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Superannuation Adequacy

Prepared for IFSA

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1. Executive Summary

1.1 Background

IFSA has engaged Rice Warner Actuaries to provide an update on the *Superannuation Savings Gap* and an analysis of the initial report from the Review Panel for Australia's Future Taxation System (the "Henry Review").

The Henry Review, issued as part of the May 2009 Budget Papers, concludes that the nine percent Superannuation Guarantee represents sufficient superannuation savings in a mature system. This recommendation leaves little doubt that voluntary saving through superannuation will be integral to delivering adequate retirement incomes for Australians, yet there is little mention of the behavioural changes and/or incentives needed to encourage voluntary superannuation and other private savings.

This research emphasises the need for such incentives by demonstrating the extent to which our retirement income system is on-track to deliver adequate retirement incomes for Australians.

Single people (consistently) earning less than about \$40,000 are likely to receive a full Age Pension in retirement and many of those (regularly) earning more than \$120,000 will be self-sufficient in retirement. Hence, IFSA's focus is on individuals earning between approximately \$40,000 and \$120,000 per annum where additional savings should lead to lower dependence on welfare in the retirement years.

This project produces an easily understood measure of the extent to which the retirement savings of Australians as a whole, or various cohorts of the Australian population, are likely to be adequate.

In addition to making use of the Retirement Savings Gap concept, the research produces cameos which demonstrate the savings patterns required for individuals to attain an adequate retirement income. These cameos are consistent with a life-cycle savings model, with individuals saving more for their retirement as they age and with their salaries varying by age. This also demonstrates the severe impact of the concessional contributions cap on Australians.

We also discuss the macroeconomic benefits of saving through superannuation, such as allocating savings to more economically efficient investments.

1.2 Our Process

Our work is produced in two reports. This one focuses on "retirement adequacy" and the 2009 Henry Report; the second is concerned with the Superannuation Savings Gap.

In addition to our reports, we have provided a spreadsheet model which can be used to produce different cameos. The results of sample cameos are set out in a supplementary report.

The key components of the research are as follows:

- Define “Adequacy.” We have summarised the findings of previous submissions, analysed the results of public statements (e.g. ASFA/Westpac definition and amount), and shown the impact of factors such as marital status, home ownership and age at retirement.
- We have analysed the Henry Review’s position on *adequacy* and pointed out the deficiencies in its arguments.
- We provide commentary on the other recommendations of the Henry Review (e.g. increasing the Preservation Age to 67 in line with new Age Pension age). We show the likely impact of each of these recommendations.
- We have developed a spreadsheet model that will enable IFSA to project the retirement benefits for individuals (and couples).
- For a number of agreed cameos, based on career and income paths, we show the likely retirement income and set out what would be a suitable contribution rate for an adequate income. In particular, we show several scenarios where a 9% SG will be inadequate.
- We estimate the likely impact of the recent budgetary measures and the proposed Henry reforms against the population’s Superannuation Savings Gap. We present the Gap and compare it to the results of our previous modelling.

1.3 Observations

This report is the first produced for IFSA. The purpose of this initial report is to:

- Define “Adequacy.”;
- Summarise the findings of previous submissions;
- Analyse the results of public research (e.g. ASFA/Westpac definition and amount); and
- Describe the impact of factors such as marital status, home ownership and age at retirement.

2. Adequacy

2.1 Our Three Pillar Structure

The Australian “three-pillar” retirement income structure is now reasonably well established and is broadly supported by the major political parties, industry associations and the superannuation and financial services sector.

It is difficult to know what individuals in the community think of the system, given the general level of apathy and confusion. However, it is fair to say that there is no public opposition to it or any campaign for a different model. Hence, we should expect that we will have the same structure for many years to come.

The components are:

- A means-tested Age Pension;
- The Superannuation Guarantee of 9% of salaries; and
- Voluntary contributions into superannuation.

The Age Pension provides a basic standard of living in retirement, and the other components are necessary to supplement (or replace) this in order to provide *adequate* living standards in retirement.

2.2 Defining Adequacy

The term “adequacy” in retirement is difficult to define as there is no consensus view on how much is considered to be “adequate”. However, we need to define a general level of *adequate* retirement income before we can make any assessment of the current superannuation system’s ability to provide such a retirement income.

In general, significant expenses such as tax, mortgage repayments (for home owners) and expenses associated with raising children have usually been extinguished before retirement. Further, expenses associated with working disappear at the time of retirement and some activities become cheaper due to pensioner discounts. Consequently, a lower income can support reasonable living standards.

Those who rent accommodation prior to retirement will not benefit from the repayment of a mortgage and will continue to incur rental costs during retirement. Therefore, they are unlikely to have as great a reduction in expenditure in retirement and will consequently require a higher income to maintain an adequate standard of living.

Studies tend to look at the living standards of retirees at different income levels so they can set a point at which people have adequacy. This point might be labelled a “modest but adequate” standard, but commentators differ on an appropriate level.

Most studies consider adequacy for an individual even though a significant number of retirees are couples with different income and expenditure needs. For example, 43% of people claiming the Age Pension (whole or part) are single (and the rest receive a “couples” benefit). Many other retirees become single later in life when their partner dies.

There are a number of other factors which need to be taken into account and these are addressed later in this document.

Most studies tend to relate retirement income in the year after retirement to some multiple of pre-retirement earnings. The common measures are Replacement Rates and Budgetary Standards. These ratios are difficult to apply in Australia as they assume a regular drawdown of income from superannuation over the retirement years - and this is not the norm for most retirees. The concept is also difficult to evaluate for those who are transitioning into retirement.

2.3 The Replacement Rate

The replacement rate is the ratio of a person's income or spending power after retirement compared to the period just before retirement. It is usually expressed as a fixed percentage of the retiree's pre-retirement income.

The advantages of defining adequacy via a replacement rate are that:

- It provides a clear relationship between an individual's standard of living before retirement with their income in retirement;
- Provided they can express their superannuation benefit in an income form, it is relatively easy for an individual to calculate as they approach retirement; and
- It can be applied readily to the population as a whole to determine the population's savings gap.

The disadvantages of defining adequacy via a replacement rate are that:

- It assumes a person's income in the period before retirement is a suitable benchmark;
- It does not take into account the actual costs a person will incur in retirement;
- It assumes a constant pattern of expenditure in retirement;
- It assumes a constant annual draw down of retirement income; and
- It does not put a dollar value on adequacy.

2.4 The Budgetary Standard

A budgetary standard represents what will be the likely costs to maintain a certain living standard. The living standard is often represented by a basket of goods and services.

The advantages of defining adequacy via a budgetary standard are that:

- It focuses on the actual costs that individuals may expect to face in retirement; and
- It is possible to breakdown the budgetary standard into separate components allowing individuals to target a specific level of consumption that the individual deems to be adequate.

The disadvantages of defining adequacy via a budgetary standard are that:

- It is unrelated to an individual's income and is more difficult to target;
- It assumes a constant pattern of expenditure during the retirement years; and
- It assumes a constant annual draw down of retirement income.

3. Previous Submissions on Adequacy

The Senate Select Committee on Superannuation and Financial Services conducted an inquiry into adequacy in 2002, at the time the SG contribution rate rose to 9% of salaries. Several organisations including the Institute of Actuaries, ASFA and IFSA made detailed submissions at the time. Many of these are still valid and the key points are set out below.

3.1 IFSA Submission

IFSA's submission to the Senate Select Committee on Superannuation, June 2002 made several comments on adequacy, which are set out as follows:

3.1.1 General comments on adequacy

There is a wide consensus that current policy settings within the Australian "three pillar" retirement incomes policy framework are not sufficient to deliver adequate income in retirement to a large number - perhaps most - Australians. The level of compulsory contributions, the Superannuation Guarantee (SG) at 9% from 1 July 2002, will not deliver a retirement income to match retiree expectations.

This gap between expectation and reality has been demonstrated in a wide range of research. The critical point is that adequate retirement incomes - at the levels generally accepted (see below) - will not be achieved by a significant proportion of the retiring populations for some decades. This gap will cover the baby boomer cohort which begins retiring from 2002.

A consequence of this expectation gap is that, if it is not addressed in prospect, electoral pressure from disgruntled retirees may drive policy responses in the future. The likelihood of a political auction for the grey vote under those circumstances is quite high. If that auction eventuates, it has the potential to increase the cost of retirement income provisions (age pension in particular) beyond the 4.6% of GDP predicted in the Intergenerational Report 2002-03 (IGR) - figures from the Retirement Incomes Task Force (RIM) and its successors. Political pressure could also result in increases in the concessional tax treatment of retirement incomes, reducing revenue in the same fiscal periods that higher levels of income support are required.

3.1.2 Adequacy Targets

IFSA's view is that target replacement rates for retirement incomes should be in the range of 75-80% of pre-retirement consumption expenditure, as a minimum.

The widely accepted measure for adequacy in retirement income has been the rate of replacement of pre-retirement income, net of taxes and transfer payments. Numbers widely regarded as an acceptable level of adequacy include a replacement rate of pre-retirement gross income of the order of 60%, and 75-80% of pre-retirement consumption expenditure. Some attitudinal research has found that people currently saving for retirement have an expectation of the same standard of living in retirement as in working life - which would imply a replacement rate as high as 100% of pre-retirement consumption expenditure.

3.2 ASFA Submission

Table 1 below (updated from ASFA, 1999a for changes in the Age Pension and other relevant parameters such as tax rates and supplemented by subsequent research) provides a summary of benchmarks or targets that are commonly applied in assessing adequacy. Some of these benchmarks have been explicitly set, while others are derived from the design parameters of specific contribution or benefit arrangements.

Table 1. Targets set or implied for adequacy of retirement income¹

Source of Target	% pre-retirement gross	% pre-retirement net (disposable) ²	Minimum annual income needed in 2002 dollars
Poverty line			\$10,700
Age Pension			\$10,997
"Low cost" budget standard ³			\$12,560
"Modest but adequate" budget standard			\$16,400
"Comfortable" budget standard			\$24,500
Conventional wisdom, commonly used in retirement planning literature	60%		\$24,500 for person on AWE
Quantitative research into community expectations			90% of all groups seeking more than \$20,000. Over 70% of Generation X and baby boomers seeking \$30,000, and 30% at least \$50,000
Compulsory systems in major OECD countries		70% to 80%	
Financial planners (typical target)	75%		
Department of Treasury Retirement Income Modelling (RIM) Unit		60%	\$11,000 (Age Pension)
Defined benefit schemes ⁴	50% - 79%	70% - 94%	
Superannuation guarantee after 30 years at 9% plus part Age Pension	37% - 74%	49% - 83%	\$19,000 (48% of gross earnings) for each person on AWE
Superannuation guarantee after 40 years at 9% plus part Age Pension	48% - 85%	65% - 96%	\$23,000 (58% of gross earnings) for person on AWE

¹ These targets are for a single person who is a homeowner. The required amount for a couple is generally regarded as being around 1.7 times that for a single person. Additional income of between \$5,000 and \$8,000 a year is required if a person is in private rental accommodation.

² Net replacement rates take into account income tax paid both pre and post retirement. The income tax rates applied are those current in 2001-2002.

³ As estimated by the Social Policy Research Centre of the University of New South Wales, adjusted for changes in the cost of living

⁴ Higher replacement rates are achieved at lower incomes due to the flat rate nature of the Age Pension and the progressive nature of the tax system. The lower value given is for a person earning \$60,000 a year before retirement, while the upper replacement rate is for a person earning \$20,000. Replacement rates for those on incomes in excess of \$60,000 a year are also potentially affected by the superannuation surcharge and by Reasonable Benefit Limits.

Australians typically would aspire to at least a comfortable standard of living in retirement, or one that bears at least some relationship to their standard of living prior to retirement. The Table below sets out estimates of the minimum level of income needed to support a comfortable standard of living in retirement based on a budget 1.5 times the level of a modest but adequate budget. This is a level that is suggested by the Social Policy Research Centre (SPRC) as an appropriate, but admittedly arbitrary, benchmark for a “comfortable” budget in the community.

The table below indicates that each of the income levels considered the SG at 9% over 30 years will not be enough to generate a retirement income sufficient to support a comfortable standard of living as defined for home owners, and will fall well short for a person renting.

Table 2. Projected retirement incomes relative to a “Comfortable” budget

Super Guarantee 30 years		Comfortable annual budget, single home owner	Comfortable annual budget, single renter
		\$24,546	\$32,451
	Final Salary	Budget as a % of retirement income	Budget as a % of retirement income
9%	\$20,000	167%	220%
	\$40,000	133%	176%
	\$60,000	111%	146%

3.2.1 Recommendations

ASFA recommends that target replacement rates for retirement income be set with regard to pre-retirement income. For a person on social security benefits the required replacement rate might be 100% or even more. For a person on average earnings, it will be around 60% of gross earnings, while for a person on \$60,000 a year it might be 50% or less of gross earnings.

3.3 Institute of Actuaries Submission

In July 2002, the Superannuation Guarantee Contribution reached 9% of salaries and wages. There is debate about whether that is sufficient to provide a reasonable level of retirement benefit.

In practice there are many variables that determine a person’s total retirement income. Contributions of 9% of salary might be sufficient for some, but totally inadequate or too much for others. It is not possible to set a single optimum SG contribution rate that will provide an appropriate or adequate retirement income for the majority of retirees. Many factors affecting the individual will influence their actual and desired level of retirement income, including:

- The period over which contributions are made (which is reduced for time out of the work force);
- The number of dependents;
- The impact of part time work;
- Retirement age;

- Future longevity in retirement (which is higher for females);
- Likely fund earnings;
- The impact of fees and taxes on benefits;
- The capacity to make additional voluntary contributions;
- Financial support outside superannuation from personal wealth or government benefits;
- The structure of retirement products; and
- Expectations of living standards in retirement.

It is fair to conclude that a 9% SG contribution alone, even over a lengthy career, will *not* provide most people with an income in retirement that will meet their expectations. Additionally, based on current retirement income policies and eligibility rules for the Age Pension, most Australian retirees today *and in the future* will receive some or all of their retirement benefit through the Age Pension.

Some commentators have suggested that SG contributions of 12 - 18% are necessary if people are to retire on (say) 60% of their pre-retirement income. This ignores the fact that for many Australians compulsory superannuation can be supplemented by voluntary superannuation contributions, other voluntary savings and assets outside the superannuation system.

The Institute considers that the national debate should move away from a focus on increasing the level of compulsory SG contributions. Rather, Government and industry commentators should focus on how best to target incentives for voluntary saving for retirement and to better integrate the superannuation and social security systems. A desirable outcome from the retirement income system would be compulsory SG superannuation (in conjunction with the Age Pension where required) that provides a foundation retirement income for all. This should be combined with appropriate incentive for voluntary saving that provide the flexibility for individuals to achieve retirement incomes that reflect their personal circumstances and expectations.

3.4 CPA Submission

NATSEM, in a paper "Superannuation - The Right Balance" released in early 2002, published a range of research that was commissioned by CPA Australia. The research modelled for a number of family types the outcomes that would be achieved by compulsory 9% employer contributions with what would be achieved by:

- Increasing employer contributions on a voluntary basis;
- By way of an increase in the SG; or
- By removing taxation on contributions and fund earnings.

All of the options examined had a dramatic impact on projected living standards in retirement.

The research used a concept of adequacy based on the “modest but adequate” budget standards developed by the SPRC and referred to earlier in this submission. Consistent with the approach generally used by ASFA, these standards when applied to future expenditures by the retired were adjusted in line with assumed movements in average weekly earnings. However, different patterns on expenditure for the retired and pre-retired are assumed, with assumed lower housing costs of those who have retired in particular boosting their disposable income. NATSEM focuses on discretionary spending by individuals, not their total gross or net income.

The NATSEM research presents a number of measures of adequacy. The first is to compare projected discretionary spending with the discretionary spending implied by the SPRC budget standards. The second approach is to compare discretionary spending during the years in the work force with discretionary spending in the years in retirement.

The NATSEM researchers came to a number of relatively strong conclusions:

- Compulsory superannuation at the rate of 9% will raise retirement incomes well above pension levels but many are projected to experience lower living standards in retirement than before retirement.
- Early retirement makes a huge difference in projected adequacy of retirement incomes generated by superannuation.
- A 3% employee contribution increases retirement living standards by about 15% while a 6% contribution roughly doubles the impact.
- The impact of a 3% employer contribution has a smaller impact than a 3% employee contribution because of the tax on employer contributions.
- The abolition of the tax on employer contributions would have a similar impact on living standards as a 3% employee contribution.
- Considerably higher contributions are needed to achieve a given standard of living if there is a delay in making additional contributions.

In summary, the NATSEM researchers used absolute and relative measures of adequacy which have a common heritage with others that have been used in Australia. They also produce results generally consistent with projections published by ASFA and others. However, they make some refinements which while having some theoretical justification are difficult to tie back to community views or standards. Their approach also requires a fairly sophisticated model peculiar to NATSEM to be used.

3.5 Consensus View

Some commentators would argue that “adequacy” should be determined as a fixed percentage of average gross earnings for all Australians. We consider such a target to be a poor benchmark. However, this amount may be too high for some segments of the population. For instance:

- Many couples will have two superannuation accounts on retirement;
- Those on lower than average earnings will see a sharp increase in income post retirement (and conversely those on higher incomes will see a significant reduction); and

- These expenses are unlikely to be incurred during an individual's retirement phase and hence a replacement rate of 75% may be too high for many.

The views can be summarised as:

Table 3. Views on Adequacy

Organisation	Target for Adequacy	Comment
ASFA	60% of pre-retirement earnings for those on salaries equal to AWOTE.	Reduced % for higher-income earners
IFSA	60% of pre-retirement income	Deemed to be equivalent to 75% to 80% of pre-retirement consumption
Institute of Actuaries	60% of pre-retirement income	
NATSEM	n/a	Comment that 9% is not enough to deliver adequacy

The Senate Select Committee concluded that a target of 60 to 65% of pre-retirement income was a reasonable level for adequacy. Subsequently, IFSA adopted an amount of 62.5% of pre-retirement income as being the target for its work on the Superannuation Savings Gap (conducted by Rice Warner).

4. Public Research

4.1 Access Economics AMP - Superannuation Adequacy

The Access Economics AMP Superannuation Adequacy Index uses a replacement rate to define adequacy. The key features of the Access Economics AMP Superannuation Adequacy Index are set out below:

- The replacement rates used measure the ratio of average consumption spending in retirement to average consumption spending in the final year in the workforce, adjusted to account for taxes and savings;
- This “target” is a relative one, making the implicit assumption that individuals on higher incomes during their working lives will expect to maintain that relative advantage in retirement; and
- The “target” for that ratio is set at 65% of an individual’s own pre-retirement living standards.

The table below contains the results of the AMP Superannuation Adequacy Index:

Table 4. AMP Superannuation Adequacy Index

Measure	December		
	2006 ⁵	2007 ⁶	2008 ⁷
Average Retirement Income (in the dollars of the day of the report)	\$40,567	\$43,310	\$43,465
Average Retirement Income as a percentage of Average Pre-Retirement Spending	70.5%	69.5%	67.5%
Percentage of Workers Below Adequacy Target (65% of pre-retirement spending)	33.1%	30.5%	40.5%

However, we note that the results of this Superannuation Index should be viewed with caution. The Superannuation Adequacy Index is based on data sourced from AMP’s corporate superannuation accounts. These accounts are a subset of the Australian population and are not necessarily representative of the Australian population.

Consequently, the percentage of workers in the general population who are likely to fail to reach their target for adequacy is much higher than shown in the published figures.

⁵ Access Economics, July 2007, *The AMP Superannuation Adequacy Report*.

⁶ Access Economics, May 2008, *The AMP Superannuation Adequacy Report July - December 2007*

⁷ Access Economics, April 2009, *The AMP Superannuation Adequacy Report July - December 2008*

4.2 Westpac ASFA - Retirement Standards

The most notable example of benchmarking adequacy through a budgetary standard is the Westpac ASFA Retirement Standard.

The Westpac ASFA Retirement Standard defines two levels of retirement income:

- Modest Lifestyle - Better than the Age Pension, but still only able to afford fairly basic activities; and
- Comfortable Lifestyle - Enabling an older, healthy retiree to be involved in a broad range of leisure and recreational activities and to have a good standard of living through the purchase of such things as household goods, private health insurance, a reasonable car, good clothes, a range of electronic equipment, and domestic and occasionally international holiday travel.

The table below details the annual income required for singles and couples to achieve the Modest and Comfortable Lifestyle levels of retirement income.

Table 5. Westpac ASFA Retirement Standard at March 2009

Retirement Standard*	Marital Status	Annual Income Required		
		March 2007 ⁸	March 2008 ⁹	March 2009 ¹⁰
Modest Lifestyle	Single	\$18,375	\$19,141	\$19,533
	Couple	\$25,780	\$26,851	\$27,547
Comfortable Lifestyle	Single	\$35,668	\$37,002	\$37,822
	Couple	\$47,766	\$49,502	\$50,771

* The Westpac ASFA Retirement Standard figures assume the retiree/s own their own home and relate to the expenditure by the household. This can be greater than household income after income tax where there is a drawdown on capital over the period of retirement. Single calculations are based on female figures. All calculations are weekly, unless otherwise stated.

⁸ Westpac ASFA, Media Release, published 17 May 2007, viewed 10 August 2009.
<http://www.superannuation.asn.au/Media-Release-17-May-2007/default.aspx>

⁹ Westpac ASFA, Media Release, published 14 August 2008, viewed 10 August 2009.
<http://www.superannuation.asn.au/mr080814/default.aspx>

¹⁰ Westpac ASFA, Retirement Standards summary factsheet, published 31 July 2009, viewed 10 August 2009.
www.superannuation.asn.au/ArticleDocuments/137/WestpacASFA_RS_Summary_mar09.pdf.aspx

Westpac and ASFA do not estimate how the Australian population is poised to achieve their Retirement Standards. However, using the Retirement Standards as a basis, it would be relatively easy to estimate the savings required for the Australian population to have an adequate retirement income. A comparison between this estimate and the current value of the superannuation market would be one method of determining the superannuation savings gap.

4.3 Assumptions for Superannuation Savings Gap

In September 2005, Rice Warner prepared a report for IFSA titled *The Retirement Savings Gap - Two Years On* (the report was based on data at 30th June 2004). This report was an update of an initial report published in August 2003 (this report was based on data at 31st December 2002).

These reports deemed adequacy to be an income stream at retirement equal to 62.5% of gross earnings, commencing from age 65. We note that IFSA chose this figure as it was within the range (60% to 65% of pre-retirement income) at which people can maintain their standard of living in retirement, chosen by the late Senate Select Committee on Superannuation and Financial Services. This equates to approximately 75% of pre-retirement expenditure and is a level which provides an adequate income in retirement, though it is modest for many people.

5. Harmer Review

The Government received the Pension Review Report from Dr Jeff Harmer on 27th February 2009 and the report was released with the May Budget Papers. When launched, the Review was promoted as one which would set the scene for pensions for the 21st century.

The report provided a good summary of the then current state of Age Pensions, and it made some worthwhile recommendations. The Government accepted many of these in the May 2009 Budget.

The Harmer Review did not fully address integration of social security (the Age Pension), taxation and private superannuation and further changes will be required to bring stability and certainty to the structure..

5.1 Single Person's Pension

The Report reiterated the well-known fact that many single Age Pensioners suffer from inadequate living standards. Ironically, more Australian retirees live in poverty than in other countries we regard as peers (such as New Zealand) so there has been much community pressure to increase the pension.

The Review relied on anecdotal evidence in the absence of suitable statistics about expenditure patterns. Hence, it was only able to provide an indicative range for its target retirement benefit. The area of most concern is for single pensioners living alone as renters in private sector accommodation. However, the Report recommended increasing the single age pension for all pensioners rather than targeting those most in need. It may have been more appropriate to increase the rent allowance and to make a smaller adjustment to the pension itself.

The report recommended increasing the single rate of pension from 61% to between 64% and 67% of a couple's Age Pension. This recommendation was helpful but did not address the current disincentive for people to share accommodation in retirement which is considered by many to have important social benefits. In the May 2009 Budget, the Government increased the single person's pension to 67% of the couple's Age Pension.

Means Testing

Australia's current means testing structure is complex. The Harmer Report did not recommend any substantive reforms to the current arrangements. Finding 26 simply notes that the announced increases to the Age Pension allow the government to tighten the existing framework of means testing. This issue may be revisited by the Henry Review.

One of the key problems of pensioners is trying to supplement their income. Any earnings are severely cut under the Age Pension income test. Harmer addressed this by recommending a "free area" where pensioners can earn modest amounts without losing access to any of their pension. The government accepted this recommendation in the May Budget. Only 50% of the first \$500 a fortnight of income is now included in the income test but the rest (above this free area) is reduced by 50% of income earned (currently 40%).

Increase in pension age

One recommendation of Harmer was to increase the Age Pension age. The rationale is based on increasing life expectancy and pension costs. The justification is that the eligibility age for the Age Pension hasn't been increased for a century and other countries are putting up their retirement age.

In practice, the majority of Australians (about 80%) retire before age 65. The median age of retirement is about 60 with many being forced out of the workforce through declining health. There is a much larger national problem in getting more Australians to reach age 65 before they retire - or helping them move to a transitional situation of reduced working hours for a few years before they retire.

Family Home

The report comments about equity in the family home and sees a role for private sector reverse mortgages in helping to unlock this (late in life).

The Report does not address the issue of valuable homes being exempt from the assets test - nor the related issue of pensioners wanting to downsize but not doing so as their Age Pension would reduce.

6. Factors Affecting Adequacy

6.1 Mortality

Mortality varies considerably amongst groups of individuals. For example, it is well known that women live longer than men, married men live longer than single men and wealthier or better educated people live longer than others.

All people likely to live longer need higher superannuation benefits as their retirement proceeds need to be spread over a longer period.

We note that mortality for the Australian population has improved quite significantly over the last few years since the publication of the Australian Life Tables 2000 - 2002. An inspection of the mortality rates published in the ABS Life Tables (since 2002), shows an average annual improvement in mortality of 3.0%¹¹. These mortality improvements result in an increase in the average longevity of the Australian population, thereby increasing the savings required by individuals to provide themselves with an adequate retirement income.

