



WORKING PAPER SERIES

# A LONGITUDINAL ANALYSIS OF SUPERANNUATION OUTCOMES: GENDER DIFFERENCES

JIMMY FENG<sup>1</sup>, PAUL GERRANS<sup>2</sup>, NOEL WHITESIDE, MARIA STRYDOM<sup>2</sup>,  
CARLY MOULANG<sup>3</sup>, GORDON CLARK<sup>4,2</sup>, MAURIZIO FIASCHETTI<sup>4</sup>

1 DEPARTMENT OF BANKING AND FINANCE, MONASH UNIVERSITY, 2 UWA BUSINESS SCHOOL, THE UNIVERSITY OF WESTERN AUSTRALIA, 3. FACULTY OF SOCIAL SCIENCES, THE UNIVERSITY OF WARWICK, 3 DEPARTMENT OF ACCOUNTING, MONASH UNIVERSITY, 4 SMITH SCHOOL OF ENTERPRISE AND ENVIRONMENT, UNIVERSITY OF OXFORD

1 May 2015

CSIRO-MONASH WORKING PAPER NO 2015-03

CLUSTER PROJECT 3: THE ROLE OF AGENTS, INFORMATION COLLECTION AND MEMBER SUPERANNUATION OUTCOMES, MEMBER SWITCHING AND BEHAVIOUR

## ABSTRACT

Since 1992, all employees in Australia have enjoyed a common condition of employment, namely an entitlement to payment of retirement savings contributions by their employer to a complying retirement savings (superannuation) fund. While this is a universal entitlement, individuals can alter their retirement savings trajectory, and ultimately their retirement standard of living, through choices they make, most notably through additional savings and the investment strategy applied to these savings. We are interested in the latter. Specifically, we are interested in the extent to which individual trajectories are influenced, or nudged, by demographic and social factors in retirement savings choices.

ACKNOWLEDGEMENTS: THIS RESEARCH WAS SUPPORTED BY THE CSIRO-MONASH SUPERANNUATION RESEARCH CLUSTER, A COLLABORATION BETWEEN CSIRO, MONASH UNIVERSITY, GRIFFITH UNIVERSITY, THE UNIVERSITY OF WESTERN AUSTRALIA, THE UNIVERSITY OF WARWICK, AND STAKEHOLDERS OF THE RETIREMENT SYSTEM IN THE INTEREST OF BETTER OUTCOMES FOR ALL.

We gratefully acknowledge Mercer Australia for the provision of data. We also acknowledge the support of David Knox in facilitating the data use and its understanding.



## **Summary**

*Using longitudinal data based on a sample of member accounts provided by a major Australian superannuation fund, this research investigated the extent to which women's superannuation savings fall behind those of men - and the main reasons why this happens. It was specifically interested to discover whether established gender-derived savings gaps are likely to diminish in the future.*

*This is a report of work in progress: the findings at this stage remain tentative. Further investigations into the data are promised.*

*Results to date suggest that:*

- *Statistical assessments demonstrate consistent gender bias in Australian superannuation. These are structurally embedded and consistent over time.*
- *The gap between male and female superannuation balances is observable from the earliest ages. Prevalent among younger cohorts, this is due to:*
  - *Lower rates of contribution;*
  - *Lower contribution frequency; and*
  - *Longer gaps between contributions (including absences for more than a year).*
- *There is little sign that patterns of female labour market participation are changing.*
- *Men dominate the upper earnings quartiles at all ages. This domination grows with age, possibly because higher earning females appear to leave the labour market in their 40s.*
- *The highest degree of volatility in member balances is visible among younger cohorts: generally, higher volatility is more evident among women than among men.*
- *Some evidence indicates greater gender equality among younger cohorts prior to the GFC.*
- *In general, the GFC appears to have damaged balance accumulations among the youngest cohorts.*

*This leads us to conclude that, if gender equality is desired, more action needs to be taken to supplement contributions from those undertaking unwaged care in lieu of work (who are mostly mothers).*

## Contents

Section 1: Introduction .....	3
Section 2: What We Already Know.....	7
Section 3: A gender-based overview of the Australian labour force (2001-12).....	10
Section 4: A Longitudinal Analysis of Gendered Superannuation Outcomes .....	15
4.1 The data .....	15
4.2 Age, time and cohorts.....	16
4.3 Member attrition by gender .....	16
4.3.1 Attrition by Gender.....	17
4.4 Superannuation accumulation .....	18
4.5 Interruptions.....	23
4.5.1 Interruptions – contribution amounts.....	23
4.5.2 Interruptions – contribution frequency.....	26
4.5.4 Interruptions – missing whole year contributions .....	30
4.6. Contribution quartiles by gender .....	32
4.7 Distributions.....	33
4.7.1 Inequality within gender groups by age .....	34
4.7.2 Mobility within gender groups: balances .....	35
4.7.2 Ranked inequality by balances: gender, age cohort and age cross-section.....	36
4.7.3 Ranked inequality by contributions: gender, age cohort and age cross-section .....	37
Preliminary Concluding Remarks.....	42
APPENDIX.....	44
REFERENCES.....	48

## Section 1: Introduction

Over the past 30 years, rising life expectancy and growing fiscal pressures have encouraged governments in developed economies to promote funded private provision to supplement (or, in the case of Australia, partially replace) state pension schemes. Rising life expectancy and recent turbulence on financial markets have caused final salary (defined benefit – DB) schemes to be extensively restructured, in part to comply with international solvency regulations, in part to protect corporate or public sector agencies from the financial impact of future imbalances. In many countries, occupational pension systems are promoting defined contribution (DC) supplements, where old age income depends directly on the amount saved by the contributor (with or without help from her employer) over a working lifetime. In Europe, persistent financial instability and falling returns have renewed demands for more public provision. However, the Global Financial Crisis (GFC) has increased public debt and this has shored up resistance by governments to any increase in public liability for pensions. Pensionable age and / or access to pension savings have been raised, with reforms continuing to promote or mandate private saving as the means to secure an adequate retirement income. Here, Australian experience is of some interest: this country introduced widespread employment linked personal superannuation in the mid-1980s. Universalised in 1992, this scheme now generates data that presents other countries with a vision of possible future outcomes for more recently introduced reforms.

The growth of private funded pensions in general (and DC schemes in particular) increases the importance of waged work as a basis for personal saving for retirement. This creates problems as female and male patterns of labour market participation are not the same. Recent decades have witnessed the decline of the male breadwinner model of family finance. Female labour market participation rates have risen and, with this, a shift away from wives' pensions derived solely from their husbands' contributions. Future female pension rights will increasingly depend on personal saving capacity – and generations of women are caught in the transition. Feminist writers, building on the extensive literature documenting gender-derived labour market inequalities, have demonstrated how continuing gender disparities in waged work translate into gender-derived pension gaps in old age: the more pension outcomes are linked to earnings-based contributions, the greater the risk that women's retirement income will decline relative to men's.

Analysis of gender-based pension gaps, their causes and extent, has largely used cross-sectional and household panel data to evaluate the size of the problem, and how far (if at all) policy interventions compensate for female disadvantage. In many countries, two issues muddy the waters. First, many DC schemes remain voluntary as governments have shied away from the electoral consequences of imposing what appears to be higher taxation. Tax incentives to encourage pension savings translate as state subsidies for the better off and, as women's earnings tend to be lower and more sporadic, cross sectional data may not reflect their long term participation in a pension plan with any accuracy. Second, when advancing reforms, policy-makers often ignore the impact of time on future outcomes.

Current female retirees rely overwhelmingly on their spouse or the state. However, if equality in outcomes is sought, this must change. Promoters of personal pensions claim that recent legislation on equal opportunities and rights to parental leave allow women to continue at work after childbirth: that occupational provision should not be required to offer a survivor's pension, for example. An astute young woman entering the labour market today might note the change and plan accordingly. Her older sister in her 30s, married with children, has less of a chance. Temporal imbalances may cause over-optimistic assumptions about future savings to the public purse while undermining pension security for women.

This points to a question central to this working paper: do younger women today continue to work and save following motherhood – or, like earlier generations, do they give up work (or work part-time) in order to dedicate themselves to family care? Financial studies have shown the detrimental consequences of missing contributions in DC schemes in the early or middle years of pension saving. These cannot be compensated by extra contributions just before retirement, as accumulated compound interest on money put aside for prolonged periods is lost (Drew et al. 2014). Simulations reveal that a five or six year labour market absence to raise children can create a 17 – 25 per cent drop in final DC savings (Scottish Widows 2014; Rice Warner 2010). The consequences of unwaged family care thus remain central to any assessment of women's future pension security when personal savings form the basis of retirement income. While many countries offer credits or other protection to safeguard women's rights under state schemes, very few compensate in any way for lower accumulation balances in private pensions.

An examination of recent developments in Australia enables a more detailed analysis, using data derived from a fund covering a large cross-section of Australian workers. A privately managed system of funded personal savings, the 1992 mandatory Super Guarantee is financed by employer contributions that have risen from 3 per cent to 9.5 per cent of salary with a commitment for a staged increase in the rate to 12 per cent in 2025. Additional (capped) voluntary contributions can be made under a tax-privileged scheme of salary sacrifice on pre-tax income: post-tax supplementation carries an additional state subsidy of 50 cents in the dollar for the low paid. Spouses can make tax-exempt additional contributions on behalf of a non-working partner. Employers can offer fund / investment choices (but not all do) and members can opt to manage their own super (Self-Managed Superannuation Funds - SMSFs). The majority, however, lapse into an employer's default fund which, from January 2014, requires mandatory contributions be paid into a MySuper simplified product with a single investment option. As these features indicate, Australian superannuation policy reflects an abiding faith in the merits of free competition and market choice in securing desirable social outcomes, in contrast to European countries, where policy mediates downside risk (as in Germany) or controls charges (as in Sweden and Denmark and, sporadically, the UK). Further, again unlike Europe, there is (to date) no obligation to annuitize, although Australian governments are encouraging senior citizens to view the superannuation retirement payout less as a personal bonus than as the means to secure an old-age income stream. This would safeguard the future cost of Australia's means-tested, tax-funded Age

Pension, currently claimed in full by over 40 per cent of retirees (ASFA 2014) thereby containing future public costs in a context of demographic ageing. Super is not yet fully mature and the mandatory contribution rate remains currently too low to offer full income replacement in old age; hence a majority of retirees will continue to rely in whole or in part on the Age Pension.<sup>1</sup>

Thanks to its mandatory obligations, data derived from this Australian scheme offers more detailed information on gendered differences in pension savings than many European counterparts. This paper uses administrative data from Mercer Australia, to interrogate super accumulation trends by gender for specific age cohorts and income quartiles for the period 2002/3 to 2011/12. In 2012, the Mercer Super Trust had around 260 participating employers and A\$15 billion in assets under management. The data therefore covers a broad section of employers and workers. The corporation is thus a major player in Australia's superannuation scheme. An analysis of the number and size of contributions made into a sample of employees' accounts allows estimated trends in part-time work and temporary absences from employment at different ages to be estimated. Data from a single super trust is limited as members' savings outside the fund cannot be taken into account. Further, member attrition is substantial: only about 20 per cent of participants in the age cohorts examined below remain at the end of the period studied. Moreover, it is very difficult to deduce the reasons behind observed individual withdrawals. Overall, we expect redundancies, changing jobs and moving away or leaving the labour market on childbirth or for related family obligations, for instance to be relevant. Observing differences between male and female exit rates may be taken to indicate the significance of the last factors. The data offers a longitudinal perspective on patterns of superannuation accrual in order to inspect gendered differences by age and income. Results reveal whether (or not) younger women still reduce waged working hours during their main child-bearing years and whether patterns differ between the low- or high-paid. The results have marked implications for gendered differences in superannuation balances for future decades.

Most projections and simulations of future retirement income used by governments and the pension industry assume 40+ years in full-time employment when estimating accumulation rates and savings outcomes. This traditional male pattern does not characterise the working lives of most women. Will the shift from full-time to part-time employment on the birth of children, discernible in the past, continue to affect super accumulation in the future? Current labour market behaviours displayed by younger professional female cohorts may suggest that it will not, but such behaviour may not be reflected among all younger women workers. Moreover, is it desirable (or possible) for all adults, men and women, to be employed on permanent full-time contracts without consequences for the birth rate and /or elder care? Falling birth rates imply future fiscal problems to sustain social services for ageing populations and /or more immigration to offer, privately or publically, the waged care needed when both parents work full time. As the need for care is neither constant nor measurable, it tends to be left

---

<sup>1</sup> The overall proportion eligible, by age, to receive any Age Pension (70 per cent) is not projected to decline substantially, though the proportion of this group receiving the full rate (currently 60 per cent) is expected to do so (Commonwealth of Australia, 2015, p.68).

in the backwaters of policy debate. However, unless it is accommodated in one way or another, discrepancies in pension accumulation will continue and gender imbalances will undermine both the political and economic viability of funded pension settlements. The ability to accommodate the issue of unwaged care is central to the success of the transition to funded old age income security for all.

The following section briefly reviews how the pension gender gap has been addressed and analysed in the literature. Using Australian Bureau of Statistics data, the paper then evaluates gender differences in labour market participation in the opening years of the 21<sup>st</sup> century before moving on to analyse longitudinal developments using a sample of accounts held by Mercer, Australia. The object is to reveal and explain why, persistently, female super savings fall behind the male rate, with specific reference to different age cohorts and different levels of income. The final section concludes this analysis and draws some inferences for policy.

We want to emphasise that this paper represents work in progress: gaps in the analysis still remain and we are exploring other ways in which the data might be exploited to shed further light on how a largely market based system of pension saving operates to the detriment of some and the advantage of others.

## Section 2: What We Already Know

The advent and growth of private funded pension systems has stimulated substantial academic interest in how such changes influence retirement income for women. Only a small fraction of that literature can be addressed here. As funded schemes reflect, within limits, individual labour market histories (as do many state pension schemes), so analysis has largely rested on research addressing female disadvantage in the labour market: disadvantage derived from occupational segregation in low paid work, broken careers and part-time jobs. Much of this work has been undertaken in Anglo-Saxon countries, where funded pension systems have a longer history. Certainly the general message has remained the same: there is a continuing need to protect women against the risk of old age poverty consequent on their lower and fewer contributions to private pension schemes. In reviewing the evolution of gender pension gaps over a 30 year period in the USA, for example, Evan and Macpherson (2004) concluded that improved gender balance in the labour market had not translated into more gender equality in pensions. Research on family histories and women's pension outcomes for current UK retirees found that previous employment was not a determining factor. Female retirees' pension rights largely rely on the spouse or the state as previous low paid and/or part-time jobs did not offer any cover. The authors concluded that the rising significance of personal pensions will increase the penalty of motherhood, not reduce it. (Sefton et al. 2011). Other studies have also found that women not only accumulate lower savings, but are also more risk averse in their investment strategies and more reliant on public pensions in retirement (Bernasek and Schwiff 2001 for the USA; Condon, 2001 for Canada; Jefferson and Preston 2005, and Gerrans et al. 2006 for Australia). Private sector pension gaps are widest for married women, with strong relationships between family size and the pension consequences for the mother (e.g. DWP 2010 for the UK; Parr et al. 2009 for Australia).

Recent research for the European Commission (Bettio et al. 2013) addresses current gender pension gaps across the European Union. Women's pensions include survivors' benefits (frequently widows' pensions) provided by many European occupational and state pension schemes, as well as pensions derived from women's previous employment. For the EU as a whole, the gender gap in pensions is more than double the gender gap in pay (39 per cent for pensions: 16 per cent for pay). Across all member states on average, there are three men for every woman in the top third of pension income distribution and two women for every man in the bottom third. Variable cover offers a partial explanation: some retired women in Catholic or Orthodox countries (Italy; Greece) never participated in the formal labour market or did not work long enough to acquire any pension rights. More importantly, there is little prospect of gaps closing in the near future. The gender pension gap is narrower among older cohorts (80 years and over) than it is among the more recently retired (65-80 years): a finding partly explained by women's greater longevity and higher life expectancy among the wealthy. However, even with rich widows removed from the data, the difference between older and younger retired cohorts diminishes, but does not disappear. The gender pension gap for future EU retirees (aged 50-64) will fall from 39 to 34 per cent, demonstrating the longevity of life choice impacts on funded pension outcomes (see also Maier et al. 2009; Leitner 2012).



Funded pension disparities, like gendered pay gaps, reflect the shift from the family to the individual wage over the past half-century. Governments have tried to compensate, to protect female retirees. In a review of over 100 research publications on the consequences of unwaged care for women's pensions, Jefferson (2009) identifies three main policy strategies that shape outcomes. The first, promoting female full-time work, is dominant in Nordic countries where gendered pension gaps are below the EU average. Sweden replaced 'maternity leave' with 'parental leave' in 1974, to include a non-transferable quota for both mothers and fathers (Gupta et al. 2008). Parental leave is funded by (capped) earnings-related benefits at 80 per cent of salary with a bonus for parents who divide this equally (but, in 2012, only 24 per cent was taken by fathers - Duvander 2014). Tax-subsidised nursery day care, pre-school classes and out-of-school-hours classes are provided for children under 12 (Nyberg 2012). The second strategy, providing a citizen's pension to protect all elderly from poverty, is exemplified by the Netherlands, where the state pension (AOW) is available to all fulfilling a residency qualification. As child care is less available and more expensive, however, Dutch women's pensions are lower than their Danish equivalents (Frericks et al 2006). The final strategy, sustaining female dependence on a male partner's contributions, is found in Germany under a strong state-run (unfunded) social insurance system (Ebbinghaus and Whiteside 2012). This currently protects German female retirees against poverty (Sefton et al 2011b), although recent pension reforms reflect a liberal turn to promote personal pension saving (Bridgen and Maier 2014). Protection against poverty is not, however, the same as gender equality and the weakness of the latter strategies is reflected in the fact that the Netherlands and Germany (and the UK) have the largest gender-derived pension gaps in Europe.

Thus similar factors underpin female pension disadvantage across countries, but policy variation creates different results. Australia is no exception. Here, the greater gender labour market equality identified by the World Economic Forum (2006) proves illusory as women work overwhelmingly in part-time, precarious and low-paid jobs (Barns and Preston, 2010; Cobb Clark 2012). Policies designed to eradicate gender inequalities in the labour market have included the 1999 Equal Opportunities for Women in the Workplace Act (reformed under the Workplace Gender Equality Act of 2011, to impose benchmarked obligations on employers); the Fair Work Act (2009) to allow flexible working hours for parents of pre-school children and the introduction of paid parental leave in 2011 (Broderick 2012). It is too early to assess if this legislation will affect superannuation outcomes. To date, Australian superannuation, being mandatory, has perpetuated labour market gender inequalities into retirement (e.g. Shaver 2001; Gee et al. 2002). Today, a gender earnings gap of 35 per cent (Jefferson and Preston 2005) translates into a pension gap in the region of 50 per cent (Davies and Ralston, 2012; Clare, 2014). Gender differences in superannuation accumulations are lower for younger cohorts (under 40) than for older people (Clare 2014): possibly reflecting the extension of mandatory superannuation in 1993 (older women workers in low paid / part-time jobs were less likely to be covered before that date), possibly the consequences of women over 35 moving into part-time work and not returning full-time in later life (also found in other countries: see Janusch and Vlasblum 2011 – the Netherlands; BMFSFJ 2012 – Germany), and/or the results of lower compound interest accruing to smaller savings pots (Drew et al. 2014). Most of the

research outlined above, however, relies on cross-sectional data. Results may assume, but cannot prove, that younger working women will follow the same employment patterns as their mothers and will therefore experience the same superannuation outcomes. In other words, time is ignored. It takes 40 years+ to accumulate a full set of contributions for a funded pension: from this perspective, even superannuation data cannot tell us the whole story.

