

RETIREMENT INCOME ADEQUACY REVISITED

**Paper presented to the Twelfth Colloquium of Superannuation Researchers,
University of New South Wales**

12 & 13 July 2004

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The views in this Paper are those of the authors and do not necessarily reflect those of the RIM Unit, the Treasury or the Government.

The authors wish to thank other members of the RIM Unit for their contributions to this paper.

INTRODUCTION

Most Australians' incomes in retirement will be funded from a combination of superannuation savings, other private savings and a full or part-rate Age Pension. In combination with the taxation system, these income sources will provide retirees with a particular level of spending capacity.

Whether this spending capacity is 'adequate' has been the subject of considerable examination and debate over recent years, including notably the examination by a Senate Select Committee (Senate Select Committee, 2002) and by industry groups such as ASFA (ASFA, 2004).

Australia's three-pillared retirement income system is now well established. The three pillars comprise the means-tested Age Pension and associated social security arrangements, compulsory employer superannuation contributions through the Superannuation Guarantee (SG) and voluntary private savings. The voluntary private savings component includes employer contributions that exceed SG requirements, voluntary member superannuation contributions and other forms of saving such as property, shares and other non-superannuation financial assets. The key policy objective of this system is to enable Australians to achieve a higher standard of living in retirement than would be possible from the publicly funded Age Pension alone. The World Bank and other international bodies have broadly endorsed Australia's approach to the provision of retirement incomes.

The superannuation system is generally regarded as strong, appropriately regulated and sound, with assets more than doubling over the past 7 years to their current level approaching \$600 billion.

This paper aims to provide a systematic assessment of the adequacy of retirement incomes for a range of life experiences. It updates and extends work presented to the 1999 Colloquium (Tinnion and Rothman, 1999), with an emphasis on recent Government initiatives. Particular attention is given to the potential impact of the expanded co-contribution policy presented in the 2004-05 Budget and to initiatives in the Retirement Income Statement which facilitate working longer, especially phasing down to retirement using part time work.

The first part of the paper considers the concepts used in assessing adequacy and methodological issues arising. The paper then presents hypothetical results for individuals receiving different lifetime levels of income and with different workforce patterns. The adequacy of retirement incomes arising from the full development of the Government's SG arrangements is considered, together with adequacy issues for the 'baby boomers'.

The RIMHYPO model of the Retirement and Income Modelling Unit (RIMU), Treasury was used to obtain the results presented in this paper. This model is as described in Tinnion and Rothman (1999) except for updating to include new policies such as the co-contribution, changes to the pension asset test and new tax arrangements such as the Senior Australians Tax Offset.

MEASURES OF LIVING STANDARDS IN RETIREMENT

The adequacy of retirement incomes is usually assessed using either an absolute (or budget) framework or a relative framework using replacement rates. Comparison with a poverty benchmark is a further relative measure. The level of the Age Pension is also assessed relative to an objective benchmark (currently 25 per cent of Male Total Average Weekly Earnings). Total retirement income, including superannuation, is most often assessed using a version of a replacement rates framework.

The absolute or budget framework seeks to estimate the actual income required to live at a certain (budget) standard or lifestyle in retirement. A prominent example is recent research commissioned by Westpac Banking Corporation and ASFA (Saunders et al 2004), which has estimated how much it currently costs for Australians to have certain specified lifestyles in retirement. These estimates are discussed in a later section.

Replacement rates are defined as ratios of a person's income or spending power after retirement to before retirement. The proposition underlying the replacement rate concept is that a person's

standard of living in retirement should be a reasonable proportion of his or her standard of living during working life.

Treasury, as well as a number of key groups (including the Institute of Actuaries¹), consider that a replacement rate measure based on a comparison of potential (net) expenditure before and after retirement is preferable to a comparison of gross incomes before and after retirement. Some important groups, however, have based their replacement rates on gross measures. Gross measures may be misleading because of substantial differences in taxation and saving before and after retirement.

An expenditure replacement rate is an after tax measure which takes account of the drawdown of capital during retirement. Replacement rates based on income alone do not take account of draw-downs of capital. Consequently, such measures understate the contribution of retirement savings to the maintenance of living standards in retirement. This paper uses expenditure as the most useful and practical guide to standards of living. It is worth noting that expenditure or spending is not quite the same as consumption, because it does not include the provision of (free) government services nor imputed rent on owner occupied housing.

