Australian Retirement Income Adequacy – A Distributional Approach to Cameo Modelling

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* The views expressed in the presentation are those of the author and do not necessarily reflect the views of Industry Super Australia

AIM

To improve the cameo modelling of the SG population by:

- Better distributional analysis of the main SG population;
- Testing of historical cameo model fit to current data;
- The microsimulation modelling of key relationships; and
- Adopting an approach to adequacy projections consistent with poverty research, actuarial research and ASIC standards.

To encourage modellers not to repeat the errors made by the Treasury and RIM in the last century and by the Grattan Institute in the last few years.

To demonstrate that the retirement incomes of the bulk of the SG population now have inadequate replacement rates and low levels of improvement over the age pension, and that these inadequacies will only be partially addressed if the SG rate is frozen at 9.5%.

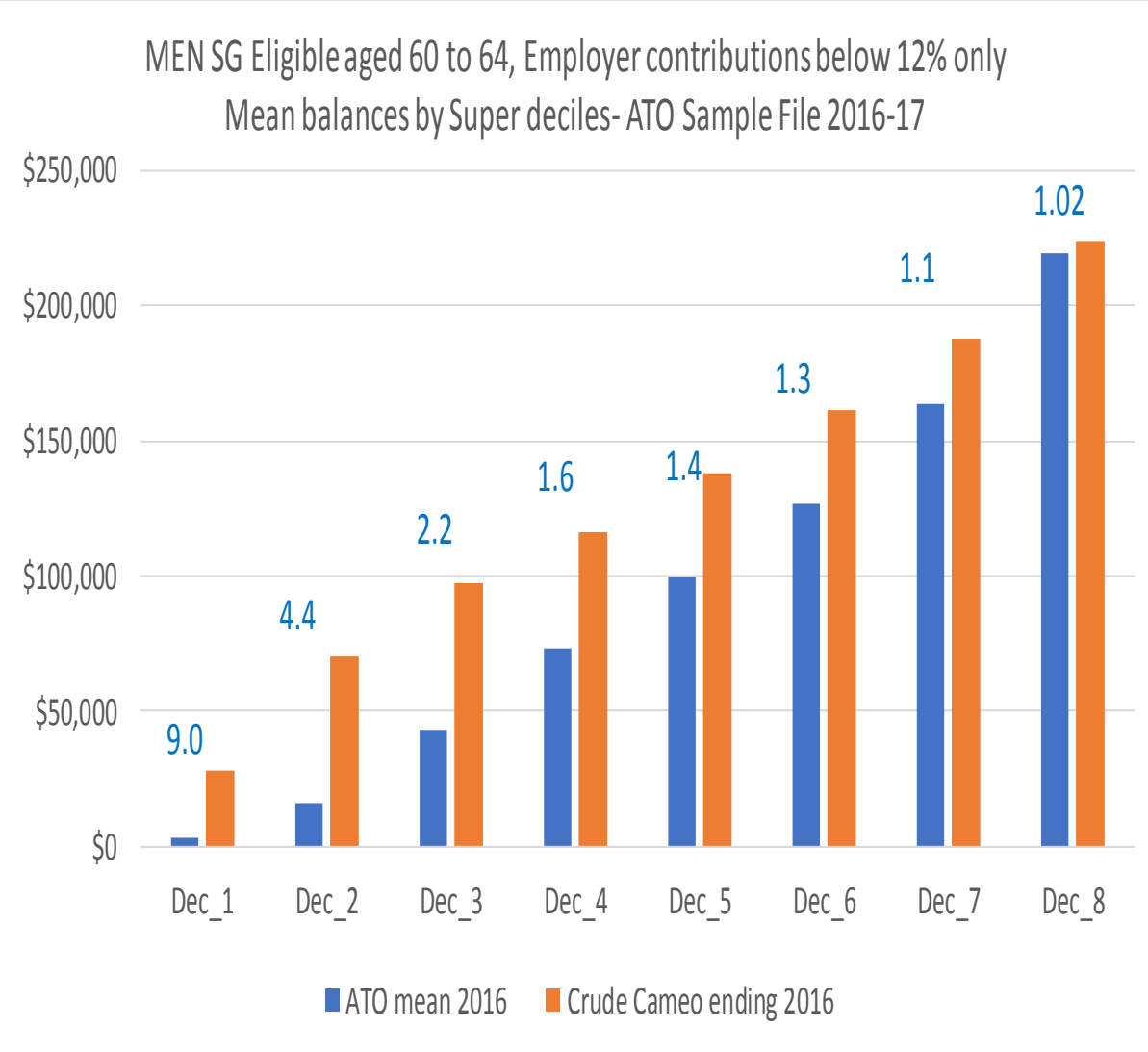
Outline

- Restate the adequacy objectives of SG policy
- Examine the main population impacted by the SG;
- Testing model fit to history;
- Separate analysis of couples, as well as single males and females;
- The case for WAGE DEFLATION of longer term incomes to keep them in tune with community standards;
- Use econometric modelling of the effect of the SG on wages;
- Microsimulation modelling of the effect of SG rises on the MTAWE index used for the pension base rate;
- Including personal tax and family tax benefit in the modelling of working life disposable income;
- Appropriate choice of private income source and drawdown rates in retirement; and
- The inclusion of non-superannuation assets and liabilities in retirement income calculations.
- Results on SG adequacy for the main SG population now and in the long term

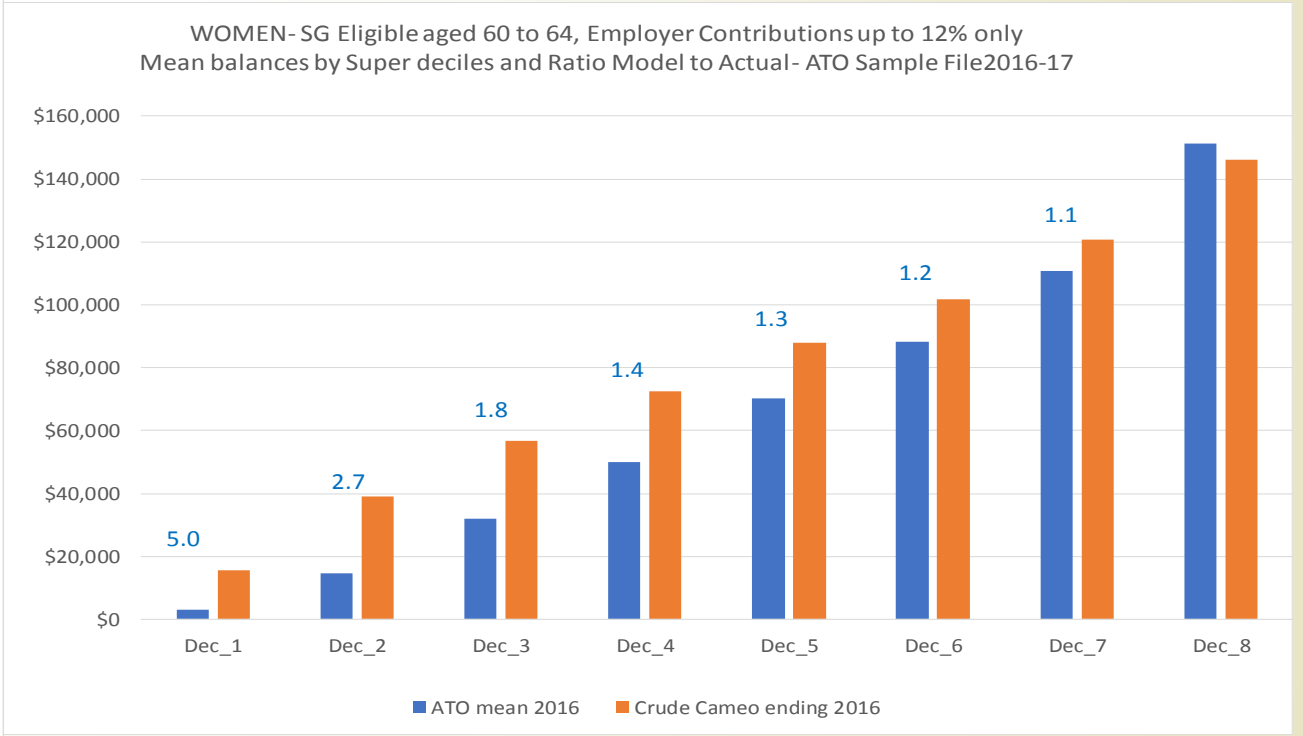
Examine the main population impacted by the SG

