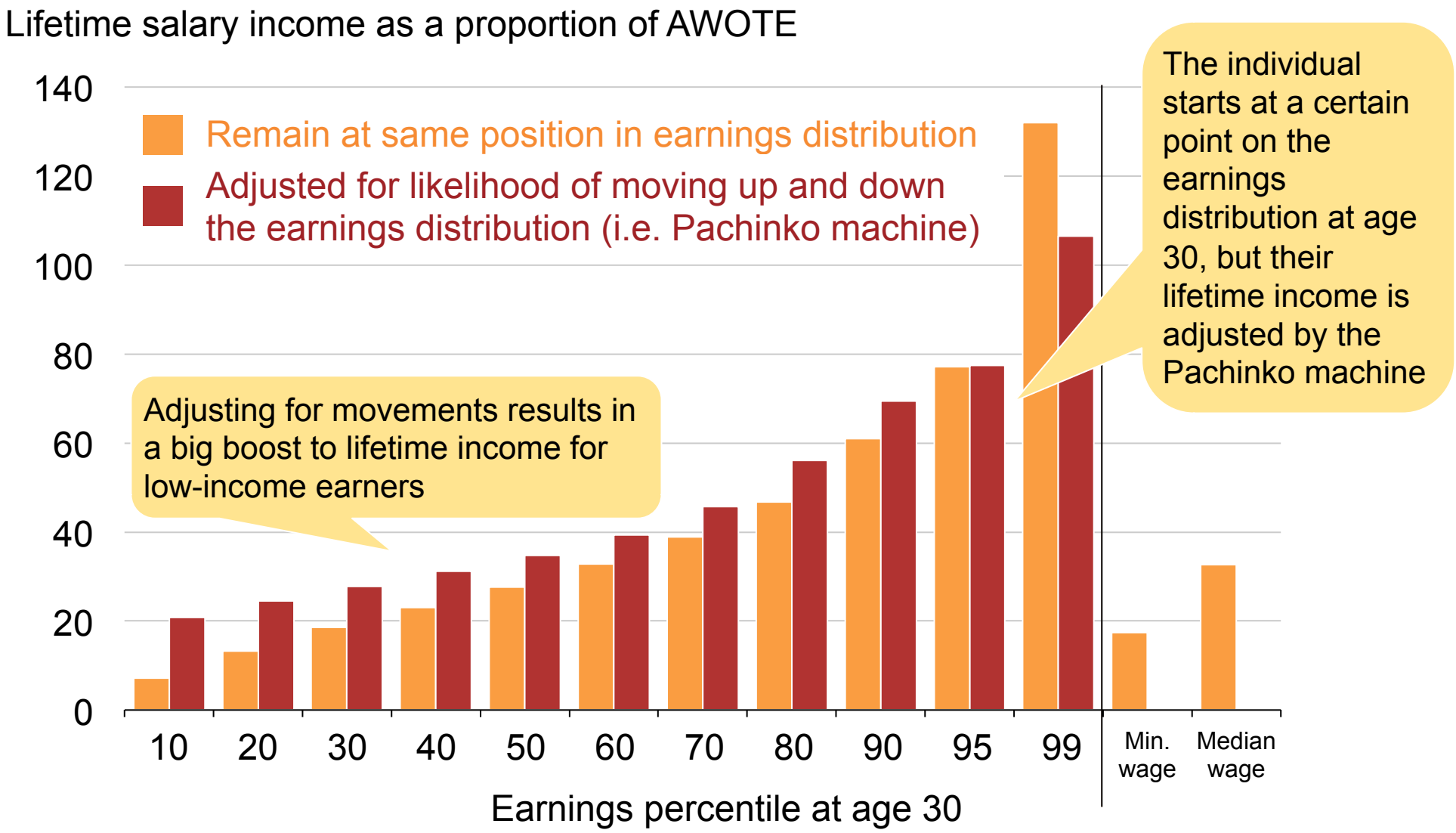
"New Gin All-15" Pachinko Machine, 1976, Japan

- Using HILDA we develop a transition matrix (or 'Pachinko machine'), which models the probability that an individual will move up or down the earnings distribution over their life

- The transition matrix adjusts for the fact that an individual is unlikely to stay in the same place in the earnings distribution their whole working life, as individuals:
  - Gain/lose skills
  - Transition between part-time and full-time work

- Career breaks are captured by people starting work at age 30

Accounting for these movements compresses the lifetime earnings distribution



Notes: Lifetime income adjusted using a transition matrix which reflects the likelihood of moving up and down the income distribution of the course of a person's working life .
Source: ABS Survey of Income and Housing; Grattan analysis