6.2 Marital Status

The marital status of a retiree will influence the savings they require to provide an adequate retirement income. Marital status affects adequacy in the following ways:

- Couples' expenditure is not twice that of a single person. Some costs such as travel and entertainment might be close to double that of a single person but the expenditure on items such as accommodation and furniture will be shared by a couple (the Westpac ASFA Budgetary Standard illustrates this point, refer to Table 5);
- The Age Pension benefit and means-testing rules vary between singles and couples; and
- If both members of the couple have an employment history, then the couple should be able to rely on two sets of superannuation savings.

6.3 Eligibility for Age Pension

The Age Pension is paid in full or in part to more than 80% of retirees. Integration with superannuation is complex due to means testing of assets and income.

The quantum varies by marital status and benefits are supplemented for those who rent.

Frequent changes to Age Pension rules and benefits make it difficult to determine future adequacy in retirement.

¹¹ ABS Catalogue number 3302.0.55.001, 2002 - 2004 is the earliest publication, while 2005 - 2007 is the latest publication. The average annual improvement in mortality of 3.0% was estimated from the difference in mortality rates estimated from between the two publications.

6.4 Home Ownership

The family home is usually the single largest investment that an individual or couple will make in their lifetime. It can potentially impact on the income earned, expenses incurred and hence the amount of savings required to provide a retiree with an adequate income. Home ownership can affect adequacy in the following ways:

- There may be some additional costs associated with the general maintenance of the home that will increase expenses during retirement;
- Ownership of a home means that there are minimal accommodation/rental costs in retirement; and
- The family home is a significant asset that could be drawn against during retirement.

This means that on top of not incurring any rental expenses, homeowners are able to access the equity in their home by either downsizing or through financial products such as reverse mortgages. Income stream payments from a reverse mortgage on a primary residence are treated as a loan and are therefore not treated as income for the Age Pension Income Test (other rules apply if the proceeds from the reverse mortgage are paid as a lump sum).

Conversely, renters have continuing costs for accommodation:

- Retirees who do not own their own home and are in receipt of the Age Pension may qualify for Rent Assistance if renting in the private rental market. The current maximum payment is \$111.80 per fortnight for a single with no dependent children and \$105.40 for a couple with no dependent children¹²; and
- Retirees who do not own their own home have a higher allowable assets threshold under the Age Pension Assets Test. Singles who do not own their own home are allowed up to \$307,000 worth of assets before their maximum Age Pension benefit is affected. In contrast, single homeowners are only allowed \$178,000 worth of assets before their maximum Age Pension benefit is affected (owner-occupied residences are exempt from the Age Pension Assets Test)¹³

6.5 Age at Retirement

The age at which an individual retires has a significant impact on determining whether their savings will be sufficient to provide an adequate retirement income. The age at retirement can affect adequacy in the following ways:

- The individual's longevity. If we compare two retirees who differ only by age, the period over which the younger retiree must spread their retirement savings is longer. This is because the younger retiree is expected to live longer than the older retiree; and
- The individual's ability to save for retirement. In general, individuals who retire at a younger age have had less time to accumulate their retirement savings.

¹² Centrelink, Rent Assistance Payment Rates, last modified 20 September 2009, viewed 12 October 2009. http://www.centrelink.gov.au/internet/internet.nsf/payments/rent_rates.htm

¹³ Centrelink, Assets Test, last modified 20 September 2009, viewed 12 October 2009. <http://www.centrelink.gov.au/internet/internet.nsf/payments/chartab.htm#a>

Conversely, a deferral of the retirement age would allow members more time to accumulate benefits and they would then also live a shorter period in retirement.

One further complication is the relatively recent introduction of *Transition to Retirement* benefits. This means there is a period during which employees can earn an income and draw a pension. It is difficult to view adequacy during this period as the private pension is used to supplement income and is not the prime source of income.

It should be noted that the median age for retirement in Australia is about 60. This means that many Australians will draw their superannuation without receiving any supplement from the Age Pension in the early years of retirement. The shift to age 67 from 2017/2023 will lead to a longer period unless Australians defer their retirement longer.

6.6 Expenditure Patterns

Rice Warner, in conjunction with AMP, is sponsoring an Australia Research Grant being undertaken at The Australian National University which is examining expenditure patterns of retirees.

The researchers (including the ANU) will test the hypothesis that expenditure varies during the retirement years. In particular, it will seek to ascertain whether pensioners can be separated into distinct cohorts, being active, sedentary and frail - and whether expenditure varies during each stage.

If expenditure needs change over retirement, then it is not sufficient to measure adequacy based on needs in the first year of retirement.

6.7 Draw-down patterns

As superannuation benefits can be drawn tax free without limit from age 60, there is considerable diversity in the draw-down patterns of pensioners.

As dependency on the Age Pension appears to increase with age, it would appear that many retirees spend most of their superannuation benefits before age 75. Therefore, many of those with adequate income at age 65 revert to inadequate levels later in life.

7. Setting Adequacy

Australia is a relatively egalitarian society with a 2006 GINI Index of 30.5 on some measures, which is amongst the best 25 countries in the world for distribution of income. A UN study puts us at 35.2 which is a worse result but still reasonable.

However, it is generally accepted that income and wealth are still skewed in Australia and there is evidence that the gap is widening, particularly for retirees. The recent increase in the single person's Age Pension is an indication from the government that the disparity needs to be addressed.

If we split the population into deciles by income, it is likely that the 9th and 10th deciles will be wealthy enough at retirement to be self-sufficient. This group is likely to include many Australians with significant superannuation within their SMSF arrangements and/or with substantial assets outside their superannuation.

For the last Retirement Savings Gap, we used a level of 62.5% of gross earnings prior to retirement. We believe this should be the minimum level and IFSA should consider a higher level of 65% *for a single* person earning up to 150% of average population earnings (that is MTOWE).

The percentage for those earning more than this should be lower and we will assume that 60% is a reasonable target.

For a couple, we suggest a reasonable level of adequacy would equate to 80% of the income of the primary income-earner up to 150% of MTOWE. Above this, the percentage should reduce to (say) 70% of income.

Rather than measure the amount of the shortfall in an individual's account, it makes sense to measure the time during the retirement years for which a benefit will be adequate, until it runs out. For example, someone with a benefit of \$100,000 could draw sufficient to provide an adequate income (when combined with Age Pension) for a decade or so. Hence, we can measure the period of inadequacy from the time the money runs out.

8. Henry Review Recommendations

The Panel reviewing Australia's tax system was asked for input on the retirement income system in advance of the May Budget. The *Report on Strategic Issues* was released with the Budget Papers. It had several findings and recommendations. Unfortunately, much of the report simply sets out discussion points for further consideration rather than concrete recommendations.

8.1 Age Pension Age

The Report confirmed the finding of the Harmer Report that the Age Pension age be raised to 67. As we have noted, 80% of Australians currently retire before age 65. Therefore, the Report's recommendation to increase the Preservation Age to 67 will be a significant challenge for the Government.

An alternative approach might have been to raise people's retirement incomes during their working life by raising contribution rates and increasing workforce participation between ages 55 and 65 (where one in six men is on a disability pension). These measures would be far more beneficial for members and society alike.

The increase in the Age Pension age reduces future social security expenditure by removing two years of Age Pension payments. The average saving is about \$30,000 per retiree. However, the saving will be reduced by social security spent on disability pensions and unemployment benefits. These will be significant unless the government can introduce policies to encourage work for older Australians.

Note, the Panel recommended a further review of the Age Pension eligibility age take place in 2020, suggesting that it could be raised further in future.

8.2 Means Testing

The Report suggests simplifying means testing by eliminating the assets test and shifting to a single test based on income. However, this would require current "deeming" rules to be expanded to superannuation and non-financial assets such as personal effects, holiday homes, land and collections.

This suggestion would be complex from an administrative view and would cause significant intrusion upon pensioners. We do not consider it practical to introduce this recommendation.

8.3 Preservation Age

The Panel recommended increasing the Preservation Age up to the higher Age Pension age (67). One reason for this is to prevent leakage of superannuation benefits before access to government pensions. Effectively, all benefits would then be applied to means-testing. At present, many lump sums and some pension withdrawals take place before age 65, thus reducing benefits before social security begins.

If this recommendation were implemented, then the Transition to Retirement strategies would cease. As these are considered an important tool for encouraging people to stay in employment to a later age, there would be unfortunate consequences.

Also, many working Australians would switch to holding a portion of their retirement savings outside superannuation, to provide an income during retirement prior to reaching their Preservation Age. This, in turn, would make financial planning more complex and costly, and savings for retirement would be less efficient..

It would be more appropriate to increase the Preservation Age to 62 thus maintaining the 5 year difference between it and the Age Pension eligibility age.

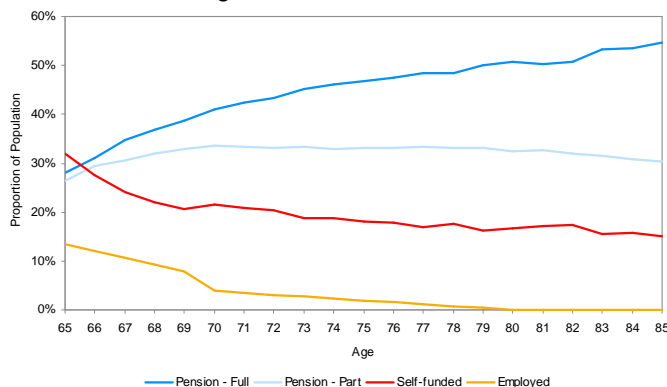
8.4 Adequacy of SG Contributions

The Report recommended leaving SG contributions at 9% and concluded that 9% is sufficient to provide an adequate retirement. The SG contribution reduces to 7.65% after deducting tax on concessional contributions. Together with the Age Pension, this provides a reasonable replacement income for low income Australians but not for average to high income earners.

However, expectations grow in line with the affluence of Nations and today's workers will expect more retirement income than their parents were able to save for their retirement years. Today's workers will have extended and healthier retirements and will require higher income to support a more active lifestyle than their parents.

Separate research undertaken for IFSA¹⁴ shows that the SG rate is not sufficient to provide adequacy in retirement. The graph below gives an example of the declining levels of self-sufficiency over the duration of retirement. Many pensioners run down their superannuation balances and shift from a part to full Age Pension - or from none to part - as they age.

Graph 1. Persons on Age Pension at June 2008



¹⁴ Superannuation Savings Gap ó Cameos 2009

The Panel modelled a person with a full career of 9% employer contributions and a 35 year unbroken work pattern. It assumes the individual will retire at Age Pension age and take all income as an indexed annuity over the period of their retirement years. It also deliberately excludes additional health costs in retirement.

The example used is not typical of current retirement patterns and cannot be extrapolated over the whole population. Despite the claim of adequacy, the percentage of people dependent on the Age Pension does not change significantly over the period as the table below shows:

The Panel expects about 74% of people above age 65 to receive an Age Pension in 2050. This is an increase from 2.9 million pensioners to 7.5 million over that time.

Table 6. Growth in number of pensioners

	People 65+ At June 2008	Proportion of Population 65+	People 65+ At June 2050	Proportion of Population 65+
Full Age Pension	1,367,800	47.5%	3,410,900	45.3%
Part Age Pension	980,100	34.0%	2,130,900	28.3%
No Age Pension	532,100	18.5%	1,987,800	26.4%
Total	2,880,000		7,529,600	

We agree that employers should not bear an additional SG levy, but a process of soft compulsion (say, 3% employee contributions introduced over a five year period) together with the government co-contribution payments for low-income earners would go some way to providing a comfortable retirement for all.

It should be noted that only 25% of retirees are expected not to receive any Age Pension by 2050 so there is some difference between government expectations and those of the younger population - most of whom would like to become self-sufficient in retirement.

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Superannuation Savings Gap 2008

Prepared for IFSA

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This report constitutes a Statement of Advice as defined under the Financial Services Reform Act. It is provided by Rice Warner Actuaries Pty Ltd. which holds Australian Financial Services Licence number 239 191.

1. Executive Summary

1.1 Introduction

IFSA has engaged Rice Warner Actuaries to provide an update on the *Retirement Savings Gap* (RSG) and an analysis of the initial report¹ from the Review Panel for Australia's Future Taxation System (the "Henry Review"). This report is the final in a series of three reports that constitute this update. The other Reports are the *Superannuation Adequacy* report which deals with the specification and measurement of adequacy in retirement and the related *Superannuation Savings Gap Cameos* report which analyses a range of specific examples.

In its interim report on the superannuation system, the Henry Review indicated that a 9% superannuation guarantee contribution was "adequate". The review has modelled various individuals over a full career of 35 years, and claims that the 9% contribution, when coupled with the Age Pension, is sufficient to provide an adequate retirement income.

In our *Superannuation Adequacy* report, we state that the modelling is unrealistic and that a higher contribution rate is required. Our *Superannuation Savings Gap Cameos* report reinforces this statement by showing the required contribution rate needed under a number of case studies. In virtually all scenarios, we show that 9% is not enough to provide an adequate retirement.

This report sets out the results of the Retirement Savings Gap for the Australian population.

1.2 Results

Our calculations show that the current funding for superannuation is still insufficient to provide the population with their expectations of a comfortable living standard in retirement.

As most of today's working population will receive a Part or Full Age Pension when they retire, the gap will be partly closed by the level of government support. Based on the target of 62.5% of earnings for people earning up to twice average earnings as wages or salary, we estimate that there is a deficit of some \$695 billion at 30 June 2008. This is approximately 7 months GDP². In our previous report we had estimated the Savings Gap to be \$452 billion at 30 June 2004.

We estimate that there is a gross deficit (that is, if we do not allow for the Age Pension) of some \$1,579 billion at 30 June 2008. The figure in our last report was \$823 billion.

These figures are lump sum amounts, expressed in today's dollars. In the report, we also express them as additional regular savings (over and above current contribution levels), which need to be made to ensure that current working Australians have a reasonable chance of retiring with the set target.

The savings gap is higher in nominal terms than the \$452 billion headline number from our previous work, but the population is now bigger. The revised Savings Gap is therefore approximately \$73,000 per person which represents an increase of about \$26,000 per person over the four years since we last calculated the Savings Gap.

¹ The Retirement Income system: Report on Strategic Issues.

² GDP was approximately \$1.2 trillion in the 2008-09 financial year.

The increase reflects a complex relationship between:

- Poor investment earnings over the 2008 - 09 period;
- A fall in the gap due to improvements in government support;
- An increase in the assumed retirement age;
- Changes in assumptions in the model to reflect changes to the underlying economic variables;
- Changes in the underlying population (which has grown over the period); and
- Changes in the estimation of the Savings Liability (refer to Section 4.5).

1.3 Comparison With Previous Results

The results of the two previous Retirement Savings Gap reports are detailed in the table below:

Table 1. Results of the Rice Warner Savings Gap at June 2002 and June 2004

Data at	Retirement Savings Gap		
	Males	Females	Total
December 2002	n/a	n/a	375
June 2004	237	216	452
June 2008	358	337	695

The \$695 billion would have been \$562 billion if earnings had been 7.5% (the long term earning rate) during the 2009 Financial Year.

1.4 Implications for the Industry and Government

The Retirement Savings Gap provides a snapshot of Australia's progress as a nation towards funding a comfortable retirement. Trends over time will show whether the relative position is improving.

Government has an important role to play in encouraging Australians to save for their retirement. The financial services industry has an important role to play in educating Australians about retirement matters and assisting individuals to improve their personal situations. Success can be measured through a reduction in the gap over time.

1.5 Methodology

To determine the Retirement Savings Gap, we have projected current superannuation savings, as well as likely future contributions (based on current levels as adjusted for anticipated changes) and compared the sum of these two amounts to the projected required amount of savings as defined above, allowing for Age Pension entitlements.

The model uses data from a number of sources. Specifically, ABS Census Statistics published in a Working Paper *Cross-sectional income distributions in the Australian Population* by Mr Tim Higgins (ANU) provide details of current taxable earnings and APRA Reports provide details on current savings.

1.6 Changes in the Environment

There have been a number of changes in the superannuation market since our previous report impacting on the Retirement Savings Gap. The major changes have been the following:

- Increase in the Age Pension eligibility age to 67 by 2024;
- Halving of the Concessional Contributions Cap to \$25,000 p.a.³;
- Increased longevity. Retirees will need more superannuation savings to fund a potentially longer period in retirement; and
- Consolidation of the Superannuation Industry - leading to lower fees and therefore a smaller erosion on retirement savings.

1.7 Modelling Differences

There are a number of differences in the modelling approach from the previous report. These are discussed in sections 4 and 6. The main differences are:

- Revision of the calculation of the Savings Liability to:
 - The savings required at retirement to provide an income of 62.5% of pre-retirement earnings for each year until life expectancy;
- Revision of Assumptions - due to the availability of better data:
 - Revised Age Distribution of Account Balances; and
 - Allocation of Account Balances by income band.
- Allowance for changes in the Age Pension as announced in the 2009 Budget;
- Variation of the assumed Contribution rates by Age; and
- Allowance for the temporary scale back of the Co-contribution Scheme as announced in the 2009 Budget.

1.8 Main Assumptions

We have made a number of assumptions in calculating the Retirement Savings Gap, and these should be considered carefully. The full range of assumptions is detailed in the report. Section 6 discusses the differences from the previous report.

The assumptions that have the most impact on the model are summarised below. Where appropriate, we have retained the assumption from the previous report.

- Economic:-
 - 7.5% gross return on the accumulation of assets;
 - 4.5% increase in salaries;
 - 3.0% increase in general price inflation of costs;
 - 1.20% expense rate, reducing to 0.60% over 15 years;
 - 0.25% cost of insurance;

³ The reduced Concessional Contributions Caps are applicable to those aged 50 and under from 1 July 2009. For those aged over 50 the reduced Concessional Contributions Caps will be applicable from 1 July 2012.

- 15.0% tax on all future employer contributions; and
- 6.0% investment tax on the investment roll up.
- Long-term real return net of fees, insurance, taxes and wage inflation of 1.7% using the economic assumptions above;
 - This is calculated as $(7.50\% - 0.60\% - 0.25\%) \times (1 - 6.0\%) - 4.5\%$ ⁴.
- Demographic:-
 - Mortality in accordance with the Australian Life Tables 2000-2002 published by the Australian Government Actuary;
 - Future improvement to post-retirement mortality in accordance with the 100 year improvement rates published by the Australian Government Actuary in the Australian Life Tables 2000-2002.
- Future contributions:-
 - Average employer contribution (including salary sacrifice) of 14.0%; and
 - Average member contribution of 3.2%.

1.9 Sensitivities

The sensitivities of the assumptions that have the most impact are detailed below, together with the effect on the Retirement Savings Gap.

Table 2. Sensitivity Analysis

Assumption	Adjustment (%)	RSG (\$billion)	Difference from Base RSG	
			(\$)	(%)
Gross Retirement Savings Gap	N/A	695.5	-	-
Ignore Post-retirement Mortality Improvements	N/A	494.4	-201.1	-28.9
Target Replacement Rate = 62.5%	+2.50	813.7	118.2	17.0
	-2.50	584.3	-111.2	-16.0
Real Investment Return ¹ = 3.0%	+0.25	617.3	-78.2	-11.2
	-0.25	776.0	80.5	11.6
Long-term Expense Rate = 0.60%	+0.10	713.7	18.2	2.6
	-0.10	677.5	-18.0	-2.6
Average Employer Contributions = 14.0%	+1.00	637.8	-57.7	-8.3
	-1.00	755.2	59.7	8.6

1. Gross return = 7.5% and salary inflation = 4.5% giving a real return of 3.0%.

It is important to recognise that the effect of each of the assumptions listed above has been considered in isolation to all other changes, i.e. the effect of the sensitivities is not cumulative.

⁴ Refer to section 4.7 and the following page for comments on these assumptions

1.10 Treasury Modelling

The Retirement Income Modelling Group within Treasury also calculates the replacement rate of superannuation. It considers that a 9% SG contribution together with the Age Pension will provide an adequate replacement rate for workers earning up to 1.5 times earnings (using AWOTE as the measure).⁵

We have analysed the difference between Rice Warner's assumptions and those of Treasury. The material differences are set out below:

- Treasury considers the SG contribution is broadly sufficient for people earning up to 1.5 times earnings; Rice Warner calculates the savings gap for persons up to 2 times average earnings.
- Treasury assumes real earnings after wage inflation, fees and taxes of 4.5% p.a. whereas Rice Warner assumes around 1.7% p.a. An analysis of superannuation fund returns published by ASFA⁶ shows an average nominal return gross of fees and taxes of 10.2% p.a. for the 47 years to 30 June 2009. This represented a real return gross of fees and taxes of 2.7% p.a. after wage inflation. This is not too far from our assumed real return net of fees and taxes of 1.7% once fees and taxes have been deducted.
- Treasury allows for indexation of pensions at CPI whereas Rice Warner indexes at salaries so that retirees maintain their income in retirement with relativity to workers. Note the Age Pension is indexed to MTAW (Male Total Average Weekly Earnings).

Finally, it should be noted that most Australians currently retire before age 65, the median age being about 60. However, we have started with a base case that assumes members will delay retirement until eligibility for the Age Pension (currently 65 but rising to 67 by 2023). Naturally, this significantly reduces the benefit required compared to that needed for an earlier retirement.

The real gap would expand exponentially if we had chosen the median retirement age of 60 as the future retirement age for current workers.

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⁵ The Retirement Income System: Report on Strategic Issues May 2009

⁶ Serhan A, 2009, *Returns: Into the Light*, ASFA SuperFunds magazine, pg 13., issue 339

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27th January 2010

2. Background to the Retirement Savings Gap

2.1 Measurement Criteria

The Retirement Savings Gap is a measure of the current shortfall in national savings between two amounts:

- The amount required to be saved by the nation as a whole to ensure “adequacy” in retirement; and
- The amount saved in the superannuation system, and estimated to be saved in future years up to retirement, by the current workforce.

The shortfall can be expressed as a lump sum amount, or an amount that needs to be saved on an annual basis over the future working lifetime of the current workforce. In this report, we have presented the figure as a lump sum in present day dollars in line with IFSA’s requirements and consistent with our previous reports.

The term “adequacy” in retirement can have different meanings for different people. In this report we have determined adequacy to be the savings required at retirement to provide 62.5% of pre-retirement earnings (in real terms) for each year until life expectancy. We have ignored people who earn more than twice average earnings as it is probable that they will have adequate provision in retirement.

The amount saved has been determined by reference to the current level of superannuation savings and the likely level of future superannuation savings based on current contribution trends. In deriving this figure, we have ignored superannuation savings in respect of those people who are already retired.

2.2 Pension Age and Age Pension

Eligibility for the Age Pension currently commences at age 65 for males (females are moving towards age 65). However, the Government announced in its 2009 Budget that the Age Pension eligibility age would gradually increase to age 67 from 1 July 2023.

We expect that younger members will need to stay in the workforce until the new Age Pension eligibility age of 67. In reality, most Australians currently retire before age 65, the median age being about 60. However, if members continue to retire earlier, they will need to live entirely off their superannuation and other savings until they reach the Age Pension eligibility age. This will reduce their savings available to fund later years - when the Age Pension will form a significant part of their income.

In calculating the Retirement Savings Gap, we recognise that in the future around 40% of the Australian population will retire on full Age Pension and a similar number receive a part pension (Treasury expects approximately 75% of people above age 65 to receive some form of the Age Pension in 2050). Adequacy in retirement is a function of Age Pension entitlement, superannuation benefits and income from other investments.

We have made explicit allowance for the Age Pension by modelling the retirement income Retirement Savings Gap separately for different income cohorts and calculating the Age Pension offset for each cohort *at all ages in retirement*.

Section 7 shows the modelling results both before and after taking the Age Pension into account.

2.3 Adequacy

The model is heavily dependent on the definition of “adequacy” in retirement. As stated above, this has been determined to be the savings required at retirement to provide 62.5% of pre-retirement earnings (in real terms) for each year until life expectancy.

We note that IFSA has chosen the 62.5% figure as it is within the range chosen by an earlier Senate Select Committee on Superannuation and Financial Services within which people can maintain their standard of living in retirements. It concluded that an adequate retirement income would fall between 60% and 65% of pre-retirement income. This equates to approximately 75% of pre-retirement expenditure and is a level which provides an adequate income in retirement, though it is modest for many people.

In our previous Savings Gap Report, adequacy was defined as an income stream at retirement equal to 62.5% of gross earnings, commencing from age 65. However, the “annuitisation” of adequacy implicitly assumes that members who die relatively early in their retirement subsidise those members that do not. Therefore, we believe that the revised definition of adequacy is a better reflection of reality, where the majority of members take their retirement benefit as a lump sum or roll it over to an account-based pension.

This change in the definition of adequacy results in an increase in the Retirement Savings Gap of approximately \$171 billion.

More detailed discussion on “adequacy” is contained in our separate *Superannuation Adequacy* report prepared for IFSA (October 2009).

2.4 Non-superannuation Assets

Our model examines the Retirement Savings Gap mainly in terms of superannuation savings. However, there will be other savings in addition to superannuation held by the general population that will impact upon the “pure” Savings Gap presented in this report. Detailed research and analysis of these savings is beyond the scope of this report. Nonetheless, some comment on the effect that non-superannuation assets might have on the Retirement Savings Gap is considered with the results in Section 7. We have made some broad allowance for investment properties of wealthier individuals, as discussed in section 4.7.6.

2.5 Population

We have ignored that portion of the population that has already attained age 65. Whilst a large number of this cohort has inadequate provision for retirement, there is little scope to improve this situation through further savings. A small number within this group is still working and may generate some additional savings within superannuation, but most have no capacity to improve their financial position.

Similarly, we have ignored people under the age of 25. The younger generation has a focus on education and work training and need not be concerned about superannuation as a priority at this time. We note that ignoring those aged under 25 serves to decrease the estimated Retirement Savings Gap.

We have also ignored wealthier individuals on pre-retirement incomes in excess of twice average earnings. These individuals hold much of Australia’s private wealth and most should be self-sufficient in retirement.

