

# Retirement Incomes Policy: Simulations Paper

Report by Access Economics Pty Limited for  
**The Industry Super Network and  
the Australian Institute of  
Superannuation Trustees**

## TABLE OF CONTENTS

|   |           |
|---|-----------|
| <b>1. Introduction .....</b>  | <b>1</b>  |
| <b>2. Summary results .....</b>   | <b>2</b>  |
| <b>3. The impact on adequacy of changes to the SG rate .....</b>                            | <b>3</b>  |
| 3.1 The impact on average adequacy – no behavioural change .....                            | 4         |
| 3.2 The distributional (fairness) impacts of raising the SG – no behavioural change .....   | 7         |
| 3.3 Allowing for behavioural change .....   | 8         |
| 3.4 The distributional (fairness) impacts of raising the SG – with behavioural change ..... | 9         |
| <b>4. Front-end contribution incentives.....</b>  | <b>11</b> |
| 4.1 The contributions tax simulations.....  | 11        |
| 4.2 The co-contributions simulations .....  | 21        |
| <b>5. Changes to the age pension.....</b>   | <b>27</b> |
| <b>6. ‘Pillar’ integration .....</b>  | <b>30</b> |
| <b>7. The \$450 rule .....</b>  | <b>34</b> |
| <b>8. Boosting women’s retirement savings .....</b>   | <b>37</b> |
| 8.1 The Access Economics analysis of women’s retirement savings.....                        | 37        |
| 8.2 The \$1,500 super baby bonus .....  | 39        |
| <b>9. The impact of fees and net returns .....</b>  | <b>42</b> |
| 9.1 The distributional (fairness) impacts of differing rates of real return.....            | 44        |
| <b>10. Combined results .....</b>   | <b>46</b> |
| 10.1 The distributional (fairness) impacts of the combined scenarios .....                  | 48        |
| <b>Appendix A: The <i>SuperSim</i> model .....</b>  | <b>53</b> |
| <b>Appendix B: Lifetime versus current incomes .....</b>                                    | <b>56</b> |

### Disclaimer

While every effort has been made to ensure the accuracy of this document, the uncertain nature of economic data, forecasting and analysis means that Access Economics Pty Limited is unable to make any warranties in relation to the information contained herein. Access Economics Pty Limited, its employees and agents disclaim liability for any loss or damage which may arise as a consequence of any person relying on the information contained in this document.

## 1. Introduction

The Industry Super Network ('the ISN') and the Australian Institute of Superannuation Trustees ('the AIST') are making a submission to the Henry Review outlining potential improvements to the targeting of superannuation incentives and age pension payments towards those currently least able to provide for their own retirement.

To inform their submission, the ISN and the AIST approached Access Economics to assess the various costs and benefits associated with a range of potential changes to retirement incomes policy.<sup>1</sup>

The ISN/AIST requested that a number of simulations be explored:

- 1 **Changes to the Superannuation Guarantee (SG) rate**, measuring adequacy across the income spectrum at a number of alternative SG rates.
- 2 **Front-end contribution incentives**, and related tax treatment for contributions.
  - Changes to the government co-contribution scheme.
  - The introduction of a more progressive contributions tax via tax rebates for members on or below the 15% marginal income tax rate.
- 3 **Changes to the age pension**, designed to increase the basic rate of payment while introducing a steeper 'tapering'. This might occur through some combination of
  - Higher rates of payment for full-pensioners.
  - Changes to income tapering, and/or deeming provisions
  - Changes to the pension assets test
- 4 **'Pillar integration'**, allowing retirees to purchase additional age pension entitlements from the Government with their lump-sum superannuation benefits.
  - Effectively, this would see the government selling funded lifetime annuities (and assuming the associated investment, inflation and longevity risks).
  - This would be broadly comparable with bonus payments for pension deferral.
- 5 **Examining the \$450 rule.**
- 6 **Boosting women's retirement savings** via a \$1,500 superannuation 'baby bonus'.
- 7 **The impact of fees and net returns**, tying adequacy to governance and efficiency and estimating the potential gains from reduced fees and account consolidation).

Access Economics updated our *SuperSim* model of retirement incomes so as to estimate the overall impact of these changes on government and the super system.

---

<sup>1</sup> Access Economics has undertaken an independent 'costing' role for the ISN / AIST. We have neither designed nor advocated any specific policy proposals.

## 2. Summary results

The table below summarises the simulation results obtained in this report.

It identifies (as at 2040-41) the increase in absolute dollars (in today's terms) in the 'modest but adequate' standard of living estimated in this report.

- The latter is shown for the average person and also for someone in the 5<sup>th</sup> lifetime income decile (a rough proxy for the median impact).

The table also includes a re-distributive ratio, noting the relative changes in the median versus the average adequacy outcomes.

Finally, the table includes a Budget cost (as at 2040-41, but in today's dollars). A negative is a cost to the Budget bottom line, and positive is an improvement.

**TABLE 1: SUMMARY SIMULATIONS**

|   | Sim # | \$ improvement in adequacy for median (5 <sup>th</sup> decile) income | \$ improvement in adequacy for average income | Re-distribution ratio (5 <sup>th</sup> decile to average) | Budget cost (\$bn: +ive is a saving) |
|---|-------|---|---|---|--------------------------------------|
| SG increase to 12%                          | 1     | \$ 1,310  | \$ 1,597                                      | 82%   | <b>-\$ 3.97</b>                      |
| SG increase to 12%, with behavioural change | 2     | \$ 457  | \$ 546  | 84%   | <b>-\$ 2.89</b>                      |
| Progressive conts tax one step              | 3     | \$ 79   | \$ 77   | 102%  | <b>-\$ 0.34</b>                      |
| Progressive conts tax                       | 4     | \$ 18   | -\$ 8   | -219%   | <b>\$ 5.18</b>                       |
| 'Pillar integration'                        | 5     | \$ 2,303  | \$ 2,771                                      | 83%   | <b>\$ 1.82</b>                       |
| 'December-style' lift in pensions           | 6     | \$ 1,022  | \$ 981  | 104%  | <b>-\$ 5.58</b>                      |
| \$450 rule                                  | 7     | \$ 19   | \$ 14   | 136%  | <b>-\$ 0.04</b>                      |
| Co-conts \$75,000 threshold                 | 8     | \$ 38   | \$ 29   | 131%  | <b>-\$ 0.24</b>                      |
| \$1,500 super baby bonus                    | 9     | \$ 79   | \$ 69   | 115%  | <b>-\$ 0.90</b>                      |
| Real returns 4.5%                           | 10    | \$ 1,259  | \$ 1,454                                      | 87%   | <b>\$ 4.32</b>                       |
| -15%/0% conts tax low incomes               | 11    | \$ 93   | \$ 91   | 102%  | <b>-\$ 0.41</b>                      |
| Compendium simulation 1                     | 12    | \$ 7,528  | \$ 8,540                                      | 88%   | <b>-\$ 6.02</b>                      |
| Compendium simulation 2                     | 13    | \$ 8,044  | \$ 9,164                                      | 88%   | <b>-\$ 7.03</b>                      |

### 3. THE IMPACT ON ADEQUACY OF CHANGES TO THE SG RATE

Increases in the SG lead to an increase in average retirement income adequacy.

However, the effect is not linear. For example, raising the SG by one percentage point to 10% does not increase retirement income adequacy by one-ninth.

Australia's retirement incomes policy has 'three pillars': the Commonwealth aged pension, the 9% SG, and voluntary savings both within and outside the superannuation system,. An increase in one of those pillars will partly come at expense of the other two, as increased compulsion via the SG for example leads to reduced entitlements to the age pension, and to a reduction in voluntary superannuation contribution inflows.

Higher compulsory savings into super doesn't necessarily translate dollar-for-dollar into higher household savings in total.

The evidence is that households offset compulsory super savings against other forms of household savings. Nevertheless, even for those people who do have sufficient savings against which they can offset compulsory super, the best available evidence appears to be that there is not a dollar-for-dollar offset. Various studies have estimated the offset (that is, the reduction in other savings for each additional dollar of compulsory super savings) at between 30 cents and 50 cents in the dollar:

1. Tulip and Stott (1994)<sup>2</sup> reviewed US research and Australian savings data and concluded that the offset to compulsory superannuation would be "about a third".
2. Covick and Higgs (1995)<sup>3</sup> estimated the extent of time smoothing of household consumption from Australian national accounts data. They concluded that their estimate of a savings offset of 36.7% was probably an overestimate, and that the Tulip and Stott value of about a third was reasonable.
3. Fitzgerald and Harper (1993)<sup>4</sup> chose 50% as their preferred value for the offset coefficient. This was more a judgement than an empirical estimate. They reasoned the offset could not be 100% and could not be 0%, so 50% was chosen as halfway between 0 and 1.
4. Research published by the Reserve Bank puts this 'savings offset' at around 38 cents in the dollar.<sup>5</sup> To the extent that such a 'savings offset' applies to ongoing increases in super savings, then the benefits of those increases for future retirement incomes are reduced.

---

<sup>2</sup> Tulip, P and Stott, D, *The Effect of Compulsory Superannuation on Private Saving*, Federal Treasury Seminar Paper, July 1994.

<sup>3</sup> Covick, O and Higgs, B, *Will the Australian Government's Superannuation Initiatives Increase National Saving?*, 24<sup>th</sup> Conference of Economists, Adelaide, 1995.

<sup>4</sup> FitzGerald, V.W. and Harper, I.R., 1993, *Super Preferred or "Level Playing Field"?: Implications for Saving and the Financial System* in Head, J.G. (ed.) *Fightback! An Economic Assessment*, papers from a conference organised by the Public Sector Management Institute, Monash University, Australian Tax Research Foundation, Conference Series No. 12, Sydney, pp.123-170; revised version of paper presented to the Third Annual Melbourne Money and Finance Conference, Victoria, December 1991.

Because of this potential for increases in the SG to be offset against other savings Access Economics has undertaken two rounds of modelling here. Both directly allow for the impact of increased SG in terms of reduced age pension payments. The first round excludes behavioural responses (that is, it assumes no reduction in other forms of savings because of increased SG). The second round includes an offset, with the behavioural response coming in two areas – voluntary contributions, and saving outside super.

### 3.1 THE IMPACT ON AVERAGE ADEQUACY – NO BEHAVIOURAL CHANGE

The *SuperSim* model builds in the structure of Australia’s age pension system, including its income and asset tests:<sup>6</sup>

- ❑ For those in the operative range of the pension income test, an extra dollar of assessable income leads to a loss of 40 cents on the single pension, or 20 cents in the couple pension.
- ❑ In addition, the *Simpler Super* reforms included notable increases to the asset threshold and taper for the aged pension. The taper rate for assets above the aged pension asset threshold was halved from \$3 per fortnight for each \$1,000 in assets to \$1.50 per fortnight as from 20 September 2007.
- ❑ Moreover, some assets are ‘deemed’ to earn income.

Given those broad parameters, the maximum possible offset through lost pension income is 40 cents in the dollar. In practice, the leakage to lost pension incomes is well below that:

- ❑ Many retirees get no pension, so they can’t lose any of it.
- ❑ Many retirees are on full pension, and the increase in their retirement income (and/or deemed assets) is insufficient to trigger the income or assets test.
- ❑ Many retirees receive the couple pension and, if only one of those retirees is working, and hence is affected by the lift in the SG, the maximum loss is 20 cents in the dollar.
- ❑ The assets test is quite lenient.

The end result is that about 70% of the change in SG contributions flows through to become a change in end-accumulation benefits.

Table 2 below sets out the impact on various adequacy measures as a result of a higher SG. In brief, and as suggested above, the increase in SG does not lead to an improvement in retirement income adequacy proportional to the increase in the SG. That said, the lost pensions are a small factor, and the improvement in retirement income adequacy is close to being proportional to the size of the relative increase in total contributions (that is, SG plus voluntary contributions).

---

<sup>5</sup> *The impact of superannuation on household saving*, Ellis Connolly and Marion Kohler, Research Discussion Paper 2004-01, March 2004. See also the Research Discussion Paper *The Effect of the Australian Superannuation Guarantee on Household Saving Behaviour*, by Ellis Connolly RDP 2007-08.

<sup>6</sup> The test which results in the lower age pension rate is the one which applies.

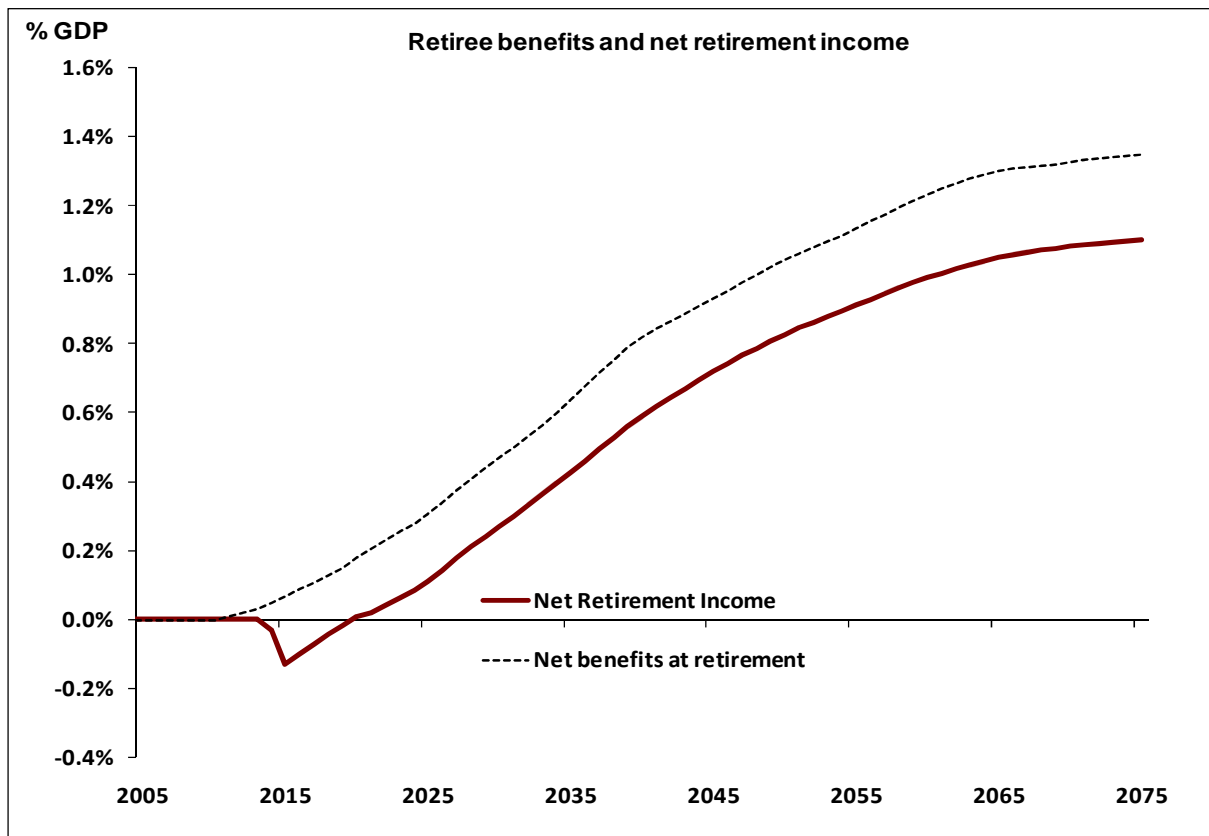
Table 2 identifies the differences compared with the baseline (that is, a 9% SG) arising from a 12% and 15% SG, respectively. In brief, and focussing on the shift to a 12% SG:

- ❑ The increase in contributions is smaller than expected, at 1.1% of GDP. Given wages and salaries are some 55% of GDP, that is only the equivalent of a 2 percentage point (rather than a 3 percentage point) shift in the SG rate. Less-than-full SG coverage helps explain the shortfall, but only some of it.
- ❑ The increase in earnings is in line with the increase in superannuation assets in the accumulation phase (it is 6.3% of the latter, in line with the assumed earnings rate on superannuation assets of 6.25%).
- ❑ As expected, the offset in terms of lost pensions is small (at 0.05% of GDP) and slow to build.
- ❑ Measures of average replacement rates improve, particularly for the MBA standard (which is a rather more modest standard than the ‘consumer spending’ measure).

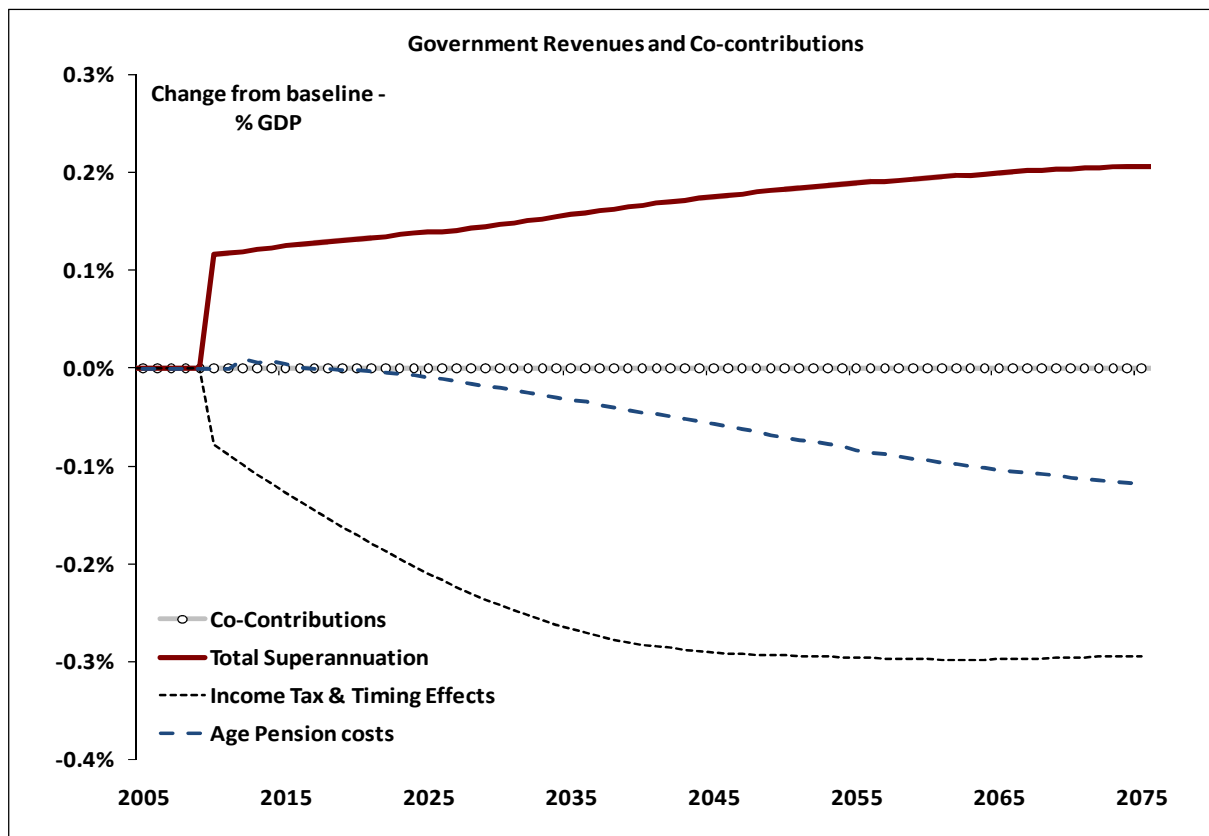
**TABLE 2: THE IMPACT OF A 12% SG RATE RELATIVE TO BASE CASE (9%SG)**

| <b>2040-41 estimates as a ratio to GDP</b> | <b>SG at 12%</b> | <b>SG at 15%</b> |
|--|------------------|------------------|
| Contributions                              | 1.1%             | 2.2%             |
| Earnings                                   | 1.6%             | 3.2%             |
| Benefits                                   | 0.8%             | 1.6%             |
| Superannuation assets                      | 25.3%            | 50.6%            |
| Pension cost                               | -0.05%           | -0.1%            |
| Net retirement income                      | 0.6%             | 1.2%             |
| Replacement ratio (consumption)            | 3.0%             | 6.0%             |
| Replacement ratio (MBA)                    | 8.1%             | 16.3%            |

**CHART 1: EFFECTS OF A 12% SG ON RETIREE BENEFITS AND INCOMES**



**CHART 2: EFFECTS OF A 12% SG ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**



### 3.2 THE DISTRIBUTIONAL (FAIRNESS) IMPACTS OF RAISING THE SG – NO BEHAVIOURAL CHANGE

As noted above, both low and high income earners see more of a benefit to adequacy than do middle income earners, because it is the latter who lose some age pension benefits (whereas those on low enough incomes lose no age pension, and those on high enough incomes weren't getting age pensions anyway).

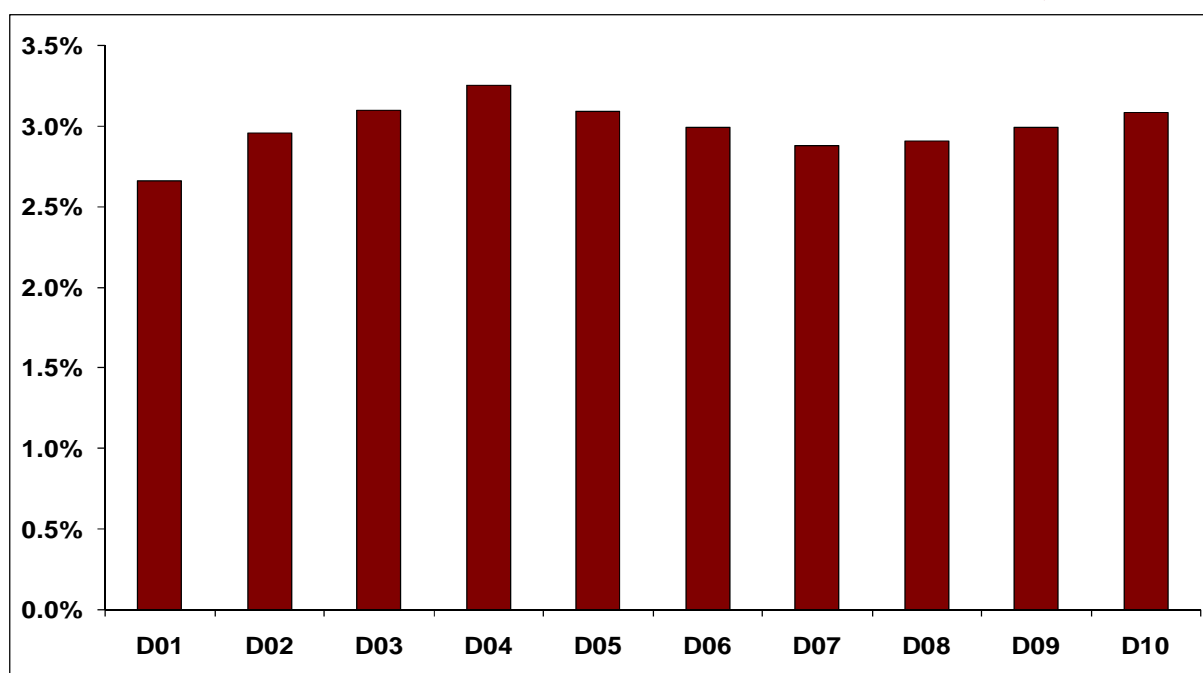
However, many low income earners have long periods out of the workforce, meaning that a higher SG has no impact on them – and hence no impact on their superannuation adequacy – for those periods.

The expected pattern for replacement rates measured on a 'consumer spending' base is therefore:

- ❑ Weakest for the lowest deciles (as they don't work for as long).
- ❑ Higher for the next deciles (for example, decile 4 enjoys the impact of the SG increase for more of their working lives, but still don't get pushed out of the full pension range).
- ❑ Weaker for the next deciles (deciles 5 to 7, which are in the pension phase out range).
- ❑ Higher for the highest deciles (as they earn no pension, they don't lose any to it).

The following charts help to illustrate that pattern.

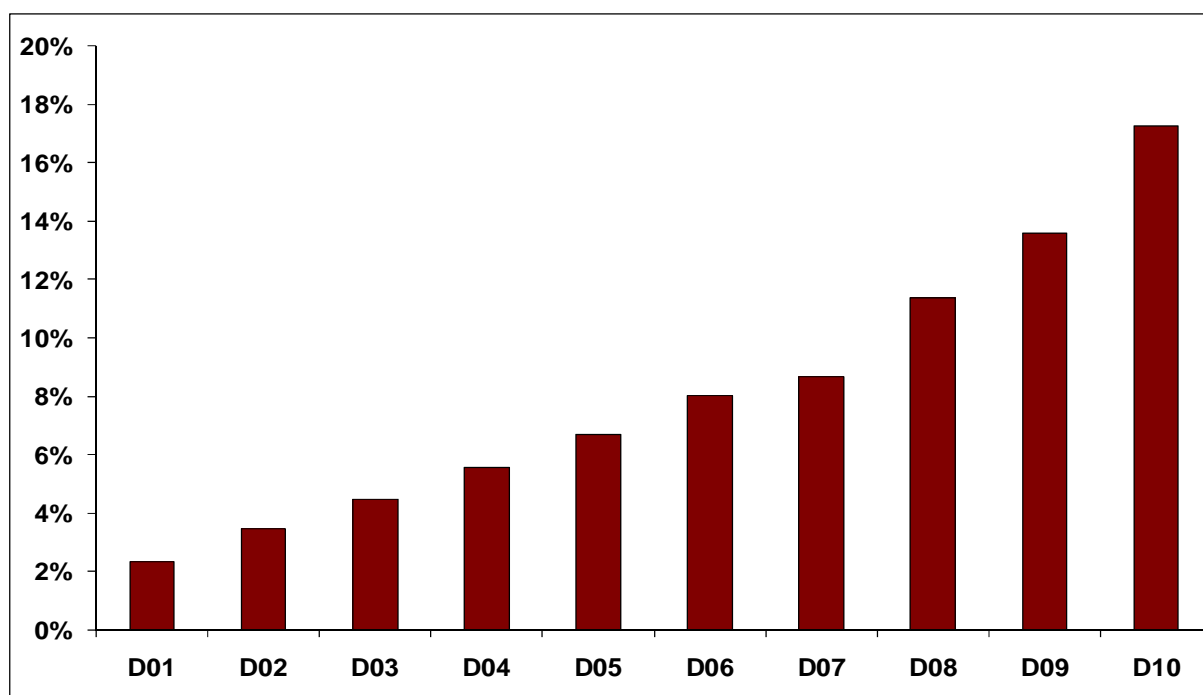
**CHART 3: EFFECTS OF A 12% SG ON THE CONSUMPTION MEASURE OF ADEQUACY<sup>7</sup>**



<sup>7</sup> This and the similar charts that follow show the absolute percentage point change in the relevant measure of the retirement income replacement ratio.

The ‘modest but adequate’ measure of adequacy focuses more on dollars received. Accordingly, and as expected, it shows higher increases at the top end than at the bottom.

**CHART 4: EFFECTS OF A 12% SG ON THE ‘MODEST BUT ADEQUATE’ MEASURE OF ADEQUACY**



### 3.3 ALLOWING FOR BEHAVIOURAL CHANGE

What if we allow for increases in the SG to be offset against other savings?

The model parameters were reset for the behavioural change simulations to allow for:

- Total savings to be offset by 38% of the SG increase (that is, the Reserve Bank estimate), with
- 25 percentage points of the 38% offset (almost two-thirds of the total) comes via a reduced voluntary contributions to super, and
- The remainder of the 38% (13 percentage points) comes via a reduction in savings in the form of other assets (such as directly owned shares, managed funds or cash at the bank).

Table 3 identifies the differences compared with the baseline (that is, a 9% SG) arising from a 12% and 15% SG, respectively, allowing for behavioural change in both cases. In brief, and focussing on the shift to a 12% SG:

- The increase in contributions is smaller still, at 0.8% of GDP, because voluntary contributions have fallen in response to the increase in SG contributions.
- The less the increase in saving, the less the impact on the other variables as well. The offset to lost pensions is notably reduced.
- The increase in earnings is again in line with the increase in superannuation assets in the accumulation phase (it is 6.3% of the latter, in line with the assumed earnings rate on superannuation assets of 6.25%).

- Measures of average replacement rates still improve, particularly for the MBA standard, but those improvements are only around a quarter of the matching improvement where there is no behavioural change.