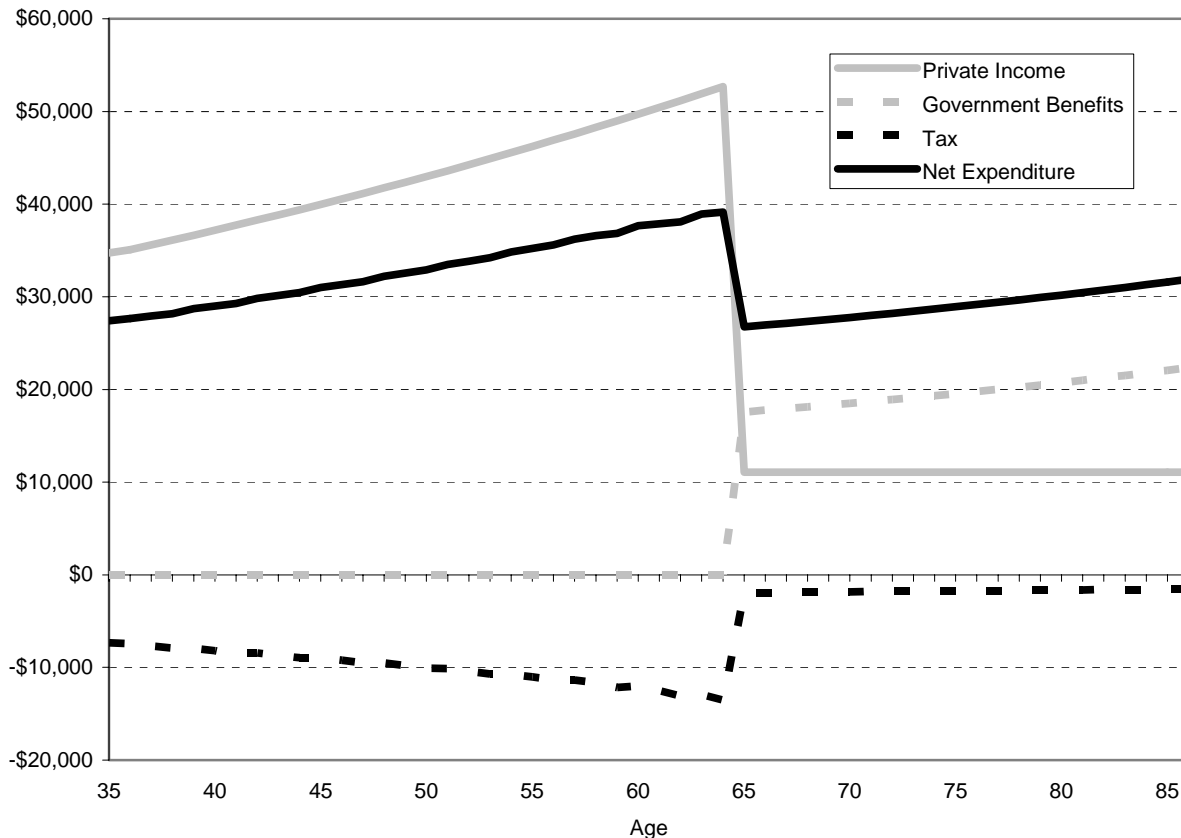
Two replacement rate measures which have been commonly used and advocated are the ratio of average expenditure in retirement to the expenditure in the last year of full-time working life, and the ratio of first year retirement expenditure to the expenditure in the last year of full-time working life. A comparison of expenditure levels in the first year of retirement and the last year of working life can often be unrepresentative of standards of living across the whole of retirement, particularly where superannuation benefits are taken as a lump sum². This is clearly illustrated by hypothetical

¹ *'Superannuation and Standards of Living in Retirement – Modelling Assumptions'*, Institute Of Actuaries Report to the Senate Select Committee Inquiry into Superannuation and Standards of Living in Retirement, September 2002

² A significant part of the controversy concerning adequacy arises from differing approaches to such measures, rather than from the parameters used or calculations done within an agreed framework.

examples provided later in this paper (Table 1, Chart 1 and others). Chart 1 shows clearly the importance of the periods of retirement and working life over which averages are taken; neither working life expenditure nor retirement expenditure is constant in real terms.

Chart 1: Hypothetical expenditure projections for working life and retirement in real terms for a single male, benefits taken as a life expectancy pension



Alternative measures that may be worthy of consideration are the ratios of average expenditure in the first 5 (or 10) years of retirement to the average expenditure in the last 5 (or 10) years of working life. These measures may be particularly useful for evaluating scenarios where a member phases down to retirement by working part-time for a period before fully retiring. This paper provides replacement rate calculations comparing the average expenditures for the 5 years either side of retirement and the 10 years either side of retirement; these measures have the additional benefit of symmetry when comparing pre and post-retirement expenditure levels.

Whether or not any particular expenditure replacement rate is optimal is a matter for judgement. It seems generally accepted, however, that for most persons, a replacement rate of less than 100 per cent will be appropriate. This is because (most) retirees do not face some major expenses, (eg home mortgage costs, the cost of raising children and the cost of commuting to and from work) which are more likely to be faced by people of working age. It is also likely that different replacement rates will be optimal for different individuals. The Government has not set an explicit benchmark replacement rate.

Analysis of replacement rates and associated policy should necessarily take account of individuals' needs in both their retirement and pre-retirement years. Proposals designed to increase gross savings in pre-retirement years with the aim of increasing retirement incomes involve trading off higher consumption in retirement for lower consumption while working.

DISCOUNTING PROJECTED EXPENDITURE LEVELS

The best deflator for expenditure is the consumer price index³. Deflating by wages (as in the results of some other groups, notably ASFA) does not properly reflect what people are able to buy, and does not capture growth in real wages and the corresponding increase in the real value of the Age Pension over time.

