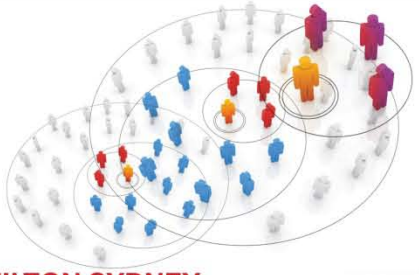
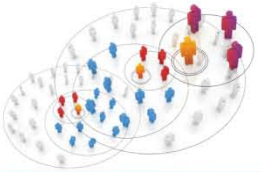
Institute of Actuaries of Australia
BIENNIAL CONVENTION 2011
BEYOND THE MANDATE
10 – 13 APRIL 2011 • HILTON SYDNEY



New Treasury Stochastic Modelling of Australian Retirement Incomes

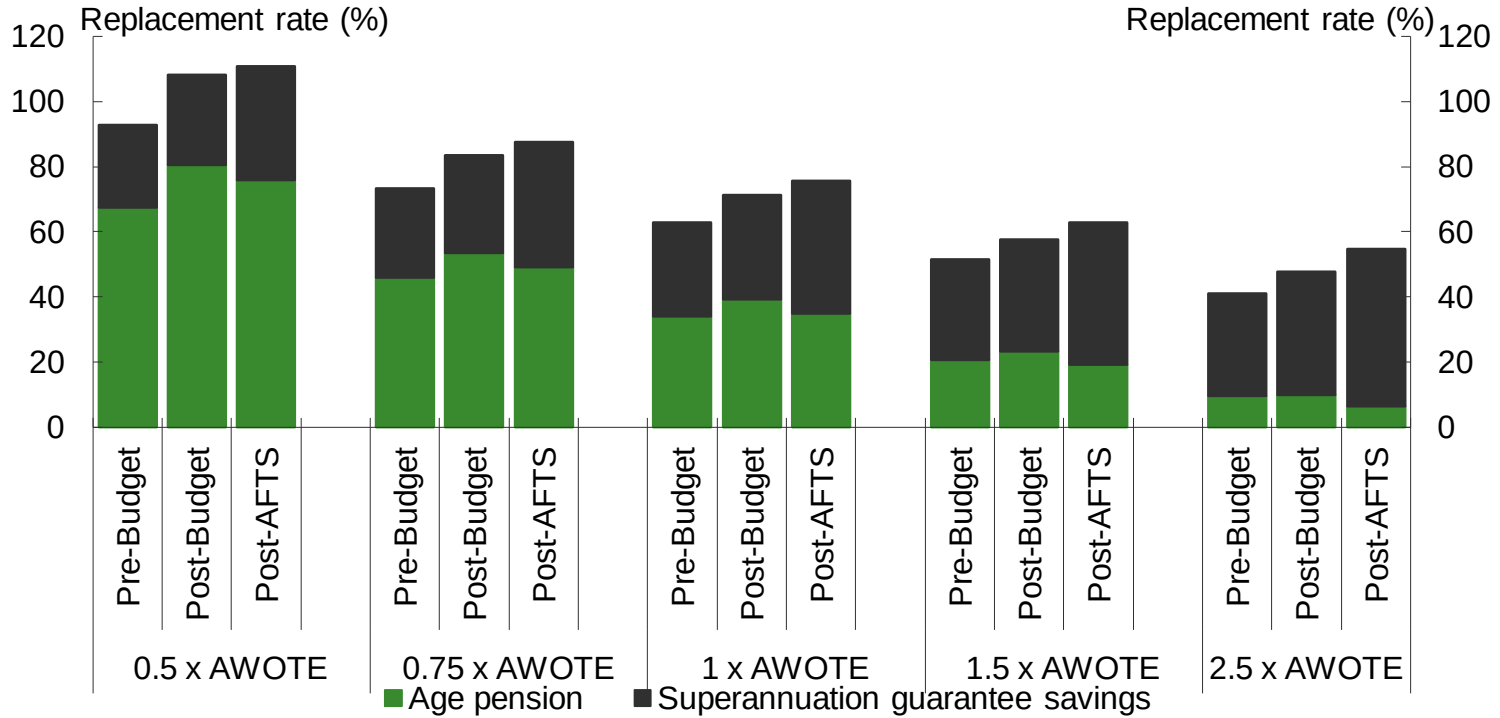
Brendan Price and Albert Suryadi



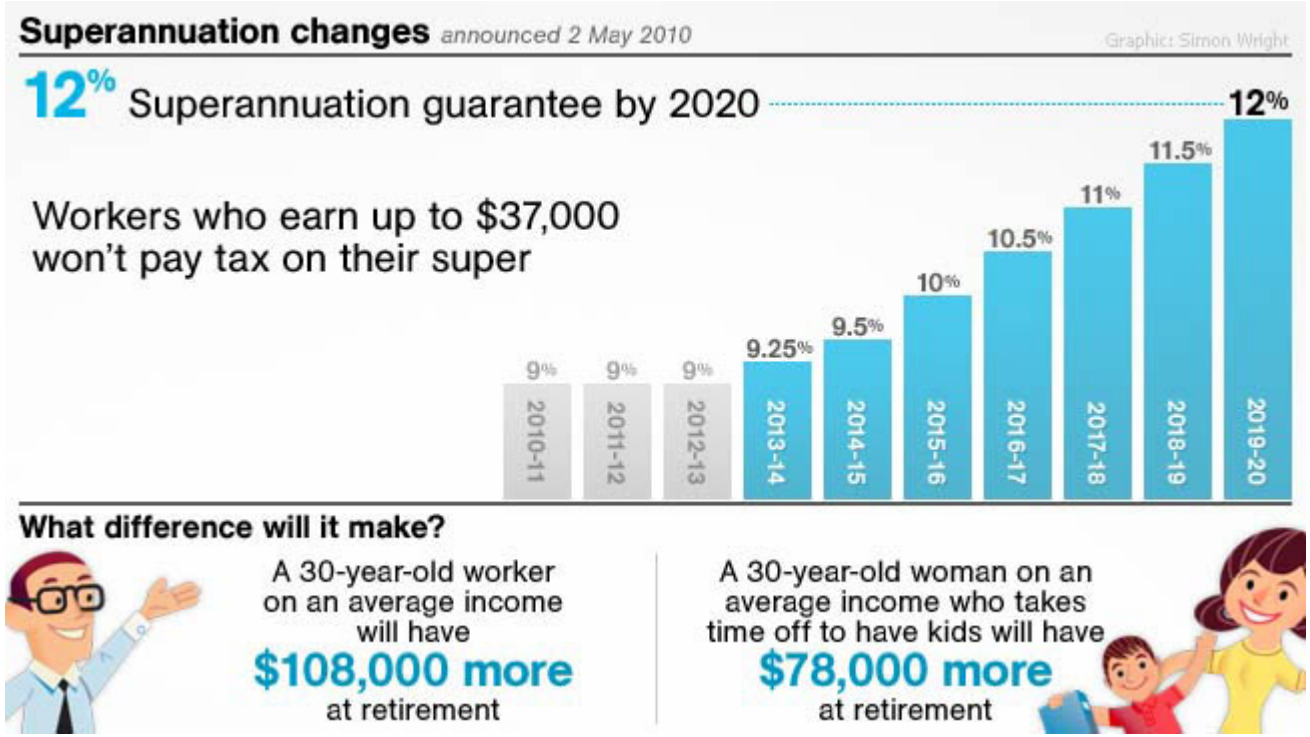
RIMHYPO

- Steps hypothetical individuals or couples through life
- Applies the ‘rules’ of the superannuation, tax and social security systems, and calculates financial outcomes