**TABLE 3: THE IMPACT OF A 12% SG RATE (WITH BEHAVIOURAL CHANGE)**

| <b>2040-41 estimates as a ratio to GDP</b> | <b>SG at 12%</b> | <b>SG at 15%</b> |
|--|------------------|------------------|
| Contributions                              | 0.8%             | 1.6%             |
| Earnings                                   | 1.3%             | 2.6%             |
| Benefits                                   | 0.5%             | 1.0%             |
| Superannuation assets                      | 20.6%            | 41.2%            |
| Pension cost                               | -0.002%          | -0.005%          |
| Net retirement income                      | 0.3%             | 0.5%             |
| Replacement (consumption)                  | 0.7%             | 1.3%             |
| Replacement (MBA)                          | 2.8%             | 5.5%             |

### **3.4 THE DISTRIBUTIONAL (FAIRNESS) IMPACTS OF RAISING THE SG – WITH BEHAVIOURAL CHANGE**

Note that the available literature (referenced above) provides estimates of the aggregate offset without estimating the distributional pattern of that offset. That said, the assumption is that liquidity constrained households are forced to save more of the compulsory increase, whereas other households (who have higher levels of savings and flows of new saving) will tend to offset more against other savings. This distributional pattern is ameliorated somewhat over time – as lifetime income deciles are rather different (and much flatter) than current income deciles.

The assumptions here result in an initial rundown in voluntary contributions. The change in SG contributions in dollar terms is compared to existing rates of voluntary saving (also in dollar terms), which is then used as a ratio to factor down voluntary saving.

Increasing the SG and assuming behavioural change results in has little effect on lower lifetime income deciles as they tend to work for a shorter period of their careers (that is, there is little increase in their SG, and hence their adequacy).

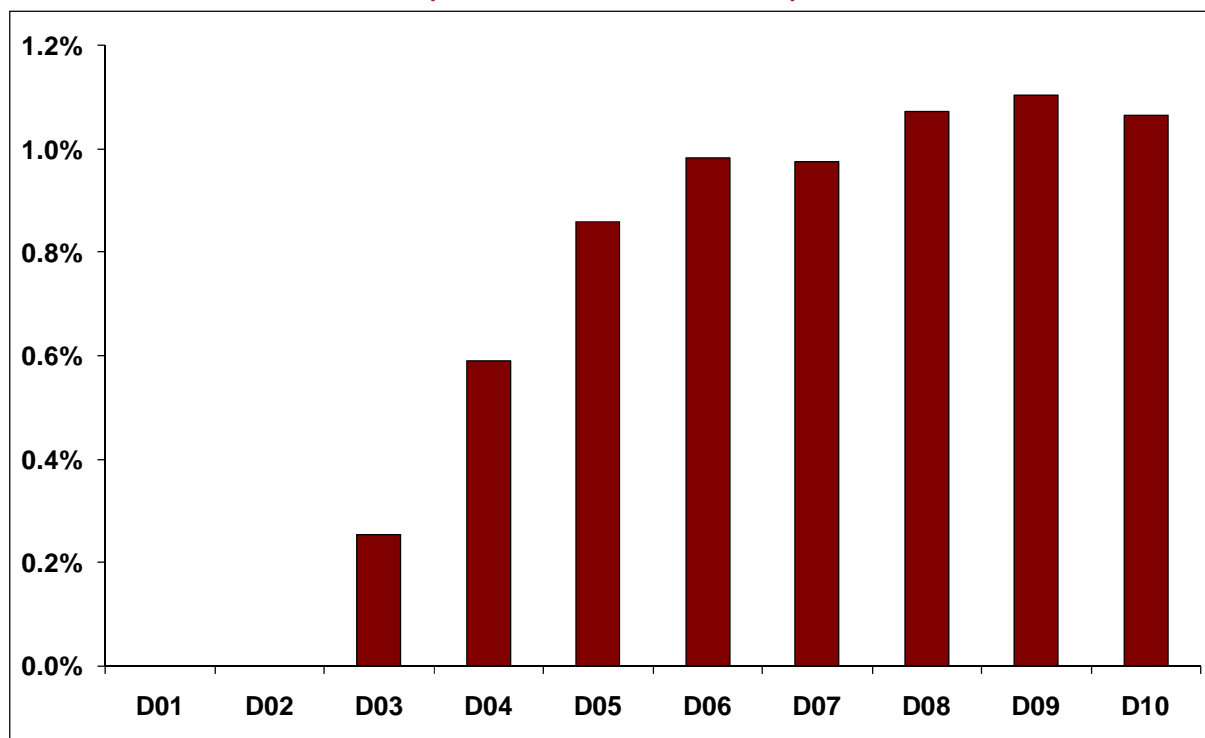
However, both the two lowest lifetime deciles (especially decile 2) have relatively healthy levels of voluntary contributions, particularly late in their lives. That means they do have the capacity to offset much of the increase in their SG, as small as the latter was.

The end result is that, when measured on either a relative ('consumer spending' adequacy) basis or an absolute ('modest but adequate') basis, the first two deciles see little or no impact on their adequacy from an increase in the SG.

On the relative measure (seen in Chart 5) adequacy gains then climb sharply across lifetime income deciles 3, 4 and 5 as SG payments do the same.

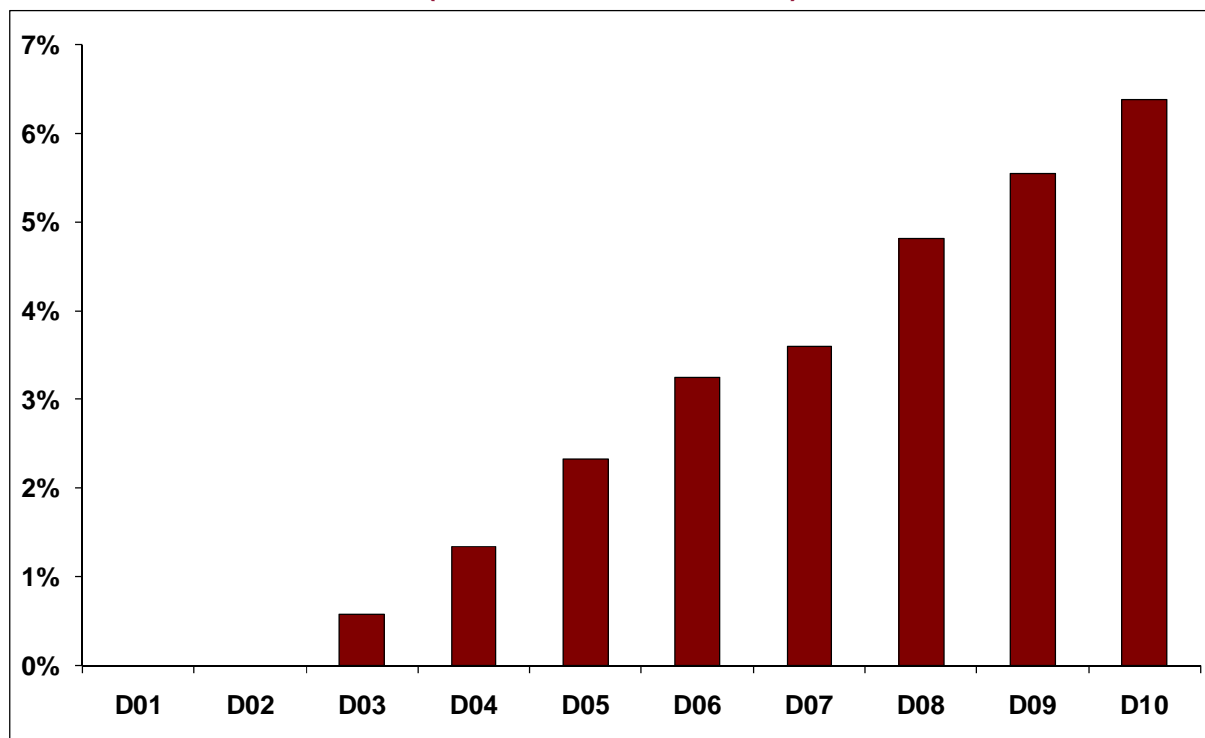
Some lost age pension benefits have an effect on the adequacy gains of deciles 5 to 7, which are in the pension phase out range.

**CHART 5: EFFECTS OF A 12% SG ON THE CONSUMPTION MEASURE OF ADEQUACY (WITH BEHAVIOURAL CHANGE)**



The 'modest but adequate' measure of adequacy focuses more on dollars received. Accordingly, and as expected, it shows higher increases at the top end than at the bottom.

**CHART 6: EFFECTS OF A 12% SG ON THE 'MODEST BUT ADEQUATE' MEASURE OF ADEQUACY (WITH BEHAVIOURAL CHANGE)**



## 4. FRONT-END CONTRIBUTION INCENTIVES

### 4.1 THE CONTRIBUTIONS TAX SIMULATIONS

ISN / AIST asked Access Economics to examine the introduction of a more progressive contributions tax via tax rebates for members on or below the 15% marginal income tax rate

Access Economics' previous analyses of changes to contribution tax have indicated that **tax changes are very close to a 'zero sum game' if the behaviour of members does not change (that is, any benefit to either government revenue or retiree incomes comes at the direct expense of the other party).**

Any change to tax rates or thresholds that is not offset by changes elsewhere in the system results in an increase or reduction in the overall burden of tax on the super system.

It is important to note that although there may be significant timing changes that raise or lower tax revenue in the short term, any change to the overall tax burden is a transfer between the government and retirees.

The simulations presented in this report show this zero sum game in a long run context.

While there are some income stream taxation issues surrounding the net result of this transfer, there is no 'magic pudding' in changes to the taxation of super. In present value terms, the system is a zero sum game, with any benefit to either government revenue or retiree incomes coming at the direct expense of the other party.

A long run view of the system as a single 'pot' of funds (divided between the government and members) illustrates an important point: If behaviour is unchanged, then a change to super tax can only raise either government revenue or retiree benefits. In the long run it is not possible to increase both.

The *SuperSim* Model is able to distinguish between timing effects and shifts in the overall tax burden. This provides an opportunity to provide a more accurate indication of the impact of complex changes on both government revenue and retiree benefits.

That said, as the results presented later show, what is a zero sum game for totals is not a zero sum for the distribution of effects across different income deciles.

It is also worth noting that cutting contribution tax (either via a progressive tax or a single step equivalent) results in a smaller loss to contributions tax revenue than might have otherwise been thought.

That is because:

- Contributions tax is only levied on 55%-60% of super contributions (that is, those which are deductible or employer contributions – not on after-tax contributions).
- Results presented here are net of taxes in retirement. That means increased benefits result in increased average tax rates.

#### 4.1.1 A FULLY PROGRESSIVE CONTRIBUTIONS TAX

Table 4 below sets out the impact of the adoption of:

- ❑ A progressive rate scale for the contributions tax.
- ❑ A combination of a tax rebate for those on the lowest incomes (of 15%) and contributions tax cuts (to 0%) for those on low incomes.
- ❑ A single step progressive contributions tax, levied at 0% on contributions up to income of \$30,000, and then at 15% on contributions from income above \$30,000.

In the progressive contributions tax scenario, the flat 15% tax on contributions is replaced with four new rates – each applying to contributions from income above the relevant personal income tax threshold.

**TABLE 4: THE IMPACT OF A FULLY PROGRESSIVE CONTRIBUTIONS TAX**

| <b>2040-41 estimates as a ratio to GDP</b> | <b>Progressive conts tax</b> | <b>-15% &amp; 0% conts tax</b> | <b>Single step conts tax</b> |
|--|------------------------------|--------------------------------|------------------------------|
| Benefits                                   | 0.0%                         | 0.05%                          | 0.05%                        |
| Earnings                                   | 0.0%                         | 0.04%                          | 0.04%                        |
| Superannuation assets                      | 0.07%                        | 0.83%                          | 0.76%                        |
| Pension cost                               | -0.001%                      | -0.04%                         | -0.003%                      |
| Net retirement income                      | 0.0%                         | 0.03%                          | 0.02%                        |
| Replacement (consumption)                  | 0.2%                         | 1.0%                           | 0.64%                        |
| Replacement (MBA)                          | 0.0%                         | 0.5%                           | 0.4%                         |

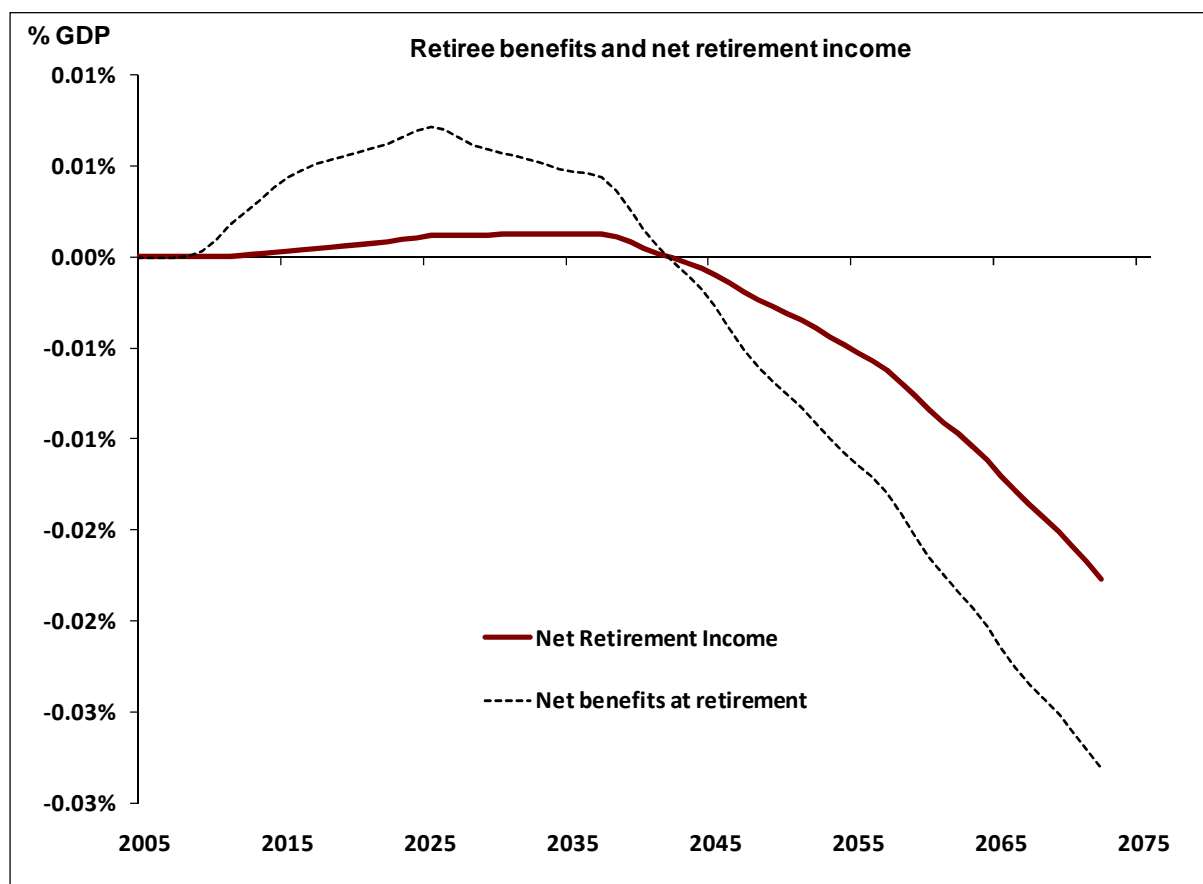
In effect, this shifts the taxation of deductible super contributions from a fixed 15% rate to a fixed 15% concession relative to the marginal personal income tax rates members otherwise face on their income (ignoring the Medicare levy, which would tend to boost that advantage for most taxpayers).

Such a shift in the taxation of super would see members earning less than the current \$34,000 per year threshold pay no tax on their contributions, while those earning more than the current \$80,000 per year threshold would face an increased rate of contributions tax.

The current average of the marginal tax rates stand at close to 31%. That suggests that if the distribution of contributions to super were to mirror the distribution of taxpayers, then the average rate of contributions tax would stand at 16% (or slightly higher given the non-refundable nature of the 15% discount for the lowest paid).

More detailed patterns (and how they develop over time) are shown in Chart 7 (for retiree benefits and incomes) and in Chart 8 (covering costs to Government revenues and spending).

**CHART 7: EFFECTS OF A PROGRESSIVE CONTRIBUTIONS TAX ON RETIREE BENEFITS AND INCOMES**



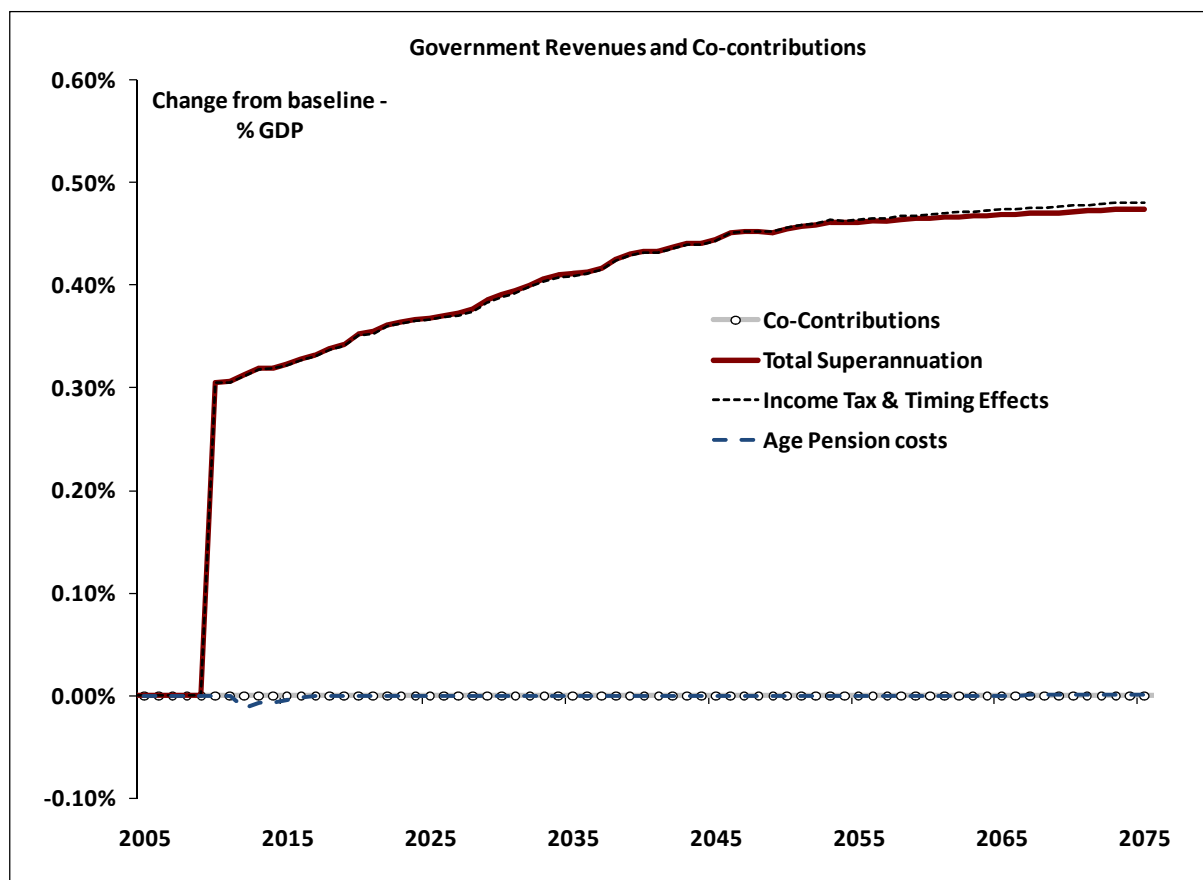
Note that, over time, the assumed indexation of personal income tax thresholds to prices rather than wages results in a growing drag on retiree incomes relative to the other scenarios presented in this report (where there are few taxes on super which are linked to the personal income tax scale).

On SG contributions alone, the scenario modelled here would therefore seem likely to result in a small increase in total contributions taxes. However, when voluntary contributions to super are added to that equation, the balance between lower taxes for the low paid and higher taxes for high income earners shifts somewhat.

Deductible voluntary contributions to super (including those made via ‘salary sacrifice’ arrangements) rise as income increases – reflecting in part the greater relative incentives offered by the current flat tax on contributions for those on higher marginal tax rates.

As a result, the progressive contributions tax rates modelled in this scenario result in a significant increase in contributions taxes, as shown in Chart 16 – as higher rates for those on the top marginal tax rates outweigh reductions in contributions taxes for the low paid.

**CHART 8: EFFECTS OF A PROGRESSIVE CONTRIBUTIONS TAX ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**



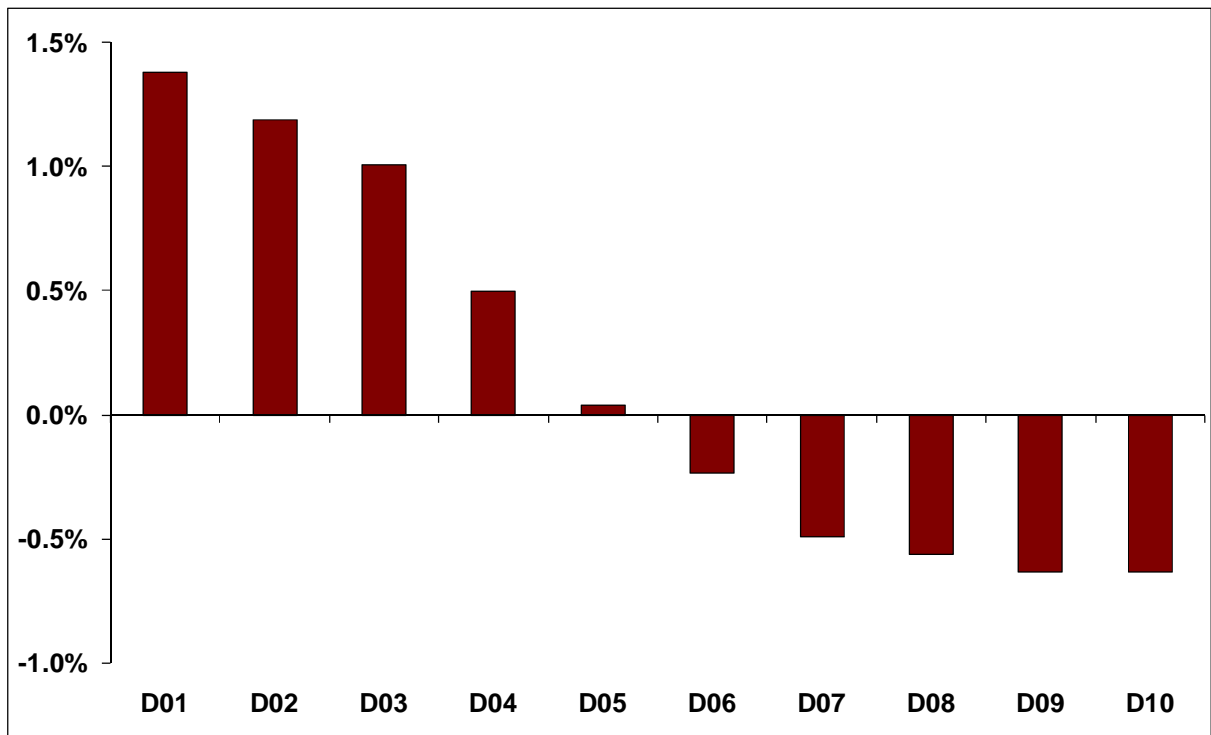
#### 4.1.2 THE DISTRIBUTIONAL (FAIRNESS) IMPACTS OF A PROGRESSIVE CONTRIBUTIONS TAX

By linking tax rates for super contributions to those on personal income, this scenario has a direct impact on 'fairness' – asking higher income earners to shoulder a greater load, while removing the disincentives that currently exist for the low paid to contribute.

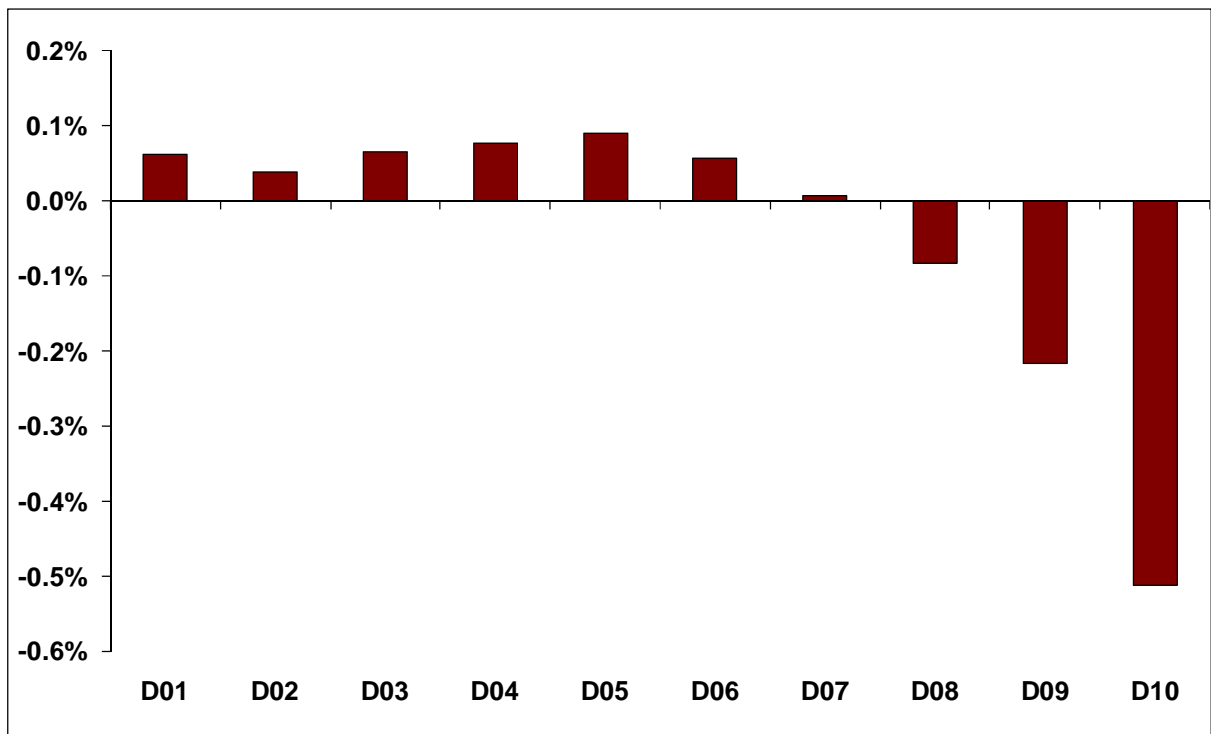
Much of the impact of this scenario is therefore felt in the distribution of super assets and benefits, rather than in the overall levels, with lower income deciles gaining at the expense of those at the top end.

The following charts help to illustrate that pattern. Chart 9 is set up in the same fashion as Chart 3 above. That is, it shows the difference in the level of the 'consumer spending' adequacy measure.

