AGGREGATE ANALYSES of POLICIES for ACCESSING SUPERANNUATION ACCUMULATIONS

George P Rothman

Retirement Income Modelling Task Force

c/- The Treasury, Parkes Place, PARKES ACT.

June 1997

Abstract

RIMGROUP is a comprehensive cohort based lifetime accumulation model developed by the Retirement Income Modelling Task Force. This paper uses the RIMGROUP model framework to analyse the impact of important policy decisions about accessing superannuation savings as announced in the 1997-98 Budget. The policies considered are the new preservation arrangements such that from July 1999 all future contributions to superannuation and earnings will be preserved; the phased increase in the preservation age implemented in full by 2025; and tightening of the arrangements for early release of superannuation benefits. In addition the paper analyses the implications of a possible policy of allowing (targeted) persons access to their superannuation balances to assist them to purchase a first home.

The improved preservation arrangements are projected to lead to a significant increase in the aggregate level of superannuation assets and to a substantial increase in national saving reaching 0.9% of GDP by 2020. In the short term there is some loss of government revenue associated with reduced ETP taxation, but eventually this is reversed with a positive fiscal balance achieved. The tightened arrangements for early release of superannuation benefits have an impact of a very similar nature but at a much lower level.

The Government has released a discussion paper relating to allowing access to superannuation for the purposes of home ownership. Allowing first home buyers limited access to their superannuation balances, subject to a means test, would lead to a reduction in the balances of superannuation funds and a reduction in national saving of about 0.2% of GDP in 2020. Such a policy would result in some additional taxes on the withdrawals made, but over the long term this gain is more than offset by lower earning taxes, additional pension costs and lower income taxes from the retired.

Additionally new summary projections of Australian superannuation assets are provided which incorporate the policy decisions of the 1996-7 and 1997-98 budgets. Superannuation asset levels are projected to reach $365b in June 2000, $810b in 2010 and $1525b in 2020. Putting a reasonable bound of uncertainty around these figures suggests a range of $345-385b for June 2000, with higher percentage error bars as we go further out. The principal distributional feature by account type is the rise in the importance of Superannuation Guarantee accounts which are projected to increase from around 12% of total superannuation assets now to 23% in 2020.

The Retirement Income Modelling Task Force is financed by the Departments of Treasury, Social Security and Finance from the reallocation of existing resources.

I would like to thank my colleagues on the RIM Task Force for their advice and assistance.

The views expressed in this paper are those of the author and do not necessarily reflect the views of the Departments financing RIM or of their Ministers or advisers. The author would be pleased to discuss aspects of this paper and can be contacted at the above address or by phone 06-2633947, Email gpr@treasury.gov.au, or fax 2632724

AGGREGATE ANALYSES OF POLICIES

FOR ACCESSING SUPERANNUATION ACCUMULATIONS

INTRODUCTION

In order that superannuation policies lead to improved retirement incomes for older Australians and contribute to the task of improving national saving it is widely accepted that access to superannuation accumulations before retirement must be limited. The term 'Preservation' is used in this context to refer to the requirement that superannuation benefits be maintained in a superannuation or rollover fund[1] until retirement on or after 'preservation age' or a condition of release is satisfied.

In the 1997-98 Budget the Government made a number of important decisions related to access (see Costello, 1997)

1. From 1 July 1999 the preservation arrangements for superannuation are to change so that all future contributions (including member contributions) and earnings are preserved[2];

2. the Government confirmed that it will proceed with increasing the preservation age according to the timetable previously announced by the former Government (that is, to phase in from 2015 to 2025);

3. the arrangements for early release of superannuation benefits are to be tightened, with effect from 1 July 1997 so that:

   (i) funds may only release benefits to a person who leaves Australia permanently after that person has reached the preservation age,

   (ii) the $500 preservation threshold is abolished,

   (iii) the current ad hoc assessment of claims for release of benefits on grounds of severe financial hardship is replaced with an objective test of hardship[3],

   (iv) defined criteria for determining applications on compassionate grounds will be introduced to clarify the circumstances covered by this condition.

Additionally the Government has released a discussion paper on the implications of allowing access to superannuation for the purposes of assisting persons to purchase a first home.

---

[1] But not necessarily the same superannuation or rollover fund.

[2] But with persons still being able to obtain early access to preserved benefits where the withdrawn benefits are taken in the form of a non-commutable life pension or lifetime annuity.

[3] This is to be administered by fund trustees based on evidence that the member has received specified Commonwealth income support payments for a continuous period of twelve months (or a cumulative period of nine months for people aged 55 or over)

This paper sets out the approaches taken and results obtained by using the RIMGROUP model to assess how different policy options and decisions relating to access lead to changes in aggregate superannuation assets, national saving and tax revenues affecting the fiscal balance. Analyses of this kind were used as inputs to consideration by the Government of policy options in the Budget process and in preparation of the discussion paper on housing access.

Additionally, reflecting public interest in such matters, new summary projections of superannuation asset levels are provided which incorporate all the relevant policy decisions of the 1996-7 and 1997-98 budgets.

The RIMGROUP MODEL

RIMGROUP is a comprehensive cohort projection model of the Australian population which starts with a population and labour force model, tracks the accumulation of superannuation in a specified set of account types, accumulates non superannuation savings, and calculates tax payments and expenditures, social security payments including pensions and the generation of other retirement incomes. Developing RIMGROUP has been a major project of the Retirement Income Modelling Task Force and contributed to by all members of the Task Force.

These projections are done for each year of the projection period *separately for each birthyear gender decile cohort*. The model projections begin in July 1992. The RIMGROUP model extends the task force's aggregate modelling capability which until 1996 relied upon its enhanced version of the RIP model. Such aggregate modelling has been of policy significance and the results have been reported earlier and at this Colloquium including in FitzGerald (1993), Gallagher et al (1993), Rothman and Bacon (1994), RIM Task Force (1994) and Gallagher (1995).

More details of the RIMGROUP model are given in Rothman (1996), Gallagher and Preston (1993) and Gallagher (1995). Further details are also in Attachment A including the current set of economic parameters used.