RIMHYPO in action

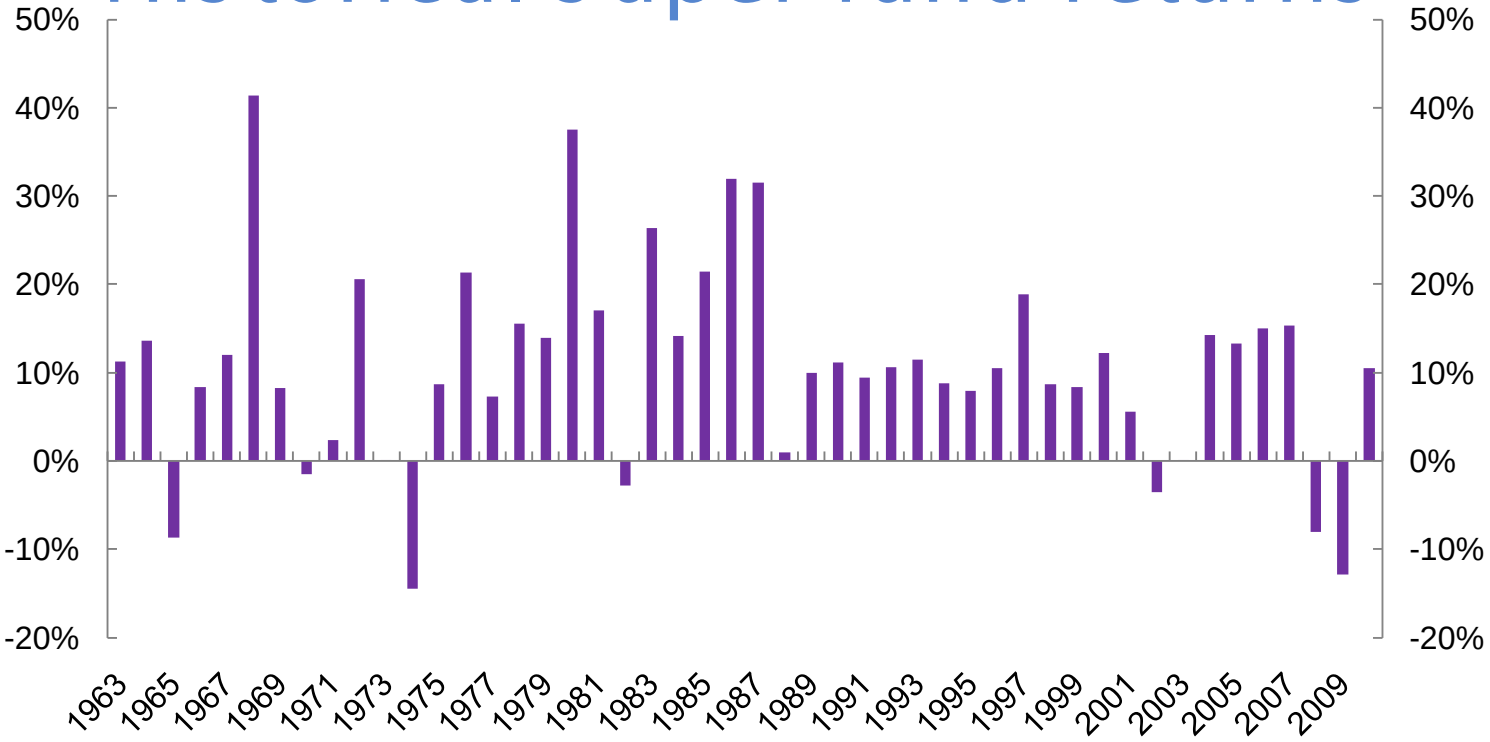


RIMHYPO in action

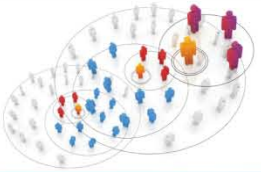


From news.com.au

Historical super fund returns

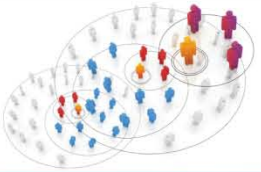


Source: ASFA



Wilkie framework