**CHART 9: EFFECTS OF A FULLY PROGRESSIVE CONTRIBUTIONS TAX ON THE CONSUMPTION MEASURE OF ADEQUACY – ABSOLUTE PERCENTAGE POINT DIFFERENCE**



**CHART 10: EFFECTS OF A FULLY PROGRESSIVE CONTRIBUTIONS TAX ON THE 'MODEST BUT ADEQUATE' MEASURE OF ADEQUACY – ABSOLUTE PERCENTAGE POINT DIFFERENCE**



Turning to the 'modest but adequate' standard, low to middle income earners do well, as they face lower rates of contributions tax on average over a lifetime. Lifetime deciles 9 and 10 in particular see rather weaker replacement rates, both as the tax advantages of super under

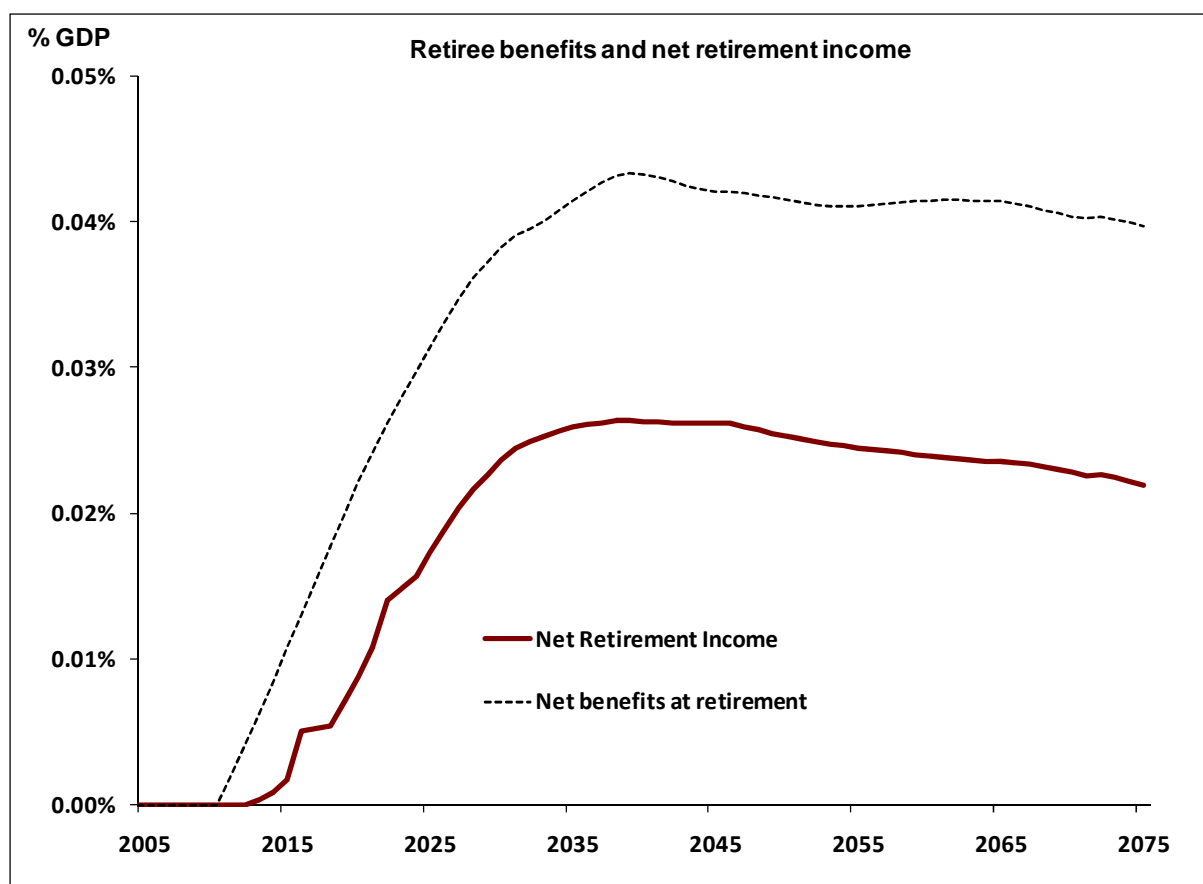
the baseline scenario are at their greatest among this group (and are hence at most risk in this scenario), and as they have the highest levels of deductible voluntary super saving.

**4.1.3 0% CONTRIBUTIONS TAX FOR THOSE ON MARGINAL RATE OF 15% PLUS -15% TAX FOR THOSE ON MARGINAL RATE OF 0%**

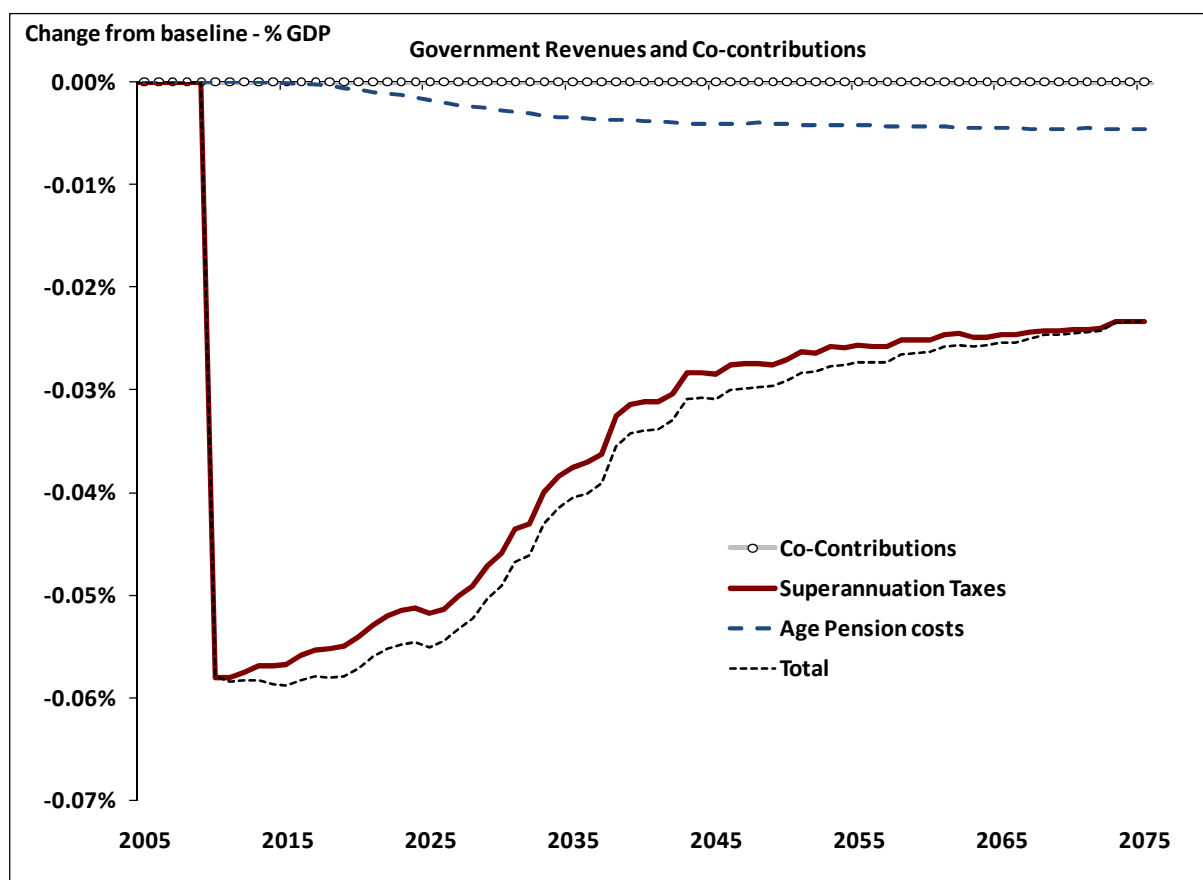
Table 4 above details the differences to the baseline results arising from this scenario.

This simulation may be thought of as a combination of a tax rebate for those on the lowest incomes and contributions tax cuts for those on low incomes. It therefore adds to the stock of super, and hence to retiree benefits and incomes (see Chart 11), adding about as much as is gained on benefits to the costs to the Government (see Chart 12).

**CHART 11: EFFECTS OF A -15%/0% CONTRIBUTIONS TAX ON RETIREE BENEFITS AND INCOMES**



**CHART 12: EFFECTS OF A -15%/0% CONTRIBUTIONS TAX ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**

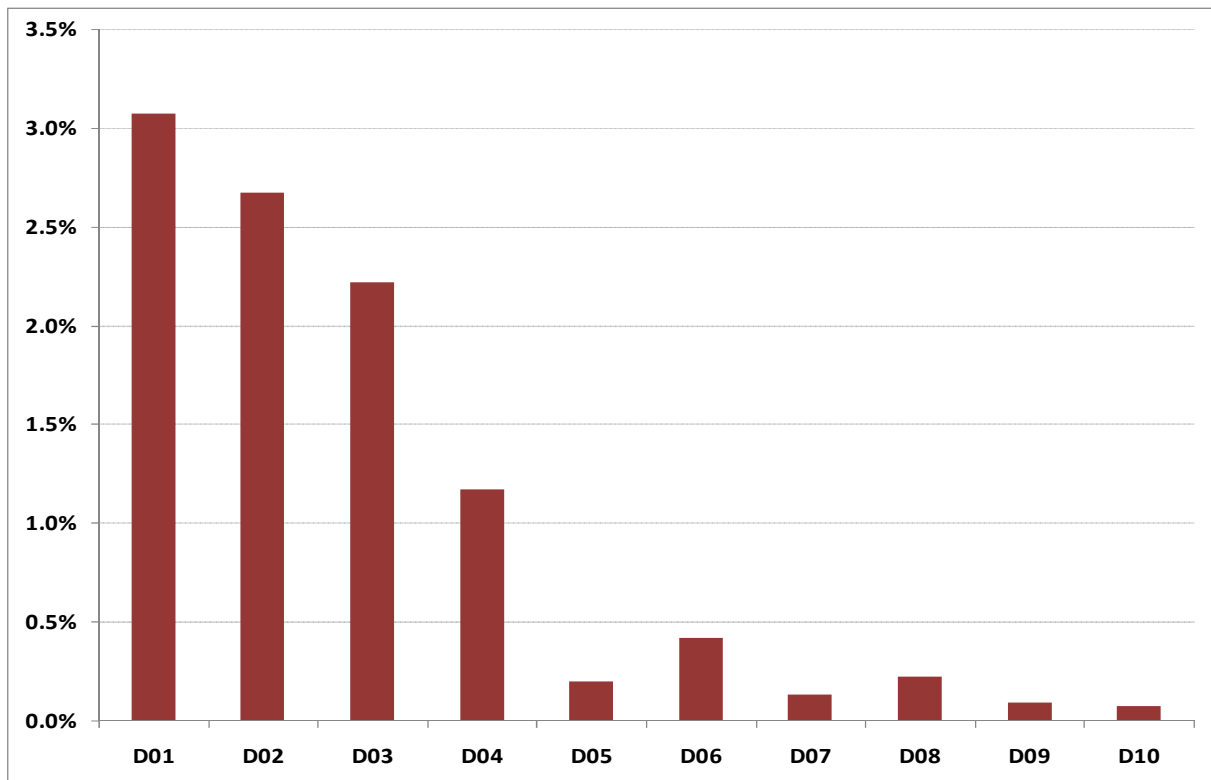


While the contributions tax changes in this scenario are applied only to those on the lowest incomes, the boost to the MBA measure seen in Chart 14 shows a fairly flat impact on retirement income adequacy.

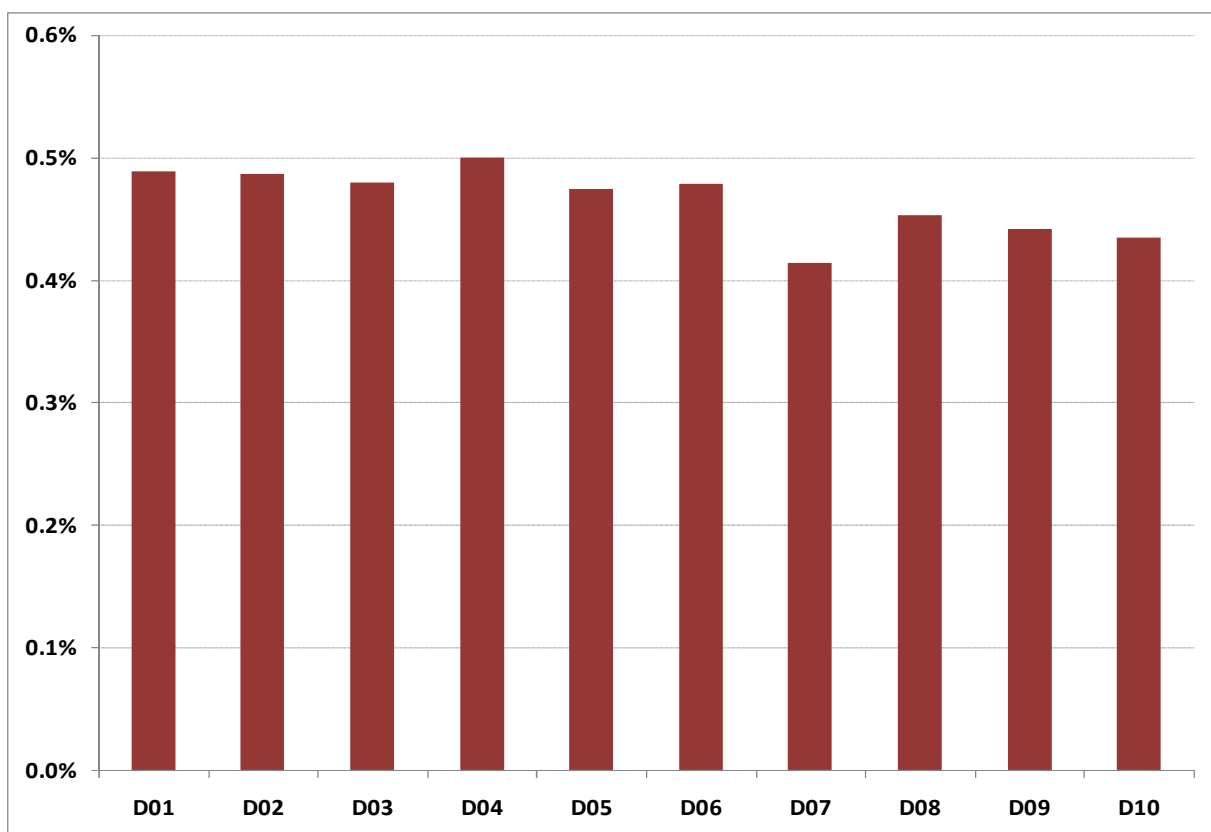
That flat distribution of adequacy changes is the result of higher lifetime income earners making larger contributions when taking a break from the workforce. By doing so, they are able to benefit in similar absolute amounts to low lifetime income earners, despite having fewer opportunities to take advantage of the lower tax rates available under the policy.

In contrast, the relative ('consumer spending') measure of adequacy shows that these flat dollar gains are important for the lower deciles, but with only small impacts at the top end.

**CHART 13: EFFECTS OF A -15%/0% CONTRIBUTIONS TAX ON THE CONSUMPTION MEASURE OF ADEQUACY – ABSOLUTE PERCENTAGE POINT DIFFERENCE**



**CHART 14: EFFECTS OF A -15%/0% CONTRIBUTIONS TAX ON THE 'MODEST BUT ADEQUATE' MEASURE OF ADEQUACY – ABSOLUTE PERCENTAGE POINT DIFFERENCE**



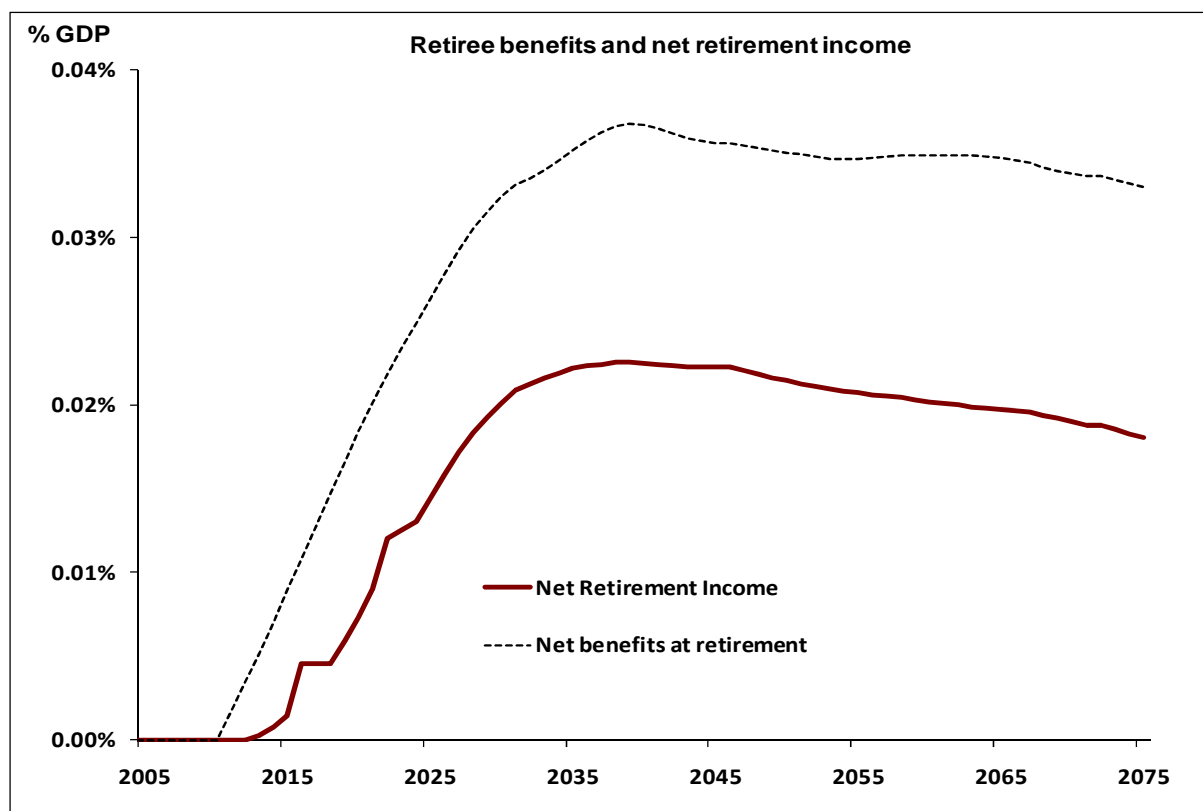
#### 4.1.4 A SINGLE STEP CONTRIBUTIONS TAX

Table 4 above sets out the impact of the adoption of a single step contributions tax:

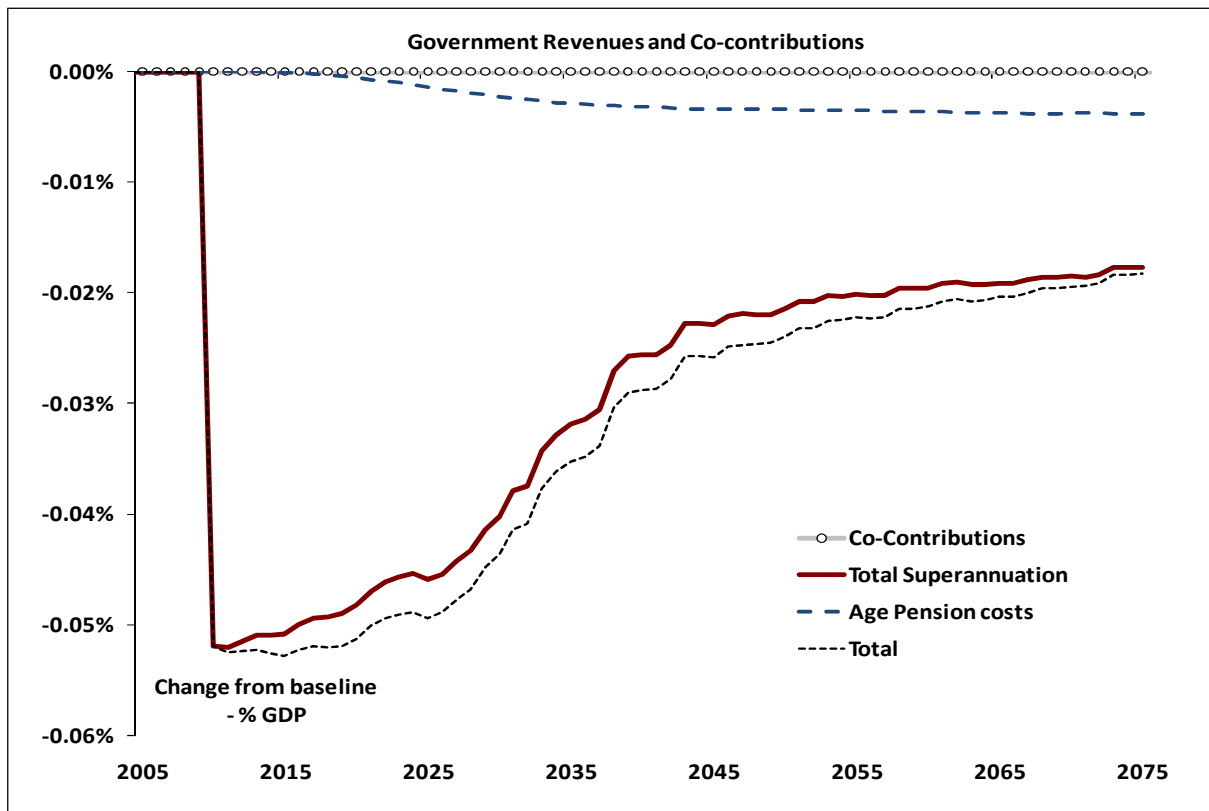
- ❑ Around 14% of the nation’s wages and salaries are paid to those who earn less than \$30,000 per year. The operation of the \$450 rule means that a small proportion of that 14% don’t pay SG, and hence don’t pay contributions tax. Moreover, the distribution of salary sacrifice contribution payments is markedly different to that of wages and salaries in the wider economy. The upshot is that this measure might be expected to reduce contribution taxes by around 11%.
- ❑ In practice, the simulation shows it cutting a little more, at around 13% of contributions tax collections. Benefits rise, and – partly thanks to the assumed Equity Risk Premium of 1% – earnings rise by even more.
- ❑ The stock of superannuation assets in the accumulation phase rises by a healthy amount, and age pension payments ease slightly.
- ❑ Measures of average replacement rates improve solidly.

More detailed patterns (and how they develop over time) are shown in Chart 15 (for retiree benefits and incomes) and in Chart 16 (covering costs to Government revenues and spending).

**CHART 15: EFFECTS OF A SINGLE STEP CONTRIBUTIONS TAX ON RETIREE BENEFITS AND INCOMES**



**CHART 16: EFFECTS OF A SINGLE STEP CONTRIBUTIONS TAX ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**

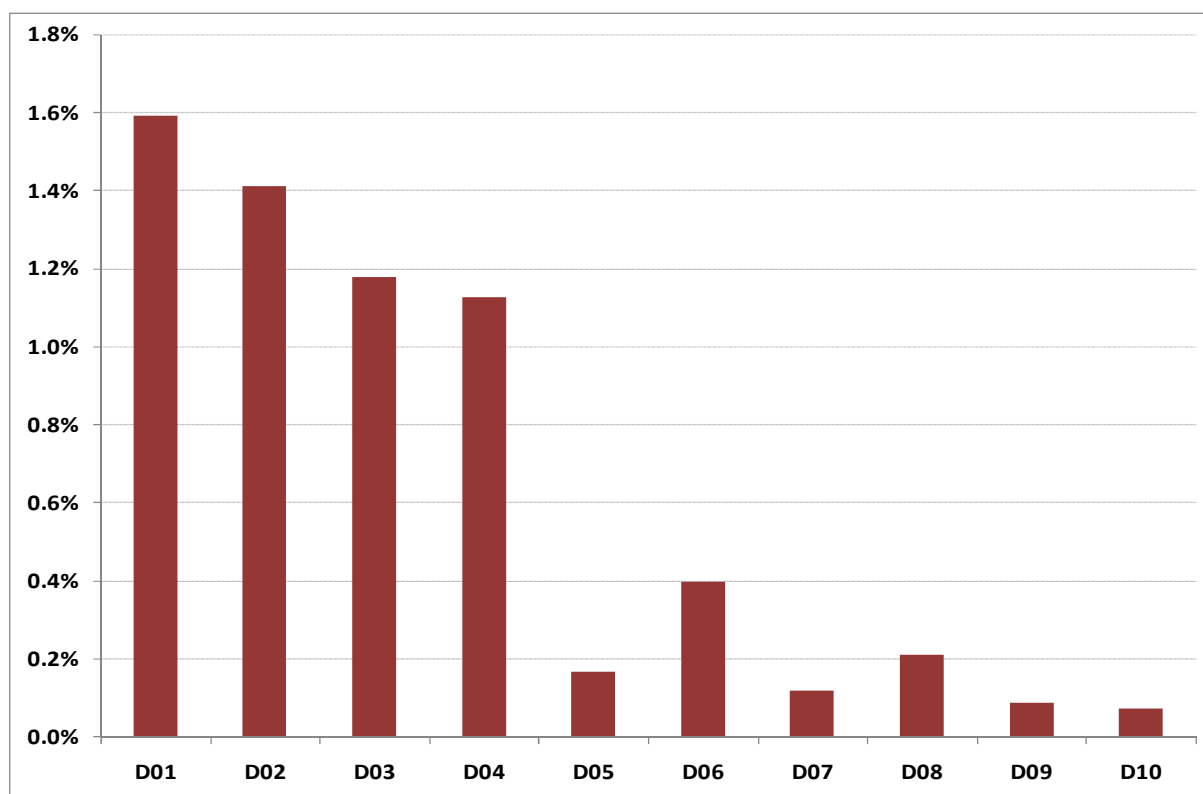


**4.1.5 THE DISTRIBUTIONAL (FAIRNESS) IMPACTS OF A SINGLE STEP CONTRIBUTIONS TAX**

By definition, most of the boost to superannuation balances and hence to incomes is at the lower end of incomes.

The following charts help to illustrate that pattern. Chart 17 is set up in the same fashion as Chart 3 above. That is, it shows the difference in the level of the ‘consumer spending’ adequacy measure.

**CHART 17: EFFECTS OF A SINGLE STEP CONTRIBUTIONS TAX ON THE CONSUMPTION MEASURE OF ADEQUACY – ABSOLUTE PERCENTAGE POINT DIFFERENCE**



The lowest income earners do less well because their contributions are a relatively small component of their retirement income – which is dominated by their pension earnings.

In contrast, those in lifetime income deciles 3 and 4 do rather better, as they earn consistent wage incomes, and often at incomes close to \$30,000.

Lifetime deciles 5, 6 and 7 do less well as they are more likely to miss out on the contributions tax break during their prime working years.

## 4.2 THE CO-CONTRIBUTIONS SIMULATIONS

ISN / AIST asked Access Economics to examine two proposals with respect to co-contributions. The first is a \$500 grant tapering to zero with \$1 for \$1 matching up to \$1500; and the second is an extension of the current co-contribution top threshold to \$75,000.

As with the SG simulations above, we have conducted these both ignoring and allowing for behavioural change.

At first glance government co-contributions to super seem quite different to tax concessions offered in the super system.

However, at its simplest, a change to the co-contributions scheme can be thought of in much the same way as a change to super tax. Distributional effects aside, an increase in co-contributions represents a reduction in the net revenue received by government from the super system.

Like a change in tax, shifts in the generosity of the co-contributions scheme represent a transfer between the government and retirees. Also like a tax change, co-contributions represent a chance for the government to make decisions about both the overall share of the super ‘pot’ it will claim, and at what point in the system it will claim it.

When behaviour is unchanged, an increase in co-contributions is similar to a cut in the up-front contributions tax.

#### 4.2.1 CO-CONTRIBUTIONS WITH NO BEHAVIOURAL CHANGE

Table 5 identifies the differences compared with the baseline of changed arrangements for co-contributions, but without behavioural change. In brief, and focussing on the shift to \$75,000 threshold:

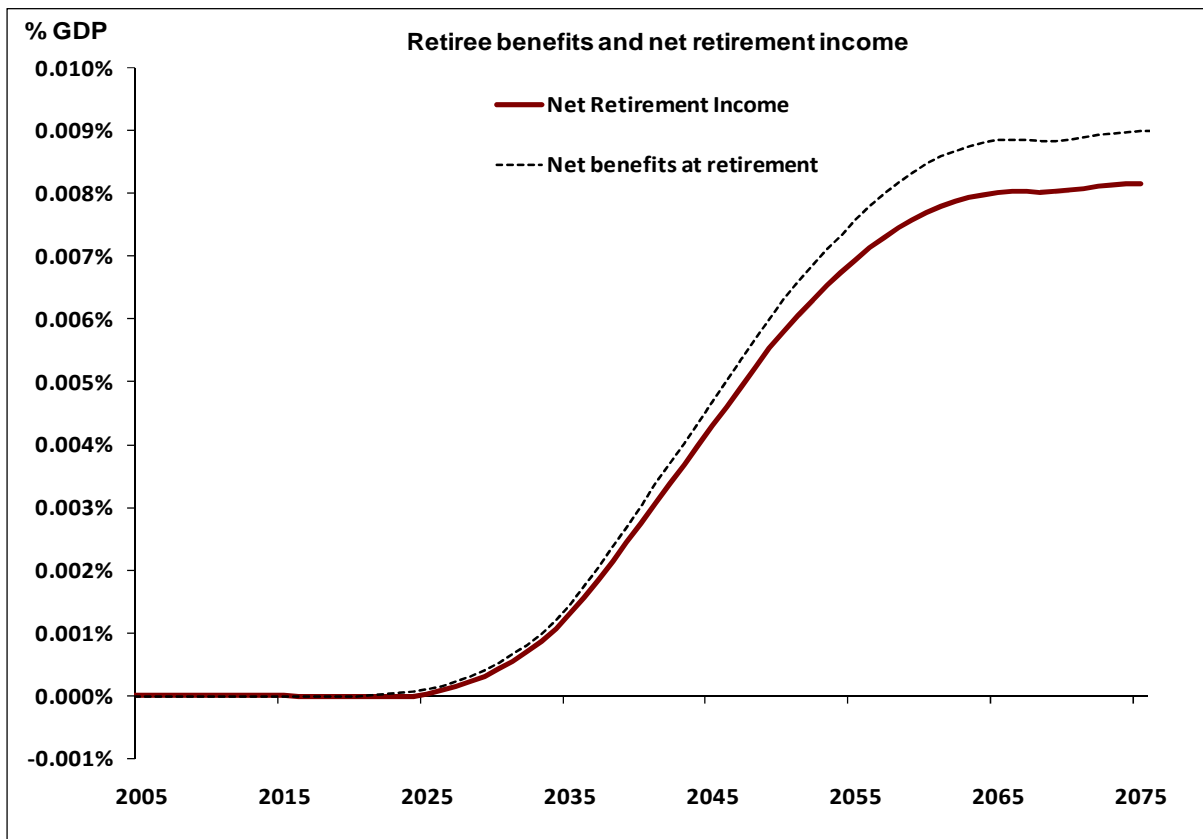
- ❑ Co-contributions are counted as contributions in the model, but the increase in contributions is small, because the policy change is relatively small compared with most of the others considered here.
- ❑ The increase in earnings is solid given the change in contributions, and there is virtually no loss of pension income (and, to the extent there is, it lies mostly beyond 2040-41).
- ❑ Measures of average replacement rates improve marginally.