- Using ATO 2% sample file for tax filers in 2016-17 which has both personal tax as well as superannuation contributions and balance details. Slight perturbation is rated by the ATO as not interfering with use.
- Select people aged 20 to 64 who will be basis of cameos
- Select wage earners who earn over $5400 ($450 per month) as eligible SG population
- 76.6% of SG population have employer contributions under 12% with no non-concessional or non-employer concessional. (6.8 million of 8.8 million people)
- 85.6% of SG population only have employer contributions (7.5 million of 8.8 million people)
- 95.1% of employees have employer contributions only (8.54 of 8.98 million people)[employees have wages, fail 10% rule]
- SO WE DO NOT ADD IN NON-SG CONTRIBUTIONS AND WE DO NOT DOUBLE COUNT SALARY SACRIFICE (RESC) AS DALEY AND COATES HAVE DONE.

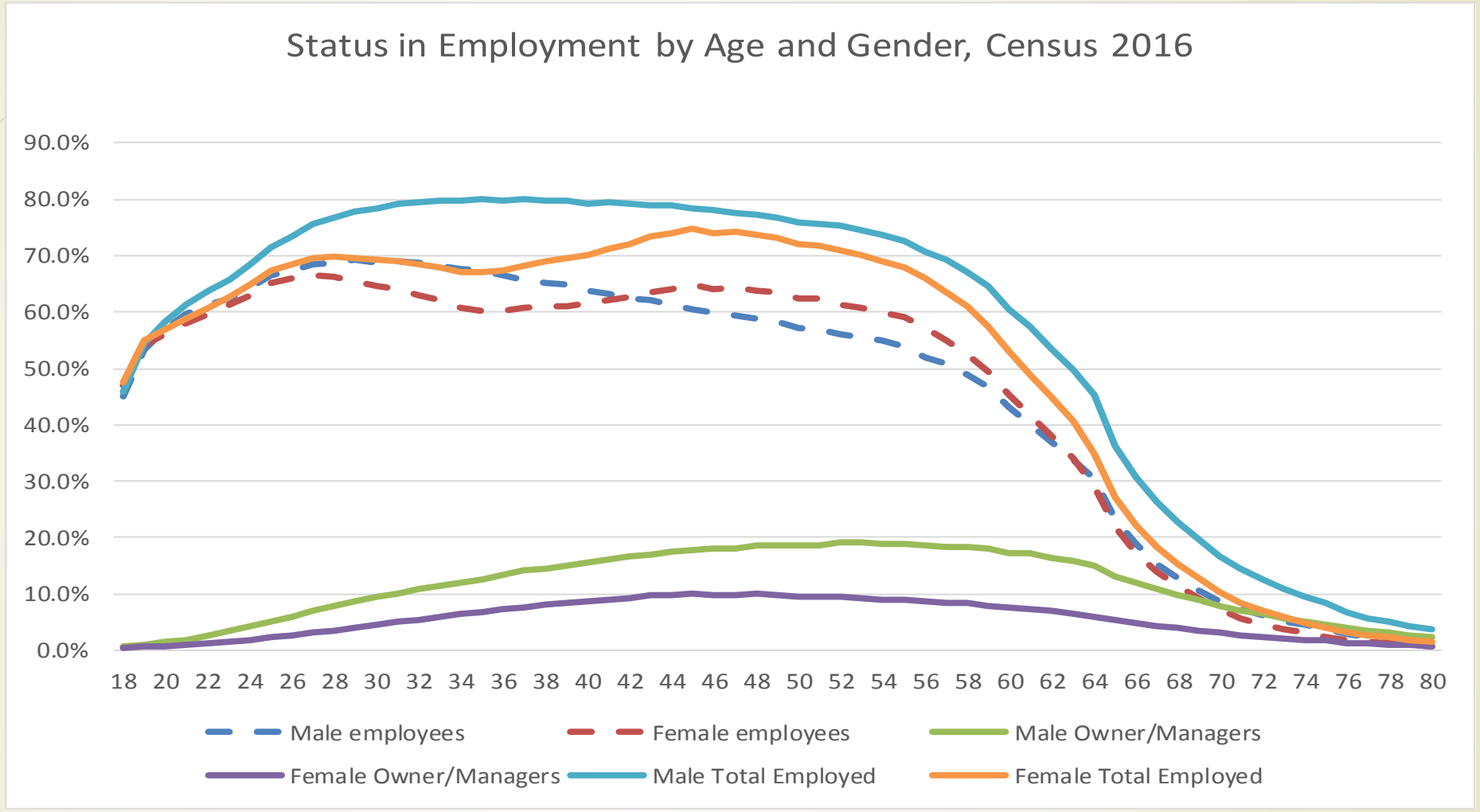
Testing model fit to history



- Bruce Bastian has created a new cameo model for ISA which automates most functions in VBA. It can be run from 1992-93 or any other starting point and it includes personal tax and family tax benefit calculations on top of the normal superannuation and age pension calculations.



Interruptions to accumulation



For wage earners only 82% get an SG amount over 7% - underpayment also detracts from accumulation

Separate analysis of couples, as well as single males and females

- **Over 70% of people retire as a member of a couple – the 2016 Census gives 70% of people partnered between age 60 and 69, the ABS Survey of Income and Housing 2015-16 gives 73.3 between 60 to 69 and 67.7 for ages 70 to 79 .**
- **The half married rate of pension is 75% of the single rate, or alternately the single rate is 132% of the half married rate.**
- **FOR ADEQUACY ANALYSIS THE PRIMARY FOCUS SHOULD BE COUPLES.**
- **For replacement rates there is no equivalence concept. The personal tax system applies to individuals.**
- **This analysis assumes assortative partnering. Males and females in the same decile form couples.**
- **Males and females require separate analysis.**

The case for WAGE DEFLATION of longer term incomes

2002 the Senate Select Committee on Superannuation inquiry into Superannuation and standards of Living in Retirement. The Institute of Actuaries was commissioned to review the Treasury methodology and came to this conclusion:

"The use of a CPI deflator (as has been used in the Treasury model) will produce results that are consistent with other Government projections. However these are usually undertaken over relatively short time frames (less than five years or so). For longer-term projections, such as are required when assessing adequacy of retirement incomes, the IAAust believes it is more consistent to use an AWOTE deflator to ensure comparability with living standards at the time of retirement."

- This wage deflated approach is consistent with poverty studies and the indexation of public pensions.
- It produces results that people can understand in terms of their current wages.
- ASIC Corporations (Amendment) Instrument 2019/514 suggests living standards deflation or a statement on why not doing this. MoneySmart Calculator is using wage deflation.
- The Henry Tax Review presented both wage and CPI discounted results as did RIM presentations on adequacy in 2011 and 2013. Grattan has cited these studies as though they only present CPI deflation.

Very few people believe that the CPI indexation of NEWSTART has kept pace with current living standards or that it provides an adequate benefit

Use econometric modelling of the effect of the SG on wages

- Bruce Bastian will present new results on econometric evidence on the link between the SG rate and wage growth in this Colloquium
- Daley and Coates and Michael Potter have asserted a one to one relationship with no evidence. They just quote each other and the Henry Tax Review which does not assert one to one.
- Kyle Taylor of the McKell Institute has modelled the relationship for Australia and found no link
- Dr Jim Stanford of the Centre for Future Work found no relationship from Australian data. The coefficient was positive.
- To be very conservative I have used relevant international literature is on the incidence of payroll taxes and social contribution changes on wages. One of the broadest meta-analyses of 52 studies and 124 estimates is that by Ángel Melguizo and José González-Páramo, 2013. This study concluded that:
- "In our preferred specification, the elasticity of wages to taxes is −0.70 in the default option . . . Moreover, the impact of taxes on wages differs in the short term. The degree of shifting is much lower in the short run: workers bear less than half of the tax burden."
- **In the absence of concluded Australian analysis I have simply assumed -0.70 as the elasticity of wages in response to changes in social contributions for those people affected.**