3. Background

In September 2005, we prepared a report for IFSA titled *The Retirement Savings Gap - Two Years On* (based on data at 30th June 2004). This report was an update of an initial report published in August 2003 (based on data at 31st December 2002). These reports deemed adequacy to be an income stream at retirement equal to 62.5% of gross earnings, commencing from age 65. We note that IFSA chose this figure as it was within the range (60% - 65% of pre-retirement income) at which people can maintain their standard of living in retirement, chosen by the late Senate Select Committee on Superannuation and Financial Services. This equates to approximately 75% of pre-retirement expenditure and is a level which provides an adequate income in retirement, though it is modest for many people.

The results of the two previous Retirement Savings Gap reports are summarised in the table below which shows the results both with and without the Age Pension taken into account:

Table 3. Results of the Rice Warner Savings Gap at June 2002 and June 2004

Basis	Data at	Retirement Savings Gap		
		Males	Females	Total
Before Age Pension	December 2002	198	548	746
	June 2004	347	476	823
After Age Pension	December 2002	n/a	n/a	375*
	June 2004	237	216	452

- The Age Pension was broadly estimated to reduce the savings gap at December 2002 by between \$100 billion to \$200 billion which was an under-estimate of the impact. If we apply the same modelling method used as calculated at June 2004, then the 2002 After Age Pension savings gap is considerably less.

Because the Age Pension was not explicitly allowed for in the savings gap estimate at December 2002 (see the note to the table above), the results in the table above suggest that the savings gap between December 2002 and June 2004 increased by approximately \$77 billion. As noted in the 2005 report, the change in the estimated savings gap since the 2003 report reflects:

- High investment earnings over the period;
- A fall in the gap due to improvements in government support;
- Changes in assumptions in the model⁷;
- Change in the underlying population (which had grown over the period); and
- Change in the treatment of the Age Pension integration (this was the main cause of the significant reduction in the savings gap after accounting for the Age Pension).

⁷ Please see Rice Walker, September 2005, *The Retirement Savings Gap - Two Years On*, for details on the change in assumptions.

4. Methodology and Assumptions

4.1 Overview

The Retirement Savings Gap model begins with an analysis of the current size of superannuation industry assets and projected future superannuation contributions and assets (excluding post retirement products) arising from the current workforce. Future entrants to the workforce are not considered and the position of those over retirement age is ignored.

We have also ignored those people currently in receipt of welfare benefits, since calculation of a Retirement Savings Gap for these individuals would be meaningless. This effectively assumes that the proportion of people on welfare benefits would remain constant in future. The model uses projections of the workforce for quinquennial age groups subdivided by bands of income.

By combining growth of the current superannuation market with accumulated projected future contributions, an estimate of likely total future savings - or the "Asset" in the context of this report - is determined. Furthermore, by projecting the workforce to age 65, an estimate of the number of people requiring "adequate provision" can be determined. Age 65 is used as a proxy for retirement age, although we note that a number of individuals will formally retire before this age. This leads to an estimate of likely required savings, or the "Liability" in the context of this report.

The difference between the Liability and the Asset is the Retirement Savings Gap. Once the size of the gap is known, the additional contributions required to bridge the gap can be determined.

4.2 Population Model

A projection of the underlying population forms the basis for the Retirement Savings Gap model, producing the distribution of incomes in each year over the future working life of different cohorts in the population. This allows measurement of the amount of superannuation savings through future contributions, as well as the size of the Liability, which depends directly on pre-retirement earnings due to the adopted definition of "adequacy".

We measure cohorts by age and income in our projection. This is necessary as:

- Younger individuals will have a longer period to make future superannuation contributions than individuals closer to retirement; and
- Measurement of the impact of the social security age pension necessitates consideration of different income groups, as lower income earners are likely to have a greater dependence on the age pension in retirement than higher income earners.

We have further segmented each cohort by sex, as this allows measurement of the differences in the Retirement Savings Gap between males and females.

We measure the Retirement Savings Gap in terms of the current population of working age, excluding those earning over twice average earnings. For the purposes of this model, we have assumed the working age population to be the population aged 25-64. The population aged 25-64 as published by the Australian Bureau of Statistics (ABS) was 11.4 million in 2008.

The ABS provides the number of persons by age and sex as follows:

Table 4. Population Aged 25 - 64 in 2008

Age Band	Males	Females	Total
25-29	759,327	741,516	1,500,843
30-34	732,525	732,183	1,464,708
35-39	791,930	801,116	1,593,046
40-44	753,090	760,073	1,513,163
45-49	767,253	780,987	1,548,240
50-54	698,762	710,347	1,409,109
55-59	638,731	645,880	1,284,611
60-64	564,229	562,960	1,127,189
Total	5,705,847	5,735,062	11,440,909

These individuals need to be allocated further to income bands. We have based this analysis on data published in a working paper *Cross-sectional income distributions in the Australian Population* by Mr Tim Higgins of the School of Finance and Applied Statistics, Australian National University. The paper summarises the number of individuals in a range of income bands by quinquennial age group and sex based on a 1% sample of the 2001 Census sourced from the ABS. Our previous report used the same data to allocate individuals to the income bands.

We have adjusted the income bands for general wage inflation over the three years to 30 June 2008, and have applied the resulting income distribution to the population at 30 June 2008 as published by the ABS.

To project the population, we have made assumptions about the expected transfers between income groups (for example, individuals moving from the \$28,400-\$35,500 income band to the \$35,500-\$42,600 income band) over time. This makes allowance for future promotional increases expected in a normal ageing workforce, and therefore higher levels of contributions to be saved in future years. The net effect of the assumed transfers is an average 0.5% p.a. increase in income above general wage inflation.

This method of projecting the number of individuals to retirement age makes no allowance for individuals re-entering the workforce at a later time or for individuals leaving the workforce. It also makes no allowance for broken careers for parents during the birth and the subsequent years of raising children.

This effectively means we assume no change in the level of unemployment, which is unlikely in practice. If we enter a higher period of unemployment, it will increase the Retirement Savings Gap as individuals with broken periods of service would tend to have lower average account balances at retirement and therefore tend to be more reliant on the Age Pension.

4.3 Current Savings

Our starting point for calculating the Asset is to determine the amount of current savings in superannuation. The major distributions by market segment have been sourced from the APRA *Quarterly Superannuation Performance* report as at 30 June 2008.

Total assets, number of member accounts and numbers of funds for differing market segments were determined to be as follows:

Table 5. Superannuation Market Breakdown at June 2008

Market Segment	Funds (number)	Assets (\$ billions)	Accounts ('000)
Employer Funds			
Corporate Funds	228	61.5	643
Industry Funds	73	222.5 ^{1,2}	11,270 ¹
Public Sector Funds	39	147.0 ^{1,2}	3,032 ¹
a) Total Employer Funds	340	431.0	14,945
Retail Funds			
Employer Master Trusts		90.0	1,501
Personal Superannuation		190.2	7,664
Post Retirement Products		86.9	1,264
Retirement Savings Accounts		1.2	120
Eligible Rollover Funds		6.4	5,677
Unallocated Reserves		5.0	-
b) Total Retail Funds	174	379.7³	16,226⁴
c) Self Managed Funds	393,610	362.5	770
Total Superannuation Market	394,124	1,173.2⁵	31,940.1⁶

1. We have adjusted the industry fund and public sector fund totals to include Unisuper, which APRA classes as a public sector fund, in the industry fund sector.
2. APRA's statistics show \$170.2 billion in public sector funds and \$199.3 billion in industry funds.
3. Includes assets in RSAs managed under Retirement Savings Accounts Act (1997) and not included in APRA's statistics
4. Includes members with RSAs and annuities managed under the Life Act and not included in APRA's statistics.
5. Note that APRA's statistics show total superannuation assets of \$1,171.9 billion. We have included the RSAs' assets in our total.
6. We have estimated this total based on actual numbers published by APRA as at 30 June 2007 and the underlying trends.

Total superannuation savings at 30 June 2008 amounted to \$1,173 billion. However, for the purposes of this model, an adjustment to this figure is required to take account of:

- Assets in respect of post-retirement members, e.g. allocated pensioners and annuitants;
- Unfunded public sector liabilities; and
- Assets in respect of individuals who earn more than twice average earnings.

4.3.1 Post-retirement assets

We have attributed \$294 billion to members of post-retirement funds based on a survey of superannuation funds holding funds under management of approximately \$197 billion.

The \$294 billion have been allocated to the various market segments as follows:

Table 6. Post-retirement Assets

Market Segment	Post-retirement Assets (\$million)
Corporate Funds	5,902
Industry Funds	12,703
Public Sector Funds	114,590
Retail Funds	86,913
Self Managed Funds	73,970
Total Post-retirement Assets	294,078

4.3.2 Unfunded Public Sector Liabilities

Unfunded public sector liabilities need to be taken into account as an Asset in the Retirement Savings Gap calculation as they represent guaranteed benefits promised by the various State and Commonwealth governments and paid out of revenue to individuals when benefit payments fall due. These liabilities declined after the closure of many generous defined benefit arrangements. However, the liabilities have risen in the last few years.

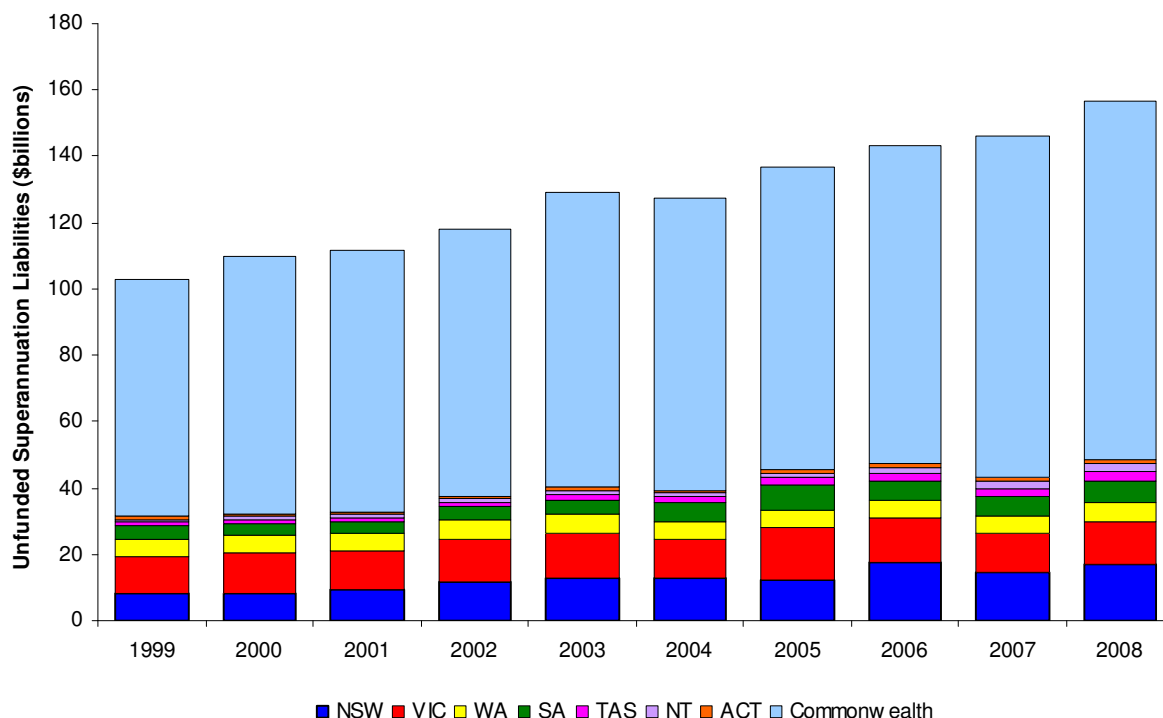
The following data has been collated from state and federal budgets up to 30 June 2008:

Table 7. Unfunded Superannuation Liabilities (\$billions)

	C'wealth	NSW	VIC	WA	SA	TAS	NT	ACT	Total
1999	71.4	8.0	11.4	5.2	3.9	1.2	1.0	0.9	102.9
2000	77.9	7.9	12.3	5.4	3.5	1.2	1.0	0.7	110.0
2001	78.7	9.3	11.8	5.2	3.2	1.3	1.2	0.7	111.4
2002	80.8	11.4	13.4	5.5	4.0	1.3	1.4	0.5	118.3
2003	89.0	13.1	13.4	5.6	4.4	1.4	1.4	1.0	129.3
2004	87.9	12.6	11.7	5.7	5.7	1.5	1.5	0.7	127.3
2005	91.1	12.5	15.3	5.6	7.2	2.5	1.5	1.0	136.6
2006	95.9	17.8	12.9	5.5	6.1	2.1	1.7	1.0	143.2
2007	102.7	14.4	11.9	5.5	5.7	2.5	2.2	1.1	146.0
2008	108.1	17.1	12.9	5.4	6.9	2.5	2.3	1.1	156.4

Notes: Queensland does not have unfunded superannuation liabilities.
These figures do not include 'Other employee entitlements and provisions' liabilities.

Graph 1. Unfunded Superannuation Liabilities



Unfunded public sector liabilities amounted to \$156.4 billion at 30 June 2008. Allowance is made in our model by adding this amount to the “Public Sector Funds” assets from the APRA *Quarterly Superannuation Performance* report as at 30 June 2008.

After adjusting for post-retirement assets and unfunded public sector liabilities, the current savings amount decreases to \$1,035 billion for the purposes of this model.

4.3.3 Distribution of Assets by Age and Income

The total amount of superannuation assets needs to be allocated to each projected population group, i.e. to each age/sex/income cohort, before the amount of assets in respect of individuals earning more than twice average earnings can be identified and removed.

We have allocated the \$1,035 billion of current pre-retirement superannuation assets to quinquennial age groups and sex based on a survey of superannuation funds covering funds under management of approximately \$197 billion.

To allocate the amount of superannuation savings in each age/sex cohort further to income bands, we calculated notional fund build-ups in each age/sex/income cohort based on possible past contribution rates. The actual amount of superannuation savings for each age/sex cohort was then distributed further to each income band, pro-rata to the notional accumulations.

The result is a segmentation of current pre-retirement superannuation savings by quinquennial age group, sex and income band. Savings in respect of individuals whose earnings will eventually exceed twice the average was eliminated by deducting the average account balance for each person eliminated from the respective age/sex/income cohort as determined by the population model.

This reduces current savings in respect of the relevant working age population further to \$708 billion at 30 June 2008. This results in the following data in respect of current savings for the relevant population:

Table 8. Savings at 30 June 2008

Age Band	Savings (\$M)	
	Males	Females
25 - 29	8,167	7,512
30 - 34	15,807	14,948
35 - 39	27,168	23,468
40 - 44	43,336	30,507
45 - 49	58,254	36,633
50 - 54	80,421	49,985
55 - 59	93,428	63,860
60 - 64	85,364	69,591
Total	411,944	296,506

4.4 Future Savings and Contribution Rates

The second component of the Asset is the roll-up of future contributions.

Likely future contributions can be determined by applying contribution rates to the total income in each age/sex/income cohort in the population model. However, for the purposes of this study, we have varied the contribution rate by age only.

Note that Employer Contributions are effectively concessional contributions and include salary sacrifice as well as the Superannuation Guarantee payments. Similarly, Member contributions are all non-concessional contributions including large one-off payments made (eg from asset sales). The assumed contributions by age group are as follows:

Table 9. Assumed Contribution Rates - June 2008

Age Group	Employer* (%)	Member (%)
25-29	9.00	0.00
30-34	10.16	0.74
35-39	11.51	1.60
40-44	13.05	2.58
45-49	14.79	3.68
50-54	16.53	4.79
55-59	18.26	5.89
60-64	20.00	7.00
Average	13.98	3.17

These contribution rates reflect the fact that individuals closer to retirement tend to contribute more towards superannuation. These individuals have fewer other priorities for their disposable income (such as saving for a car or buying a house) than the younger age groups, and saving for retirement is a more pressing issue.

The revised contribution rates result in an increase in the Retirement Savings Gap of approximately \$61 billion despite the increase in the assumed average contribution rates. This apparent contradiction is the result of the relative significance of accumulated contributions to the total savings at retirement between the different age bands. Accumulated contributions are more significant for younger individuals who have a whole working life ahead of them whereas current savings are more significant for older individuals with much fewer working years before retirement.

We consider that these revised contribution rates better reflect the ability and propensity of individuals at different ages to make contributions to superannuation. We note that these revised contribution rates still produce contribution levels that are broadly consistent with the current contribution levels as published in APRA's *Quarterly Superannuation Performance Report* dated 30 June 2008 (after allowing for contributions made to self-managed funds).

For comparative purposes the contribution rates assumed in our previous report are set out below. Note government co-contributions are made in addition to the Member Contributions shown (see 4.4.1 below).

Table 10. Assumed Contribution Rates - June 2004

Age Group	Employer* (%)	Member (%)
25-29	9.00	4.00
30-34	9.86	4.29
35-39	10.71	4.57
40-44	11.57	4.86
45-49	12.43	5.14
50-54	13.29	5.43
55-59	14.14	5.71
60-64	15.00	6.00
Average	11.82	4.94

The model is sensitive to the assumptions employed for future contribution rates. By way of example, a 1% increase in employer contributions results in a reduction in the Retirement Savings Gap of approximately \$58 billion.

We note that the Government introduced an age-based cap on concessional contributions. From the 2009-10 financial year, the maximum total concessional contributions that persons aged under 50 can make have been halved to \$25,000 p.a. (indexed). The existing cap for those aged 50 and over remains at \$50,000 but from July 2012 will be reduced to be in line with the prevailing cap for those aged under 50.

4.4.1 The Co-contribution Scheme

The Government Co-contribution Scheme has been in operation since 1st July 2003.

In the May 2009 Budget the government announced that it would temporarily scale back the co-contribution scheme. The table below contains the details of the superseded co-contribution scheme (2008 - 09) and the temporary scaling back of the scheme.

Table 11. Changes to Co-contribution Scheme

Contribution Year	Co-contribution Matching Rate (%)	Maximum Co-contribution (\$)
2008 - 09	150	1,500
2009 - 10	100	1,000
2010 - 11	100	1,000
2011 - 12	100	1,000
2012 - 13	125	1,250
2013 - 14	125	1,250
2014 - onwards	150	1,500

Statistics released by the former Assistant Treasurer, Honourable Mal Brough, in February 2005 show that around 450,000 individuals received Co-contribution payments in the 2003-04 income year, 37% of payments were in respect of males, and 63% were in respect of females⁸.

A breakdown of Co-contributions by age band was released as follows:

Table 12. Co-contributions by Age

Age Range	Proportion of Co-contribution Payments (%)
Under 21	4
21 - 25	8
26 - 30	7
31 - 35	9
36 - 40	11
41 - 45	13
46 - 50	14
51 - 55	15
56 - 60	12
61 - 65	6
66 - 70	1
Total	100

⁸ More recent information is not available.

We have broadly allocated the projected future Co-contribution payments to individual income bands based on the Co-contribution available as well as the ability/propensity to contribute at each income band. We have further allocated the Co-contribution payments by age and sex according to the statistics released by the former Assistant Treasurer.

Our Savings Gap Report at June 2004 assumed that the take-up would grow over five years so that 20% of the eligible population will receive Co-contributions, where after it would remain at this level. At the time the Co-contribution Scheme was relatively immature⁹ with the assumed increase in the take up rates based on research by Eureka! Strategic Research (commissioned by IFSA) and what we considered to be a plausible scenario at the time.

However, for the year to 30 June 2007 the ATO's taxation statistics indicated that approximately 1.3 million Co-contributions (a take up rate of approximately 13.0% of those eligible to receive a Co-contribution) worth \$1.2 billion were paid (resulting in an average Co-contribution payment of \$880 compared to \$540 in 2004). For the purposes of calculating the value of Co-contributions received we have assumed that this take up rate of 13.0% will continue into the future.

The overall effect of the total Co-contributions paid, the reduction in the future take up rate and the temporary scale back of the Co-contribution scheme increases the Retirement Savings Gap by approximately \$2 billion.

4.5 Required Level of Funding

The required level of funding is the Liability component of the Retirement Savings Gap calculation.

This component of the model uses the projected number of individuals to retirement age as produced by the underlying population model. As discussed in Section 2.3 the Liability is determined as the savings required at retirement to provide 62.5% of pre-retirement earnings (in real terms) for each year until life expectancy.

4.5.1 Effect of the Age Pension

The continuation of the Social Security Age Pension in its present form indefinitely into the future would significantly reduce the Liability.

As a result of defining the retirees' Liability as the savings required to support a retirement income being sourced from an account-based pension rather than a Term Allocated Pension¹⁰, we have revised the way that we allow for the Age Pension. The effect of the Age Pension was calculated for each age/sex/income cohort by:

- Calculating the year-by-year age pension to which each individual would be entitled based on their remaining pension account balance and their defined adequate income; and
- Calculating the difference between the savings required to be adequate without the Age Pension and with the Age Pension.

⁹ In addition to the Scheme being only 1 year old, the Government had also announced that it would increase the matching rate from \$1.00 per \$1.00 member contribution to \$1.50 per \$1.00 member contribution from the 2004-05 financial year onwards.

¹⁰ An account based pension allows greater flexibility in an individual's drawdown pattern. For example, individuals are able to adjust their drawdown to maximise their Age Pension benefits (if eligible).

Our analysis makes the following assumptions:

- We have assumed that assets outside superannuation would be negligible for the population in question for the purposes of the Age Pension means test. This is not unreasonable if one considers that for most people measured the family home will be the only significant non-superannuation asset at retirement, and it is exempt from the means tests.
- We have assumed that 75% of retirees qualify for the Couples pension, and the balance for the Singles pension. This is consistent with the current experience according to Age Pensioner statistics sourced from Centrelink.
- We have assumed that the means test limits would be indexed in line with general price increases in future. This is contrary to the legislated policy, which indexes the limits in line with general wage increases on a year-by-year basis. This approach implicitly assumes systematic tightening of the means tests resulting in a gradual reduction in age pension eligibility over time.

As detailed in section 7, the calculated effect of the Age Pension is a reduction in the Retirement Savings Gap of \$884 billion.

4.6 Retirement at 67

We expect that younger members will need to stay in the workforce until age 67 (the new Age Pension age from 1 July 2023). If they do not do so and retire earlier, they will need to live entirely off their superannuation and other savings until they reach that age. This will reduce the benefit available to fund later years - when the Age Pension will form a part of their income.

In practice, most Australians currently retire before age 65, the median age being about 60. However, we have started with a base case that members will delay retirement until age 67. Naturally, this significantly reduces the benefit required compared to that needed for an earlier retirement.

By retiring at age 67, members benefit both from the extra savings accumulated during their extended working life and the shorter period over which their retirement income will be consumed. Furthermore, there will not be any delay between the start of actual retirement and the eligibility date to receive the (means-tested) Age Pension. However, we note the practical difficulties in keeping most people within the workforce to such an advanced age.

The Henry Review noted the savings that could be made from shifting members to a later retirement age and recommended shifting the Preservation Age to 67. This would preserve most superannuation benefits for longer and improve overall adequacy. However, it does not seem practical to do this over the next 15 years without generating significant employment opportunities for older workers. Further, this would require a major shift in retirement planning for the whole population.

The calculated effect of delaying retirement to age 67 is a reduction in the Savings Gap of approximately \$108 billion. Note that if we had used the median retirement age of 60 to calculate the Savings Gap then the Savings Gap would be much larger than the estimated headline figure of \$695 billion.

4.7 Assumptions

4.7.1 Economic Assumptions

To project the data into the future we have made assumptions regarding inflation, investment returns, administration expenses, mortality etc. These assumptions, detailed below, have been used to calculate the projected growth in each of the segments to an assumed retirement age of 65. No allowance has been made for any retirements prior to age 65.

We have retained the economic assumptions adopted in our previous report. These are as follows:

- 7.5% gross return on the accumulation of assets;
- 4.5% increase in salaries; and
- 3.0% increase in general price inflation of costs.

This effectively assumes a real rate of return of 3% over salary inflation, and 4.5% over price inflation before the effect of expenses and tax. We consider these rates are still appropriate for the purposes of the model.

These assumptions have been derived from various sources.

The gross return on assets has been compared with the assumptions recommended by the Institute of Actuaries of Australia (IAAust) in their report on "Superannuation and Standards of Living in Retirement" dated September 2002. The IAAust recommend a range of assumptions after fees and tax within the range 6% to 8%. Its allowances for fees and tax are not detailed in percentage terms but grossing up to allow for these could result in a range for the gross return of 8% to 10%, which suggests our assumption is below the lower end of the range.

We also recently surveyed the leading asset consultants and a small group of fund managers about the returns they expected over the future. Universally, the group had a similar expected return for each asset class for periods of 10 years and all longer durations. The results of the survey indicated an average nominal return gross of fees and taxes of around 7.5% p.a.

Furthermore, an analysis of superannuation fund returns published by ASFA¹¹ shows an average nominal return gross of fees and taxes of 10.2% for the 47 years to 30 June 2009. While this nominal return is higher than our assumed nominal return of 7.5%, once it is adjusted for wage inflation, superannuation funds achieved a real return gross of fees and taxes of 2.7% p.a. This is fairly close to our real return gross of fees and taxes of 3.0% p.a.

The increase in salaries roughly reflects the average increase in Average Weekly Ordinary Time Earnings over the last four years. General price inflation takes into account the Reserve Bank's stated range of 2%-3% p.a. and notes that annualised CPI increases over the last 4 years are 3.0% - hence our adoption of a rate at the upper end of the range.

We have adjusted the first year of investment earnings to reflect the poor returns experienced over the 2008 - 09 financial year. We have assumed a gross nominal investment loss of 12% based on the figures in APRA's *Quarterly Superannuation Performance, June 2009* report. The effect of the investment loss is much greater for older individuals. Compared to younger individuals, their superannuation balances are generally larger (resulting in a much larger dollar loss) and their shorter remaining working life makes it more difficult for them to make up for this loss. The investment loss for 2008-09 increased the Retirement Savings Gap by approximately \$133 billion.