**TABLE 5: THE IMPACT OF CO-CONTRIBUTION POLICY CHANGES**

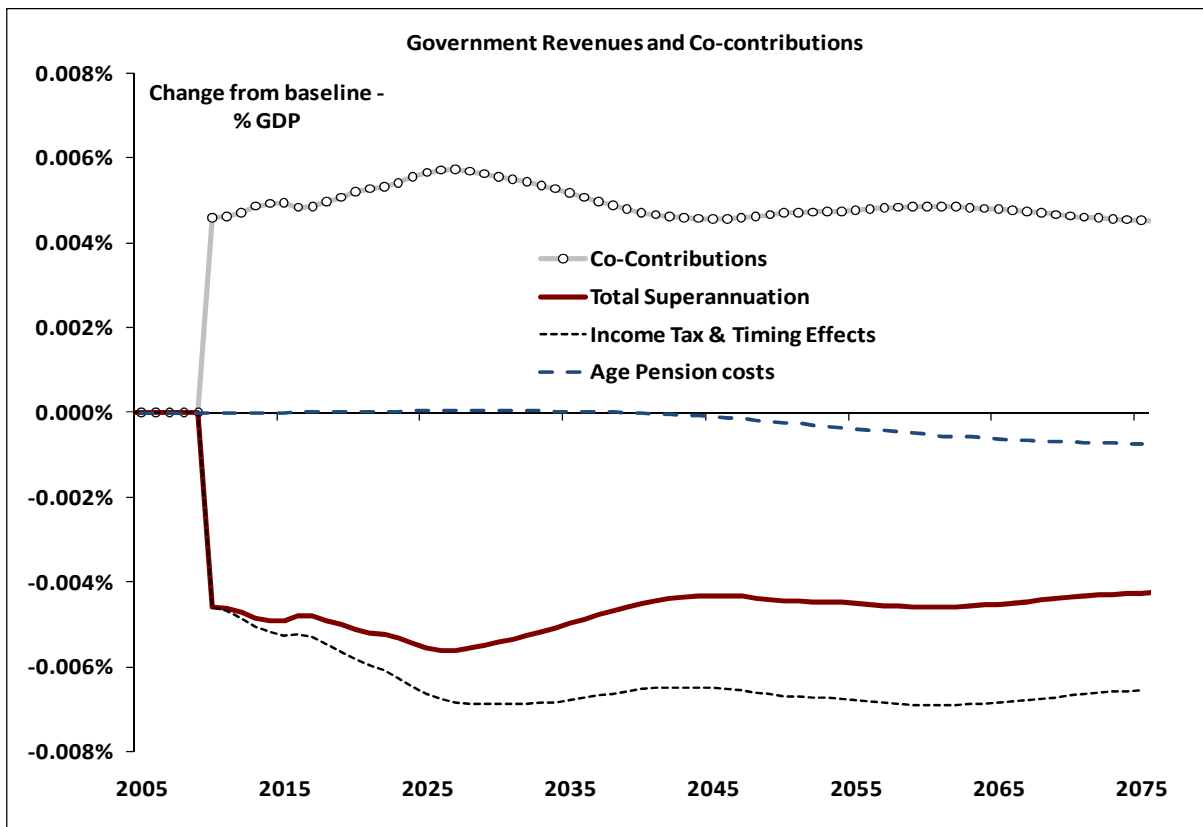
| 2040-41 estimates as a ratio to GDP | \$500 co-conts with<br>\$1 for \$1 to \$1,500 | Co-conts threshold<br>\$75,000 |
|-------------------------------------|---|--------------------------------|
| Contributions                       | 0.01%   | 0.02%                          |
| Earnings                            | 0.07%   | 0.03%                          |
| Benefits                            | 0.01%   | 0.02%                          |
| Superannuation assets               | 1.2%  | 0.5%                           |
| Pension cost                        | 0.00%   | 0.00%                          |
| Net retirement income               | 0.007%  | 0.012%                         |
| Replacement (consumption)           | 0.11%   | 0.07%                          |
| Replacement (MBA)                   | 0.15%   | 0.15%                          |

As usual, the following charts provide greater detail and a time series for the changes arising from the simulation to (1) retiree benefits and incomes, and on (2) the net costs to Government, as well as the impact on adequacy using (3) a consumer spending measure and (4) a ‘modest but adequate’ measure. Note that the charts below are drawn from the scenario which has the co-contributions threshold lifting to \$75,000, but the matching charts for the other co-contributions scenario (the \$500 grant tapering to zero with \$1 for \$1 matching up to \$1500) are very similar.

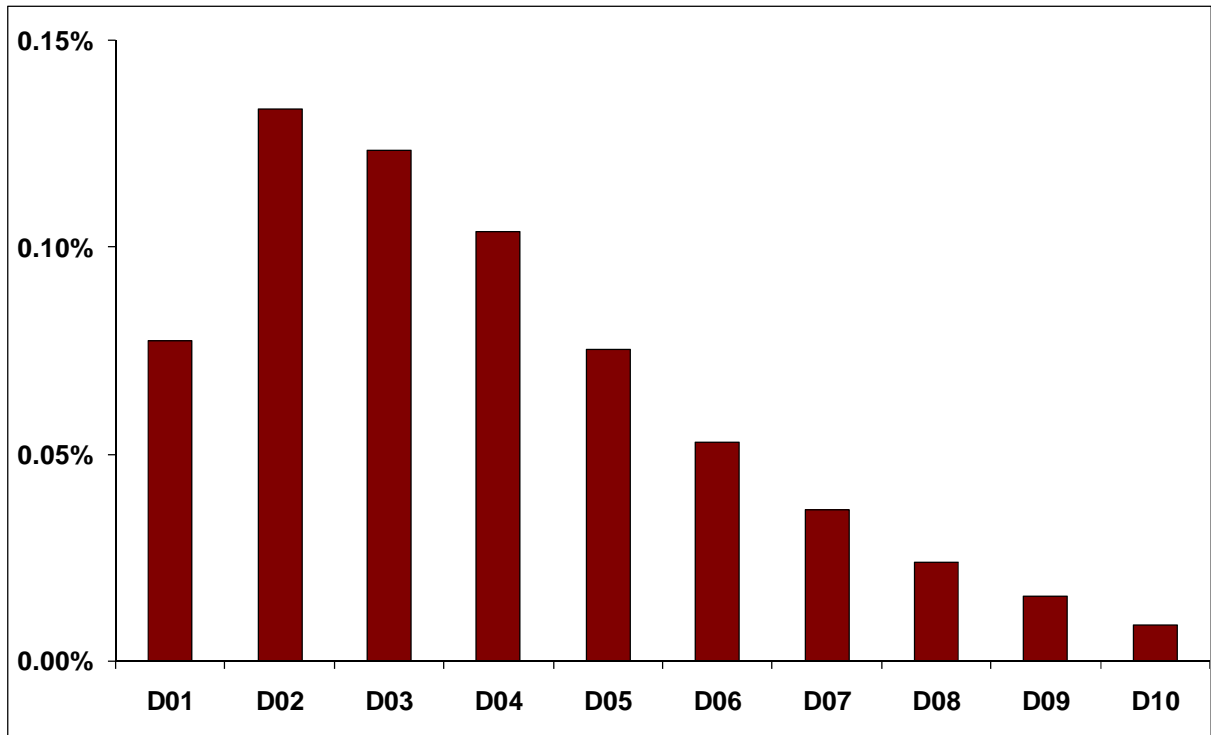
**CHART 18: EFFECTS OF A \$75,000 CO-CONTS THRESHOLD ON RETIREE BENEFITS AND INCOMES**



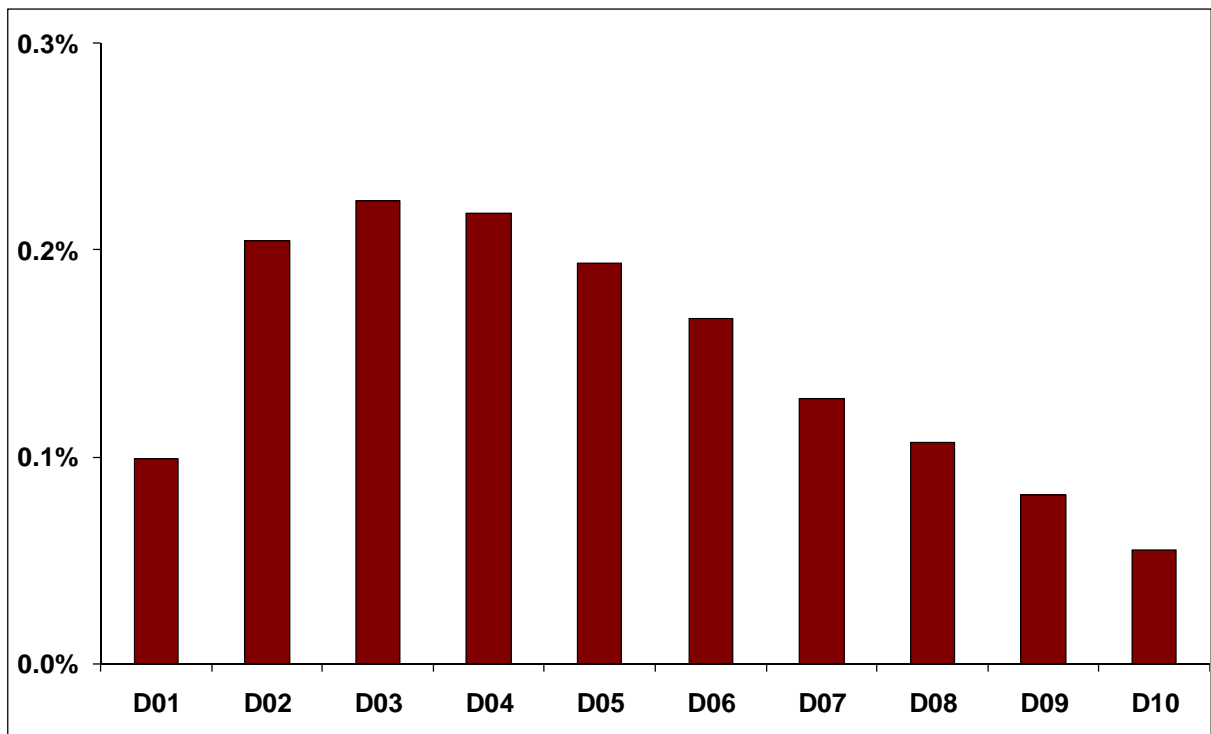
**CHART 19: EFFECTS OF A \$75,000 CO-CONTS THRESHOLD ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**



**CHART 20: EFFECTS OF A \$75,000 CO-CONTS THRESHOLD ON THE CONSUMPTION MEASURE OF ADEQUACY**



**CHART 21: EFFECTS OF A \$75,000 CO-CONTS THRESHOLD ON THE 'MODEST BUT ADEQUATE' MEASURE OF ADEQUACY**



As expected, most gains are focussed on those with low- to middle lifetime income deciles.

#### 4.2.2 CO-CONTRIBUTIONS WITH BEHAVIOURAL CHANGE

Table 6 identifies the differences compared with the baseline of changed arrangements for co-contributions with behavioural change. Focussing on the shift to \$75,000 threshold:

- ❑ This ‘small’ policy becomes smaller still once behaviour is allowed to change to offset it. Co-contributions are a clear and up-front gains to those who receive them, so for those who can offset their savings behaviour (through reduced voluntary contributions and/r running down their holdings of other assets), that makes a simple switch in savings relatively attractive.
- ❑ Accordingly, there is little net change in contributions, but (given the small change in contributions) a solid increase in benefits and in net retirement income.
- ❑ That (small) lift in average replacement rates comes at a direct cost to government revenue.

**TABLE 6: THE IMPACT CO-CONTRIBUTIONS POLICY CHANGES, WITH BEHAVIOURAL CHANGE**

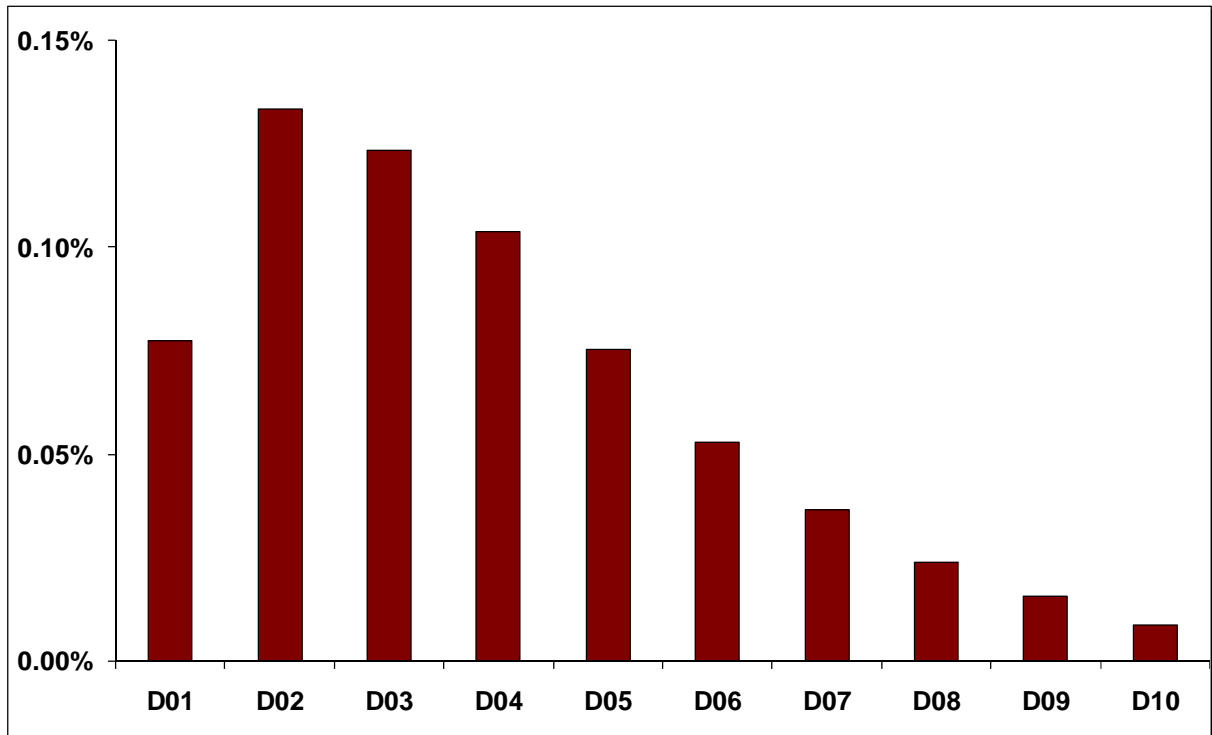
| 2040-41 estimates as a ratio to GDP | \$500 co-conts with<br>\$1 for \$1 to \$1,500 | Co-conts threshold<br>\$75,000 |
|-------------------------------------|---|--------------------------------|
| Contributions                       | 0.00%   | 0.02%                          |
| Earnings                            | 0.02%   | 0.03%                          |
| Benefits                            | 0.01%   | 0.02%                          |
| Superannuation assets               | 0.34%   | 0.5%                           |
| Pension cost                        | 0.00%   | 0.00%                          |
| Net retirement income               | 0.002%  | 0.011%                         |
| Replacement (consumption)           | 0.04%   | 0.06%                          |
| Replacement (MBA)                   | 0.08%   | 0.14%                          |

The charts below are drawn from the scenario which has the co-contributions threshold lifting to \$75,000, but allowing for behavioural change.

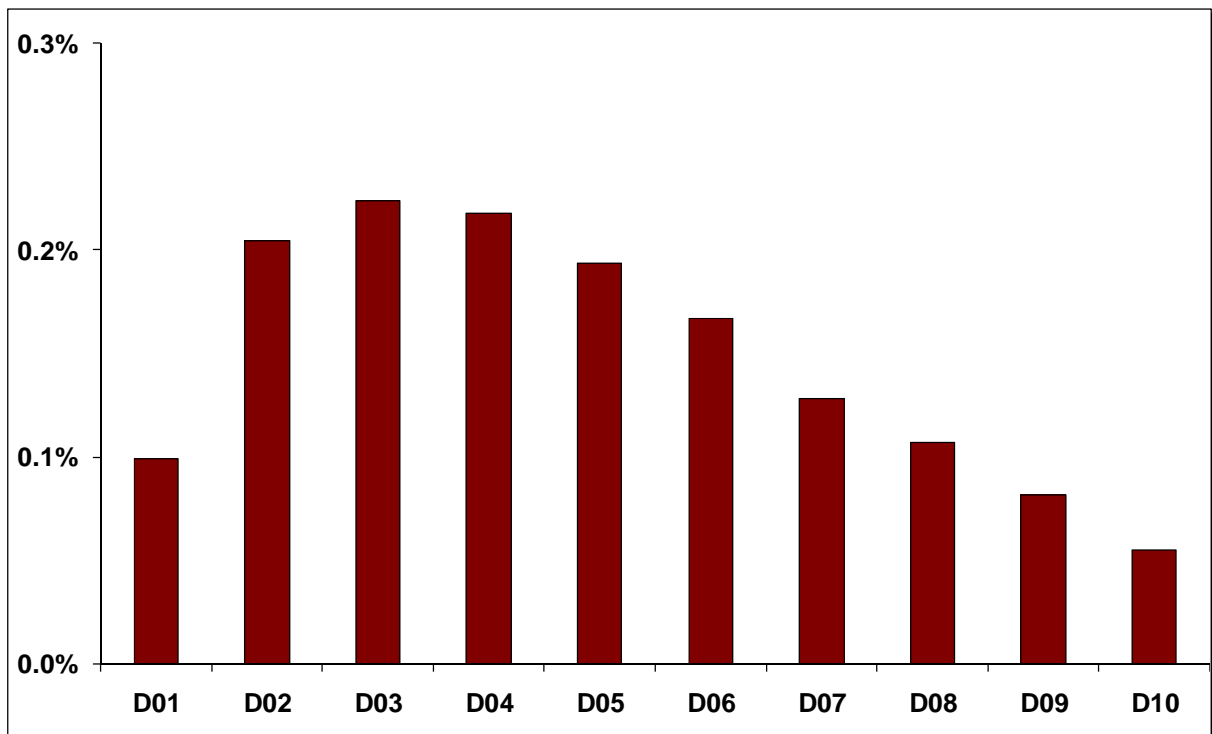
As Chart 22 shows, adequacy improves for those whose income allows them to avail themselves of the policy (that is, those on low-to-middle incomes), with the benefits to middle income earners remaining evident even if – as here – they take the opportunity to scale back other forms of saving (including voluntary contributions).

These adequacy outcomes are flatter on the MBA standard (see Chart 23), but the additions to MBA adequacy are larger (as the standard is, on average, lower in absolute terms than the ‘consumption spending’ standard).

**CHART 22: EFFECTS OF A \$75,000 CO-CONTS THRESHOLD ON THE CONSUMPTION MEASURE OF ADEQUACY, WITH BEHAVIOURAL CHANGE**



**CHART 23: EFFECTS OF A \$75,000 CO-CONTS THRESHOLD ON THE 'MODEST BUT ADEQUATE' MEASURE OF ADEQUACY, WITH BEHAVIOURAL CHANGE**



## 5. CHANGES TO THE AGE PENSION

The age pension is the main fairness lever in the Australian retirement income system.

ISN / AIST asked Access Economics to examine three alternatives:

- ❑ A permanent increase in age pensions equivalent to the December 2008 one-off payment.
- ❑ Reducing the top pension means-test income threshold by 5%.
- ❑ Reducing the top pension means-test income threshold by 10%.

Table 7 focuses on differences arising from enacting a permanent ‘December 2008-style’ lift in pensions:

- ❑ Pension costs lift by 0.5% of GDP, with a matching lift in net retirement incomes (that is, there is a transfer of incomes pretty much direct from the public to the private sector).
- ❑ There are negligible impacts on the stock of superannuation assets in the accumulation phase, but measures of average replacement rates improve solidly.

Note that the model’s parameters are set to assume that two-thirds of member benefits at retirement are taken as a lump sum, which is then drawn down at double the rate of superannuation allocated pensions.

**TABLE 7: THE IMPACT OF A ‘DECEMBER 2008-STYLE’ LIFT IN PENSIONS**

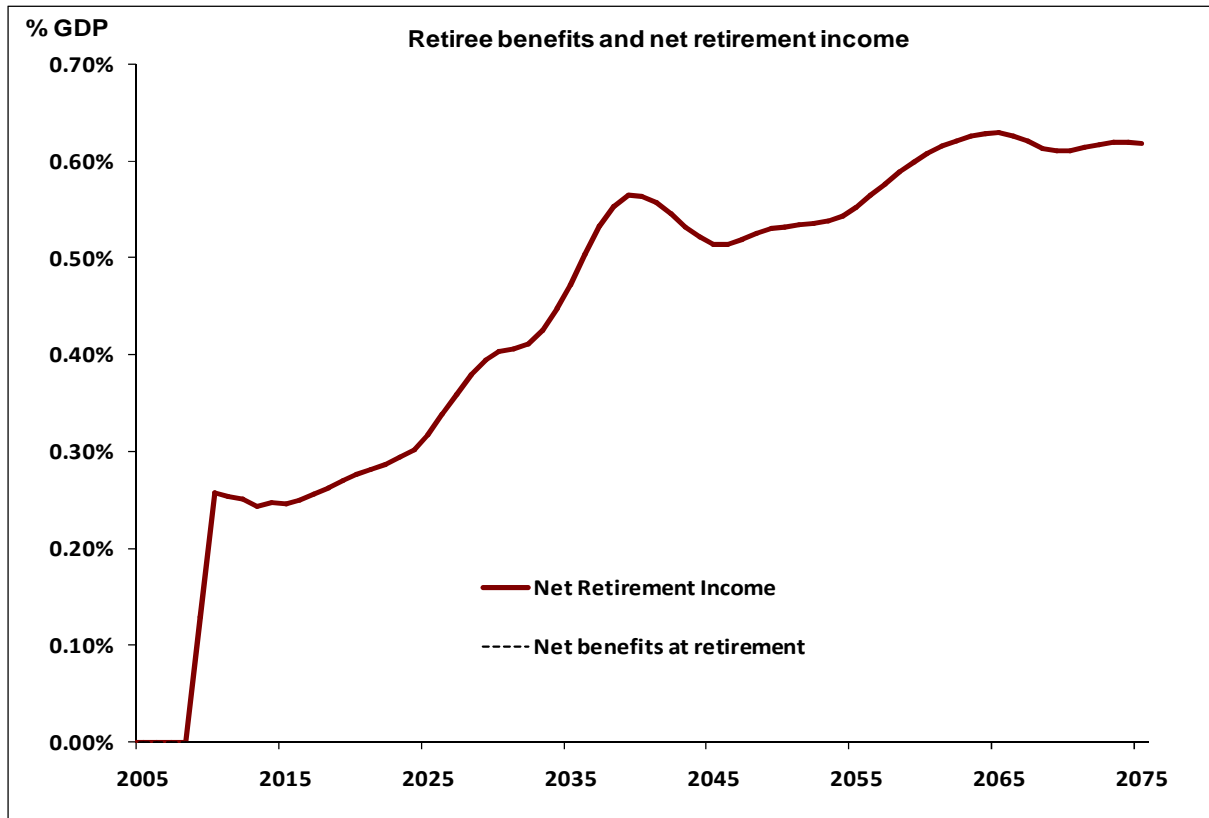
| <b>2040-41 estimates as a ratio to GDP</b> | <b>‘December 2008-style’ lift in pensions</b> | <b>5% lift in pension income threshold</b> |
|--|---|--|
| Benefits                                   | 0.0%  | 0.0%                                       |
| Earnings                                   | 0.2%  | 0.4%                                       |
| Superannuation assets                      | 0.2%  | 0.3%                                       |
| Pension cost                               | 0.5%  | 0.01%                                      |
| Net retirement income                      | 0.5%  | 0.014%                                     |
| Replacement (consumption)                  | 2.4%  | 0.2%                                       |
| Replacement (MBA)                          | 5.0%  | 0.2%                                       |

Chart 24 shows the size of the lift in retiree incomes (‘retiree benefits’ is an estimate of the assets available on retirement so, unlike retirement incomes, these are unaffected by the change in pension arrangements)

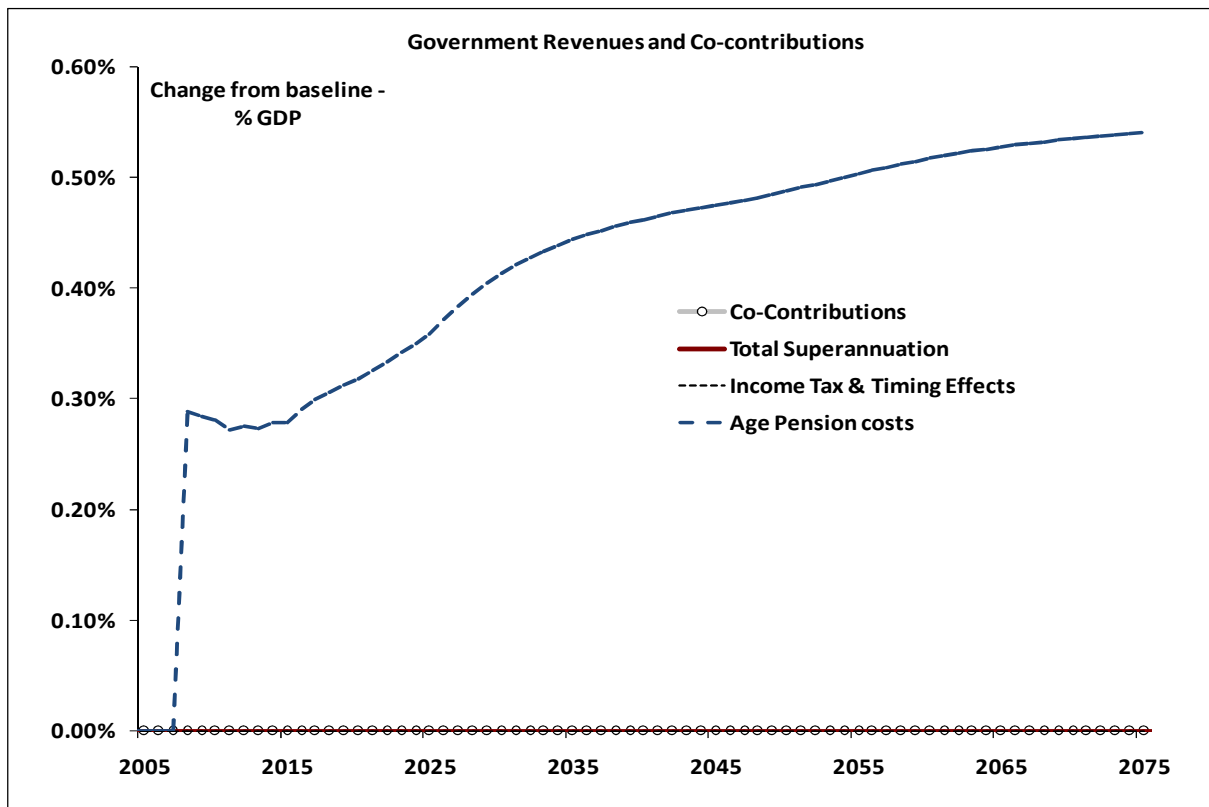
Chart 25 shows the source of the extra retirement income – the increase in pension payments.

The ‘consumer spending’ benchmark of adequacy seen in Chart 26 show the gains are concentrated among low income earners, though the ‘modest but adequate’ benchmark in Chart 27 shows a more even spread of the dollars.