Strengths and Limitations

The strengths of RIMGROUP lie in:

- The major new parameter research underlying the model in relation to many distributional aspects of superannuation, non superannuation savings, labour force dynamics and retirement documented in earlier papers (including Bacon, 1994, 1995, 1996a-b; Brown 1994, 1996; Rothman 1995,a-d). Research has been carried out on superannuation sectors not previously extensively researched, such as the public sector, self employed and rollover funds. An extensive set of decrements have also been researched to account for losses on job change, disability, hardship and death as well as retirement. A number of significant new data sets have been created as part of this research.
- The comprehensiveness of the model including the integration into RIMGROUP of a full population model, labour force projection model, the endogenous calculation of GDP, an extensive study of retirement, coverage of saving other than superannuation and wide coverage of government payments to beneficiaries and pensioners, together with modelling of taxation, tax expenditures, and national saving. This comprehensiveness means that RIMGROUP can serve as a framework for other medium longer term modelling such as projecting dependency ratios and the longer term costs of the health system; to a limited extent it has been so used already (Commission of Audit, 1996).
- The detail incorporated into the model, particularly the strong distributional framework which distinguishes by superannuation account, age, income and gender. Taxation and government

payments are also coded in considerable detail. A rich range of distributional results are available as well as key aggregates.

- The very long time frame, to 2060 if required and appropriate.
- The facility to make changes in all underlying parameters and assumptions including the ability to make direct changes through a user friendly interface to the most frequently changed policy and economic parameter settings.

The principal limitations of RIMGROUP lie:

- in the essential nature of a group model. The model is a very large one incorporating some 113000 records, with thousands of variables calculated for each record and with subgroups formed for those with different superannuation accounts, different ages of retirement and so on. Nonetheless, it is not an individually based microsimulation and there is some necessary 'pooling' of work experiences, account balances, income levels and so on. For example, unemployment is viewed as a temporary phenomenon and superannuation accumulation is shared by those working and (temporarily) not working[4]. Similarly migrants are pooled with others in the model and may dilute the assets of the group they join;
- in macroeconomic linkages being externally imposed rather than endogenous to the model. For example unemployment is exogenously supplied and does not respond automatically to the build up of superannuation or changing retirement rates or other aspects of the economy. In this way it differs from the AMP model (AMP, 1996); and
- in some data which continue to be unavailable in the detail needed. Even though extensive research and some commissioning of new data has been undertaken, the extensive and demanding data base will require further development and fine tuning.

Recent work on RIMGROUP includes further benchmarking, particularly of the retirement phase, further development and parameter revision of the retirement phase, extension of the concepts for comparing policy options, including particularly national saving concepts and related parameters and offsets (see Gallagher, 1997), and development of counterfactual code to assist in the assessment of tax expenditures related to superannuation. RIMGROUP continues to benchmark very well against key aggregates such the ABS/ISC asset series (ISC,1997).

PRESERVATION ARRANGEMENTS

The broad principle underlying preservation rules is that benefits which have received concessional taxation treatment should be preserved. However, there is wide recognition that this principle is not fully reflected in current preservation rules.

Benefits currently subject to preservation include:

- benefits (ie contributions and earnings) financed from compulsory employer contributions made under the Superannuation Guarantee (SG) system or payable under industrial awards;

[4] But those permanently unable to work through disability are distinguished and treated separately.

- benefits financed from member (usually self employed) deductible contributions;
- benefits accumulated in a fund where the member is the sole contributor (namely, voluntary employee and self employed superannuation contributions) whether they have received concessional treatment or not); and
- any new or improved benefits arising from an arrangement or agreement made after December 1986 for a private sector fund, or July 1990 for a public sector fund.

Under these rules, superannuation fund members who have obtained their superannuation coverage either under industrial awards or under the SG are subject to full preservation in respect of their employer financed superannuation benefits.

Benefits financed from voluntary employer superannuation contributions (ie those in excess of SG), including under salary sacrifice arrangements, are currently not subject to preservation, even where the employer has received a tax deduction, as long as those benefits do not represent a new or improved benefit provided since December 1986. Benefits financed from voluntary employee contributions made to a fund also receiving employer contributions are not preserved either. Additionally some other assets are not preserved because they relate to contributions to schemes that pre-date the SG or industrial awards or the other preservation standards.

Overall a large proportion of the assets currently in the system are not preserved. The RIMGROUP data base which incorporates these rules indicates about 65% of account balances are currently not preserved, with this proportion falling over time as a greater proportion of contributions made are required by the SG and therefore preserved. An analysis of how this proportion is projected to change over time under the new and old preservation arrangements is given below in Chart 1.

The previous government had announced a change in preservation arrangements to be implemented on 1 July 1996 (delayed to 1 July 1998) which would have achieved part of the new policy's limitations on access but would have been considerably more complex to administer (see Brown,1997).

MODELLING PRESERVATION IN RIMGROUP

In RIMGROUP preserved and non preserved balances of superannuation funds are allocated initial values and changes in these values are comprehensively accounted for. RIMGROUP includes a comprehensive parameter set specifying job change rates by gender, age and decile and cohorts in RIMGROUP are affected by the preservation arrangements upon job change.

Persons in a cohort with a job change have preserved and unpreserved components of their superannuation balances. Ratios are specified by gender, age and decile which split the destination of the preserved amount between the existing fund and a rollover account. Similarly the unpreserved amount is split between dissipation (consumption), leaving it in the existing fund and moving to a rollover account. Comprehensive data to specify this fine scale allocation is not available and plausible ratios have been inserted; eg the proportions rolled over increase as age increases and the proportion dissipated is higher for lower deciles than for higher ones. Some adjustment is then made to fit the total outflows to available data including the ISC files, ATO data on ETPs and also some privately communicated data from large companies on rollover holdings by age and gender. It is worth noting that in RIMGROUP the amount leaving the system upon job change is very substantial and typically exceeds the amount taken by persons upon retirement. It is also over 10 times the size of the amounts taken upon early release of benefits, eg on hardship grounds.

RIMGROUP MODELLING OF PRESERVATION POLICY CHANGE

A number of runs of the RIMGROUP have been carried out to assess how different preservation policy options are projected to lead to different aggregate superannuation assets, national savings and tax revenues affecting the fiscal balance. The comparative results of such modelling assist the formulation of policy and policy decisions by the Government. The results presented here are for the Budget policy of full preservation policy from July 1999 together with the commitment to raise preservation age, compared with existing preservation policy (as reflected in the forward estimates).

