

WEPAU
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***Women and retirement
incomes in Australia:
A Review***

by

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ABOUT WEPAU

The Women's Economic Policy Analysis Unit ("WEPAU") was founded in April 1999 in response to a growing void - within Australia and internationally - in the gender analysis of the economic and social policy issues that confront women. To most effectively address this void, WEPAU was established as an inter-disciplinary research program, spanning two divisions of Curtin University, the Curtin Business School (CBS) and the Division of Humanities.

WEPAU is committed to producing high quality quantitative and qualitative feminist research on a broad range of issues that women identify as undermining their ability to achieve equity and autonomy in the current context. Meeting this commitment is enabled by the breadth of experience and expertise brought to WEPAU by an increasing range of researchers.

Through its academic and consultancy research into women's experiences of social and economic policies WEPAU provides a meaningful gender analysis of policy. An analysis strongly put forward via active contribution to government policy debates.

Our broad objectives include:

- Identifying the cases and causes of women's disadvantaged social and economic status and to contribute appropriate policy initiatives to address this disadvantage;
- Demonstrating the way in which social factors, particularly gender, influence the construction of economic theory and policy;
- Extending current theory and research by placing women and their social context at the centre of analysis;
- Contributing an interdisciplinary approach to the understanding of women's position in society. In turn, this should enable the unit to better reflect the interrelatedness of the social, economic and political discourses in policy and their consequent implications for women;
- Fostering feminist research both nationally and internationally;
- Expanding linkages with industry;
- Establishing and supporting a thriving Curtin University postgraduate research community with a common interest in feminist scholarship.

For further details see: <http://www.cbs.curtin.edu/research/wepau/> and/or email wepau@cbs.curtin.edu.au.

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Women and retirement incomes in Australia: A Review

Abstract

More than sixty percent of age pensioners in Australia are women. While public policy encourages private saving for retirement through compulsory superannuation, diverse projections of women's superannuation accumulations predict that women will continue to rely heavily on government and private transfers in retirement. This review synthesises the outcomes from existing research to show that expectations about the level and source of women's retirement incomes are clearly linked with low earnings. However, this occurs in combination with both attitudinal and institutional barriers to active retirement planning.

1. INTRODUCTION

Public policy encouraging private financing of retirement incomes has dramatically increased the coverage of occupational superannuation in Australia. However, the benefits of increased coverage are uneven. In 2000, the median account balance among those with superannuation was \$13,400 for men and \$6,400 for women (Australian Bureau of Statistics, 2001b)¹. Given that 61 per cent of age pensioners in Australia are women (Department of Family and Community Services, 2002), it is increasingly recognised that public policy relating to retirement incomes may be enhanced by a greater understanding of issues relevant to women's patterns of work, saving and retirement.

Internationally and within Australia there is a growing literature on women's retirement incomes. Due to the size of the literature and the strong influence that varying institutional arrangements have on the design and findings of research projects, this review focuses on Australian research on this subject, including: sources of retirement income; the interaction of household labour supply and savings decisions; attitudes to saving and investment; and fund administration. This paper reviews the main insights into the links between employment, superannuation, savings and women's retirement incomes provided by a diverse Australian literature. In particular, it synthesises the outcomes of existing research to show that women's retirement incomes are clearly linked with low earnings and that this occurs in combination with both attitudinal and institutional barriers to active retirement planning.

2. AN OVERVIEW OF AUSTRALIA'S RETIREMENT INCOME FRAMEWORK

Australia's retirement income framework is comprised of three pillars: government transfers (such as the age pension), compulsory superannuation and private savings. Australian government transfers providing income in retirement can be dated to the introduction of the age pension in 1909. Their importance as a source of retirement

¹ The Australian Bureau of Statistics has expressed some reservations about the actual account balances reported in this publication. However, the relativities between account balances of different population groups are valid.

income for all retirees and especially for women is well established (Australian Bureau of Statistics, 1998b; Department of Family and Community Services, 1999, 2001; King, Bækgaard, & Harding, 1999; King, Walker, & Harding, 1999; Rosenman & Warberon, 1996). In June 2002, 61 per cent of age pensioners were women, of whom 69.2 per cent received the full age pension rate (Department of Family and Community Services, 2002).

In contrast with government transfers, compulsory superannuation is a relatively recent addition to the retirement income framework. It was introduced in 1992 through the *Superannuation Guarantee Charge (SGC) Act 1992* as a response to the fiscal implications of Australia's ageing demographic profile and as a result of significant negotiation in the industrial relations arena (Kelly, 1997; Sharp, 1992). In the decade prior to the passing of the SGC legislation and since its introduction, superannuation coverage increased significantly (Brown, 1994). By 2000, 78 per cent of males and 71 per cent of females in the pre-retired population had a superannuation account (Australian Bureau of Statistics, 2001a). Compulsory superannuation operates through compulsory contributions, equivalent to 9 per cent of wages, being paid by an employer to an employee's superannuation account. Entitlement is linked to employment status. In general terms, all employees are entitled to SGC contributions unless they are:

- paid less than \$450 per calendar month;
- aged 70 or over;
- aged under 18 years of age and do not work more than 30 hours a week;
- performing work of a domestic or private nature for not more than 30 hours a week for a non-business employer (Australian Tax Office, 2002).

The links between employment and contributions mean that those with marginal workforce attachment or low earnings accumulate relatively low levels of superannuation or have no coverage (Australian Bureau of Statistics, 2000). Women are disproportionately represented in these categories and from its inception, there has been widespread recognition that compulsory superannuation is not gender neutral in its application (see for example Clare, 1994a, b; Cox, 1994; Larkin, 1994; Pender, 1994; Roseman, 1995; Rosenman & Winocur, 1994; Ross, 1994; Sharp, 1995; Walpole, 1994).

The third pillar of the retirement incomes framework is comprised of private, voluntary savings. Most savings data are collected at a household level and there is limited information about its distribution among individual household members. This is not to suggest that voluntary savings are not important. Concern has been expressed that households appear reluctant to save for long term goals such as retirement and that there is scope to encourage further saving as a source of retirement income (Harris, Loundes, & Webster, 1999; Kelly, 2001; Kelly & Toohey, 2001; Loundes, 1997).

3. WOMEN'S EMPLOYMENT PATTERNS AND INCOMES

According to standard economic theory, income level is the major determinant of savings: lower earnings are predicted to result in lower levels of saving (Wärneryd, 1999). There is considerable evidence that women's lifetime earnings are, on average, lower than men's. This can be attributed to three interrelated issues: fewer years in the workforce; a gender pay gap; and a gender gap in non-wage income such as rent and dividends.

One reason that women's earnings over the life cycle are relatively low is that, on average, they spend less time in the paid labour force. While men and women devote roughly equal amounts of time to "total work", men spend more time in paid work while women spend a greater amount of time in unpaid household production. This division of labour is reflected in women's broken employment patterns and part time employment (Australian Bureau of Statistics, 1998a; Ironmonger, 1996). Data from the National Life Course Survey (Baxter, Jones, McDonald, & Mitchell, 2001) show that over their life cycle, women in the baby boomer cohort, born between 1948 and 1964, are likely to spend about 60 per cent of the time in paid work that is typical for men (Preston & Jefferson, 2003).