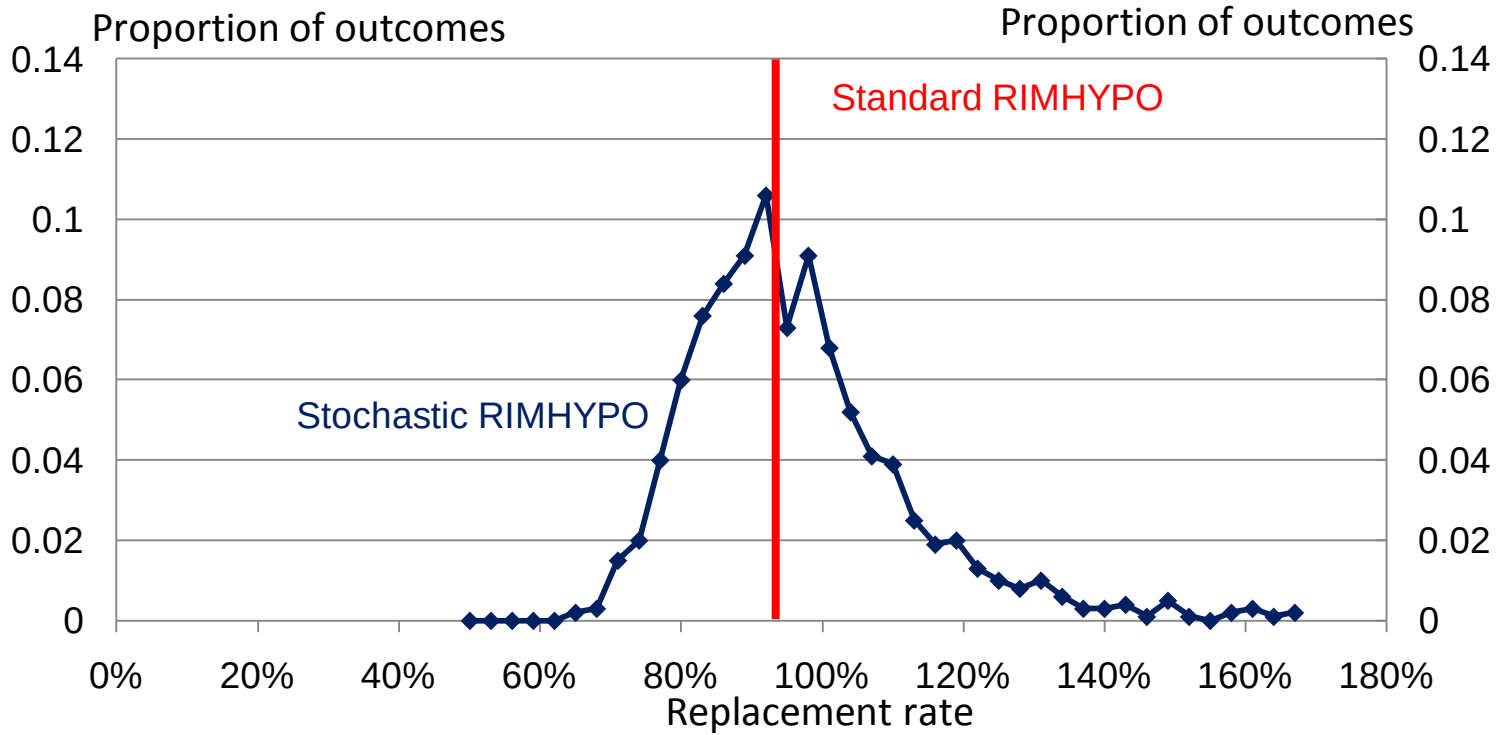
- 'Cascading' structure - inflation modelled first
- Margins over inflation are used to capture correlation between different series
- Lags are used to capture cycles
- Parameterisation by Butt & Deng (2010) used