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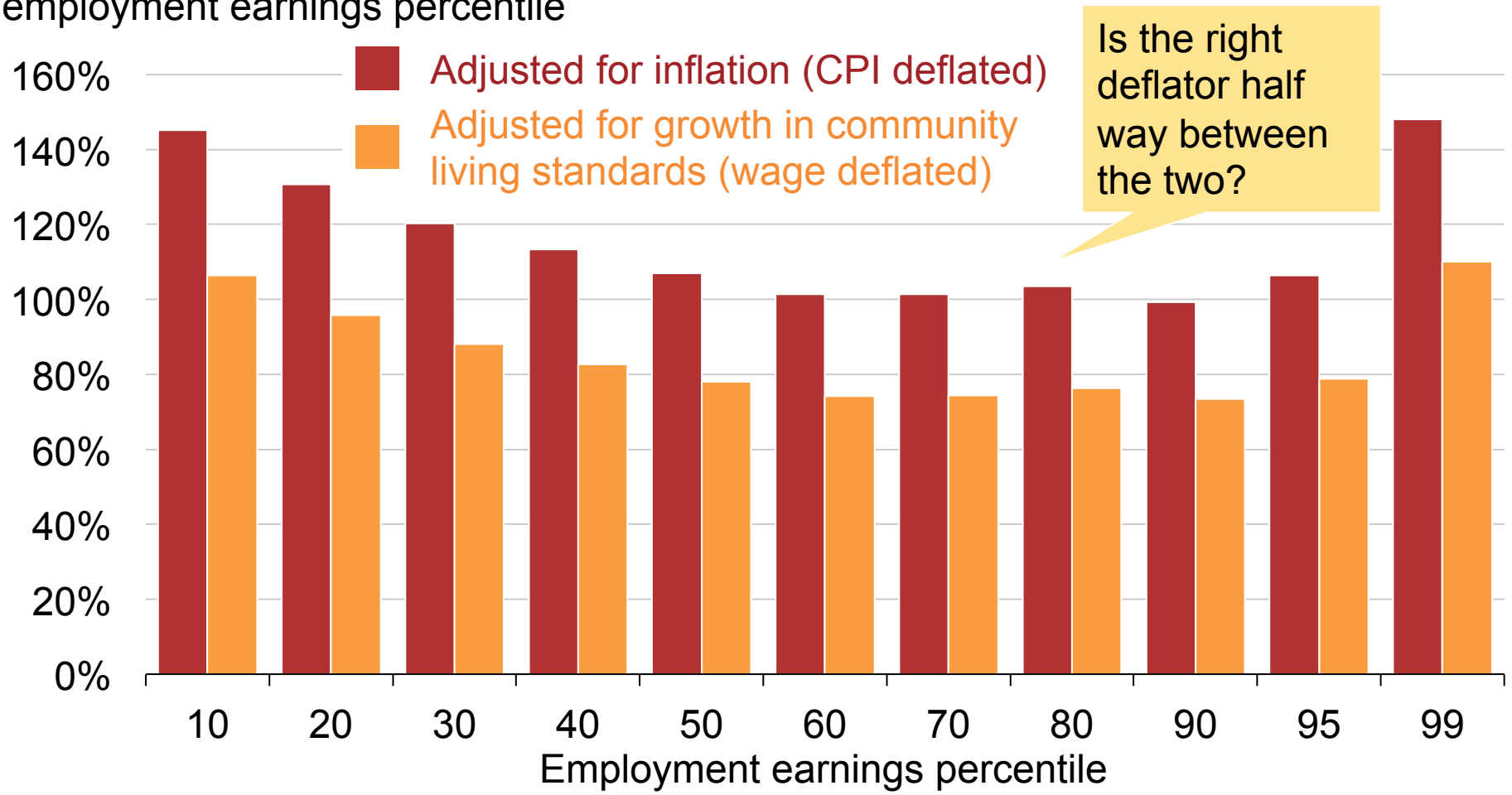
Replacement rates are higher when deflating by CPI

Replacement rates (income in retirement compared to wages when working), by employment earnings percentile



Notes: Results from modelling the retirement income of a person born in 1985, who works uninterrupted from 30 to 70, and dies at age 92. Superannuation and pension policy is as legislated (Super Guarantee to rise to 12 per cent by 2025-26). Includes savings outside super. Employment earnings adjusted to account for movements up and down the earnings distribution. Retirement savings drawn down so that a small bequest is left in addition to the home.

Source: Grattan Retirement Incomes Model

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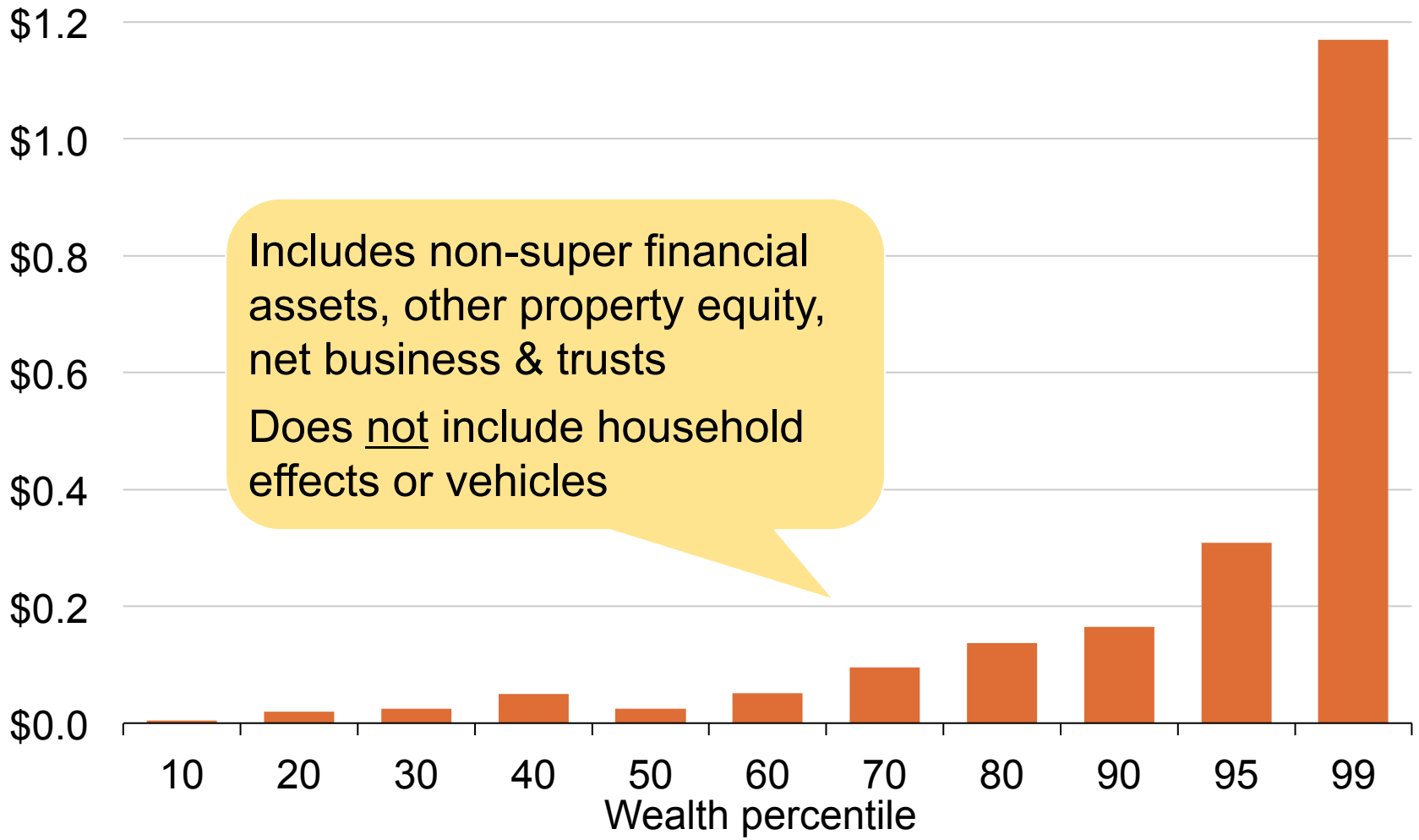
Non-super savings are substantial for wealthier individuals

Non-super assets for individuals aged 60-64, by wealth percentile, $2013-14 millions



Notes: Includes non-super financial assets, other property equity and net business and trusts. Average of five percentiles around each wealth percentile shown. Value of investment property and financial assets are only available at the household level so is apportioned equally to every adult member of the household.