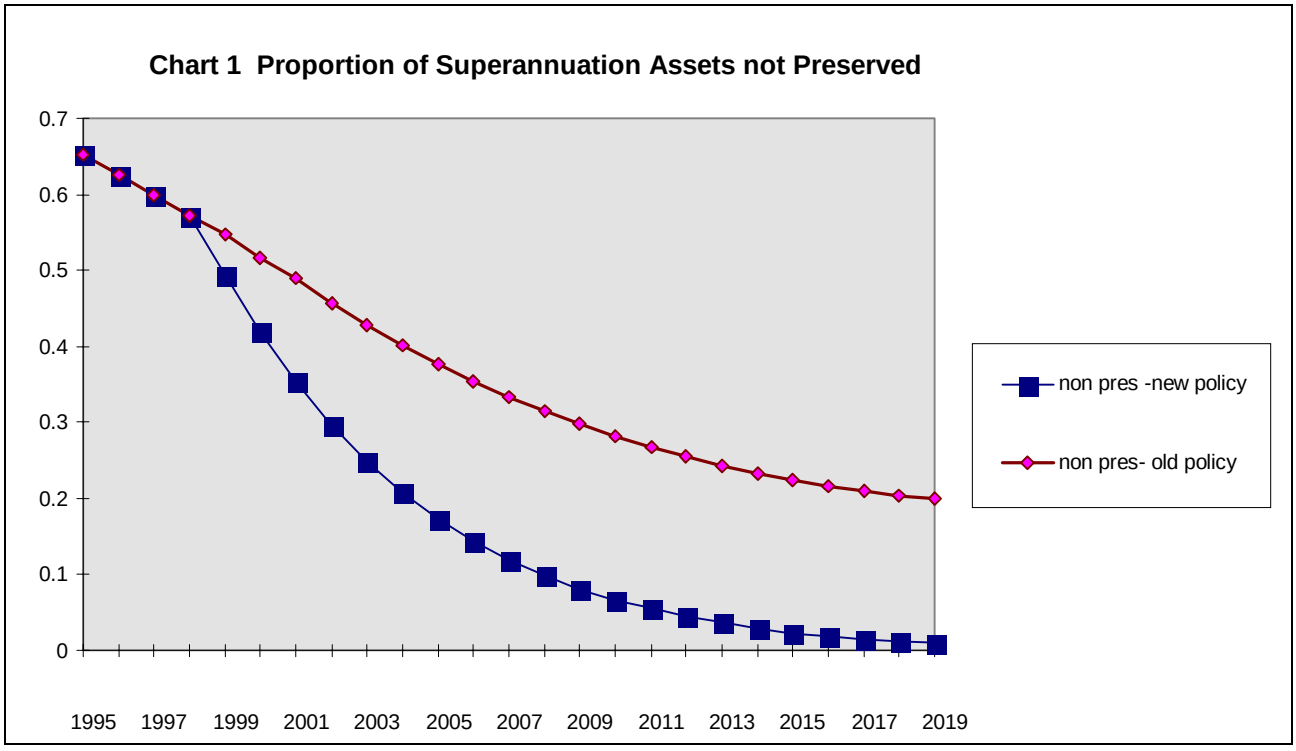
The new policy and the base runs also reflect the full range of superannuation policies announced in the 1996-97 and 1997-98 Budgets, namely:

- opting out;
- provision for use of Retirement Savings Accounts (RSAs);
- spouse contributions and the spouse contribution rebate;
- the superannuation surcharge in respect of high income earners; and
- the replacement of the previous Government's co-contribution proposals with the savings rebate.

Results:

Impact on Preservation Levels

Chart 1 shows how the new tight preservation policy phases in over time such that by 2019-20 less than 1% of superannuation assets are not preserved.



Apart from the dramatic effect of the new policy, the interesting aspect of the chart is how much of the funds would have become preserved anyway over time. This occurs because of the impact of the rising SG schedule; the view is taken in RIMGROUP that existing employer contribution rates essentially stay the same for given age gender and decile as a proportion of salary; over time more and more contributions are effectively converted to SG contributions because of the rising SG scale and preserved even under the old arrangements[5].

Fiscal balance and Components of National Saving

National saving projections measure the change in flows into public and private saving **in a given year** as the difference in flows in the new policy less the base policy. National saving is not about stocks.

The new RIMGROUP public debt methodology assumes that some proportion of the change in the fiscal balance increases or decreases Commonwealth debt and results in changes in public debt interest outlays which are assessed as a component of public saving. Further detail on the approach and parameters used in estimating National Saving is given in Gallagher (1997).

Table 1 below sets out changes in the fiscal balance, public debt interest, the aggregate asset balances of superannuation funds and components of national financial saving associated with the policy change. The term 'fiscal balance' as used here refers to the **difference** between modelled tax **revenue** changes (personal taxes including superannuation fund taxes) and modelled changes in **outlays** (social security payments). The fiscal balance does not include changes in public debt interest outlays; these are shown separately in the table and included in the calculation of national saving.

Table 1: Components of National Saving for New Preservation Policy

Financial Year	Change in Fiscal Balance[6]	Public Debt Interest	Change in Super Funds Balances	Change in Private Saving	Change in Public Saving	Change in National Saving	Change in National Saving
			$m in nominal dollars				% of GDP
1999-00	-$90	-$1	$540	$540	-$46	$493	0.08%
2000-01	-$183	-$5	$1,727	$1,186	-$97	$1,089	0.17%
2001-02	-$271	-$12	$3,598	$1,871	-$148	$1,722	0.26%
2004-5	-$456	-$50	$13,065	$3,795	-$278	$3,516	0.46%
2009-10	-$567	-$156	$41,095	$6,750	-$440	$6,310	0.67%
2014-15	-$332	-$292	$81,654	$8,897	-$458	$8,438	0.72%

[5] As an approximation at this time RIMGROUP has all earnings from employer superannuation preserved not just those from the SG.

[6] The figures here do not correspond to those in the Budget because these figures do not include some required further adjustments, principally needed to reflect part year effects not allowed for in RIMGROUP.

2019-20	$333	-$402	$137,264	$12,619	-$235	$12,383	0.87%

Essentially, all the national saving effect arises from substantially increased private saving associated with more superannuation fund earnings and lower outflows on job change (with such outflows before retirement being taken as consumed rather than saved elsewhere).