¹¹Serhan A, 2009, *Returns: Into the Light*, ASFA SuperFunds magazine, pg 13., issue 339

The results of the model are extremely sensitive to changes in the gaps between the assumptions. More specifically, an increase of 0.25% in the gap between the gross return and the increase in salaries serves to decrease the Retirement Savings Gap by approximately \$78 billion (or 11%).

4.7.2 Management Expense Rates

Our December 2008 report to IFSA entitled *Superannuation Fees Report 2008 - Market Segment Analysis at 30 June 2008* sets out the fees charged in the superannuation market by industry segment as follows:

Table 13. Fees 2008

Sector	Segment	Total Fees % ¹
Wholesale	Corporate	0.73
	Corporate Super Master Trust ¹² (large)	0.79
	Industry	1.07
	Public Sector	0.69
Retail	Corporate Super Master Trust ¹³ (small)	2.12
	Personal Superannuation	2.00
	Retirement Income	1.84
	Retirement Savings Accounts	2.30
	Eligible Rollover Funds	2.49
Small Funds	Self Managed Super Funds	0.98
Total		1.21

1. Expressed as a % of *average* assets over the year to 30 June 2008.

As our model does not segment by fund type, we have considered only an average management expense rate across the entire superannuation industry. In our Savings Gap report at June 2004 report, we adopted an overall initial expense rate of 1.25% of assets reducing to 1.00% over five years and assumed that it remained at this level.

However, we generally expect fees to reduce as a percentage of assets from these levels in all market segments over the next 15 years, for a number of reasons including:

- Growth in assets, which will mean that fees will reduce as a percentage of FUM;
- Consolidation of accounts which will lead to elimination of many fees on multiple accounts and reduced fees (as a percentage of assets) on the main account;
- Consolidation of superannuation funds, which will lead to elimination of many smaller less-efficient funds;
- Transfers of corporate funds into other arrangements, which usually results in savings of fund costs;
- Improvements in technology which should drive down the cost of managing superannuation;
- Reductions in distribution costs as the delivery of financial advice is delivered more cost-effectively to a wider group of members; and
- Establishment of clearing houses to allow employers to make contributions electronically, allowing a significant reduction in costs associated with the collection and allocation of contributions.

We have therefore assumed that fees will halve from 1.20% (at 30 June 2008) to 0.60% by 30 June 2023. The management expense rates we have assumed are summarised below. These include all fees charged in the relevant segment. This expense assumption does not include the cost of insurance, which is considered separately.

¹² Excludes employer plans with less than \$5 million in assets.

¹³ Employer plans with less than \$5 million in assets.

To illustrate the sensitivity of this assumption, a 0.10% reduction in the long term expense rate (from 0.60% to 0.50%) has the effect of reducing the Retirement Savings Gap by about \$18 billion (or 2.6%).

4.7.3 Cost of Insurance

According to figures published in APRA's *Quarterly Superannuation Performance* report the cost of member benefit insurance over the year to 30 June 2008 was as follows:

Table 14. Cost of Member Benefit Insurance - Year to 30 June 2008

Market Segment	Cost of Insurance \$M
Corporate	113
Industry	886
Public Sector	131
Retail	1,383
Total Superannuation Market	2,513

The annual cost of insurance for superannuation funds is therefore approximately 0.25% of pre-retirement superannuation assets (at June 2004 insurance costs were approximately 0.40% of assets).

We have therefore allowed for the annual cost of insurance by adding 0.25% to the annual expense rate. Our approach assumes that any benefit proceeds arising from insurance are not re-invested in the superannuation system.

4.7.4 Taxation

The model allows for taxation as follows:

- 15% contributions tax on all future contributions; and
- 6% investment tax on the investment roll up.

The investment tax assumption is less than the 15% levied on investment income for superannuation products because it makes implicit allowance for imputation credits used by funds to offset the tax and the 10% concessional tax rate on capital gains available to superannuation funds. A 1% shift in the investment tax assumption affects the Retirement Savings Gap by approximately \$10 billion.

4.7.5 Mortality

We have allowed for mortality pre-retirement using the Australian Life Tables 2000-02 (ALT2000-02) published by the Australian Government Actuary. For the quinquennial groupings in this projection, this results in the following probabilities of each age cohort surviving to age 67:

Table 15. Probability of Survival to Age 67

Age Band	Probability of Survival to Age 65	
	Males	Females
25 - 29	0.85	0.91
30 - 34	0.86	0.92
35 - 39	0.86	0.92
40 - 44	0.87	0.92
45 - 49	0.88	0.93
50 - 54	0.89	0.93
55 - 59	0.91	0.95
60 - 64	0.94	0.97

We have also allowed for mortality post retirement in accordance with ALT2000-02. Allowance has been made for improvement in mortality after retirement to permit a more plausible valuation of the income stream in retirement. This allowance has been made by applying the “100-Year Future Percentage Mortality Improvement Factors” published in ALT 2000-02. These factors were derived from the historical trends in Australian mortality improvement over the last 100 years for the purpose of producing estimates of future mortality and life expectancy scenarios.

This effectively assumes that future mortality will improve at the rate of 1.1% p.a. for a 65 year old male and 1.3% pa for a 65 year old female.

The impact of improving mortality has a significant effect on the model. If no allowance were made for improving mortality, the Retirement Savings Gap would reduce by approximately \$201 billion (or 29%).

4.7.6 Non-superannuation Assets

We have made some allowance for non-superannuation assets by allowing for investment properties held by the wealthier individuals in the model. We have assumed that 10% of individuals on incomes over \$89,000 own an investment property, with a mean value of \$450,000 in 2008 dollars.

These assumptions reduce the calculated Gap for those individuals in the model earning between \$89,000 and twice the average income (or approximately \$120,000). These are broad assumptions only, but our modelling indicates that their impact on the Retirement Savings Gap is relatively small, so they are not inappropriate. The relatively small effect is due to the fact that any reduction in the Gap due to income derived from these assets is partially offset by a reduction in the Age Pension entitlement.

4.7.7 General

There are a number of items for which we have made implicit assumptions. Whilst it is impossible to be dogmatic about every single possibility and outcome that affects the model, there are a number of items that deserve comment.

For instance, the model assumes that female workers will have a full history of employment, with no breaks in service for maternity leave, career breaks etc. Similarly, it assumes that those women currently off work to bear and raise children will not return. Of course, in practice, some

will leave and be replaced by others returning to the workforce. Unfortunately, there are no reliable statistics showing the extent and incidence of broken service so we have not done this more complex modelling. As a result, the model will understate the Retirement Savings Gap for younger females.

The model projects at the individual income level rather than the household income level. Consequently, the results will include those low income “secondary earners” who do not require an “adequate” income stream in retirement when total household income is taken into account. This will serve to overstate the Retirement Savings Gap, although we would expect the overall impact to be small since low income earners have a limited effect on the projection results.

5. Comment on Assumptions

5.1 General

With any model, the results that emerge will be sensitive to the assumptions employed. In particular, difficulties can arise where insufficient data exists to justify a particular assumption or methodology adopted. This section sets out those parts of the model where these difficulties have arisen.

5.2 Current Savings by Age Cohort

The population model provides a mechanism for generating future contributions for the individuals in respect of whom the Retirement Savings Gap is calculated. The starting population for the model is based on income distribution data published in a working paper *Cross-sectional income distributions in the Australian Population* by Mr Tim Higgins of the School of Finance and Applied Statistics, Australian National University, based on a 1% sample of the 2001 Census sourced from the ABS.

However, the amount of current savings is not segmented in a similar fashion, yet we must do this:

- As we need to know expected term to retirement so that the savings are allocated investment earnings for the appropriate period;
- So there is consistency with the contribution roll-up calculations; and
- As modelling of the Age Pension requires the total amount of assets to be known for each income band.

As detailed in section 4.3.3, we have allocated the total amount of current savings in respect of the population to the different age/sex cohorts based on a survey of superannuation funds covering \$197 billion of funds under management.

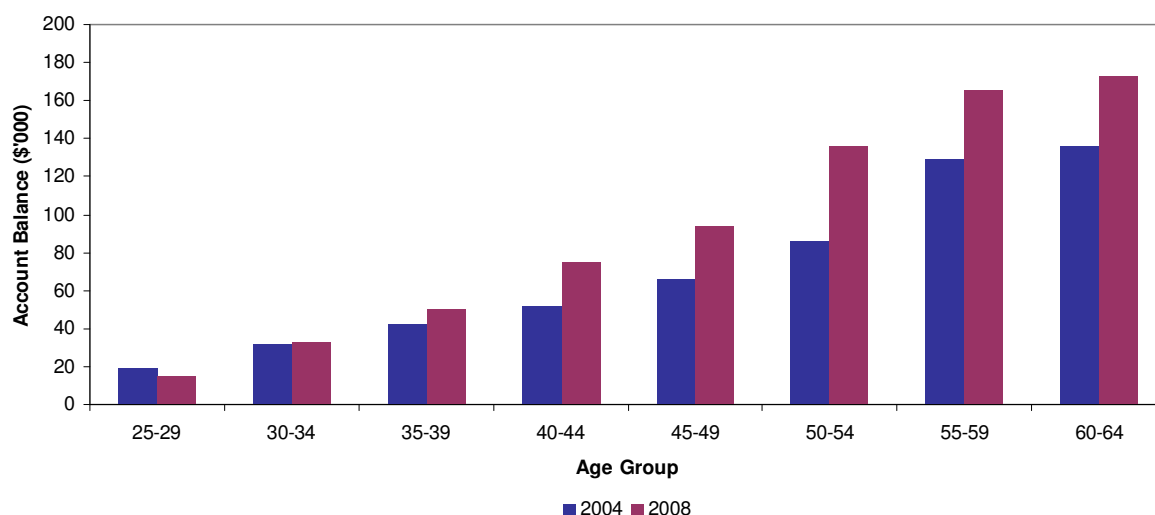
The starting point of this demographic projection is an analysis of superannuation accounts as at 30 June 2007. We allocated current savings to the different age/sex cohorts as follows:

- APRA's *Annual Superannuation Bulletin, June 2007* indicates 30.4 million member accounts as at 30 June 2007. The APRA report gives the breakdown of member accounts by the five main industry segments - Corporate Funds, Industry Funds, Public Sector Funds, Small Funds and Retail Funds;
- We have estimated the number of accounts as at 30 June 2008 from the trend in APRA data;
- We have adjusted the number of retail fund members to reflect members of retirement savings accounts and holders of annuities which are not included in the APRA statistics;
- We have allocated the retail fund members to the sub-sectors of the retail market identified in this report - employer master trusts, personal superannuation, post retirement products, retirement savings accounts and eligible rollover funds;
- Within each industry sector, we have made assumptions about the number of *active*, *inactive* and *retired* members respectively. We have assumed that the number of *active* members would be approximately equal to the size of the employed labour force;

- We have further allocated the number of members within each sector to each age/sex cell. This was done by reference to membership profiles sourced from a number of industry funds, public sector funds and master trust providers; and
- Finally, we have rebalanced the profile of “active” members to approximate the demographic profile of the labour force as published by the ABS.

The resulting distribution of assets by age is shown below:

Graph 2. Assets Per Person By Age at 30 June 2004 and 30 June 2008

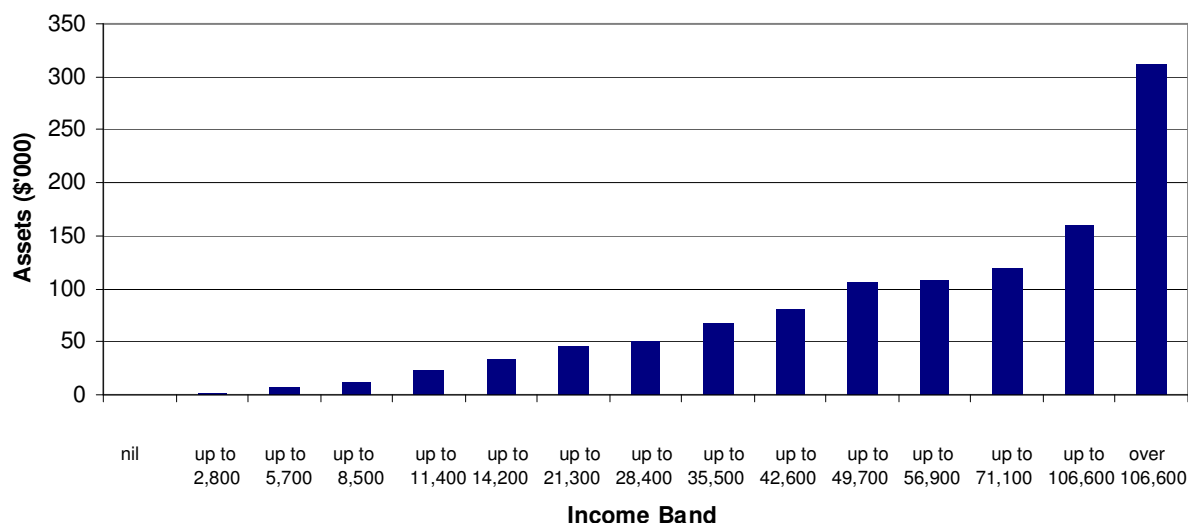


The average account balances are higher than in our previous report. This is in part a reflection of the growth in total assets over the period.

The total superannuation assets by age and sex now need to be segmented further by income group. As no reliable statistics suitable for this purpose are available, we have based this allocation on what we consider a plausible past pattern. We considered notional fund balances in each age/sex/income cohort as a basis for distributing the assets in each age/sex cohort (details in section 4.3.3).

The adjusted notional fund balances produced in respect of current members of the workforce results in an overall distribution of assets by income band as illustrated below. This is the distribution across all ages; the actual distribution in each age group would vary.

Assets Per Person by Income



The modelling results for individuals close to retirement would be sensitive to the assumed distribution of assets, as this forms the bulk of the Asset in the Gap calculation. Conversely, the modelling results for younger individuals would not be sensitive to the assumed distribution of assets, as the bulk of the Asset in this case consists of savings through future contributions.

5.3 Future Population Movements

The Retirement Savings Gap model is built on a projection of the population by age, sex and income. The population projection provides the framework which allows the model to calculate the future level of savings through contributions, pre-retirement income for adequacy and eligibility for the Age Pension for population cohorts.

With any model, the difficulty with the projection is determining likely future movement between income-band cohorts. For example, a young professional who joins the workforce after completing tertiary education will be on a low income initially. However, as they progress through professional examinations or gain promotion, that income will rise steadily over time over and above ordinary wage inflation. We call this “promotional increases”. By the mid-point of a working career, experience indicates that promotional increases flatten out.

To allow for such promotional increases, we have assumed a pattern of movement between each income band cohort over time. In brief, we have developed a “transition matrix” which details for people in each income band the income distribution of those people in five years’ time. Successive application of the transition matrix gives the income distribution for individuals for successive five-year periods.

Adopting promotional increases means that some individuals will eventually reach income levels in excess of twice average earnings, and, where this occurs, they are excluded from the model.

The adopted “transition matrix” effectively assumes that 15% of individuals in each income band will progress to the next income band over a five-year period. The average effect of this assumption is approximately a 0.5% increase in salaries above general wage inflation. This is a broad-brush approach, but the calculated Gap is only moderately sensitive to the assumption.

For example, increasing the proportion from 15% to 20% increases the Retirement Savings Gap by approximately \$93 billion, a 7% increase.

A summary of the proportion of people in each age cohort whose earnings will exceed twice the average by age 65 (both those currently earning more than twice the average and those projected to rise above twice the average in future) is shown in the following table:

Table 16. Proportion of Population Earning 2x Average Earnings by Age 65

Age Cohort	Current (%)	Future (%)	Total (%)
25-29	2.4	9.4	11.8
30-34	4.8	10.0	14.7
35-39	5.9	8.0	13.9
40-44	6.0	7.3	13.2
45-49	6.1	6.2	12.3
50-54	5.9	4.3	10.2
55-59	4.2	2.1	6.3
60-64	2.8	0.6	3.3
Overall	4.8	6.2	11.1

5.4 Future Contribution Rates

There is no reliable data on the current contribution level by age and income band. While we can confidently say that future employer contributions will be at least equal to the current Superannuation Guarantee level of 9%, our best estimate of the market would be that contributions will be higher for people with higher disposable incomes, and higher for individuals closer to retirement. For the purposes of this model, we assume that contribution rates do not vary by income.

6. Differences from Previous Report

Comparison of the modelling results to those presented in the previous report requires an appreciation of the differences between the models in the two reports before any conclusions can be drawn regarding trends over the period. The main differences are discussed below:

6.1 Population Differences

Our calculation of the Retirement Savings Gap considers the working population earning less than twice average earnings. The population underlying the current calculation would differ from that at the previous calculation because:

- New entrants into the labour force over the intervening period are now included in the population, and conversely individuals who have left the labour force due to retirement or other reasons are now excluded;
- The underlying population has changed as a result of ageing, mortality and migration; and
- The assumed income distribution has changed from the previous report due to the availability of more suitable data, leading to a change in the assumed number of high income earners who are excluded from the projection.

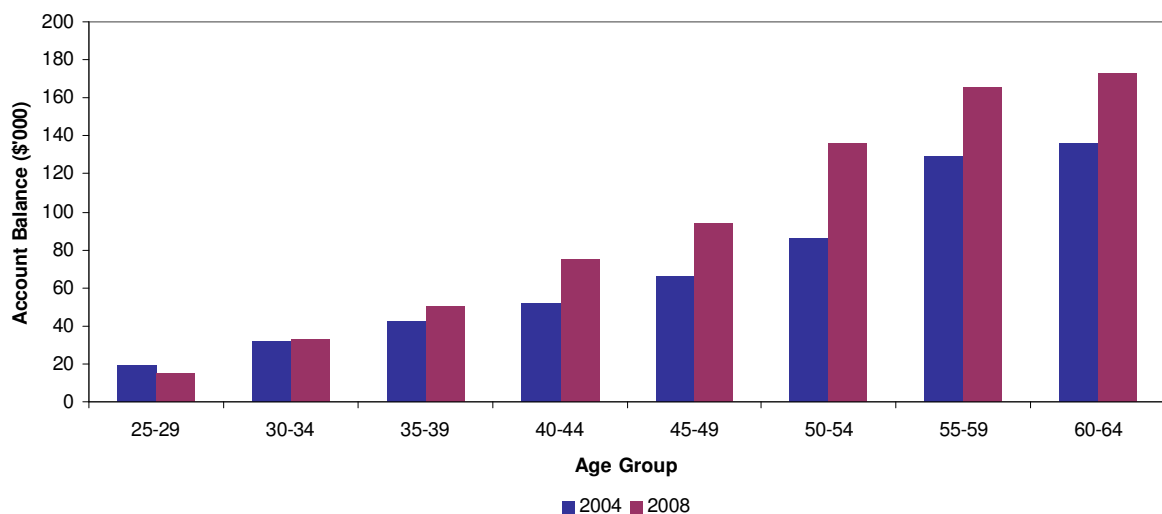
When comparing the results in this report to the results in the previous report, it is important to remember that the results are in respect of a slightly different population cohort.

6.2 Changes in Assumptions

Assumptions were revised from the previous report in a number of areas due to the availability of more detailed suitable data.

The distribution of superannuation assets by age and sex was based on a survey of superannuation funds which we have conducted, and the results were calibrated to a distribution of assets accounts published in APRA's *Annual Superannuation Bulletin, June 2007* and *Quarterly Superannuation Performance, June 2008*. A comparison of the distribution of assets by age cohort is shown below.

Graph 3. Assets Per Person



Account balances have increased for the majority of ages, partly reflecting investment earnings over the period.

As detailed in section 4.3.3, we have allocated the current amount of superannuation savings further by income band. This allows investigation of the Retirement Savings Gap by income, as well as modelling of the age pension.

7. Results

7.1 Retirement Savings Gap

The Retirement Savings Gap as at 30 June 2008 is calculated as \$695 billion after allowance for the Age Pension, compared to our estimate of \$452 billion as at 30 June 2004. It is important to note that this amount is not a lump sum that is required immediately, but an amount that would need to be funded over the expected term to retirement of the current workforce.

We estimate that the gross deficit (that is not allowing for the Age Pension) is approximately \$1,579.

Whereas the estimated Gap has increased by \$243 billion in dollar terms, the underlying population measured has grown from 8.8 million to 9.5 million. The growth came from general population growth (including migration), increase in the population for 25-65, and increases in the cohort eligible (partly due to growth in wages).

The estimated Gap has therefore increased to \$73,000 per person. This represents an increase of approximately \$26,000 per person in nominal terms or approximately \$22,000 in real terms (refer to Table 18 for an analysis of the increase).

The Retirement Savings Gap can be subdivided between the sexes as follows:

Table 17. Retirement Savings Gap by Sex

As at 30 June	2004			2008		
	Males	Females	Total	Males	Females	Total
Asset	1,020	798	1,097	1,097	886	1,983
Liability						
Before the Age Pension	1,367	1,274	2,641	1,816	1,746	3,562
After the Age Pension	1,257	1,013	2,270	1,455	1,224	2,678
Retirement Savings Gap						
Before the Age Pension	347	476	823	719	860	1,579
After the Age Pension	237	216	452	358	337	695

As discussed in section 2.3, the Senate Select Committee on Superannuation and Financial Services suggested a range for “adequacy” of 60% to 65% of gross earnings. This gives a range for the Retirement Savings Gap of \$584 billion to \$814 billion or \$1,437 billion to \$1,722 billion if there is no allowance for the Age Pension.

We note that the Retirement Savings Gap (after the Age Pension) is higher for males. Males tend to receive less Age Pension benefits as they generally have greater super savings at retirement. Further, a lower number of males survive to advanced ages (where most retirees receive a full Age Pension). In contrast, females tend to have a lower Retirement Savings Gap as a result of the Age Pension forming a higher proportion of their retirement income (females tend to have lower pre-retirement incomes and therefore lower adequate retirement incomes).

However, if we do not allow for the Age Pension the Savings Gap is higher for females. This reflects the combination of lower super savings at retirement and their longer expectation of life (and thus the longer period over which to provide an adequate income) relative to males.

7.2 Analysis of Differences from Previous Report

A broad analysis of the difference between the estimated Retirement Savings Gap (allowing for the Age Pension) from the previous report is given below:

Table 18. Analysis of Difference of Retirement Savings Gap (Allowing for the Age Pension)

	\$ billion
Retirement Savings Gap Estimate, 30/6/2004	452
Effect of change in the modelling of adequacy (account based pension)	171
Effect of increase in average earnings	136
Poor investment return over the 2008/09 financial year	133
Effect of revised contribution rate assumptions	61
Effect of demographic differences since 2004	42
Effect of change in Co-contribution assumptions and scale back	2
Effect of estimated reduction in fees and insurance costs	-67
Delay in retirement to age 67	-108
Effect of contributions and investment returns since 2004	-127
Retirement Savings Gap Estimate, 30/6/2008	695

7.3 Results by Age

The results can be expressed in quinquennial age groupings, together with the required additional annual contribution rate required by each age cohort to achieve the target standard of living in retirement.

The table below shows the composition of the Retirement Savings Gap (after allowing for the Age Pension) by quinquennial age group.

Table 19. Retirement Savings Gap (\$M) - After the Age Pension

As at 30 June Age	2004		2008	
	Males	Females	Males	Females
25-29	32,136	38,936	75,354	82,916
30-34	36,376	34,270	71,201	57,839
35-39	34,731	27,957	58,904	48,204
40-44	39,546	34,946	48,200	42,829
45-49	36,278	34,993	46,071	48,729
50-54	33,480	27,768	28,409	35,161
55-59	18,128	11,881	19,017	15,727
60-64	6,121	4,798	10,944	5,995
Total	236,796	215,549	358,099	337,400

The table below shows the additional contribution required to offset the Retirement Savings Gap over the future lifetime of each age/sex cohort. This is shown both as an average additional contribution (above the assumed average 11% employer and 4% member contribution) and as a contribution in addition to the 9% Superannuation Guarantee Rate.

Table 20. Required Additional Contribution - 30 June 2004 after Age Pension

Age	Males		Females	
	Average* (%)	Above SG (%)	Average* (%)	Above SG (%)
25-29	2.4	8.8	3.1	9.5
30-34	3.2	9.5	2.9	9.3
35-39	3.8	10.1	3.0	9.3
40-44	5.0	11.4	4.4	10.8
45-49	6.6	12.9	6.4	12.8
50-54	9.0	15.3	7.7	14.1
55-59	8.6	14.9	6.4	12.7
60-64	10.3	16.6	9.3	15.7

* Additional contribution required in excess of an assumed average 14% employer contribution and 3% member contribution

Table 21. Required Additional Contribution - 30 June 2008 after Age Pension

Age	Males		Females	
	Average* (%)	Above SG (%)	Average* (%)	Above SG (%)
25-29	3.8	10.2	4.7	11.1
30-34	4.9	11.2	4.0	10.4
35-39	4.6	10.9	3.7	10.1
40-44	4.9	11.3	4.4	10.8
45-49	6.1	12.4	6.6	12.9
50-54	5.9	12.2	7.4	13.8
55-59	6.9	13.2	6.2	12.6
60-64	11.9	18.3	7.6	13.9

* Additional contribution required in excess of an assumed average 14% employer contribution and 3% member contribution

The rates increase with age, as one would expect. The older age groups suffer from the fact that they have not enjoyed Superannuation Guarantee contributions over their working lifetimes and they have less time over which to amortise the Retirement Savings Gap.