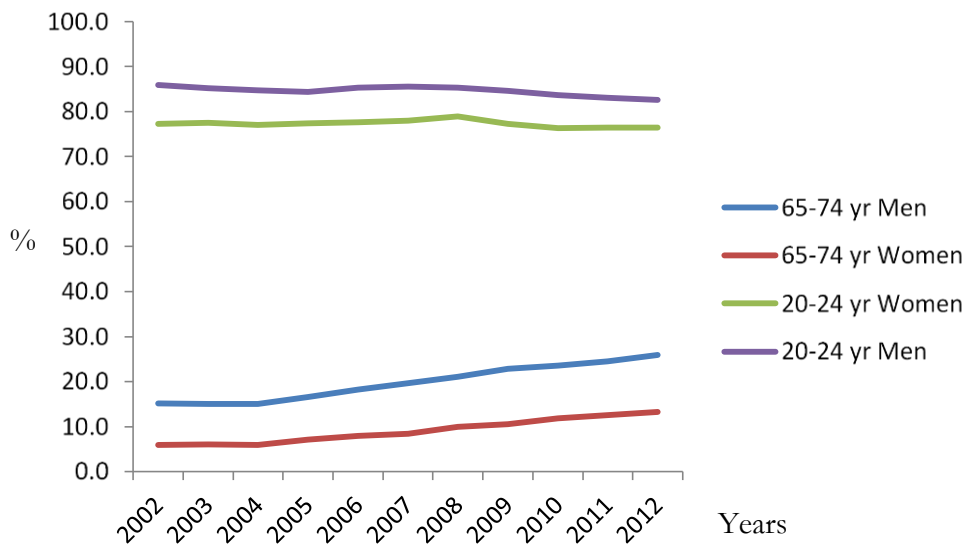
Gender disparities in Australia have led the pension industry to recommend the abolition of the lower minimal income level for Superannuation Guarantee contributions (offering state-funded supplements for the low paid) to accommodate more part-time or low paid workers (ASFA 2014). Such marginal improvements, however, will not get to the heart of the problem: women live longer and face retirement with lower superannuation accumulation than their male counterparts. In reviewing female superannuation savings over the decade 2002/3 to 2011/12, we assess the gendered performance of a private savings scheme that only offered marginal (non-mandatory) support for mothers over that decade. This is the market red in tooth and claw. How far women manage to accommodate the demands made by family care while continuing to accumulate their own pensions is a matter of no little interest and to its analysis we now turn.

### Section 3: A gender-based overview of the Australian labour force (2001-12)

Gender gaps in superannuation savings are rooted in the different ways men and women participate in the labour market over their working lives. Longitudinal data from Mercer enable a more exact analysis of the behaviours of specific age cohorts over time, getting behind the blanket explanations that identify low pay, broken careers and unwaged caring obligations as the main factors that lead to lower female savings. Cross sectional data derived from the Australian Bureau of Statistics’ ‘Gender Indicators’ for the Australian labour force paint a broad picture of pay and work participation rates in the early 21<sup>st</sup> century. This section offers an overview.

Some 78.1 per cent of Australian men and 60.3 per cent of women were in employment<sup>2</sup> in 2001/2002. These figures rose slightly for both sexes by 2011/2012 with averages of 79.2 per cent and 65.2 per cent respectively, narrowing the gender gap (the difference in work participation rates) from 18 per cent in 2001/2002 to 14 per cent in 2011/2012. Employment rates vary by age. Men consistently have higher participation rates across all age groups but the gender gap in participation is smallest for 20-24 year olds (8.6 per cent in 2001/2002; 6.2 per cent in 2011/2012) and (post-retirement) 65-74 year olds (9.3 per cent in 2001/2002; 12.6 per cent in 2011/2012). The participation rates of both sexes decline after age 55.

Figure 3.1: Australian labour force participation by gender and age (2001-2012)



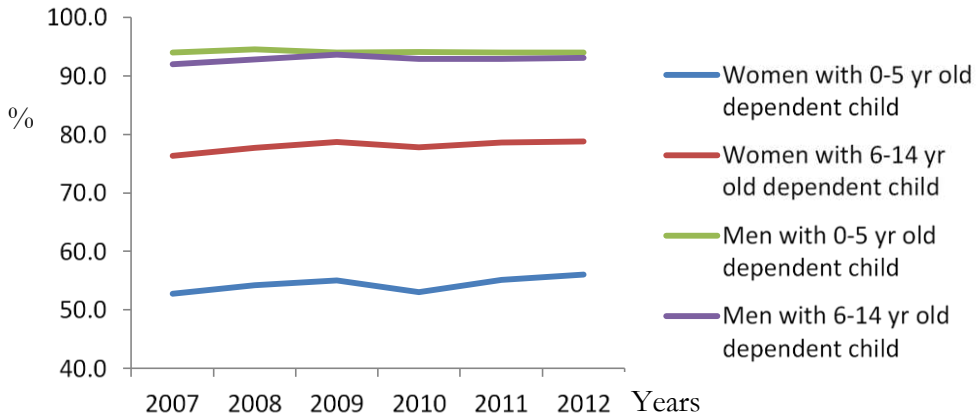
Source: Australia Bureau of Statistics (2013)

Greater disparities can be observed for parents of dependent children (see Figure 3.2). Only 52.8 per cent (76.3 per cent) of women with dependent children below age 5 (aged 6-14) were employed in 2006/2007 compared to 94 per cent (92 per cent) of men. Women’s participation in the labour force is

<sup>2</sup> The labour force participation rate considers all individuals who are involved in any kind of work, regardless of whether part-time or full time. It considers all individuals in the population between the ages of 20 and 74.

significantly lower when they have dependent children, particularly when these children are of pre-school age. The participation rates of fathers remain in the 90<sup>th</sup> percentile. Women therefore emerge as the primary carers of dependent children and a large percentage of women apparently leave the labour force for extended periods in consequence. Such extended absence from work must partly explain the large gender differences in superannuation balances at retirement age discussed below.

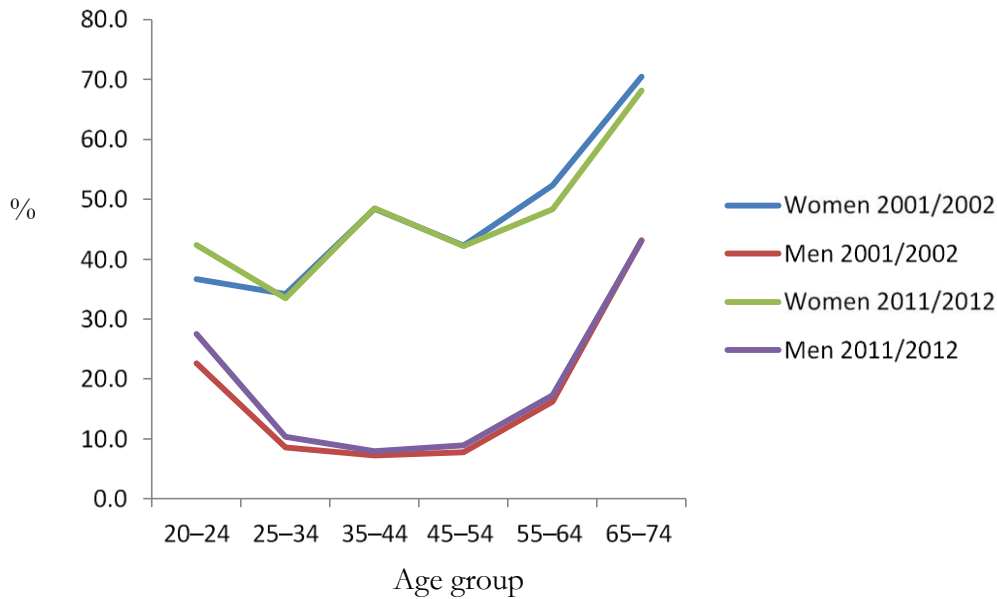
Figure 3.2: Australian labour force participation by gender and dependent children (2007/12)



Source: Australia Bureau of Statistics (2013)

Over and above total labour market absences, more women than men work part-time and this appears consistent over time. In 2001/2002 (2011/2012) 42.4 per cent (43.2 per cent) of women in the labour force were employed part-time compared to 11.1 per cent (13.5 per cent) of men. The percentage of women in part-time employment generally differs across age cohorts, again consistently over time (see Figure 3.3). For 20-24 year olds, 36.7 per cent (42.4 per cent) worked part-time 2001/2002 (2011/2012), for 35-44 year olds this rises to 48.4 per cent (48.5 per cent). Fewer women in the higher age cohort (44-54) work part-time, but more elect to do so after retirement age, reaching 70.5 per cent (68.2 per cent) for 65-74 year olds. The similarity of part-time working trajectories for the same age cohorts across the decade is striking. For men, some 22.6 per cent (27.5 per cent) in the 20-24 year old group were employed part-time in 2001/02 (2011/12), 7.2 per cent (7.9 per cent) in the 35-44 year old group and 43.2 per cent (43.1 per cent) in the 65-74 year old group. Men thus had lower rates of part-time labour force participation across all age cohorts.

Figure 3.3 Australian labour force participation (part-time) by gender and age



Source: Australia Bureau of Statistics (2013)

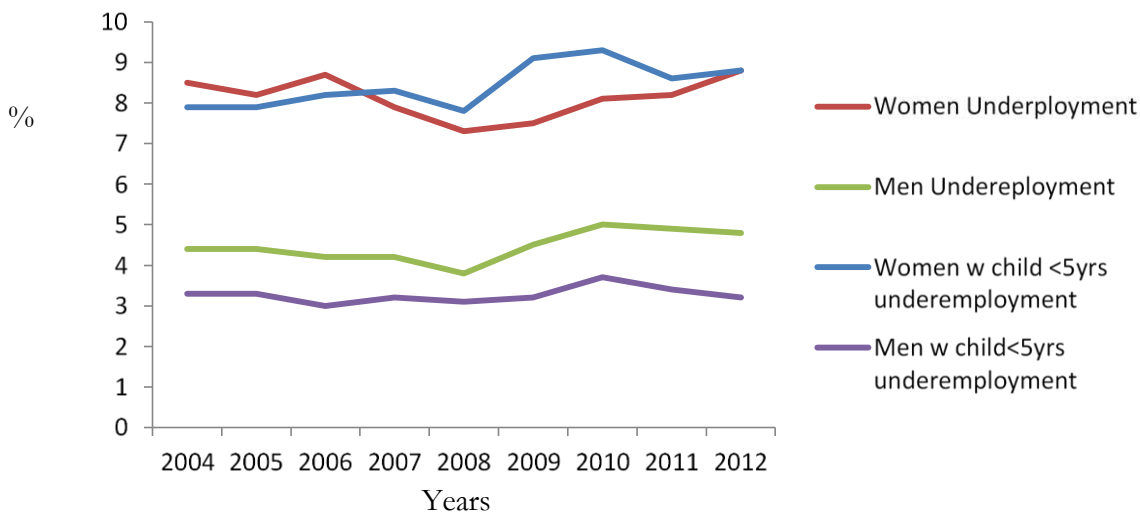
Of those labour force participants with children under the age of 5, 6.9 per cent of men and 64.8 per cent of women were employed part-time in 2011/2012. These figures were similar for those with children between ages 6 and 14 where 7.1 per cent of men were employed part-time compared to 55 per cent of women. This reinforces the analysis illustrated in Figure 3.2: fathers of dependent children are both more likely to work and more likely to work full time than their partners.

This pattern is reflected by figures on male and female average working hours: women work fewer hours than men whether employed full or part-time, although the gap for full-time workers is more notable. In 2001/2002 (2011/2012) the average hours per week for a male in full-time employment was 42.3 (40.6) hours whilst, that for women was 37.8 (36.4) hours. For part-time workers these figures were 17.2 (17.3) hours for men vs. 16.4 (16.8) hours for women. These disparities, unsurprisingly, widen for parents of dependent children. The full-time working father of a pre-school child averages 41.1 hours per week: his partner averages 32.3 hours. If in part-time work, the male parent of a pre-school child is employed 18.6 hours compared to the part-time mother who works 15.1 hours. Within both categories, therefore, longer hours probably translate into higher earnings (and superannuation contributions) for men than for women – thus creating future gaps in retirement balances.

Australian unemployment rates generally declined in the first decade of the 21<sup>st</sup> century and the rates for men and women were not noticeably different, falling from 6 per cent (5.4 per cent) of men (women) in 2001/2 to about 4.2 per cent (4.6 per cent) by 2011/2012. More telling are the labour underutilisation rates. These identify employees who are seeking to work more hours than are currently available to them, who are essentially under-employed. The average underutilisation rate for men was 9.1 per cent in 2011/2012 whilst that for women was higher at 13.1 per cent. Labour underutilisation

rates are higher for both genders in the 20-24 age cohort (18.6 per cent for men and 21.3 per cent for women in 2011/2012), possibly reflecting the consequences of the GFC, and are lowest, on average, for those in retirement. When comparing labour underutilisation for parents of children under 5 years old, rates for men are substantially lower at 6.2 per cent compared to 14.9 per cent for women. Women find it more difficult to obtain enough working hours compared to men, more so when they have small children. Shorter working hours (noted above) are not only the consequence of personal choice.

Figure 3.4: Percentage of labour force underemployed by gender



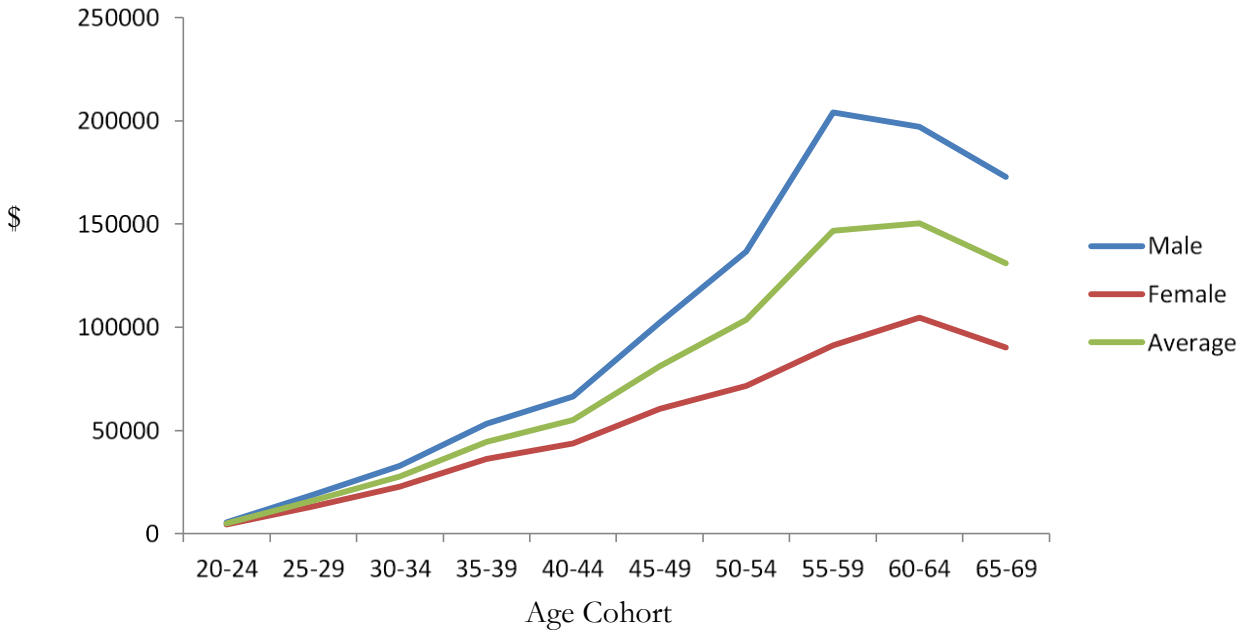
Source: Australia Bureau of Statistics (2013)

As far as pay and superannuation is concerned a clear gender-based pay gap exists which extends into a gender gap in superannuation balances. If managerial grades are excluded, the average hourly rate for men was \$35.40 in 2012 and that for women was only \$31.20. Given that men on average work more hours than women, this gap widens when translated into weekly earnings, with average pay at \$1399.60 for men and \$946.80 for women.

As superannuation contributions are proportionate to earnings, this means that accumulation rates for women fall behind those for men (see Figure 3.5). In 2011/12, the average superannuation balance for male adults (age 15+) was \$197,000 as against \$105,000 for women (Clare, 2014: 3). This average stems from a small gender-based balance gap in the 25-34 year age group (\$25,859 for men vs. \$18,082 for women) which reaches larger proportions in the retirement age group, aged 65-74 (\$153,779 for men vs. \$77,653 for women). Furthermore, some 34.6 per cent of women aged over 15 had no superannuation coverage in 2011/12, compared to only 26.1 per cent of men (ibid. 7-8). Younger (aged 15-24) and older (aged 65+) women were most likely to have no superannuation coverage. For younger women this is probably caused by participation in higher education and casual work which often does not amount to sufficient income to attract Superannuation Guarantee payments;. For older women, the legacy effect of part-time employment in the period prior to the Superannuation Guarantee being introduced in 1992 explains their exclusion. Figure 3.5 shows a change of accumulation trajectory

between men and women in their early 40s in 2011/12, possibly indicating how the Superannuation Guarantee has managed to bring more women into the super scheme on entry to the labour market. The subsequent broadening of gendered fund accumulations also indicates how compound interest on larger balances increases the gap between men and women in absolute terms in later working life.

Figure 3.5: Superannuation balances by age (2011/12)



Source: ASFA, 2014

In summary, gender-based differences in labour force participation reveal how women currently display lower activity rates in every age cohort and the presence of dependent children affects women’s participation in waged work more than men’s. Women are substantially more likely to be employed part-time than men. The number of hours employed, whether on a full or part-time contract, is also lower for women at every age cohort than for men. While unemployment rates for men and women remain very similar, the underutilisation rates for women are higher. This indicates that more women than men would work longer hours if the opportunity existed. Excluding professional classes, women receive lower hourly and weekly pay in each age cohort. The associated impact on superannuation is revealed in the gender gap in accumulated balances. Specifically, whilst the gap in super balances of men and women is relatively small in their early twenties, this gap is much larger (and very material) in later life.

## Section 4: A Longitudinal Analysis of Gendered Superannuation Outcomes

Section 3 used ABS data to establish general differences in the labour market and work experience of Australian men and women. It showed that shorter hours (lower earnings) and higher levels of labour market exit / part-time work help shape the gender superannuation gap visible among those approaching retirement. However, this data is not definitive: it is quite difficult to read the experience of different age cohorts across time. Women falling in the 25-34 age range in 2001/2 will be in the 35-44 cohort in 2011/12. Is there evidence that younger women no longer leave work or shorten working hours during child bearing years? And what are the consequences for future dependence on the Age Pension, currently supplementing the retirement of more women than men? A longitudinal analysis of Mercer data offers some answers

### 4.1 The data

Before proceeding to the analysis, some features of this data need to be specified. First, it is drawn from administrative records of a major superannuation provider. Information about members is limited to factors of direct concern to the management of the sub-plan. While distinguishing contributors by age and gender, there is no information on marital status, parenthood or occupation. Annual income can only be inferred from the dollar amount of an employer's contribution. Equally, a temporary absence from work, or a transfer to part-time working, can be deduced from changes in regularity or amount of contributions made on a member's behalf. If a member leaves, accumulated balances are transferred into a Personal Superannuation Division (PSD) of the Mercer Super Trust, but reasons for leaving (e.g. change of job or family obligations) are not supplied. Second, the analysis below focuses primarily on the experiences of different age cohorts by gender. However, as mandatory superannuation was only introduced in 1992, this has implications for the balances of older women in our sample as they were less likely to have been covered before that date (due to part-time working, for example). Moreover, as noted above, the MySuper reforms came into effect in 2014 and thus has no impact on the data used here. Australia's superannuation scheme is not yet mature and this examination assesses its early implications, not its definitive outcomes as these may yet be changed by tax modifications or future regulatory changes.

Finally, as workers enter and leave jobs and as the number of employers covered by Mercer alter over the period under review (2002/03 – 2011/12), the number of individual workers on record also change. At the start of our study, a very large sub-plan came under Mercer's stewardship in the year 2002/3. As a result, it has not proved possible to create a common starting point for established and entering members at that date as the data on new members only embraces a part-year. In order not to distort the results, two sets of data are presented in the calculations below that distinguish the experiences of established and entering members.



## 4.2 Age, time and cohorts

We are interested in superannuation outcomes for women, taking interruptions in membership history into account. Interruptions here are variously defined as: periods where no contributions are received; periods where the average employer contributions dollar amount is reduced; and periods where the frequency of employer contributions received is reduced relative to the member’s own history.