A second reason for women's lower levels of lifetime earnings is that when engaged in paid work, they earn less than men. There is a large literature discussing women's over representation in occupations and industry sectors which have both relatively low rates of pay and are less likely to offer stable, full time, long term employment (see for example Preston, 2001, 2003; Wooden, 1999) and there are important links between women's unpaid responsibilities and their experiences in the paid labour market (Chapman, Dunlop, Gray, Liu, & Mitchell, 2001). Intermittent periods of non participation in the paid workforce have significant effects upon career paths and women's own perceptions of their career prospects and status (Rimmer & Rimmer, 1994) and employer investment in training for women (Miller, 1994).

Thirdly, on average women have relatively low non-wage incomes. Capital income such as rent, dividends and interest can be obtained through asset ownership. Personal income tax returns from 1995/96 show that about 73 per cent of women tax filers and 72 per cent of men received some form of income through the ownership of assets. Men received higher average levels of capital income than women: \$7,368 compared with \$5,912 (Tinnion, 1998).

4. PROJECTING SUPERANNUATION ACCUMULATIONS

In the absence of comprehensive longitudinal data on lifetime income and savings, researchers have used the recognised link between income and savings to develop a diverse range of models demonstrating the impact of women's earnings profiles on superannuation and voluntary savings accumulations. Several studies focus specifically on the gender gap in projected outcomes from current superannuation provisions (Brown, 1994; Donath, 1998; Kelly, Harding, & Percival, 2002; King, 2001; Preston & Austen, 2001; Ross, 1994).

Generally, studies with a gender focus incorporate two of the distinguishing features of women's working lives, fewer years of workforce participation and lower earnings, and analyse the way in which they interact to restrict superannuation accumulations. However, the projections of Kelly, Harding and Percival (2002) include variables related to divorce, single parenthood, disability and the dilution and accumulation of assets. Significantly for the projection of superannuation account balances, they also include voluntary superannuation contributions while the other studies include only compulsory SGC contributions.

Different models of projected superannuation accumulations vary considerably in the number and pattern of individual working life profiles constructed, the types of outcomes projected and the implications considered. Contrasting approaches can be demonstrated briefly by comparing some selected assumptions of Preston and Austen (2001) with those of Kelly, Harding and Percival (2002). Preston and Austen assume that only compulsory SGC contributions are made and that these earn a net

real rate of return of 3.25 per cent per annum. Kelly, Harding and Percival (2002) include voluntary contributions in addition to SGC contributions, assume net real rates of return of between 5 per cent per annum for the years after 2000 (with higher historical rates being applied to prior years) and project that women's account balances will contain transfers of superannuation accumulations if divorce occurs. A comparison of the studies, including a range of selected assumptions incorporated into the various models is included in Appendix A.

While significant differences make comparability between studies difficult, a small number of projections is included in Table 1. Two of the studies included in this Table do not have an explicit focus on gender but their use of low, middle and high individual earnings profiles provides a structural analysis which is applicable to women's lower earnings and superannuation accumulations (King, 2001; Tinnion & Rothman, 1999). Despite widely varying assumptions and modelling techniques, these diverse studies consistently demonstrate the way in which women's low lifetime earnings translate into relatively low superannuation account balances and retirement incomes.

Table 1: Selected Outcomes from Studies Projecting SGC and/or Savings Accumulations by Gender, Australia

Author/s	Type of Outcome projected	Projected outcomes for men		Projected outcomes for women	
		High	Low	High	Low
Brown 1994	\$1992/93 lump sum	\$216,255	\$167,365	\$112,963	\$84,916
Ross 1994	\$1994 lump	\$122,000	*	\$81,000	\$46,500
Donath 1997	Annuity expressed as multiple of age pension	7.0	2.4	4.7	0.9
Tinnion & Rothman 1999	Ratio of Average Net Annual Expenditure in Retirement to Average Working Life Net Salary	0.69	1.28		
King 2001	Living standard at retirement for single person household as multiple of a defined adequacy benchmark	1.8	1.6	1.6	1.4
Preston & Austen 2001	\$1996 superannuation accumulations	\$233,000	*	\$206,000	\$43,000
Kelly, Harding and Percival 2002	Average \$1999 superannuation account balance of pre retired population aged 55-64 years in 2030.	Average		Average	
		\$232,700		\$131,900	
Preston & Jefferson 2003	Average \$1996 superannuation accumulation for those born 1960 at age 65.	\$77,998		\$47,515	

Note: *One outcome was estimated for men in this study.

Sources: Brown 1994 Table 3; King 2001, Figure 2; Tinnion and Rothman 1999, Table 1, column c; Donath 1997 Figures 7 and 11, 0.05 per cent returns and retirement at age 65 years; Preston and Austen Table 4; Kelly, Harding and Percival 2002 Appendix C; Preston and Jefferson 2003 Table 6.

5. VOLUNTARY RETIREMENT SAVINGS ACCUMULATIONS

Voluntary savings and personal superannuation contributions constitute a possible source of retirement not incorporated in the above studies (with the exception of Kelly et al., 2002). Using 1995/96 anonymous unit record files from the Australian Tax Office, Tinnion (1998) provides wide ranging information on voluntary superannuation contributions, by gender, age and income bracket. She finds that approximately 64 per cent of all tax filers received superannuation contributions from employers. Of these, about 46 per cent made additional contributions on their own behalf. Women comprise 37 per cent of tax filers making additional contributions and on average made voluntary contributions of \$1,246 for the year compared with men's \$1,909.

A more recent survey by the Australian Bureau of Statistics supports Tinnion's analysis. In 1998/99, 21.4 per cent of women and 30.4 per cent of men made personal superannuation contributions, with 23.1 per cent of men making contributions of \$50 or more per week compared with 17.2 per cent of women (Australian Bureau of Statistics, 2000).

One interesting feature of Tinnion's analysis relates to self employed tax filers. Approximately 14 per cent of the employed labour force could be classified as self employed in 1997 (ABS 6104.0 1998). According to Tinnion (1998) about 2.3 per cent of tax filers made self employed superannuation contributions in 1995/96. Tax filers can include persons not in the labour force and therefore it may be expected that the percentage of self employed tax filers is less than the percentage of the labour force that is self employed. However, there is apparently a large discrepancy between the proportion of the workforce classified as self employed and the proportion of self employed tax filers making superannuation contributions, suggesting that the self employed may have relatively lower levels of superannuation coverage (Preston and Jefferson 2003).

Less than a quarter of tax filers making self employed contributions are women. However, their average contributions to superannuation are slightly higher than those of self employed men. Self employed women made average contributions of \$4,851, compared with men's average contributions of \$4,663. This varies across ages, with women aged under 18 and 65 and over contributing significantly less than men.