The generally lower rates for females reflect the lower income distribution which increases eligibility for the Age Pension. If the Age Pension is ignored, the rates for females are considerably higher:

Table 22. Required Additional Contribution - 30 June 2004 before Age Pension

Age	Males		Females	
	Average* (%)	Above SG (%)	Average* (%)	Above SG (%)
25-29	3.3	9.6	5.2	11.6
30-34	4.2	10.5	5.4	11.8
35-39	5.1	11.5	6.5	12.8
40-44	7.0	13.4	9.8	16.2
45-49	9.6	16.0	14.4	20.7
50-54	14.0	20.4	18.9	25.3
55-59	14.4	20.8	19.1	25.4
60-64	20.5	26.9	42.8	49.2

* Additional contribution required in excess of an assumed average 14% employer contribution and 3% member contribution

Table 23. Required Additional Contribution - 30 June 2008 before Age Pension

Age	Males		Females	
	Average* (%)	Above SG (%)	Average* (%)	Above SG (%)
25-29	7.1	13.4	9.3	15.6
30-34	8.4	14.8	9.1	15.4
35-39	8.5	14.8	9.9	16.3
40-44	9.5	15.9	11.9	18.2
45-49	11.8	18.2	16.4	22.8
50-54	12.6	19.0	20.4	26.7
55-59	18.0	24.3	23.3	29.6
60-64	44.4	50.7	45.9	52.3

* Additional contribution required in excess of an assumed average 14% employer contribution and 3% member contribution

The difference for females reflects a number of factors:

- The pool of current savings will be less than for males due to career breaks;
- The accumulated future contributions will be less than for males due to the lower average income for females relative to males; and
- A larger pool of assets will be required at retirement to fund pension payments relative to males given the longer expectation of life for females.

7.4 Results by Income

The results can also be expressed by income band.

The table below shows the composition of the Retirement Savings Gap (after the Age Pension) in terms of income:

Table 24. Retirement Savings Gap (\$M) by Income and Sex

Annual Income	Males	Females
under 28,400	0	0
28,401 - 35,500	0	1,670
35,501 - 42,600	6,824	16,266
42,601 - 49,700	19,089	38,474
49,701 - 56,900	43,804	62,840
56,901 - 71,100	113,080	114,132
71,101 - 106,600	134,448	87,776
over 106,600	40,854	16,241
Total	358,099	337,400

Most of the Retirement Savings Gap is attributable to individuals earning over about \$42,600, or approximately 70% of average earnings. These individuals would seek to maintain a higher standard of living in retirement compared to lower income earners and would have reduced eligibility for the Age Pension and Co-contribution.

There is no gap for individuals earning under \$28,400 p.a. and the gap is small for individuals earning up to \$35,500 p.a. Some may experience an increase in living standards, as the Age Pension can provide an approximate maximum of \$17,000 p.a. (as from 20 September 2009).

7.5 Other Assets

We discussed in Section 2 the impact on the Retirement Savings Gap of Non-superannuation assets. The effect of non-superannuation assets has not been considered in detail in this report. Published data is available in the NATSEM model, but this is only reported in terms of average family wealth rather than per individual and so does not correspond with the make-up of our model.

Any assessment of the effect of non-superannuation assets on the Retirement Savings Gap would need to consider the associated reduction in Age Pension entitlement which would mitigate the effect. Assessment of the overall effect would necessitate having a breakdown of non-superannuation assets by age, sex and income, as the Age Pension entitlement would vary with these variables.

However, we expect that for most individuals considered in this report non-superannuation assets (other than the family home) would form a relatively small proportion of total assets at retirement. That is, individuals earning less than twice average earnings generally do not have a sufficient disposable income to accumulate a significant amount of assets outside of superannuation.

Given the offsetting effect of the reduction in the Age Pension entitlement, we do not expect non-superannuation assets to have an overly large impact on the retirement savings position of individuals in the model.

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Superannuation Savings Gap Cameos 2009

Prepared for IFSA

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1. Executive Summary

1.1 Background

IFSA has engaged Rice Warner Actuaries to provide an update on the *Retirement Savings Gap* (RSG) and an analysis of the interim report from the Review Panel for Australia's Future Taxation System (the "Henry Review").

In its interim report on the superannuation system, the Henry Review indicated that a 9% superannuation guarantee contribution was "adequate". The interim report has modelled various individuals over a full career of 35 years, and claims that the 9% contribution, when coupled with the Age Pension, is sufficient to provide an adequate retirement income.

In our separate report on "Adequacy", we state that the modelling is unrealistic and that a higher contribution rate is required. This Report reinforces this statement by showing the required contribution rate needed under a number of case studies. In virtually all scenarios, we show that 9% is not enough to provide an adequate retirement!

We set out these *Cameos* to test the progress towards an adequate retirement under a number of scenarios for single people and couples. These case studies represent ordinary Australians with realistic financial situations.

1.2 Cameos

There are 11 different case studies and these are described in Section 2. All the individuals are under age 50 so they will need to retire at age 67.

When a member enters retirement, the adequacy of their benefit depends on a number of factors including the investment earnings on their superannuation (before and after retirement), the rate of drawdown of the pension and the number of years the member lives after retirement.

We have modelled a number of variations for a group of case studies for singles and couples, based on:

- Their accrued superannuation savings and their savings pattern (assuming continuation of current contribution levels);
- Entering retirement at age 67 which coincides with the new age for receipt of the Age Pension for all the case studies;
- The impact of the member choosing an earlier retirement age - as happens with most retirees today;
- A definition of adequacy of 62.5% of pre-retirement income with separate calculations to show the cost of aiming for 65.0%; and
- The impact of future mortality improvements.

1.3 People Mid-Career

We have set up various cameos for individuals and couples who are midway through their careers. These examples are based on realistic situations facing Australians today.

Our results show:

- In almost all cases, the SG contribution is not sufficient to provide an adequate retirement benefit for any member who lives for average life expectancy. The SG contribution is also insufficient for couples, despite couples benefiting from reduced per-capita expenses;
- Significant extra contributions are required if we increase the definition of adequacy from 62.5% to 65.0% of gross salary at retirement;
- Much higher contributions are required for those retirees who live to the age to which 25% of retirees will live (the 75th survival percentile); and
- The increase in the Age Pension eligibility age will actually reduce adequacy unless the Preservation Age is lifted (see 1.6 below).

1.4 People Full-Career

We have set up three Cameos for individuals who enter the workforce today and will have a full career with a 9% SG contribution. We have tracked their progress through their career. These Cameos show that members need to start early and supplement the 9% SG frequently if they are to build an adequate retirement income.

Although these members will be better off from receiving the full SG throughout their career, they still do not accrue an adequate retirement benefit. One reason is that likely future increases in mortality will increase the duration of their retirement years, thus requiring a larger benefit to be accrued.

1.5 Retirement at 67

We expect that younger members will need to stay in the workforce until age 67 (the new Age Pension age from 1 July 2023). If they do not do so and retire earlier, they will need to live entirely off their superannuation and other savings until they reach that age. This will reduce the benefit available to fund later years - when the Age Pension will form a part of their income.

In practice, most Australians currently retire before age 65, the median age being about 60. However, we have started with a base case that the individuals and couples within each cameo will delay retirement until the Age Pension eligibility age. Naturally, this significantly reduces the benefit required compared to that needed for an earlier retirement.

By retiring at age 67, members benefit both from the extra savings accumulated during their extended working life and the shorter period over which their retirement income will be consumed. Furthermore, there will not be any delay between the start of actual retirement and the eligibility date to receive the (means-tested) Age Pension. However, we note the practical difficulties in keeping most people within the workforce to such an advanced age.

The Henry Review interim report noted the savings that could be made from shifting members to a later retirement age and recommended shifting the Preservation Age to 67. This would preserve most superannuation benefits for longer and improve overall adequacy. However, it does not seem practical to do this over the next 15 years without generating significant employment opportunities for older workers.

1.6 Retiring Early

If people retire at earlier ages, they will require higher superannuation savings to have an adequate retirement income. We have used examples of retirement at 60 and 65 to show the impact of a member continuing with current population behavioural patterns.

In almost all cases of early retirement, the individuals need to more than double their current estimated savings in order to have an adequate living standard in retirement.

We also calculate that very high contribution rates (total contributions of around 20% to 40% of total/combined gross salary for almost all cases) are required to achieve adequacy. This shows that:

- Their current level of superannuation savings and their savings patterns are not on track to providing an adequate retirement income;
- The SG of 9% of gross salary will not be sufficient to provide an adequate retirement income for the majority of the Cameos; and
- High levels of voluntary contributions are required to reach an adequate retirement (in fact the total voluntary contributions are impractically high).

1.7 Higher Level of Adequacy

Increasing the definition of adequacy to 65.0% of pre-retirement income has a significant impact on the required contribution rates. Even this relatively small increase in target annual income requires a substantial increase in contributions.

It demonstrates the sensitivity of the cost of funding retirement to the definition of adequacy.

1.8 Impact of Mortality Improvement

Mortality improvements result in an increase in the average longevity of the Australian population. This directly increases the savings required by individuals to provide themselves with an adequate retirement income. The cost to government also increases from the increased period over which Age Pension benefits are made.

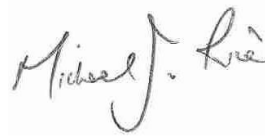
Therefore, improvements in mortality will have a significant impact on the RSG. While the forecast levels of improvement are significant, it should be noted from past experience that forecasts of improvement are usually exceeded.

This report was prepared and peer reviewed for IFSA by the following consultants.

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27th January 2010

2. Retirement Savings Gap Cameos & Scenarios

2.1 Cameos & Scenarios - Mid Career

In this section we calculate the Retirement Savings Gap (RSG) for a range of scenarios. We have chosen these examples to be typical of Australians earning between 70% and 200% of average earnings. People earning less than this will generally fall back on a full Age Pension whereas people earning more are likely to be self-sufficient in retirement.

2.1.1 Case Studies

The scenarios are detailed below and the underlying assumptions are set out in Appendix A. The assumptions are consistent with the RSG calculation in respect of the Australian population as per our other report to IFSA.

We have calculated the RSG in respect of the following Cameos. These are case studies of people who are mid career.

Table 1. Cameo Parameters - Mid Career

Cameo	Single/ Couple	Sex	Age	Income \$	Current Super Savings \$	Super Contributions (% of Gross Salary)		Career Break	Retirement Age	Homeowner/ Renter
						Employer	Member			
1	Single	F	38	60,000	50,000	11	4	None	67	Homeowner
2	Single	M	45	80,000	90,000	9	5	None	67	Homeowner
3	Single	F	22	40,000	0	9	0	5 Years ¹	67	Renter
4	Single	M	40	110,000	100,000	9	0	None	67	Homeowner
5	Couple	M	48	78,000	95,000	9	2	None 5 Years ²	67	Homeowners
		F	45	66,000	55,000	9	5		64	
6	Couple	M	37	120,000	110,000	9	0	None 5 Years ²	67	Renters
		F	33	54,000	35,000	9	0		63	
7	Couple	M	30	54,000	40,000	9	0	None None	67	Homeowners
		F	29	48,000	25,000	9	0		66	
8	Couple	M	40	90,000	85,000	9	0	None 5 Years ²	67	Homeowners
		F	33	45,000	30,000	9	0		60	

1. Starting when she is aged 27.

2. Starting immediately.

2.1.2 Assumptions

Some general assumptions are set out in Appendix A. In particular, it has been assumed that these individuals will not have significant assets outside superannuation and their family home. Some individuals will inherit moderate wealth from their parents during middle-age. However, most wealth in Australia is concentrated on those with income exceeding twice national average income. Therefore, these examples are generally realistic.

The key assumptions used for these Cameos are listed below:

- Adequacy for singles is defined as being able to receive 62.5% of pre-retirement income for the duration of their life expectancy as determined at the date of retirement. Note that about 50% of retirees will live beyond this period;

- Adequacy for couples is defined as 75%¹ of the sum of each individual’s “adequate” retirement income until life expectancy as a couple (the ages where they are both expected to survive as a couple). This reflects the benefits couples receive from economies of scale and is based on the proportion between the Single Age Pension Rate and the Couple Age Pension Rate;
- Contributions are as described in Table 1. Most examples follow reality by assuming the only contribution received is the SG ;
- Current superannuation savings are slightly above the average savings within the population for the particular age, gender and salary profile;
- The Cameos combine the drawdown from their pension account with the Age Pension to receive an adequate retirement income. In the situation where means- testing excludes an individual from receiving the Age Pension, the individual relies solely on their pension account to provide an adequate income. We note that the drawdown patterns shown are illustrative of current drawdown patterns where people tend to try to maximise their Age Pension benefits during retirement;
- Retirement Age is as described in Table 1. For couples, we have assumed the younger female partner will retire at the same time as her husband as this tends to occur in practice; and
- Mortality is taken from the 25-year improvement trend as published in the Australian Government Actuary report on the Australian Life Tables 2000-02.

2.1.3 Alternative Assumptions

We have also analysed the RSG for the Cameos under different assumptions. The various scenarios are described in the table below:

Table 2. Scenarios

Scenario	Parameter Changed from the Base Scenario
Maintaining current expectations	Retirement between ages 60 to 65
Higher level of adequacy	Adequacy defined as 65.0% of pre-retirement income until Life Expectancy
Impact of mortality improvement	No mortality improvements

2.2 Cameos & Scenarios - Full Career

In this section we calculate the RSG for individuals that are just starting their working career. We have assumed that Cameos 9, 10 and 11 will enter the workforce as a plumber, a nurse and an employee in the financial services industry respectively. These jobs were chosen to reflect typical careers that workforce entrants would follow.

¹ Note also that the ratio between the Westpac ASFA Retirement Standard for singles and couples was 71% for the Modest Lifestyle and 74% for the Comfortable Lifestyle during the March 2009 quarter.

The details of these Cameos are set out in the table below.

Table 3. Cameo Parameters - Full Career

Cameo	Single/ Couple	Sex	Age	Income \$	Current Super Savings \$	Super Contributions (% of Gross Salary)		Career Break	Retirement Age	Homeowne/ Renter
						Employer	Member			
9	Single	M	16	14,508	0	9	0	None	67	Renter
10	Single	F	18	31,629	0	9	0	5 Years	67	Homeowner
11	Single	M	22	40,000	0	9	0	None	67	Homeowner

Based on industrial awards, we have set out a set of promotional salary increases that are unique to the respective careers of these individuals. Snapshots of their salaries at key points in their careers are set out in Appendix A.2.7.

We have also assumed the nurse will have a five year career break at age 27 to raise a family.

In addition to the scenarios set out in Table 2, we also estimate the RSG based on a typical contributions pattern for individuals over their working career. That is, individuals increase their voluntary contributions as they get older and achieve a higher annual salary (in real terms). Refer to Appendix A.2.12 for details of the contributions pattern.

3. Summary of Results - Retiring at 67

We expect that many members will try to stay in the workforce until age 67. If they do not do so, they will need to live entirely off their superannuation and other savings until they reach that age. This will reduce the benefit available to fund later years - when the Age Pension will form a part of their income.

As part of our analysis, we also calculate the contributions required both to achieve an adequate retirement income until their life expectancy and until their 75th survival percentile (the age which 25% of people of the same gender and age at retirement will attain).

3.1 Impact of Retiring at Age 67

By delaying retirement until the new Age Pension eligibility age of 67, they all benefit from the extra savings accumulated during their extended working life and the shorter period over which they require an adequate retirement income. Furthermore, there will not be any delay between the start of retirement and when they are eligible to receive the (means-tested) Age Pension. Nonetheless, the majority of the Cameos still have a shortfall in their retirement savings.

The reductions in the RSG are significant for many of the Cameos as they are generally able to supplement their pension drawdown with the Age Pension as soon as they retire (as soon as the Male retires for the couples). If they had retired at their intended retirement ages (from 60 to 65 - see section 3.2) they would have had to fully rely on their superannuation savings to provide an adequate income until the new Age Pension eligibility age of 67.

Most notably, Cameos 7 and 9 manage to eliminate their RSG. The relatively low definition of adequate income for these Cameos, combined with the significant Age Pension benefits they are eligible to receive (refer to Table 7) allows them to achieve an adequate retirement income beyond their respective life expectancies.

In contrast, the reduction in the RSG is not as great for Cameos 4, 10 and 11. The means testing of the Age Pension excludes these individuals from receiving the Age Pension. Their required drawdowns are too high for them to be eligible to receive any Age Pension benefits at all. This means that they must drawdown their entire superannuation savings before they become eligible to receive the Age Pension!

Table 4. Expected Retirement Saving Gap - Retiring at Age 67

Cameo	Sex	Age	Income \$	Current Super Savings \$	Super Contributions (% of Gross Salary)		Career Break	Retirement Age	Savings at Retirement \$	Savings Required for Adequacy \$	Expected Retirement Savings Gap \$
					Employer	Member					
1	F	38	60,000	50,000	11	4	None	67	397,500	639,100	241,600
2	M	45	80,000	90,000	9	5	None	67	406,100	825,100	419,000
3	F	22	40,000	0	9	0	5 Yrs ¹	67	242,800	484,200	241,400
4	M	40	110,000	100,000	9	0	None	67	457,700	1,332,600	874,900
5	M	48	78,000	95,000	9	2	None	67	518,100	694,700	176,600
	F	45	66,000	55,000	9	5	5 Yrs ²	64			
6	M	37	120,000	110,000	9	0	None	67	761,200	1,231,700	470,500
	F	33	54,000	35,000	9	0	5 Yrs ²	63			
7	M	30	54,000	30,000	9	0	None	67	570,800	522,100	Nil
	F	29	48,000	25,000	9	0	None	66			

Cameo	Sex	Age	Income \$	Current Super Savings \$	Super Contributions (% of Gross Salary)		Career Break	Retirement Age	Savings at Retirement \$	Savings Required for Adequacy \$	Expected Retirement Savings Gap \$
					Employer	Member					
8	M	40	90,000	85,000	9	0	None	67	526,700	841,500	314,800
					9	0					
9	M	16	14,508	0	9	0	None	67	252,500	238,300	Nil
10	F	18	31,629	0	9	0	5 Years ¹	67	328,200	1,253,500	925,300
11	M	22	40,000	0	9	0	None	67	467,500	1,443,800	976,300

1. Starting when she is aged 27.

2. Starting immediately.

3.2 Contributions Required to Close RSG

Table 5 shows the required contribution rates needed to achieve an adequate income up to life expectancy. These contributions would be sufficient for the 50% of the population who do not live past their life expectancy.

The total contributions are a high percentage of salary. If the individuals had accumulated higher current accumulated benefits, the required rates would fall. However, the accumulated amounts we chose are close to market average rates for people in these positions. This highlights that many people need to begin a regime of higher contributions from as early an age as possible. Those who are mid-career may well need to spend significantly to catch up.

Table 5. Contribution Rates Required to Receive an Adequate Retirement Income until Life Expectancy - Retiring at Age 67

Cameo	Current Contribution Rate (% of Gross Salary)		Incremental Contributions (% of Gross Salary)		Total Contributions to Achieve Adequacy (% of Gross Salary)	
	Employer	Member	Employer	Member	Employer	Member
1	11.0	4.0	11.8	0.0	22.8	4.0
2	9.0	5.0	17.3	4.6	26.3 ¹	9.6
3	9.0	0.0	8.9	0.0	17.9	0.0
4	9.0	0.0	9.9	14.1	18.9 ¹	14.1
5	9.0	2.0	11.8	0.0	20.8	2.0
	9.0	5.0	0.0	0.0	9.0	5.0
6	9.0	0.0	8.1	0.0	17.1 ¹	0.0
	9.0	0.0	8.7	0.0	17.7	0.0
7	9.0	0.0	Nil ²	0.0	9.0	0.0
	9.0	0.0		0.0	9.0	0.0
8	9.0	0.0	11.6	0.0	20.6	0.0
	9.0	0.0	0.0	0.0	9.0	0.0
9	9.0	0.0	Nil ²	0.0	9.0	0.0
10	9.0	0.0	17.4	6.3	26.4 ¹	6.3
11	9.0	0.0	12.0	5.7	21.0 ¹	5.7

1. This is the maximum concessional contribution that can be made for this individual without breaching the concessional contributions cap.

2. This Cameo is estimated to be sufficient beyond their life expectancy.

The contributions required to fund an adequate retirement up to the point at which 25% are still alive is about an extra 10% of gross salary for all singles Cameos except for Cameo 9. Because Cameo 9 is already adequate beyond his life expectancy, he only requires additional employer contributions of just under 4% of his gross salary to achieve adequacy until his 75th survival percentile.

For the Cameos with couples, it is an extra 6% to 10% of their combined gross salaries except for Cameo 7. For Cameo 7, the extra contributions required are a little over 1% of their combined salaries as the SG already provides an adequate retirement income beyond their life expectancy as a couple.

Table 6. Contribution Rates Required to Receive an Adequate Retirement Income until 75th Survival Percentile - Retiring at Age 67

Cameo	Current Contribution Rate (% of Gross Salary)		Incremental Contributions (% of Gross Salary)		Total Contributions to Achieve Adequacy (% of Gross Salary)	
	Employer	Member	Employer	Member	Employer	Member
1	11.0	4.0	21.6	0.0	32.6	4.0
2	9.0	5.0	17.3	15.3	26.3 ¹	20.3
3	9.0	0.0	19.5	0.0	28.5	0.0
4	9.0	0.0	9.9	23.1	18.9 ¹	23.1 ²
5	9.0	2.0	18.1	0.0	27.1 ¹	2.0
	9.0	5.0	11.6	0.0	20.6	5.0
6	9.0	0.0	8.1	0.3	17.1 ¹	0.3
	9.0	0.0	30.3	0.0	39.3	0.0
7	9.0	0.0	2.2	0.0	11.2	0.0
	9.0	0.0	0.0	0.0	9.0	0.0
8	9.0	0.0	14.2	0.0	23.2 ¹	0.0
	9.0	0.0	12.5	0.0	21.5	0.0
9	9.0	0.0	3.8	0.0	12.8	0.0
10	9.0	0.0	17.4	18.4	26.4 ¹	18.4
11	9.0	0.0	12.0	14.2	21.0 ¹	14.2 ²

1. This is the maximum concessional contributions that can be made for this individual without breaching the concessional contributions cap.

2. Minimum pension payment rules require this individual to draw significantly more than their defined adequate income in some years. This contribution rate reflects the funding of the surplus income in these "more than adequate" years.

3.3 Age Pension Received

Table 7 shows the proportion of total retirement income received that was derived from Age Pension benefits. As expected, the Age Pension comprises a smaller proportion of total retirement income if superannuation savings are greater. The table also shows that the Age Pension will in many cases comprise a significant component of a retiree's income.

Table 7. Proportion of Total Retirement Income from Age Pension

Cameo	Proportion of Total Retirement Income from Age Pension for Adequate Retirement Income Until:	
	Life Expectancy (%)	75 th Survival Percentile (%)
1	23.9	17.6 ¹
2	13.0	9.4 ¹
3	38.8 ¹	26.3 ¹
4	2.1	1.1 ¹
5	29.3	27.4
6	12.2	8.6
7	43.7 ²	42.3
8	25.4	23.6
9	60.5 ^{1,2}	55.2 ¹
10	3.7 ¹	3.3 ¹
11	1.8 ¹	1.5 ¹

1. In some years the actual income received is greater than adequate due to minimum pension payment rules.

2. Superannuation savings at retirement provides a retirement income that is more than adequate until life expectancy.

4. Retiring Early

We have estimated the Retirement Savings Gap for the individuals/couples based on their current superannuation savings and savings patterns and an earlier retirement age as set out in Table 8.

This age reflects current behavioural patterns. However, the age at which an individual retires has a significant impact on determining whether their savings will be sufficient to provide an adequate retirement income. The age at retirement can affect adequacy in the following ways:

- The individual's longevity. If we compare two retirees who differ only by age, the period over which the younger retiree must spread their retirement savings is longer. This is because the time until death for the younger retiree is expected to be longer than for the older retiree; and
- The individual's ability to save for retirement. In general, individuals who retire at a younger age have had less time to accumulate their retirement savings.

A deferral of the retirement age would allow individuals more time to accumulate benefits and they would then also live a shorter period in retirement.

We have estimated that the savings required for the individuals to have an adequate retirement income is significantly higher than their projected savings at retirement. In all cases, the individuals need to almost double their estimated savings at retirement in order to be adequate in retirement (except for Cameo 7, where an extra contribution of only 10% of salary is required). Cameos 3, 4, 10 and 11 actually need to more than triple their current estimated savings at retirement. The table below contains the results of our estimates.

Table 8. Expected Retirement Saving Gap - Maintaining Current Expectations

Cameo	Sex	Age	Income \$	Current Super Savings \$	Super Contributions (% of Gross Salary)		Career Break	Retirement Age	Savings at Retirement \$	Savings Required for Adequacy \$	Expected Retirement Savings Gap \$
					Employer	Member					
1	F	38	60,000	50,000	11	4	None	65	367,400	701,900	334,500
2	M	45	80,000	90,000	9	5	None	65	372,000	871,600	499,600
3	F	22	40,000	0	9	0	5 Yrs ¹	60	186,100 ³	687,400	501,300
4	M	40	110,000	100,000	9	0	None	65	424,900	1,388,100	963,200
5	M	48	78,000	95,000	9	2	None	65	468,900	798,000	329,100
	F	45	66,000	55,000	9	5	5 Yrs ²	62			
6	M	37	120,000	110,000	9	0	None	65	707,400	1,370,700	663,300
	F	33	54,000	35,000	9	0	5 Yrs ²	61			
7	M	30	54,000	40,000	9	0	None	65	532,800	582,900	50,100
	F	29	48,000	25,000	9	0	None	64			
8	M	40	90,000	85,000	9	0	None	65	486,700	884,300	397,600
	F	35 ⁴	45,000	30,000	9	0	5 Yrs ²	60			
9	M	16	14,508	0	9	0	None	60	200,800	386,400	185,600
10	F	18	31,629	0	9	0	5 Yrs ¹	65	303,300	1,349,500	1,046,200
11	M	22	40,000	0	9	0	None	65	434,600	1,501,500	1,066,900

1. Starting when she is aged 27.

2. Starting immediately.

3. There is a gap between when this individual runs out of savings and when she receives the Age Pension.

4. Her current age has been increased to 35 so that she can retire at the same time as her spouse. This achieves the effect of reducing her working life by two years (from 22 years to 20 years).

In general, the significant increases in the RSG are due to the individuals relying fully on their superannuation savings until they are eligible for the Age Pension at age 67. This highlights the need to assist older workers to find jobs so they can defer consumption of their retirement benefits.