We are particularly interested in age differences in this experience. Given that a possible ten-year window is available for analysis, we need to distinguish between age and cohort effects over time. The bulk of the analysis below examines three, three-year age-cohorts who either are existing members in 2002/03 or join a sub-plan during 2002/03. The three age cohorts are: 24, 25, 26 year olds; 34, 35, 36 years old; and 44, 45, 46 years old in 2002/03. These can alternatively be characterised as three birth-year cohorts: those born in 1956-1958, 1966-1968 and 1976-1978. For convenience we refer to these as *age cohorts*. Some analysis focuses on samples of those of the same age in different years. For example, those aged 24-26 years in 2002/03 and 2005/06. These are identified as *age cross-sections*; they allow examination of whether the experience of the same age group changes over time. Finally, member balances are tracked each year and aggregated separately by whether the member left the sub-plan or continued in the financial year as an active member, that is, they have not exited. Those leaving are specifically excluded in some of the figures produced below as their heterogeneity really does not add anything significant to the analysis. However, their experience is reproduced in an appendix

## 4.3 Member attrition by gender

As a first step, the attrition rates by gender for each specified age cohort are explored below. At each specific age, what proportion of members remains from the original sample at the end of the financial year? To illustrate the extent of member attrition, the analysis focuses on the nine ages identified above, using two categories of members. The first are those members who joined prior to the beginning of 2002/03 financial year who are labelled as “existing” members; the second are those who joined during the 2002/03 financial year (“joined”) whose maximum total membership length is slightly less than nine years. To provide an idea of the sample sizes, the table below provides the number of members by gender, by age and distinguishes existing from joining members.

Figure 4.1: Sample breakdown by gender and age

Age	Existing 2002 Female	Existing 2002 Male	Joined 2002 Female	Joined 2002 Male
24	354	460	588	644
25	356	522	589	740
26	438	590	683	684
34	376	885	603	967
35	377	902	512	869

36	376	854	522	897
44	339	884	386	789
45	294	874	393	672
46	297	821	314	657

The initial sample is thus over 21,500 members, although – thanks to attrition – this is reduced to c. 4,300 by the end of the period. Note that, while numbers of men and women members are only mildly skewed in their mid-twenties, this is not the case for members in their mid-thirties and mid-forties, where the proportion of male members is substantially higher.

4.3.1 Attrition by Gender

The figures below address the flow of members out of the fund: from the starting sample sizes, the attrition of members is tracked. Figures 4.2 (a) and (b) provide an attrition profile by gender and age. At each year the proportion remaining active (not-exited) is shown. For both samples a lower proportion of female members remains in the sub-plan, as shown by the lower position of the red line. Note that the experience of the initial sample (Figure 4.1) over time is being measured. These are specific age groups formed at 2002/03; and thus the first graph traces the attrition rate for men and women as they age over the period given their age in 2002/03. Our interest here is whether the attrition rate is higher or lower for women.

Figure 4.2(a): Attrition rates by age and gender: existing members

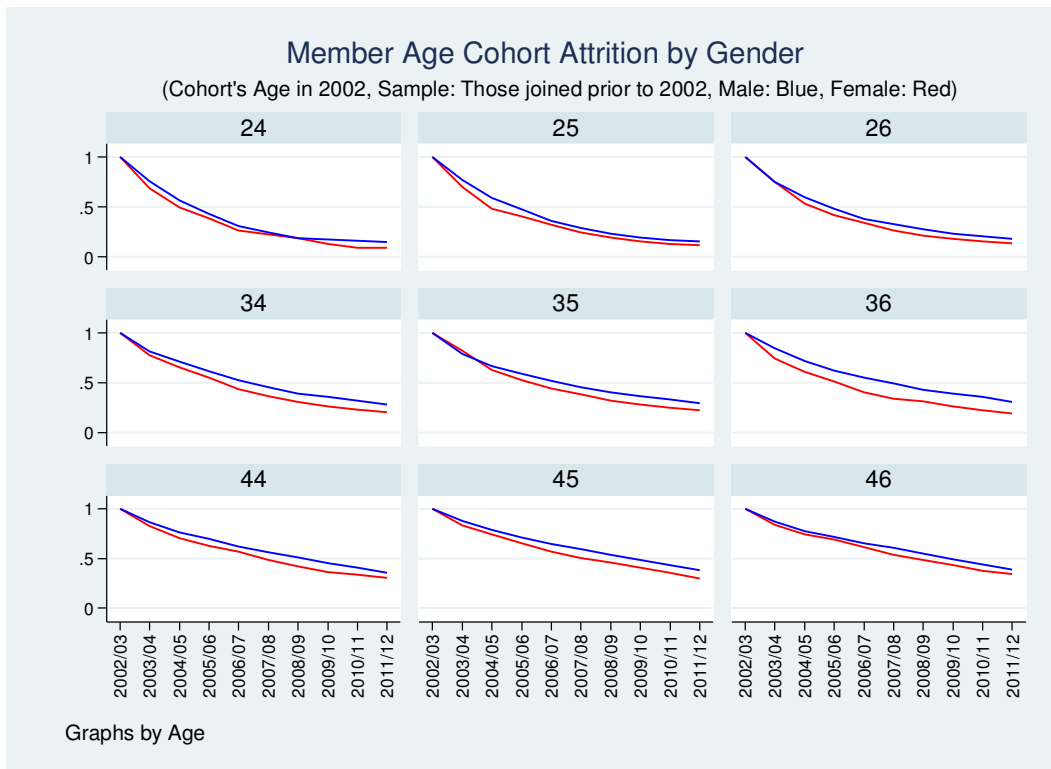
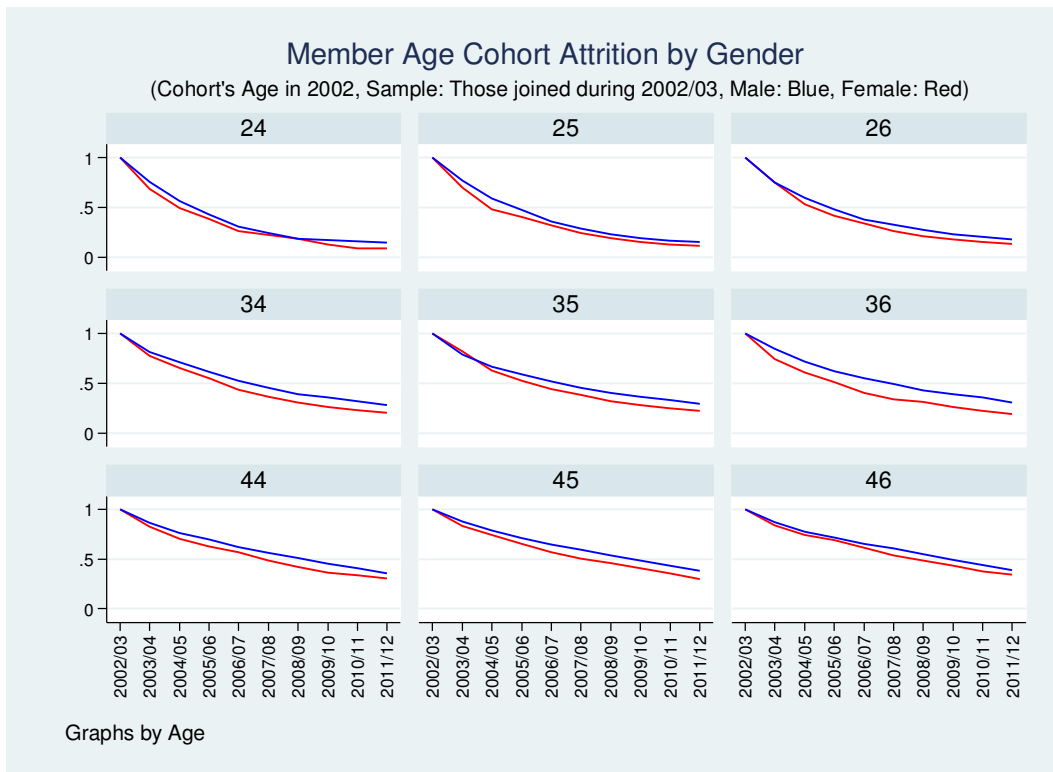


Figure 4.2 (b): Attrition rates by age and gender: joining members



Attrition consequent on the propensity of members to move away and/or change jobs might be assumed to be gender neutral. Attrition is highest, overall, for members of the sample in their 20s, indicating the greater labour mobility found in that age group. However, for all ages in the sample, the propensity for women to leave the sub-plan is higher than that for men. There is a distinct gender effect: this is most marked among women aged 36-45, but is also higher among those aged 44-55 than among women aged 24-36. As these are different age groups, does this signal a change of behaviour at younger ages – even though women in their 20s are still slightly more likely to leave than men? Or do growing family size and a full-time, secure job for the male partner (see Figure 3.3 above) encourage women to give up work (or work part-time) in their 30s and 40s?

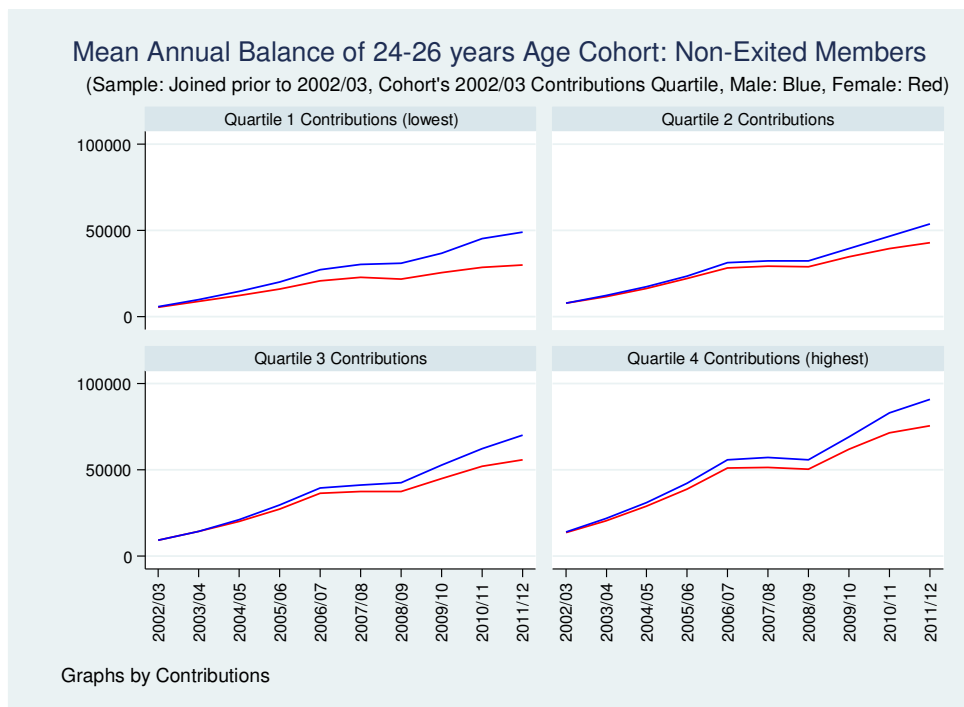
**4.4 Superannuation accumulation**

We next examine the history of member balances by gender within *combined three-year* age cohorts, using aggregated membership figures and dividing them by earnings quartiles based on employer

contributions. Individuals are grouped according to the first full year of employer contributions. For those who joined prior to 2002/03 a 2002/03 earnings quartile is constructed. For those who joined during 2002/03, rather than creating equivalents from part-year contributions, their 2003/04 record is used to construct the earnings quartiles. The following analysis describes gender differences in superannuation accumulation by age cohort, divided into different earnings quartiles for non-exited members only, distinguishing those who joined during 2002/3 from existing members. Figures illustrating balances for members leaving the sub-plan can be found in an Appendix to this paper.

First, we examined the sample that joined prior to 2002/03 and compared the end of full-year balance for each of the three age cohorts, broken down by contributions quartile. These are the quartiles formed on the basis of the members’ contributions record in 2002/03 (existing members) and 2003/04 for those who joined in 2002/03. (Later, the gender split within these quartiles and mobility within these quartiles will be examined.)

Figure 4.3 (a): Mean superannuation balances for age cohort 24-6 by gender: existing members



Differences in male and female accumulation rates are visible by their late twenties in all earnings quartiles, the savings gap is largest for the low paid. The graphs do not include women who have left the sub-plan. They do cover those with contribution gaps or salaries reduced by part-time working.

Figure 4.3 (b): Mean superannuation balances for age cohort 34-6 by gender: existing members

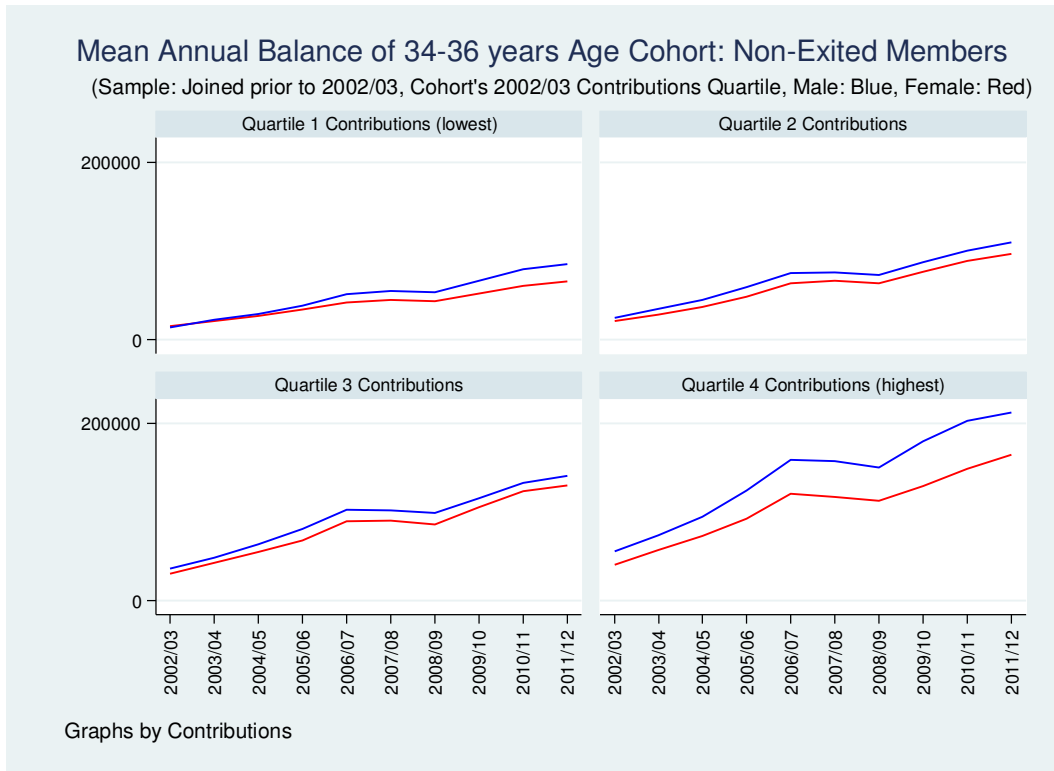
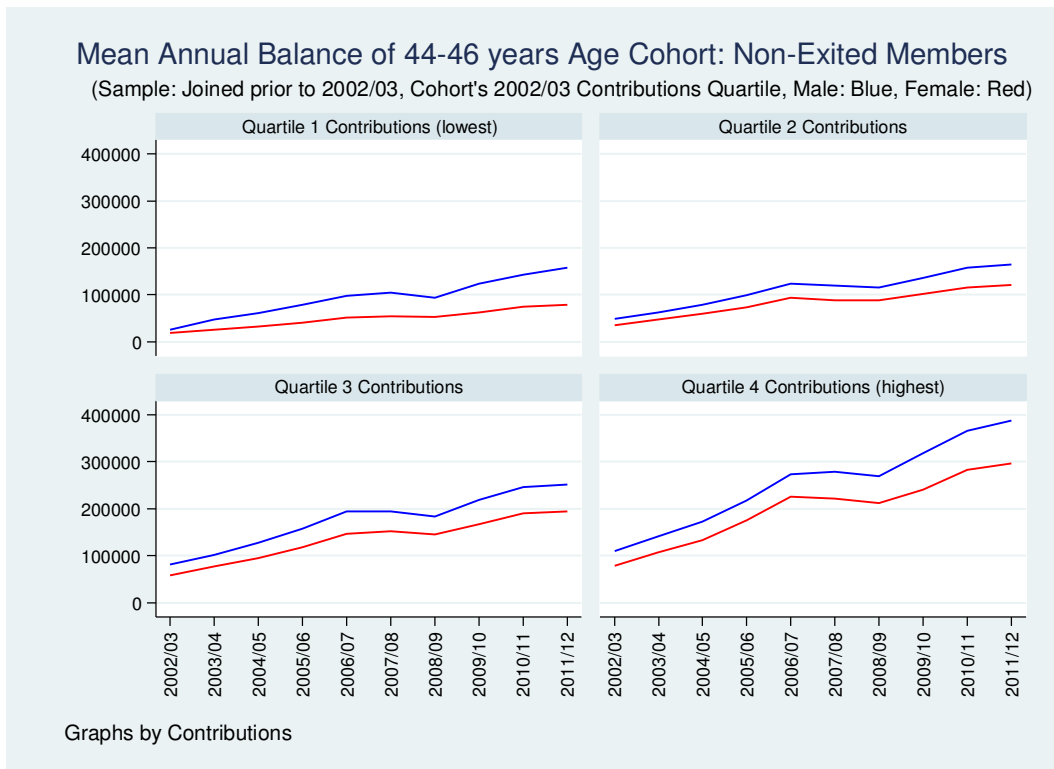


Figure 4.3 (c): Mean superannuation balances for age cohort 44-6 by gender: existing members



For those who were existing members in 2002/03 a consistent gender pattern is also observed with female members accumulating lower balances. As might be expected, with tax concessions taken into account, overall accumulation rates rise with salary size to reward the better paid.

Figure 4.4 (a): Mean superannuation balances for age cohort 24-6 by gender: joined members

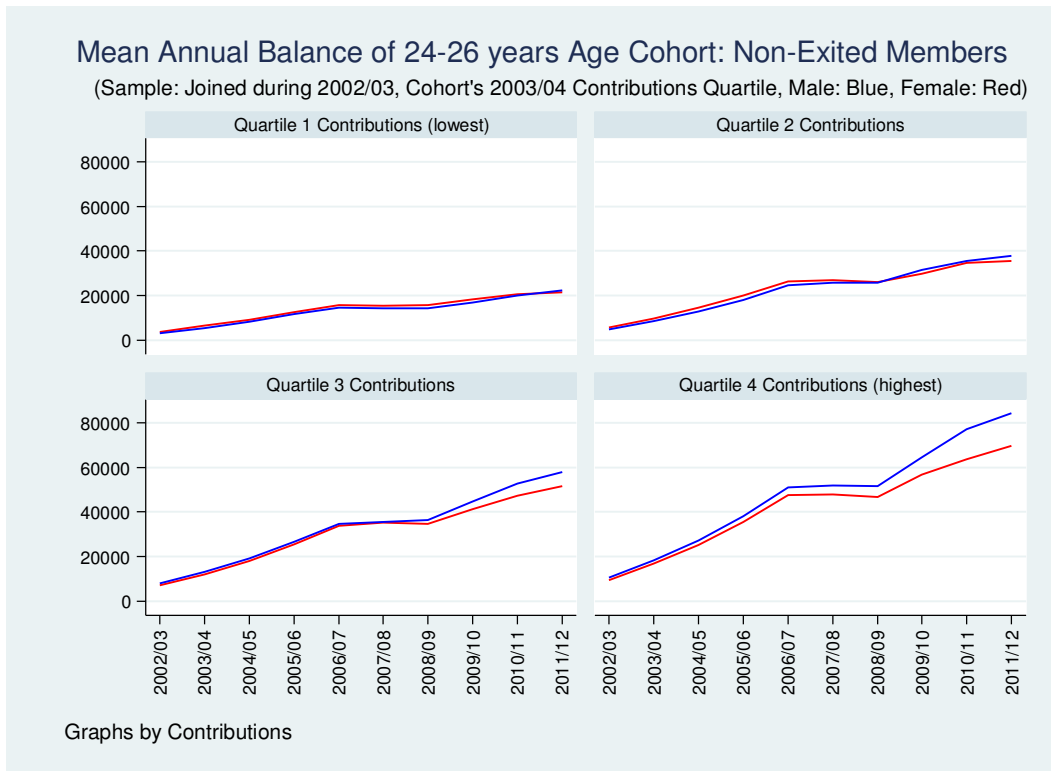


Figure 4.4 (b): Mean superannuation balances for age cohort 34-6 by gender: joined members