Microsimulation modelling of the effect of SG rises on the MTAWE index used for the pension base rate

- If the SG were to rise from 9.5% of Ordinary Time Earnings (OTE) to 10% of OTE then the group of employees impacted would be those with an effective SG rate between 7% of OTE and 10% of OTE.
- This can be analysed using the ATO's 2% sample file of personal income tax and superannuation returns.
- If salary sacrifice is removed from employer contributions this impacted group is about 40% of males counted in Male Total Average Weekly Earnings and 45.5% of males and females in the Average Weekly Earnings series.
- People below an effective SG rate of 7% seem unlikely to get an SG rise, and those over 10% would not be required to do so.
- **Using the ATO sample file for 2016-17, we microsimulate successive SG rises of half a per cent, and find that, with a 70% pass through to wages for those affected, Male Total Average Weekly Earnings (MTAWE) would be 0.9989 times the level without any SG offset.**
- **So, if wages were rising 3% in the absence of an SG rise, with the SG rising by half a per cent the rise in MTAWE would be 2.89% for modelling purposes.**
- **This is important for pension indexation which is based on MTAWE. Grattan finds that the rise in the SG from 9.5% to 12% would reduce the maximum age pension by 1.7%. The ISA estimate of the effect is 0.51% –less than a third of the Grattan estimate**

Including personal tax and family tax benefit in the modelling of working life disposable income

- Replacement rate calculations should compare spending in retirement to spending (disposable income) in working life
- Any wage adjustment from an increase in the SG will affect tax at marginal rates and for most couples (and some singles) will also be affect family tax benefit income tests.
- So these impacts on disposable income are included in the modelling.
- Wage deflated disposable income can be used across all of working life and all of retirement, whereas CPI deflation can only be used for a few years around retirement. People understand how much income is when it is expressed in current wages.
- The long period avoids using replacement rates based on the few years of low income before retirement. I am using the first 15 years of retirement and the last 15 years of working life.

The Wage Deciles Used based on ATO file SG population with Contributions under 12%

MALES (Deciles are percentages of AWOTE)										
Age	Decile-1	Decile-2	Decile-3	Decile-4	Decile-5	Decile-6	Decile-7	Decile-8	Decile-9	Decile-10
20	11.1%	18.8%	25.9%	32.5%	39.5%	46.4%	53.8%	62.3%	74.1%	108.0%
25	14.5%	29.3%	42.3%	53.6%	63.0%	71.7%	81.7%	93.3%	110.1%	162.1%
30	20.3%	42.1%	57.3%	68.7%	79.7%	91.2%	103.8%	119.0%	142.1%	214.5%
35	23.8%	49.4%	64.6%	76.9%	89.5%	102.4%	117.8%	136.0%	163.7%	257.4%
40	25.0%	50.6%	66.4%	79.7%	93.4%	107.3%	123.3%	144.7%	178.4%	313.6%
45	25.2%	51.0%	66.3%	78.4%	91.7%	105.9%	122.3%	143.3%	178.0%	339.1%
50	24.4%	49.4%	64.1%	76.3%	89.6%	102.7%	118.4%	139.6%	171.7%	309.5%
55	21.6%	44.9%	59.0%	70.9%	82.6%	95.6%	110.2%	130.1%	162.3%	306.6%
60	17.0%	34.1%	48.0%	59.0%	69.5%	79.9%	92.9%	111.3%	140.1%	263.8%