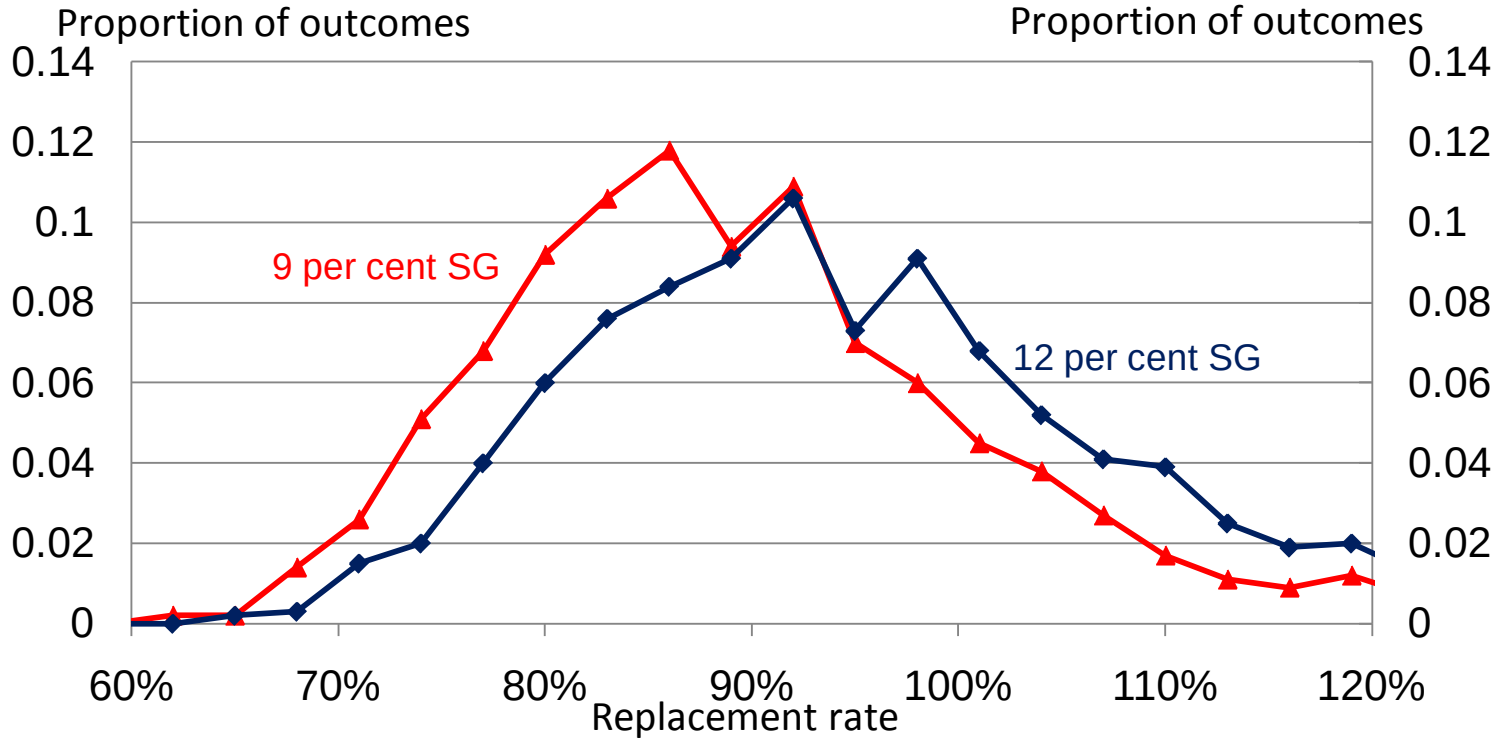
After adjustments

	Mean real growth	Standard deviation	Median real growth	Nominal mean (2.5% CPI)
Wages	1.61%	0.47	1.60%	4.15%
Defensive assets	1.65%	0.88	1.65%	4.19%
Growth assets	5.04%	2.25	5.05%	7.67%