Table 9. Increased Cost of Retiring Early

Cameo	Change in Savings at Retirement		Change in Savings Required for Adequacy		Change in Expected Retirement Savings Gap	
	(\$)	(%)	(\$)	(%)	(\$)	(%)
1	(30,100)	(8)	62,800	10	92,900	38
2	(34,100)	(8)	46,500	6	80,600	19
3	(56,700)	(23)	203,200	42	259,900	108
4	(32,800)	(7)	55,500	4	88,300	10
5	(49,200)	(9)	103,300	15	152,500	86
6	(53,800)	(7)	139,000	11	192,800	41
7	(38,000)	(7)	60,800	12	50,100	N/A
8	(40,000)	(8)	42,800	5	82,800	26
9	(51,700)	(20)	148,100	62	185,600	N/A
10	(24,900)	(8)	96,000	8	120,900	13
11	(32,900)	(7)	57,700	4	90,600	9

Tables 10 and 11 show the contributions required to achieve an adequate retirement income until their respective life expectancies and until their 75th survival percentile ages.

The generally high levels of contributions show that:

- Their current level of superannuation savings and their savings patterns are not on track to providing an adequate retirement income;
- The SG of 9% of gross salary will not be sufficient to provide an adequate retirement income; and
- High levels of voluntary contributions are required to bridge the RSG (in fact the total voluntary contributions are impractically high except for Cameo 7).

Table 10. Contribution Rates Required to Receive an Adequate Retirement Income until Life Expectancy - Maintaining Current Expectations

Cameo	Current Contribution Rate (% of Gross Salary)		Incremental Contributions (% of Gross Salary)		Total Contributions to Achieve Adequacy (% of Gross Salary)	
	Employer	Member	Employer	Member	Employer	Member
1	11.0	4.0	17.9	0.0	28.9	4.0
2	9.0	5.0	17.3	11.1	26.3 ¹	16.1
3	9.0	0.0	24.2	0.0	33.2	0.0
4	9.0	0.0	9.9	18.8	18.9 ¹	18.8
5	9.0	2.0	18.1	0.0	27.1 ¹	2.0
	9.0	5.0	11.9	0.0	20.9	5.0
6	9.0	0.0	8.1	0.0	17.1 ¹	0.0
	9.0	0.0	26.2	0.0	35.2	0.0
7	9.0	0.0	2.0	0.0	11.0	0.0
	9.0	0.0	0.0	0.0	9.0	0.0
8	9.0	0.0	14.2	0.0	23.2 ¹	0.0
	9.0	0.0	5.2	0.0	14.2	0.0
9	9.0	0.0	8.3	0.0	17.3	0.0
10	9.0	0.0	17.4	11.1	26.4 ¹	11.1
11	9.0	0.0	12.0	8.5	21.0 ¹	8.5

1. This is the maximum concessional contributions that can be made for this individual without breaching the concessional contributions cap.

Table 11. Contribution Rates Required to Receive an Adequate Retirement Income until 75th Survival Percentile - Maintaining Current Expectations

Cameo	Current Contribution Rate (% of Gross Salary)		Incremental Contributions (% of Gross Salary)		Total Contributions to Achieve Adequacy (% of Gross Salary)	
	Employer	Member	Employer	Member	Employer	Member
1	11.0	4.0	23.5	2.9	34.5 ¹	6.9
2	9.0	5.0	17.3	25.0	26.3 ¹	30.0
3	9.0	0.0	32.2	2.6	41.2 ¹	2.6
4	9.0	0.0	9.9	28.7	18.9 ¹	28.7
5	9.0	2.0	18.1	6.9	27.1 ¹	8.9
	9.0	5.0	23.7	0.0	32.7 ¹	5.0
6	9.0	0.0	8.1	5.7	17.1 ¹	5.7
	9.0	0.0	30.3	0.0	39.3 ¹	0.0
7	9.0	0.0	7.2	0.0	16.2	0.0
	9.0	0.0	0.0	0.0	9.0	0.0
8	9.0	0.0	14.2	0.0	23.2 ¹	0.0
	9.0	0.0	27.1	0.0	36.1	0.0
9	9.0	0.0	13.3	0.0	22.3	0.0
10	9.0	0.0	17.4	26.1	26.4 ¹	26.1
11	9.0	0.0	12.0	19.6	21.0 ¹	19.6 ²

1. This is the maximum concessional contributions that can be made for this individual without breaching the concessional contributions cap.

The table below shows the proportion of total retirement income received that was derived from Age Pension benefits. In general, the Age Pension will form a significant source of income during retirement.

Table 12. Proportion of Total Retirement Income from Age Pension

Cameo	Proportion of Total Retirement Income from Age Pension for Adequate Retirement Income Until:	
	Life Expectancy (%)	75 th Survival Percentile (%)
1	20.9	16.2 ¹
2	11.1	7.5 ¹
3	27.4 ¹	18.0
4	1.1	0.5 ¹
5	25.5	24.0
6	9.1	6.8
7	39.9	38.9
8	24.0	21.8
9	47.8 ¹	45.1 ¹
10	2.4 ¹	2.3 ¹
11	0.9 ¹	0.8 ¹

1. In some years the actual income received is greater than adequate due to minimum pension payment rules.

5. Higher Level of Adequacy

The Retirement Savings Gap is sensitive to the definition of adequacy. In this section we summarise the effect of increasing the definition of adequacy from 62.5% to 65.0% of pre-retirement income.

As expected, a slight increase in the definition of adequacy significantly increases the RSG for the majority of the Cameos. The relatively large increases in the RSG demonstrate the sensitivity of the RSG to the definition of adequacy. An increase of 2.5% of pre-retirement income increases the RSG by 7% to 31% for all Cameos. Tables 13 and 14 summarise the impact of increasing the definition of adequacy to 65% of pre-retirement income.

Table 13. Cameo Results - Higher Level of Adequacy

Cameo	Sex	Age	Income \$	Current Super Savings \$	Super Contributions (% of Gross Salary)		Career Break	Retirement Age	Savings at Retirement \$	Savings Required for Adequacy \$	Expected Retirement Savings Gap \$
					Employer	Member					
1	F	38	60,000	50,000	11	4	None	67	397,500	693,400	295,900
2	M	45	80,000	90,000	9	5	None	67	406,100	874,800	468,700
3	F	22	40,000	0	9	0	5 Yrs ¹	67	242,800	532,800	290,000
4	M	40	110,000	100,000	9	0	None	67	457,700	1,393,400	935,700
5	M	48	78,000	95,000	9	2	None	67	518,100	749,700	231,600
	F	45	66,000	55,000	9	5	5 Yrs ²	64			
6	M	37	120,000	110,000	9	0	None	67	761,200	1,311,500	550,300
	F	33	54,000	35,000	9	0	5 Yrs ²	63			
7	M	30	54,000	40,000	9	0	None	67	570,800	573,500	2,700
	F	29	48,000	25,000	9	0	None	66			
8	M	40	90,000	85,000	9	0	None	67	526,700	901,800	375,100
	F	33	45,000	30,000	9	0	5 Yrs ²	60			
9	M	16	14,508	0	9	0	None	67	252,500	266,200	13,700
10	F	18	31,629	0	9	0	5 Yrs ¹	67	328,200	1,317,900	989,700
11	M	22	40,000	0	9	0	None	67	467,500	1,509,500	1,042,000

1. Starting when she is aged 27.

2. Starting immediately.

Table 14. Change from Retiring at Age 67

Cameo	Change in Savings at Retirement		Change in Savings Required for Adequacy		Change in Expected Retirement Savings Gap	
	(\$)	(%)	(\$)	(%)	(\$)	(%)
1	0	0	54,300	8	54,300	22
2	0	0	49,700	6	49,700	12
3	0	0	48,600	10	48,600	20
4	0	0	60,800	5	60,800	7
5	0	0	55,000	8	55,000	31
6	0	0	79,800	6	79,800	17
7	0	0	51,400	10	2,700	N/A
8	0	0	60,300	7	60,300	19
9	0	0	27,900	12	13,700	N/A
10	0	0	64,400	5	64,400	7
11	0	0	65,700	5	65,700	7

Tables 15 and 16 show the contributions required to achieve an adequate retirement income until life expectancy and until the 75th survival percentile with adequacy defined as 65% of pre-retirement income.

The contribution rates required to achieve adequacy until life expectancy requires total contributions (both concessional and non-concessional) equivalent to at least 20% of gross salary (combined for couples) for all Cameos (except Cameos 7 and 9). Total contributions of between a quarter and half of gross salary are required to achieve an adequate income until the respective 75th survival percentile ages (except for Cameos 7 and 9).

Such high levels of contributions are not realistic and simply illustrate the sensitivity of the RSG to the definition of adequacy.

Table 15. Contribution Rates Required to Receive an Adequate Retirement Income until Life Expectancy - Adequacy Defined as 65.0% of Pre-Retirement Income

Cameo	Current Contribution Rate (% of Gross Salary)		Incremental Contributions (% of Gross Salary)		Total Contributions to Achieve Adequacy (% of Gross Salary)	
	Employer	Member	Employer	Member	Employer	Member
1	11.0	4.0	14.5	0.0	25.5	4.0
2	9.0	5.0	17.3	6.9	26.3 ¹	11.9
3	9.0	0.0	10.8	0.0	19.8	0.0
4	9.0	0.0	9.9	15.6	18.9 ¹	15.6
5	9.0	2.0	15.4	0.0	24.4	2.0
	9.0	5.0	0.0	0.0	9.0	5.0
6	9.0	0.0	8.1	0.0	17.1 ¹	0.0
	9.0	0.0	14.1	0.0	23.1	0.0
7	9.0	0.0	0.1	0.0	9.1	0.0
	9.0	0.0	0.0	0.0	9.0	0.0
8	9.0	0.0	13.9	0.0	22.9	0.0
	9.0	0.0	0.0	0.0	9.0	0.0
9	9.0	0.0	0.5	0.0	9.5	0.0
10	9.0	0.0	17.4	7.8	26.4 ¹	7.8
11	9.0	0.0	12.0	6.8	21.0 ¹	6.8

1. This is the maximum concessional contributions that can be made for this individual without breaching the concessional contributions cap.

Table 16. Contribution Rates Required to Receive an Adequate Retirement Income until the 75th Survival Percentile - Adequacy Defined as 65.0% of Pre-Retirement Income

Cameo	Current Contribution Rate (% of Gross Salary)		Incremental Contributions (% of Gross Salary)		Total Contributions to Achieve Adequacy (% of Gross Salary)	
	Employer	Member	Employer	Member	Employer	Member
1	11.0	4.0	23.5	0.9	34.5 ¹	4.9
2	9.0	5.0	17.3	18.0	26.3 ¹	23.0
3	9.0	0.0	22.0	0.0	31.0	0.0
4	9.0	0.0	9.9	25.1	18.9 ¹	25.1
5	9.0	2.0	18.1	0.0	27.1 ¹	2.0
	9.0	5.0	19.8	0.0	28.8	5.0
6	9.0	0.0	8.1	2.0	17.1 ¹	2.0
	9.0	0.0	30.3	0.0	39.3	0.0
7	9.0	0.0	4.7	0.0	13.7	0.0
	9.0	0.0	0.0	0.0	9.0	0.0
8	9.0	0.0	14.2	0.0	23.2 ¹	0.0
	9.0	0.0	20.0	0.0	29.0	0.0
9	9.0	0.0	5.4	0.0	14.4	0.0
10	9.0	0.0	17.4	20.9	26.4 ¹	20.9
11	9.0	0.0	12.0	15.9	21.0 ¹	15.9

1. This is the maximum concessional contributions that can be made for this individual without breaching the concessional contributions cap.

The table below shows the proportion of total retirement income received that was derived from Age Pension benefits. Once again, this shows that the Age Pension will, in general, be a significant source of income for the many retirees.

Table 17. Proportion of Total Retirement Income from Age Pension

Cameo	Proportion of Total Retirement Income from Age Pension for Adequate Retirement Income Until:	
	Life Expectancy (%)	75 th Survival Percentile (%)
1	20.6	15.1 ¹
2	11.2	8.0 ¹
3	35.2 ¹	22.7 ¹
4	1.5	0.8 ¹
5	26.6	24.2
6	10.1	7.1
7	40.5	38.8
8	23.0	20.7
9	57.6 ¹	51.6 ¹
10	2.7 ¹	2.7 ¹
11	1.3 ¹	1.1 ¹

1. In some years the actual income received is greater than adequate due to minimum pension payment rules.

6. Impact of No Mortality Improvement

Mortality for the Australian population has improved quite significantly over the last few years and mortality rates have reduced substantially since the publication of the Australian Life Tables 2000 - 2002. An inspection of the mortalities published in the ABS Life Tables (since 2002), shows an average annual improvement in mortality of 3.0%².

While we do not expect such significant improvements in mortality to occur in perpetuity, we do expect them to continue for quite some time. We note that most group insurance renewals for the last 12 months have resulted in savings of 20% to 30% of premium reflecting much improved claims experience. Consequently, we do not believe the forecasts are too optimistic.

Mortality improvements result in an increase in the average longevity of the Australian population, thereby increasing the savings required by individuals to provide themselves with an adequate retirement income. In this section, we show the impact that expected improvements in mortality have upon the expected Retirement Savings Gap for the individuals.

Tables 18 and 19 summarise the significant impact that expected mortality improvements have on the RSG for all Cameos by determining the RSG if there were no mortality improvement. If we did not have the expected improvements, the RSG would be reduced by between 30% and 80% for all Cameos (where an RSG existed). Conversely, if mortality improvements exceed those we expect, the costs of retirement will rise by even more.

Table 18. Cameo Results - Without Mortality Improvement

Cameo	Sex	Age	Income \$	Current Super Saving \$	Super Contributions (% of Gross Salary)		Career Break	Retirement Age	Savings at Retirement \$	Savings Required for Adequacy \$	Expected Retirement Savings Gap \$
					Employer	Member					
1	F	38	60,000	50,000	11	4	None	67	397,500	463,700	66,200
2	M	45	80,000	90,000	9	5	None	67	406,100	615,500	209,400
3	F	22	40,000	0	9	0	5 Yrs ¹	67	242,800	342,500	99,700
4	M	40	110,000	100,000	9	0	None	67	457,700	1,046,300	588,600
5	M	48	78,000	95,000	9	2	None	67	518,100	553,000	34,900
	F	45	66,000	55,000	9	5	5 Yrs ²	64			
6	M	37	120,000	110,000	9	0	None	67	761,200	876,700	115,500
	F	33	54,000	35,000	9	0	5 Yrs ²	63			
7	M	30	54,000	40,000	9	0	None	67	570,800	379,800	Nil
	F	29	48,000	25,000	9	0	None	66			
8	M	40	90,000	85,000	9	0	None	67	526,700	633,800	107,100
	F	33	45,000	30,000	9	0	5 Yrs ²	60			
9	M	16	14,508	0	9	0	None	67	252,500	159,800	Nil
10	F	18	31,629	0	9	0	5 Yrs ¹	67	328,200	877,700	549,500
11	M	22	40,000	0	9	0	None	67	467,500	980,300	512,800

1. Starting when she is aged 27.

2. Starting immediately.

² ABS Catalogue number 3302.0.55.001, 2002 - 2004 is the earliest publication, while 2005 - 2007 is the latest publication. The average annual improvement in mortality of 3.0% was estimated from the difference in mortality rates estimated from between the two publications.

Table 19. Change from Retiring at Age 67

Cameo	Change in Savings at Retirement		Change in Savings Required for Adequacy		Change in Expected Retirement Savings Gap	
	(\$)	(%)	(\$)	(%)	(\$)	(%)
1	0	0	(175,400)	(27)	(175,400)	(73)
2	0	0	(209,600)	(25)	(209,600)	(50)
3	0	0	(141,700)	(29)	(141,700)	(59)
4	0	0	(286,300)	(21)	(286,300)	(33)
5	0	0	(141,700)	(20)	(141,700)	(80)
6	0	0	(355,000)	(29)	(355,000)	(75)
7	0	0	(142,300)	(27)	N/A	N/A
8	0	0	(207,700)	(25)	(207,700)	(66)
9	0	0	(78,500)	(33)	N/A	N/A
10	0	0	(375,800)	(30)	(375,800)	(41)
11	0	0	(463,500)	(32)	(463,500)	(47)

Tables 20 and 21 show the contributions required without an improvement in mortality to achieve an adequate retirement income until life expectancy and until the 75th survival percentile. As expected, the contribution rates to achieve an adequate retirement income have also reduced quite significantly.

Table 20. Contribution Rates Required to Receive an Adequate Retirement Income until Life Expectancy - Impact of Mortality

Cameo	Current Contribution Rate (% of Gross Salary)		Incremental Contributions (% of Gross Salary)		Total Contributions to Achieve Adequacy (% of Gross Salary)	
	Employer	Member	Employer	Member	Employer	Member
1	11.0	4.0	3.2	0.0	14.2	4.0
2	9.0	5.0	11.4	0.0	20.4	5.0
3	9.0	0.0	3.7	0.0	12.7	0.0
4	9.0	0.0	9.9	5.5	18.9 ¹	5.5
5	9.0	2.0	2.3	0.0	11.3	2.0
	9.0	5.0	0.0	0.0	9.0	5.0
6	9.0	0.0	2.8	0.0	11.8	0.0
	9.0	0.0	0.0	0.0	9.0	0.0
7	9.0	0.0	Nil ²	0.0	9.0	0.0
	9.0	0.0		0.0	9.0	0.0
8	9.0	0.0	4.0	0.0	13.0	0.0
	9.0	0.0	0.0	0.0	9.0	0.0
9	9.0	0.0	Nil ²	0.0	9.0	0.0
10	9.0	0.0	15.1	0.0	24.1	0.0
11	9.0	0.0	9.9	0.0	18.9	0.0

1. This is the maximum concessional contributions that can be made for this individual without breaching the concessional contributions cap.

2. This Cameo is estimated to be sufficient beyond the 50th survival percentile.

Table 21. Contribution Rates Required to Receive an Adequate Retirement Income until 75th Survival Percentile - Impact of Mortality

Cameo	Current Contribution Rate (% of Gross Salary)		Incremental Contributions (% of Gross Salary)		Total Contributions to Achieve Adequacy (% of Gross Salary)	
	Employer	Member	Employer	Member	Employer	Member
1	11.0	4.0	10.5	0.0	21.5	4.0
2	9.0	5.0	17.3	4.6	26.3 ¹	9.6
3	9.0	0.0	6.9	0.0	15.9	0.0
4	9.0	0.0	9.9	12.9	18.9 ¹	12.9
5	9.0	2.0	11.8	0.0	20.8	2.0
	9.0	5.0	0.0	0.0	9.0	5.0

Cameo	Current Contribution Rate (% of Gross Salary)		Incremental Contributions (% of Gross Salary)		Total Contributions to Achieve Adequacy (% of Gross Salary)	
	Employer	Member	Employer	Member	Employer	Member
6	9.0 9.0	0.0 0.0	8.1 4.9	0.0 0.0	17.1 ¹ 13.9	0.0 0.0
7	9.0 9.0	0.0 0.0	Nil ²	0.0 0.0	9.0 9.0	0.0 0.0
8	9.0 9.0	0.0 0.0	9.3 0.0	0.0 0.0	18.3 9.0	0.0 0.0
9	9.0	0.0	Nil	0.0	9.0	0.0
10	9.0	0.0	17.4	2.8	26.4 ¹	2.8
11	9.0	0.0	12.0	2.8	21.0	2.8

1. This is the maximum concessional contributions that can be made for this individual without breaching the concessional contributions cap.

2. This Cameo is estimated to be sufficient beyond the 75th survival percentile.

The table below shows the proportion of total retirement income received that was derived from Age Pension benefits if mortality improvements are ignored.

Table 22. Proportion of Total Retirement Income from Age Pension

Cameo	Proportion of Total Retirement Income from Age Pension for Adequate Retirement Income Until:	
	Life Expectancy (%)	75 th Survival Percentile (%)
1	29.0	24.7
2	16.4	13.0
3	41.2	40.4 ¹
4	2.9	2.3
5	26.8	29.3 ³
6	11.8	12.8 ³
7	43.9 ^{2,4}	44.2 ^{2,4}
8	22.0	25.3
9	60.4 ^{1,2,4}	61.1 ^{1,2,4}
10	6.5	4.8
11	3.3	2.6

1. In some years the actual income received is greater than adequate due to minimum pension payment rules.

2. Superannuation savings at retirement is estimated to provide a retirement income that is more than adequate beyond the 75th joint survival percentile.

3. The increase in the Age Pension benefits received for these Cameos is due to the increase in the Age Pension Income Test deductible.

4. The increase in the Age Pension benefits received for these Cameos is largely the result of neither Cameo requiring extra savings to be adequate beyond their 75th survival percentile.

7. Increasing Contributions Pattern - Full Career

This scenario estimates the RSG based on a contributions pattern that is consistent with an individual's age and income. That is, voluntary contributions will generally increase with age and income.

Although the assumed contributions rates will not bridge their RSG (refer to Section 3.1.1), this scenario shows that members need to start early and supplement the 9% SG frequently if they hope to build an adequate retirement income.

As expected, the extra voluntary contributions reduce the RSG quite significantly for Cameos 10 and 11 (the SG in combination with the Age Pension already provides an adequate retirement income for Cameo 9).

Table 23. Cameo Results - Full Career Increasing Contributions Pattern

Cameo	Sex	Age	Income \$	Current Super Savings	Super Contributions (% of Gross Salary)		Career Break	Retirement Age	Savings at Retirement \$	Savings Required for Adequacy \$	Expected Retirement Savings Gap \$
					Employer	Member					
9	M	16	14,508	0	9	0	None	67	414,200	238,300	Nil
10	F	18	31,629	0	9	0	5 Yrs ¹	67	495,200	1,253,500	758,300
11	M	22	40,000	0	9	0	None	67	653,900	1,443,800	789,900

1. Starting when she is aged 27.

Table 24. Change from Retiring at Age 67

Cameo	Change in Savings at Retirement		Change in Savings Required for Adequacy		Change in Expected Retirement Savings Gap	
	(\$)	(%)	(\$)	(%)	(\$)	(%)
9	161,700	64	0	0	N/A	N/A
10	167,000	51	0	0	(167,000)	(18)
11	186,400	40	0	0	(186,400)	(19)

8. Individual Cameos - Mid Career

8.1 Cameo 1

We estimate that:

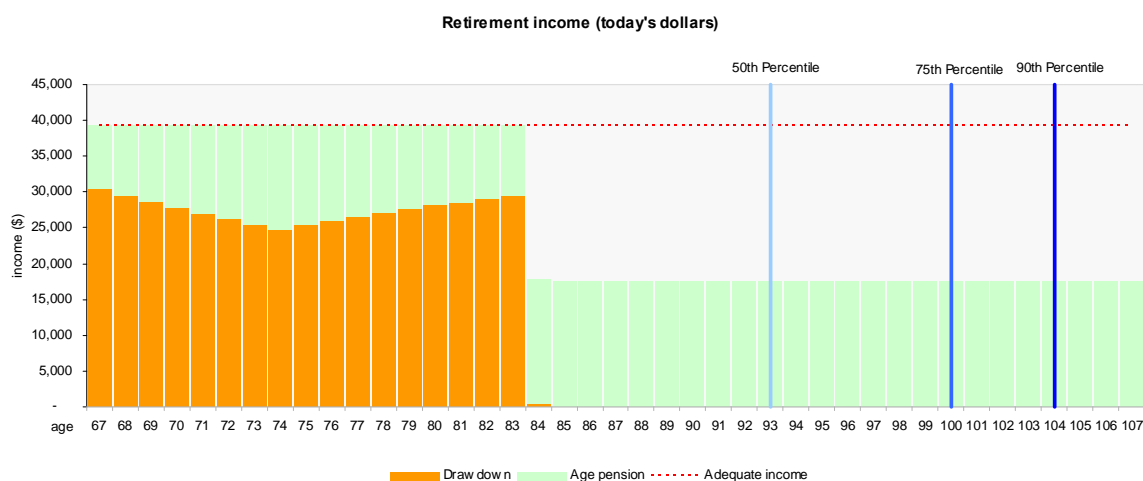
- Her superannuation balance at retirement will be approximately \$397,500;
- In order to receive an adequate retirement income until her life expectancy (age 93) her superannuation balance at retirement needs to be approximately \$639,100;
- Her Retirement Savings Gap is \$241,600;
- To achieve adequacy until her life expectancy:
 - Her employer needs to pay total contributions of 22.8% of her gross salary (this is an increase of 11.8% from 11.0%); and
 - She continues to contribute 4.0% of her gross salary.
- To achieve adequacy until age 100 (the age where 25% of females who retire at age 67 in 2039 will live):
 - Her employer needs to pay total contributions of 32.6% of her gross salary (this represents an increase of 21.6% from 11.0%); and
 - She continues to contribute 4.0% of her gross salary.

The graph below is the annual income that Cameo 1 is estimated to receive. It shows that:

- From the start of her retirement she is able to supplement her pension drawdown with the Age Pension;
- She has an adequate retirement income up to and including age 83;
- By retiring at age 67 and making contributions during her extended working life she manages to have an adequate retirement income for 17 years; and
- From age 85 onwards her only source of income is the Age Pension. That is, she must live on the Age Pension for 9 years until her life expectancy.

The graph below shows the annual income that she is estimated to receive as a result of retiring at age 67.

Graph 1. Cameo 1 - Retiring at Age 67



8.2 Cameo 2

We estimate that:

- His superannuation balance at retirement will be approximately \$406,100;
- In order to receive an adequate retirement income until his life expectancy (age 89) his superannuation balance at retirement needs to be approximately \$825,100;
- His Retirement Savings Gap is \$419,000;
- To achieve adequacy until his life expectancy:
 - His employer needs to pay total contributions of 26.3% (or approximately \$21,000 over the next year). This is the proportion of his salary that ensures that he will never breach the concessional contributions cap³, it represents an increase of 17.3% from 9.0%; and
 - He needs to make total contributions of 9.6% of his gross salary (this is an increase of 4.6% from 5.0%).
- To achieve adequacy until age 96 (the age where 25% of males who retire at age 67 in 2032 will live):
 - His employer needs to pay total contributions of 26.3%; and
 - He needs to make total contributions of 20.3% of his gross salary (this is an increase of 15.3% from 5.0%).