While lower contributions by women are sometimes predicted because of their lower levels of earnings, Tinnion's report suggests that this is not the case among those who make self employed contributions. In these cases, gender disparities in contribution rates are less significant and slightly higher average contributions are made by women compared with men in most age and taxable income brackets. This suggests that while levels of earnings may be one significant factor determining superannuation contributions they are not the sole determinant, an issue further considered below.

Information about other forms of voluntary saving is generally collected at a household level rather than an individual level, making gender comparisons difficult. In general terms available data collections confirm the close linkage between income and savings (Loundes 1999; Harris, Loundes and Webster 1999; Kelly 2001; Kelly and Toohey 2001). As noted previously, Tinnion's (1998) analysis of income tax returns demonstrates lower capital incomes for women compared with men, suggesting lower levels of asset accumulations (Tinnion 1998). Loundes (1999) notes the relative lack of information on motivations for saving and the complexity

that arises due to the possibility that several motivations can exist simultaneously within a household. The issue of household financial decision making is considered further below.

6. INCOME, CONSUMPTION AND SAVING: THE LINKS WITH HOUSEHOLD PRODUCTION

Women's working patterns and earnings are influenced by their traditional involvement in unpaid household work, the annual value of which has been estimated at between 48 and 64 per cent of GDP (Australian Bureau of Statistics, 1994). While the way in which households allocate their time between the labour market and household production has implications for the level and type of resources they can access (Becker, 1965), analysis of household production is rarely considered in studies of savings. However, Apps and Rees have integrated household production into an economic model demonstrating possible links between household decisions regarding labour supply and levels of consumption and savings prior to and following retirement (Apps & Rees, 2001).

Restricting their analysis to consideration of two adult households, Apps and Rees show that increased labour market participation by a household's secondary wage earner increases levels of household savings. They note that this finding contrasts with that found in overseas research (Attanasio & Banks, 1998). The policy implications of this finding are interpreted as showing that taxation measures which increase the net wages of secondary earners will increase savings by a greater amount than those which increase the net wages of primary wage earners. In contrast to other studies projecting levels of savings, Apps and Rees do not provide estimates of individual or average accumulated savings at retirement. Instead, their model provides estimates of annual net saving or dissavings by households according to various identified stages in the life cycle. Their main finding is that consumption and savings patterns are maintained at more consistent levels when household production is integrated into the analysis. For example, following retirement, additional time spent in household production replaces market purchases of goods and services so that consumption levels may be maintained despite reduced expenditure. In terms of women's lifetime patterns of work and earnings this study is notable for the prominence it gives to unpaid household production, the influence of the secondary earner's income on savings and the heterogeneity of household behaviour.

7. MOTIVATIONS FOR SAVING: WOMEN'S ATTITUDES TOWARDS SAVING FOR RETIREMENT

Current income is one major determinant of savings in Australia. In 2000, 35.6 per cent of men and 39.1 of women said they were deterred from making voluntary superannuation contributions because of affordability (Australian Bureau of Statistics, 2000:33). However, as discussed above, Tinnion's research shows that gender differences in voluntary superannuation contributions by the self employed are much smaller than those made by employees (Tinnion, 1998). Further, Apps and Rees (2001) suggest that savings patterns are influenced by the source of household income. This suggests that decisions with respect to retirement savings and planning reflect a greater number of variables than earnings alone. This section focuses on literature that considers attitudinal aspects of saving for retirement.

Issues of motivation and attitudes towards savings have a long history in economics (Wärneryd, 1999) and some Australian research suggests that when it comes to retirement savings, the cumulative structural disadvantages faced by women are exacerbated by a lack of effective planning (Onyx, 1998). This appears to stem from three connected issues: the relevance of the term retirement to women's working lives; traditional "breadwinner" perceptions of responsibility regarding retirement income provision; and gender differences in the availability and use of retirement planning resources.

Difficulties with applying the concept of retirement to women's lives have been found in both large scale survey research and qualitative interview data (Encel & Studencki, 1996; Onyx & Benton, 1996; Rosenman & Winocur, 1988; Woolcott, 1998). It is also an impediment to the construction of research models attempting to examine women's workforce entry and exit (Chalmers & Norris, 2001). Many women do not draw clear distinctions between their roles in unpaid and paid work. Rather, women view both their unpaid and paid roles as 'work' and while there is a recognition that the balance between the two roles may alter over time, they do not consider that there will be a time when they cease 'working'. The perception that work does not cease at some point in the life cycle appears to discourage active consideration of retirement (Onyx et al., 1996). In the context of differing work experiences, it is been argued that the concept of retirement is not gender neutral (Onyx et al., 1996).

Onyx (1998) argues that due to the difficulty of applying the term 'retirement' to their working profiles, women are less likely than men to be actively planning for retirement. The results of a survey commissioned by the Financial Planning Association of Australia are consistent with Onyx's findings. Their 2002 report finds that women are less likely than men to have superannuation coverage and that among those without coverage, significantly fewer women than men plan to obtain superannuation coverage in the future. Among those aged 18-24 years, 25 per cent of women, compared with 76 per cent of men report they are planning to get superannuation coverage. For those aged 25-49, responses indicated that 17 per cent of women and 40 per cent of men plan to get coverage (Roy Morgan Research, 2002).

Secondly, it appears that traditional breadwinner approaches to income earning and retirement planning may be significant. Women are more likely than men to identify retirement income planning or superannuation contributions as their partner's responsibility (Australian Bureau of Statistics, 2000; Rosenman, 1999). This view appears to translate into an expectation that women's retirement incomes will be sourced through transfers (Onyx, 1998). In 1988 Rosenman and Winocur found that older women expected to be dependent upon either private transfers from a partner or public transfers in the form of a government pension as a source of retirement income (Rosenman et al., 1988). Despite subsequent increases in superannuation coverage through the SGC this is still a relatively prevalent expectation, particularly among those employed part time (both men and women) (Australian Bureau of Statistics, 1998b; Chalmers et al., 2001; Onyx, 1998; Rosenman, 1999).

Finally, compared with men, there are indications that women's retirement savings decisions reflect a different availability and use of resources relating to retirement planning. Women are more likely than men to state that they have not received any information on retirement planning and this is particularly the case among those working part time (Onyx et al., 1996). Men are more likely than women to value access to written and web-based information and it is possible that this is linked to occupational characteristics that give greater access to resources such as computers. Women are more likely to value access to information through seminars

and to consult with colleagues, family and friends. While women are more likely than men to consult with a financial planner or an accountant, they are less likely than men to rate this as their most important source of information (Clark-Murphy & Gerrans, 2001).