Source: ABS Survey of Income and Housing; Grattan analysis

Replacement rates are higher once non-super savings are included

Replacement rates (income in retirement compared to wages when working), by employment earnings percentile, wage deflated

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The recommended benchmark replacement rate is around 70 per cent of pre-retirement earnings

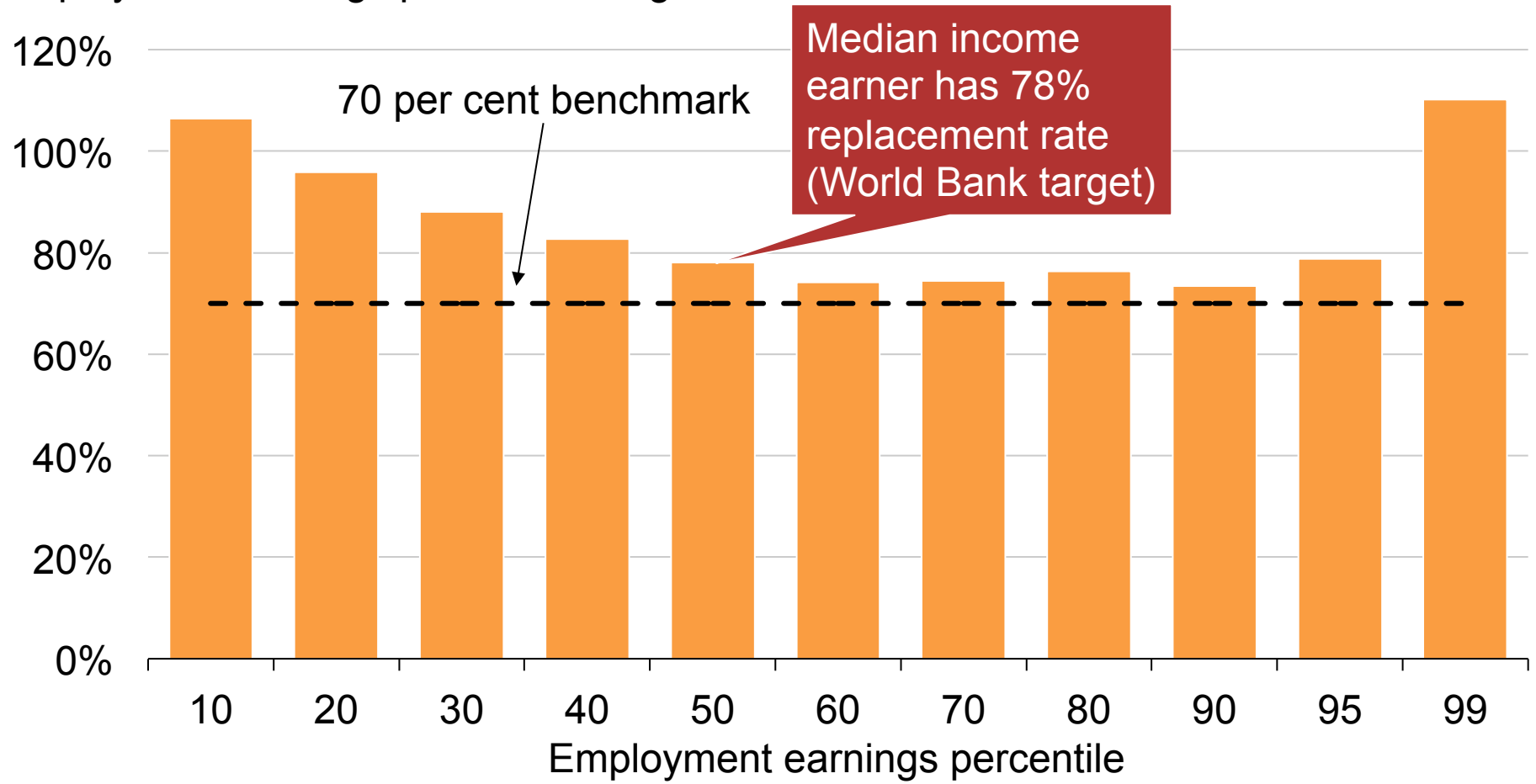
Target replacement rate for median/average income earner

Institution	Benchmark
OECD	70 per cent of net final earnings
World Bank	78 per cent of net lifetime earnings
Melbourne Mercer Global Pension Index	70 per cent – 100 per cent of median net lifetime earnings

Notes: “Net lifetime earnings” refers to the ratio of disposable income (after tax and transfers) across retirement compared to net lifetime earnings pre-retirement. “Gross lifetime earnings” is lifetime pre-tax income but including transfers for both working life and retirement. Both the OECD an the Mercer Global Pension Index calculate replacement rates including income from government pensions and compulsory superannuation contributions, but excluding voluntary super contributions since less than 30 per cent of Australians make voluntary contributions and non-super savings The average net lifetime replacement rate across OECD countries for a median income earner is 66 per cent. The Mercer Global Pension Index gives full marks to retirement income systems that deliver a replacement rate of between 70 to 100 per cent of net lifetime earnings. The World Bank notes a guideline target replacement rate for middle income earners in mandatory schemes that can be expressed as either 78 per cent of net average lifetime earnings; 60 per cent of gross average lifetime earnings; 53 per cent of the net final year earnings; or 42 per cent of the gross final year earnings
Source: OECD (2017b); World Bank (1994); Mercer (2017)

GRIM predicts that future replacement rates will meet recognised benchmarks

Replacement rates (income in retirement compared to wages when working), by employment earnings percentile, wage deflated