This increased private saving is offset by some loss of public saving. Initially this arises from reduced ETP taxation, as the offsetting public saving from other factors takes a long time to become substantial. Over the long term the change in the fiscal balance changes to positive as the earning tax differences grow and the savings from reduced pension costs and increased taxes by the retired assume significance.

An important assumption underlying the above analysis is the assumption of no behavioural change. The analysis assumes the continuation of all employer contributions including voluntary contributions above the SG level. If a consequence of this policy were to significantly reduce voluntary employer contributions, particularly those involving salary sacrifice, the aggregate level of superannuation assets would be lower and so would the national saving effect. A similar issue of possible behavioural response also applies in relation to member contributions.

RELEASE OF BENEFITS

A very similar analysis can be carried out of the likely impact of the tightened arrangements for early release of benefits outlined above. The essential input to the analysis is the extent of the reduced outflow from superannuation fund assets resulting from the policy. Unfortunately for some components of early release, particularly for the release of benefits for persons going overseas on a permanent basis, there are no data available on the current arrangements. In the analysis presented below the assumed reduction in total outflow is initially around $120m pa, compared with current total hardship flows of $180m and uncertain amounts for persons going overseas on a permanent basis. Judging by the level of tax change, my assumptions of flow change arising from the policy appear to be of the same order as those underlying the forward estimates.

The results are set out in Table 2.

Table 2: Components of National Saving for Early Release of Benefits

Financial Year	Change in Fiscal Balance	Public Debt Interest	Change in Super Funds Balances	Change in Private Saving	Change in Public Saving	Change in National Saving	Change in National Saving
			$m in nominal dollars				% of GDP
1997-98	-$13	$0	$122	$122	-$7	$115	0.02
1998-99	-$14	$0	$260	$137	-$8	$129	0.02
1999-00	-$16	-$1	$414	$154	-$9	$144	0.02
2004-5	-$20	-$4	$1,473	$256	-$15	$241	0.03
2009-10	-$19	-$9	$3,151	$391	-$19	$371	0.04
2014-15	$3	-$15	$5,547	$538	-$13	$525	0.05

2019-20	$67	-$14	$8,761	$714	$19	$733	0.05

As with the preservation analysis above most of the national saving effect arises from increased private saving associated with more superannuation fund earnings and lower outflows.

This increased private saving is offset initially by some loss of public saving from reduced ETP taxation. Over the longer term the change in the fiscal balance changes to positive as the earning tax differences grow and the savings from reduced pension costs and increased taxes by the retired assume significance.

The nature of the impact is entirely analogous to that for the preservation policy change but the scale is considerably lower by a factor of 10 to 20. The impact is additive to that of the preservation policy change.

HOUSING ANALYSIS

RIMGROUP has also been used to develop an aggregate analysis of the implications of allowing individuals direct access to a part of their superannuation balances for the purposes of purchasing their own homes. Various proposals of this nature have been made over recent years. During the 1996 election campaign the Government gave an undertaking to examine the full implications of implementing such a scheme. A discussion paper has been released recently together with an invitation for submissions on this issue (Treasury, 1997). The discussion paper uses analysis by the RIM Task Force both of an aggregate and hypothetical nature.

REIA Proposal

Much of the analysis relates to consideration of a scheme along the lines recently proposed by the Real Estate Institute of Australia. This proposal was to permit superannuation to be accessed with the following restrictions:

- available only to first home buyers, with the funds to be used as a deposit or part deposit on a residential property;
- subject to an income test, so that only those with an annual income of less than or equal to $25,000, net of tax and superannuation contributions, would be eligible.
- the withdrawal be a one off benefit of up to 100 per cent of the person's superannuation balance (with an upper limit of $15,000) which would decrease the balance and not have to be paid back;
- the withdrawal would be subject to some taxation; and
- the maximum price payable for a house purchased by the beneficiary of the withdrawal would be capped.

RIM Approach

RIM has made a number of adjustments to the underlying assumptions for the purposes of this analysis. These are that the amount withdrawn would be taxed as an ETP (rather than the complex one-off REIA approach) and that members of couples would be able to access up to $15,000 each. The rationale for these adjustments is that:

- taxing the early benefit as an ETP ensures that the withdrawal for housing would be treated for taxation purposes in the same manner as any other lump sum withdrawal. This would minimise the changes needed to administrative procedures of funds and would maintain equity with existing lump sum withdrawals. For most persons in the target group the resulting level of taxation is similar to that proposed by the REIA; and

- it would be extremely difficult, if not impossible, for funds to know the marital status of an applicant and whether the other member of the couple had accessed their superannuation for this purpose. Issues of equity of access between couples and singles would also arise.

The analysis has used the ABS First Home Owners survey (ABS,1995) to provide data on the income and age groupings of first home buyers, then used the income groupings within RIMGROUP (ten income groups for each gender and each age) to determine eligibility for making housing withdrawals. This process is intended to align broadly with the targeting proposed by REIA but the alignment could not be made precise. Most persons eligible for, and likely to take advantage of the policy are in the second, third and fourth lifetime income deciles of RIMGROUP.

Our analysis has most people buying their first home when they are aged between 25-40 years old. Where both members of a couple have superannuation coverage it is assumed they will both take advantage of this policy. A further assumption is that 80 per cent of those eligible to make housing withdrawals would do so, with the other 20 per cent choosing not to because of the required payment of ETP tax or having sufficient savings not to need the withdrawal. The projections do not have any increase in financial saving later in life to attempt to make up for the reduction in superannuation.

An important issue is what proportion of the target population would achieve and maintain home ownership by retirement age because of the proposed policy and would not have achieved home ownership otherwise. This is impossible to know in advance and very difficult to estimate. My base case analysis assumes that about 15% of those making withdrawals achieve home ownership specifically as a result of the proposed policy[7]. Additionally sensitivity analysis has been done of the case where no increase in home ownership results, and, as an upper limit, where 40% of those making withdrawals achieve home ownership as a result of the proposed policy (see later Section).

The projections compare the policy proposal of allowing withdrawals for housing for new home buyers (on a targeted basis as described above) with a base policy in which no housing withdrawals are permitted. As with the preservation analysis the base (and the new policy) also fully reflect the superannuation policies announced in the 1996-97 and 1997-98 Budgets. For this analysis the model has been run for a longer period than the earlier analyses (to 2039-40) as it clearly takes a very long time for withdrawals from superannuation by first home buyers to be reflected in increased pension costs.