The graph below is the annual income that Cameo 2 is estimated to receive. It shows that:

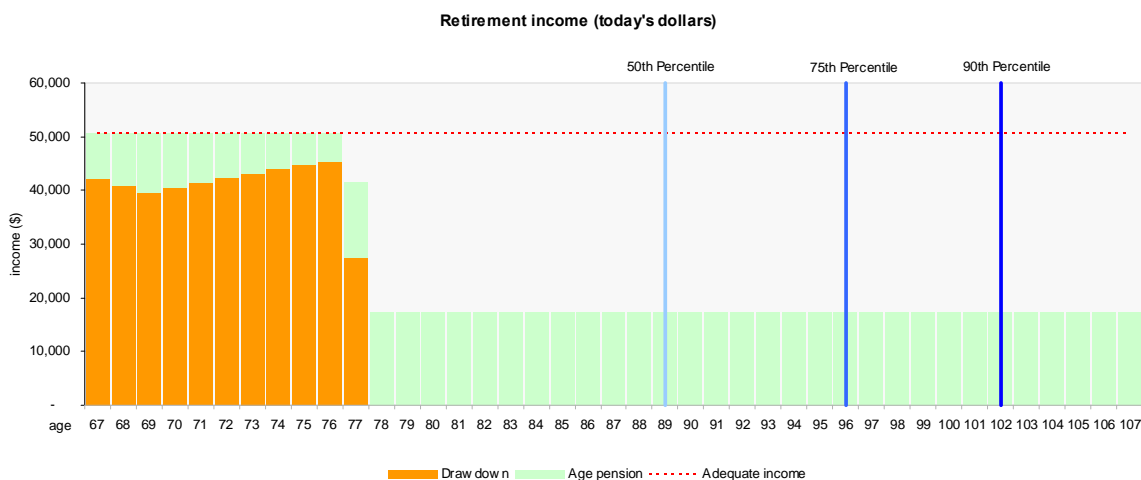
- From the start of his retirement he is able to supplement his pension drawdown with the Age Pension;
- He has an adequate retirement income up to and including age 76;

³ The concessional contributions cap is currently \$25,000 for persons aged under 50. However, the concessional contributions is indexed with CPI and rounded down to the nearest \$5,000. This means that the concessional contributions cap will decrease in today's dollars as time passes. It follows that 26.3% of his salary reaches the contributions cap later in his career despite 26.3% of his current salary (or approximately \$21,000) being below the current concessional contributions cap.

- By retiring at age 67 and making contributions during his extended working life he manages to have an adequate retirement income for 10 years; and
- From age 78 onwards his only source of income is the Age Pension. That is, he must live on the Age Pension for 10 years until his life expectancy.

The graph below shows the annual income that Cameo 2 is estimated to receive as a result of retiring at age 67.

Graph 2. Cameo 2 - Retiring at Age 67



8.3 Cameo 3

We estimate that:

- Her superannuation balance at retirement will be approximately \$242,800;
- In order to receive an adequate retirement income until her life expectancy (age 95) her superannuation balance at retirement needs to be approximately \$484,200;
- Her Retirement Savings Gap is \$241,400;
- To achieve adequacy until her life expectancy:
 - Her employer needs to pay total contributions of 17.9% of her gross salary (this is an increase of 8.9% from 9.0%); and
 - She does not need to make any contributions.
- To achieve adequacy until age 102 (the age where 25% of females who retire at age 67 in 2055 will live):
 - Her employer needs to pay total contributions of 28.5% of her gross salary (this represents an increase of 19.5% from 9.0%); and
 - She does not need to make any contributions.
- Without a career break we estimate that:
 - Her superannuation balance at retirement will be approximately \$306,500. This is an increase of \$63,700 (or 26%);

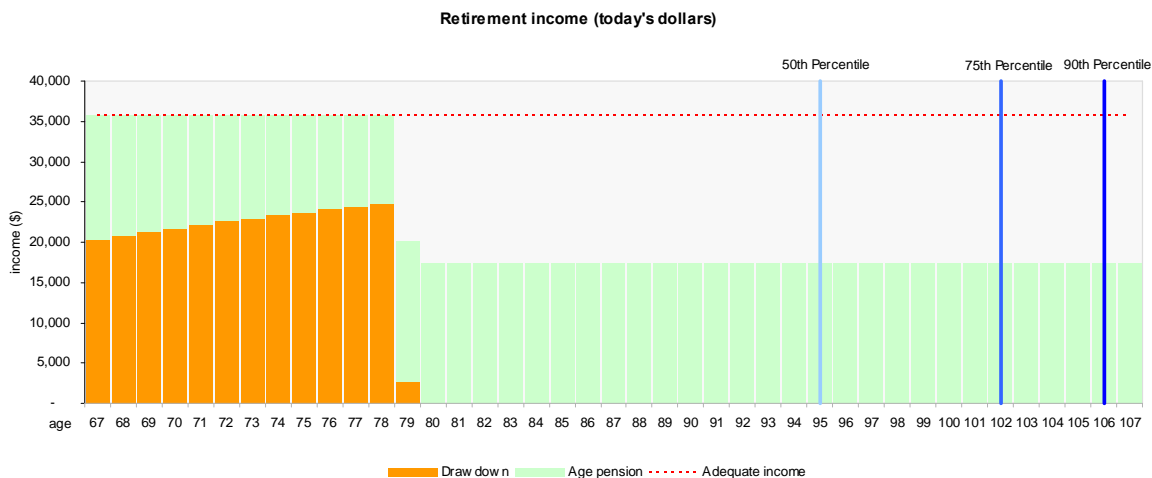
- However, because she has not taken any breaks from the workforce she has received more promotional salary increases. The extra promotional salary increases result in an increase in her defined adequate income meaning that her superannuation balance at retirement needs to be approximately \$652,100 to provide an adequate retirement income until her life expectancy. This is an increase of \$167,900 (or 35%);
- Accordingly, her Retirement Savings Gap increases by \$104,200 (or 43%) to \$345,600; and
- If we assume her superannuation balance at retirement needs to be \$484,200 (i.e. the same as if she did have a career break), then her Retirement Savings Gap would have reduced to \$177,700. This would have resulted in a decrease in her Retirement Savings Gap of approximately 26%.

The graph below is the annual income that Cameo 3 is estimated to receive. It shows that:

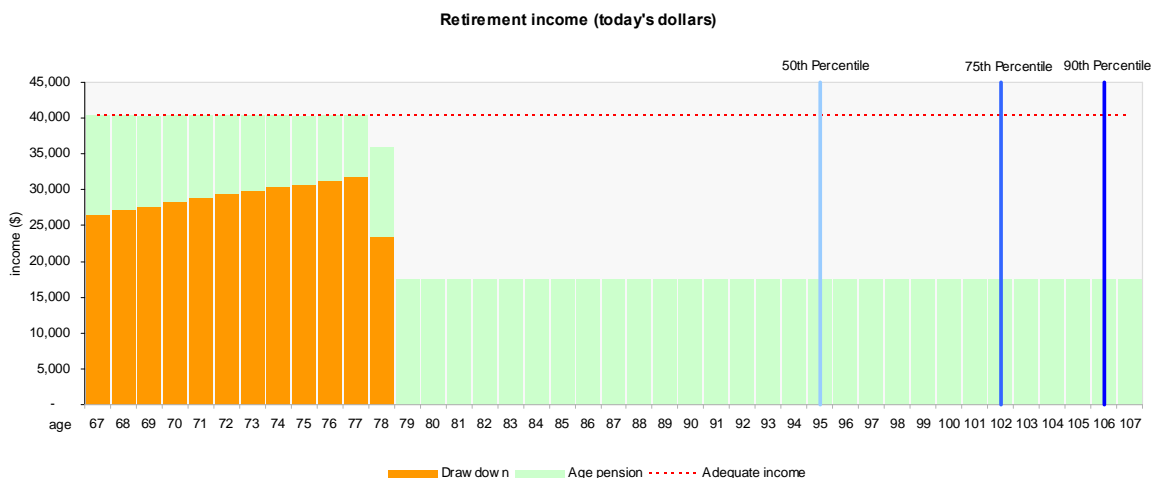
- From the start of her retirement she is able to supplement her pension drawdown with the Age Pension;
- She has an adequate retirement income up to and including age 78;
- By retiring at age 67 and making contributions during her extended working life she manages to have an adequate retirement income for 12 years; and
- From age 80 onwards her only source of income is the Age Pension. That is, she must live on the Age Pension for 16 years until her life expectancy.

The graph below shows the annual income that Cameo 3 is estimated to receive as a result of retiring at age 67.

Graph 3. Cameo 3 - Retiring at Age 67



The graph below is the annual income that Cameo 3 is estimated to receive if she does not have a career break:



8.4 Cameo 4

We estimate that:

- His superannuation balance at retirement will be approximately \$457,700;
- In order to receive an adequate retirement income until his life expectancy (age 90) his superannuation balance at retirement needs to be approximately \$1,332,600;
- His Retirement Savings Gap is \$874,900;
- To achieve adequacy until his life expectancy:
 - His employer needs to pay total contributions of 18.9% of his gross salary (or approximately \$20,800 over the next year). This is the proportion of his salary that ensures that he will never breach the concessional contributions cap, it represents an increase of 9.9% from 9.0%; and
 - He needs to make total contributions of 14.1% of his gross salary (this is an increase of 14.1% from nil).
- To achieve adequacy until age 97 (the age where 25% of males who retire at age 67 in 2037 will live):
 - His employer needs to pay total contributions of 18.9%;
 - He needs to make total contributions of 23.1% of his gross salary (this is an increase of 23.1% from nil); and
 - The extra contributions ensure that he will have an adequate income for every year until he is aged 97. However, this contributions rate results in a level of savings at retirement that requires him to draw an income that is significantly more than adequate as a result of minimum pension payment rules.

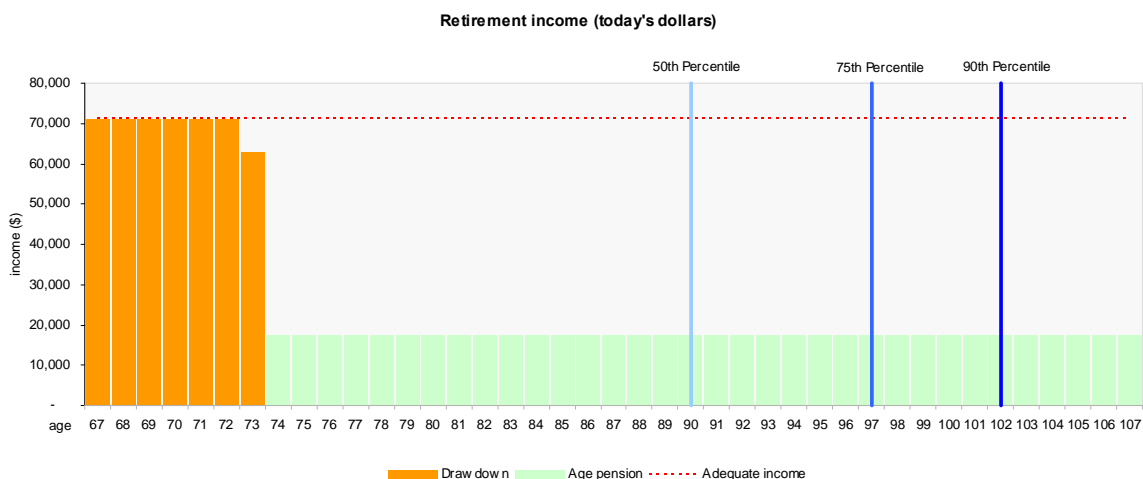
The graph below is the annual income that Cameo 4 is estimated to receive. It shows that:

- The dollar amount of his defined adequate retirement income is relatively large so he is only able to rely on his superannuation savings to draw an adequate retirement income;
- He has an adequate retirement income up to and including age 72;
- By retiring at age 67 and making contributions during his extended working life he manages to have an adequate retirement income for 6 years; and

- From age 74 onwards his only source of income is the Age Pension. That is, he must live on the Age Pension for 17 years until his life expectancy.

The graph below shows the annual income that Cameo 4 is estimated to receive as a result of retiring at age 67.

Graph 4. Cameo 4 - Retiring at Age 67



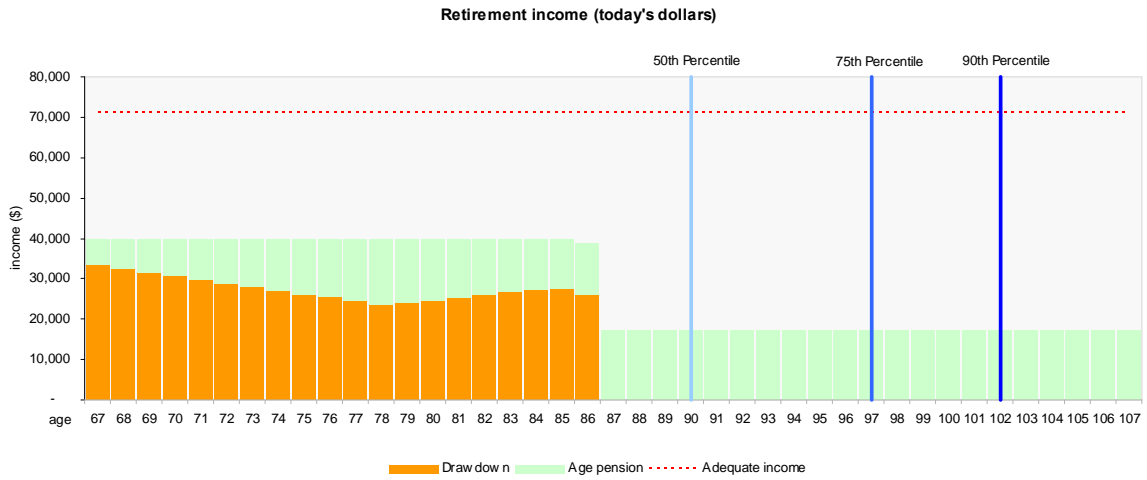
However, we note that it may be more prudent for Cameo 4 to reduce the drawdown from his pension account to a more modest level of \$40,000 p.a. (this figure is based on the Westpac ASFA Comfortable Lifestyle Retirement Standard for Singles which was \$37,822 during the March 2009 quarter).

Reducing the drawdown from his pension account has several significant effects on his retirement income:

- While he will not receive an adequate income in any year, the number of years he must rely solely on the Age Pension (until his life expectancy) significantly reduces from 17 years to four years;
- The reduction in his pension drawdown allows him to receive Age Pension benefits from the start of his retirement; and
- The average gap between his actual retirement income and his adequate retirement income reduces from approximately \$38,000 to \$35,000 p.a.. An average decrease of around 9%.

The graph below shows the annual income that Cameo 4 is estimated to receive if he reduces his pension drawdown to \$40,000 p.a..

Graph 5. Cameo 4 - Retiring at Age 67 - Drawing \$40,000 p.a. from Pension Account



9. Couple Cameos - Mid Career

9.1 Cameo 5

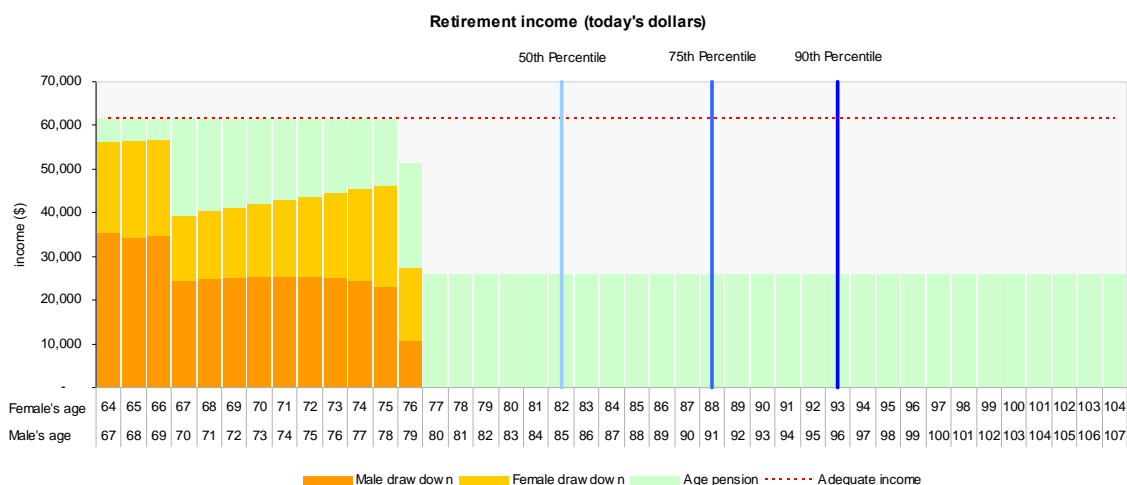
We estimate that:

- Their superannuation balance at retirement will be approximately \$518,100;
- In order to receive an adequate retirement income until age 85 (him) and age 82 (her) respectively (the ages where they are both expected to survive as a couple, that is, their life expectancy as a couple) their superannuation balance at retirement needs to be approximately \$694,400;
- Their Retirement Savings Gap is \$176,600;
- To achieve adequacy until their life expectancy as a couple:
 - His employer needs to pay total contributions of 20.8% of his gross salary (this is an increase of 11.8% from 9.0%);
 - He continues to contribute 2.0% of his gross salary;
 - Her employer needs to pay total contributions of 9.0% of her gross salary (this remains unchanged); and
 - She continues to contribute 5.0% of her gross salary.
- To achieve adequacy until age 91 (him) and age 88 (her) (the ages where there is a 25% chance that they will both still be living as a couple):
 - His employer needs to pay total contributions of 27.1% of his gross salary (this is the maximum concessional contributions that can be made without breaching the contributions cap, it represents an increase of 18.1% from 9.0%);
 - He continues to contribute 2.0% of his gross salary;
 - Her employer needs to pay total contributions of 20.6% of her gross salary (this is an increase of 11.6% from 9.0%); and
 - She continues to contribute 5.0% of her gross salary.

The graph below is the annual income that Cameo 5 is estimated to receive. It shows that:

- From the start of their retirement he is able to supplement their pension drawdown with the Single's benefit rate of the Age Pension;
- Three years from the start of their retirement, when she is aged 67 and he is aged 70, they are eligible to receive the Age Pension at the Couple's benefit rate;
- They have an adequate retirement income up to and including when he is aged 78 and she is aged 75;
- They manage to have an adequate retirement income for 12 years; and
- From when he is aged 80 (and she is aged 77) onwards their only source of income is the Age Pension. That is, they must live solely on the Age Pension for 6 years until their life expectancy as a couple.

Graph 6. Cameo 5 - Retiring at Age 67



9.2 Cameo 6

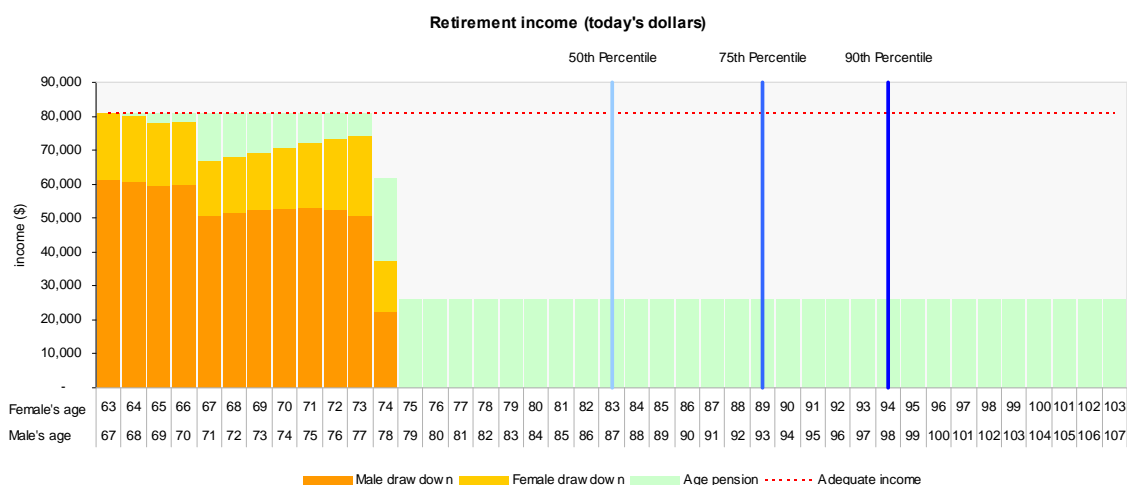
We estimate that:

- Their superannuation balance at retirement will be approximately \$761,200;
- In order to receive an adequate retirement income until age 87 (him) and age 83 (her) respectively (the ages where they are both expected to survive as a couple, that is their life expectancy as a couple) their superannuation balance at retirement needs to be approximately \$1,231,700;
- Their Retirement Savings Gap is \$470,500;
- To achieve adequacy until their life expectancy as a couple:
 - His employer needs to pay total contributions of 17.1% of his gross salary (or approximately \$20,500 over the next year). This is the proportion of his salary that ensures that he will never breach the concessional contributions cap, it represents an increase of 8.1% from 9.0%;
 - He does not need to make any contributions;
 - Her employer needs to pay total contributions of 17.7% of her gross salary (this is an increase of 8.7% from 9.0%); and
 - She does not need to make any contributions.
- To achieve adequacy until age 93 (him) and age 89 (her) (the ages where there is a 25% chance that they will both still be living as a couple):
 - His employer needs to pay total contributions of 17.1% of his gross salary;
 - He needs to make total contributions of 0.3% of his gross salary (an increase of 0.3% from nil);
 - Her employer needs to pay total contributions of 39.3% of her gross salary (this is the maximum concessional contributions that can be made without breaching the contributions cap, it represents an increase of 30.3% from 9.0%); and
 - She does not need to make any contributions.

The graph below is the annual income that Cameo 6 is estimated to receive. It shows that:

- The couple's total assets make him ineligible to receive any Age Pension benefits at the start of retirement. However, one year later he is eligible to receive a partial Age Pension benefit as a Single (she is still below the Age Pension eligibility age of 67);
- After four years from the start of their retirement, when she is aged 67 and he is aged 71, they are eligible to receive the Age Pension at the Couple's benefit rate;
- They have an adequate retirement income up to and including when he is aged 77 and she is aged 73;
- They manage to have an adequate retirement income for 11 years; and
- From when he is aged 79 and she is aged 75 onwards their only source of income is the Age Pension. That is, they must live on the Age Pension for nine years until their life expectancy as a couple.

Graph 7. Cameo 6 - Retiring at Age 67



9.3 Cameo 7

We estimate that:

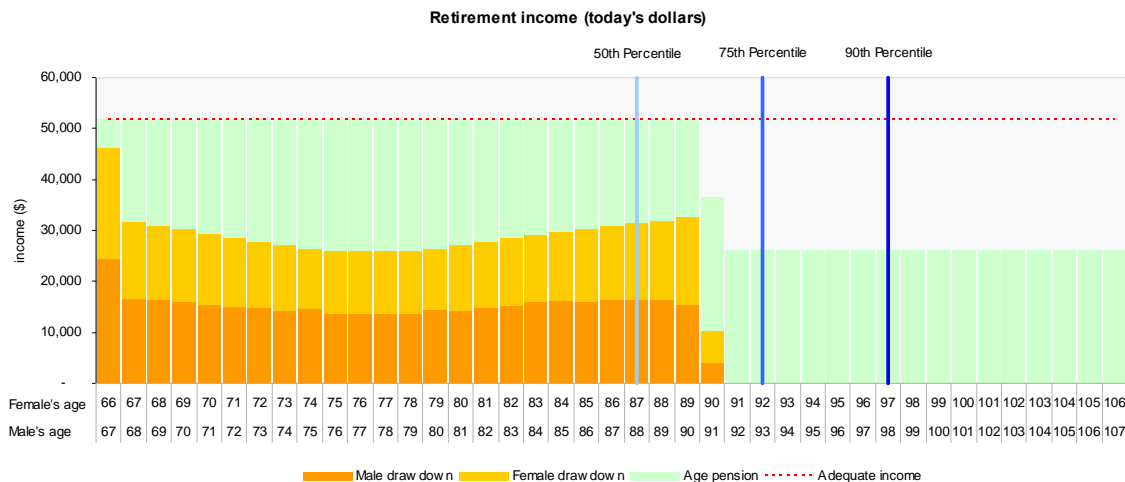
- Their superannuation balance at retirement will be approximately \$570,800;
- In order to receive an adequate retirement income until age 88 (him) and age 87 (her) respectively (the ages where they are both expected to survive as a couple, that is their life expectancy as a couple) their superannuation balance at retirement only needs to be approximately \$522,100;
- They do not have a Retirement Savings Gap. In fact, their estimated savings at retirement is approximately \$48,700 (or 9%) more than is required to provide an adequate retirement income until their life expectancy as a couple;
- They do not need any additional contributions on top of the 9% SG their employers pay to achieve adequacy until their life expectancy as a couple.

- To achieve adequacy until age 93 (him) and age 92 (her) (the ages where there is a 25% chance that they will both still be living as a couple):
 - His employer needs to pay total contributions of 11.2% of his gross salary (this is an increase of 2.2% from 9.0%);
 - He does not need to make any contributions;
 - Her employer continues to pay the SG of 9.0% of her gross salary; and
 - She does not need to make any contributions.

The graph below is the annual income that Cameo 7 is estimated to receive. It shows that:

- From the start of their retirement he is able to supplement their pension drawdown with the Single's benefit rate of the Age Pension;
- In the second year of their retirement they are eligible to receive the Age Pension at the Couple's benefit rate;
- They have an adequate retirement income up to and including when he is aged 90 and she is aged 89;
- They manage to have an adequate retirement income for 24 years. This is two years beyond their life expectancy as a couple; and
- The Age Pension contributed approximately 44% of the total retirement income that they received up to and including their life expectancy as a couple.