In a purely financial/economic sense, standards of living are driven by the level of consumption a person can afford on a sustainable basis. Westpac and ASFA recently released a joint paper (undertaken by the University of New South Wales) estimating current budgetary requirements for 'modest but adequate' (MBA) and 'comfortably affluent and sustainable' lifestyles. It is a reasonable expectation that the basket of goods analysed in these budgets will increase in price over time at a rate much closer to movements in CPI than in wages and some limited analysis supports this view. Saunders et al (2004) found that from February 1997 to August 2003, CPI increased by

³ Ideally a price index for goods and services used by retirees should be used.

around 18 per cent, while the estimated increases in MBA budgetary requirements for singles and couples over the same period were 16 per cent and 17 per cent respectively. This analysis suggests that indexing future retiree budgetary requirements (or discounting projected retirement expenditure levels to today's dollars) by CPI should provide a fair and reasonable indicator of standards of living in retirement.

Discounting by CPI also aligns with definitions such as 'real income' and 'real rate of return', which deflate nominal results by CPI rather than by the rate of growth in wages.

Much of a retirees' private income will rise by CPI or less. Returns from fixed interest are usually constant in nominal terms, not keeping pace with CPI. When converting superannuation benefits into a life expectancy pension, CPI indexation is offered by retail funds and most public sector funds, but wages indexation is not. While income from shares and rent may rise in line with wages, such income is not generally a large component. The only common component of retirement income that is indexed by wages is the age pension. This is a relatively unusual arrangement (by comparison with the majority of other countries⁴). This feature is worth emphasising and discounting by CPI achieves this aim.

UNSW/ASFA/WESTPAC STUDY OF RETIREMENT BUDGET REQUIREMENTS – SOME ISSUES AND CLARIFICATIONS

A recent media release highlighted new research commissioned by Westpac Banking Corporation and ASFA, estimating how much it costs for Australians to have certain specified lifestyles in retirement. This work was undertaken by the Social Policy Research Centre of the University of New South Wales (Saunders et al 2004) and is a prominent example of the absolute or budget approach to assessing adequacy.

⁴ Disney, R. and Johnson, P., 'Pension Systems and Retirement Incomes across OECD countries', Edward Elgar, UK, 2001

There are significant discrepancies between the way in which the media releases have presented the key findings and the way they are presented in the source research paper. The most significant examples of these public misrepresentations revolve around the definitions applied to the two main lifestyle standards reported.

The source paper refers to a 'modest but adequate' (MBA) budget standard as 'lying between the standards of survival and decency and those of luxury as these are commonly understood, corresponding in round terms to the median standard of living in the community as a whole'.

Therefore, this could be considered a reasonable starting point for the retirement living standard of a person currently earning a median income. However, the accompanying press release and subsequent public discussion has suggested that the MBA budget standard 'allows for the basics but very little else', suggesting such a lifestyle is barely above subsistence living. In considering the research paper more carefully, we see that the MBA budget includes such items as costs of owning a car, health insurance, cinema, sporting and day trips, books and magazines, DVD rentals, domestic travel and some alcohol each week⁵. To represent the MBA budget as barely above subsistence living is clearly misleading.

The source paper refers to a 'comfortably affluent and sustainable' (CAS) budget standard as being 'grounded in the attitudes and behavioural patterns of comfortably affluent older people'. It also states that this group are predominantly self-funded retirees (i.e. receiving little or no age pension) or the group with around the top 20% of retirement incomes. However, the accompanying press release and subsequent public discussion has replaced the phrase 'comfortably affluent' with 'comfortable', implying that rather than being a budget required to satisfy the desires of the top quintile, it is the budget required to provide a reasonable standard of retirement living for all Australians.

The paper estimates that to achieve a ‘comfortably affluent and sustainable’ retirement lifestyle, a home owner couple would have an annual net expenditure of \$43,350 and a home owner single person would spend \$32,800. To achieve a ‘modest but adequate’ retirement lifestyle, it is estimated that a couple would spend \$23,550 each year and singles \$16,930. For a single person currently earning a median income, the budget figures reported above lead to a net expenditure replacement rate of 59% for the MBA case and 115% for the CAS case⁶.

The paper itself notes that the methodology used to construct their budget could lead to an upward bias in the estimate, yet no mention of this issue has been made in any public discussion of the findings. This potential upward bias occurs because, as an initial rule, the methodology allocates to the total budget all goods and services that 50 per cent or more of households would consume.

The paper notes an example where ‘the majority of the population (70 per cent) in fact choose between the two items’ (a stereo system and a home computer). However, the budget figures provided assume both items are consumed, leading to a potential upward bias in the budget bottom line. This pattern applies across the entire budget, where any given person or couple is likely to choose a selection of the ‘desirable’ or luxury items included in the budget, but almost certainly not all of them, leading to a reduction in the realistic total budget required.