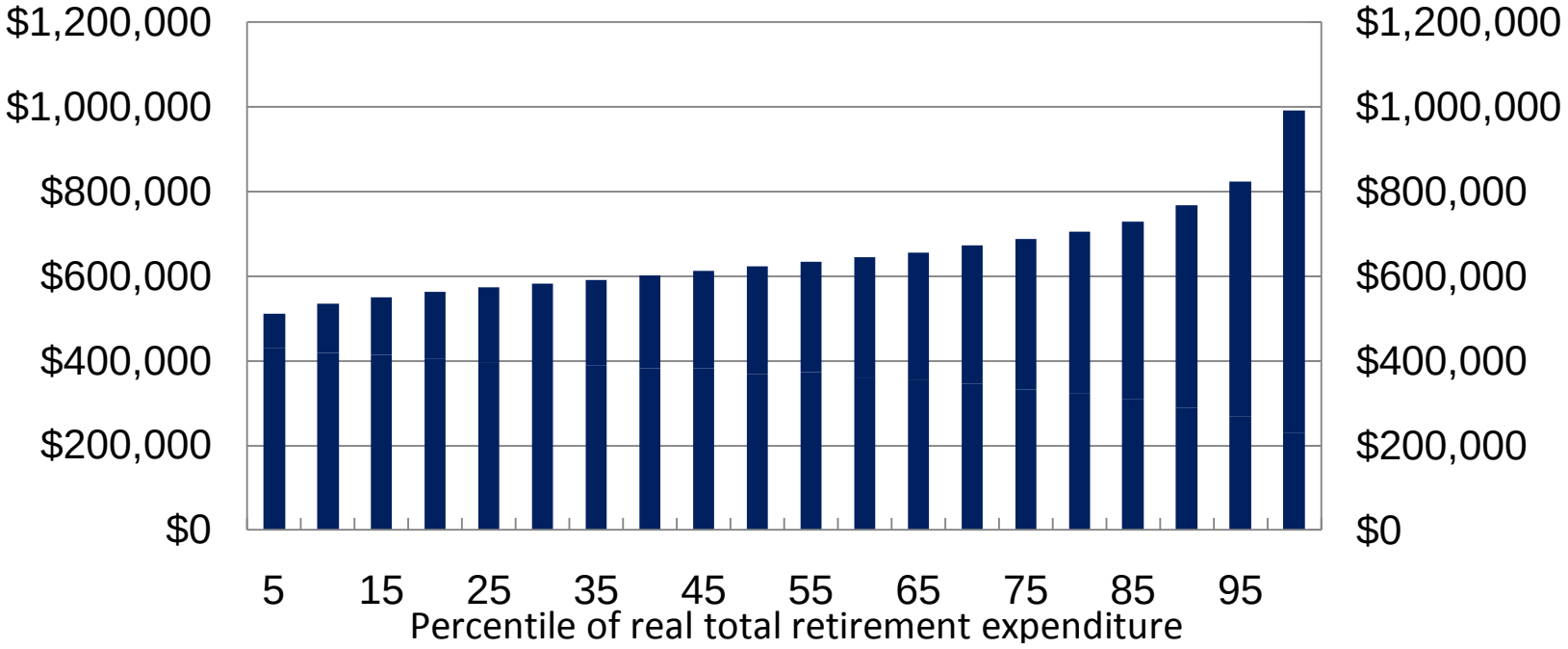
Replacement rate outcomes



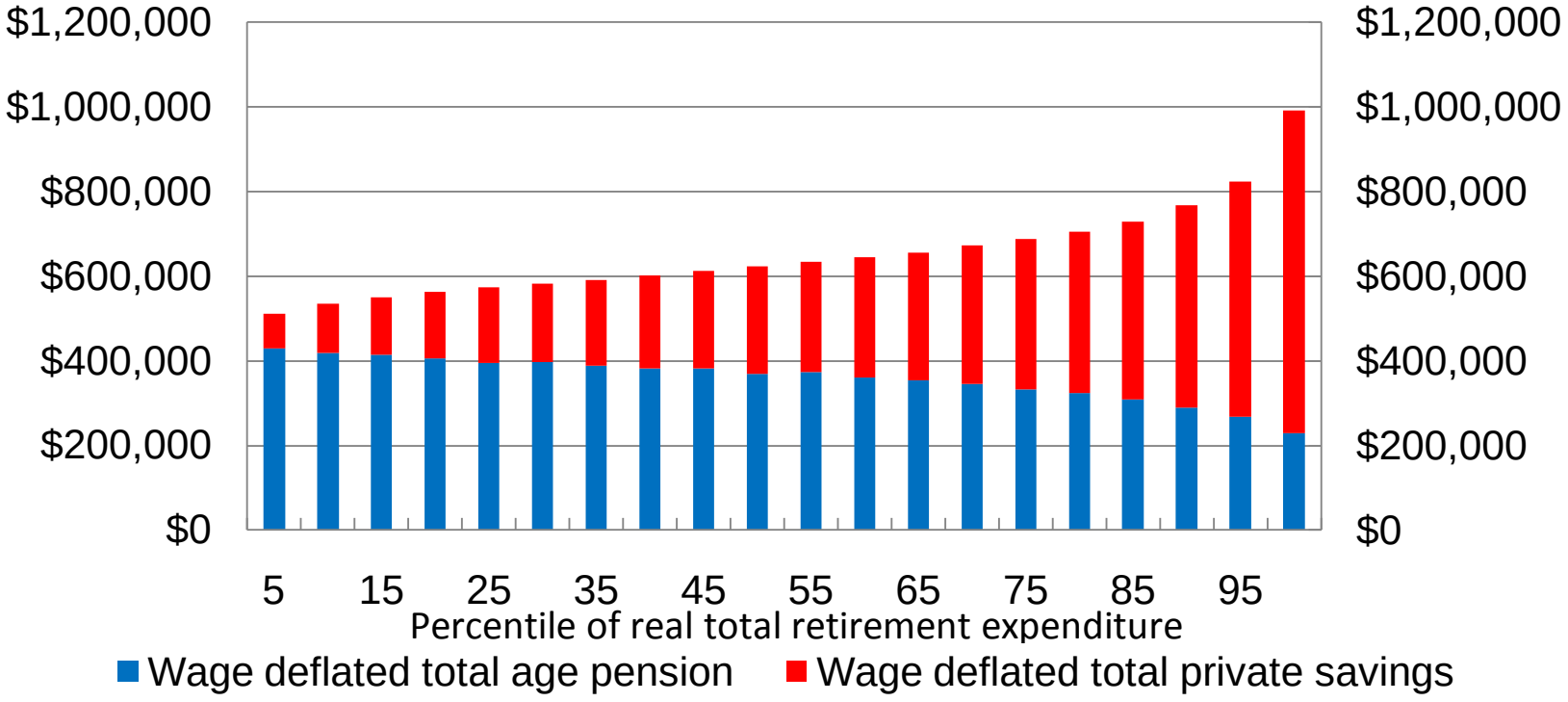
Impact of an increase in SG rate