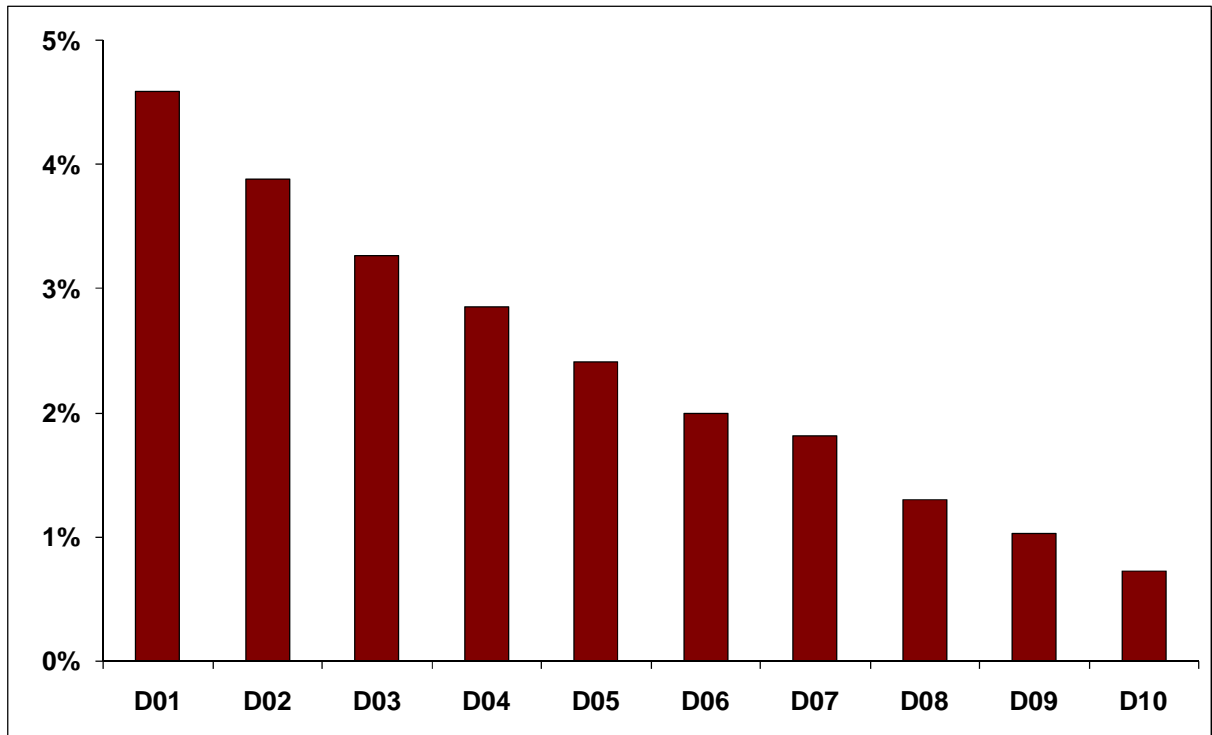
**CHART 24: EFFECTS OF A 'DECEMBER 2008-STYLE' LIFT IN PENSIONS ON RETIREE BENEFITS AND INCOMES**



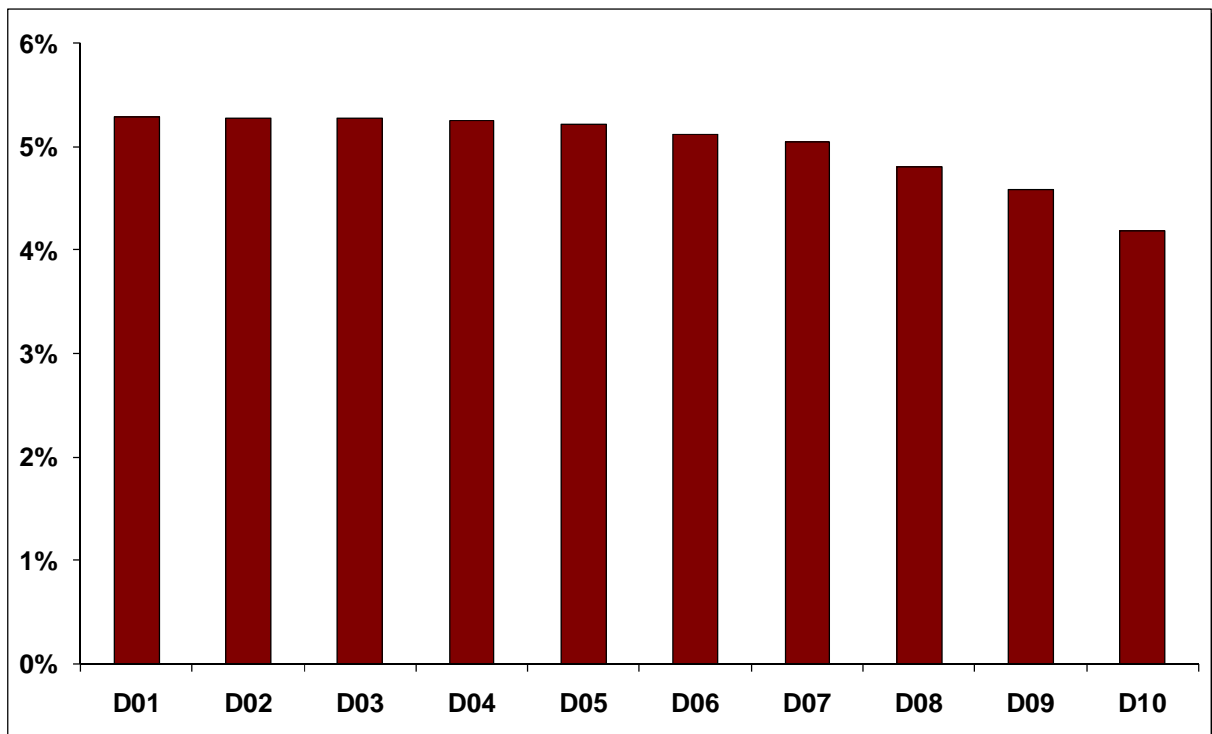
**CHART 25: EFFECTS OF A 'DECEMBER 2008-STYLE' LIFT IN PENSIONS ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**



**CHART 26: EFFECTS OF 'DECEMBER 2008-STYLE' LIFT IN PENSIONS ON THE CONSUMPTION MEASURE OF ADEQUACY**



**CHART 27: EFFECTS OF A 'DECEMBER 2008-STYLE' LIFT IN PENSIONS ON THE 'MODEST BUT ADEQUATE' MEASURE OF ADEQUACY**



## 6. 'PILLAR' INTEGRATION

The 'pillar integration' proposal would allow retirees to purchase additional age pension entitlements with lump-sum superannuation benefits.

- ❑ Effectively, this would see the government selling funded lifetime annuities (and assuming the associated investment, inflation and longevity risks).
- ❑ This would be broadly comparable with bonus payments for pension deferment

ISN / AIST asked Access Economics to examine the possibility of allowing retirees to purchase entitlement to a higher rate of the (public) age pension.

Many of the scenarios examined in this report – and effectively all of those modelled without behavioural change – have simply redistributed money between the government and retirees, between workers and retirees (that is, across generations), across income ranges, or across time.

Yet, as complicated as those shifts have been, they essentially represent a zero sum game.

The proposal to consider 'pillar integration' offers the potential to move beyond a zero sum games on three fronts:

- ❑ First, governments have access to economies of scale in administration and delivery not as readily available to private providers of pension products.
- ❑ Second, and rather more importantly, the Federal Government – and its sovereign rating – has greater access to capital markets at lower costs than do private providers.
- ❑ Third, the average retiree suffers from a degree of myopia: they are not well aware that the average man will live to be 9.8 years older than his Dad, while the average woman will live to be 8.2 years older than her Mum. Accordingly, they tend to take too much by way of lump sums and too little of their retirement income in the form of annuities, and so run down their capital earlier than they might expect.

The second channel (and the potential 'free lunch' that it offers) was central to the modelling of the proposal here. Access Economics assumed that the cost to retirees of the provision of additional (and privately purchased) public age pension payments was discounted by some two percentage points when compared with the otherwise matching private alternative.

Further, it was assumed that such a discount represents the cost advantages of government provision – that is, the Federal Government is assumed to neither make a profit nor a loss on the provision of these 'additional' pension products.

Not surprisingly, Table 8 shows that there is no impact on the accumulation phase of the superannuation system from the implementation of this proposal – each of contributions, benefits and earnings are unchanged:

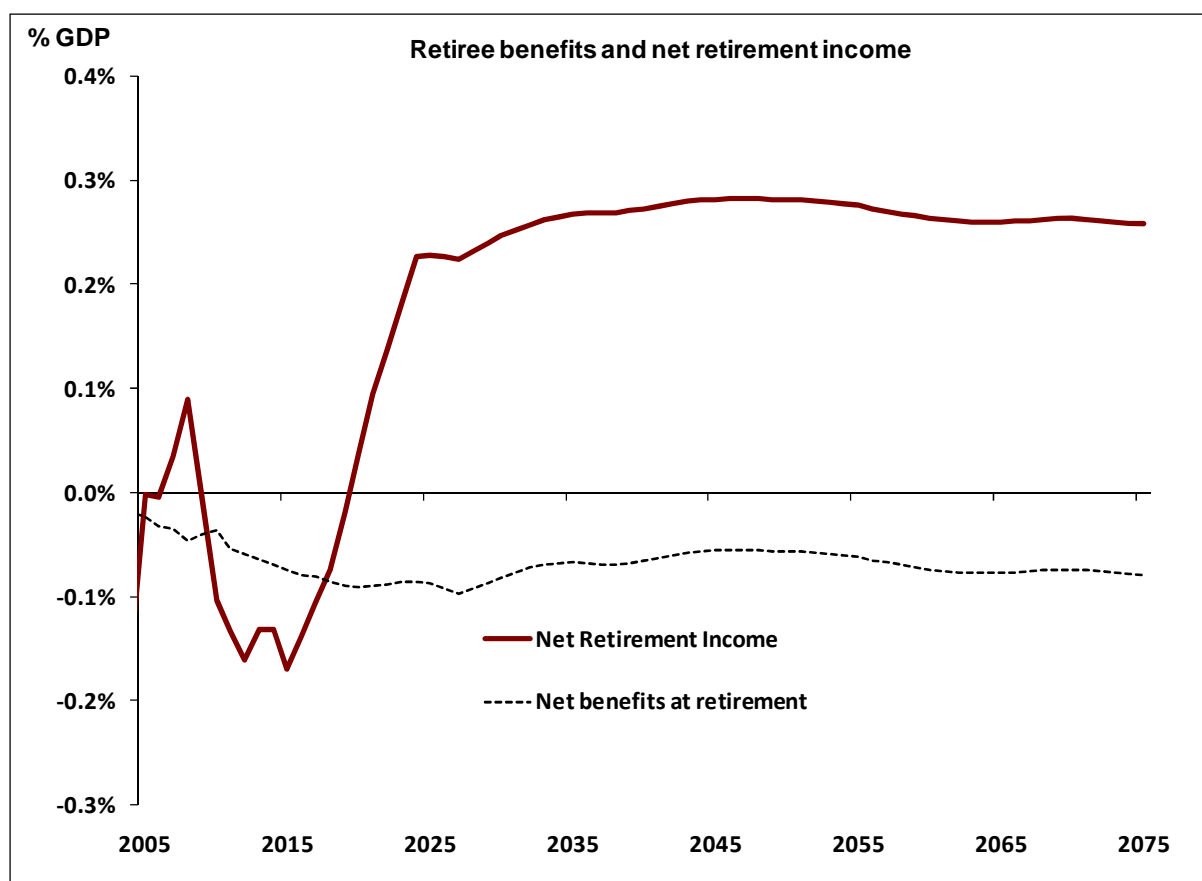
- ❑ Rather, the difference lies in net retirement income (that is, this can have the potential to be a 'win' for retirees at no net cost to government) on the assumptions used here.
- ❑ Measures of replacement rates improve notably.
- ❑ Note that the privately-purchased additional pension income counts as income for the purposes of assessing the publicly provided age pension – which explains the small saving to (public) age pension costs in Table 9.

**TABLE 8: THE IMPACT OF ‘PILLAR INTEGRATION’**

| 2040-41 estimates as a ratio to GDP | Pillar integration |
|-------------------------------------|--------------------|
| Contributions                       | 0.0%               |
| Benefits                            | 0.0%               |
| Earnings                            | 0.0%               |
| Superannuation assets               | 0.0%               |
| Pension cost                        | -0.05%             |
| Net retirement income               | 0.3%               |
| Replacement (consumption)           | 5.3%               |
| Replacement (MBA)                   | 14.1%              |

Chart 28 shows the size of the lift in retiree incomes. Note that ‘net benefits at retirement’ are little affected – rather, this proposal affects the retirement phase rather than the position at the end of the accumulation phase.

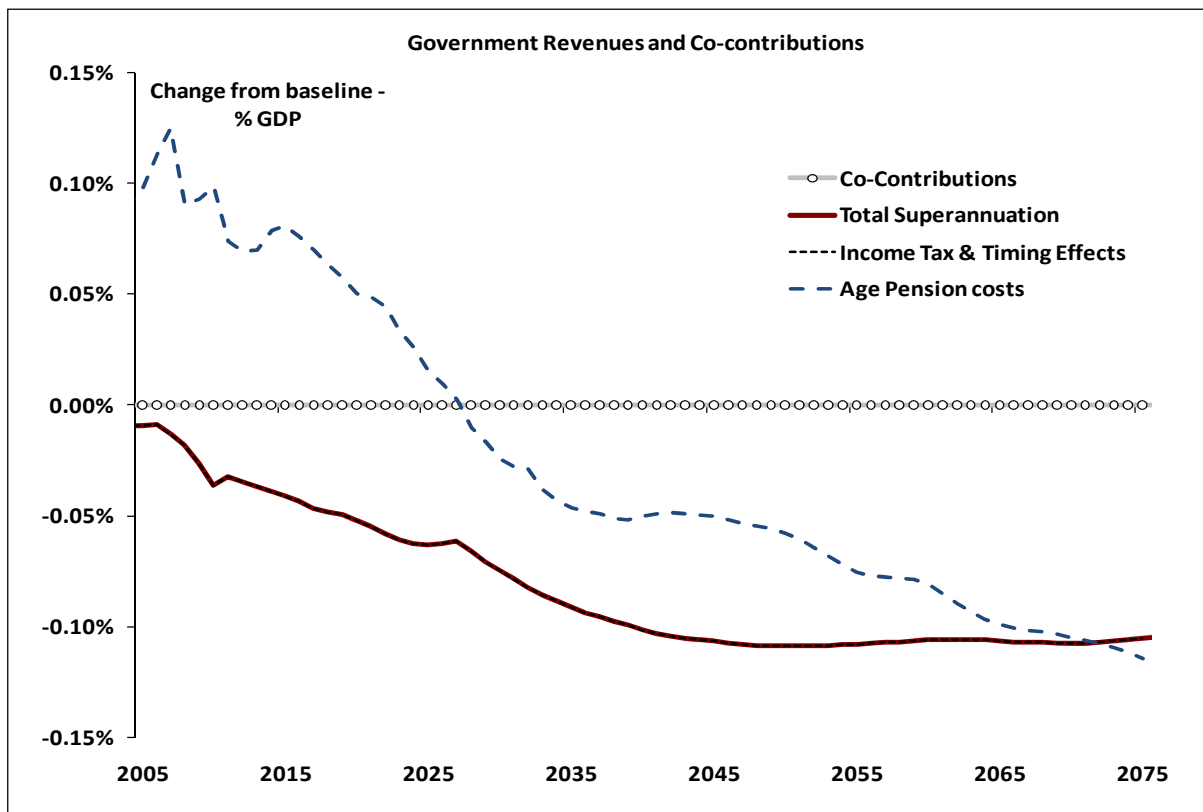
**CHART 28: EFFECTS OF ‘PILLAR INTEGRATION’ ON RETIREE BENEFITS AND INCOMES**



Note that, even though this is an age pension entitlement, it is counted as a private pension for the purposes of the public age pension means test. The shift out of a lump sum dominated environment to purchases of the public age pension means that, initially, there is a net win for retirees (and a net cost to the government) on the age pension: see Chart 29.

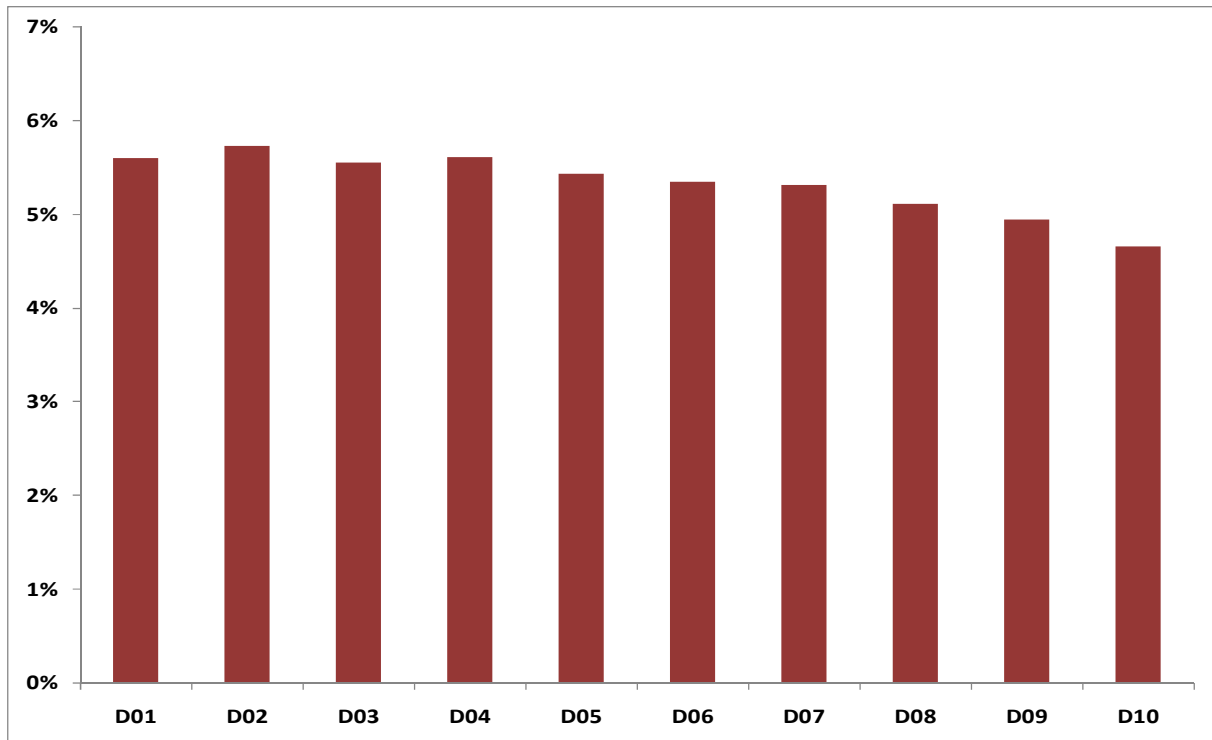
With the passing of time, and as noted above, this proposal would lower (public) age pension costs to governments.

**CHART 29: EFFECTS OF 'PILLAR INTEGRATION' ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**

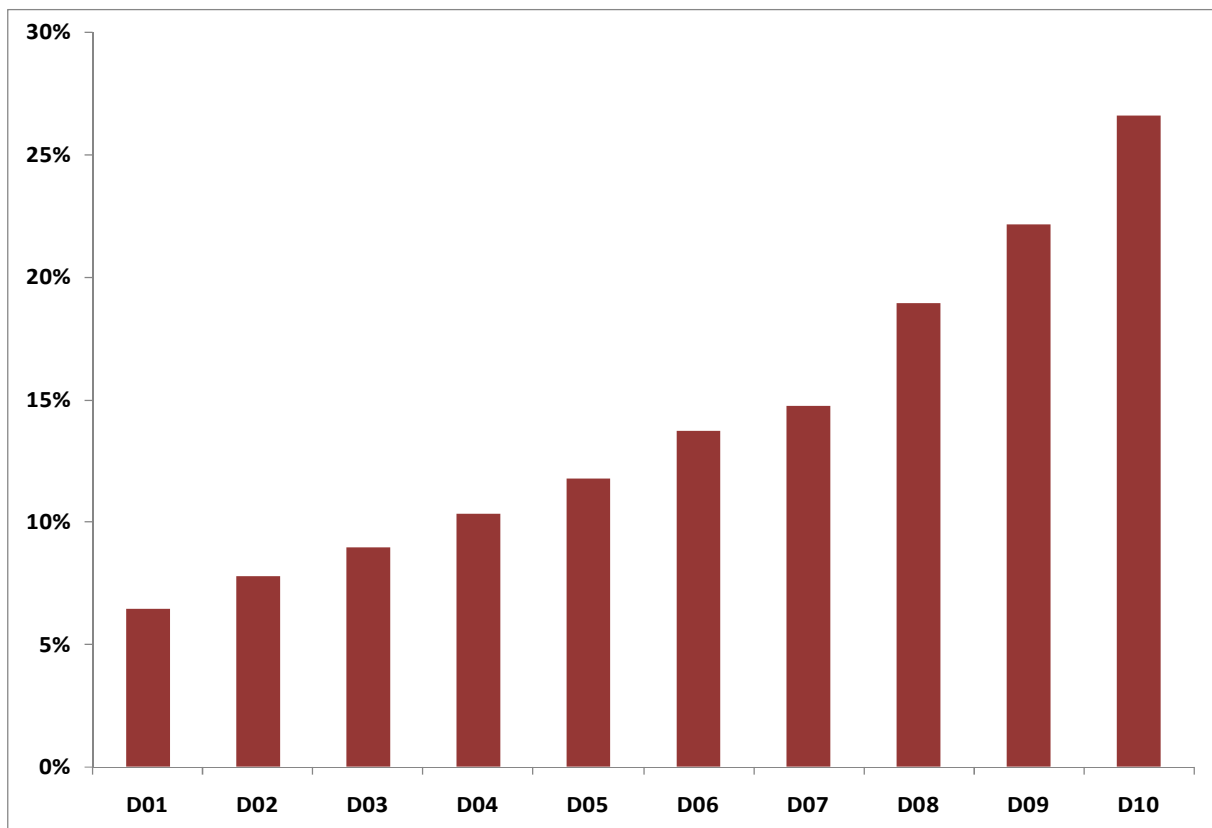


The strong adequacy gains seen in both the 'consumer spending' benchmark of adequacy (Chart 30) and the 'modest but adequate' benchmark (Chart 31) are partly a sign that age pension products allows people to cover part of their rising age expectancy risk.

**CHART 30: EFFECTS OF 'PILLAR INTEGRATION' ON THE CONSUMPTION MEASURE OF ADEQUACY**



**CHART 31: EFFECTS OF 'PILLAR INTEGRATION' ON THE 'MODEST BUT ADEQUATE' MEASURE OF ADEQUACY**



## 7. THE \$450 RULE

There are some exclusions to the Superannuation Guarantee system. The key ones are:

- ❑ Employees under eighteen years of age who work fewer than 30 hours in a week, and
- ❑ Those earning less than \$450 in a month.

We developed a proxy for the removal of the \$450 rule by estimating its impact on effective SG coverage by current year income decile. This approach was calibrated to the information available from the ABS SEARS data set (for employees – which in turn was used to adjust population-based current income deciles). For people in income deciles with below average SG coverage rates had those coverage rates adjusted up towards the average. In turn, these adjustments were applied to the SG.

The effect was an increase in the SG coverage for the bottom three current income deciles – particularly current income decile 1.

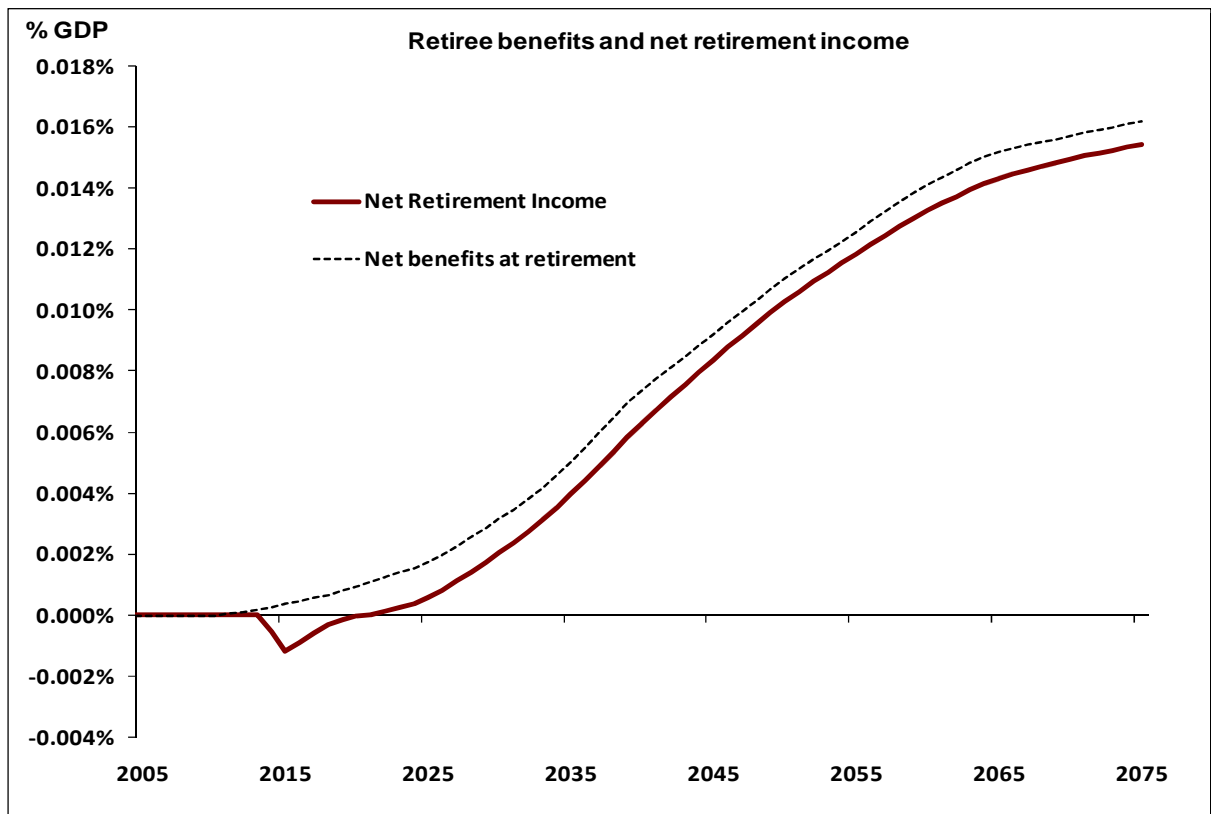
Table9 identifies the differences compared with the baseline from removing the \$450 rule:

- ❑ The increase in contributions is very small, at 0.013% of GDP.
- ❑ The increase in earnings is in line with the increase in superannuation assets in the accumulation phase (it is 6.3% of the latter, in line with the assumed earnings rate on superannuation assets of 6.25%). Retiree benefits and incomes rise in tandem (see Chart 32).
- ❑ Measures of average replacement rates improve slightly (see Chart 34 and Chart 35).