But despite such issues, the fully mature Australian retirement income system is projected to more than adequately meet the needs of the MBA budget for a person earning a median wage (for whom the MBA budget is intended as a measure of living standards in retirement). Based on a 35 year working career and retirement in 2039 at age 65, a single male is projected to have a real net expenditure in the first year of retirement of around \$32,000 and an average annual real net

⁵ Westpac and ASFA, ‘Retirement Living Standard Detailed Budget Breakdowns, Comfortable Lifestyle and Modest Lifestyle’, February 2002

⁶ Where the replacement rate measure adopted is a comparison of net expenditures between the average across retirement and the final year of working life.

expenditure across retirement of around \$35,000, reflecting the real increase in age pension values over time. In fact, such a result would enable the member to purchase a similar basket of goods and services to that outlined in the current CAS budget, assuming that these goods and services were to increase in price over time in line with inflation (as discussed earlier).

ADEQUACY CAMEOS – SUPERANNUATION GUARANTEE CONTRIBUTIONS ONLY

Replacement rate hypotheticals are presented below for a single male with an unbroken working career of 35 years and for a single female with a broken working career, where a career of 26 years of full-time equivalent work is spread over a 40-year period. Further explanation of the rationale for selecting these cases is presented in Appendices A and B. For these cases, only compulsory SG contributions are assumed to be made for the private component of retirement income.

Table 1: Various Replacement Measures for a single male with a working life of 35 years, retiring at age 65 in 2039⁷

Salary (multiple of AWOTE)	Private benefit taken as:	Average over retirement / last year work	First 10 years retired / last 10 years work	First 5 years retired / last 5 years work	First year retired / last year work
0.75	Life Exp Pension	78%	79%	75%	72%
	Lump Sum	79%	73%	66%	60%
1.00	Life Exp Pension	71%	71%	68%	67%
	Lump Sum	70%	61%	54%	49%
1.50	Life Exp Pension	60%	61%	58%	54%
	Lump Sum	57%	46%	40%	36%
2.50	Life Exp Pension	44%	45%	42%	39%
	Lump Sum	42%	34%	31%	29%

⁷ All hypothetical cases presented assume a 7% per annum nominal rate of earnings (after fees but before tax), wage growth of 4% per annum and inflation of 2.5% per annum.

The results above highlight that where benefits are taken in the form of a lump sum and then drawn down over retirement, the definition used to measure replacement rates is of major importance (although the replacement rate definition chosen is of lesser consequence where private benefits are taken in the form of a life expectancy pension).

The definition that compares the first year of retirement expenditure to the last year of working life expenditure (the last column) can give a misleading picture of the overall financial position of the retiree. This is mainly as a result of two factors:

- It makes no allowance for real increases in the value of the age pension across time, and perhaps more importantly;
- These individuals are significantly impacted upon by the asset test in the early years of their retirement, receiving low levels of age pension benefits as a consequence. As the retiree's private funds are drawn down upon over the course of retirement, they benefit from significant and continuing increases in the level of annual age pension benefit received.

Further, it can be argued that a comparison of average annual retirement expenditure to last year of working life expenditure is not sufficiently responsive to the shape of expenditure levels across retirement (i.e. a sharper than suggested drop in the early years, followed by significant improvements in later years of retirement. Chart 1 helps to illustrate this point).

With this in mind, the authors suggest that a comprehensive replacement rate measure should have some regard to real growth in the age pension, to increased age pension benefits as a result of reduced asset test impact over retirement and to the shape of expenditure levels across retirement. The replacement rate measures that compare the 5 and 10-year timeframes on either side of the point of retirement seem to best satisfy these criteria. Further comparison and evaluation of the range of expenditure replacement rate measures can be made by considering the case of a person who phases down into retirement, as follows:

Table 2: A single female with a broken working pattern and working part-time from age 60 until retirement at age 65 in 2044⁸

Salary (multiple of AWOTE)	Private benefit taken as:	Average over retirement / last year work	First 10 years retired / last 10 years work	First 5 years retired / last 5 years work	First year retired / last year work
0.75	Life Exp Pension	114%	88%	106%	101%
	Lump Sum	115%	83%	97%	90%
1.00	Life Exp Pension	94%	75%	88%	85%
	Lump Sum	94%	67%	74%	68%
1.50	Life Exp Pension	78%	63%	74%	71%
	Lump Sum	75%	48%	53%	48%
2.50	Life Exp Pension	59%	46%	55%	51%
	Lump Sum	54%	32%	36%	34%

Again, the differences in estimated replacement rates between different measure definitions are more marked where a retiree takes their private benefit in the form of a lump sum. However, the relativity between results derived under each measure for a person working full-time in the years leading up to retirement has altered.

This change in relativity comes about because only the comparison of the 10 years either side of retirement makes an appropriate allowance for the period where the woman worked in a full-time capacity. All the other measures use a denominator based on a part-time workload alone, while using a numerator which has been impacted by the significant periods of full-time work. It can be argued that as a result, those measures overstate the true standard of living enjoyed by this retiree, as she will still have recent (fond) memories of a significantly better financial standing during her final years of working full-time.