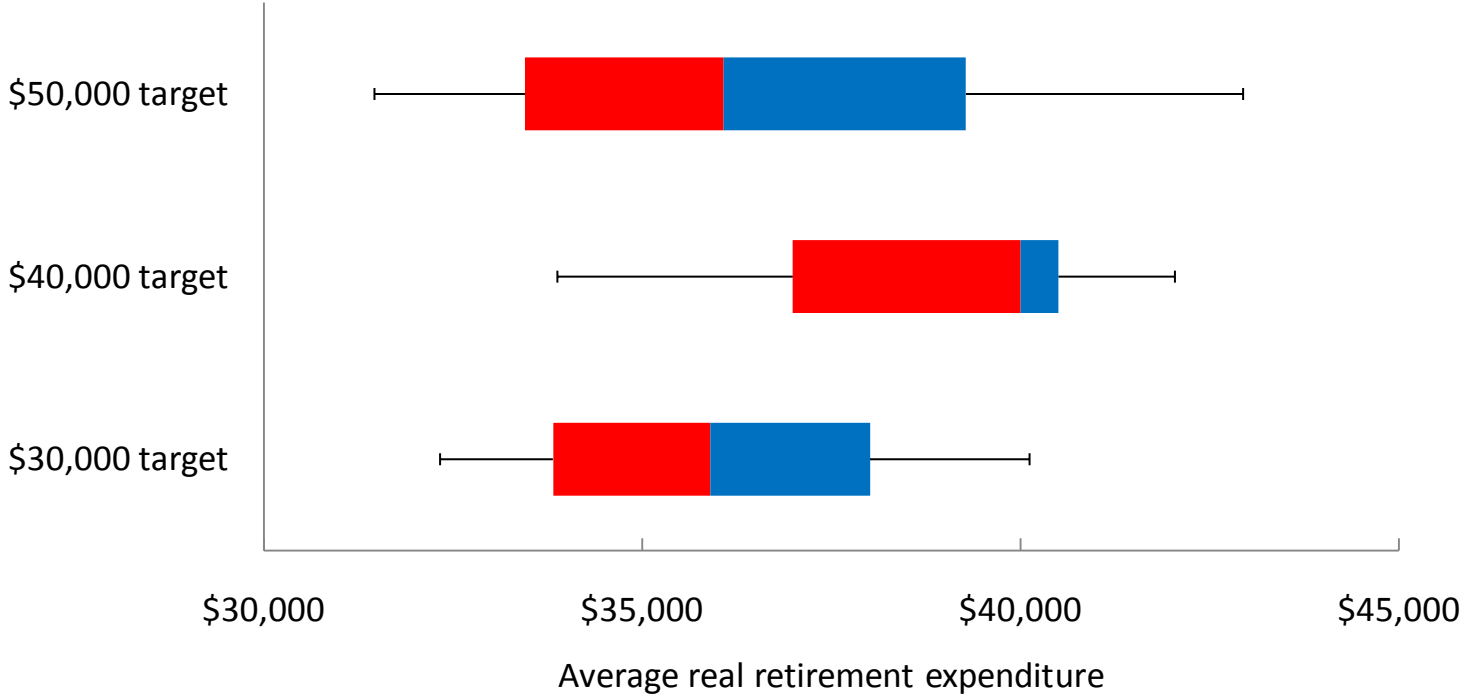
'Cushioning' effect of Age pension



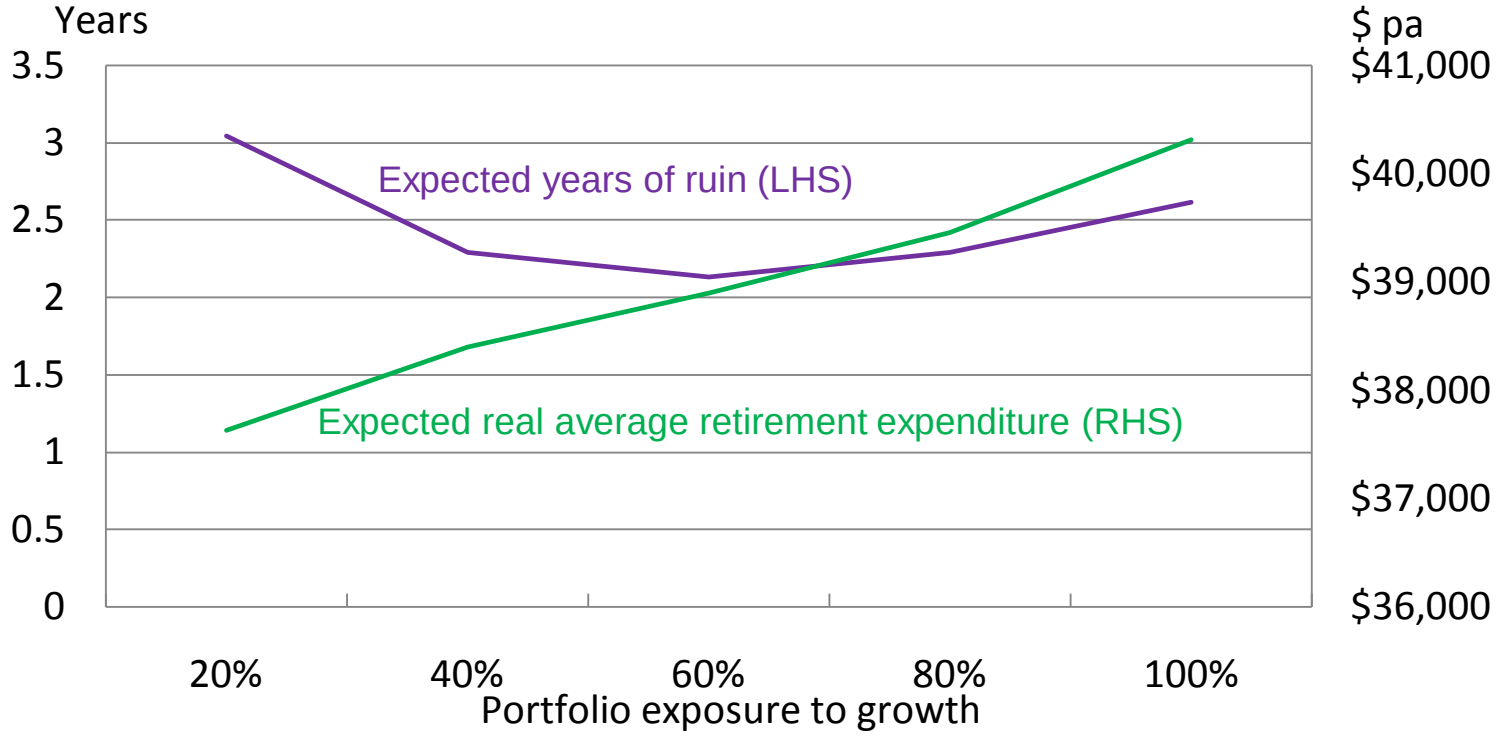