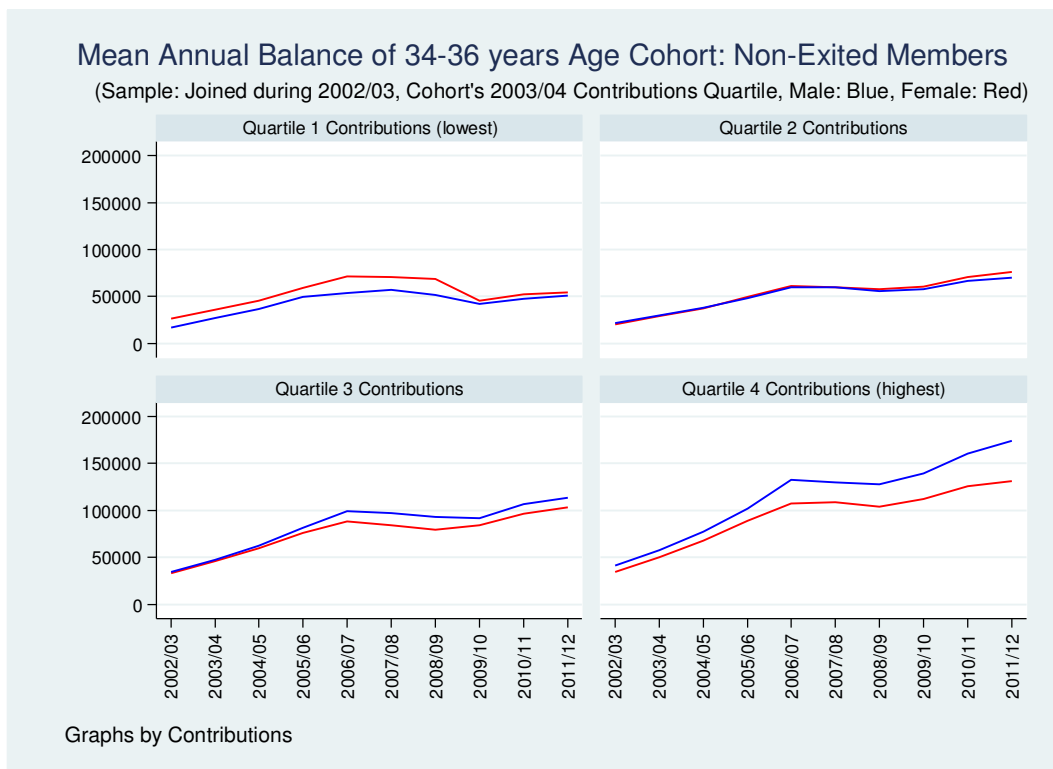
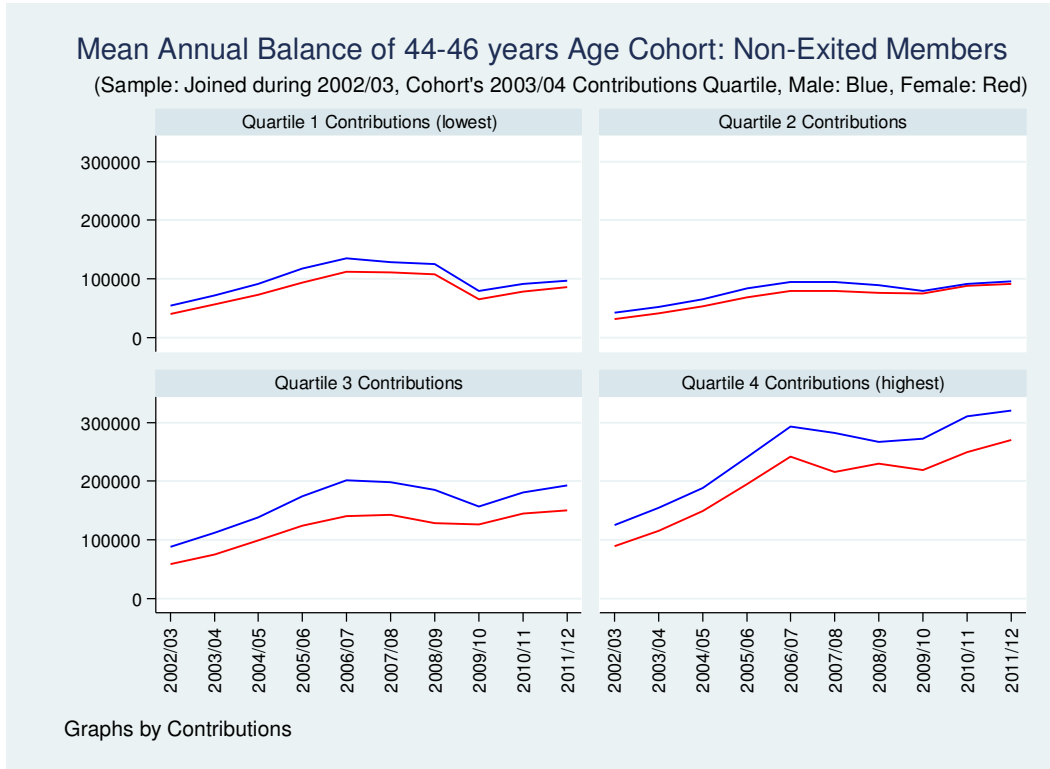


Figure 4.4 (c): Mean superannuation balances for age cohort 44-6 by gender: joined members



The pattern observed for those who joined during 2002/03 is similar, although for the youngest age cohort, gender disparities are much less marked – with the single exception of the highest earning quartile. Further, for the lowest-paid quartile in their mid-30s, women appear to accumulate more than men. However, as this represents a very small minority within our overall sample, we might conclude this exception is a statistical anomaly or, possibly, a feature of employment in a particular sub-plan that joined Mercer in 2002/3.

The accumulation trajectories illustrated here belong to workers remaining in employment, in all probability with the same employer over the whole period. As noted above, this is a minority (about 4,300 out of 21,500) of the original sample created in 2002/3. The profiles for members who individually left the sub-plan or were members of sub-plans that left Mercer are slightly different (see Appendix). An initial inspection reveals that, although female accumulations remain generally lower than male, rates of accumulation and the sizes of super balances on exit tend to vary a great deal, with some indication that the GFC had some effect. This variability reflects an idiosyncratic income distribution and variable timing of those who changed jobs or left work over the particular twelve month period. Members who left the sub plan in January will, on average, have lower accumulations than those who left in December, albeit that all balances are used to calculate the mean for that year.

Therefore, although the leavers form the majority of our original sample and are important, the particular year that they leave is less so and until that time their experience is reflected in Figures 4.3 (a-c) and 4.4 (a-c): the period in which they remained active members. For completeness, the experiences of the yearly samples of exiting members are presented in the appendix.

## 4.5 Interruptions

The above figures demonstrate differential balance outcomes by gender and interrupted membership of the sub-plan may provide an explanation. We revisit the measures of “interruption”: an interruption in the data has to be inferred as there is no administrative indication. The classification of someone as having an interrupted membership requires a statement of subjective criteria. Our strategy is to start with the least subjective approach and assess the results. The following data can identify interruptions:

- Reduction in the average employer contribution rate, calculated as total employer annual contributions divided by the number of payments over the financial year. This offers a proxy for changes in number of hours worked.
- Proportion of members with a reduction in the frequency of contributions received from year to year, or record to record (ie. allowing for missing contribution in the same year), relative to a member’s own history or relative to the average (mode) for the sub-plan. Proxy for absences or change in type of employment, eg. to casual work.
- Proportion of those non-exited members (ie. there is no indication they have exited) with no contributions record over a full year. Proxy for annual absences.

None of these are perfect but figures to distinguish relative levels by gender should be informative.

### 4.5.1 Interruptions – contribution amounts

First, the proportion of members, by gender and age, whose employer contribution amounts are reduced, is examined. Contributions are measured as an average contribution rate per year calculated as the total employer contributions divided by the number of contribution payments the member receives. The sample for existing members in 2002/03 is analysed separately from those who joined in 2002/03. Changes between different contribution years are analysed separately from those changes that occurred between different contribution records. This last measure allows those with contribution reductions within a given year to be identified.

The following four figures provide a first assessment of interruptions based on the *rate* of contributions. This measure strongly suggests gender differences with generally larger proportions of female members experiencing a reduction in their employer contributions each year, although the pattern is weaker for older members.



Figure 4.5 (a) Existing members with reduced contribution amounts: year on year by gender and age

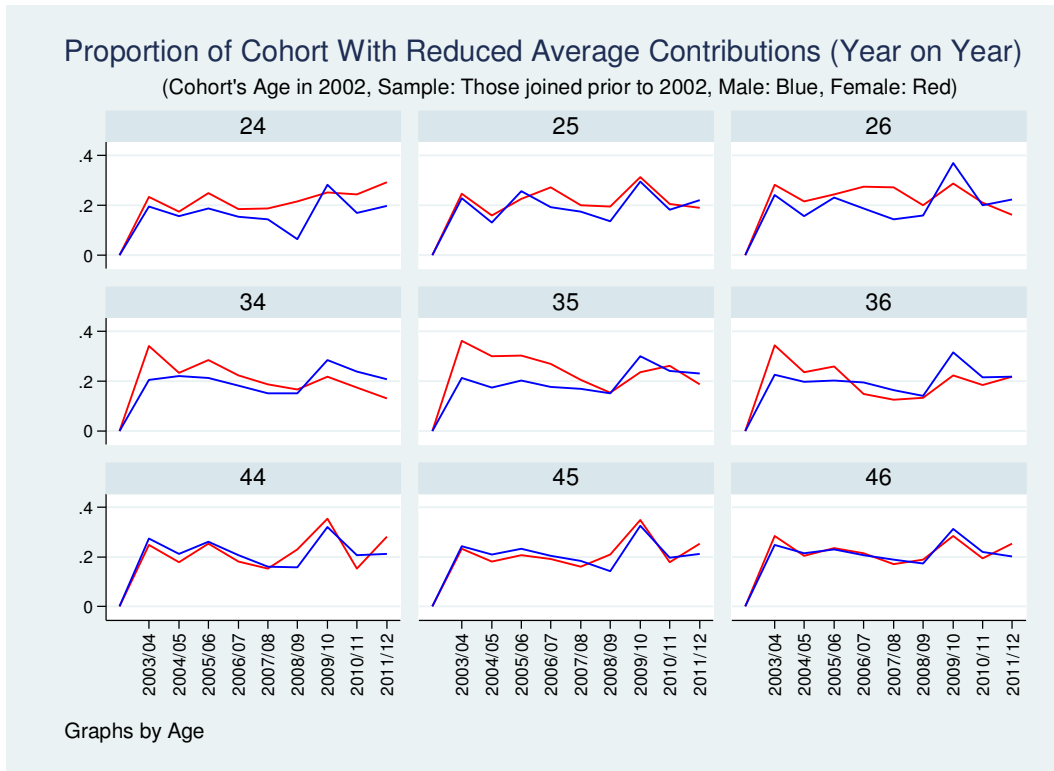


Figure 4.5 (b) Joined members with reduced contribution amounts: year on year by gender and age

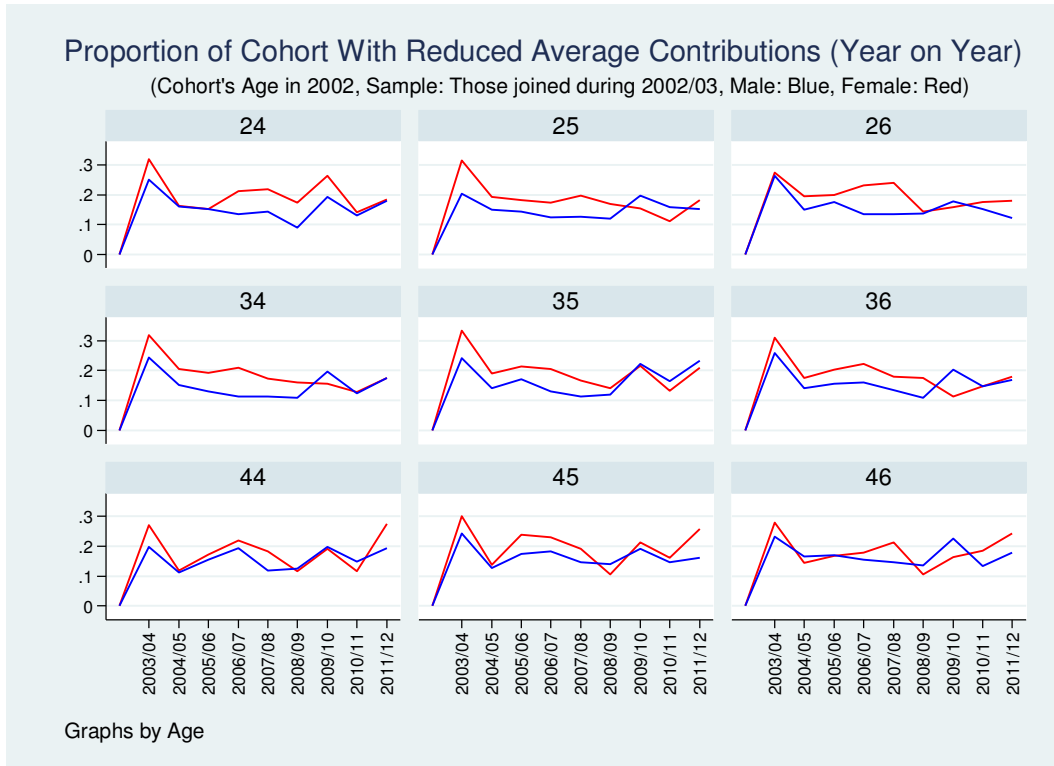


Figure 4.6 (a) Existing members with reduced contributions between records by gender and age

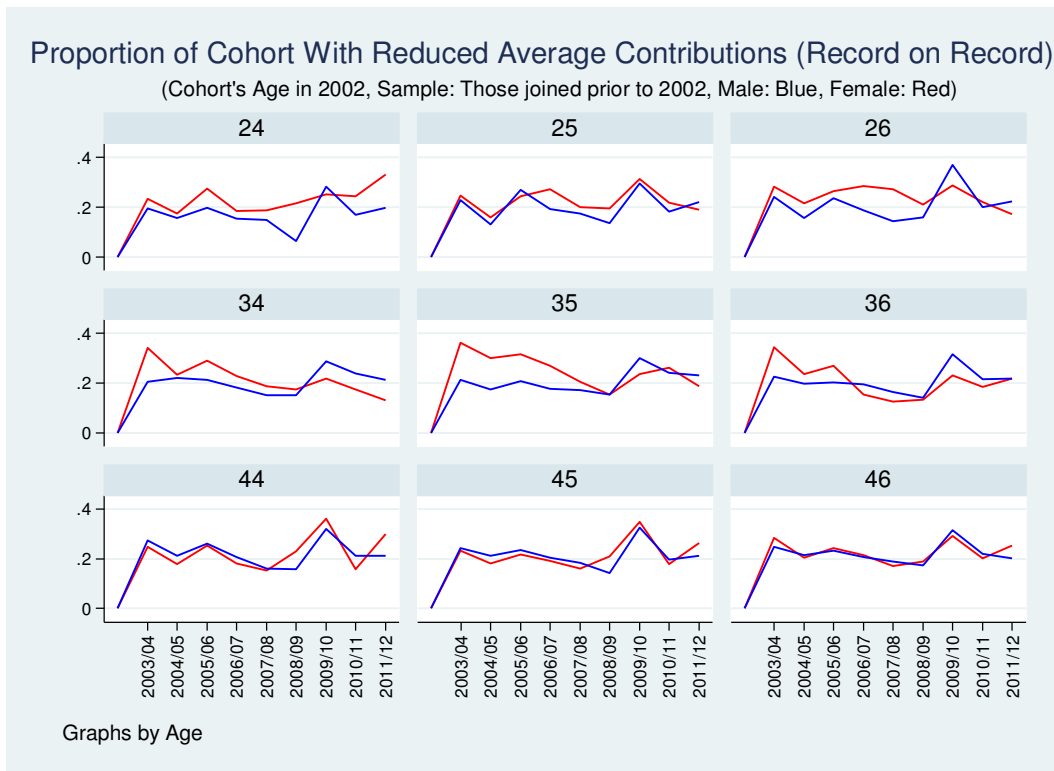
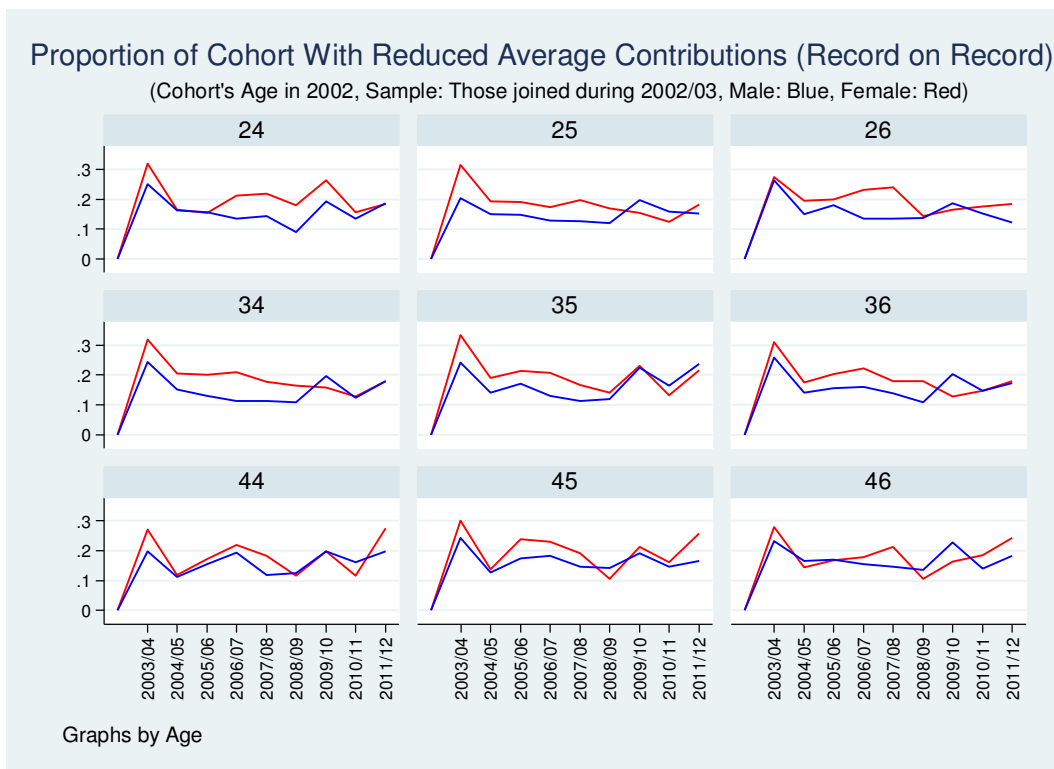


Figure 4.6 (b) Joined members with reduced contributions between records by gender and age



### 4.5.2 Interruptions – contribution frequency

The following analysis examines interruptions in terms of the *number* of contributions received per member in a full year and compares that to the number of contributions received in the previous full year, to calculate the proportion that has a reduction. The sample of existing members is again distinguished from those who joined in 2002/03, as are changes that occurred between years from those that occurred between contribution records.

In sum, there appears to be more volatility in the gender pattern among those members existing in 2002/03 than for those who joined in 2002/03. With the sample of members who joined in 2002/03 the pattern indicates that a greater proportion of women received fewer contributions and the trend is more visible among younger members. However, there is much volatility in the data that would benefit from more detailed statistical analysis, notably among men and women at older ages.