⁸ Assumed to work full-time from age 25-29, no work from age 30-39, part-time from age 40-44, full-time from age 45-59 and part-time from age 60-64. Part-time workload is assumed to be three-fifths of a full-time workload.

Other misleading results may be observed in the case where a person receives a significant increase in salary (either via promotion or perhaps as a result of an increased workload) in the year(s) immediately prior to retirement. Under any measure that only has regard to the level of working life expenditure immediately prior to retirement, a significant spike in expenditure just before retirement and the subsequent sharp drop upon retirement may suggest that the retiree's expectations are not going to be met. However, the prospective retiree may still be accustomed to the standard of living they enjoyed before this brief period of improved expenditure, particularly given the inertia people typically may feel to making significant lifestyle changes. Therefore, it seems desirable to have a measure of replacement rates that caters to a level of expectation developed over the longer term. Of the four replacement rate measures presented, the comparison of average expenditure levels for the 10 years either side of the point of retirement appears to best fit the circumstances for this particular case. For a person who has a shorter period of part-time work prior to retirement, a comparison of average expenditure levels for the 5 years either side of the point of would also provide fair and reasonable results.

At higher income levels, replacement rates are lower because a lower part pension is received (which is a smaller proportion of total retirement income) and taxation in retirement is more significant. However, as income rises, absolute retirement incomes do continue to rise.

FURTHER ADEQUACY CAMEOS - BABY BOOMERS

The results of projections based on a fully mature SG system indicate that a reasonable level of adequacy can be achieved with SG only contributions for many Australians, although higher income earners may wish to consider additional savings to provide a smoother financial transition into retirement. However, there are a significant number of Australians who will retire before this time, particularly the 'baby boomers', for whom the issue of adequate retirement spending power may be of greater concern.

One method of evaluating adequacy for this group is to project in what year SG contributions in conjunction with the age pension lead to retirement spending power that is equivalent to the UNSW/ASFA/Westpac MBA budget (in real terms) as discussed previously.

For a single male on median earnings, receiving SG contributions from 1992 onwards and retiring at age 65 in 2010, real net expenditure in the first year of retirement is projected to be around \$16,800, with an average real net expenditure across retirement of around \$18,700. For a single female under the same circumstances, real net expenditure in the first year of retirement is projected to be around \$16,400, with an average real net expenditure across retirement of around \$18,700. This compares with the stated budget requirement of \$16,930. The single female case is lower in the first year but broadly equivalent overall, because longer life expectancy for females leads to higher pension valuation factors applying to private funds but also a positive impact from more years of real growth in age pension values. It is important to note that for these cases, where the member does not benefit from a fully mature SG system, the majority of retirement expenditure is derived from the age pension.

For a single income couple on median earnings, receiving SG contributions from 1992 onwards and retiring when both partners turn 65 in 2007, real net expenditure in the first year of retirement is projected to be around \$23,300, with an average real net expenditure across retirement of around \$25,000. This compares with the stated budget requirement of \$23,550.

IMPACT OF THE GOVERNMENT CO-CONTRIBUTION

For those on low-to-middle incomes who wish to improve the adequacy of their standard of living in retirement, the recent introduction of the government co-contribution (and subsequent extensions – see Appendix C for details) has the potential to provide significant assistance in this area.

Table 3 provides scenarios that utilise the extended co-contribution policy to varying degrees, in order to highlight the improvements in retirement incomes members can potentially receive if they choose to make regular additional savings into superannuation via this vehicle.

Table 3: A single male with a working life of 35 years, retiring at age 65 in 2039, with varying utilisation of the extended co-contribution policy⁹

2004/05 salary	2004/05 member contribution	2004/05 co-contribution	Average over retirement / last year work	First 10 years retired / last 10 years work	First 5 years retired / last 5 years work	First year retired / last year work
\$30,000	\$0	\$0	89%	89%	85%	81%
	500	\$750	102%	104%	100%	96%
	\$933	\$1,400	106%	109%	104%	100%
\$36,000	\$0	\$0	79%	80%	76%	73%
	\$500	\$750	87%	89%	85%	81%
	\$733	\$1,100	88%	90%	85%	82%

Table 3 highlights that for a person currently earning \$30,000, an improvement in their replacement rate of 15 to 20 percentage points is achievable, while an improvement of 8 to 10 percentage points could be achieved by a person currently on median earnings (around \$36,000). Of course, such a level of regular saving may be beyond the reach of some eligible individuals within the relevant income range. However, smaller contributions than those required to receive the maximum co-

⁹ Private benefit assumed to be taken as a life expectancy pension. In any year where the maximum co-contribution entitlement is projected to be smaller than the figure presented in the table, the member is assumed to reduce their contribution to the level required for the maximum entitlement in that year.

contribution payment at a given income can still lead to significant improvements in retirement standards of living.

Table 4 shows the projected improvement in standards of living in retirement where a member makes a post-tax contribution of \$5 per week (or \$260 per annum) and receives the relevant co-contribution payment.