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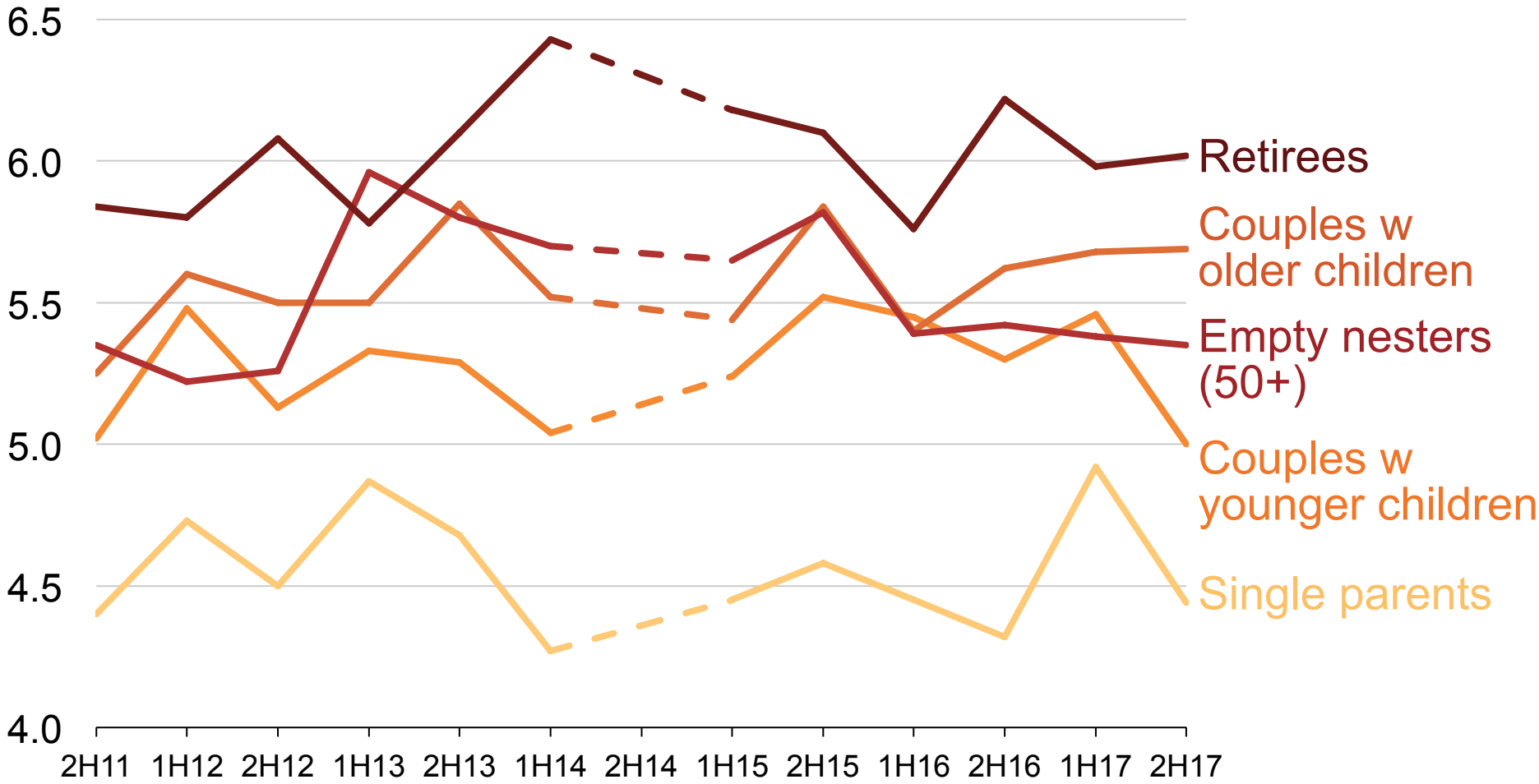
Source: Grattan Retirement Incomes Model

Existing retirees feel less stressed on subjective measures of financial wellbeing

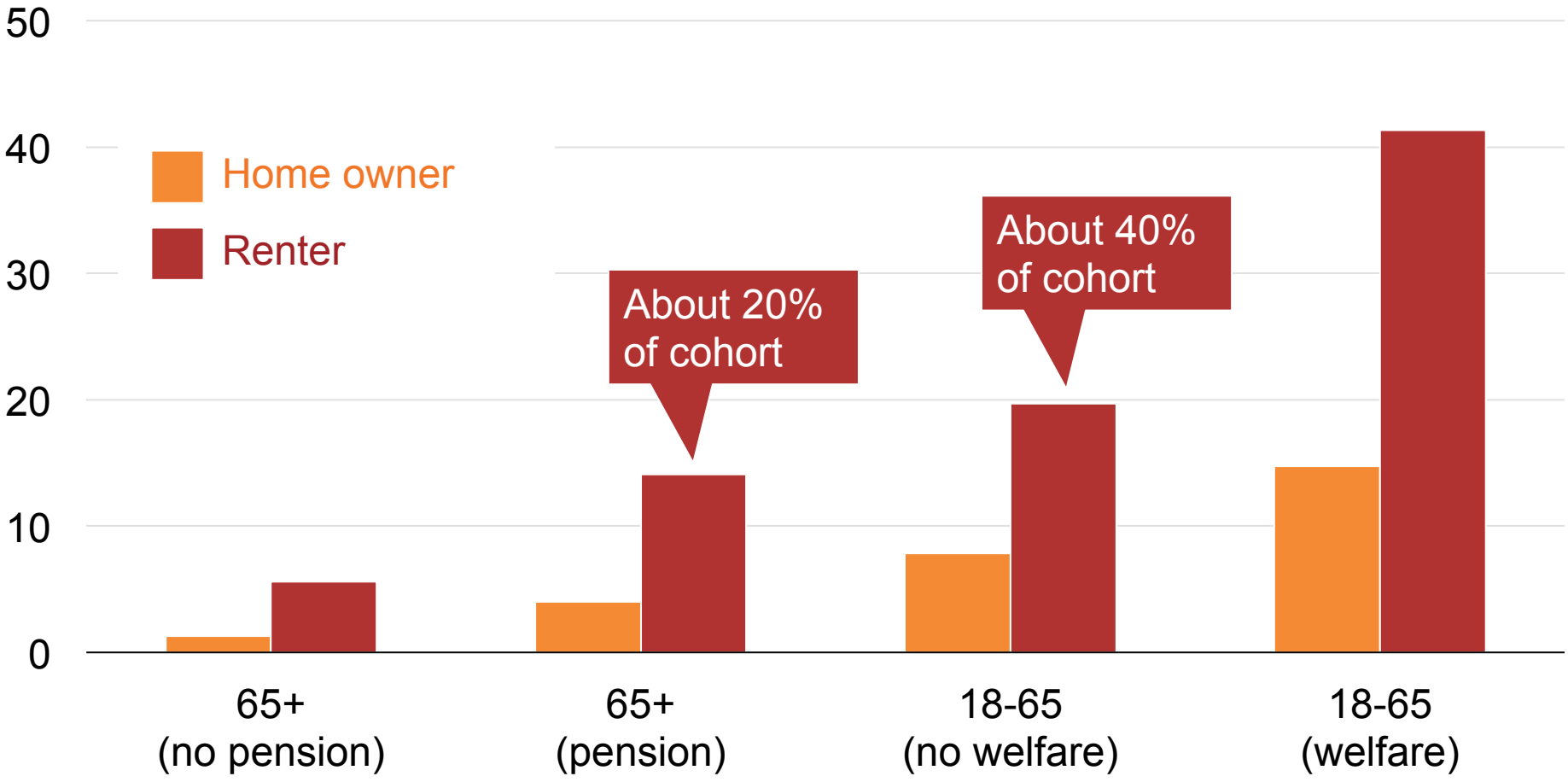
Self-assessed financial comfort



Notes: Excludes anomalous Dec 2014 survey
Sources: Members equity, *Financial comfort survey*