Figure 4.7 (a) Existing members with reduced contribution frequency, year on year, by gender and age

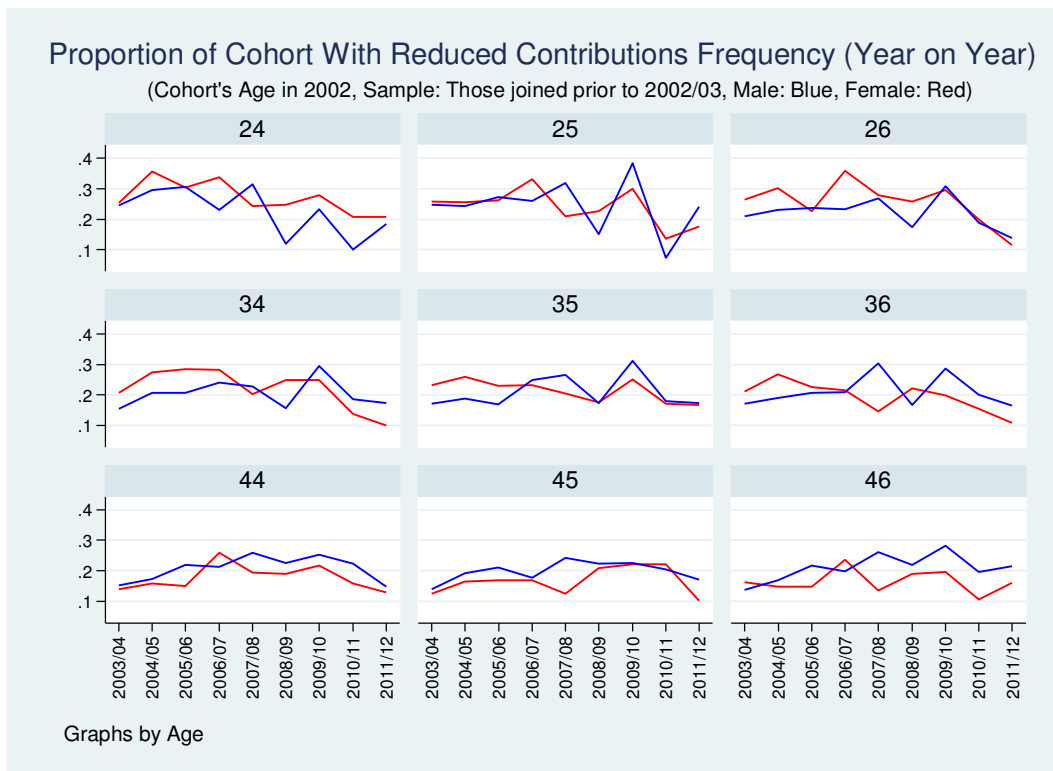


Figure 4.7 (b) Joined members with reduced contribution frequency, year on year, by gender and age

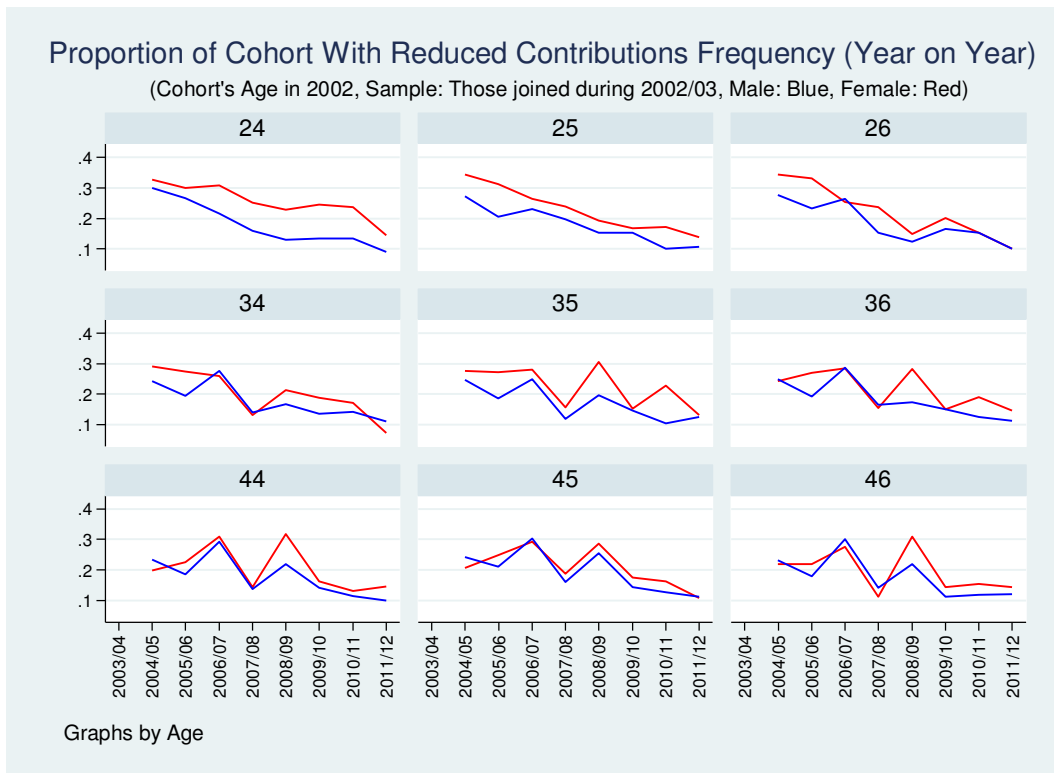


Figure 4.8 (a) Existing members with reduced contribution frequency within years, by gender and age

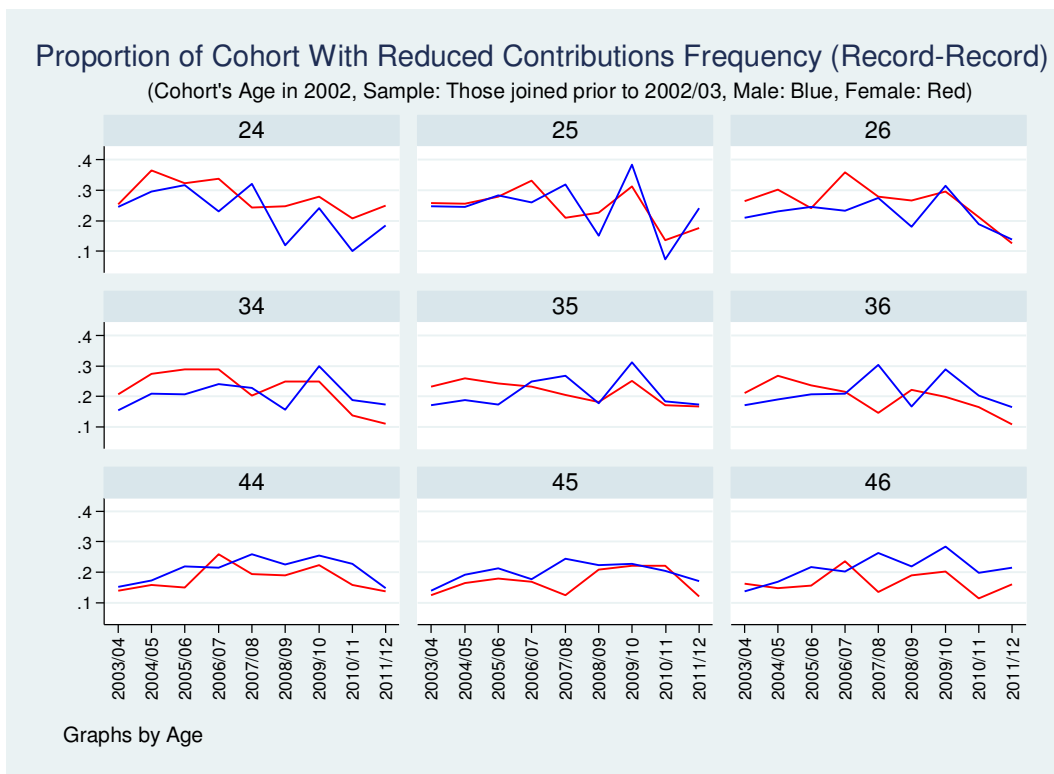
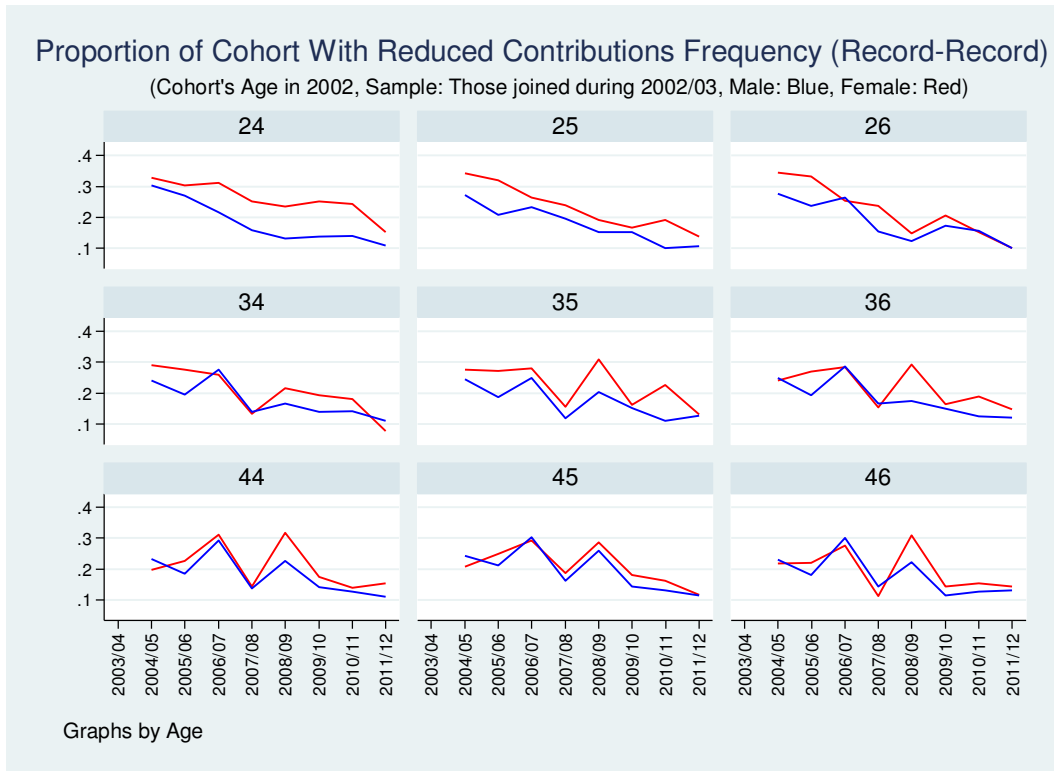


Figure 4.8 (b) Joined members with reduced contributions within years by gender and age



4.5.3 Interruptions – lower contribution frequency than plan mode

Here, analysis focuses on the proportion of members with contribution frequency lower than the mode of the sub-plan by gender, again distinguishing by ages and with separate measures for existing members and those who joined in 2002/03.

Figure 4.8 (a) Existing members with contribution frequency below plan mode by gender and age

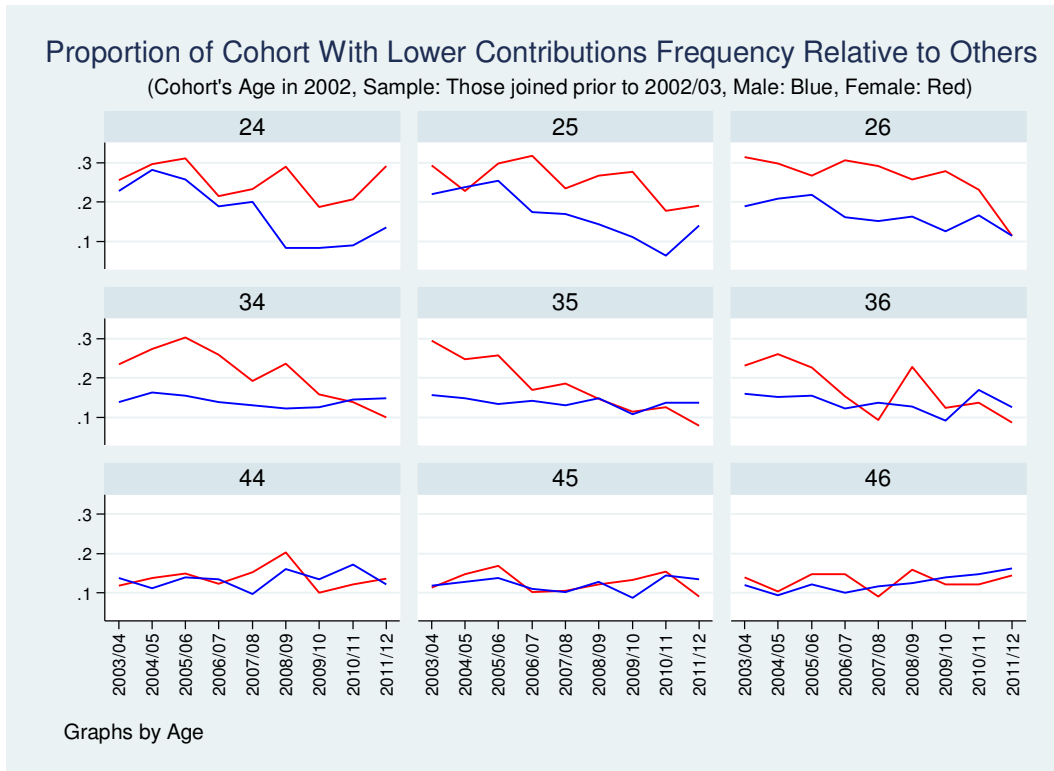
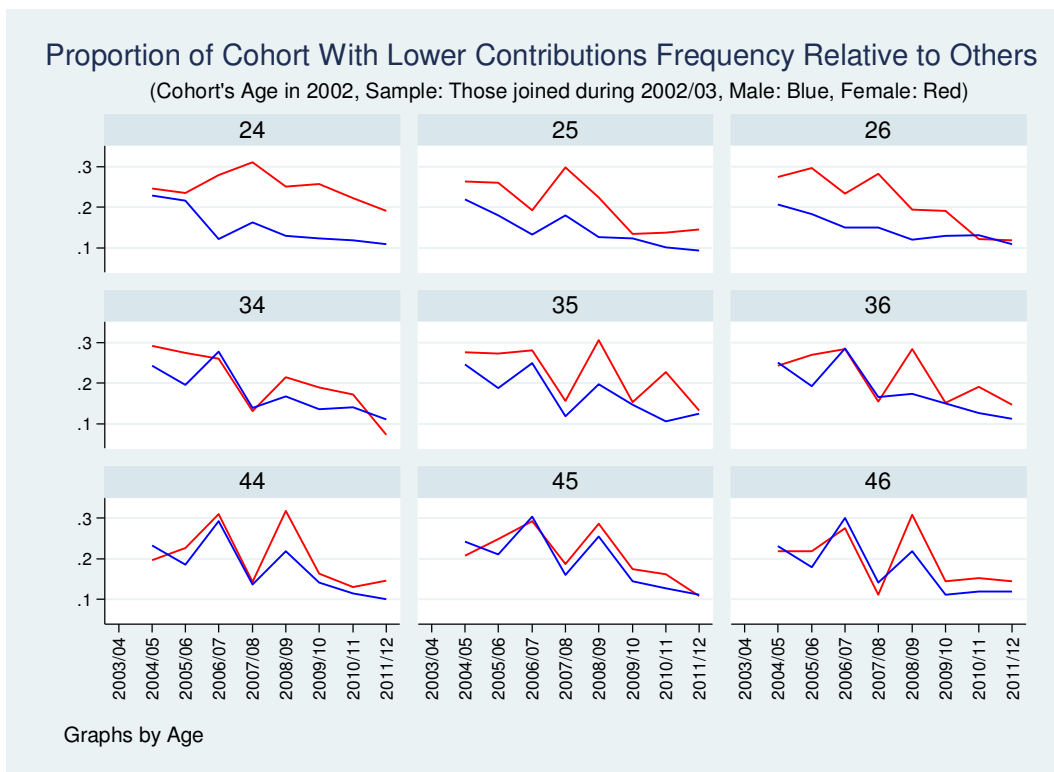


Figure 4.8 (b) Joined members with contribution frequency below plan mode by gender and age



Here gender effects are clearer. At younger ages, a larger proportion of female members receive less frequent contributions than their male counterparts, suggesting different employment patterns.

#### 4.5.4 Interruptions – missing whole year contributions

Finally, we look at members with a full year of missed contributions by gender within age cohorts. That is members who remain classified as an active member (ie. not exited), but who receive no contributions for the financial year. This data strongly reinforces the picture: a large proportion of young female members have missing contributions for a full year, although the difference for members who joined in in 2002/03 appears slightly smaller.

Figure 4.9 (a) Existing members with missing whole year contributions by gender and age

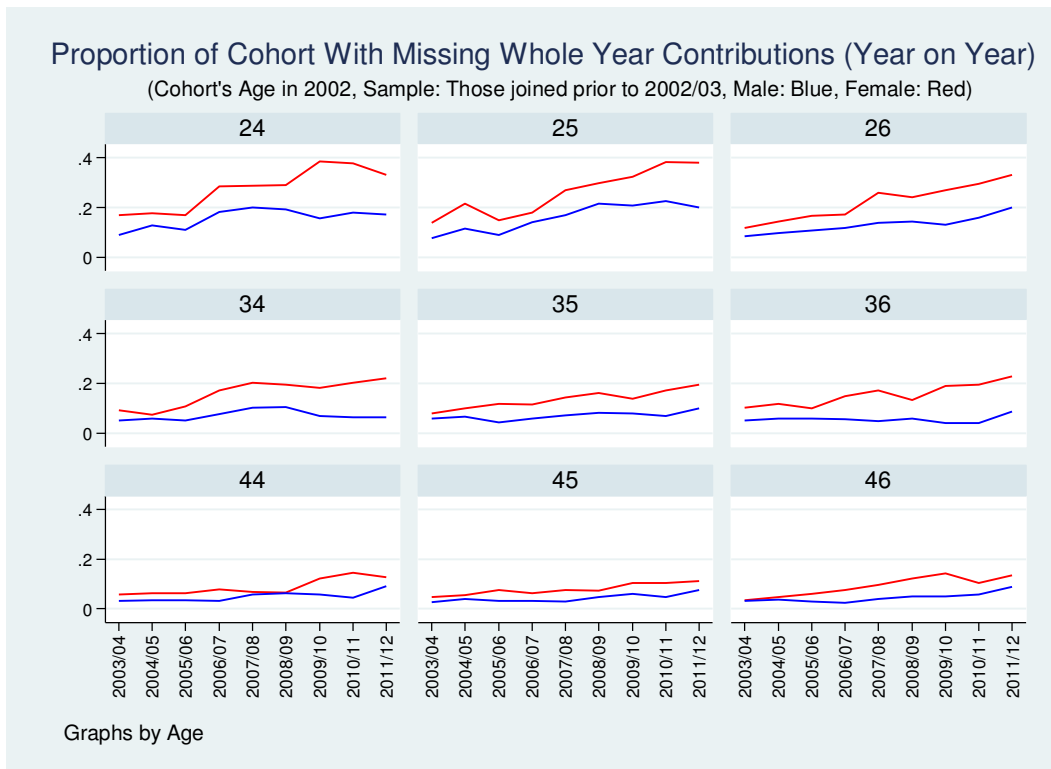
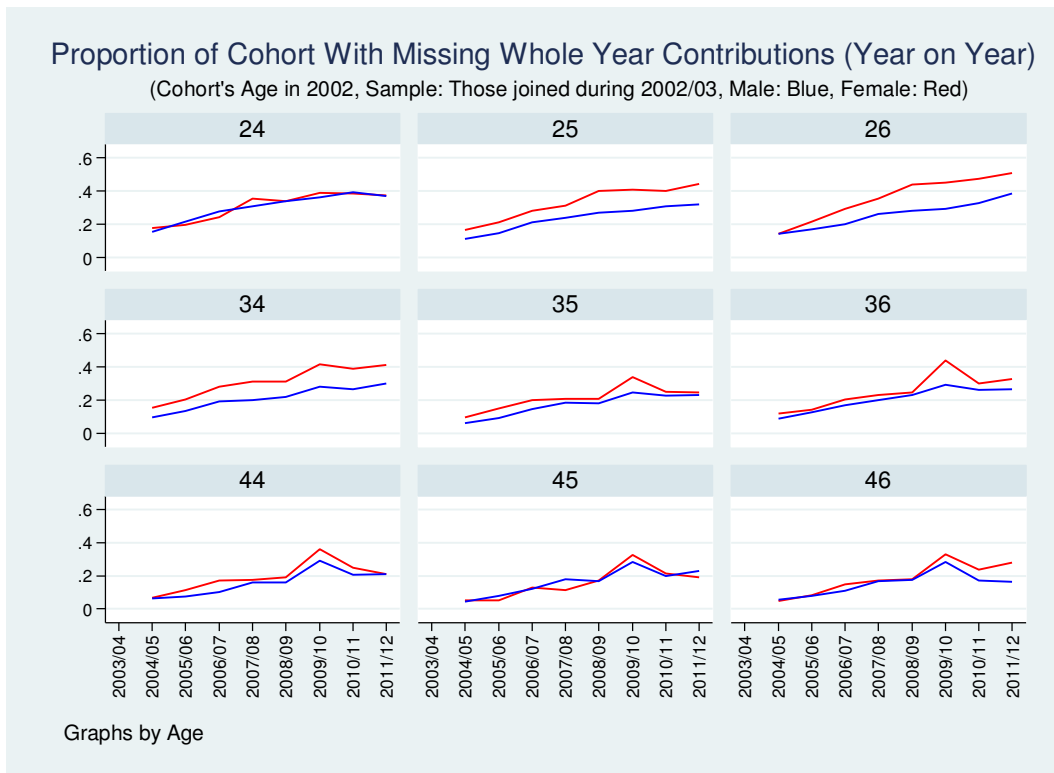


Figure 4.9 (b) Joined members with missing whole year contributions by gender and age





### 4.6. Contribution quartiles by gender

As a final consideration, the spread of contributions quartiles over age cohorts is considered in terms of the proportion of males in each quartile against the overall membership profile. Figures 4.10 (a-c) plot the proportion of men in contributions quartiles by age cohort (the proportion of women is the residual amount, not shown). The thick line indicates the proportion of males in each age cohort and the four other lines present the proportion in each quartile. With the exception of the lowest earners, there is a marked tendency for male membership of the upper earnings quartile to increase with age. For each age-cohort, males are over-represented in the top contributions quartile, and for the two older age-cohorts it is true for the top two contributions quartiles. However, although this indicates that earnings inequalities play their part in generating unequal superannuation savings, the earnings interruptions identified above must contribute to this process: the two factors strongly inter-relate. The other main feature to note is how little the picture changes over time, with female (male) members less (more) prevalent in the higher quartiles of contributions.