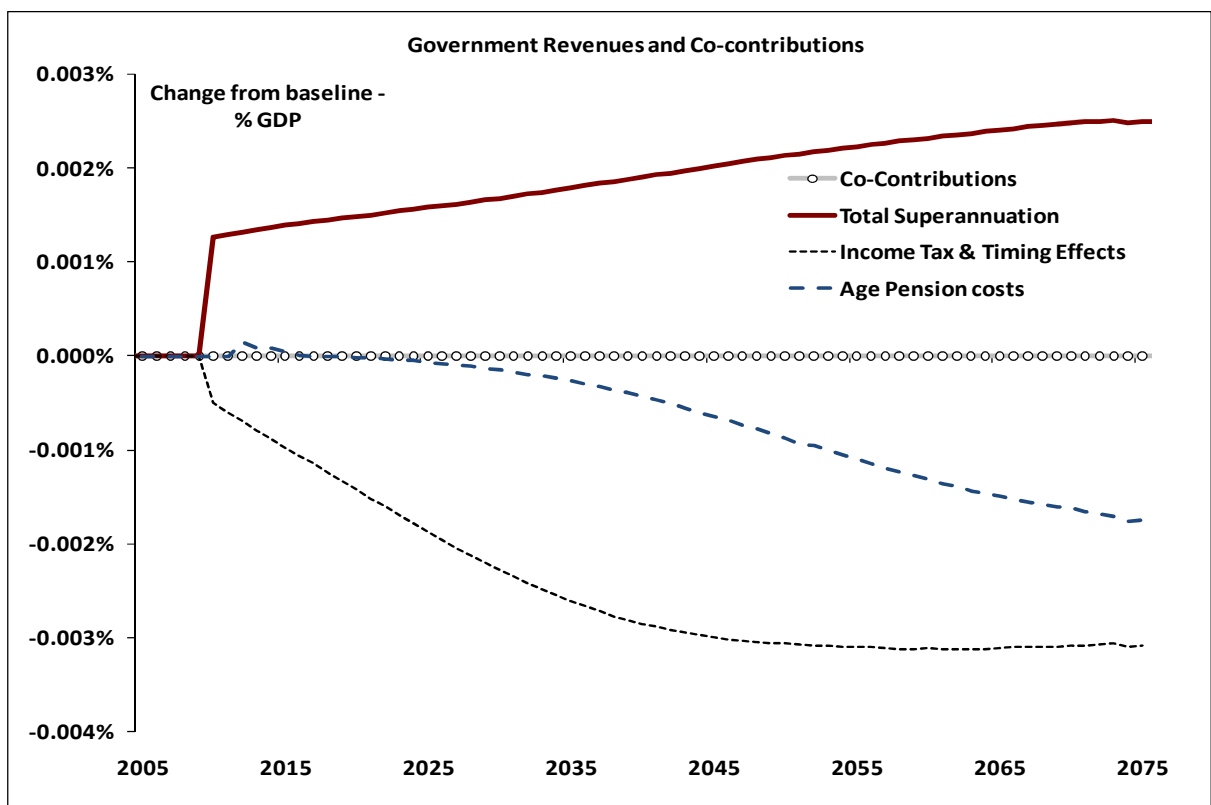
**TABLE 9: THE IMPACT OF REMOVING THE \$450 RULE**

| <b>2040-41 estimates as a ratio to GDP</b> | <b>Removing the \$450 rule</b> |
|--|--------------------------------|
| Contributions                              | 0.013%                         |
| Earnings                                   | 0.021%                         |
| Benefits                                   | 0.007%                         |
| Superannuation assets                      | 0.326%                         |
| Pension cost                               | 0.000%                         |
| Net retirement income                      | 0.007%                         |
| Replacement (consumption)                  | 0.042%                         |
| Replacement (MBA)                          | 0.073%                         |

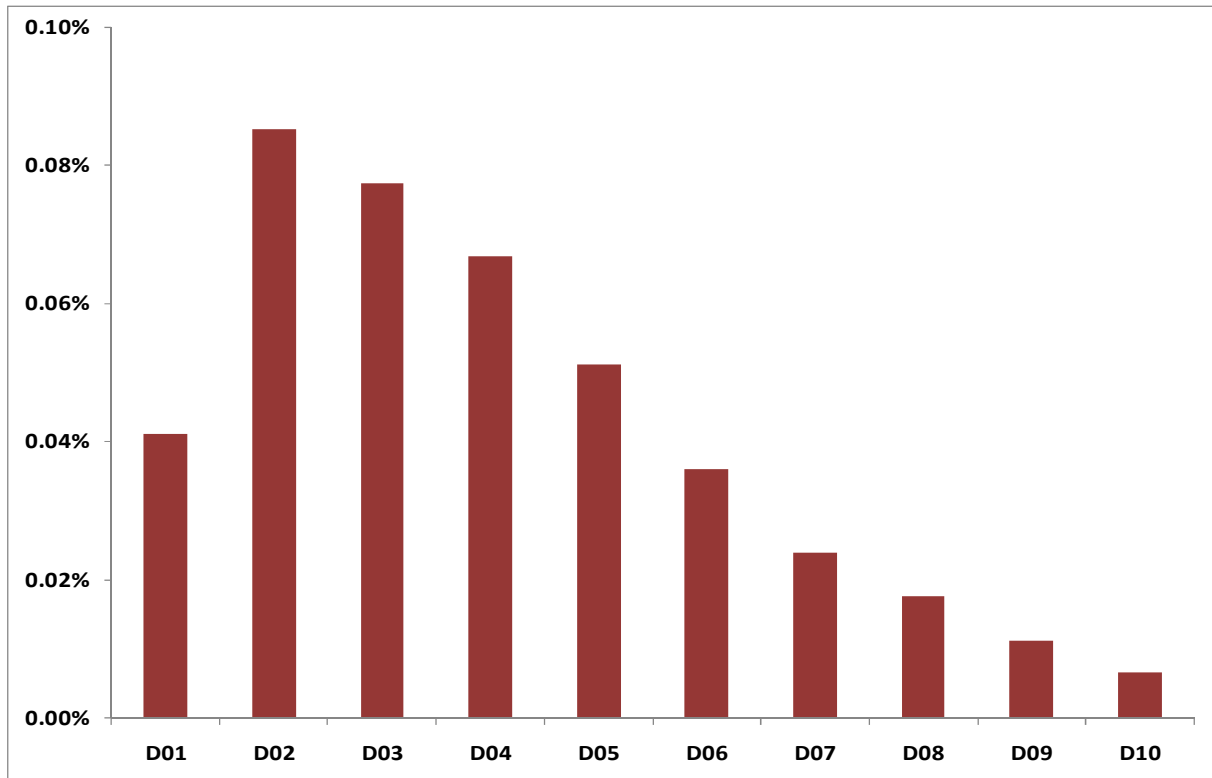
**CHART 32: EFFECTS OF REMOVING THE \$450 RULE ON BENEFITS AND INCOMES**



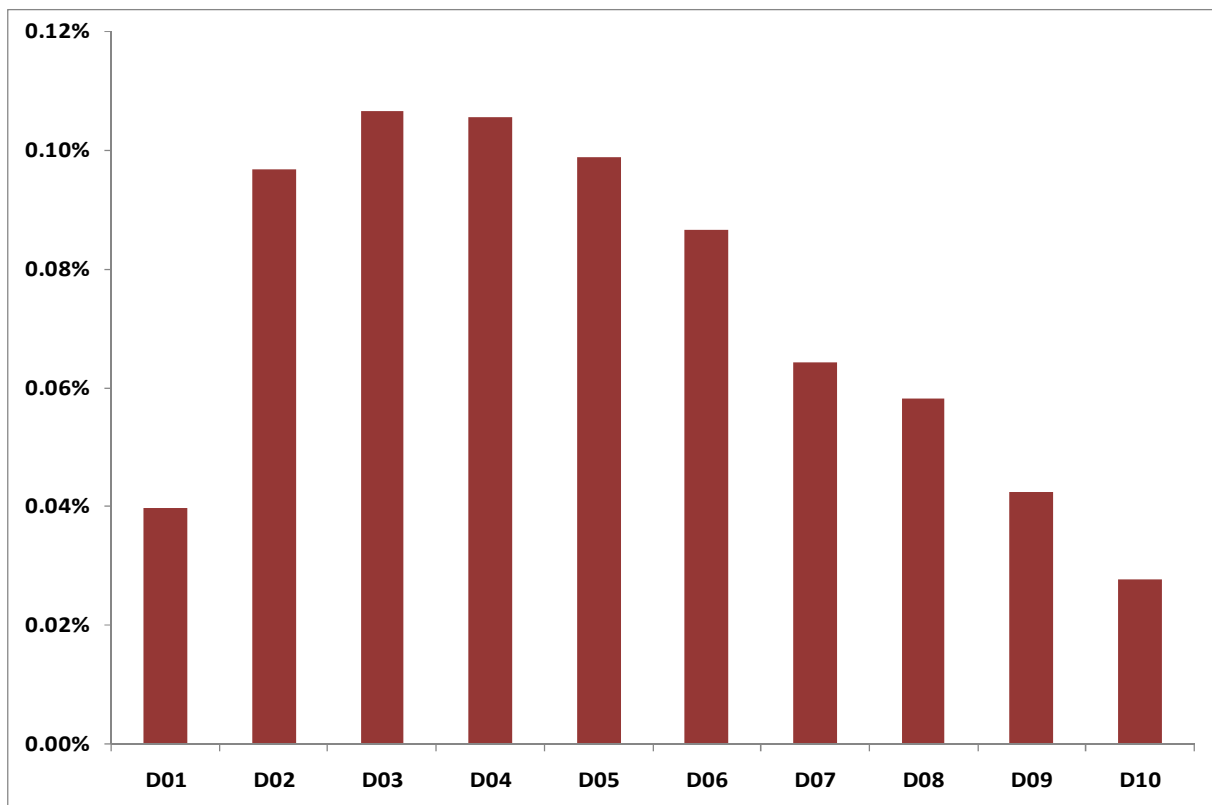
**CHART 33: EFFECTS OF REMOVING THE \$450 RULE ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**



**CHART 34: EFFECTS OF REMOVING THE \$450 RULE ON THE CONSUMPTION MEASURE OF ADEQUACY**



**CHART 35: EFFECTS OF REMOVING THE \$450 RULE ON THE 'MODEST BUT ADEQUATE' MEASURE OF ADEQUACY**



## 8. BOOSTING WOMEN'S RETIREMENT SAVINGS

Women have lower participation rates, more part-time work, more broken periods of work, and lower average wages associated with their work in different occupations and for shorter periods than men.

As a result, women's superannuation savings are rather lower.

Despite that, Access Economics analysis for AMP suggests that women appear to be making the most of the incentives in super to address part of the gender imbalance in retirement savings.

While voluntary contribution rates among women were around 89.1% of the average, after-tax contributions from women were 28.1% above average, suggesting co-contributions are an important support to the retirement savings of women.

Access Economics found that, nonetheless, current income and savings patterns suggest that the average female worker will face a retirement income some 19.2% lower than that for the average male.

This is a key area in which both absolute and relative measures of retirement incomes are particularly important:

- ❑ Looking at a relative standard, Federal Treasury (*Projecting The Distributions Of Superannuation Flows And Assets*, by Dr George Rothman and David Tellis, 4 July 2008) has found that, "the relative average assets of women compared with men are projected to rise from 63 to 75 percent", "women's age retirement payouts in 2040-41 are 2.2 times those in 2010-11 in real terms, while the corresponding ratio is 1.7 for men".
- ❑ Similarly, Access Economics has noted that, given the average income of women is lower than that for men, women are projected to achieve higher 'consumer spending' replacement rates of pre-retirement living standards than do men, reflecting their lower incomes in the workforce and a greater reliance on the age pension in retirement.

### 8.1 THE ACCESS ECONOMICS ANALYSIS OF WOMEN'S RETIREMENT SAVINGS

A range of factors mean that women have below average retirement savings. These factors include career choice, broken work patterns and higher participation in part-time or casual work.

From an adequacy perspective, that gap in the adequacy of retirement savings is made larger by longer average life expectancies for women. In 2006, women retiring at the age of 65 could expect to live 3.2 years longer than a man of the same age.<sup>8</sup>

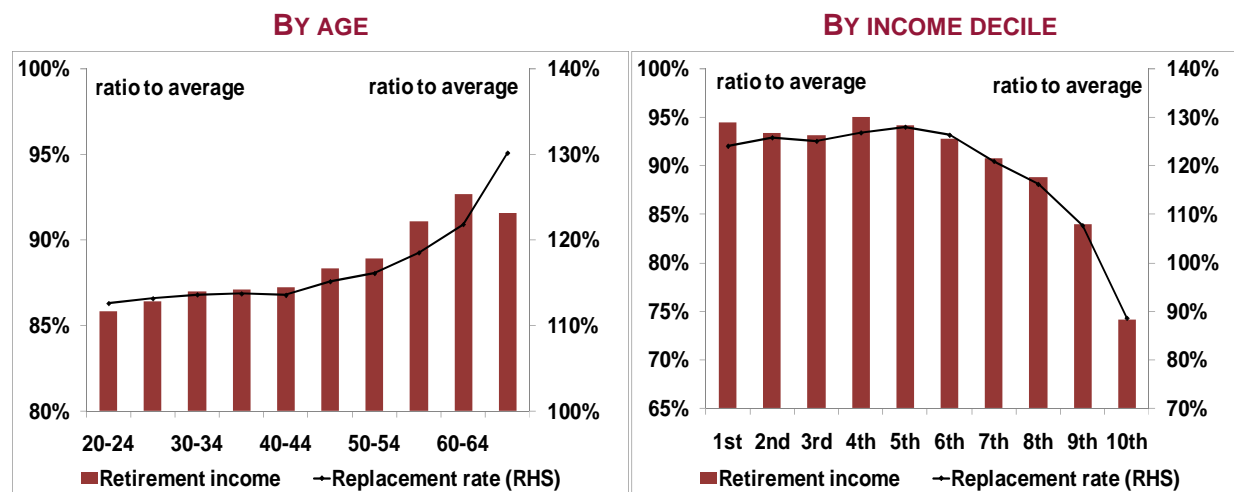
---

<sup>8</sup> ABS *Life Tables, Australia, 2006*, Cat No. 3302.0.55.001

### 8.1.1 RETIREMENT OUTCOMES AND ADEQUACY

Chart 36 below shows the projected level of retirement income and replacement rates (based on a 'consumer spending' standard) as a ratio to the average results presented in the previous section.

**CHART 36: RETIREMENT OUTCOMES FOR WOMEN**



Lower average incomes, super balances and voluntary contribution rates combine to result in average retirement incomes for women which are below the figures for all active members.

Current income and savings patterns suggest that the average female worker will face a retirement income some 19.2% lower than that for the average male.

Nevertheless, women are projected to achieve higher than average replacement rates, particularly among older age cohorts.

That is because lower salaries during working life reduce women’s ability to accumulate retirement savings, but the retirement adequacy benchmark used here is related to income in the final year of work, meaning lower average salaries result in a lower target for women’s future retirement incomes in order to meet the relative benchmark applied by the Index.

Or, in other words, low incomes are not a penalty against an adequacy index that is measured relative to income.

Further, while incomes during working life are lower for women, the value of the age pension is not. Age pension payments do not vary by gender, and can have a significant impact on the relative living standards of retirees with low working life incomes.

The age pension is also targeted towards those with low private incomes in retirement. Lower average super savings therefore mean that women are more likely to qualify under the age pension means test than men.

The brighter picture of adequacy for women presented here is due in large part to the role of the age pension in supporting the living standards of women in retirement. That is, while women’s retirement incomes will exceed the relative benchmark of 65% of pre-retirement living standards, they will remain more heavily reliant on the age pension than men.

## 8.2 THE \$1,500 SUPER BABY BONUS

ISN / AIST asked Access Economics to examine the introduction of a maternity linked contribution (\$1,500) to super funds.

**TABLE 10: THE IMPACT OF A ‘SUPER BABY BONUS’**

| <b>2040-41 estimates as a ratio to GDP</b> | <b>Super baby bonus</b> |
|--|-------------------------|
| Contributions                              | 0.1%                    |
| Benefits                                   | 0.0%                    |
| Earnings                                   | 0.3%                    |
| Superannuation assets                      | 2.6%                    |
| Pension cost                               | 0.0%                    |
| Net retirement income                      | 0.008%                  |
| Replacement (consumption)                  | 0.3%                    |
| Replacement (MBA)                          | 0.4%                    |

Table 10 shows that:

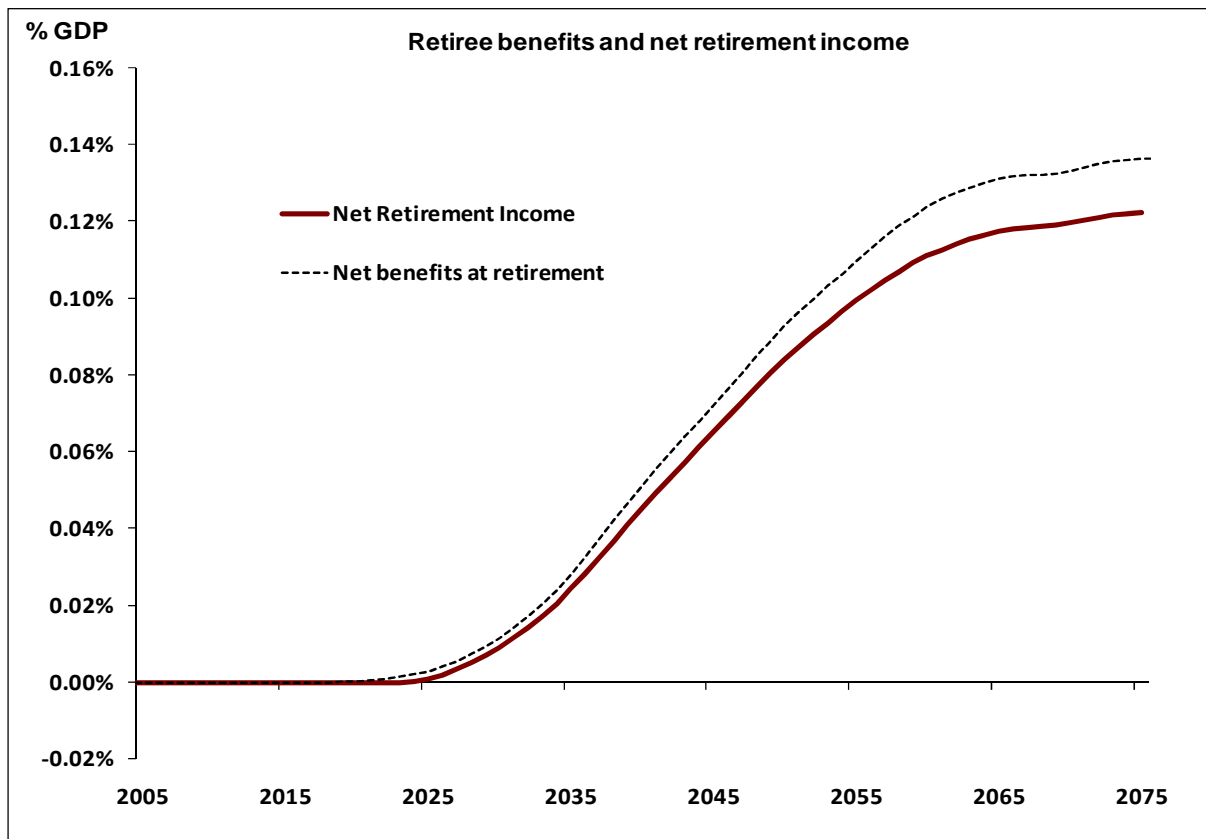
- ❑ Contributions rise thanks to the \$1,500 super baby bonus. At around \$900 million as an annual cost, that is just enough to round to 0.1% of GDP extra on contributions.
- ❑ Earnings rise by 0.3%, and by 2040-41 the stock of super assets is some 2.6% larger than it would otherwise have been.
- ❑ Net retirement income therefore increases, while adequacy measures increase marginally

Chart 37 shows the size of the lift in retiree incomes.

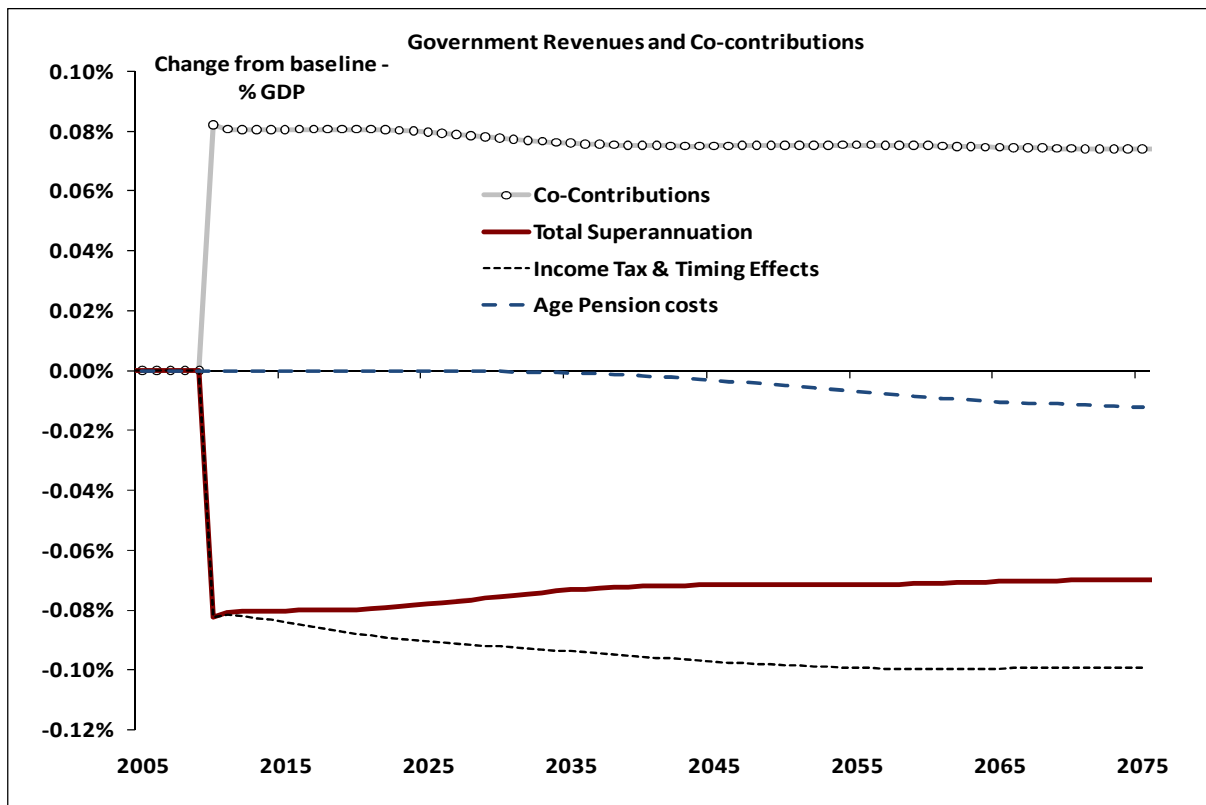
The increased maternity payments are shown in Chart 38 as increased co-contributions.

With women having lower than average lifetime incomes, the impact of the \$1,500 super baby bonuses are concentrated in lower deciles on both the ‘consumer spending’ benchmark of adequacy (Chart 39) and the ‘modest but adequate’ benchmark (Chart 40).

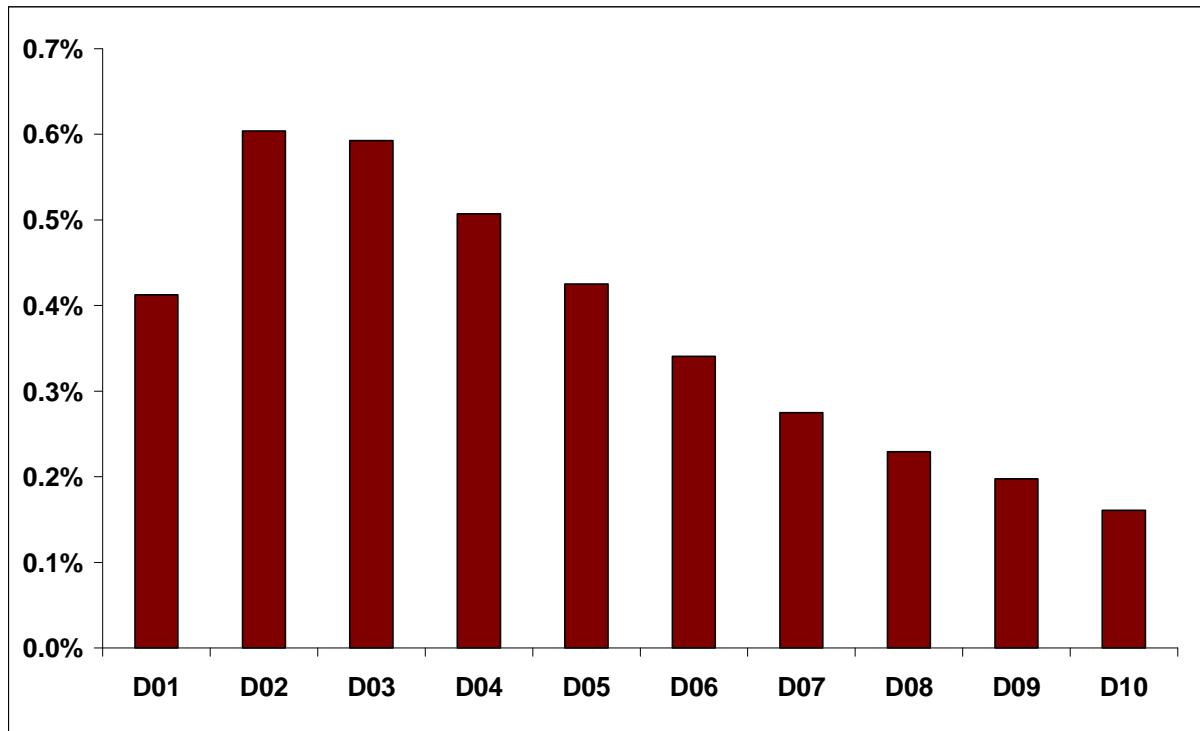
**CHART 37: EFFECTS OF A 'SUPER BABY BONUS' ON RETIREE BENEFITS AND INCOMES**



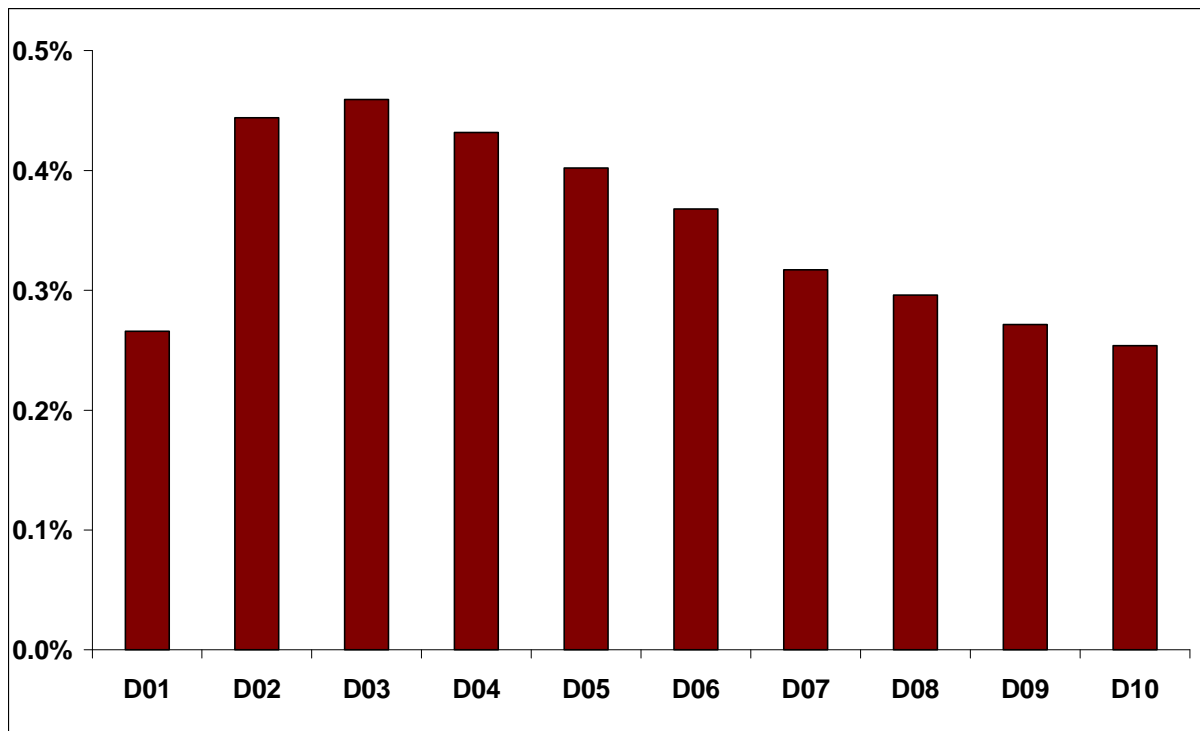
**CHART 38: EFFECTS OF A 'SUPER BABY BONUS' ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**



**CHART 39: EFFECTS OF 'SUPER BABY BONUS' ON THE CONSUMPTION MEASURE OF ADEQUACY**



**CHART 40: EFFECTS OF A 'SUPER BABY BONUS' ON THE 'MODEST BUT ADEQUATE' MEASURE OF ADEQUACY**



## 9. THE IMPACT OF FEES AND NET RETURNS

The impact of fees and net returns on retirement incomes outcomes is notable.

In the baseline run of the model, all assets receive nominal GDP (close to 5.25%, though it edges down over time as employment growth does the same) plus an assumed Equity Risk Premium (or ERP, set at 1%). With inflation running at 2.5%, the real return implied in the baseline is around 3.75%.

Three simulations were done here. Instead of a real return at (close to 3.75%), these three scenarios set real returns at 1.5%, 3% and 4.5% respectively.