Retirees that don't own their homes are at much higher risk of financial stress…

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



Notes: Financial stress defined as money shortage leading to 1) skipped meals; 2) not heating home; 3) failing to pay gas, electricity or telephone bills on time; or 4) failing to pay registration insurance on time. 'Pension' and 'welfare' includes all those receiving cash benefits of more than $100 per week
Sources: ABS Household Expenditure Survey 2015-16, Grattan analysis.

… and more retirees will be renting in the future

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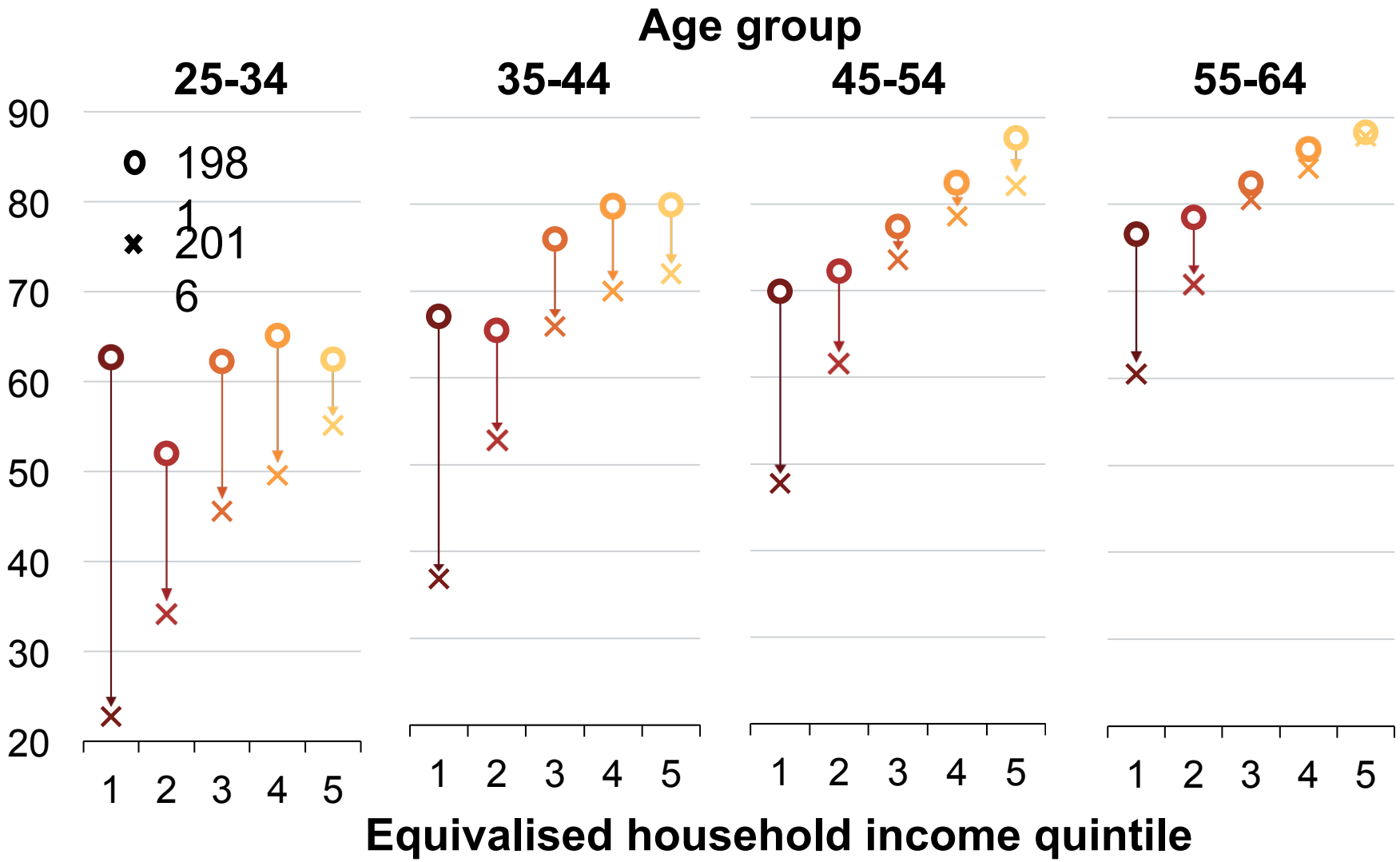
Home ownership rates by age and income, 1981 and 2016



Source: Census; Burke et al 2014; ABS.

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The Super Guarantee is legislated to increase to 12 per cent by July 2025