Figure 4.10 (a) Proportion of men in contribution quartiles: existing members in youngest cohort

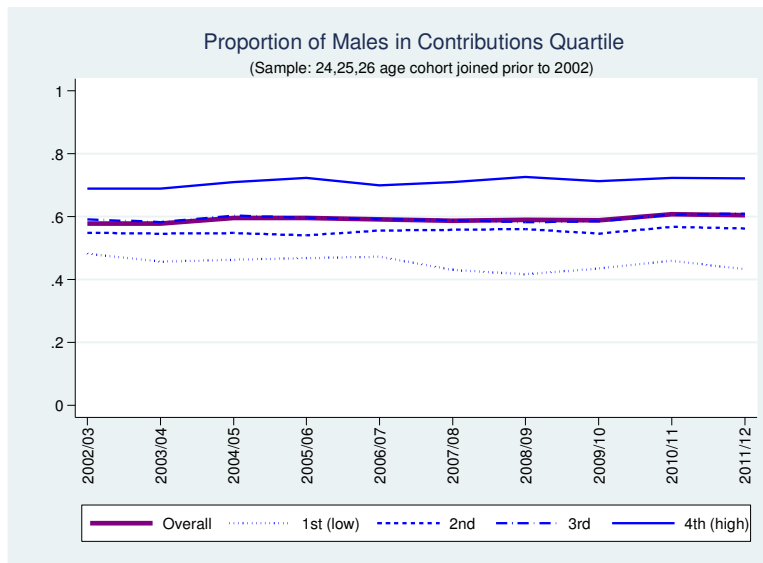


Figure 4.10 (b) Proportion of men in contribution quartiles: existing members in middle cohort

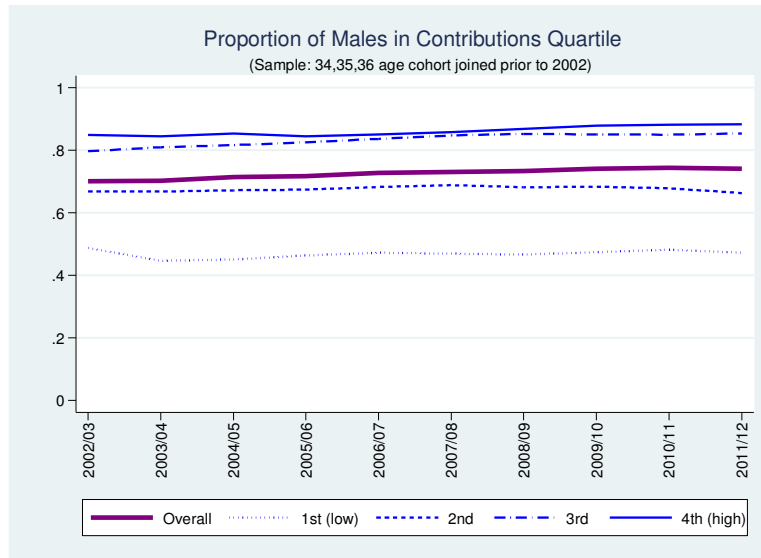
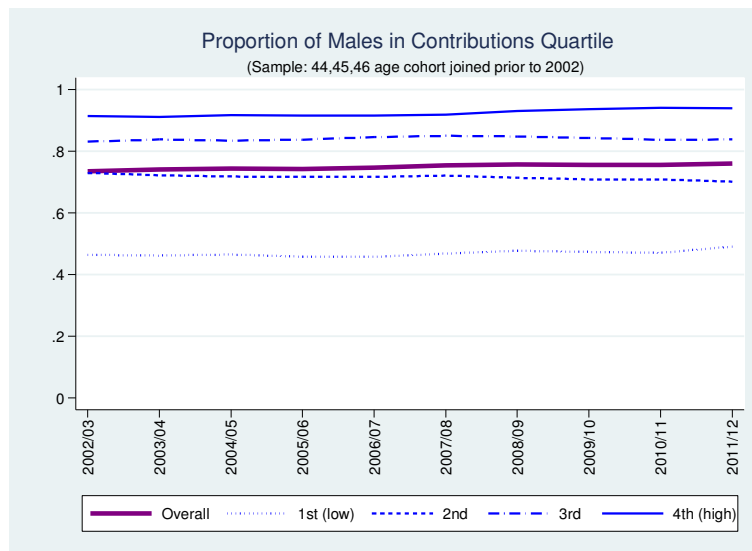


Figure 4.10 (a) Proportion of men in contribution quartiles: existing members in oldest cohort



### 4.7 Distributions

The analysis so far has concentrated on average outcomes, primarily the mean and median by gender and age, to shed light on factors possibly causing unequal outcomes in superannuation saving. This section explores the distributions of superannuation balances and of employer contributions by gender. As a reminder, these are preliminary results and, relatedly, none of the individual measures afford the necessarily composite picture required. However, they each represent parts of a puzzle. Second, where differences are indicated, at this stage they are suggestive rather than significant in a statistical sense. In much of the data we do not have standard errors or distributions in order to compare whether

observed differences are significant or not. Subsequent analyses will provide this. Such preliminary results must be viewed with necessary caution.

4.7.1 Inequality within gender groups by age

The Gini index/ratio is typically applied to measure the extent to which a distribution of income or wealth is different from an equal distribution. In this instance it is used to examine member balances and employer contributions. As measured, the closer to zero the index/ratio, the closer the data is to an equal distribution and, conversely, the closer to one, the more unequal the distribution in the data. The index does this by ranking the distribution of balances, or contributions, accumulating the sum of balances (or contributions) and comparing the cumulative proportion with the cumulative proportion of the number of members. For example, if 10 per cent of the members own 10 per cent of the total balances, 20 per cent own 20 per cent and so on there would be an equal distribution. For the moment this has not been used to identify whether the explanation of observed inequality is gender biased. But we can look within each gender group to see if the distribution is more or less equally distributed.

Of most interest in Figure 4.11 below is the relative position of each gender and the relative difference of inequality between age cohorts. The figure suggests that inequality between genders is highest for the 44-46 year old age group, albeit that, within each gender cohort, there is a wider inequality of experience (as the Gini is higher). For the 34-36 year cohort the distribution for women is less unequal. For the youngest age-cohort, there is initially less of a gender gap, but this suddenly widens in later years. Note that the figures follow only the non-exited or “surviving” members in each age-cohort for each year. That is, it does not document a balanced sample of members that survived in the sample over time; rather the sample reduces in size with each successive year, thanks to member attrition. This probably explains the apparent decline in the index which suggests greater equality. The more equal distribution over time is thus an artefact of sample construction.

Figure 4.11: Surviving members: superannuation inequalities (balances & contributions) by age cohorts



#### 4.7.2 Mobility within gender groups: balances

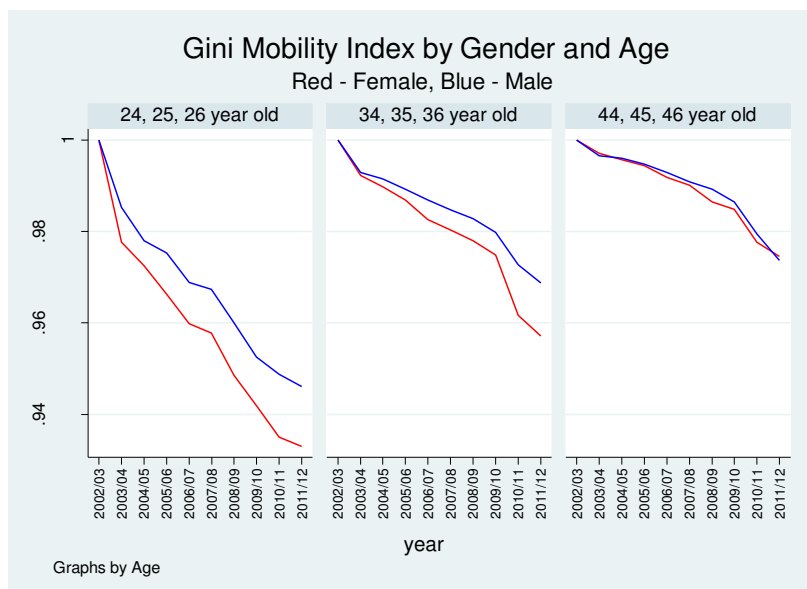
Next we consider balance *immobility* as a natural complement to the consideration of balance inequality. The analysis seeks to answer whether the inequality in balances is a short or long term effect. In other words, are women with low (high) balances likely to make up deficiencies (suffer setbacks) in their savings over time? To answer this question we recognise that a measure of balance inequality will vary depending on whether we consider it over, for example, a five-year period or over each year in that five-year period. A variation of Shorrocks (1978) R index is used to quantify the proportion of inequality measured over a sub-period, here annually, which persists over the longer-term period. The immobility index is calculated as follows:

$$R = \frac{I(\text{Average Balance over the period})}{\sum w_i I_i(\text{Annual Balance})}$$

Where  $I(\cdot)$  is the inequality index. The index ranges zero to one, the latter figure indicating no mobility or rigid inequality.

Figure 4.12 plots the Gini Immobility (R) Index for members of the 2002/03 age cohorts. Here, the lower the value the greater the mobility. By age cohort, mobility is greatest for the youngest group, reflecting greater movement up *and down* the balance distribution. Also, mobility is generally greater for women, though again note that this is relative to other women within the age-group. The largest gender gap exists for the youngest age-group, reflecting a high degree of volatility in the distribution of their superannuation balances. This is reduced for the 34-36 year old cohort and nearly disappears for the oldest age-group. Similar to the inequality analysis, the immobility index is calculated for existing members in each year, hence the sample size is shrinking over the period under review and this may distort the results.

Figure 4.12: Mobility in superannuation balances over time by gender and age cohort



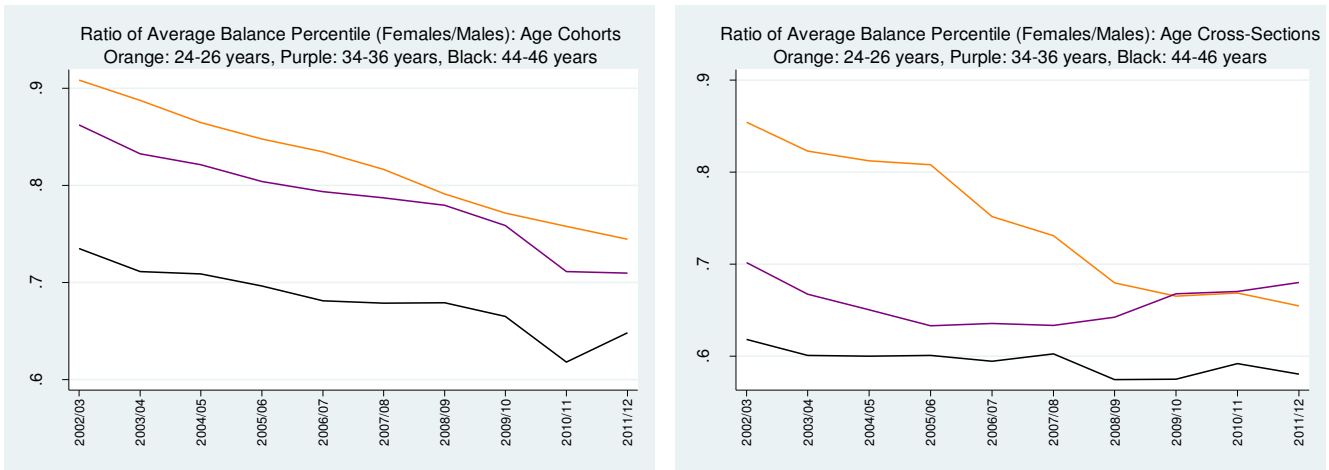
#### 4.7.2 Ranked inequality by balances: gender, age cohort and age cross-section

We now seek to identify inequality between genders by investigating whether female (male) members are over-represented in lower or upper sections of distributions in superannuation balances or employer contributions. To do so, all members are pooled, sorted, and ranked by member balance at the end of each financial year. With members ranked we then assign each a percentile ranking from 1 to 100 where a ranking of one represents a balance in the bottom one percent of all members and 100 represents a rank at the very top 100<sup>th</sup> percent of members. To examine the relative position of female and male members we then sum the percentiles separately for males and females and then calculate the average percentile for each. Finally, we calculate the ratio of the female average percentile to the male average percentile: the closer to one, the closer the average percentile ranking of males and females. Both the level and trend in this ratio are of interest.

Two different samples are examined. The first follows, as previously, the three *age cohorts* from 2002/03. This sample depletes over time as the 2002/03 members leave their employer and exit the sub-plan. A second sample examines a sample of members of the same age each financial year or successive *age cross-sections*. The latter, in effect, is a series of new cross-sectional samples of the same age members and seeks to answer the question of whether the experience of the same age membership changes over time.

Figure 4.13 (below) examines superannuation balances. The panel on the left follows the established *age cohorts* as they grow older and the one on the right charts *age cross-sections*. The *age cohorts'* figure identifies that the average ranking is closest for the 24-26 year old cohort and furthest apart for the 44-46 year olds. The trend suggests that the average ranking decreases for female members relative to males for each age cohort. The dip and subsequent improvement for the 44-46 year cohort in 2010/11 and 2011/12 suggests the exit of a group of relatively higher balance women in 2010/11. The *age cross-sections* presented in the right panel suggests a similar pattern for the youngest age group as before given that the average percentile ranking for women aged 24-26 years has fallen over the period. However, for the 34-36 year age-groups and 44-46 year age-groups the average ranking of women relative to men, while lower, has changed little, although there is some variability.

Figure 4.13: Superannuation balances: gender inequality by age cohort and age cross section

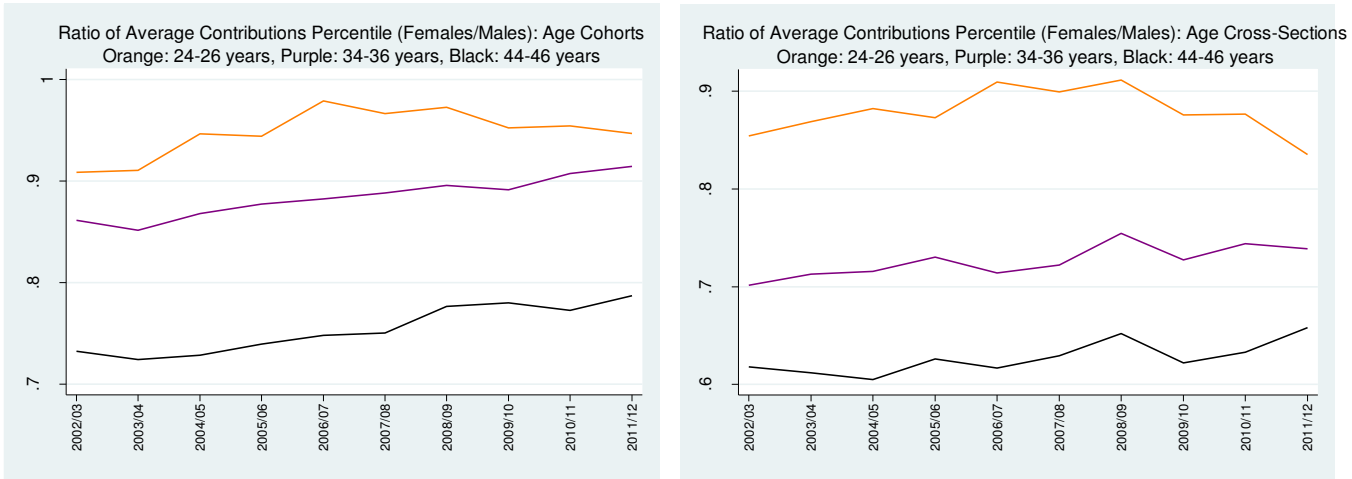


#### 4.7.3 Ranked inequality by contributions: gender, age cohort and age cross-section

We next repeat the comparison of average percentile rankings but use employer contributions rather than existing balances. Balances represent a *stock* of retirement savings whereas employer contributions represent the *flow* into the savings pot. As wealth tends to be more unequally distributed than income (Headey, Warren and Wooden, 2008), we expect to see a similar outcome for balances and contributions. Within the data there are financial years where there are breaks in employer contributions even though the member remains active (non-exited) but is not in receipt of waged income. The averages calculated in the diagram below exclude any missing record. That is, the average covers only those with an employer contribution in a financial year rather than including them as zero.

The left panel of Figure 4.14, focussing on age cohorts, indicates an upward trend, suggesting the average percentile ranking for women’s contributions improves relative to men over the period, although more so for older cohorts. The level of the ratio for each of the age cohorts shows that there remains an inequality with male rankings on average higher than female member rankings. The right panel indicates a similar trend in the level of inequality with inequality the persistent result. Overall, the ratio of percentile ranking is lower for age cross-sections examined. The average percentile rankings were re-estimated with missing contributions treated as zero but there is very little difference in the position or trend and the results are therefore not included.

Figure 4.14: Superannuation contributions: gender inequality by age cohort and age cross section



4.7.5 Balance distributions between genders: age cohorts and age cross -sections

This section formally tests balance distributions between genders. First, the age cohort perspective: Figure 4.15 (a), for example, compares the group of 24-26 year olds from 2002/03 with their later selves in 2011/12 (at least the surviving group). The tests confirm, here and in subsequent Figures 4.15 (b) and (c) that the balance distributions are different – men have higher accumulations than women, although the balance density for women coheres at higher levels among older age cohorts. In other words, the distribution of female balances for every age cohort is lower (with more density to the left reflecting lower balances). The difference is most obvious for the 44-46 year age-group. Repeating the comparison for the surviving (non-exited members) in 2011/12 shows that the distributions have moved further apart. The differences in male/female distributions are larger in 2011/12 than 2002/03.