RESULTS: **Impact on persons and flow of funds**

RIM estimates that withdrawals from superannuation funds in 1997-98 if the proposal were implemented would be about $525 million:

---

[7] RIM analysis of the 1990 Income and Housing Survey indicates that about 80% of persons aged 45-64 and earning between 70 and 100% of AWOTE are home owners or buyers. This suggests that the base case analysis, which eventually adds 12% to this, represents a very significant change.

- This would involve some 39,000 individuals, with the average individual amount withdrawn being about $13,400; 18,000 couples and 3,000 singles are estimated as making first home purchases using the withdrawals.

- The number of individuals affected is estimated to remain for many years at around the 40,000 level, with the average sum withdrawn rising over time in line with the indexed limit and the rising average balances in superannuation funds.

- These figures compare with a Department of Social Security estimate of around 280,000 households in the target income range which are not home owners and which have significant superannuation equity

  -This estimate of the **stock** of such households is broadly consistent with the RIM estimates of the annual **flow** of households that would choose to access their superannuation for housing.

Fiscal balance and components of national saving

Table 3 below sets out changes in the fiscal balance, public debt interest, the aggregate balances of superannuation funds and components of national financial saving associated with the possible policy change. The framework is exactly the same as used above in the analysis of preservation options. The framework focuses on financial saving because of its importance in determining the stream of funds for investment and does not include any increase in housing equity as an increase in private saving.

Table 3: Components of National Saving

Financial Year	Change in Fiscal Balance	Public Debt Interest	Change in Super Funds Balances	Change in Private Saving	Change in Public Saving	Change in National Saving	Change in National Saving
			$m in nominal dollars				% of GDP
1997-98	90	1	-524	-524	46	-478	-0.09
1998-99	95	4	-1,107	-582	52	-530	-0.09
1999-00	99	8	-1,751	-643	57	-585	-0.10
2009-10	117	56	-12,178	-1,445	114	-1,330	-0.14
2019-20	59	141	-33,040	-2,674	171	-2,503	-0.18
2029-30	-371	221	-66,356	-3,629	35	-3,594	-0.17
2039-40	-982	142	-105,593	-4,402	-348	-4,750	-0.15

The initial gain in the fiscal balance arises from the additional ETP tax on the withdrawals made for housing purposes. Over the long term, this gain is more than offset by lower earnings taxes on the smaller balances in superannuation funds, additional age and disability pension costs and lower income taxes from the retired.

The accumulated total balance of superannuation funds is projected to fall by $1.8 billion by June 2000, $12.2 billion by 2010, $33 billion by 2020 and $106 billion by 2040, all expressed in the dollars of the time.

National saving is expected to fall, initially by $0.5 billion increasing to a fall of $4.75 billion in 2040. Expressed as a percentage of GDP this ranges from 0.09 per cent to a peak of 0.18 per cent, not dramatic changes, but not negligible.

Table 4 below shows the projected age and disability pension increases over time for selected years, together with the reductions in income tax liability of the retired.

Table 4:

Financial Year	Increase in Age Pension	Increase in Disability Pension	Change in Income Tax of Retired
		$m in nominal dollars	
2009-10	1	0	0
2019-20	33	4	-6
2029-30	152	4	-103
2039-40	181	5	-488

Sensitivity analysis

Tables 5 and 6 below show key aggregates of fiscal balance, age and disability pensions, income tax of the retired and change in national saving for alternative housing analyses mentioned above, the first where no increase in home ownership results, and secondly where 40% of those making withdrawals achieve home ownership as a result of the proposed policy.

Table 5: Assuming No Increase in Home Ownership

financial year	Change in Fiscal balance	Increase In age Pension	Increase In disability Pension	Change in Income tax Of retired	change in national Saving
		$m in nominal dollars			% of GDP
2009 -10	$117	$1	$0	0	-0.14
2019 -20	$59	$33	$4	-$6	-0.18
2029 -30	-$422	$188	$5	-$117	-0.17
2039 -40	-$1,140	$278	$7	-$546	-0.16

Table 6: Assuming 40% Increase in Home Ownership

financial year	Change in Fiscal balance	Increase In age Pension	Increase In disability Pension	Change in Income tax Of retired	change in national Saving
		$m in nominal dollars			% of GDP
2009 -10	$117	$1	$0	0	-0.14
2019 -20	$59	$33	$4	-$6	-0.18
2029 -30	-$295	$98	$2	-$82	-0.17
2039 -40	-$746	$35	$1	-$401	-0.15

Comparing these Tables with Tables 2 and 3 it is clear that the impact on National saving is essentially the same, that no change in the fiscal balance and its components takes place before 2019 and that the lower the assumed change in home ownership, the larger the long term cost to the fiscal

balance, through increased pension costs, and lower income taxes from the retired (and although not explicitly shown) from lower taxes from the earnings of superannuation funds.

It is important to note that all these figures apply to a highly targeted scheme and if restrictions to first home owners and income levels did not apply the effects would be much larger by a factor of about 3-4 times.

Projecting the levels of superannuation assets in 2000, 2005, 2010 and 2020.

The Table below shows RIMGROUP projections by type of fund for recent history and for selected financial years out to 2019-2020. Numbers do not add across as some funds within the superannuation system, such as rollover funds, annuities and allocated pensions held on behalf of the retired, have not been explicitly listed.

Clearly no one knows the future in detail for even a short time, and the projections have bands of uncertainty around them which increase as we go further out. The projected levels are particularly sensitive to economic assumptions such as the level of return achieved by various funds; as an example, an annual difference of one half of a percent in return over the period to June 2005 changes the grand asset total by plus or minus $17b.

Broad agreement with other longer term projections will largely reflect common parameter settings for rates of return and other economic factors. There are also some other major views about the future which significantly impact the longer term dynamics and which are either difficult to estimate or to some extent unknowable, including:

- the extent to which the established funds which offer higher levels of contribution than the SGC will retain these higher levels;
- the rate of closure of the more generous private sector funds;
- the rate at which rollover funds will become relatively less important as a result of essentially the same services being available through ordinary superannuation funds.