Table 4: A single male with a working life of 35 years, retiring at age 65 in 2039, contributing \$5 per week and receiving the extended co-contribution¹⁰

2004/05 salary	2004/05 member contribution	2004/05 co-cont	Average over retirement / last year work	First 10 years retired / last 10 years work	First 5 years retired / last 5 years work	First year retired / last year work
\$30,000	\$0	\$0	89%	89%	85%	81%
	\$260	\$390	96%	98%	93%	90%
\$36,000	\$0	\$0	79%	80%	76%	73%
	\$260	\$390	84%	86%	82%	78%
\$40,000	\$0	\$0	75%	75%	72%	69%
	\$260	\$390	78%	80%	76%	73%
\$45,000	\$0	\$0	71%	72%	69%	66%
	\$260	\$390	73%	74%	71%	68%

The results in Table 4 indicate that even a small weekly level of saving, in conjunction with the government co-contribution, has the potential to provide a significant improvement in standards of living in retirement. This improvement decreases as income increase (from a 7 to 9 percentage point increase at a current income of \$30,000 to a 2 percentage point increase at a current income of \$45,000) as a result of both the way in which the co-contribution taper range is indexed and the relativity of the member and co-contributions to the underlying level of SG contributions a member is receiving. A fixed nominal level of member and co-contributions may provide a significant

¹⁰ Private benefit assumed to be taken as a life expectancy pension. In any year where the maximum co-contribution entitlement is projected to be smaller than the figure presented in the table, the member is assumed to reduce their contribution to the level required for the maximum entitlement in that year.

relative increase in net contributions to superannuation where the SG component is low, but becomes less of a factor in relative terms as the SG component increases.

IMPACT OF DELAYING RETIREMENT

One theme that has emerged in recent times is the potential positive impact on standards of living in retirement achieved by delaying the retirement decision. Essentially this impact is derived from three main sources, namely;

- More contributions to superannuation can be made during this extended period of working life (both via compulsory SG and additional voluntary saving).
- The longer period of fund retention allows more earnings to accrue, both on existing asset holdings and on additional contributions being made.
- Delaying retirement leads to a shorter period of drawdown in retirement, this improving the level of funds that can be drawn down in any given year.

Table 5 examines the potential impact on replacement rates that may be achieved by delaying the retirement decision for a relatively short period of time, incorporating the potential utilisation of the government co-contribution policy.

Table 5: A single female currently aged 62 with a superannuation balance of \$100,000, who can retire now, at age 65 in 2007 or at age 67 in 2009 - extended working life can be full-time (2004/05 salary of \$40,000) or part-time (2004/05 salary of \$24,000) ¹¹

Retirement age	Workload from 2004/05 until retirement	2004/05 member cont	2004/05 co-cont	Average over retirement / last year work	First 10 years retired / last 10 years work	First 5 years retired / last 5 years work	First year retired / last year work
62	na	na	na	65%	65%	60%	52%
65	FT	\$0	\$0	69%	70%	66%	64%
		\$600	\$900	71%	71%	68%	66%
	PT	\$0	\$0	109%	78%	84%	101%
		\$1,000	\$1,500	116%	80%	87%	107%
67	FT	\$0	\$0	71%	72%	69%	67%
		\$600	\$900	73%	74%	72%	69%
	PT	\$0	\$0	112%	88%	107%	104%
		\$1,000	\$1,500	120%	92%	116%	113%

As noted previously when discussing part-time work immediately prior to retirement, the most relevant replacement rates derived are those based on a working life measure that is averaged over a number of years, as the final year of working life may not be a fair indicator of retirement living standards. Nonetheless, the table highlights the significant improvement in retirement standards that can be achieved by delaying the retirement decision by a relatively short period of time.

¹¹ Private benefit assumed to be taken as a life expectancy pension. In any year where the maximum co-contribution entitlement is projected to be smaller than the figure presented in the table, the member is assumed to reduce their contribution to the level required for the maximum entitlement in that year.

SENSITIVITY OF THE RESULTS

The results presented in this paper are based on a number of assumptions about factors such as earnings rates, rates of wages growth, inflation, retirement age and life expectancy¹².

The impact of variations in earnings rates is straightforward. Improved returns on investment lead to improved replacement rate projections, while reductions in returns on investment lead to reductions in replacement rate projections. As an example, a male on around median earnings working 35 years is projected to have a replacement rate of 80 per cent for SG only, using ten years after retirement compared with ten years before and a nominal net earnings rate (after fees but before tax) assumption of 7 per cent per annum. If this earnings rate assumption is lowered to 6 per cent per annum, the new replacement rate projection is 76 per cent, while an earnings rate assumption of 8 per cent per annum would lead to a replacement rate projection of 84 per cent. It is important to note that as the net earnings assumption is made on net of fees basis, the variation from the base may come as a result of a change in gross returns, a change in fees or possibly a combination of the two.

The differential between wage growth and inflation rates is also of significance. Suppose the difference between the two growth rates (in effect the growth attributable to productivity) were 2 per cent, rather than the currently assumed 1.5 per cent. This would result in greater growth of real salaries and therefore real expenditure during working life, but also greater real growth in the age pension and expenditure during retirement. Thus for replacement rate calculations, both the numerator and denominator would be larger than currently assumed.