Figure 4.15 (a): Superannuation balance distributions: gender inequality for age cohort 24-6

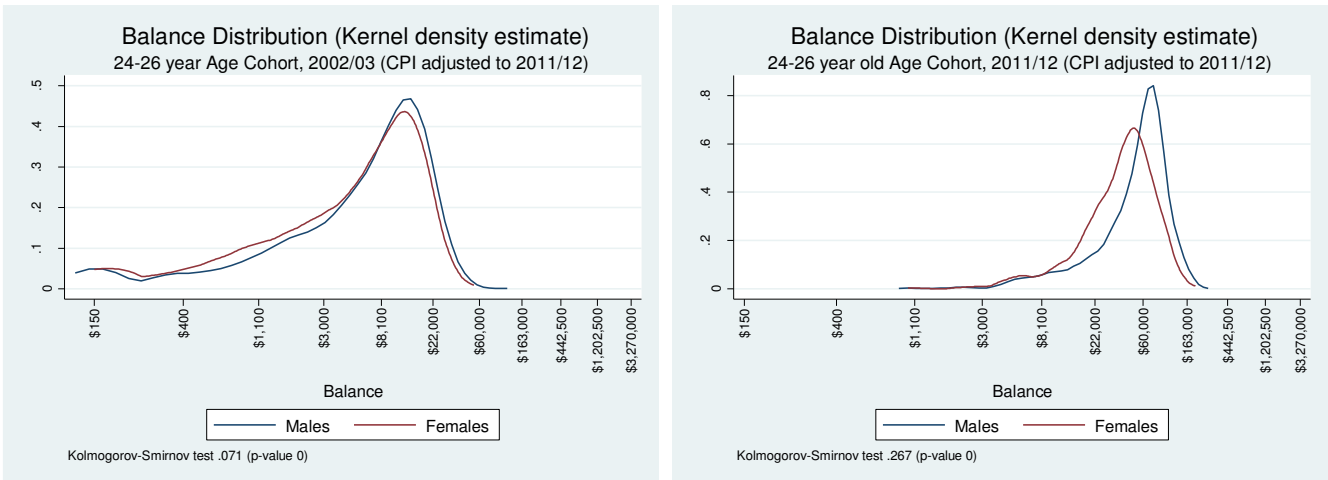


Figure 4.15 (b): Superannuation balance distributions: gender inequality for age cohort 34-6

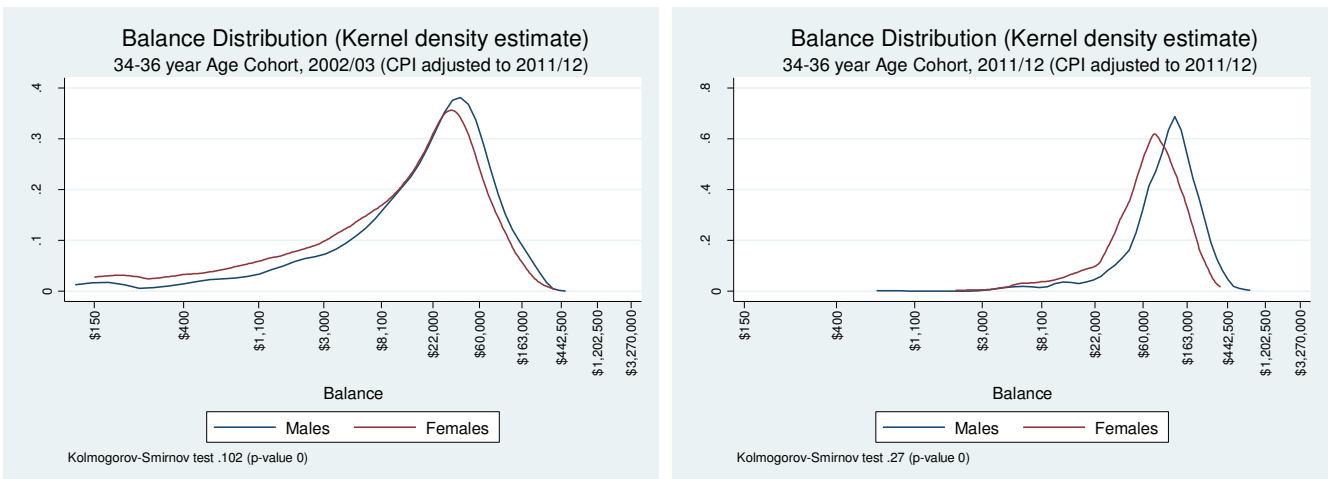
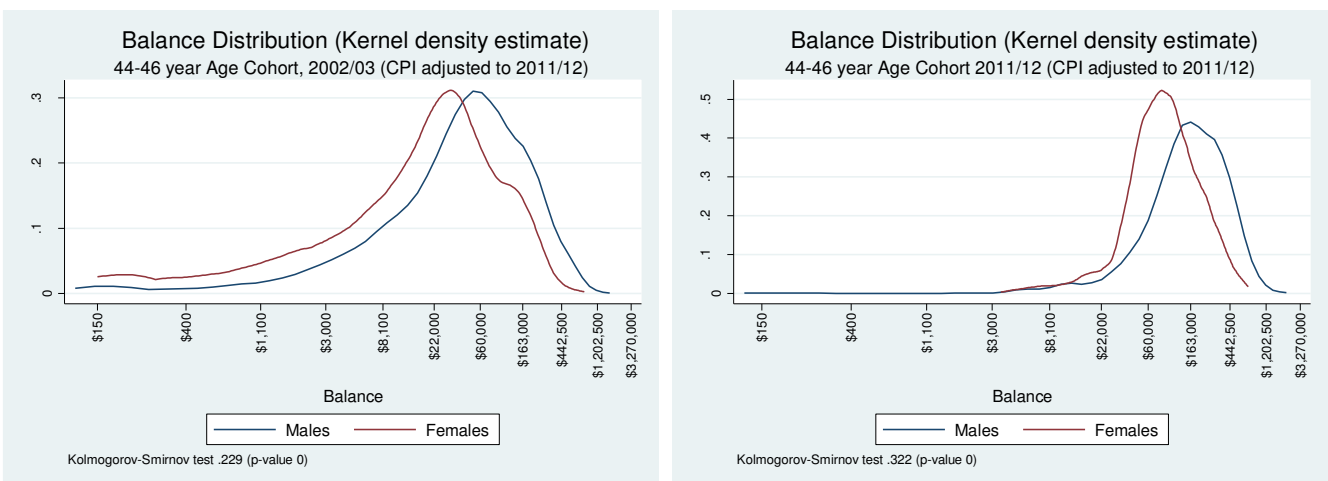


Figure 4.15 (c): Superannuation balance distributions: gender inequality for age cohort 44-6





Finally, using age cross –sections, is the experience of the same age-group in 2011/12 different to the same age group a decade earlier? The graphs below assess this by comparing, for example, the experience of female 24-26 year olds in 2002/03 to that of their “sisters” in 2011/12. Has the picture changed with time? For the youngest age-group it looks as though for both male and females, inflation adjusted returns are lower in 2011/12 than they were for their 2002/03 counterparts. In real terms they appear worse off, maybe reflecting GFC impacts on earnings and work opportunities of the young. Looking at the 34-36 years age cross-sections, both men and women are better off than their same sex age counterpart a decade earlier. Though here, by 2011/12, men appear to have secured a larger improvement. The same result appears for the 44-46 year age groups. The differences in distributions are significant for the same-sex age comparisons, the between-sex comparison isn’t formally tested.

Figure 4.16 (a): Superannuation balance distributions: gender inequality for age cross section 24-6

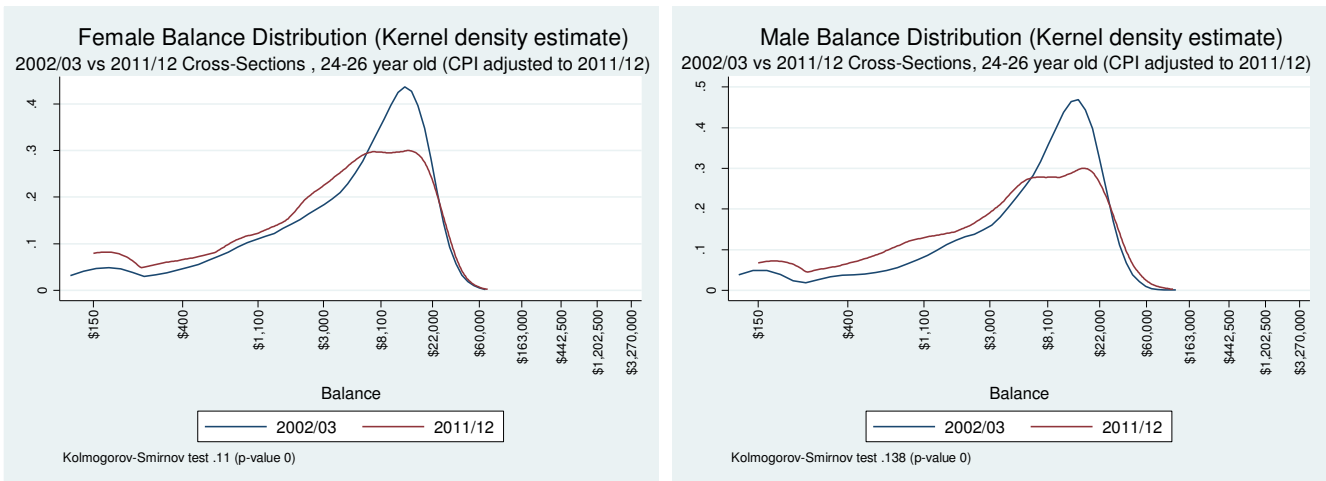


Figure 4.16 (b): Superannuation balance distributions: gender inequality for age cross section 34-6

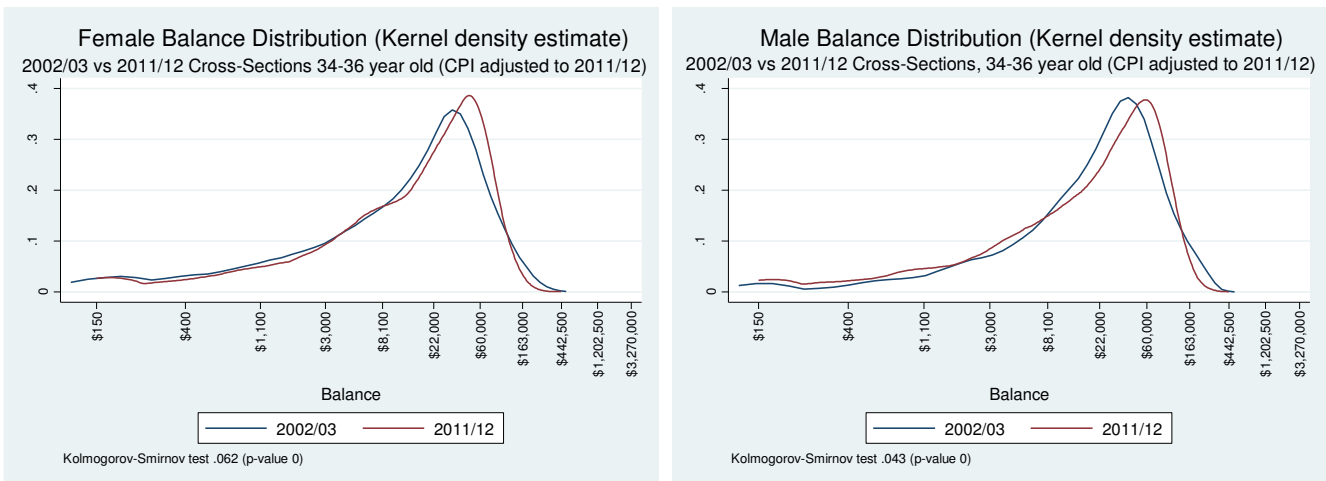
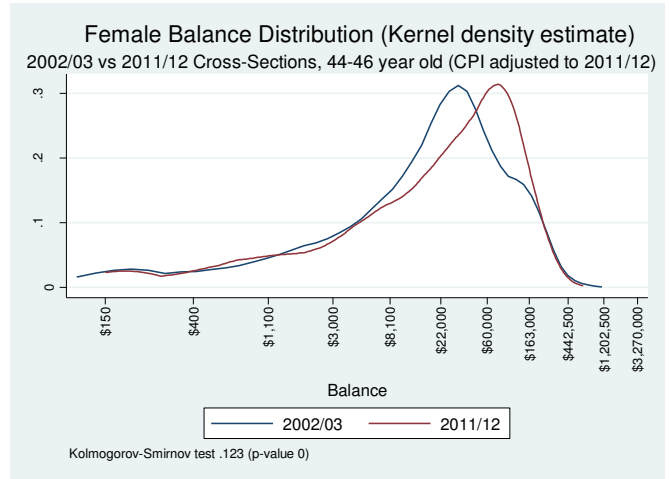
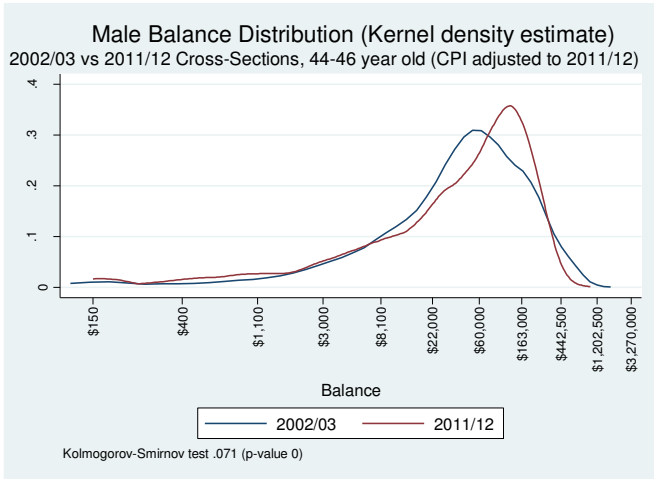


Figure 4.16 (c): Superannuation balance distributions: gender inequality for age cross section 44-6



## Preliminary Concluding Remarks

Using a substantial sample drawn from members of a major Australian superannuation provider, this paper has used longitudinal analysis to explore the main factors that contribute to lower female superannuation accumulation balances in Australia. The object has been less to observe the consequences of pension policy than to analyse how market mechanisms interact with female labour market participation patterns to generate lower savings. While the results here are specific to Australia, the analysis offered here has implications for the development of funded pension systems world-wide. However, at this stage – and as repeatedly stressed throughout this paper – the results displayed are provisional and further analysis is needed to paint a fuller picture.

So what has the data told us? First, in the many measurements graphically produced in the Figures above, male and female outcomes are rarely the same. This indicates that structural features in this type of scheme generate a gender bias that, as many surveys indicate, undermines the chances of women being able to generate the same superannuation savings as men. Second, in exploring the sources of this discrepancy, the data shows that much damage occurs early in working life, and is largely attributable to gaps in younger women's contributory record: gaps that seem less evident among older age cohorts, but this may be due to larger numbers of older women leaving work (and therefore the sample) altogether. This, reflecting the data from the Australian Bureau of Statistics (Figures 3.1 – 3.4 above), provokes the conclusion that younger women leave work / work part-time during the years of family formation: a conclusion supported by our data on the higher levels of contribution irregularity and wider spreads of inequality found among younger females. Third, the decision to work part-time / take career breaks in early working life appears to affect future income in an adverse way. The gender distribution of men and women in our contribution-based earnings quartiles demonstrates how older males increasingly dominate the higher earnings groups: although we have to be careful here as these figures represent the earnings of different cohorts and the experience of older women cannot be transposed back as an assumed future for younger cohorts. Note that there is some evidence that women's balances proportionate to men's are improving over time, but the rate of improvement is so slow as to be nearly imperceptible.

In terms of the answer to our original question, over the nine years 2002/3 to 2011/12 there is less sign that young women's engagement with the labour market in Australia is changing than advocates of funded pension systems would like to suppose. Data documenting changing balances and contribution distributions demonstrate a clear shift for women in their later 20s and early 30s in the opening years of the 21<sup>st</sup> century. This indicates that career breaks and part-time working remain the strategy of choice for coping with the care of babies and young children – and that the mother is the person who takes this on. This means that, in early working life, the flow of contributions into superannuation savings slows or stops temporarily. This has two major consequences. First, as widely acknowledged, a return to full-time work in the mid-40s certainly stabilises the inter-relationship between male and female contribution rates, but the price in terms of promotion and associated workplace opportunities has already been paid and female balances are much lower. Moreover, this gap might also be explained by the evidence that women who do return to full-time work in their 40s (Figure 3.3) are probably poorer

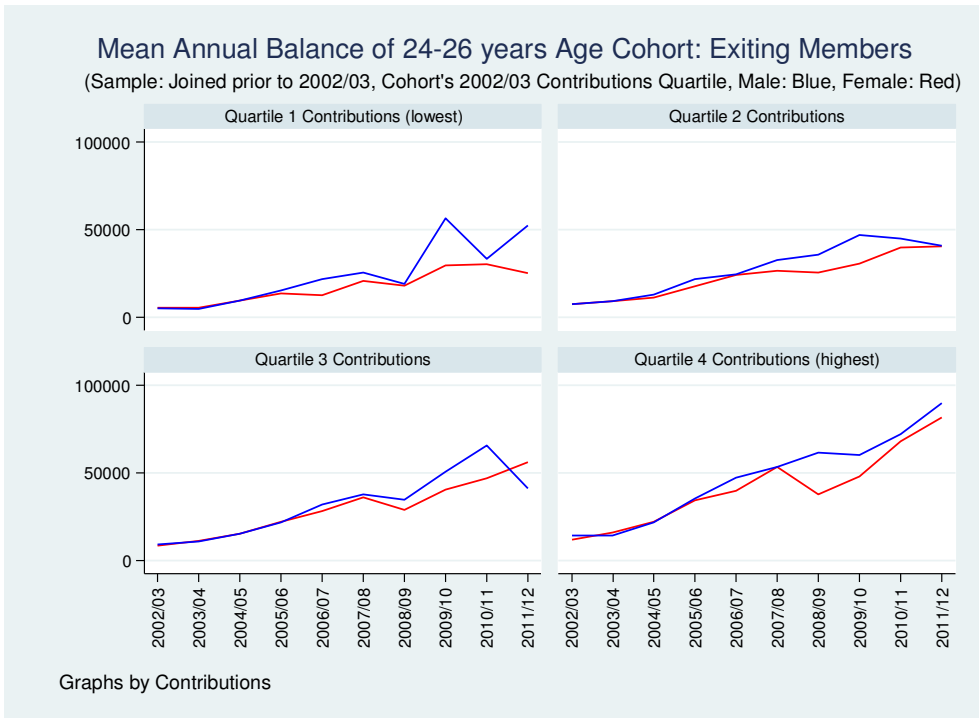
than those who leave the labour market altogether (Figure 4.11) – although this conclusion is highly tentative at this stage. Second, the super balances for older women take a knock due to less regular contribution flow – and the compound interest accruing to lower balances in mid-working life exacerbates the gap between male and female super savings which expands over the final years before retirement. The penalty motherhood apparently exerts on women’s income security in old age has long been – and remains - peculiarly marked. Little evidence appears in our data to suggest that, thanks to changing working patterns among younger generations of women, this situation will solve itself in time. On the contrary, there is every reason to suppose that for the next half century or more, Australian women without the support of a spouse will continue to rely overwhelmingly on the Age Pension.

Much of the recent response to gender inequalities in pension saving has been to encourage women to save more – in Australia, through salary sacrifice or by taking advantage of the state supplements the Commonwealth government is beginning to offer the low paid. Women live longer, the argument runs, so must save more in order to guarantee that their funds do not fall short of their needs in later life (e.g. Rice Warner, 2010). This is an inadequate response that will not bridge the gap revealed here and as Feng and Gerrans (2014) note, fewer women are taking up the tax advantaged pre-tax savings options. More constructive suggestions involve including contributions from maternity pay in the Super Guarantee, but this only offers a very partial compensation (ASFA 2014).

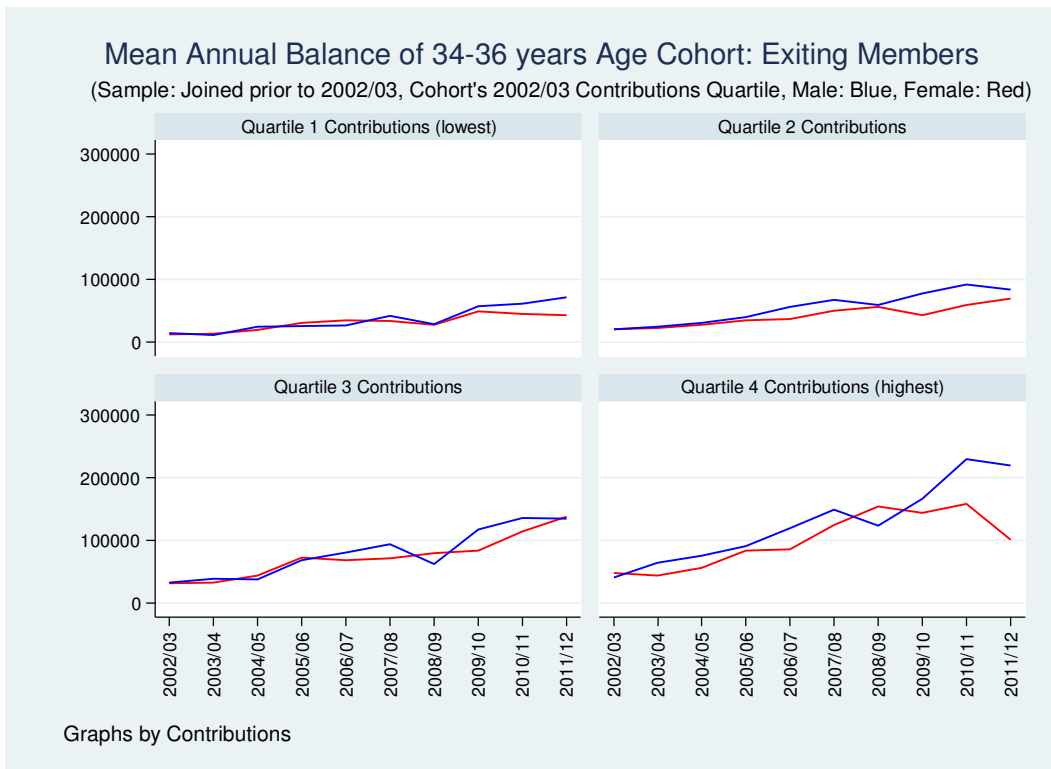
Other factors threaten the future of Australian superannuation that are beginning to be revealed in the data produced here. The Lucky Country has enjoyed nearly thirty years of prosperity, relatively full employment and good returns on invested funds. However, notably in Figure 4.16(a) above as well as elsewhere, there are indications that the party may be over, that new entrants into the scheme are not attaining the savings of their older siblings, that the GFC may have exerted a greater influence than previously supposed on jobs for young people and thus on their savings for the future (for European experience, see Hinrichs and Jessoula, 2012). Further research will be able to verify this conclusion in a more definitive way, but future safeguards will be needed if this type of personal savings system is going to offer a viable and secure retirement for all Australian citizens.