The main uses of RIMGROUP are to distinguish between the implications of various policies, including the analysis of distributional consequences and assessing the robustness of the differences between policies to reasonable differences in key parameter settings, rather than make such asset projections. The projections are presented here in the light of the clear interest shown in such output when previously published by the Task Force (Rothman & Bacon, 1994, Rothman 1996), and to see how consistent these projections are with other published projections. The 1994 projection of the Task Force for June 2000 was $320-380b in prices of that year, with the figure given in the published table being $366.5b; the RIM figure published in July 1996 was $373b compared with the figure of $364b in Table 7, a very good fit given various changes in the economic parameters and the significant policy changes (which have apparently largely cancelled each other out).

Table 7: Superannuation Assets by Type of Fund

	Public DB funds	Private DB funds	Private DC funds	Total SGC funds	Personal & rollover funds	Self employed	Grand Total all funds	Grand Total all funds
	$M - Current prices	$M - Current prices	$M - Current prices	$M - Current prices	$M - Current prices	$M - Current prices	$M - Current prices	% of GDP
At June								
2000	$77,212	$67,569	$43,806	$51,480	$55,205	$29,350	$364,360	60.6%
2005	$105,900	$95,160	$69,353	$100,528	$76,013	$35,556	$552,782	72.6%
2010	$142,628	$134,315	$105,846	$167,561	$97,269	$41,582	$810,083	85.5%
2015	$184,961	$182,567	$152,167	$251,529	$122,186	$47,421	$1,128,900	96.9%
2020	$233,769	$240,789	$209,278	$353,488	$151,026	$54,354	$1,524,291	107.1%

Over the longer term these aggregate figures are broadly similar to, but higher than, the aggregates published in Knox in July 1995[8] (Knox,1995). On the other hand, the results are initially somewhat lower than published by the AMP in 1996 (AMP,1996) which suggest an aggregate figure of over $400b by the turn of the century. They are much lower than recent projections by Rice Kachor (1997); the author does not know the reasons for the very substantial differences in the Rice Kachor projections.

None of the Knox, AMP or Rice Kachor models have the rich distributional detail available in RIMGROUP. The main distributional feature shown in the above table is the strong relative growth of SG accounts from their current level of 12% of total superannuation assets to about 23% in 2020.

Turning to flows into and out of the superannuation system, Table 8 shows current and projected key flows for financial years in the dollars of the year in question. The headings are self explanatory. However it should be noted that a substantially lower contribution series than that published by the ABS/ISC collection is used, together with much lower outflows; the flows in RIMGROUP line up with a range of other data sources (see Rothman,1996) and RIMGROUP aligns well with the ABS/ISC asset stock numbers.

These flow projections are underpinned by projections of the population, labour force, productivity, unemployment and GDP as well as superannuation distributions and detailed coding of current policies and should be viewed as indicative only. However the figures clearly show that both contributions and earnings drive the growth, often contributing about the same amounts. This contrasts with a frequently stated view (eg Foster 1997) that earnings are the paramount driver of growth.

Table 8 Key Superannuation Flows

$ m in current dollars of the year

year	Contributions After tax	Fund earnings After tax	total payouts	net flows as % of GDP
1996-97	$17,546	$19,234	$13,490	4.52%
1999-00	$21,665	$21,758	$16,827	4.42%
2004-5	$30,656	$30,353	$22,941	5.00%
2009-10	$38,620	$44,097	$33,814	5.16%
2014-15	$47,890	$61,205	$49,816	5.09%
2019-20	$59,304	$82,057	$66,576	5.25%

CONCLUSIONS

The long term integrity of the superannuation arrangements and their successful contribution to substantially improved retirement incomes and national saving makes it important that access to superannuation fund balances be restricted to use for retirement purposes. This limitation on access is also perceived as an important aspect of justifying continuing tax concessions for superannuation saving. In this context the decisions in the recent Budget to further limit such access are seen as very important.

[8] Slightly higher in dollar terms but much higher as a proportion of GDP.

The Budget policy for increased preservation from July 1999 is projected to lead to significant increases in the aggregate level of superannuation assets and to substantial increases in national saving (0.9% of GDP in 2019-20). Essentially, all the national saving effect arises from substantially increased private saving associated with greater superannuation fund earnings and lower outflows on job change. This increased private saving is initially offset by some loss of public saving. There is a significant loss of revenue for some time associated with reduced ETP taxation, although eventually this is reversed through public saving from increased earning taxes, reduced pension costs and increased taxes by the retired.

The tightened arrangements for early release of superannuation benefits have an impact of a very similar nature but at a much lower level.

In a sister paper by Colin Brown (Brown 1997) the change in preservation arrangements is also shown to be a very important factor in ensuring that the superannuation system leads to adequate retirement incomes.

The government has not yet taken a position on whether to allow access to superannuation balances for the purposes of assisting first home purchasers and has distributed a discussion paper setting out the issues. The analysis of my paper shows that there would be a moderate but definite detrimental impact on national saving associated with a targeted scheme - of the order of 0.2% of GDP in 2019-20. Initially the scheme would lead to some increased taxation associated with the housing withdrawals but in the long term this is more than overtaken by lower earning taxes and additional pension costs and lower income taxes from the retired- the reverse of the preservation analysis. The impact of a scheme allowing wide (non targeted) access for housing purposes would be of a similar nature but at a much higher level. Typically countries that do allow a wide range of reasons for accessing superannuation accounts, do so within a system which has much higher contribution levels.

Additionally this paper has provided new summary projections of Australian superannuation assets which incorporate the policy decisions of the 1996-7 and 1997-98 budgets. Superannuation asset levels are projected to reach $365b in June 2000, $810b in 2010 and $1525b in 2020. As a proportion of GDP the projections rise significantly and steadily from about 54% now to about 107% of GDP in 2020. The principal distributional feature by account type is the rise of Superannuation Guarantee accounts which are projected to increase from around 12% of total superannuation assets now to 23% in 2020.

REFERENCES

AMP 1996, paper by Kirsten Armstrong 'The new Government's Superannuation Initiatives' in AMP SuperTrends Issue no 2, NSW, May 1996,

Australian Bureau of Statistics, 1994, 'Superannuation, Australia, November 1993', Catalogue No. 6319.0, Canberra.

Australian Bureau of Statistics, 1995, 'First Home Buyers, Australia', Catalogue No. 4137.0, Canberra.

Australian Taxation Office, various years, 'Taxation Statistics', AGPS, Canberra

Bacon B.R. (1994), 'RIM Population and Demographic Modelling', Working Paper 94/2, Retirement Income Modelling Task Force, Treasury.