Among the Australian adult population knowledge about superannuation and account balances appears limited (ABS 2001; Kelly, Harding and Percival 2002). However, within this context, women appear to have lower levels of knowledge than men. Chalmers and Norris (2001) find that 26 per cent of men and 33 per cent of women can not put a value on their expected income in retirement from a private pension source and 14 per cent of men and 25 per cent of women can not estimate the value of other assets they may have in retirement. Onyx (1998) finds that most men and women cannot estimate the level of superannuation required to provide a liveable income or estimate the expected lump sum benefit of their superannuation. Knowledge of these issues is lower among women compared with men and those employed part time (both men and women) (Onyx 1998). Women are more likely than men to categorise their level of knowledge of superannuation as "none" or "little", compared with men who are more likely to describe their knowledge as "average" or "good" (Clark-Murphy et al., 2001). These findings appear consistent with the view that there is a need for education programs which create a savings culture in the community generally and among women specifically (Bentley, 2001; Olsberg, 2001).

8. INSTITUTIONS, RETIREMENT PLANNING AND INCOMES

A range of institutions plays a role in women's approaches to retirement savings and incomes. These include households, insurance offices and superannuation fund trustee boards.

As discussed above, households play an important role in women's retirement incomes. They affect decisions regarding labour supply, consumption and savings, provide a significant source of information on superannuation and investment decisions and are a source income transfers. Two additional aspects of household structure and decision making may be considered important in relation to women's retirement incomes. The first concerns the decision making processes of households with respect to the allocation of resources and retirement savings decisions. The second is that household structures are dynamic and subject to change through actions such as divorce.

9. HOUSEHOLDS

Households play a major role in resource allocation. Low income earners do not necessarily live in households at the bottom of the income distribution and may benefit from access to pooled household resources. Many low-wage earners are married women whose earnings contribute less than half of the family income (Richardson, 1999).

Whether Australian households pool their resources is difficult to establish from available research. It has been argued that the hypothesis that households engage in an equal sharing of resources can not be disproved in Australia (Bradbury, 1996) although small scale survey data suggests otherwise (Edwards, 1984). Australian and overseas research suggests that greater access to and control over household spending is associated with greater contributions of market income to the household resource pool (Edwards, 1984; Pahl, 1989; Singh, 1997; Vogler, 1998).

It is clear from available data that if equal sharing does occur, it does not result in equal savings accumulations among men and women. Data on asset ownership, sources of income and expectations regarding future income, demonstrate that on average, women own fewer assets and receive less capital income than men (Tinnion, 1998). The reasons for this are less clear. As outlined above, available literature suggests that women's relatively low capital accumulations are a function of their low lifetime earnings. However, the 'equal sharing' hypothesis suggests that low lifetime earnings of individual household members are compensated for through intrahousehold income distributions. If women can access additional income distributions through intrahousehold transfers, it is possible, in theory at least, that this income could be used for retirement savings purposes.

It is possible that lower paid members of a household may not use intrahousehold transfers to contribute to their own savings because of the way in which households make decisions regarding savings or because of their perceptions about the necessity of more immediate forms of consumption. On questioning couples about how they would use an increase in income, Edwards found that men are more likely to suggest saving or paying off debts than women. Women are more likely to suggest spending the money on themselves or their children (Edwards, 1984). The issue of fungibility may also be important. Singh finds that married partners construct meanings for money from different sources and use it for different purposes (Singh, 1997). For example one partner's earnings may be used to meet ongoing expenses while another's is used to accumulate assets and/or pay the mortgage. These kinds of arrangements may mean that pooled resources are not used for women's individual savings. There is little research into the relationship between household financial decision making and retirement savings by individual household members.

Income splitting arrangements for superannuation contributions, introduced in July 2003, are based on the premise that household incomes can be used to contribute to the savings of either individual in a couple (Treasury of the Commonwealth of Australia, 2002). The success of policy measures based on intrahousehold income transfers will be partially dependent on the extent to which such transfers are made for the purpose of retirement savings, as well as the costs associated with operating separate accounts. When available, data on these new arrangements may provide additional insights into the operation of intrahousehold income allocations to women's savings.

While household decisions to save for retirement have not been studied in depth, the importance of joint decisions in relation to other retirement related issues is recognised. Apart from poor health, the main reasons that women retire are closely related to the needs of others in their household or family, including the decision of a spouse to retire, to spend more time with family or to care for family members (Australian Bureau of Statistics, 1998b; Woolcott, 1998). Among a survey of retired couples, 77 per cent of men and 67 per cent of women indicated making joint retirement decisions (Woolcott, 1998) and some decisions, particularly those related to residential location are influenced by family members outside the household, such as adult children (Woolcott, 1998).

While households are important institutions with respect to retirement planning, they are also dynamic structures. Retirement planning involves long term decisions and the traditional view that women's retirement incomes will be provided through shared household resources is being challenged by rising divorce rates. Approximately 40 per cent of marriages contracted in the 1970s and 1980s are expected to end in divorce and approximately 12 per cent of women currently receiving the age pension

are divorced. This percentage is expected to increase in future years (Maloney et al., 2000).

Women who divorce are expected to move down the income distribution (Richardson, 1999). Low wealth indicators are higher for divorced women age pensioners than for those who are widowed, never married or in a married/de facto relationship. Older women are more likely to experience financial disadvantage upon divorce than older men (Weston & Smyth, 2000; Whiteford & Bond, 2000). While this has been addressed to some extent by recent legislation allowing for superannuation splitting upon divorce and through increased workforce participation, the expected benefits of these measures may be limited. Obviously, women who have already divorced do not have the benefit of this legislation. For those facing divorce in the future, it is argued that women's unpaid work contributions tend to be undervalued during divorce proceedings and broken employment patterns reduce future earnings through workforce participation (Sandor, 2001). Further, while these developments are expected to improve the retirement incomes of divorced women, it is expected that they will continue to experience relatively unfavourable financial outcomes (Maloney et al., 2000).

10. INSURANCE OFFICES – INVESTMENT ADVICE AND PRODUCTS

It has been argued that aversion to risk results in relatively low returns to investments for women. However, there is significant discussion whether lower returns are the result of different preferences or the way in which investment advice is offered to women in comparison with men (Clark-Murphy & Gerrans, 2002). Clark-Murphy and Gerrans suggest that gender differences are less significant when knowledge of investments is taken into account and that there is scope for improvement in the investment information offered to women. The results of their Australian study suggest that women are particularly thorough in their processing of information relating to investment and that there are potential gains in ensuring that more comprehensive information is readily available (Clark-Murphy et al., 2002).

Life offices offer different products to men and women. As women have higher average life expectancies than men, they can be charged higher costs than men for annuities. If instead, annuity calculations are based on average life expectancies for both men and women, then annuities for women become more cost attractive while annuities for men become more expensive. This reflects the fact that life expectancies differ from the actual longevity experienced by each individual and the cost of annuities reflects cross subsidisation by those with different life spans. (Clare, 1994b; National Superannuation Committee of Inquiry, 1976; Spratlin & Holden, 2000). In Australia, different annuity costs for men and women are legal because they are based on the average life expectancy of women and men as groups, not individuals. In the United States and the European Union there have been moves against pensions schemes which differentiate between men and women in the payment of annuities, encouraging cross subsidisation occurs across the total population (Clare, 1994a; Spratlin et al., 2000). It has been argued unequal life expectancies are associated with characteristics of people other than gender, such as occupation and ethnic background (National Superannuation Committee of Inquiry, 1976) and that there are no inherent justifications for differential annuities (Walpole, 1994).

