

Superannuation over the past decade: Individual experiences^{*#}

A Report by the Australian Centre for Financial Studies for AIST

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This paper uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this paper, however, are those of the author and should not be attributed to either FaHCSIA or the Melbourne Institute.

[#] Prepared by Professor Kevin Davis, Research Director, Australian Centre for Financial Studies. Anne Ritter provided valuable research assistance.

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Executive Summary:

This report uses data from the HILDA survey to examine individual and household superannuation experiences over the past decade. It draws on only a very small portion of the information available in that survey which includes data about individual characteristics and experiences beyond that which superfunds have about their members. The report includes the following findings^{**}:

- The gap between average super balances of males and females increases with age, but
 - This does not appear to be attributable to gender *per se* but rather reflects gender-related differences in things such as labor force participation and incomes; and
 - The gap is not apparent at ages below the early 30s where differences in labor force participation experience are less likely to have emerged.
- Examining super balances/wages at different ages can indicate if individuals are “on track” to achieve adequate retirement income. For males, the average ratio is around 2.5 at age 50, that is at 50 the average male has saved two and one half times his annual wage. This ratio climbs rapidly, reaching around 4.5 or four and one half times their annual salary (for those in the survey) by the early 60’s. This is partly due to the decline in average wage and salary income which sets in from around that age. That income effect partly offsets the lower consumption needs of pre-retirees in terms of having funds available for voluntary super contributions – an issue which warrants consideration in terms of age-related setting of the cap for concessional contributions.
- There are still around 10 per cent of employees with some defined benefit super
- Most older single retirees have little or no super, but many have significant housing wealth. Most single non-home-owner retirees also have no super balances, but their responses to a question about their financial position show over 80 per cent regard themselves as “reasonably comfortable” or “just getting along” and only 6 per cent as

^{**} Although the HILDA sample is large and representative of the population, readers should be aware of the importance of sampling error and interpret figures and statistics presented as “ball-park” rather than precise estimates.

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“poor” or “very poor”. Responses of other retiree groups (eg home-owners) reinforce an impression that the old-age pension is relatively effective in providing an adequate living standard safety net.

- The message of the higher future official pension age of 67 had not really gotten through to the middle-younger aged cohorts by 2010. Males have plans to retire at 64 and females earlier. But the planned retirement age has increased by around 2 years since 2006 (although there are no signs of a greater response by females for whom the official age has increased by more).
- Three quarters of employees make no personal contributions to super above their employer contributions.
- Around 15 per cent of singles below 50, but very few couples, report having zero super. While some of those singles may be self-employed and thus outside the compulsory contribution arrangements, lack of take-up of tax-beneficial contribution arrangements is a concern. Over age 70 two-thirds or more have zero super.
- There is evidence of increased awareness of super, however, although 12 per cent of employees still don't know the amount of the employer super contribution (and 3 per cent think it is below 9 per cent). This is a sizable percentage increase over 2002 and 2006, when 21 and 14 per cent respectively were unaware.
- For mid-career individuals (aged between mid 30s and mid 50s in 2010), average super balances increased by about 50 per cent between 2002 and 2006 and also between 2006 and 2010.
- Super has become a higher part of total wealth over time for singles and in 2010 was around 35 per cent for those aged 30, but lower for older singles. For couples, the share of super is relatively constant by age group at around 20-25 per cent, and hasn't changed much over time – reflecting the commensurate growth in both house prices and superannuation asset values.
- Comparisons of super balances of the average individual aged “X” in 2002 with one of the same age in 2006 and 2010 indicate that:

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- Average balances are higher in the later years, but that there was a greater increase between 2002 and 2006 than between 2006 and 2010, and importantly,
- Whereas average balances tended to decline after age 50 in 2002, they are increasing in 2010.
- Higher educated individuals tend to have more super, even after allowing for the effect of higher income.

Introduction

How have individual superannuation balances changed over the past decade? What household or individual characteristics have influenced accumulation of superannuation balances? How are current super balances related to factors such as age, gender, income, wealth? What do these factors tell us about how the superannuation system might be improved?