**APPENDIX**

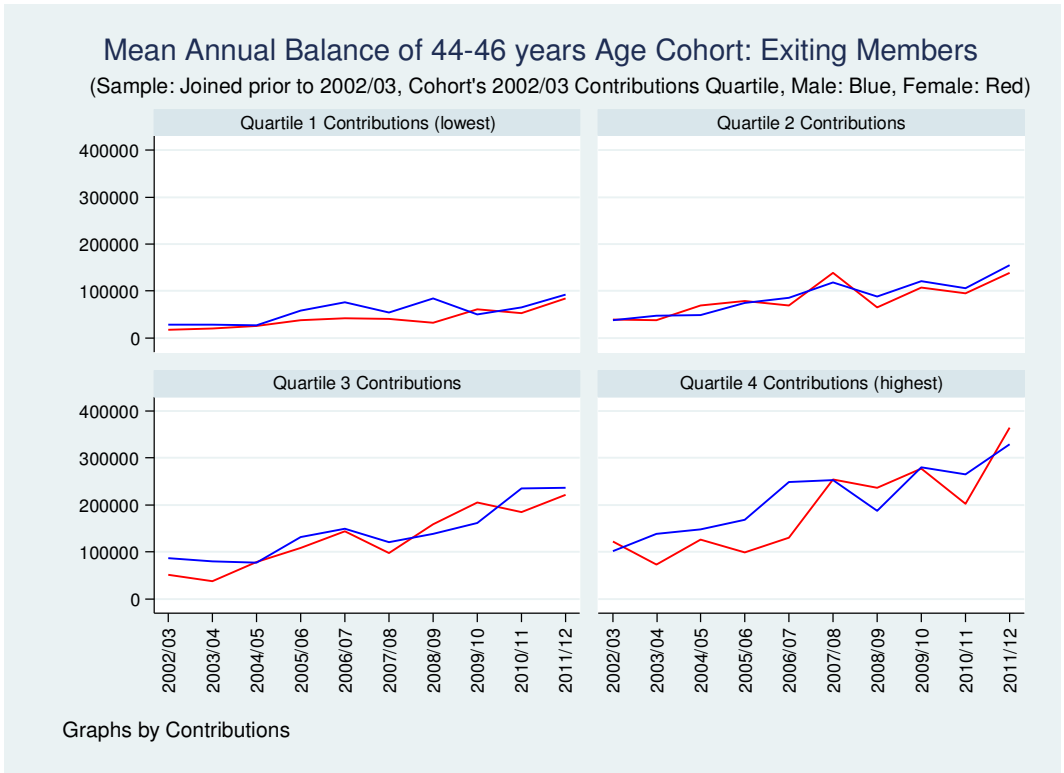
**4.3 (d): Mean superannuation balances for age cohort 24-6 by gender: existing members who exited**



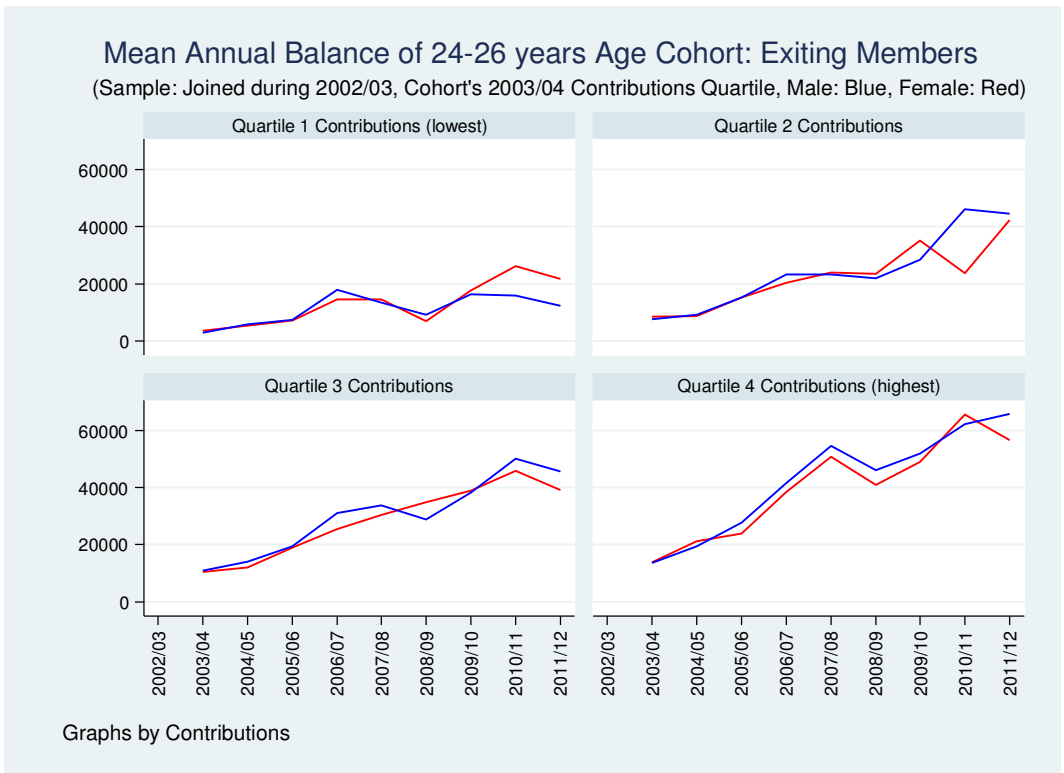
**4.3 (e): Mean superannuation balances for age cohort 34-6 by gender: existing members who exited**



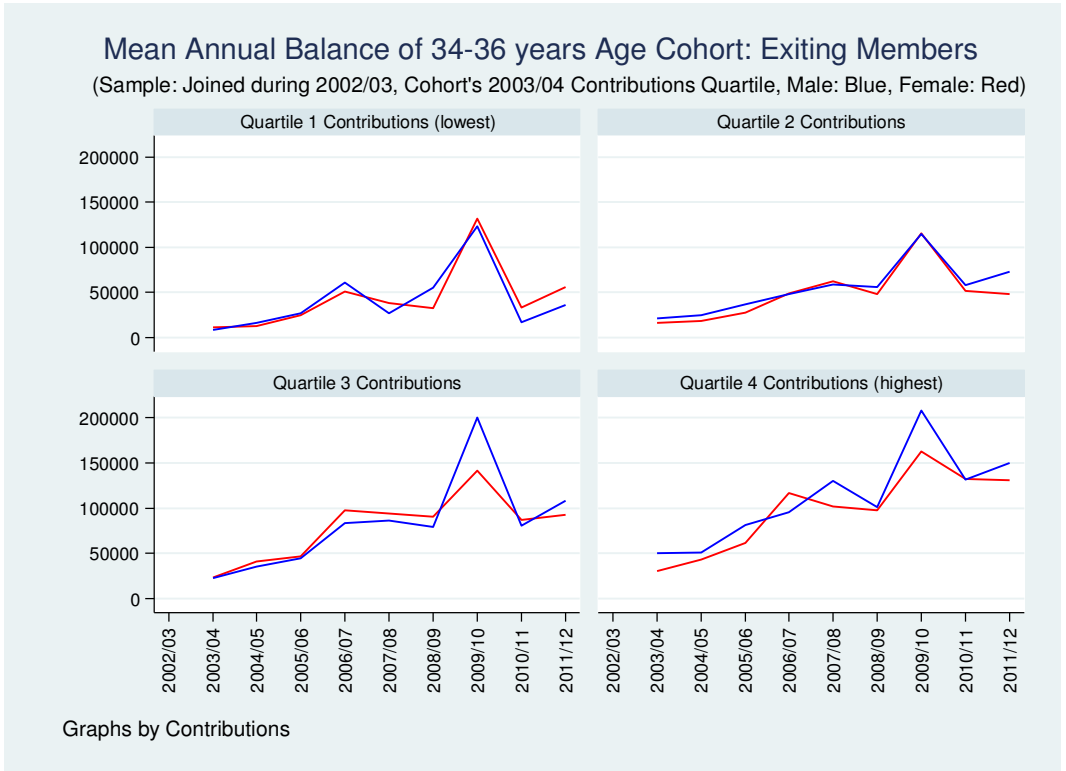
4.3 (f): Mean superannuation balances for age cohort 24-6 by gender: existing members who exited



4.4 (d): Mean superannuation balances for age cohort 24-6 by gender: joined members who exited



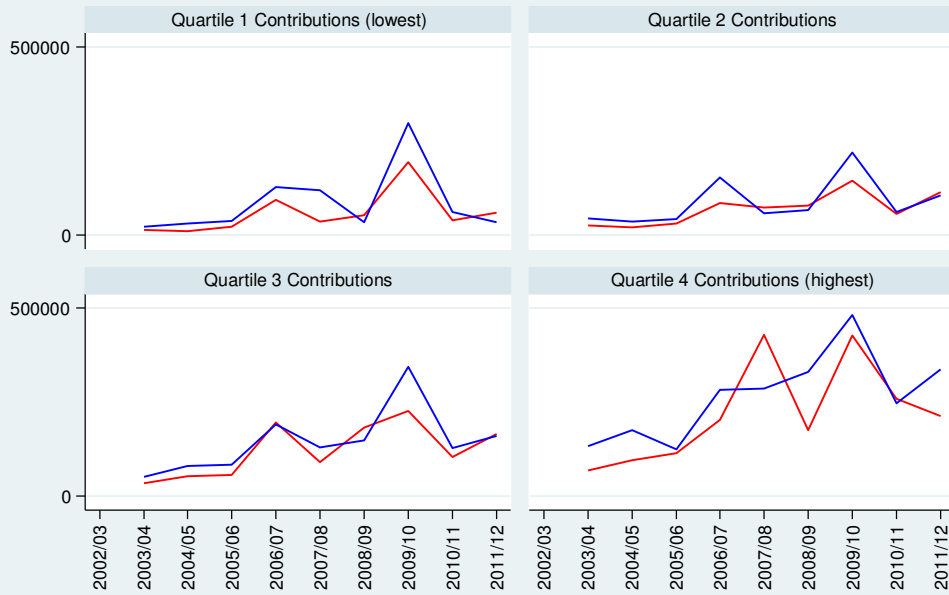
4.4 (e): Mean superannuation balances for age cohort 34-6 by gender: joined members who exited



4.4 (f): Mean superannuation balances for age cohort 44-6 by gender: joined members who exited

### Mean Annual Balance of 44-46 years Age Cohort: Exiting Members

(Sample: Joined during 2002/03, Cohort's 2003/04 Contributions Quartile, Male: Blue, Female: Red)



Graphs by Contributions



## REFERENCES

- ASFA (Association of Superannuation Funds of Australia) (2014) *The Future of Australia's Super: a new framework for a better system* (Sydney, ASFA)
- Australian Bureau of Statistics (2013). *Gender Indicators Report*. [www.abs.gov.au](http://www.abs.gov.au)
- Barns, A. and Preston, A. (2010). 'Is Australia really a world leader at closing the gender gap?' *Feminist Economics* 16 (4): 81-103
- Bernasek, A. and Schwiff, S. (2001) 'Gender, risk and retirement' *Journal of Economic Issues* 35 (2): 345-56
- Bettio, F, Tinios, P and Betti, G (2013) *The Gender Gap in Pensions in the EU* (Fondazione Giacomo Brodoline and Istituto per la Ricerca Sociale funded by the EC D-G for Justice Unit D2 'Equality between Men and Women') To be published as Bettio, F., Betti, G., Tinios, P., and Georgiadis, T. *Ageing Unequal in Europe? Women's independence and Pensions*, Basingstoke: Palgrave Macmillan (forthcoming)
- BMFSFJ - (Federal Ministry for Family Affairs, Senior Citizens and Youth) (2012) *Women's biographical patterns and pension income prospects* Berlin, BMFSFJ.
- Bridgen, P and Meyer, T (2009) Social rights, social justice and pension outcomes in four multi-pillar systems. *Journal of Comparative Social Welfare* 25 (2): 129-137.
- Bridgen, P and Meyer, T (2014) The liberalisation of the German social model *Journal of Social Policy* 43, 1: 37-68
- Broderick, E. (2012) Women in the workforce *Australian Economic Review*, 45, 2: 204-10
- Casey, B and Dostal, JG (2013) Voluntary pension saving for old age. *Social Policy and Administration* 47 (3): 287-309
- Clare, R. (2012) *Equity and Superannuation: the real issues* Association of Superannuation Funds of Australia (ASFA) <http://www.superannuation.asn.au/policy/reports>
- Clare, R (2014) *An update on the level and redistribution of retirement savings* Sydney, Association of Superannuation Funds of Australia (ASFA) <http://www.superannuation.asn.au/policy/reports>
- Cobb Clark, D.A. (2012) 'The pesky problem of persistent gender bias' *Australian Economic Review*, 45, 2: 210-16.
- Commonwealth of Australia (2015) 2015 Intergenerational Report: Australia in 2055. Available at [www.treasury.gov.au](http://www.treasury.gov.au)
- Condon, M. (2001) 'Gendering the pension promise in Canada: risk, financial markets and neo-liberalism' *Social and Legal Studies* 10 (1): 83-103

- Davies, K and Ralston, D (2012) *Superannuation over the past decade: individual experiences*. A report by the Australian Centre for Financial Studies for AIST
- Drew, M, Stoltz, P, Walk, A, West, J (2014) Retirement adequacy through higher contributions: is this the only way? *The Journal of Retirement*, spring issue: 1-18.
- Duvander, A-Z (2014) How long should parental leave be? Attitudes to gender equality, family and work as determinants of women's and men's parental leave in Sweden. *Journal of Family Issues* 35: 909-926
- DWP – UK Department of Work and Pensions Information Directorate (2010) *Lifetime Labour Market Database*
- Ebbinghaus, B. and Whiteside, N. (2012). Shifting responsibilities in Western European pension systems: What future for social models? *Global Social Policy*, 12(3), 266-282.
- EGGESI (Expert Group on Gender Equality and Social Inclusion) (2011) *The socio-economic Impact of pension systems on the respective situations of women and men: synthesis report*. Rome: Fondazione Brodoline
- Evandrou, M, Falkingham, J and Sefton, T (2009) Women's family histories and incomes in later life. London School of Economics, STICARD Research Paper Series no. CASE/138.
- Even, WE and Macpherson, DA (2004) When will the gender gap in retirement income narrow? *Southern Economic Journal*, 71: 182-200
- Feng, J. and Gerrans, P. (2014). Patterns of voluntary worker retirement savings: a longitudinal analysis. Available at <http://australiancentre.com.au/sites/default/files/superannuation-cluster/cp3wp3-patterns-of-voluntary-worker-retirement-savings--a-longitudinal-analysis.pdf>
- Frericks, P, Maier, R and De Graaf, W. (2006) Shifting the pension mix: consequences for Dutch and Danish women *Social Policy and Administration* 40, 5: 475-92
- Gee, S., Hung Ng, S., Weatherall, A., Liu, J., Leong, C. and Te Ripowai, H (2002), Savings ourselves: gender issues in making provision for one's own retirement. *Australian Journal on Aging* 21, 1: 30-35
- Gerrans, P., Clark-Murphy, M., and Speelman, C. (2010). Asset allocation and age effects in retirement savings choices. *Accounting and Finance*. 50(2), 301-319.
- Gough, O. (2001) The impact of the gender pay gap on post-retirement earnings. *Critical Social Policy* 21: 3: 311-34
- Gupta, N, Smith, N and Verner, M (2008) The impact of Nordic countries family friendly policies on employment, wages and children. *Review of the Economics of the Household* 6 (1): 65-89
- Headey, B., Warren, D., and Wooden, M. (2008). The structure and distribution of household wealth in Australia: cohort differences and retirement issues. Social Policy Research Paper No. 33, Melbourne Institute of Applied Economic and Social Research, University of Melbourne.

- Hinrichs, K and Jessoula, M (2012) (eds.) *Labour Market Flexibility and Pension Reforms*. Basingstoke: Palgrave Macmillan
- Janusch, T and Vlasblom, JD (2011) 'Pensions and female labour careers in the Netherlands' in *Women's Biographical Patterns and Pension Income Prospects*, Berlin: Federal Ministry for Family Affairs, Senior Citizens and Youth
- Jefferson, T (2009) 'Women and retirement pensions.' *Feminist Economics* 15 (4): 115-45
- Jefferson, T. and Preston, A (2005) 'Australia's "other" gender wage gap: baby boomers and compulsory Superannuation accounts' *Feminist Economics* 11 (2): 79-101
- Leitner, S (2012), *Effects of life courses on women's pensions: synthesis report – Germany*, EC D-G Employment, Social Affairs and Inclusion, Brussels
- Lewis J and Campbell, M (2007) UK work/family balance policies and gender equality, 1997-2005. *Social Politics* 14 (1): 4-30
- Maier, R, De Graaf, W, and Frericks, P. (2007) Pension reforms in Europe and life course policies *Social Policy and Administration* 41, 5: 487-504
- Nyberg, A (2012) Gender equality policy in Sweden 1970s-2010s. *Nordic Journal of Working Life Studies* 2 (4): 67-84
- Olsberg, D. (2006) 'Major changes for Super' *Australian Accounting Review* 16 (3): 47-51
- Parr, N, Ferris, S and Mahuteau, S (2009) 'The impact of children on Australian women's and men's superannuation.' *The Economic Labour Relations Review* 18 (1): 3-26
- Preston, A. and Austin, S. (2001) 'Women, Superannuation and the SGC' *Australian Bulletin of Labour* 27 (4) 272-95
- Rice Warner Actuaries (2010) *Superannuation savings gap for women* Report for IFSA  
[http://www.fsc.org.au/downloads/file/PublicationsFile/2010\\_0311\\_RptSuperannuationSavingsGapforWomenMarch2010.pdf](http://www.fsc.org.au/downloads/file/PublicationsFile/2010_0311_RptSuperannuationSavingsGapforWomenMarch2010.pdf)
- Shaver, S. (2001) 'Pension reform in Australia: problematic gender equality' in Ginn, J., Street, D. and Arber, S. *Women, Work and Pensions* (Buckingham, Open University Press): 179-98
- Scottish Widows (2013) *Women and Pensions Report*  
[http://www.scottishwidows.co.uk/about\\_us/media\\_centre/reports\\_women.html](http://www.scottishwidows.co.uk/about_us/media_centre/reports_women.html)
- Sefton, T, Evandrou, M and Falkingham, J (2011a) 'Family ties: women's work and family histories and their association with incomes in later life in the UK' *Journal of Social Policy* 40 (1): 41-69

Sefton, T, Evandrou, M, Falkingham, J and Vlachantoni, A (2011b) The relationship between women's work histories and incomes in later life in the UK, US and West Germany, *Journal of European Social Policy* 21 (1): 20-36

Shorrocks, A.F. (1978). Income Inequality and Income Mobility, *Journal of Economic Theory*, 19, 376-93.

UK Pensions Advisory Service - PAS (2014) *Women and Pensions*

Weston, R. and Smyth, B. (2000) 'Financial living standards after divorce' *Family Matters* 55: 11-15

Williams F (2008) The intersection of child care regimes and migration regimes: a three-country study, *in: Lutz H (ed.) Migration and Domestic Work: a European perspective on a global theme*. Routledge: 13-28