Women's longer life expectancies also make it probable that, among couples, women will survive their partner. The expectation that women will rely upon transfers from their partner as a source of retirement income is implicitly based on the assumption

that they will be living with their partner in retirement. This form of retirement planning requires a recognition that “there is currently no actual or implicit expectation that a partner with superannuation will make financial provision for a non-superannuated surviving spouse” (Rosenman, 1999). Rosenman notes that while 53 per cent of women respondents to a survey said that they expected to manage financially on a partner’s superannuation if he died, only 15 per cent reported receiving any of their partner’s superannuation upon being widowed or divorced. The relatively neglect of reversionary benefits as a retirement planning issue increases the income risk associated with widowhood (Spratlin et al., 2000).

11. SUPERANNUATION FUND ADMINISTRATION

The long term nature of saving for retirement and accumulating superannuation balances means that previous discriminatory practices in the workforce will have implications into the future. This is demonstrated by a study analysing access to superannuation fund membership in the Education Department in South Australia (Patrickson, Harmann, & McCarron, 1994). In this case, women employed full time were not permitted to have fund membership until the principal of equal pay was introduced in 1966, while those employed part time did not have the option of becoming fund members until 1989. When voluntary separation packages were offered to Department employees in the 1990s, women’s choices were limited because of their lack of superannuation accumulations to finance early retirement. This case study provides insights into the long term effects of policies regarding retirement income provision.

Olsberg (1994) argues that greater recognition of women’s superannuation requirements would occur if women achieved greater representation as superannuation trustees. She provides a summary of the characteristics she believes women would bring to various areas of management, including team building skills, resourcefulness and cautious approaches to risk taking. Olsberg argues that increasing women’s representation on boards would bring a greater diversity of experiences and expertise to draw upon in the decision making process, including a greater commitment to the situation of casual workers and a long term view on fund performance and membership (Olsberg, 1994).

12. SUMMARY AND CONCLUSION: Gender and the Current Retirement Income Framework

The introduction of compulsory superannuation is expected to simultaneously increase average retirement incomes and result in wider inequality between those on high and low retirement incomes (Harding, Kelly, & King, 2002; Kelly, Harding, & Percival, 2001). While, superficially, compulsory superannuation appears to operate in a similar manner for both men and women, the employment nexus on which it is based means that it operates to provide the least benefits to those sectors of the workforce in which women are concentrated. Given the close linkages between income and savings, there is an expectation that low income earners, particularly women, will largely remain dependent on government or intrahousehold transfers.

Current behavioural and institutional factors appear to exacerbate the nexus between patterns of workforce participation and retirement incomes. Many women do not apply the term retirement to their working lives and their access to and use of retirement planning information appears to be relatively limited. Women’s longer life expectancies and the associated significance of gender based annuity costs and

reversionary benefits also appear relatively neglected issues both among Australian women and the superannuation and life insurance industry.

The increasing emphasis upon private retirement income provision is occurring in a context of expected fiscal pressures from an ageing population, limited levels of general awareness about the need for retirement planning and increasing divorce rates. Within this environment, women may find that their future access to private and government transfers will be relatively limited. Available literature suggests that Australian women will continue to experience relatively low incomes in later life and that this is due to their relatively high contribution to the economy's unpaid workload and attitudinal and institutional barriers to effective and equitable retirement planning.

13. REFERENCES

- Apps, P., & Rees, R. 2001. Household saving and full consumption over the life cycle: Centre for Economic Policy Research discussion paper no 428. Canberra: Centre for Economic Policy Research, Australian National University.
- Attanasio, O., & Banks, J. 1998. Trends in Household Savings: A Tale of Two Countries. Working Paper Series no W98/15. London: Institute of Fiscal Studies.
- Australian Bureau of Statistics. 1994. **Unpaid Work and the Australian Economy 1992, Catalogue 5240.0**. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. 1998a. **How Australians use their time 1997, Catalogue 4153.0**. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. 1998b. **Retirement and Retirement Intentions, Australia 1997, Catalogue 6238.0**. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. 2000. Superannuation Australia: Coverage and financial characteristics: April to June 2000, Catalogue 6360.0. Canberra.
- Australian Bureau of Statistics. 2001a. **Employment arrangements and superannuation, Australia: April to June 2000, Catalogue 6361.0**. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. 2001b. **Superannuation Australia: Coverage and financial characteristics: April to June 2000, Catalogue 6360.0**. Canberra: Australian Bureau of Statistics.
- Australian Tax Office. 2002. Superannuation guarantee: The facts for employees, Vol. 2003. Canberra: Australian Tax Office.
- Baxter, J., Jones, F., McDonald, P., & Mitchell, D. 2001. Negotiating the Life Course 1997 [computer file]. Canberra: Social Science Data Archives, The Australian National University.
- Becker, G. S. 1965. A Theory of the Allocation of Time. *The Economic Journal*, LXXV(299): 493-517.
- Bentley, K. 2001. The Importance of Saving over the Life Cycle, A Woman's Perspective: Paper presented at Ms...ing Out? Economic Policy Summit on Women & Retirement Savings, Friday 7 September, 2001 at the University of New South Wales, Sydney.
- Bradbury, B. 1996. Household Income Sharing, Joint Consumption and the Expenditure Patterns of Australian Retired Couples and Single People: Social Policy Research Centre, Discussion Paper No. 66. Sydney: Social Policy Research Centre: University of New South Wales.
- Brown, C. 1994. The Distribution of Private Sector Superannuation by Gender, Age and Salary of Members: Retirement Income Modelling Task Force Conference Paper 94/2. Canberra: Retirement Income Modelling Task Force.