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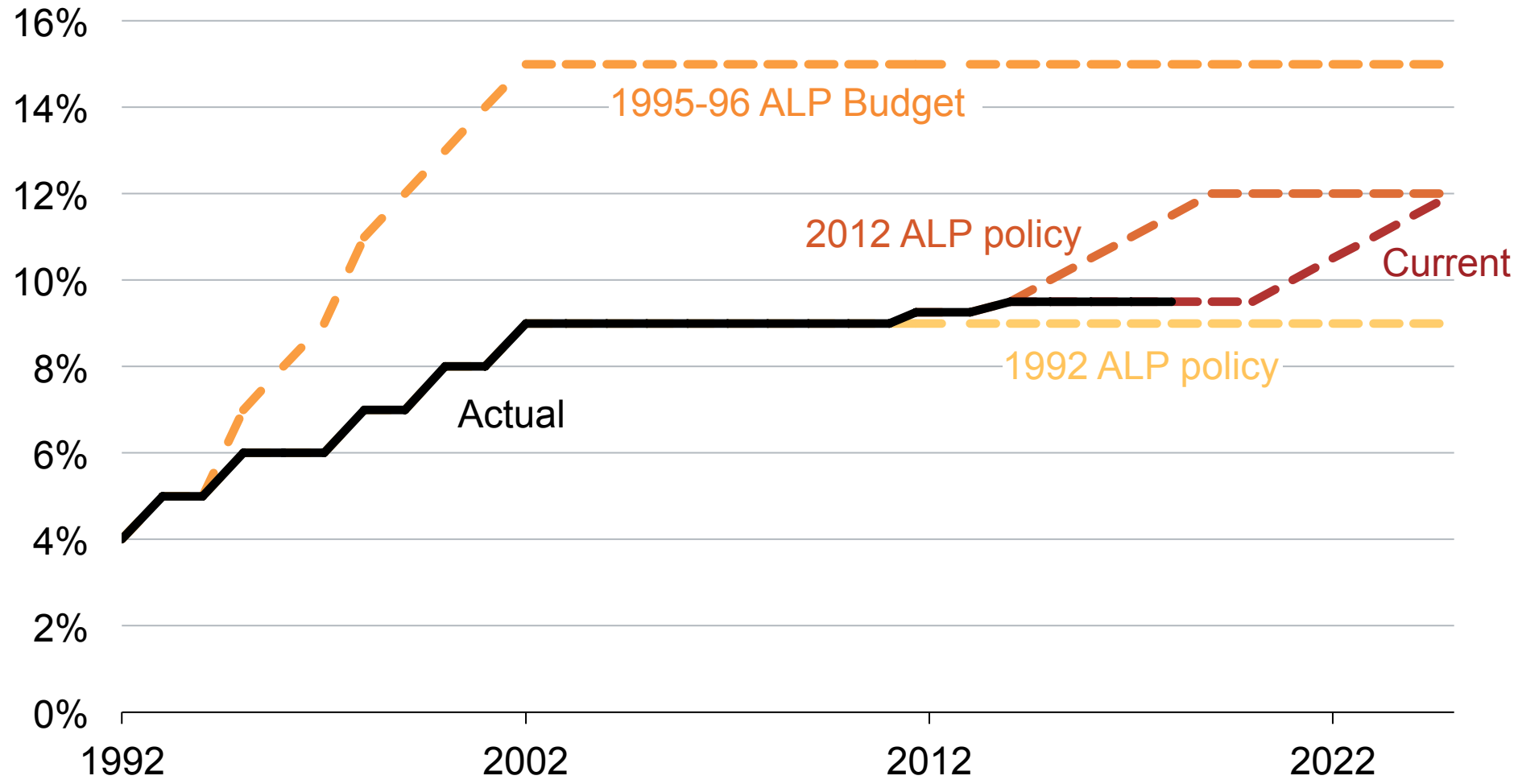
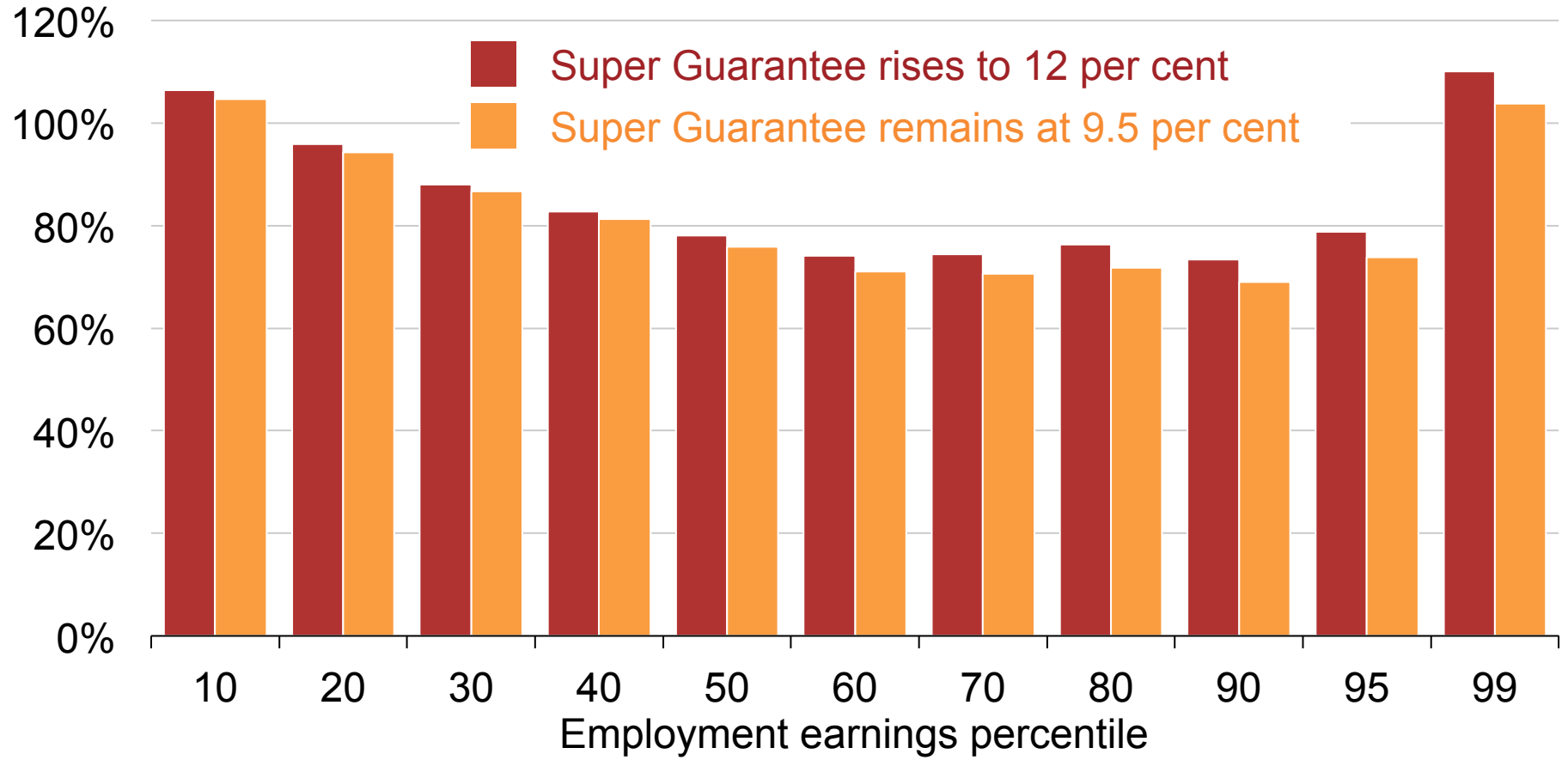
Super Guarantee, actual and proposed