Table 11 below sets out the impact of differing rates of real return. In brief, and focussing on the shift to a 4.5% (that is, higher) real return:

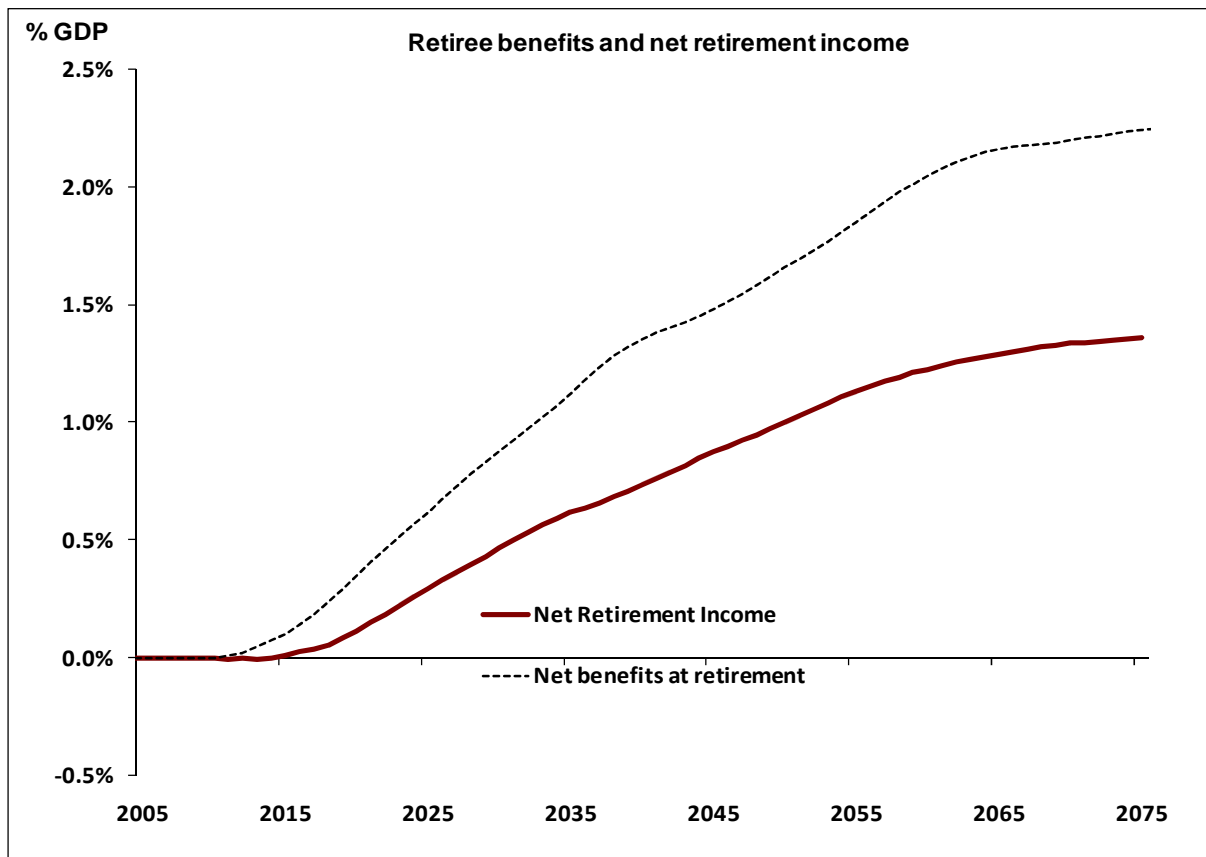
- ❑ Such ‘manna from heaven’, is a benefit on most measures. Contributions are unchanged, but benefits and earnings rise, as does the stock of assets held in the superannuation system during the accumulation phase.
- ❑ Pension costs fall and the tax take on super rises (see Chart 42) yet, despite that, overall net retirement incomes rise handsomely.
- ❑ Measures of average replacement rates improve.

**TABLE 11: THE IMPACT OF HIGHER REAL RETURNS**

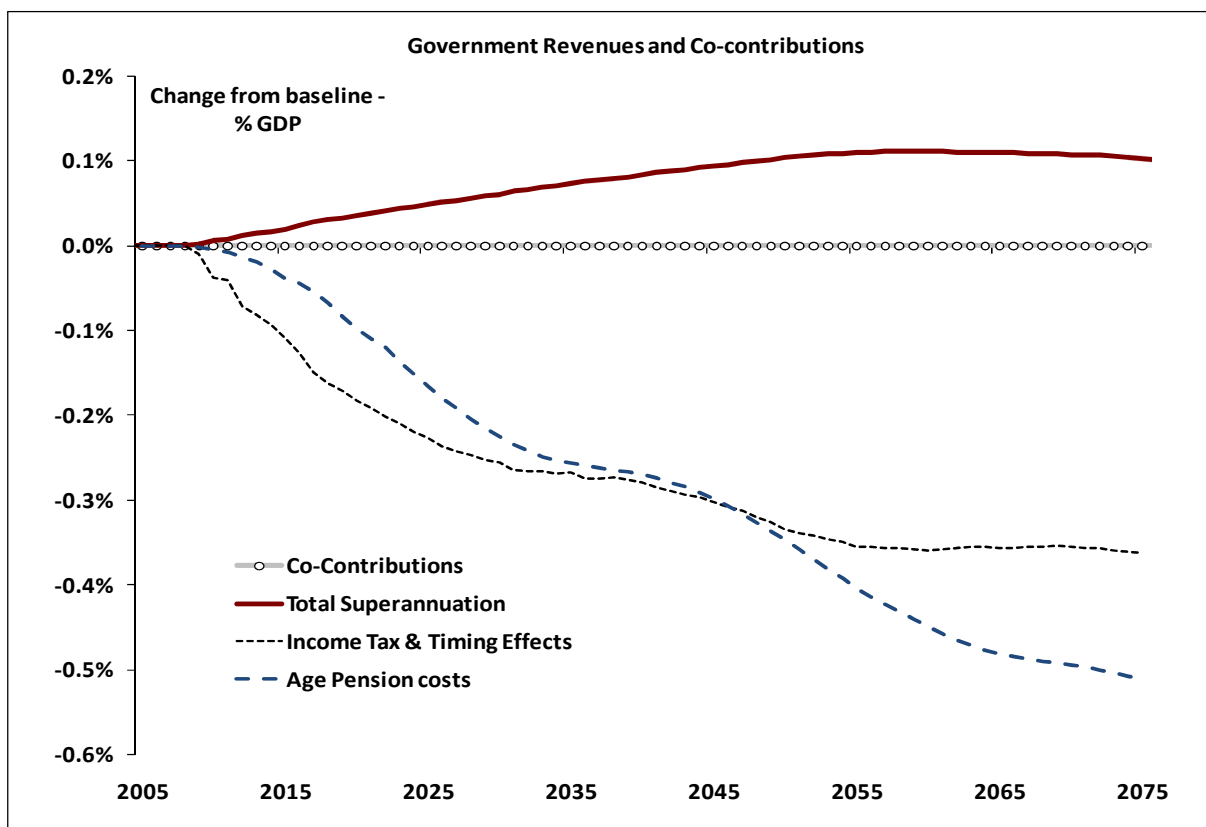
| <b>2040-41 estimates as a ratio to GDP</b> | <b>RR at 1.5%</b> | <b>RR at 3%</b> | <b>RR at 4.5%</b> |
|--|-------------------|-----------------|-------------------|
| Benefits                                   | -3.5%             | -1.8%           | 1.4%              |
| Earnings                                   | -5.1%             | -1.5%           | 2.8%              |
| Superannuation assets                      | -43.9%            | -17.7%          | 19.1%             |
| Pension cost                               | 0.7%              | 0.2%            | -0.3%             |
| Net retirement income                      | -2.9%             | -1.8%           | 0.8%              |
| Replacement (consumption)                  | -12.8%            | -4.2%           | 4.4%              |
| Replacement (MBA)                          | -22.5%            | -6.5%           | 7.5%              |

Similarly, the simulations with real returns set at 1.5% and 3% both show outcomes weaker than the baseline.

**CHART 41: EFFECTS OF A 4.5% REAL RETURN ON RETIREE BENEFITS AND INCOMES**



**CHART 42: EFFECTS OF A 4.5% REAL RETURN ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS**

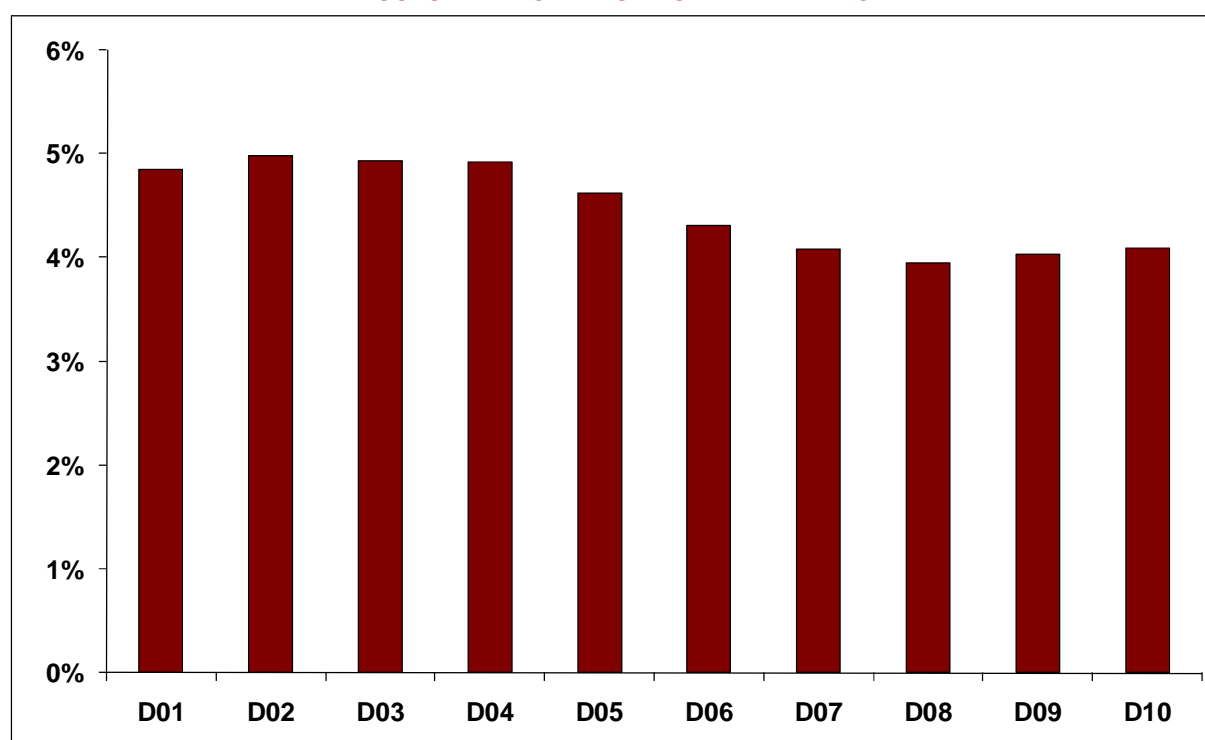


## 9.1 THE DISTRIBUTIONAL (FAIRNESS) IMPACTS OF DIFFERING RATES OF REAL RETURN

As was true in the discussion above of changes to the SG, increased income (in this case from higher real returns) loses some impact for those in lifetime income deciles 5, 6 and 7, as some of their good fortune is lost to reduced part pension payments from the Government.

The following charts help to illustrate that pattern. Chart 43 is set up in the same fashion as Chart 3 above. That is, it shows the difference in the level of the adequacy measure.

**CHART 43: EFFECTS OF A 4.5% REAL RETURN ON THE CONSUMPTION MEASURE OF ADEQUACY – ABSOLUTE PERCENTAGE POINT DIFFERENCE**

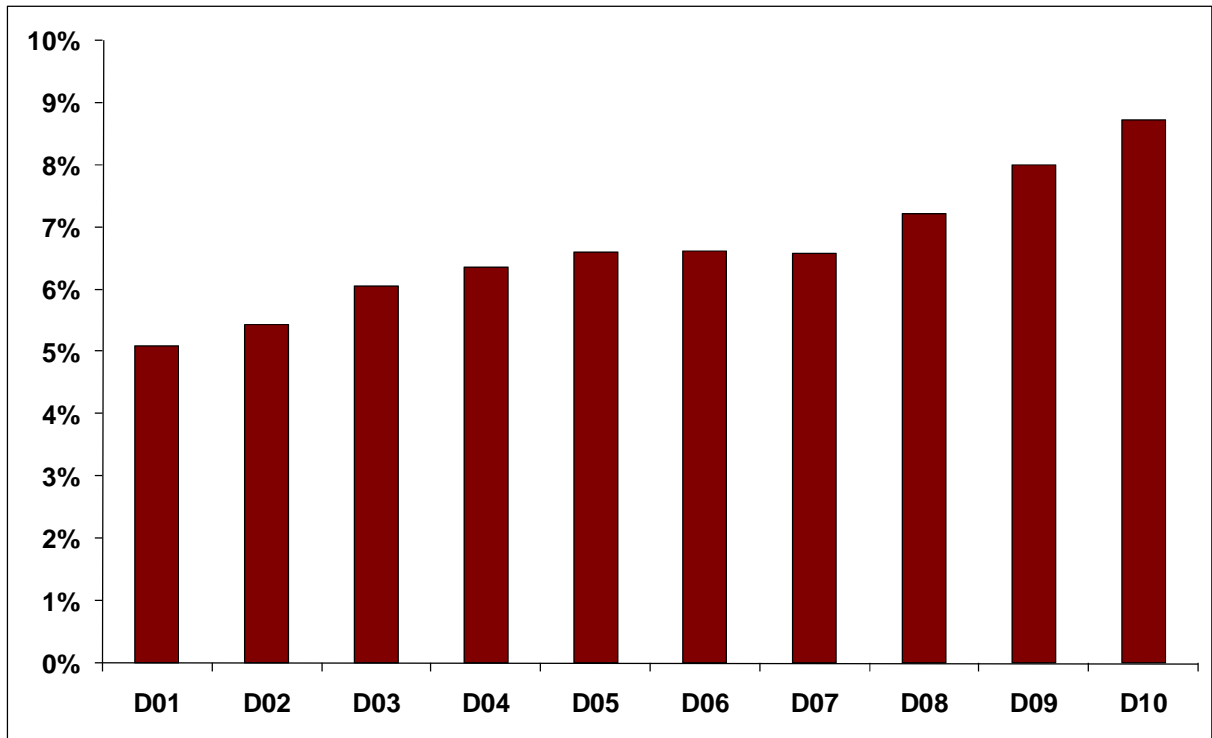


In contrast, Chart 44 shows the relative (rather than absolute) difference in adequacy. It therefore helps to show that higher lifetime income earners do better out of higher returns.

Low income earners do less well because superannuation assets provide a rather smaller share of their incomes in retirement than the age pension does.

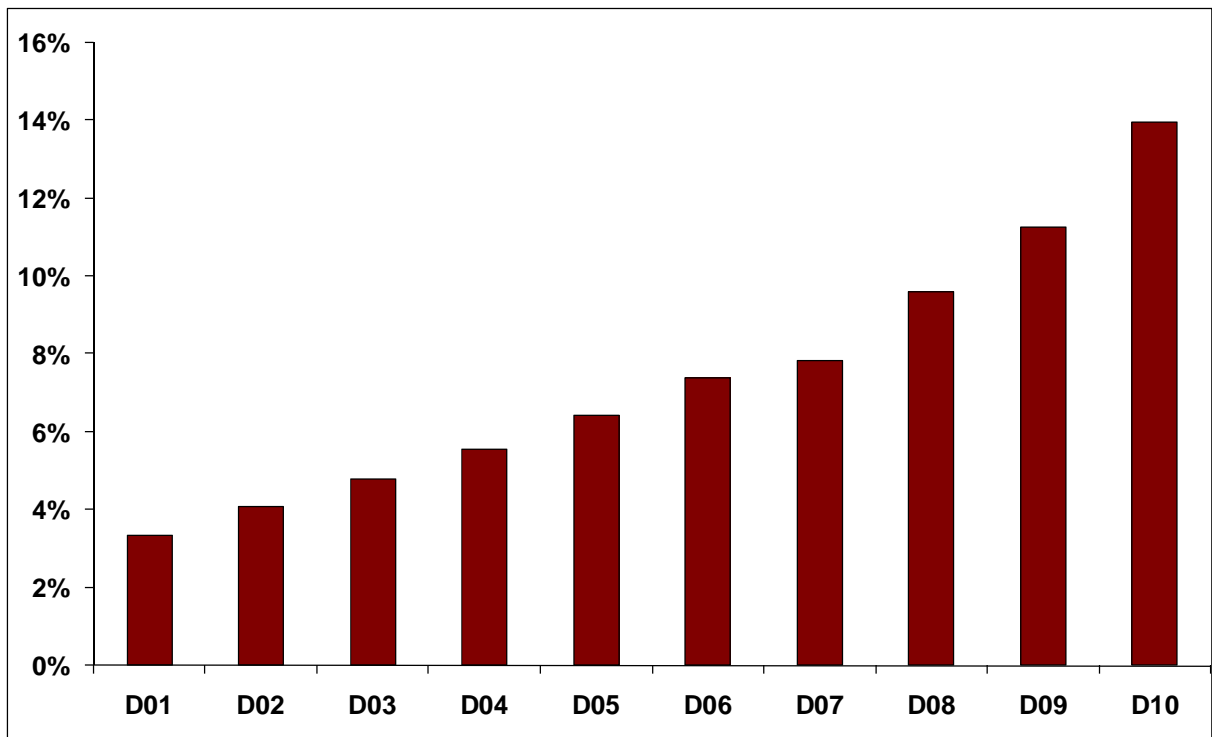
And those in deciles 5, 6 and 7 receive relatively equal adequacy boosts as some of it is lost to reduced pension payments.

**CHART 44: EFFECTS OF A 4.5% REAL RETURN ON THE CONSUMPTION MEASURE OF ADEQUACY – RELATIVE PERCENTAGE DIFFERENCE**



The ‘modest but adequate’ measure of adequacy focuses more on dollars received. Accordingly, and as expected, it shows higher increases at the top end than at the bottom.

**CHART 45: EFFECTS OF A 4.5% REAL RETURN ON THE ‘MODEST BUT ADEQUATE’ MEASURE OF ADEQUACY**



## 10. COMBINED RESULTS

There are two combined scenarios are examined here. The first includes:

- ❑ An increase in the age pension.
- ❑ Changes to contributions tax to ensure that:
  - Contributions from income taxed at a marginal 0% personal income tax rate attract a rebatable tax offset of 15%.
  - Contributions from income taxed at a marginal 15% personal income tax rate attract a tax offset of 15%.
  - The current 15% rate continues to apply to all other contributions.
- ❑ A \$1,500 'baby bonus' contribution to super (as outlined in the modelling above).
- ❑ Allowing retirees to purchase additional age pension entitlements with lump-sum superannuation benefits (the 'pillar integration' scenario also outlined above).
- ❑ The removal of the \$450 per month exemption threshold for SG contributions.

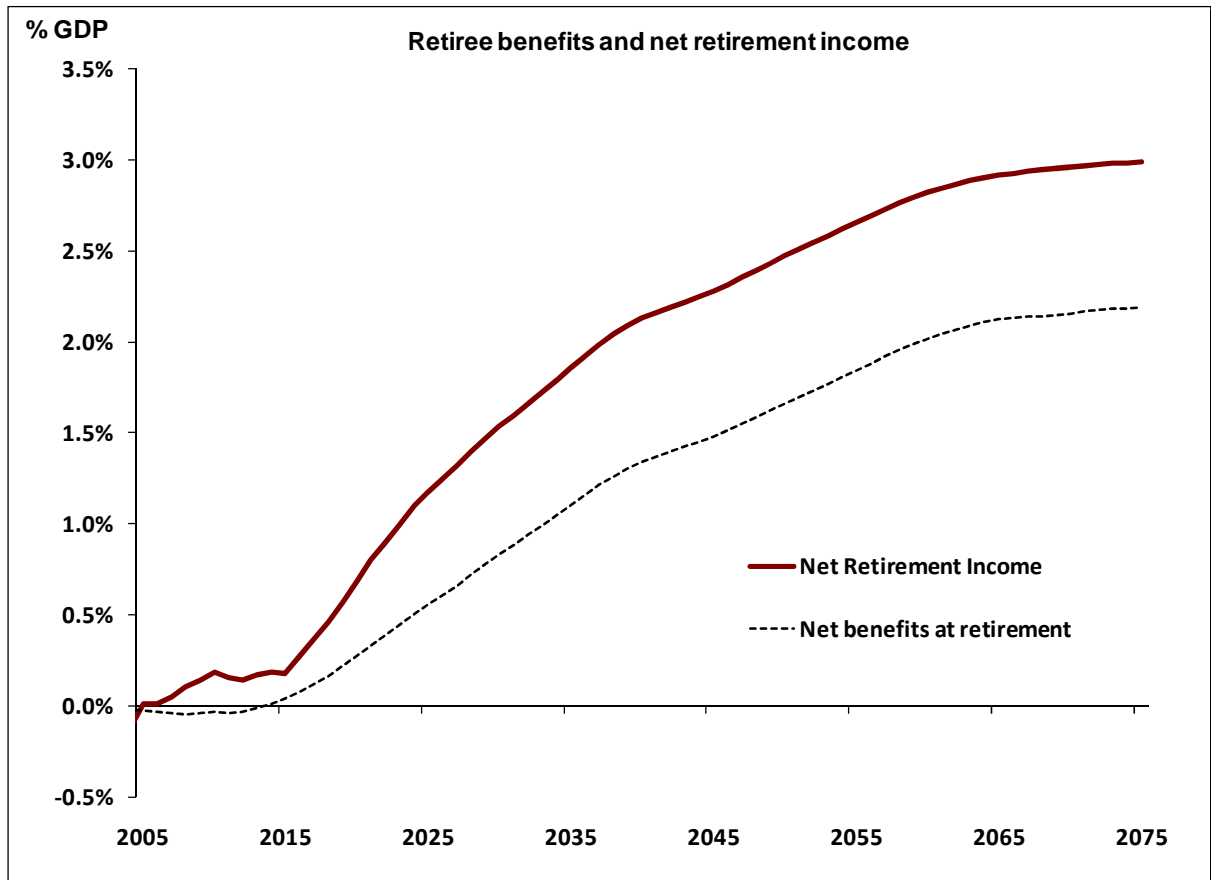
The second combined scenario includes all of the above changes, plus an increase in the SG rate from 9% to 10%, with a tenth of that increase offset by reductions in voluntary super contributions and other savings flows.

Table 12 shows the impact of each scenario on the key aggregate results.

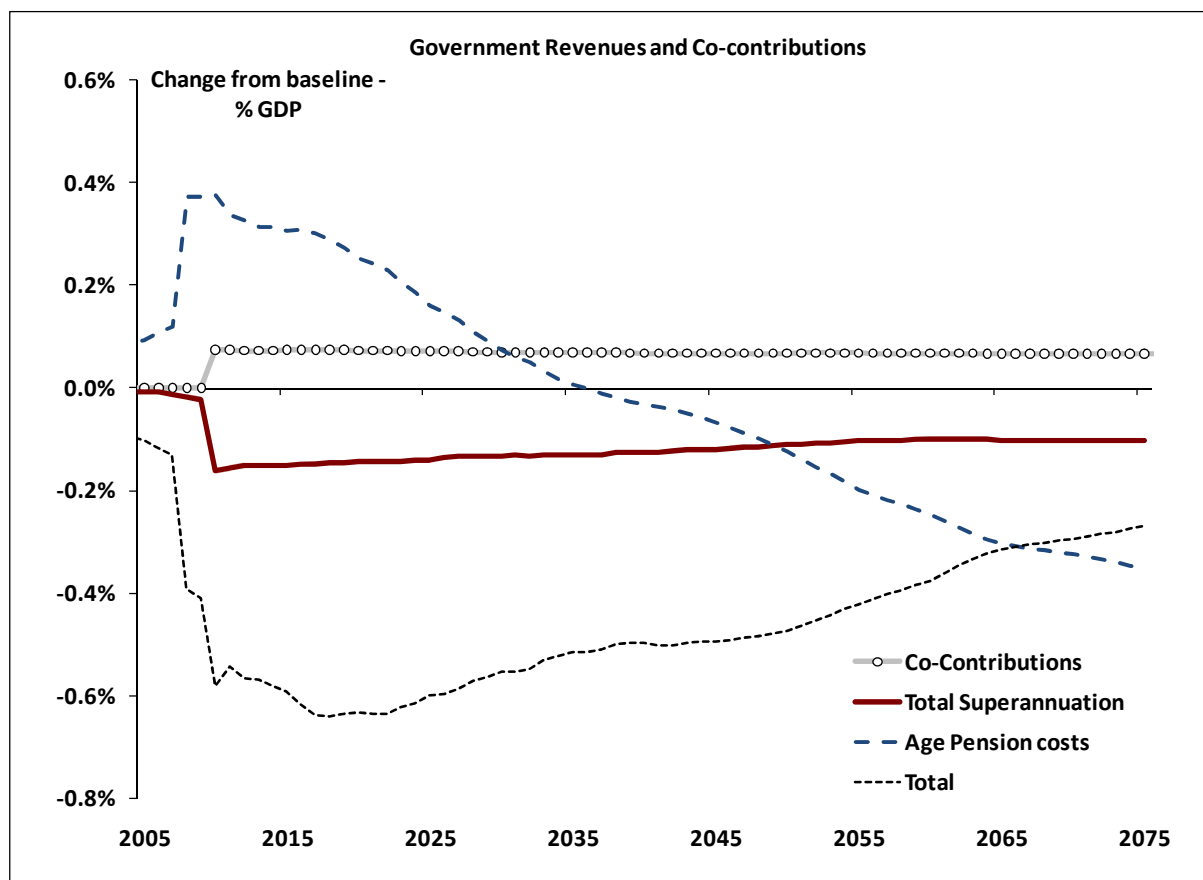
**TABLE 12: THE IMPACT OF THE COMBINED POLICY CHANGES**

| <b>2040-41 estimates as a ratio to GDP</b> | <b>Combined Scenario 1</b> | <b>Combined Scenario 2</b> |
|--|----------------------------|----------------------------|
| Contributions                              | 0.08%                      | 0.42%                      |
| Benefits                                   | 2.86%                      | 3.45%                      |
| Earnings                                   | 1.22%                      | 1.48%                      |
| Superannuation assets                      | 22.62%                     | 30.82%                     |
| Pension cost                               | -0.04%                     | -0.06%                     |
| Net retirement income                      | 2.16%                      | 2.38%                      |
| Replacement (consumption)                  | 17.17%                     | 18.32%                     |
| Replacement (MBA)                          | 43.53%                     | 46.72%                     |

**CHART 46: EFFECT OF COMBINED POLICY CHANGES ON RETIREE BENEFITS AND INCOMES – COMBINED SCENARIO 1**



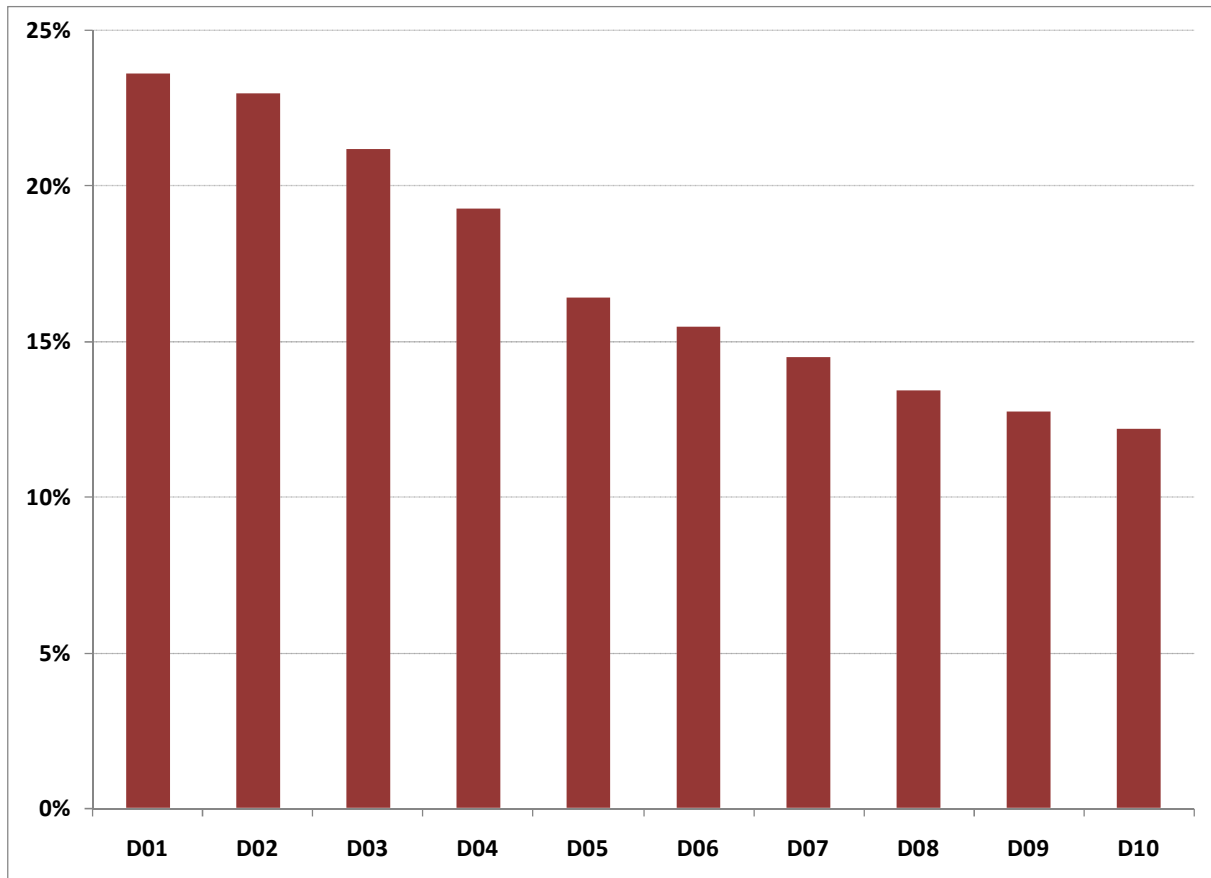
**CHART 47: EFFECT OF COMBINED POLICY CHANGES ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS – COMBINED SCENARIO 1**