Graph 8. Cameo 7 - Retiring at Age 67



9.4 Cameo 8

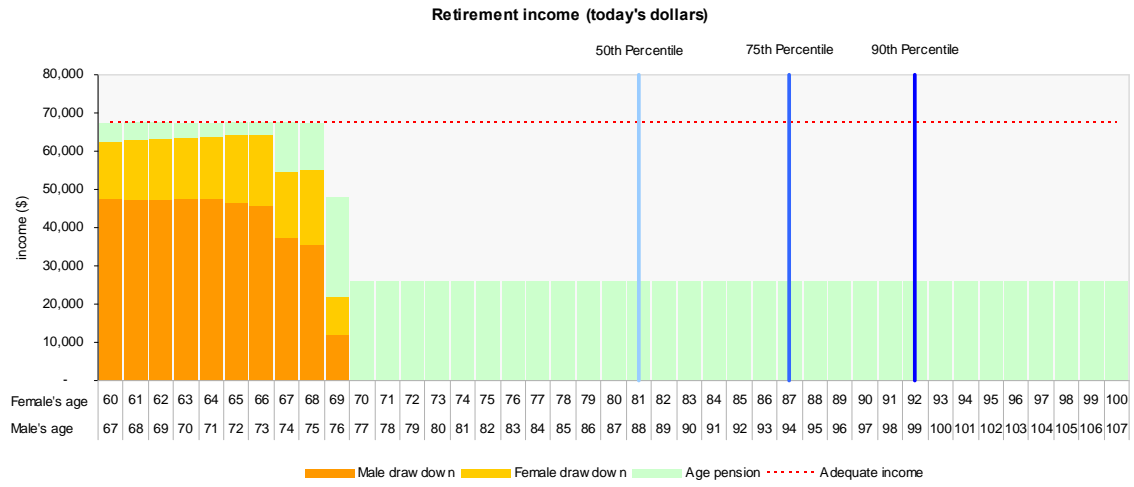
We estimate that:

- Their superannuation balance at retirement will be approximately \$526,700;
- In order to receive an adequate retirement income until age 88 (him) and age 81 (her) respectively (the ages where they are both expected to survive as a couple, that is their life expectancy as a couple) their superannuation balance at retirement needs to be approximately \$841,500;
- Their Retirement Savings Gap is \$314,800;
- To achieve adequacy until their life expectancy as a couple:
 - His employer needs to pay total contributions of 20.6% of his gross salary (this is an increase of 11.6% from 9.0%);
 - He does not need to make any contributions;
 - Her employer continues to pay the SG of 9.0% of her gross salary; and
 - She does not need to make any contributions.
- To achieve adequacy until age 94 (him) and age 87 (her) (the ages where there is a 25% chance that they will both still be living as a couple):
 - His employer needs to pay total contributions of 23.2% of his gross salary (this is the maximum concessional contributions that can be made without breaching the contributions cap, it represents an increase of 14.2% from 9.0%);
 - He does not need to make any contributions;
 - Her employer needs to pay total contributions of 21.5% of her gross salary (this is an increase of 12.5% from 9.0%); and
 - She does not need to make any contributions.

The graph below is the annual income that Cameo 8 is estimated to receive. It shows that:

- From the start of their retirement he is able to supplement their pension drawdown with the Single's benefit rate of the Age Pension;
- In the eighth year of their retirement, when she is aged 67 and he is aged 74, they are eligible to receive the Age Pension at the Couple's benefit rate;
- They have an adequate retirement income up to and including when he is aged 75 and she is aged 68;
- They manage to have an adequate retirement income for nine years; and
- From when he is aged 77 and she is aged 70 onwards their only source of income is the Age Pension. That is, they must live on the Age Pension for 12 years until their life expectancy as a couple.

Graph 9. Cameo 8 - Retiring at Age 67



10. Individual Cameos - Full Career

10.1 Cameo 9

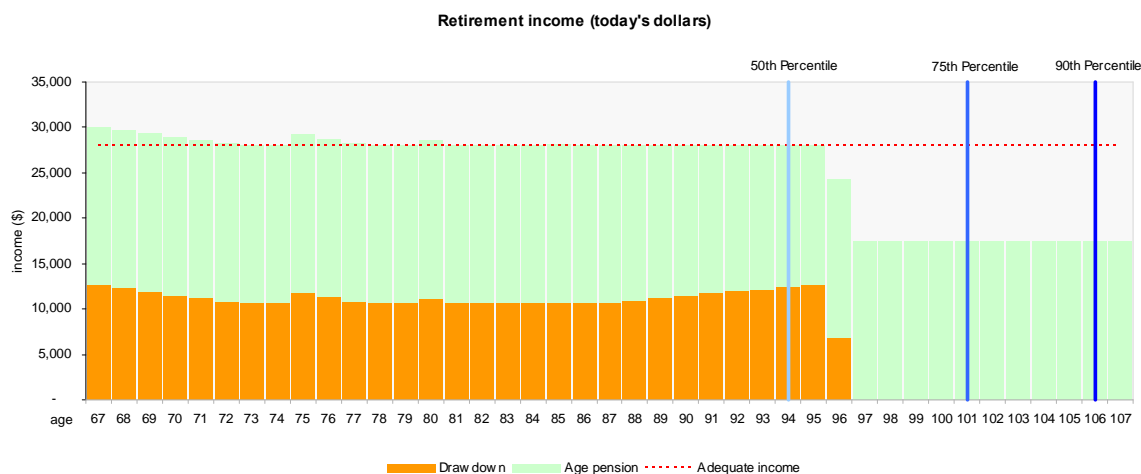
We estimate that:

- His superannuation balance at retirement will be approximately \$252,500;
- In order to receive an adequate retirement income until his life expectancy (age 99), his superannuation balance at retirement only needs to be \$238,300;
- He does not have a Retirement Savings Gap. His estimated savings at retirement is approximately \$14,200 (or 6%) more than is required to provide an adequate retirement income until his life expectancy;
- To achieve adequacy until age 101 (the age where 25% of males who retire at age 67 in 2061 will live):
 - His employer needs to pay total contributions of 12.8% of his gross salary (this is an increase of 3.8% from 9.0%); and
 - He does not need to make any contributions.

The graph below is the annual income that Cameo 9 is estimated to receive. It shows that:

- From the start of his retirement he is able to supplement his pension drawdown with the Age Pension;
- In some years he receives an income that is greater than his defined adequate income. This is a result of the minimum pension payment rules that apply;
- He has an adequate retirement income up to and including when he is aged 95;
- He manages to have an adequate retirement income for 29 years. This is an additional year beyond his life expectancy; and
- The Age Pension contributed approximately 61% of the total retirement income that he received up to and including his life expectancy.

Graph 10. Cameo 9 - Retiring at Age 67



10.2 Cameo 10

We estimate that:

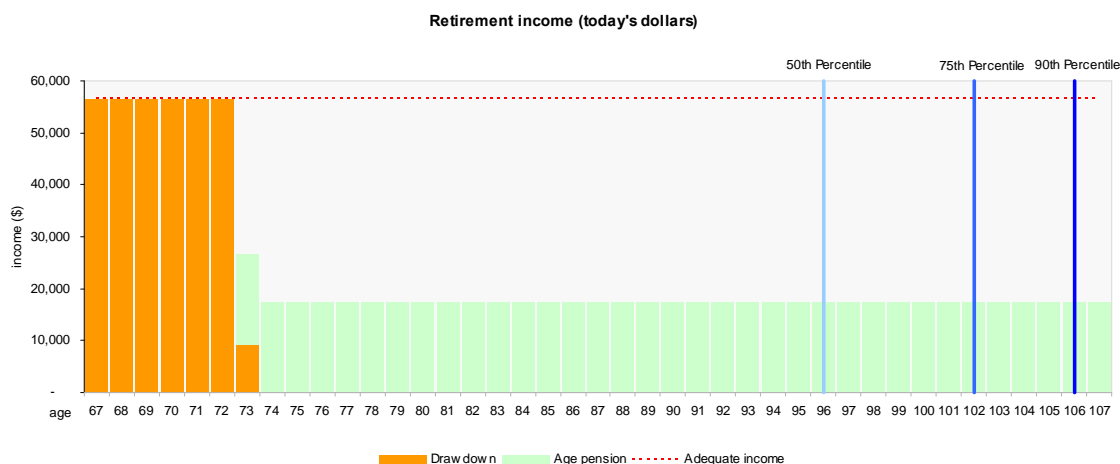
- Her superannuation balance at retirement will be approximately \$328,200;
- In order to receive an adequate retirement income until her life expectancy (age 96) her superannuation balance at retirement needs to be approximately \$1,253,500;
- Her Retirement Savings Gap is \$925,300;
- To achieve adequacy until her life expectancy:
 - Her employer needs to pay total contributions of 26.4% of her gross salary. This is the proportion of her salary that ensures that she will never breach the concessional contributions cap, it represents an increase of 17.4% from 9.0%; and
 - She needs to make total contributions of 6.3% of her gross salary (this is an increase of 6.3% from nil).
- To achieve adequacy until age 102 (the age where 25% of females who retire at age 67 in 2059 will live):
 - Her employer needs to pay total contributions of 26.4% of her gross salary; and
 - She needs to make total contributions of 18.4% of her gross salary.

The graph below is the annual income that Cameo 10 is estimated to receive. It shows that:

- The dollar amount of her defined adequate retirement income is relatively large. The means testing of the Age Pension makes her ineligible to receive any benefits. She must rely solely on her superannuation savings to draw an adequate retirement income;
- She has an adequate retirement income up to and including age 72;
- By retiring at age 67 and making contributions during her extended working life she manages to have an adequate retirement income for 6 years;
- From age 74 onwards her only source of income is the Age Pension. That is, she must live on the Age Pension for 23 years until her life expectancy; and
- In a similar fashion as Cameo 4, she would be able to prolong her superannuation savings by drawing a more modest income from her pension account and supplementing it with the Age Pension.

The graph below shows the annual income that she is estimated to receive as a result of retiring at age 67.

Graph 11. Cameo 10 - Retiring at Age 67



10.3 Cameo 11

We estimate that:

- His superannuation balance at retirement will be approximately \$467,500;
- In order to receive an adequate retirement income until his life expectancy (age 93) his superannuation balance at retirement needs to be approximately \$1,443,800;
- His Retirement Savings Gap is \$976,300;
- To achieve adequacy until his life expectancy:
 - His employer needs to pay total contributions of 21.0% of his gross salary. This is the proportion of his salary that ensures that he will never breach the concessional contributions cap, it represents an increase of 12.0% from 9.0%; and
 - He needs to make total contributions of 5.7% of his gross salary (this is an increase of 5.7% from nil).
- To achieve adequacy until age 100 (the age where 25% of males who retire at age 67 in 2055 will live):
 - His employer needs to pay total contributions of 21.0% of his gross salary; and
 - He continues to contribute 14.2% of his gross salary; and
 - The extra contributions ensure that he will have an adequate income for every year until he is aged 100. However, this contributions rate results in a level of savings at retirement that requires him to draw an income that is significantly more than adequate as a result of minimum pension payment rules (refer to Graph 13).

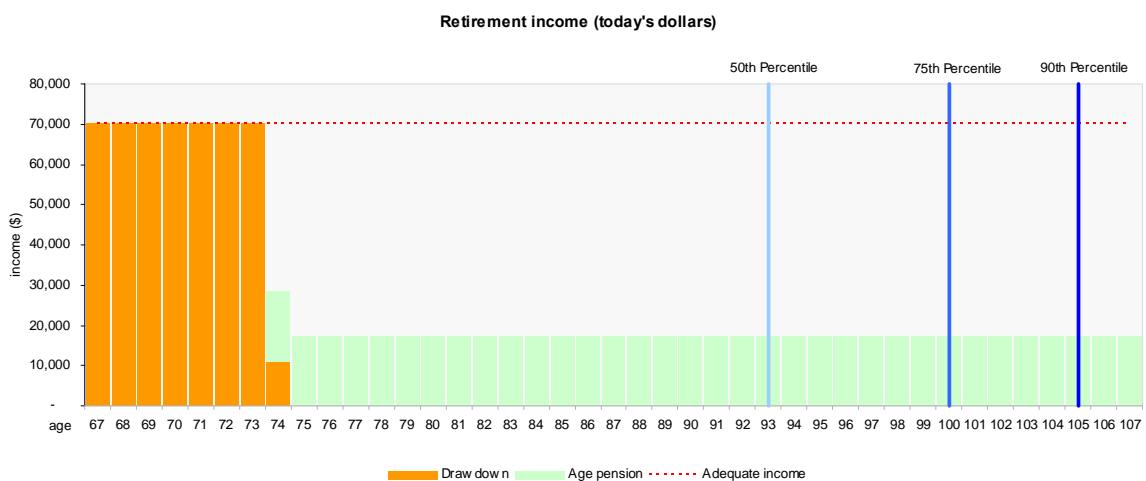
The graph below is the annual income that Cameo 11 is estimated to receive. It shows that:

- The dollar amount of his defined adequate retirement income is relatively large. The means testing of the Age Pension makes him ineligible to receive any benefits. He must rely solely on his superannuation savings to draw an adequate retirement income;
- He has an adequate retirement income up to and including age 73;

- By retiring at age 67 and making contributions during his extended working life he manages to have an adequate retirement income for 7 years;
- From age 75 onwards his only source of income is the Age Pension. That is, he must live on the Age Pension for 19 years until his life expectancy; and
- In a similar fashion as Cameo 4, he would be able to prolong his superannuation savings by drawing a more modest income from his pension account and supplementing it with the Age Pension.

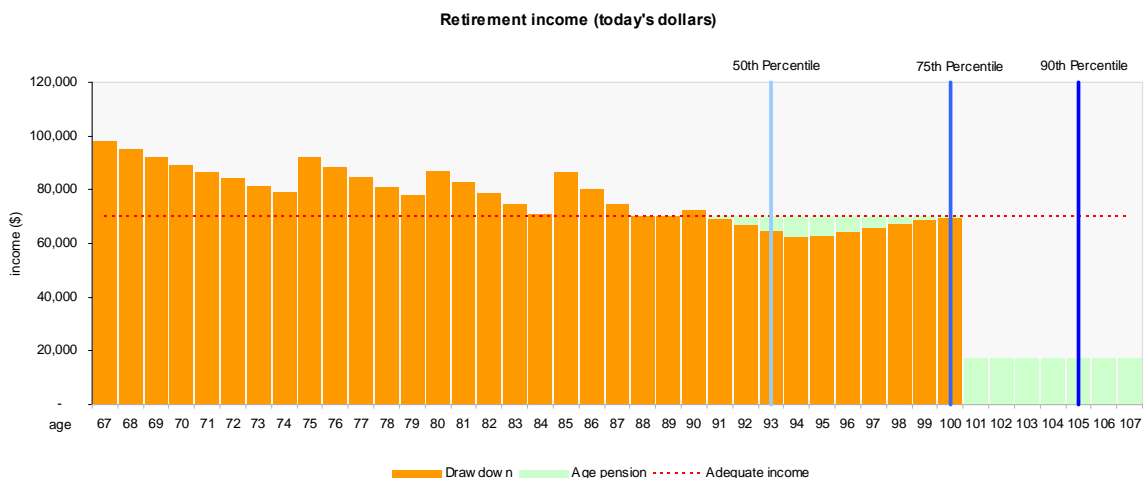
The graph below shows the annual income that he is estimated to receive as a result of retiring at age 67.

Graph 12. Cameo 11 - Retiring at Age 67



Where he has accumulated sufficient funds to provide an adequate retirement income until he is aged 100 (the age where 25% of males who retire at age 67 in 2055 will live), he will be required to draw a more than adequate retirement income in a significant number of years because of minimum pension payment rules. This is shown in Graph 13.

Graph 13. Cameo 11 - Adequate Until Age 100



Appendix A Methodology and Assumptions

A.1 Background

The RSG is a measure of the current shortfall in savings between two amounts:

- The amount required to be saved to ensure “adequacy” in retirement, in conjunction with benefits available from the Age Pension; and
- The amount currently saved in the superannuation system, and estimated to be saved in future years up to retirement.

Calculation of the RSG involves:

- Estimating the amount currently saved in the superannuation system;
- Projecting this amount to retirement, allowing for future investment returns and superannuation contributions;
- Projecting the level of benefit required for “adequacy” in retirement; and
- Determining the effect of the Age Pension payable in retirement.

A.2 Assumptions

The main assumptions are detailed in the following sections.

A.2.1 Integration with Age Pension

In order to show benefits which take into account the Age Pension, we need to take means-testing into account. This requires us to make assessments about the individual’s marital status, home ownership and assets outside superannuation.

As all the cameos are based on people earning less than twice MTAW, we have ignored assets held outside superannuation. In general, this is reasonable as wealth is skewed towards those earning higher incomes. We do make a global adjustment for this in the population RSG.

A.2.2 Economic Assumptions

The main economic assumptions are:

- 7.5% p.a. gross return on the accumulation of assets;
- 1.2% p.a. in fees;
- 4.1% p.a. general wage inflation; and
- 2.5% p.a. general price inflation.

A.2.3 Taxation

We have made assumptions about future taxation as follows:

- 15% tax on all future employer (“concessional”) contributions; and
- 6% investment tax on the investment roll up to retirement, 0% thereafter.

The investment tax assumption is less than the 15% levied on investments of superannuation funds, but makes implicit allowance for imputation credits used by funds to offset the tax and the 10% capital gains concession available to super funds.

This results in an effective net return of 5.9% prior to retirement, after allowing for tax and expenses.

A.2.4 Mortality

In respect of post-retirement mortality, we have assumed mortality rates in accordance with the Australian Life Tables 2000-02 as published by the Australian Government Actuary. We have also made allowance for improvements in mortality rates based on the 25-year improvement trend as published in the report on the Australian Life Tables 2000-02.

We note that the Australian Government Actuary is due to publish the Australian Life Tables 2005-07 by the end of October 2009. We plan to update the results of this report with the mortality rates published in these upcoming life tables.

A.2.5 Adequacy

The calculation results are heavily dependent on the definition of “adequacy” in retirement. We have assumed a superannuation benefit to be adequate if it can provide an indexed income stream in retirement equal to 62.5% of gross earnings until life expectancy.

More detailed discussion on adequacy can be found in the *Superannuation Adequacy* report we have already prepared for IFSA (October 2009).

A.2.6 Current savings

For each cameo, we have assumed an opening superannuation account balance consistent with the age, gender and salary profile in respect of each individual/couple. We have not considered assets outside superannuation as most Australians hold little beyond their family home and superannuation. We do not expect more than 5% of Australians earning up to twice national average earnings (about \$120,000 a year) to hold sufficient assets outside superannuation to materially affect their retirement savings gap.

A.2.7 Promotional Salary Increases

For Cameos 1 to 8 we have assumed a promotional salary scale consistent with those used in the superannuation industry. Sample promotional increases are shown in the table below.

Table 25. Promotional Salary Increases

Age	Promotional Salary Increase
20	7.5%
30	2.2%
40	0.6%
50	0.1%
60	0.0%

For Cameos 9, 10 and 11 we have assumed promotional salary scales based on the following tables. The salary scales for Cameos 9 and 10 are based on the award rates for a plumber and

nurse respectively while the salary scale for Cameo 11 is indicative of a typical career in the financial services industry.

Table 26. Salary Scale - Plumber

Career Year	Age	Job Title	Annual Wage (\$) ¹	Award Rate (\$) ²
1	16	Journeyman plumber trainee apprentice: Building industry	14,508	7.44
5	20	Journeyman plumber	37,518	19.24
10	25	Journeyman plumber in charge of up to two employees	38,825	19.91
13	28	Journeyman plumber in charge of three to five employees	40,385	20.71
16	31	Journeyman plumber in charge of six to ten employees	42,413	21.75
25	40	Journeyman plumber in charge of ten or more employees	44,987	23.07

1. Based on 37.5 hour working week for a 52 week year.

2. Sourced from Plumbers and Gasfitters (State) Award [AN120684-NSW], published July 2008.

Table 27. Salary Scale - Nurse

Career Year	Age	Job Title	Annual Wage (\$) ¹	Award Rate (\$) ²
1	18	Assistant in Nursing	31,629	16.22
5	22	Enrolled Nurse	37,889	19.43
10	32 ³	Registered Nurse	42,296	21.69
18	40	Nursing Unit Manager	64,467	33.06
22	44	Deputy Director of Nursing 75 - 100 Beds	70,727	36.27
30	52	Director of Nursing 200 - 250 Beds	90,578	46.45

1. Based on 37.5 hour working week for a 52 week year.

2. Sourced from Nursing Homes, &c., Nurses' (State) Award [AN120387-NSW], published August 2008.

3. She takes a career break at age 27

Table 28. Salary Scale - Financial Services Graduate

Career Year	Age	Job Title	Annual Salary (\$)
1	22	Graduate	40,000
5	26	Senior Analyst	60,000
10	31	Junior Manager	75,000
17	38	Senior Manager	90,000
24	45	Head of Department	110,000

A.2.8 Drawdown Rates

We have assumed that retirees will drawdown their superannuation savings at their "adequate" income rate until their savings have been depleted. The drawdown rate has been determined with reference to potential Age Pension benefits (if applicable) and any minimum drawdown

rates. That is the drawdown rate plus any Age Pension benefits will be equal to a retiree's "adequate income."

A.2.9 Age Pension

The Age Pension forms one of the pillars that comprise the Australian "three-pillar" retirement income structure (the other pillars are the Superannuation Guarantee of 9% of salaries and voluntary contributions into superannuation). As the calculations undertaken for these cameos are at an individual level, we have shown results explicitly with and without allowance for the Age Pension.

In calculating the effect of the Age Pension, we have allowed for the gradual increase in the Age Pension eligibility age that was made in the May 2009 Budget. The table below sets out the details of the gradual increases to the eligibility age for the Age Pension.

Table 29. Changes to Age Pension Eligibility Age

Date	New Age Pension age	Affects People born	Current age
1 st July 2017	65.5	1 July 1952 - 31 Dec 1953	55.5 to 57
1 st July 2019	66.0	1 January 1954 - 30 June 1955	54 to 55.5
1 st July 2021	66.5	1 July 1955 - 31 Dec 1956	52.5 to 54
1 st July 2023	67.0	1 Jan 1957 onwards	Up to age 52.5

A.2.10 Government Co-Contribution Scheme

The Government Co-contribution Scheme has been in operation since 1st July 2003. We have included the co-contribution in our estimates (where eligible) of the Cameos' superannuation savings at retirement.

In the May 2009 Budget the government announced that it would temporarily scale back the co-contribution scheme. The table below contains the details of the superseded co-contribution scheme (2008-09) and the temporary scaling back of the scheme.

Table 30. Changes to Co-contribution Scheme

Contribution Year	Co-contribution Matching Rate	Maximum Co-contribution	Reduction Rate Per Dollar Above Income Threshold
2008 - 09	150%	\$1,500	\$0.05
2009 - 10	100%	\$1,000	\$0.03
2010 - 11	100%	\$1,000	\$0.03
2011 - 12	100%	\$1,000	\$0.03
2012 - 13	125%	\$1,250	\$0.04
2013 - 14	125%	\$1,250	\$0.04
2014 - onwards	150%	\$1,500	\$0.05

We have assumed the income thresholds will increase in line with price inflation over future years.

A.2.11 Career Breaks

We have made allowance for career breaks as stipulated in each cameo. Where a career break is taken, we have assumed the individual re-enters the workforce at the same level of income as before the break, allowing for general wage inflation.

A.2.12 Increasing Contributions Pattern

The three tables below contain the assumed contributions under the Increasing Contributions Scenario for the Full Career Cameos (namely Cameos 9, 10 and 11). The contributions rates were chosen with reference to the individuals' ability to save at different stages of their lives. That is:

- Individuals with relatively low incomes generally do not have a sufficient disposable income to make voluntary superannuation contributions; and
- Relatively young individuals do not generally prioritise saving for retirement as expenditure on their mortgage and children consume most of their income.

Table 31. Increasing Contributions Pattern - Cameo 9 - Plumber

Career Year	Age	Job Title	Super Contributions (% of Gross Salary)	
			Employer	Member
1	16	Journeyman plumber trainee apprentice: Building industry	9.0	0.0
5	20	Journeyman plumber	9.0	0.0
10	25	Journeyman plumber in charge of up to two employees	9.0	1.0
13	28	Journeyman plumber in charge of three to five employees	9.0	1.0
16	31	Journeyman plumber in charge of six to ten employees	9.0	1.0
25	40	Journeyman plumber in charge of ten or more employees	9.0	1.0

Table 32. Increasing Contributions Pattern - Cameo 10 - Nurse

Career Year	Age	Job Title	Super Contributions (% of Gross Salary)	
			Employer	Member
1	18	Assistant in Nursing	9.0	0.0
5	22	Enrolled Nurse	9.0	0.0
10	32 ³	Registered Nurse	9.0	1.0
18	40	Nursing Unit Manager	10.0	1.0
22	44	Deputy Director of Nursing 75 - 100 Beds	11.0	1.0
30	52	Director of Nursing 200 - 250 Beds	13.0	1.0

Table 33. Increasing Contributions Pattern - Cameo 11 - Financial Services Graduate

Career Year	Age	Job Title	Super Contributions (% of Gross Salary)	
			Employer	Member
1	22	Graduate	9.0	0.0
5	26	Senior Analyst	9.0	1.0
10	31	Junior Manager	11.0	1.0
17	38	Senior Manager	12.0	0.0
24	45	Head of Department	15.0	0.0

A.2.13 Concessional Contributions Cap

The May 2009 Budget introduced an age-based cap on concessional contributions. From the 2009-10 financial year, the maximum total concessional contributions that persons aged under 50 can make have been halved to \$25,000 p.a. (indexed). The existing cap for those aged 50 and over remains at \$50,000 but from July 2012 will be reduced to be in line with the prevailing cap for those aged under 50.

Generally speaking, persons with the ability to breach the concessional contributions cap are unlikely to have an inadequate retirement income.

A.2.14 Couples

Most studies consider adequacy for an individual even though a significant number of retirees are couples with different income and expenditure needs. We have treated a couple as a couple rather than the aggregation of two individuals.

To account for the different income and expenditure needs of a couple we have assumed that the "adequate" level for a couple in retirement is 75% of the sum of each individual's "adequate" retirement income. This reflects the benefits couples receive from economies of scale and is based on the proportion between the Singles Age Pension Rate and the Couple Age Pension Rate.