As an example, a male on around median earnings working 35 years is projected to have a replacement rate of 80 per cent for SG only, using ten years after retirement compared with ten

¹² All hypothetical cases presented assume a 7% per annum nominal rate of earnings (after fees but before tax), wage growth of 4% per annum and inflation of 2.5% per annum.

years before and the assumed base productivity rate of 1.5 per cent per annum. If this productivity rate is varied to be 2 per cent for the same case (by increasing wage growth to 4.5 per cent per annum), the replacement rate projected would increase to 82 per cent. This increase is primarily the result of the higher real growth in the age pension more than offsetting the higher real growth in wages.

Anticipated future improvements in life expectancy (while not being explicitly linked to private saving) may have an impact on the decisions of members both leading up to and particularly during retirement years. The impact of such demographic change is opposite to the impact of delaying retirement – improved life expectancies lead to reductions in annual drawdowns of private funds and consequently in available retirement expenditure. Pressure on the cost to government of the age pension will also be increased, as retirees will be receiving potentially higher benefits from the government each year (due to the reduction in private drawdown) for a greater number of years.) As an example, if life expectancy for a male on median earnings entering the workforce now with a working life of 35 years were to improve by 3 years and their private pension drawdown in retirement were to reflect this, their projected replacement rate would be reduced by 2 percentage points (from 80 per cent to 78 per cent).

CONCLUSIONS

The paper argues strongly for using replacement rates based on comparison of net expenditure after and before retirement and clearly shows the differences between measures that compare different periods before and after retirement. Comparisons using periods of 5 to 10 years are argued to be appropriate, allowing a fair adjustment for a period of part time work and avoiding distortions from the pension asset test.

For average Australians with SG contributions over a full working life, the age pension and SG systems combine to provide relatively high replacement rates of pre-retirement net expenditure. For

example, a male on around median earnings working 35 years is projected to have a replacement rate of 80 per cent for SG only, using ten years after retirement compared with ten years before. If he makes a \$5 a week member contribution and receives the co-contribution the projected replacement rate rises to 86 per cent; if he makes contributions sufficient to get the maximum co-contribution his replacement rate rises to 90 per cent.

At higher income levels replacement rates are lower, because a lower part pension is received (which is a smaller proportion of total retirement income) and taxation in retirement is more significant. However, as income rises, absolute retirement incomes do continue to rise. At higher income levels saving above the SG and/or saving outside superannuation is usually desirable. Available data indicates that there is a greater tendency to voluntary saving at higher income levels.

Analysis of the baby boomers, who have not had the benefit of the full SG in place throughout their working lives, shows that a single person on median earnings (receiving SG contributions from 1992 onwards) retiring at age 65 in 2010 or later, should reach or exceed the Westpac/ASFA 'modest but adequate' retirement budget. Couples retiring as early as 2007 should meet the couple 'modest but adequate' budget. While in no way suggesting that additional saving (particularly using the co-contribution) is not desirable, these new results indicate that those baby boomers with the SG but not saving voluntarily will still be able to retire at age 65 at a reasonable community standard.

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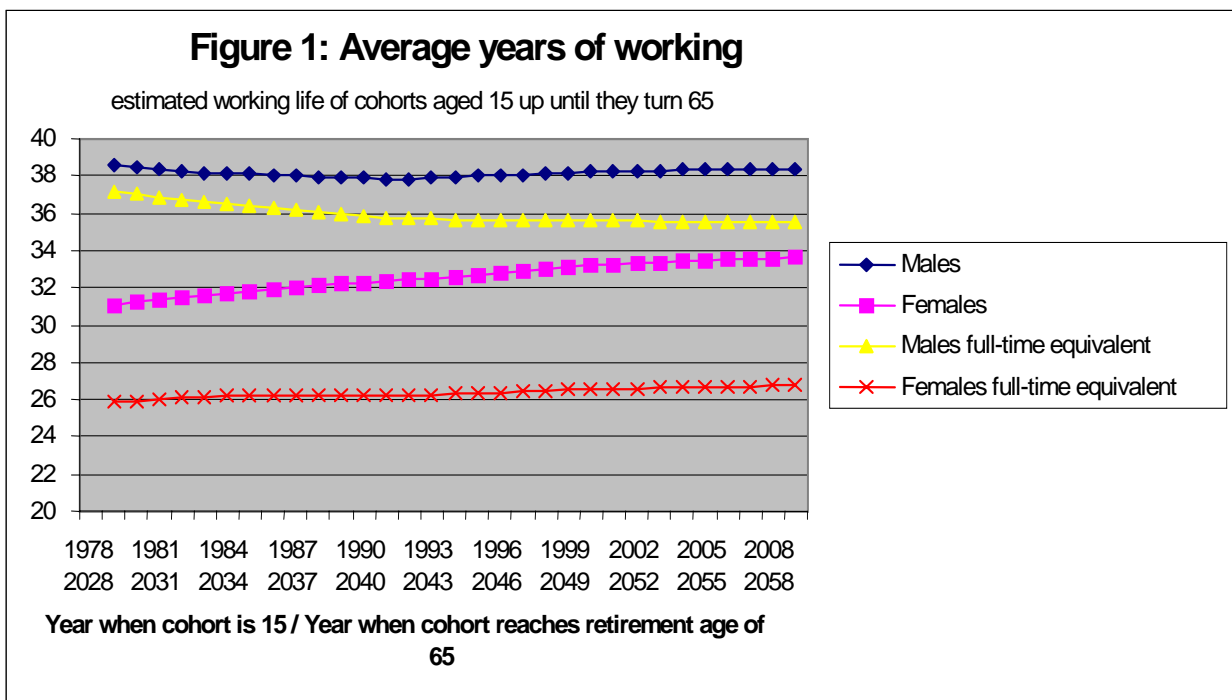
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APPENDIX A: WORKING LIFE ESTIMATES FOR MALES AND FEMALES