- Chalmers, J., & Norris, K. 2001. Early Retirement: Does it Lead to Dependency on Income Support? SPRC report 40/01. University of New South Wales: Social Policy Research Centre.
- Chapman, B., Dunlop, Y., Gray, M., Liu, A., & Mitchell, D. 2001. The Impact of Children on the Lifetime Earnings of Australian Women: Evidence from the 1990s. *The Australian Economic Review*, 34(4): 373-389.
- Clare, R. 1994a. Women and Superannuation. *Australian Accountant*, 64(8): 34-37.
- Clare, R. 1994b. Women and Superannuation. In Economic Planning and Advisory Council (EPAC), & Office for the Status of Women (OSW) (Eds.), *Women and Superannuation: Selected Seminar Papers: Background paper no 41*: 1-28. Canberra: Commonwealth of Australia.
- Clark-Murphy, M., & Gerrans, P. 2001. Consultation and Resource Usage in Retirement Savings Decisions: Australian Evidence of Systematic Gender Differences. *Financial Services Review*, 10(2001): 273-290.
- Clark-Murphy, M., & Gerrans, P. 2002. Women's 'problems' with finance and investment - a result of gender differences in information processing? Paper presented to Reimagining leading @ home and in the marketplace: Eleventh international women in leadership conference, hosted by the Institute of the Service Professions, at Edith Cowan University, Mt Lawley campus, 28-29 November 2002.
- Cox, E. 1994. Super for unwaged women and low waged women. In Economic Planning and Advisory Council (EPAC), & Office for the Status of Women (OSW) (Eds.), *Women and Superannuation: EPAC Background Paper no 41*: 29-48. Canberra: Commonwealth of Australia.
- Department of Family and Community Services. 1999. Income Support Customers: A Statistical Overview 1999. Canberra: Department of Family and Community Services.
- Department of Family and Community Services. 2001. Income Support and Related Statistics: A Ten Year Compendium, 1989-1999: Department of Family and Community Services Occasional Paper no 1. Canberra: Commonwealth of Australia.
- Department of Family and Community Services. 2002. Annual Report 2001/02. Canberra: Department of Family and Community Services, Commonwealth of Australia.
- Donath, S. 1998. The Continuing Problem of Women's Retirement Income. Paper presented to the 7th Australian Women's Studies Association Conference 16-18 April 1998. University of South Australia.
- Edwards, M. 1984. *The Income Tax Unit in the Australian Tax and Social Security Systems*. Melbourne: Australian Institute of Family Studies.
- Encel, S., & Studencki, H. 1996. *Retirement: A Survey*. Sydney: Consultative Committee on Ageing.
- Harding, A., Kelly, S., & King, A. 2002. Trends in the Incomes and Assets of Older Australians. Discussion Paper no 58 June 2002. University of Canberra: National Centre for Social and Economic Modelling.
- Harris, M. N., Loundes, J., & Webster, E. 1999. Determinants of Household Saving in Australia: Melbourne Institute Working Paper no22/99. Melbourne: Melbourne Institute of Applied Economic and Social Research, Melbourne University.
- Ironmonger, D. 1996. Counting Outputs, Capital Inputs and Caring Labor: Estimating Gross Household Product. *Feminist Economics*, 2(3): 37-64.
- Kelly, R. 1997. Superannuation and the marketisation of retirement incomes. *Labour and Industry*, 8(1): 57-79.
- Kelly, S. 2001. Levels, patterns and trends of Australian household saving: Report prepared for the Financial Planning Association of Australia Limited. University of Canberra: National Centre for Social and Economic Modelling.

- Kelly, S., Harding, A., & Percival, R. 2001. Women and Superannuation in the 21st Century: Poverty or Plenty? Paper presented to the SPRC National Social Policy Conference, University of New South Wales, 4-6 July 2001. Canberra: NATSEM, University of Canberra.
- Kelly, S., Harding, A., & Percival, R. 2002. Projecting the Impact of Changes in Superannuation Policy: A Microsimulation Approach. Paper Presented to the Tenth Annual Colloquium of Superannuation Researchers 8-9 July 2002. Canberra: NATSEM, University of Canberra.
- Kelly, S., & Toohey, M. 2001. Who are Australia's best savers? A Report Prepared for the Financial Planning Association of Australia Ltd. Canberra: NATSEM, University of Canberra.
- King, A. 2001. Superannuation - The right balance: CPA Australia <http://www.cpaaustralia.com.au> 28 July 2003.
- King, A., Bækgaard, H., & Harding, A. 1999. Australian Retirement Incomes, National Centre for Social and Economic Modelling discussion paper no 29: 58. Canberra: NATSEM, University of Canberra.
- King, A., Walker, A., & Harding, A. 1999. Social security, ageing and income distribution in Australia. National Centre for Applied Economic Modelling discussion paper no 58: 29. Canberra: NATSEM, University of Canberra.
- Larkin, J. 1994. Occupational Link - Eligibility and the 'two year rule'. In Economic Planning and Advisory Council, & Office for the Status of Women (Eds.), **Women and Superannuation: Selected Seminar Papers: EPAC Background paper no 41**: 63-72. Canberra: Commonwealth of Australia.
- Loundes, J. 1997. Household Saving Behaviour in Australia: Melbourne Institute Working Paper No. 17/99. Melbourne Institute of Applied Economic and Social Research, University of Melbourne.
- Maloney, G., Marshall, J., McConnell, A., Elliot, J., Banks, A., & Hausknecht, P. 2000. Retirement incomes of women who divorce. **Australian Social Policy**, 2000(1): 3-24.
- Miller, P. 1994. Gender Discrimination in Training: An Australian Perspective. **British Journal of Industrial Relations**, 32(4): 539-564.
- National Superannuation Committee of Inquiry. 1976. **A National Superannuation Scheme for Australia (The "Hancock Report"): Parts One and Two**. Canberra: Australian Government Publishing Services.
- Olsberg, D. 1994. New directions in corporate governance: Women on trustee boards of superannuation funds. In Economic Planning and Advisory Council (EPAC), & Office for the Status of Women (OSW) (Eds.), **Women and Superannuation: EPAC Background Paper no 41**: 73-86. Canberra: Commonwealth of Australia.
- Olsberg, D. 2001. Women and Retirement Savings - Ways Forward? Lessons from overseas initiatives and proposed Australian Strategies: paper presented to the Economic Policy Summit, University of New South Wales, September, 7 2001.
- Onyx, J. 1998. Issues affecting women's retirement planning. **Australian Journal of Social Issues**, 33(4): 379-393.
- Onyx, J., & Benton, P. 1996. Retirement: A Problematic Concept for Older Women. **Journal of women and aging**, 8(2): 19-34.
- Pahl, J. 1989. **Money and Marriage**. London: MacMillan.
- Patrickson, M., Harmann, L., & McCarron, L. 1994. Women in education and early retirement. **Journal of educational administration**, 32(4): 77-85.
- Pender, H. 1994. The taxation treatment of super. In Economic Planning and Advisory Council (EPAC), & Office for the Status of Women (OSW) (Eds.), **Women and Superannuation: EPAC Background Paper no 41**: 90-93. Canberra: Commonwealth of Australia.
- Preston, A. 2001. **The Structure and Determinants of Wage Relativities: Evidence from Australia**. Ashgate Publishing Limited.