In this report, we examine these types of questions, drawing upon data from the HILDA Survey (see Box 1 for details). In Section 1 we provide some background information on data available from the HILDA Survey. In Section 2 we present information on the level of individual superannuation balances in 2010 and other items of interest. In Section 3 we consider how individual superannuation balances have changed between 2002, 2006 and 2010 – which are the years in which the HILDA Survey collects data about superannuation balances. In Section 4 we delve deeper into understanding reasons for some of the changes exhibited. Finally, the report concludes with some discussion of policy issues highlighted by the data assembled and reviewed.

1. The Hilda Survey: Background Information

Box 1 provides some background information on the HILDA Survey which, because of the sample selection procedure, can be used to provide a representative picture of relevant characteristics of the Australian population.¹

BOX 1: THE HILDA Survey*

The Household, Income and Labour Dynamics in Australia (HILDA) Survey is a household-based panel study which began in 2001. It has the following key features:

- It collects information about economic and subjective well-being, labour market dynamics and family dynamics.
- Special questionnaire modules are included in each wave.
- The wave 1 panel consisted of 7,682 households and 19,914 individuals.
- Interviews are conducted annually with all adult members of each household.
- The panel members are followed over time.
- The funding has been guaranteed for twelve waves, though the survey is designed to continue for longer than this.
- Academic and other researchers can apply to use the General Release datasets for their research.
- Release 10 of the HILDA data (waves 1 to 10) is now available.

The HILDA Survey was initiated, and is funded, by the Australian Government through the [Department of Families, Housing, Community Services and Indigenous Affairs](#) (FaHCSIA). Responsibility for the design and management of the survey rests with the [Melbourne Institute of Applied Economic and Social Research](#) (University of Melbourne).

Data collection for waves 9 to 12 is being undertaken by [Roy Morgan Research](#), a private market research company, and The Nielsen Company collected waves 1 to 8.

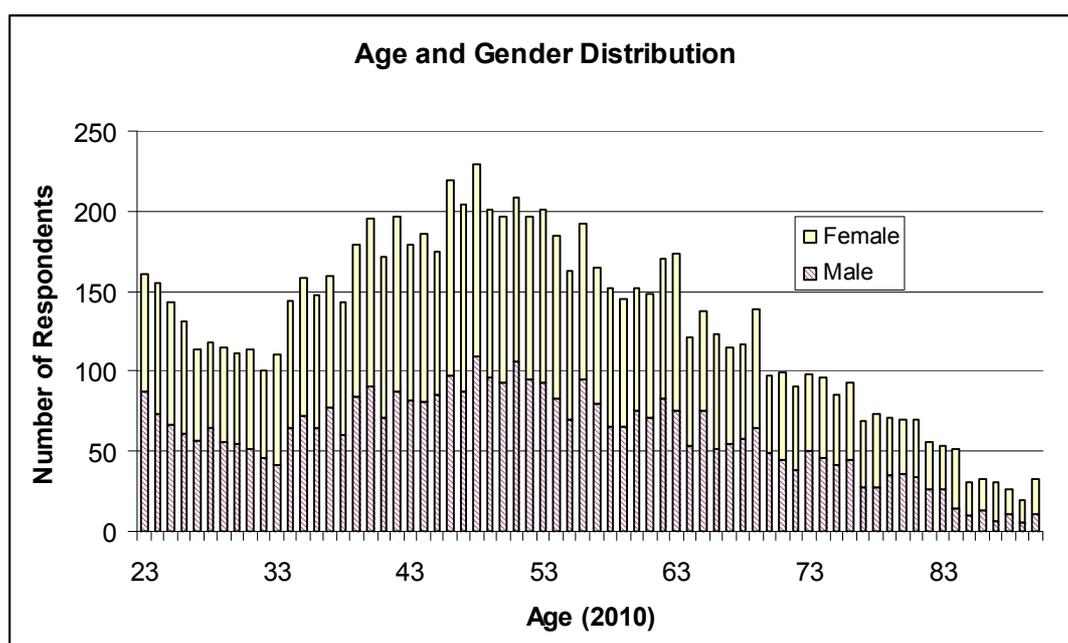
* This description of the HILDA Survey is taken from the HILDA website <http://melbourneinstitute.com/hilda/>

¹ Because it is a sample, averages etc are estimates of population values and are subject to sampling error.