Figure 1 summarises the Retirement and Income Modelling Unit's (RIMU) estimates for years of working life, based on the expected average working life of cohorts defined by the person being aged 15 in each of the years 1978 to 2008. Working life is expressed as the number of years in work. Full-time equivalent working also takes into account the proportion of people working full-time and part-time.

Figure 1 shows that the full-time equivalent working life for men is projected to decline over time. RIMU estimates that the average years of full-time equivalent working life for a male 15 years of age in 1984 and retiring at age 65 in 2034 is around 36 years. For females, equivalent full-time working life is projected to rise very slowly over time. RIM estimates that the average years of full-time equivalent working life for a female 15 years of age in 1984 and retiring at age 65 in 2034 is 26 years. A description of the methodology is given as Appendix C in Bingham (2003)¹³.



¹³ Bingham, C., 'Impact of Private Saving and Longer Careers on Retirement Incomes', Paper presented to the Eleventh Colloquium of Superannuation Researchers, July 2003

APPENDIX B: PROPORTIONS OF WOMEN WORKING FULL-TIME AND PART-TIME BY AGE AND MARITAL STATUS

Table B.1: Women working full-time and part-time by age and marital status

Age	Marital Status	Proportion working full-time	Proportion working part-time
25-34	Married	61%	39%
	Not Married	76%	24%
35-44	Married	48%	52%
	Not Married	63%	37%
45-54	Married	54%	46%
	Not Married	69%	31%
55-59	Married	50%	50%
	Not Married	68%	32%
60-64	Married	41%	59%
	Not Married	60%	40%

Data Source: Australian Bureau of Statistics, Australian Labour Market Statistics (Cat No. 6105.0), April 2004

APPENDIX C: EXTENDED CO-CONTRIBUTION POLICY

The Government's co-contribution policy has three key components:

- The currently legislated policy which offers a 1 for 1 co-contribution payment (maximum of \$1,000) to those who make a post-tax personal contributions to superannuation and:
 - are aged 70 or under at the end of the income year in which their personal contributions are made;
 - receive employer superannuation contributions and receive at least 10 per cent of their income for co-contribution purposes as eligible employment income; and
 - have an income for co-contribution purposes of under \$40,000

Income for co-contribution purposes is the total of assessable income plus reportable fringe benefits. This income definition (and the age eligibility requirement) does not change under either extension outlined below.

- The extension of eligibility to those who;
 - Do not receive employer superannuation contributions but still receive at least 10 per cent of their income for co-contribution purposes as eligible employment income (implementing the announcement in March 2004).
 - This measure has been passed in the House of Representatives, but has yet to be debated in the Senate.
- The extension of the matching applied to contributions (from 1 for 1 to 1.5 for 1), the increase in maximum co-contribution payable to \$1,500 and the lifting of the upper income threshold range to \$58,000 (up from \$40,000) as announced in the Budget this year.
 - This measure has also been passed in the House of Representatives, but has yet to be debated in the Senate.

The paper evaluates the co-contribution based on the fully extended policy as outlined in the Budget this year.

It is important to note that a member contribution of \$1,000 is not required to receive a co-contribution. As an example, any eligible person with an income for co-contribution purposes of less than \$52,000 can receive a co-contribution payment of \$300 by making post-tax contributions of \$200 in that year. Table C.1 below outlines the maximum co-contribution benefit available to eligible members with various incomes for co-contribution purposes, as well as the level of post-tax personal contributions required to receive this maximum benefit.

Table C.1: Maximum benefit available under the co-contribution for eligible members

Income for co-contribution purposes	Maximum co-contribution benefit available	Post-tax personal contribution required to receive maximum
up to \$28,000	\$1,500	\$1,000
\$31,000	\$1,350	\$900
\$34,000	\$1,200	\$800
\$37,000	\$1,050	\$700
\$40,000	\$900	\$600
\$43,000	\$750	\$500
\$46,000	\$600	\$400
\$49,000	\$450	\$300
\$52,000	\$300	\$200
\$55,000	\$150	\$100
\$58,000 and above	\$0	\$0