Bacon B.R. (1995), 'Labour Force Status, Earnings, Asset Accumulation, Retirement Behaviour and Long-run projections', Conference Paper 95/5, Retirement Income Modelling Task Force, Treasury.

Bacon B.R. and Gallagher P. (1995), 'Early Retirees - Trends and Use of Superannuation Benefits', Conference Paper 95/6, Retirement Income Modelling Task Force, Treasury.

Bacon B. R., (1996a), 'Retirement in Australia: A Model of Retirement - RETMOD', Paper to The Fourth Annual Colloquium of Superannuation Researchers, University of Melbourne.

Bacon B.R. (1996b), 'Labour Force Status Projection Model (LFSMOD)', Forthcoming Working Paper, Retirement Income Modelling Task Force, Treasury.

Brown, C.L., 1994, 'The Distribution of Private Sector Superannuation Assets by Gender, Age, and Salary of Members', Paper to The Second Annual Colloquium of Superannuation Researchers, University of Melbourne.

Brown, C.L., 1996, 'Sources of Income and the Assets of Older Australians', Paper to The Fourth Annual Colloquium of Superannuation Researchers, University of Melbourne.

Brown, C.L., 1997, 'Preservation and the Effectiveness of Retirement Incomes Policy', Paper to The Fifth Annual Colloquium of Superannuation Researchers, University of Melbourne.

Costello P., 1997,'Savings: Choice and Incentive' Statement by the Treasurer AGPS, Canberra, May 1997.

FitzGerald, V.W., 1993, 'National Saving: A Report to The Treasurer', AGPS, Canberra.

Gallagher, P., and Preston, A., 1993, 'Retirement Income Modelling And Policy Development In Australia', Paper prepared for the Economic Modelling Bureau of Australia Conference on the Asia-Pacific Economy, Ramada, Palm Cove Cairns, August.

Gallagher, P., Rothman, G. and Brown, C., 1993, 'Saving for Retirement: The Benefits of Superannuation for Individuals and the Nation', Paper Presented to the National Social Policy Conference, University of New South Wales, 14 July.

Gallagher, P., 1995, 'The Policy Use of the Products of the Retirement Income Modelling Task Force', Paper to The Third Annual Colloquium of Superannuation Researchers, University of Melbourne.

Gallagher, P., 1997, 'National Saving Analysis of Government Superannuation Policy', Paper to The Fifth Annual Colloquium of Superannuation Researchers, University of Melbourne.

Insurance and Superannuation Commission (ISC), 1997, ' Insurance and Superannuation Commission Bulletin, December 1996', AGPS, Canberra.

Knox, D M., 1995, 'Some Financial consequences of Australia's Superannuation Industry in the Next Three Decades', Paper to The Third Annual Colloquium of Superannuation Researchers, University of Melbourne, July 1995.

National Commission of Audit, 1996, Report to the Government AGPS, Canberra.

Retirement Income Modelling Task Force, 1994, 'Response to the Senate Select Committee on Superannuation for Analysis of the Effects of Allowing Withdrawals from Superannuation Funds for Housing Deposits' April (Retirement Income Modelling Paper 94/1)

Rice Kachor Research 'Master Trust Analysis-Projections And Forecasts', January 1997

Rothman, G. and Bacon, B.,1994, 'The Impact of Population and Labour Force Scenarios on Superannuation, Tax Expenditures and Pension Costs' Paper for the Second Colloquium of Superannuation Researchers, University of Melbourne.

Rothman, G., 1995a, 'The Distribution of Superannuation Assets by Sector, Account type, and Personal Characteristics, Paper to The Third Annual Colloquium of Superannuation Researchers, University of Melbourne.

Rothman, G., 1995b, 'RIMGROUP Project: Estimation Of Multiple Accounts And The Implications For Accounts Structures And Parameter Estimates' (Retirement Income Modelling Working Paper 95/2)

Rothman, G., 1995c, 'Estimating the Distribution of Private Sector Superannuation' (Retirement Income Modelling Working Paper 95/3)

Rothman, G., 1995d, 'Estimating Superannuation Parameters for the Self Employed', (Retirement Income Modelling Working Paper 95/4)

Rothman, G., 1996, 'Aggregate and Distributional Analysis of Australian Superannuation using the RIMGROUP model', Paper to The Fourth Colloquium of Superannuation Researchers, University of Melbourne.

Treasury, 1997, Allowing Access to Superannuation for Housing, AGPS, Canberra, May 1997.

ATTACHMENT A

THE RIMGROUP MODEL

INTRODUCTION

RIMGROUP is a comprehensive cohort projection model of the Australian Population which starts with population and labour force models, tracks the accumulation of superannuation in a specified set of account types, accumulates non superannuation savings, and calculates tax payments and expenditures, social security payments including pensions and the generation of other retirement incomes.

These projections are done for each year of the 60 plus years of the projection period *separately for each birthyear gender decile cohort*. The model projections begin in July 1992 and can run out to June 2060. There are over 4300 cohorts in the model covering the Australian population from their beginning work to death.

The model covers single years of age from 18 to 100 plus (83 age groupings) for each gender (2), for 10 lifetime income groupings (termed deciles) and for the 68 financial years mentioned above. The detailed information about each cohort in each year of the model is held in an individual record, termed the record of the **group**; in this terminology there are 112880 group records (2 x 83 x 10 x 68). Additionally, as explained below, some information is generated at the sub group level, distinguishing within a group by, for example, the main type of superannuation coverage or the age range during which retirement takes place. Obviously keeping the model to a manageable size has required us to restrict the extent of subdivision below the group level.

The main uses of RIMGROUP are to distinguish between the implications of various policies, including the analysis of distributional consequences and assessing the robustness of the differences between policies to reasonable differences in key parameter settings, rather than to make specific projections of the future.

RIMGROUP is written in SAS. It is run on a Unix platform but is transportable to other platforms, though its size and complexity make it unsuitable for an average PC. The 'strengths and limitations' of RIMGROUP have been discussed in the main Paper.