Notes: The ALP's current position on the Super Guarantee increase trajectory is uncertain, given that their 2012 proposal is now obsolete. The party platform simply states an intention to 'fast-track' the increase in a 'prudent' timeframe.
Sources: Superannuation Guarantee (Administration) Act 1992 as amended; 1995-96 Budget speech to Parliament; ALP 2015

Increasing the Super Guarantee helps wealthier retirees more

Replacement rates (income in retirement compared to wages when working), by employment earnings percentile, wage deflated



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Source: Grattan Retirement Incomes Model

Retirement incomes for low-income earners *barely increase* when the SG rises to 12 per cent

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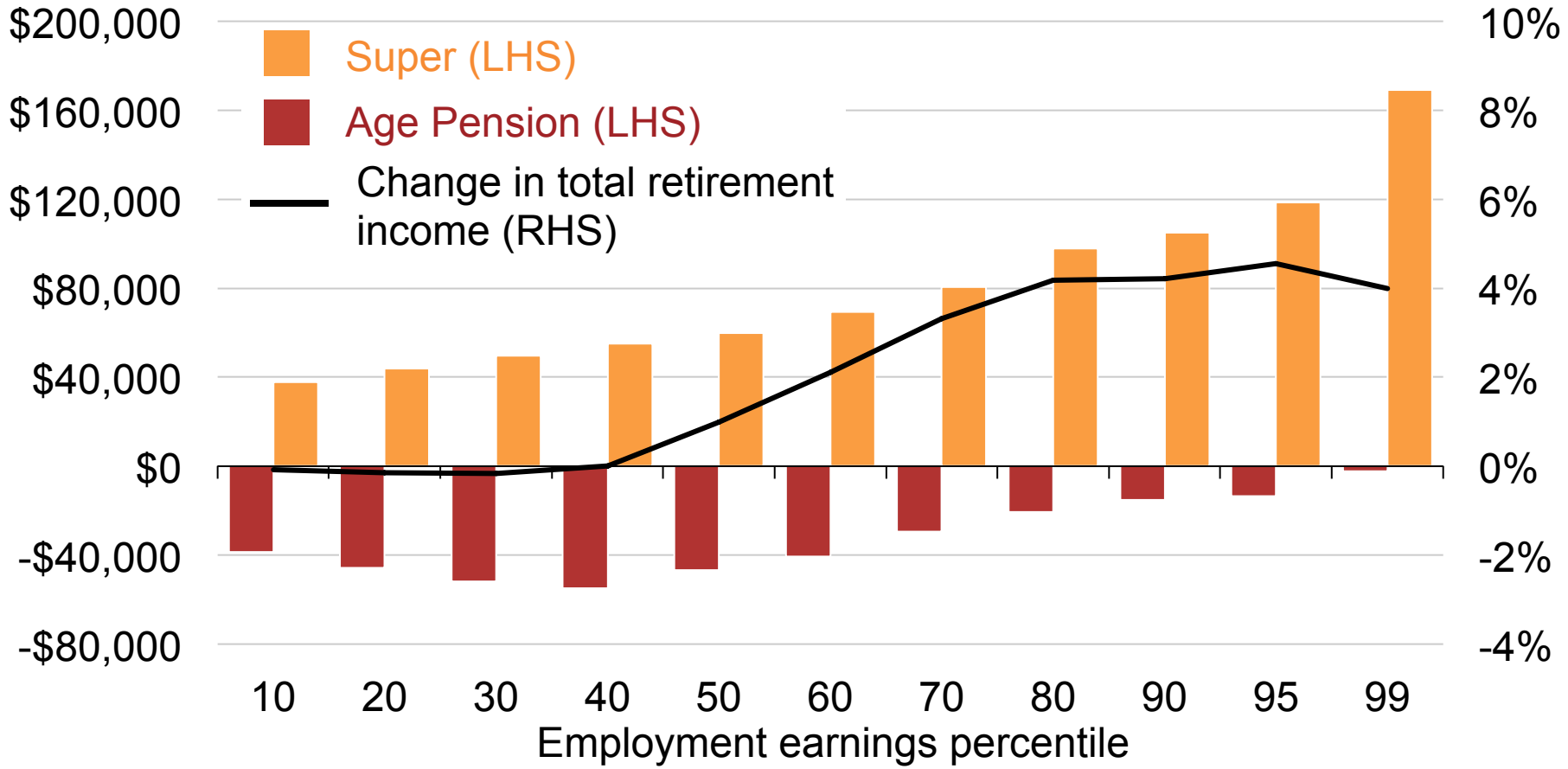
Change in income over 23 years of retirement ($2015-16, CPI deflated) if the Super Guarantee increases to 12 per cent compared to remaining at 9.5 per cent