- Preston, A. 2003. Gender Earnings and Part Time Pay in Australia, 1990-1998. *British Journal of Industrial Relations*, 41(3): 417-433.
- Preston, A., & Austen, S. 2001. Women, Superannuation and the SGC. *Australian Bulletin of Labour*, 27(4): 272-295.
- Preston, A., & Jefferson, T. 2003. Baby Boomers and Australia's Other Gender Wage Gap, WEPAU discussion paper.
- Richardson, S. 1999. Households, individuals and low wages. *Australian Social Policy*, 1999(1): 163-180.
- Rimmer, R. J., & Rimmer, S. 1994. *More Brilliant Careers*. Canberra: Australian Government Publishing Service.
- Roseman, L. 1995. Superannuation guarantee charge: Benefits and risks. In A. Edwards, & S. Magarey (Eds.), *Women in a Restructuring Australia: Work and Welfare*. Sydney: Allen and Unwin.
- Rosenman, L. 1999. Not Just Surviving But Living: Policy and Income for Retirement and Old Age. *Australasian Journal on Ageing*, 18(3 supplement): 38-43.
- Rosenman, L., & Warberton, J. 1996. Restructuring Australian retirement incomes: Implications of changing work and retirement patterns. *International Social Security Review*, 49(4): 5-25.
- Rosenman, L., & Winocur, S. 1988. *Women's planning for old age and retirement*. Paper presented at the Proceedings of the 23rd annual conference of Australian Association of Gerontology, Brisbane.
- Rosenman, L., & Winocur, S. 1994. Women's work patterns and the impact upon provision for retirement. In Economic Planning and Advisory Council (EPAC), & Office for the Status of Women (OSW) (Eds.), *Women and Superannuation: EPAC Background Paper no 41*: 95-104. Canberra: Commonwealth of Australia.
- Ross, S. 1994. Taxation, superannuation and women. In Economic Planning and Advisory Council (EPAC), & Office for the Status of Women (OSW) (Eds.), *Women and Superannuation: EPAC Background Paper no 41*: 105-114. Canberra: Commonwealth of Australia.
- Roy Morgan Research. 2002. Superannuation Choice in Australia. Sydney: Financial Planning Association.
- Sandor, D. 2001. To Have And To Hold Till The Super Do We Part -Women and Marital Separation : Superannuation Implications A paper presented to the Economic Policy Summit on Women & Retirement Savings 7 September 2001, University of New South Wales.
- Sharp, R. 1992. The rise and rise of superannuation under labor. *Journal of Australian Political Economy*, 30: 24-41.
- Sharp, R. 1995. Women and superannuation: Super bargain or raw deal? In A. Edwards, & S. Magarey (Eds.), *Women in a Restructuring Australia: Work and Welfare*. Sydney: Allen and Unwin.
- Singh, S. 1997. *Marriage Money*. Sydney: Allen and Unwin.
- Spratlin, J., & Holden, K. C. 2000. Women and Economic Security in Retirement: Implications for Social Security Reform. *Journal of Family and Economic Issues*, 21(1): 37-63.
- Tinnion, J. 1998. Provision for Retirement - Who does what? Distribution of superannuation contributions, lump sum payments and capital incomes of tax filers 1995-96: new estimates. Paper presented to the sixth colloquium of superannuation researchers, University of Melbourne 9 and 10 July 1998. Canberra: Retirement Income Modelling Unit, Department of Treasury.
- Tinnion, J., & Rothman, G. 1999. Retirement Income Adequacy and the Emerging Superannuation System: New Estimates: Paper presented to the Seventh Colloquium of Superannuation Researchers, University of Melbourne 8 & 9 July 1999. Canberra: Retirement and Income Modelling Unit.

- Treasury of the Commonwealth of Australia. 2002. Splitting of Superannuation Contributions Between Couples: Consultation Paper. Canberra: Commonwealth of Australia.
- Vogler, C. 1998. Money in the Household: Some Underlying Issues of Power. *The Sociological Review*, 46: 687-713.
- Walpole, S. 1994. Indirect discrimination and superannuation. In Economic Planning and Advisory Council (EPAC), & Office for the Status of Women (OSW) (Eds.), *Women and Superannuation: Selected Seminar Papers: Background paper no 41*: 115-127. Canberra: Commonwealth of Australia.
- Wärneryd, K.-E. 1999. *The psychology of saving: A study on economic psychology* (1 ed.). Cheltenham, UK and Northampton, MA, USA: Edward Elgar.
- Weston, R., & Smyth, B. 2000. Financial Living Standards After Divorce. *Family Matters*, 55: 11-15.
- Whiteford, P., & Bond, K. 2000. Trends in the Incomes and Living Standards of Older People in Australia: Policy Research Paper no 6. Canberra: Department of Family and Community Services, Commonwealth of Australia.
- Wooden, M. 1999. Gender Pay Equity and Comparable Worth in Australia: A Reassessment. *The Australian Economic Review*, 32(2): 157-171.
- Woolcott, I. 1998. Families in Later Life, Dimensions of retirement: Australian Institute of Family Studies Working Paper No.14, May 1998. Melbourne: Australian Institute of Family Studies.

Appendix A

Selected Features of Studies Projecting SGC and/or Savings Accumulations, Australia

Ross (1994)					
Earnings	Contributions	Growth of Fund, Charges applied	Taxation	Working life profile	Outcome, \$1994 Lump Sum
Monthly Average Weekly Earnings by gender	9% of earnings	7% pa growth	15% on contributions and 15% on super funds earnings	Man works 40 years full time	122,000
				Woman works 40 years full time	81,000
				Woman works 8 years full time, followed by 10 year break, followed by 17 years full time	46,500
Brown (1994)					
Earnings	Contributions	Growth of Fund, Charges applied	Taxation	Working life profile	Outcome \$1992/93 Lump Sum
Average earnings for each year for age and gender as per ABS 1990 income distribution survey	9% of earnings	10 year bond rate plus 1% per accrual period. Administrative charges of \$1.70 (\$1994) per week, indexed to historical CPI data.		Male full time paid work from age 21 years retires at 55 years in 1992/93	167,365
				Male full time paid work from age 21 years retires at 60 years in 1992/93	193,700
				Male full time paid work from age 21 years retires at 65 years in 1992/93	216,255
				Female full time paid work from age 21, nilf 25-29, part time paid work (two thirds) 30-34, at 35 returns to full time and retires at 55 years in 1992/93	84,916
				Female full time paid work from age 21, nilf 25-29, part time (two thirds) 30-34, at 35 returns to full time retires at 60 years in 1992/93	100,195
				Female full time paid work from age 21, nilf 25-29, part time (two thirds) 30-34, at 35 returns to full time retires at 65 years in 1992/93	112,963
Donath (1997)					
Earnings	Contributions	Growth of Fund, Charges applied	Taxation	Selected Working Life Profiles*	Annuity as multiple of Age Pension (approx**) s
Weekly earnings of Employees disaggregated into	12% of earnings	1%-8% Results are presented here	15% contributions tax	Woman works full time from age 20, nilf for 5 years age 30-34, resumes full time work until retirement at age 60. earns income at 25 th percentile for her age group.	1.0