### 10.1 THE DISTRIBUTIONAL (FAIRNESS) IMPACTS OF THE COMBINED SCENARIOS

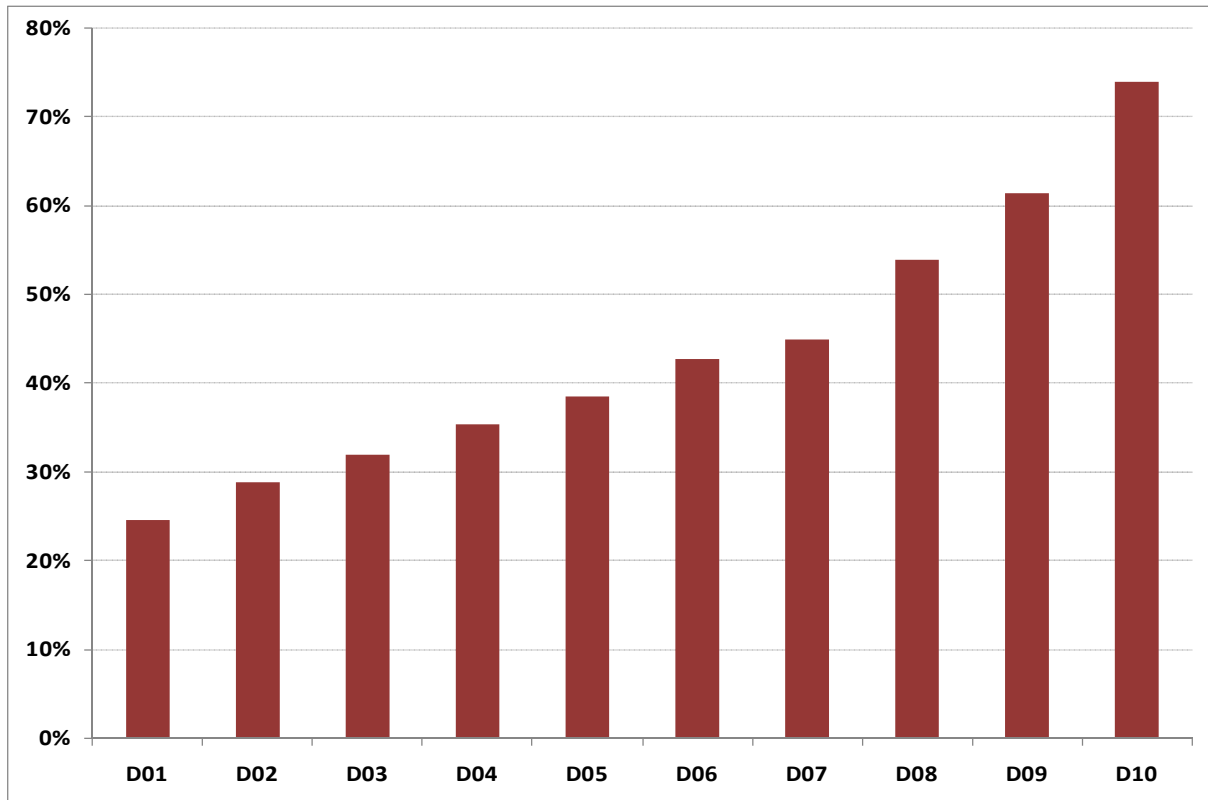
Chart 48 is set up in the same fashion as Chart 3 above. That is, it shows the difference in the level of the adequacy measure.

**CHART 48: EFFECTS OF COMBINED POLICY CHANGES ON THE CONSUMPTION MEASURE OF ADEQUACY – ABSOLUTE PERCENTAGE POINT DIFFERENCE – COMBINED SCENARIO 1**



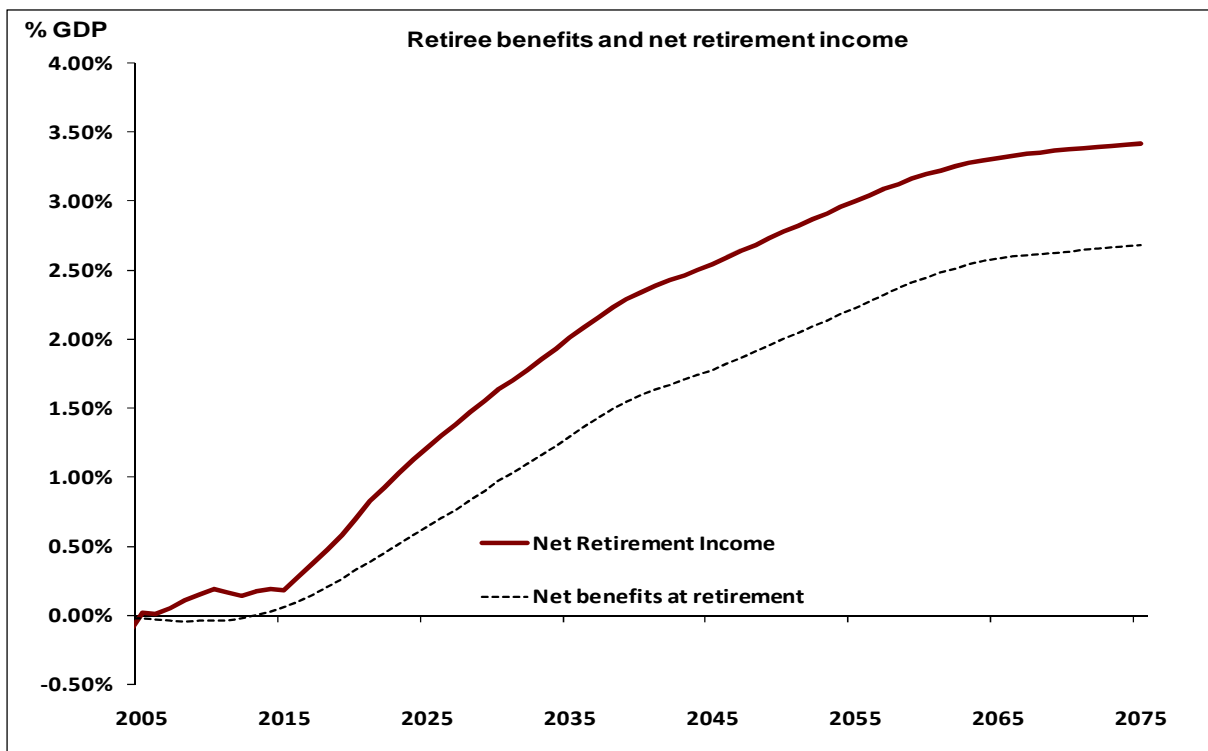
The 'modest but adequate' measure of adequacy focuses more on dollars received. Accordingly, and as expected, it shows higher increases at the top end than at the bottom.

**CHART 49: EFFECT OF COMBINED POLICY CHANGES ON THE ‘MODEST BUT ADEQUATE’ MEASURE OF ADEQUACY – COMBINED SCENARIO 1**

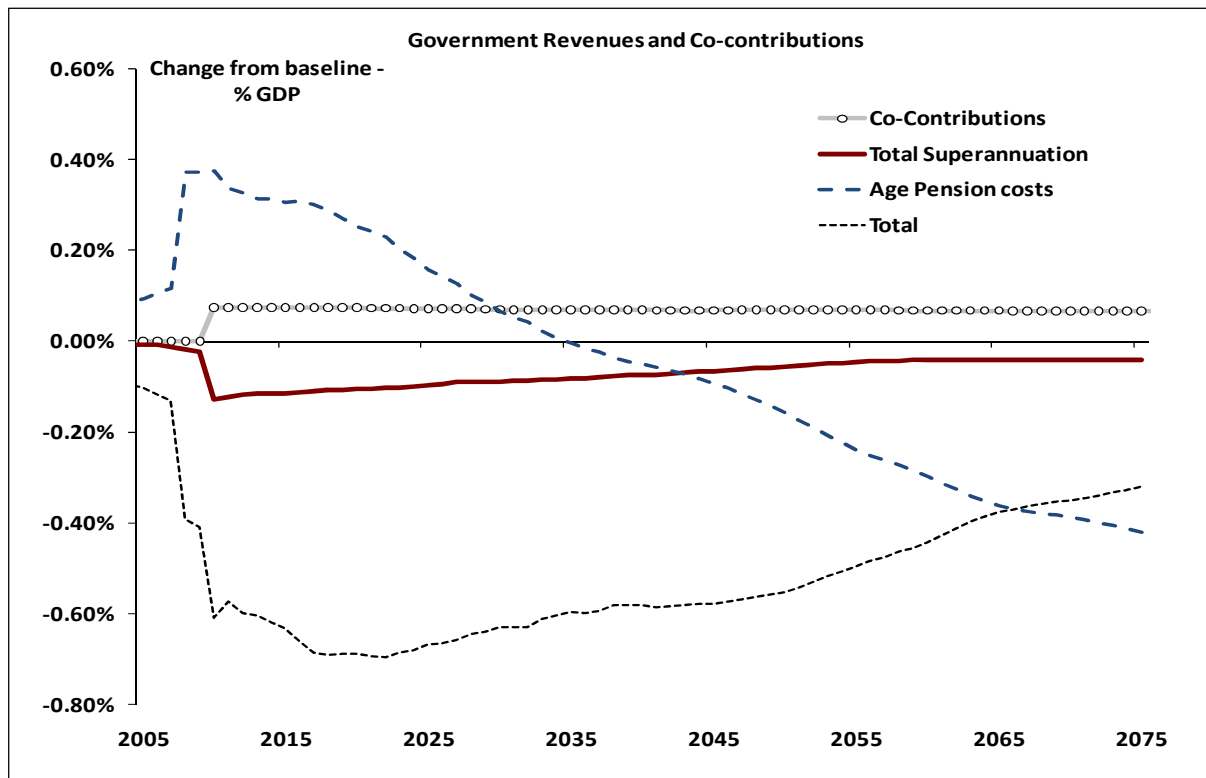


The following charts look at the same range of results, but for the second scenario.

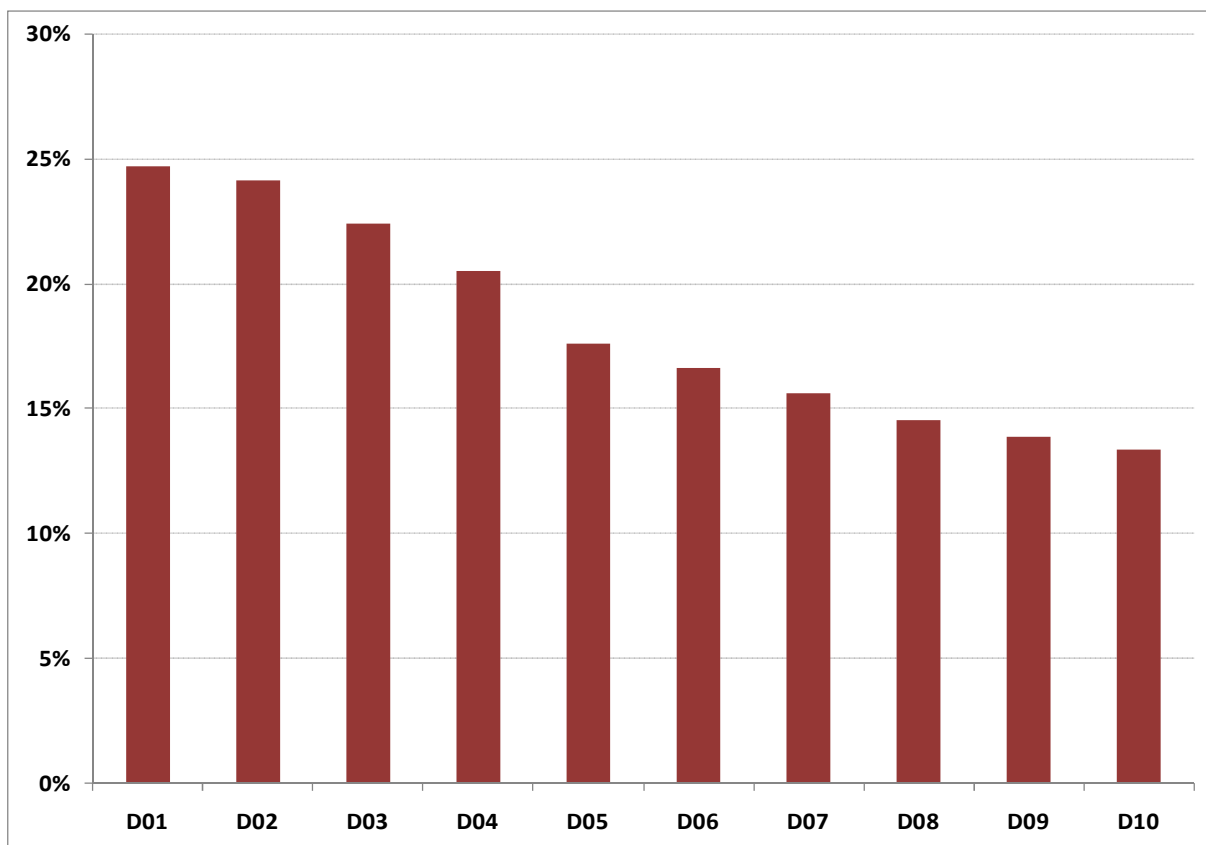
**CHART 50: EFFECT OF COMBINED POLICY CHANGES PLUS SG INCREASE ON RETIREE BENEFITS AND INCOMES – COMBINED SCENARIO 2**



**CHART 51: EFFECT OF COMBINED POLICY CHANGES PLUS SG INCREASE ON GOVERNMENT TAXES AND CO-CONTRIBUTIONS – COMBINED SCENARIO 2**

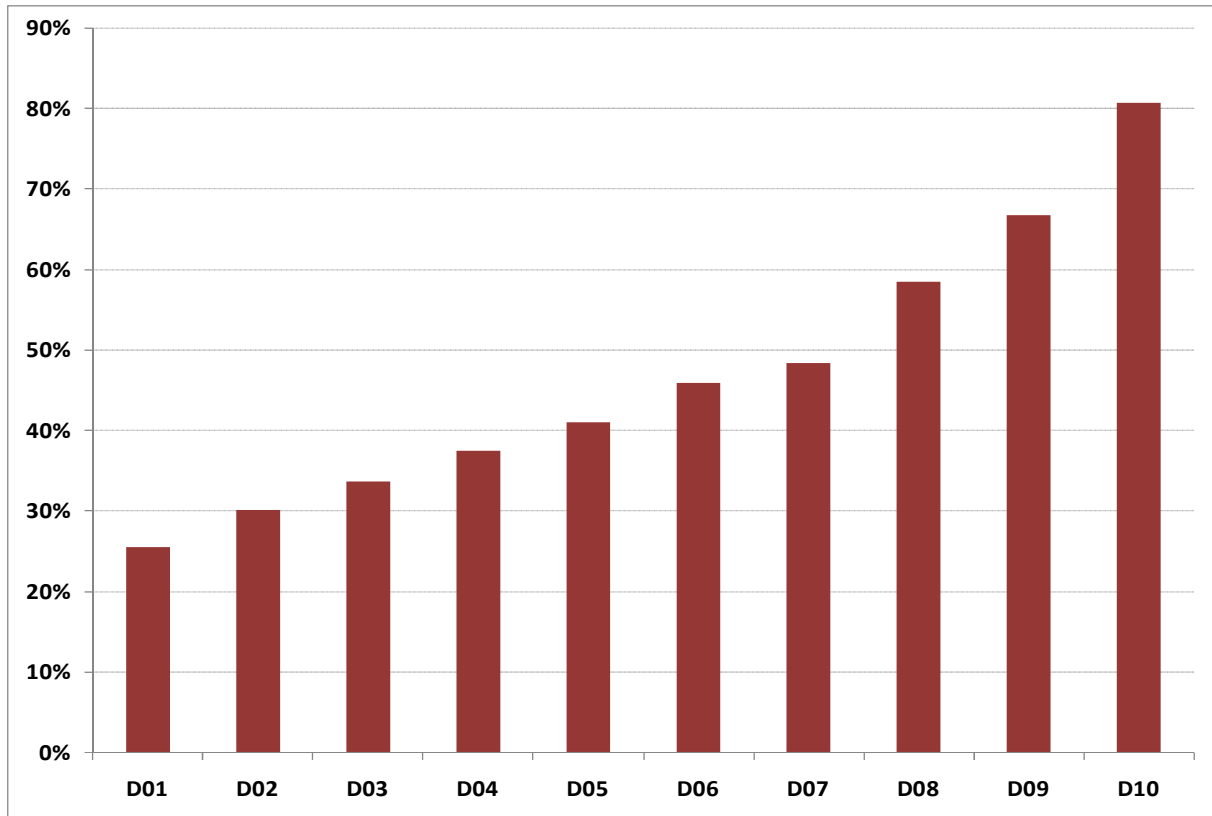


**CHART 52: EFFECT OF COMBINED POLICY CHANGES PLUS SG INCREASE ON THE CONSUMPTION MEASURE OF ADEQUACY – ABSOLUTE PERCENTAGE POINT DIFFERENCE – COMBINED SCENARIO 2**



The ‘modest but adequate’ measure of adequacy focuses more on dollars received. Accordingly, and as expected, it shows higher increases at the top end than at the bottom.

**CHART 53: EFFECT OF COMBINED POLICY CHANGES PLUS SG INCREASE ON THE ‘MODEST BUT ADEQUATE’ MEASURE OF ADEQUACY – COMBINED SCENARIO 2**



## APPENDIX A: THE *SUPERSIM* MODEL

Access Economics' SuperSim model projects retirement savings outcomes in Australia over the coming century. It combines broad scope, detailed projections and unmatched flexibility to provide a level of modelling sophistication previously reserved for government agencies.

It also has a broad range of relevant policy levers, allowing for many of the potential options likely to be explored as part of this project.

That has the particular advantage of making it easy to adjust some of the key drivers of the outcomes, which is critical to the success of the project as policy options are developed and updated in the short timeframe available.

Access Economics' *SuperSim* model is a dynamic, long run model designed to project outcomes for retirement savings in Australia. It includes detailed projections of outcomes within the superannuation system, and a flexible framework for measuring the impact of changes to super policy.

### KEY OUTPUTS

At its broadest level, the model is able to project outcomes for:

- **Working households.** Relevant stocks and flows among pre-retirement households, are presented in a framework similar to the ABS national accounts, including:
  - Household income
  - Household savings by broad asset class
  - Household consumption
- **Retirees.** Detailed projections of assets at retirement are coupled with an allocated pension framework to create a full suite of private asset and income projections for retirees.
- **Governments.** Taxes on income, housing and superannuation are projected within the model, and policy changes flow through to all other aspects of the results, including through the behavioural responses of individuals.
- **Asset markets.** As retirement savings are accumulated within the model, projections of total assets within each broad class are available.

At finer levels of detail the model provides insights into the savings experience of a range of groups, allowing analysis of retirement outcomes:

- **By age, and date of retirement.** Model results can be tailored to show impacts of specific generations of retirees, as well as retirement cohorts.
- **By current and lifetime income.** A dual income distribution allows the model to distinguish between the 'asset rich' and the 'income rich' at any point in time.

A review of the model is currently underway, meaning there may be some limited scope to add additional outputs which reflect the particular policy aims of the ISN and the AIST for this project.

## KEY INPUTS AND ASSUMPTIONS

Underlying the richness of the model results is a robust and flexible methodology. In keeping with the policy modelling focus of the SuperSim model, scenario analysis can be conducted on a wide range of assumptions, including key model equations.

A complete list of possible changes would be long – the input-related sections of the model alone contain over 1,800 variables.

Some of these parameters are more important than others, and make up a standard set of ‘levers’ which provide for a range of possible future scenarios. This section outlines the major inputs and assumptions which might be varied in a straightforward simulation of the model.

### ECONOMIC ASSUMPTIONS

Economic projections in the model are constructed from historical data and assumptions about future trends in key variables. At their simplest, these assumptions resemble those in the Commonwealth’s *Intergenerational Reports* (IGRs), though a more detailed view of economic trends can be informed by Access Economics macroeconomic model (the AEM).

Assumptions are made about the following variables, in each year of the projection period:

- **Population projections, by age cohort.** Current values reflect the most recent population projections from the ABS.
- **Inflation.** Current values reflect IGR assumptions.
- **Productivity growth.** Current values reflect IGR assumptions.
- **Participation rates by age cohort.** Current values reflect IGR assumptions.

Changing the values of any of these assumptions, year by year, is a simple matter within the model. In this way, the model can create new economic projections to suit any scenario. That is a key advantage given the current economic circumstances surrounding the review.

### SUPER SYSTEM PARAMETERS

Much of the SuperSim modelling uses known system parameters, such as the 9% SG rate, to project future outcomes. While many of these values are fixed over time, they present opportunities for scenario analysis to reflect changes in government policy, and alternative views of future consumer behaviour in the retirement savings system.

A selection of key parameters might include:

- **The SG Rate.** While there is little prospect of a change to the 9% SG rate in the near future, this parameter allows the model to consider the impact of a broad lift in super contributions.
- **Preservation arrangements.** Preservation rules currently provide an important threshold for super benefits, but given demographic trends, there may pressure to further increase the preservation age in coming years. A set of parameters identifying eligibility for super benefits is available by age, allowing staggered changes to preservation ages over time.
- **Voluntary contribution rates.** Voluntary contributions are modelled in detail within the model, but assumptions about the level and source of these contributions can be

varied for each scenario. Separate parameters are available by contribution type, allowing changes to effect salary sacrifice contributions and after tax contributions separately. Current values assume that recent contributions behaviour is unchanged over the projection period. For each year in the projection period changes can be made both by age cohort, and current year income decile.

- **Earnings rates by broad asset class.** Earnings in the SuperSim model are currently set to growth in nominal GDP, plus an optional 'equity risk premium', and are equal for super, housing and other assets. Each of these assumptions can be varied in each year to create a wide range of potential scenarios for future investment performance.
- **Income stream purchases.** Shares of the benefits from the super system which are withdrawn as an income stream product are currently informed by a combination of industry statistics and ATO TaxStats. This assumption can be varied by type of super (employer or after tax contributions), by year. The model's parameters are set to assume that two-thirds of member benefits at retirement are taken as a lump sum, which is then drawn down at double the rate of superannuation allocated pensions.

Again, all the above parameters can be changed to suit any new scenario within the model.

### TAXES AND SUBSIDIES

The SuperSim model has been designed to measure the impacts on retirement incomes of changes to the complex system of taxation surrounding superannuation in Australia. It is therefore well placed to simulate a range of scenarios for future taxes and co-contribution arrangements.

Key input variables include:

- **Income tax rates and thresholds.** Incentives to contribute to super are closely tied to the income tax system, and the deductibility of some contributions mean that changes to the super system can have 'second round' impacts on income tax revenues received by the government. All current rates and thresholds, including the Medicare levy and the low income tax offset, can be altered within the model for any year in the projection period.
- **Super contributions tax rates.** The 15% tax on contributions to super is perhaps the most visible of the current super taxes. The model allows this rate to be altered in any year
- **Earnings taxes.** Within the SuperSim model, final 'effective' rates of earnings tax reflect two factors – the rate of tax, and the value of imputation credits available to funds for the purpose of offsetting their earnings tax liability. Both of these can be varied as part of any scenario.
- **The government co-contributions scheme.** The *SuperSim* model includes options for this scheme that include all current policy parameters, plus options to extend and alter targeting of the scheme. Inputs for each year of the projections include:
  - Income thresholds (including adding new thresholds).
  - Matching rates (including the addition of variable rates and phase-outs).
  - Maximum contributions (including phase-out rates).

## APPENDIX B: LIFETIME VERSUS CURRENT INCOMES

Appendix Table 1 compares estimates of average income within each current and lifetime decile.

**APPENDIX TABLE 1: AVERAGE ANNUAL INCOME BY DECILE – 2005-06**

|                  | Current year income deciles  |                      | Lifetime income deciles      |                      |
|------------------|------------------------------|----------------------|------------------------------|----------------------|
|                  | Average Wage & Salary Income | Average Total Income | Average Wage & Salary Income | Average Total Income |
| <b>Decile 1</b>  | \$0                          | \$0                  | \$8,233                      | \$18,211             |
| <b>Decile 2</b>  | \$129                        | \$7,084              | \$11,652                     | \$26,785             |
| <b>Decile 3</b>  | \$3,052                      | \$19,445             | \$15,073                     | \$32,947             |
| <b>Decile 4</b>  | \$11,133                     | \$25,904             | \$18,506                     | \$38,605             |
| <b>Decile 5</b>  | \$16,697                     | \$36,375             | \$21,914                     | \$44,163             |
| <b>Decile 6</b>  | \$23,306                     | \$44,687             | \$25,783                     | \$50,508             |
| <b>Decile 7</b>  | \$28,896                     | \$55,711             | \$27,192                     | \$52,695             |
| <b>Decile 8</b>  | \$37,033                     | \$67,766             | \$34,800                     | \$65,355             |
| <b>Decile 9</b>  | \$47,088                     | \$85,847             | \$40,317                     | \$74,674             |
| <b>Decile 10</b> | \$85,308                     | \$151,021            | \$49,172                     | \$89,898             |
| <b>Average</b>   | \$25,264                     | \$49,384             | \$25,264                     | \$49,384             |

Source: Household Income and Labour Dynamics in Australia (HILDA) Survey data, Access Economics  
Incomes are net of taxes and transfers

It is important to note that **these figures represent the same measures of income averaged across two different groups of individuals**, rather than averages of measures for the same ten groups. In simple terms, these lifetime income deciles below are constructed by recognising that:

- ❑ For each individual in the population, we observe past and present incomes (including that for the 2005-06 financial year), and are able to quickly form current year income deciles by ordering and grouping individuals.
- ❑ At some point in the future, each individual for whom we have measured 2005-06 income will also be included in a lifetime income decile, based on the total income they have earned in the past. By definition, the lifetime decile attached to each individual:
  - cannot change over time (since every individual lives once),
  - cannot be observed with certainty until the end of his/her life, and;
  - has ten possible outcomes, with the probabilities attached to those outcomes dependent on the future income of the individual, and of all other individuals in the population.
- ❑ For each possible combination of future 'current year' income deciles, the lifetime income for an individual can be estimated by adding up the average income in each decile that individual falls into in every future year. That is, if we just knew what future 'current year' decile 'path' each individual would follow, we could estimate their lifetime income decile.

- To estimate the future 'path' of income for individuals in each current year income decile, a Monte Carlo simulation approach is used:
  - An estimate of the probability attaching to a 'guess' at an individual's future income decile can be made, based on the number of similar individuals who achieved that outcome in the past.
  - We know that these hypothetical income 'paths' are not likely to be accurate predictions for the individual, but if enough 'guesses' can be made they don't need to actually *be* 'right' as long as it is known *how likely* they are to be 'right'.
  - The probabilities attaching to each 'path' can be applied to estimate the share of each current year income decile which is *expected* to fall into each lifetime income decile.
  - These shares can then be applied to the (known) current year income deciles to obtain the lifetime income decile averages outlined above.