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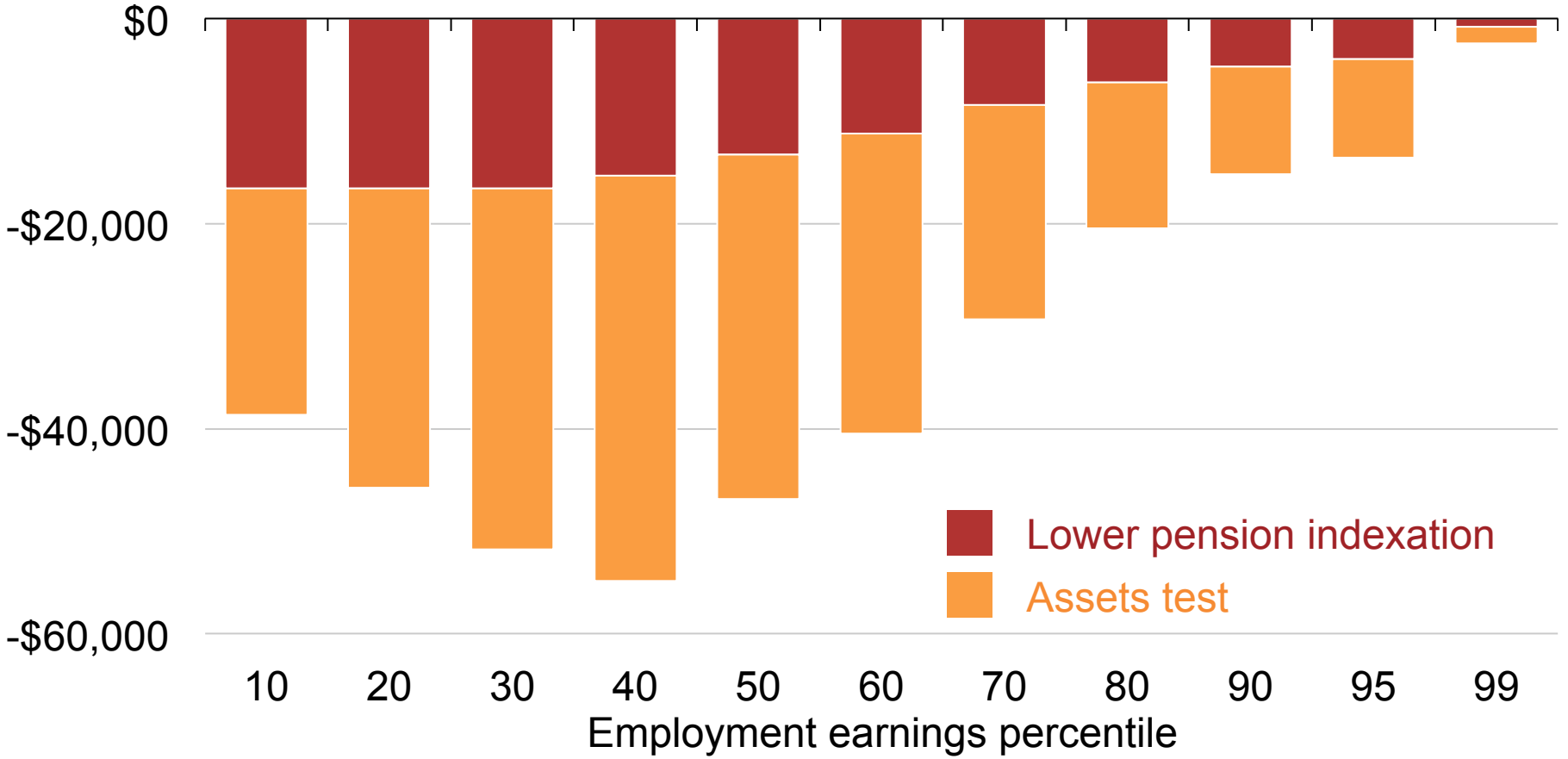
Lower pension indexation and the assets test combine to reduce Age Pension income if the Super Guarantee rises

Change in pension income over 23 years of retirement ($2015-16, CPI deflated) if the Super Guarantee increases to 12 per cent compared to remaining at 9.5 per cent



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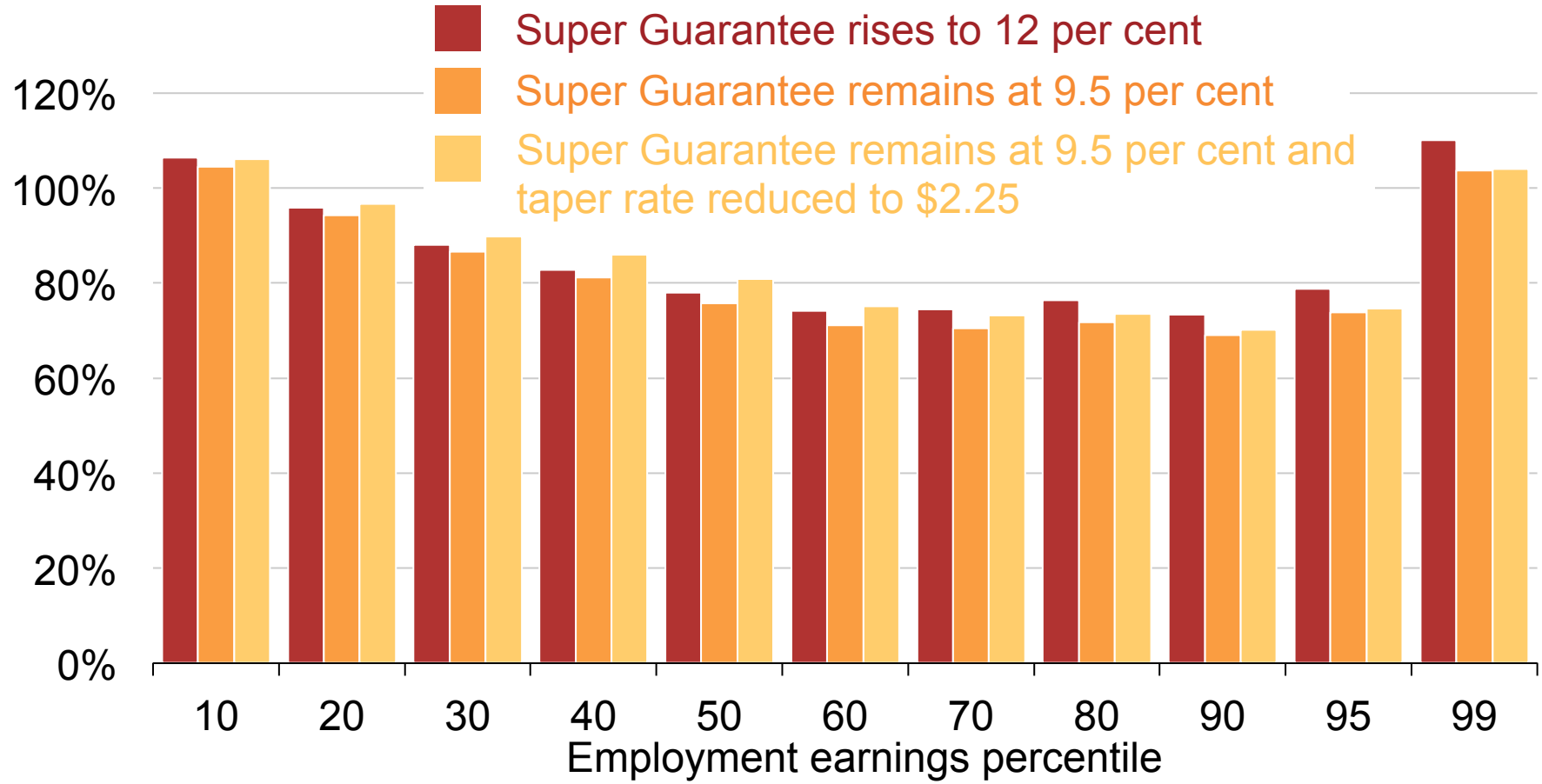
An alternative to raising the SG: restoring the Age Pension assets test taper to $2.25 per $1,000 in assets

Replacement rates (income in retirement compared to wages when working), by employment earnings percentile, wage deflated



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