percentile bands by gender		for 5%	Superannuation fund Income taxed at 7.5% (corresponds to 15% tax on super fund earnings less dividend imputation)	Woman works full time from age 20 retires at age 60, earning income at 25 th percentile for her age group.	1.1
		An annuity is purchased on retirement giving an annuity which is the average between the highest and lowest annuity values published in 1997.		Man works full time from age 20 retires at age 60, earning income at 25 th percentile for his age group.	2.1
				Woman works full time from age 20, nilf for 5 years age 30-34, resumes full time work until retirement at age 60. earns income at 50 th percentile for her age group.	1.5
				Woman works full time from age 20 retires at age 60, earning income at 50 th percentile for her age group.	1.8
				Man works full time from age 20 retires at age 60, earning income at 50 th percentile for his age group.	2.8
				Woman works full time from age 20, nilf for 5 years age 30-34, resumes full time work until retirement at age 60. earns income at 75 th percentile for her age group.	2.0
				Woman works full time from age 20 retires at age 60, earning income at 75 th percentile for her age group.	2.5
				Man works full time from age 20 retires at age 60, earning income at 75 th percentile for his age group.	3.6
Tinnion and Rothman (1999) – Hypothetical individual analysis					
Earnings	Contributions	Growth of Fund, Charges Applied	Taxation	Selected Working Life Profiles*	Ratio of Average Annual Net Expenditure in Retirement to Average Working Life Net Salary
Multiples of Average Weekly Ordinary Time Earnings. Real wages growth of 3.5% assumed.	9% of earnings	Long term bond rate of 6 per cent. Fund earnings of 7%. CPI of 2.5%.	All taxation and government transfer provisions as at 1999 are included, indexed to average weekly earnings.	Man on lifetime earnings of 0.5 Average Weekly Ordinary Time Earnings (AWOTE) commences work at age 25 in 1997 and retires at age 65.	128%
				Man on lifetime earnings of 1.0 AWOTE commences work at age 25 in 1997 and retires at age 65	91%
				Man on lifetime earnings of 2.0 AWOTE commences work at age 25 in 1997 and retires at age 65	69%
Tinnion and Rothman (1999) – Cohort analysis					

Earnings	Contributions	Growth of Funds, Charges Applied	Taxation	Working life profiles*	Potential Aggregate Replacement Ratio
Population and labour force model with variables such as savings, unemployment, tax liabilities applied to groups in different age, gender and income cohorts	Compulsory SGC of 9% plus above minimum contributions and private savings.	Long term bond rate of 6%. Fund earnings of 7%. CPI of 2.5%.	All taxation and government transfer provisions as at 1999 are included, indexed to average weekly earnings.	Average for total population year 2000	60%
				Average for total population year 2038	70%
				Average for total working population year 2000	45%
				Average for total working population year 2038	59%
King (2001)					
Earnings	Contributions			Selected Working life profile*	Living standard at retirement as multiple of adequacy benchmark
Three income levels, low, middle and high, are distinguished for each of four different family types. Low income levels are related to no post-school qualifications, middle to post-school non-degree qualifications and high to post-school degree qualifications. Average earnings by labour force activity, age, gender and educational attainment are used.	9% of based salary	Superfund earnings of 4.5%pa Real earnings grow at 1% pa. Non superannuation investments return 3.5% pa. Housing mortgage rate is 3.5% pa	2000 tax system indexed to earnings. Age pension, reasonable benefits limits and superannuation tax thresholds indexed to earnings. Social security entitlements maintained in real terms.	Single male, low income, employed full time from age 25 until 65 years.	1.6
				Single male, middle income, employed full time from age 25 until 65 years.	1.7
				Single male, high income, employed full time from age 25 until 65 years.e	1.8
				Single female, low income, employed full time from age 25 until 65 years.	1.4
				Single female, middle income, employed full time from age 25 until 65 years.	1.4
				Single female, high income, employed full time from age 25 until 65 years.	1.6
				Couple, low income, male employed full time from age 25 until 65 years. Female reduced labour force participation from age 50 years until 65 years.	1.7
				Couple, middle income, male employed full time from age 25 until 65 years. Female reduced labour force participation from age 50 years until 65 years.	1.8

				Couple, high income, male employed full time from age 25 until 65 years. Female reduced labour force participation from age 50 years until 65 years.	1.9
				Couple with two children first child born when mother aged 24 years, second at 26 years. Male employed full time from age 25 until 65 years. Female reduced labour force participation while children young and from age 50 years until 65 years.	1.6
				Couple with two children, middle income, first child born when mother aged 27 years, second at 29 years. Male employed full time from age 25 until 65 years. Female reduced labour force participation while children young and from age 50 years until 65 years.	1.7
				Couple with two children, high income, first child born when mother aged 30 years, second at 30 years. Male employed full time from age 25 until 65 years. Female reduced labour force participation while children young and from age 50 years until 65 years.	1.9
Preston and Austen (2001)					
Earnings	Contributions	Growth of Fund, Charges applied	Taxation	Selected Working life profile*	Superannuation accumulations \$1996
Average annual 'starting' salaries of men and women (aged 20) employed full-time, residing in a metropolitan area and born in Australian. Salary indexed by coefficient of returns to labour market experience. This is discounted for women working part time.	Contributions at 9 per cent of salary.	Superannuation funds return 3.25% pa.	15% contributions tax is imposed.	Man works continuously, on a full-time basis, from age 20 in 2000 until retirement at the age of 65 (in 2045). Has average level of education.	233,000
				Woman works continuously, on a full-time basis, from age 20 in 2000 until retirement at the age of 65 (in 2045). Has average level of education.	206,000
				Women with average level of education enters workforce at age 20, withdraws from workforce from age 27-34. Returns on full time basis until retirement at age 65.	144,000
				Women with average level of education enters workforce at age 20, withdraws from workforce from age 27-34. Returns on part time basis until retirement at age 65.	106,000
Kelly, Harding and Percival (2002)					

Earnings	Contributions	Growth of Fund, Charges applied	Taxation	Selected Average Superannuation balance of non retired population \$1999, with 9% Superannuation Guarantee Contributions	
Dynamic micro-simulation model based on population sample simulates life cycle events through estimating probabilities for events such as household formation, divorce, earnings, taxation, savings and other events. Projections are benchmarked against external data, eg. demographic projections benchmarked against ABS population projections. 80 characteristics are profiled for 150,000 'synthetic individuals'.	Superannuation on Guarantee contributions plus additional voluntary contributions.	Fund earnings based on 5% return from 2000 onwards.	15% contributions tax.	Year 2000 Male 55-64 years	110,600
				Year 2000 Female 55-64 years	40,100
				Year 2000 Male 65-74 years	80,000
				Year 2000 Female 65-74 years	19,100
				Year 2010 Male 55-64 years	148,400
				Year 2010 Female 55-64 years	63,600
				Year 2010 Male 65-74 years	128,600
				Year 2010 Female 65-74 years	32,600
				Year 2020 Male 55-64 years	181,600
				Year 2020 Female 55-64 years	92,500
				Year 2020 Male 65-74 years	184,600
				Year 2020 Female 65-74 years	50,000
				Year 2030 Male 55-64 years	232,700
				Year 2030 Female 55-64 years	131,900
Year 2030 Male 65-74 years	214,700				
Year 2030 Female 65-74 years	73,900				

*This table contains only a sample of projections contained in the relevant study. **Donath's results are presented in the form of graphs. The ratios printed here represent a reading from these graphs.