'Cushioning' effect of Age pension



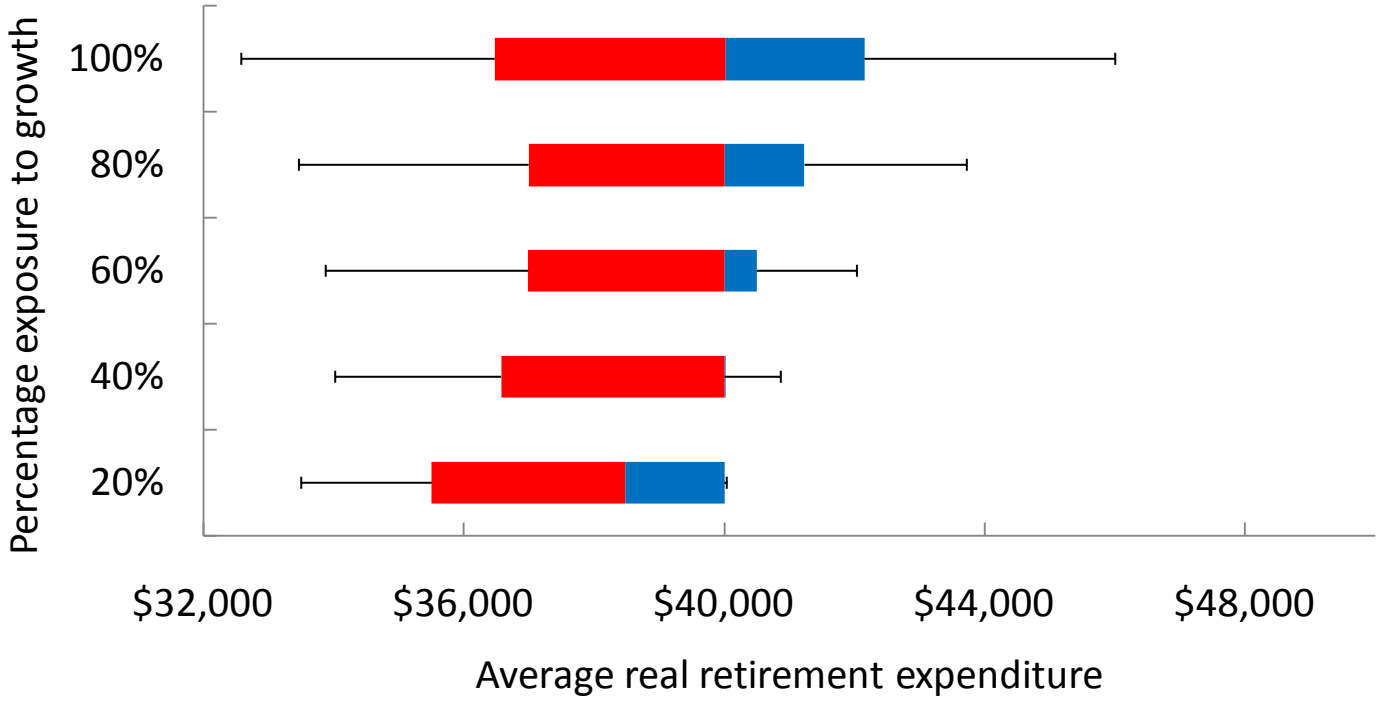
Different drawdown patterns



Different metrics



Outcomes


Percentage exposure to growth
100%
80%
60%
40%
20%
$32,000
$36,000
$40,000
$44,000
$48,000
Average real retirement expenditure