PRINCIPAL MODULES of RIMGROUP

Demography, Labour Force and Incomes

The model firstly generates basic demographic and labour force information about the cohorts. This process uses the component models POPMOD and LFSMOD described in more detail in Bacon, 1994,1995 and 1996b. POPMOD provides annual projections of Australia's population by year for males and females by single year of age. It is driven by parameter matrices for fertility, mortality and overseas migration. LFSMOD produces projections by labour force status, age, gender and income decile. Labour force status is split by employed/unemployed, full-time/part-time, public/private, wage and salary earners/employers/self employed. Persons not in the labour force are split by retired/never in labour force/permanently disabled/temporarily not in the labour force.

This module of RIMGROUP also uses data from CEPROC which is a set of complex procedures used to estimate career earning profiles by labour force status, age, gender and income decile.

Persons working full or part time in each group are allocated earnings specified as a proportion of average weekly earnings.

Superannuation

Each Group subdivided by labour force status is then allocated to a principal superannuation account which has an great deal of detail supplied about it. For those working within the private or public sectors[9] a filter is first applied as to the proportion of that group which have superannuation cover These persons are then mapped onto given account types. Separate accounts are kept for established defined benefit and defined contribution funds and Superannuation Guarantee funds by sector, an account for the self employed, together with a combined personal/rollover account and an eligible rollover account used specifically to keep preserved funds for those retiring early. This mapping uses techniques developed in Rothman (1995).

For each account type for each group the following information is provided:

- proportion in account type
- initial superannuation balance
- employer contributions
- member contributions
- initial level of preservation
- initial undeducted contributions
- dissipation on job change
- flow to rollovers (separately for preserved and not preserved)
- hardship losses (separately for preserved and not preserved)

For some funds a few of the data items will clearly not be required, eg. there are no employer contributions for the self-employed. On the other hand, for the public sector defined benefit fund it is necessary to add information on the percentage of employer contributions which are funded and information on payouts. Rothman 1995a describes the data base used.

Accumulation of and Decrements to Superannuation

The above detail together with other information not needed to be supplied at group level (such as earning rates of funds and taxation rules) allows calculation of the accumulation of superannuation for each group together with appropriate decrements. Taxation and other arrangements such as preservation rules are modelled in considerable detail. There is also a very extensive decrement structure whereby monies can leave, (or transfer within), the superannuation system because of job change, hardship, permanent disability and death, as well as retirement and of course taxation.

Retirement has been researched in detail, principally through construction of RETMOD (see Bacon, 1996a) which provides annual projections of partial and full retirement by gender, age and income decile.

---

[9]But not for the self employed where the ATO file based methodology provides a direct estimate of the proportion of those in the self employed workforce who are contributing to superannuation .

Accumulation of Other Savings

The accumulation of other financial savings and housing can also be modelled in a similar way. At this time the modelling of such processes is not as advanced as the modelling of processes relating to the accumulation of superannuation.

Retirement Incomes

RIMGROUP calculates the number of people retiring from each account type and the aggregate value and components of their retirement benefits categorised by the type of retirement (disability or age). The retirement code categorises retirees in the following manner:

- whether a person was a member of a public sector defined benefit superannuation scheme, whether the person's benefit originated from one of the other account types or whether the person belongs to a group with no superannuation throughout their working life; and

- by the age at which the person retired. There are 4 subgroups of retirees:

  - those retired before 55;
  - those retired from age 55 to age 59;
  - those who retired from age 60 to age 64; and
  - those who retired at 65 or later

In other words subgroups are created for the above categories as there are significant differences in retirement income and taxation for the subgroups**.**

Retirement benefits are then allocated for each sub group of retirees to six destinations. These are:

- Eligible Termination payments (ETPs) dissipated with no impact on retirement income;
- ETPs invested in interest bearing accounts;
- ETPs invested in rollover accounts for those under 65;
- ETPs invested in shares or other assets with likely long term capital gains;
- Monies rolled over into allocated pension accounts; and
- Benefits taken as superannuation pensions or monies rolled over to a rollover complying annuity.

The allocation can be specified by the user or use historical allocations. Considerable study of current allocations has been undertaken by Brown, 1996 as part of the determining the initial distribution of assets and income of the retired for the start of the model.

Social Security Payments

Numbers of Social security recipients and payments to them are projected by the model both in relation to unemployment and sickness benefits during working life and age and disability pensions upon retirement. To estimate these quantities in respect of beneficiaries more accurately, sub groups are formed by marital status and whether full or partial benefit is received; the projection of beneficiaries and payments to them is linked principally to projections of unemployment but also in part to the projected dynamics of part time workers and those not in the labour force.

Thresholds and withdrawal levels associated with Social Security income and asset tests are modelled in detail, with the user being able to specify the type of indexation to be applied to the tests and base levels of payment.

Taxation and Taxation Expenditures

Taxation projected to be due through any taxes on superannuation is modelled with user specification of tax rates and indexation readily available. A model of tax expenditures has also been incorporated through the construction of a personal income tax based counterfactual.

PARAMETER STRUCTURE

Parameters which vary by many of the attributes of gender, age, decile and account type are generated as files in a standard format and input through a parameter integration program (which also sets up the basic 112880 records referred to above). It is expected that these parameters will be varied only infrequently by 'expert' users. Many other parameters of an economic or policy significant nature can be varied readily through a user friendly interface which handles such variables which vary by time and/or account type. Examples of variables that can be input through the interface include the returns of various superannuation accounts and retirement investments, rates of compulsory SG contributions, inflation, rates of increase in average weekly earnings, various social security and taxation rates and the type of indexation to apply to them.

BASE PARAMETER SETTINGS

These are adjusted to historical rates, with a gradual transition to the following long term settings:

- 2.5% per annum for inflation
- 3.75% pa for growth of average wages for a person of given age and gender [10]
- 6% pa for the long term bond rate;
- 7% pa for the average pre-tax return of superannuation funds (after deducting the expenses of investing the capital but before tax and administrative expenses which are deducted separately); and
- effective tax rates on the earnings of superannuation funds of 3% for defined benefit funds, 4% for established defined contribution funds, 5% for SG funds and 10% for rollover funds.

In RIMGROUP we differentiate between the annual returns for defined benefit funds, defined contribution funds, industry funds and rollover funds. Currently these differences are set at 0.5-1.5 percentage points, with the defined benefit schemes having the highest rates and rollovers the lowest.

The base demographic scenario is essentially identical with Series A as published by the ABS (1995). The labour force scenarios have been generated specifically by the Task Force (see Bacon 1995).

[10] The actual wage outcome is impacted by demographic and structural change such as the increasing proportion of work which is part time.