FEMALES (Deciles are percentages of AWOTE)										
Age	Decile-1	Decile-2	Decile-3	Decile-4	Decile-5	Decile-6	Decile-7	Decile-8	Decile-9	Decile-10
20	11.0%	17.4%	23.1%	28.9%	34.8%	41.1%	47.7%	54.8%	63.7%	84.3%
25	13.2%	24.1%	34.1%	44.1%	52.8%	60.9%	69.8%	79.8%	92.7%	122.7%
30	13.6%	25.5%	36.1%	46.2%	55.9%	65.8%	76.7%	90.1%	108.2%	155.1%
35	14.2%	26.4%	37.2%	47.2%	56.7%	66.7%	78.6%	94.2%	116.0%	182.9%
40	15.2%	28.5%	39.3%	49.1%	58.5%	69.2%	81.8%	97.6%	120.4%	200.6%
45	16.4%	30.4%	40.7%	49.6%	58.3%	67.9%	80.1%	96.1%	118.2%	198.0%
50	16.7%	30.5%	40.7%	49.1%	57.4%	66.7%	77.2%	91.5%	112.8%	191.2%
55	15.5%	27.9%	37.4%	46.2%	54.3%	62.7%	72.7%	86.3%	105.8%	168.0%
60	13.5%	24.5%	33.0%	41.0%	48.7%	56.9%	66.0%	78.0%	96.0%	151.8%

New Method of Allocating household property and liabilities to persons to get non-superannuation non-home median assets

	Age 55 to 64	
	AWOTE MULTIPLES	
DECILE	Males	Females
1	3.2%	43.3%
2	0.6%	7.7%
3	4.2%	0.6%
4	1.3%	6.4%
5	6.4%	0.8%
6	0.4%	2.6%
7	51.0%	9.5%
8	6.4%	12.8%
9	15.9%	1.3%
10	44.6%	21.7%
Source ABS SIH1516		

A Retirement Income Product that you can buy

Allocated pension with drawdown set at the higher of the 10% or age specific drawdown.

Return 6%

Has fees

Couple Replacement Rates based on wage deflated average last 15 years of working life (ages 52 to 66) and first 15 years of retirement (ages 67 to 81) disposable incomes

Scott Morrison has used 70% as a guide

Decile	Frozen SG 9.5%	SG increases to 12%	Improvement in Replacement Rate
1	157%	167%	10%
2	101%	107%	5%
3	85%	89%	4%
4	75%	80%	6%
5	69%	77%	8%
6	65%	74%	9%
7	64%	75%	11%
8	60%	73%	12%
9	59%	73%	14%
10	54%	68%	14%

Average Retirement Income Relative to Full rate Couple Pension

Decile	Frozen SG 9.5%	SG increases to 12%	Improvement in Ratio to Full Rate
1	122%	127%	5%
2	136%	141%	6%
3	144%	150%	6%
4	149%	157%	8%
5	155%	166%	11%
6	161%	175%	13%
7	173%	189%	17%
8	183%	204%	21%
9	202%	232%	30%
10	270%	327%	57%

Change in Average Annual Disposable Income from SG Rise

Decile	Working Life	Retirement
1	-0.1%	4.4%
2	-0.7%	4.2%
3	-0.9%	4.1%
4	-0.8%	5.9%
5	-0.8%	8.2%
6	-0.9%	10.1%
7	-0.9%	12.2%
8	-1.0%	14.3%
9	-1.0%	17.6%
10	-1.2%	22.4%

Conclusions

- Studies of SG Adequacy should use statistics from the SG population with Employer Contributions below 12% of OTE.
- Most people retire as couples, and couples should be the default unit of analysis. If looking at singles, then some care in using single career income should be taken.
- Wage deflation of longer term disposable incomes is highly recommended by IAA, ASIC, poverty researchers and ISA.
- Access to the ATO A-LIFE longitudinal dataset would considerably improve career wage and superannuation estimates.
- Using mean wages for the SG population in the ATO sample file and median non-superannuation non-home net assets we find that the SG going to 12% can be shown to:
  - Lift replacement rates for couples above the 70% adequacy line for deciles 5 to 9.
  - Have 0.1% to 1.2% decrease in annual working life disposable incomes, and raise annual retirement disposable incomes by 4.1 to 22%