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Figure 1 provides background information on the number of individuals included in the analysis of this paper. Only those individuals who responded to questions about financial wealth in each of the three “waves” of the survey (2002, 2006, 2010) are included. This leads to a sample of almost 9,000 individuals, around 54 per cent of whom are female, and with the largest concentration of numbers in the 40-60 age group (as at 2010).

Figure 1

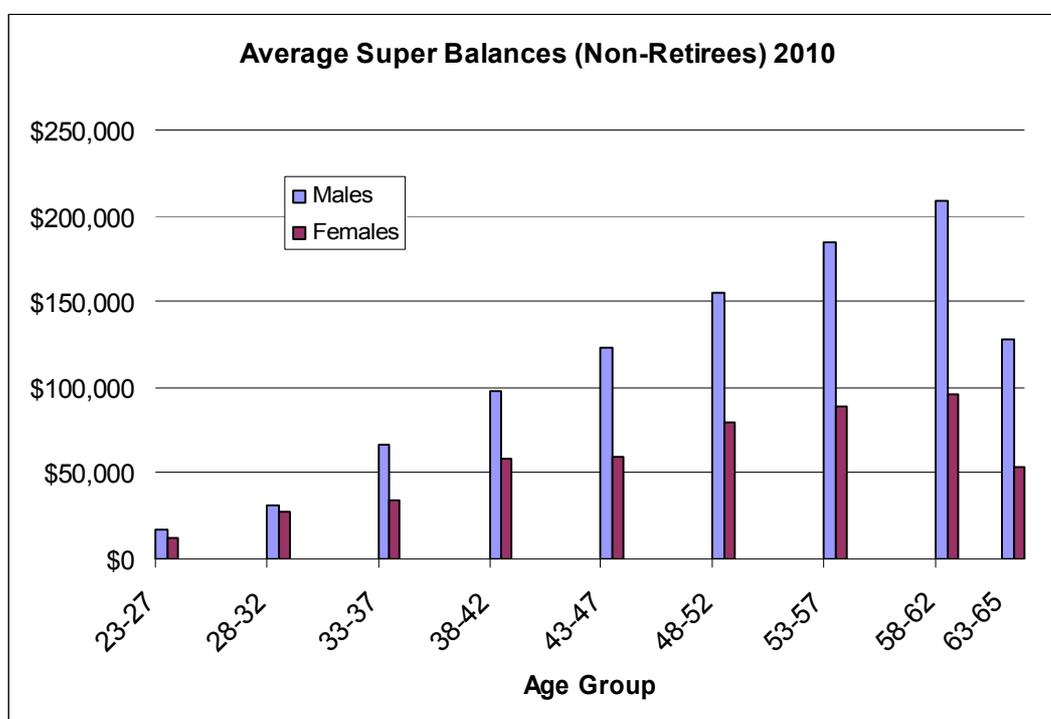


There are 8803 individual responses used from the 2010 HILDA Survey. In the initial survey in 2001 there were 19,914 individuals.

2. Superannuation Features: 2010

Figure 2 provides information on average superannuation balances by age group and gender for non-retirees as at 2010. Averages over five year age bands have been used to smooth the data. The figure contains few surprises. For individuals over 40, on average males tend to have superannuation balances roughly double those of females, reflecting a mix of factors such as non-participation or part-time participation in the paid workforce by some females due to child bearing and rearing, and gender related salary differences such as lower average salaries in female-dominated industries. But notably in the younger age groups, there is little difference by gender, raising the question of the extent to which the gap currently seen at older age levels will persist in the future. The noticeable drop-off in super balances for the 63-65 age group can be attributed to factors such as greater propensity for early retirement among those with large super balances (and thus their exclusion from the sample) and running-down of super balances through transition to retirement pensions by some others.

Figure 2



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Super Balances relative to Wages

Figure 3 shows the ratio of superannuation balances to current wage and salary income for full time employed males in different age groups as at 2010. While the marked increase in the ratio at the upper end of the age distribution appears positive in terms of preparation for retirement, a significant part of that increase is due to the fact that the average wage and salary income of those in the sample falls significantly from around age 50 and onwards. (From around \$85,000 in the late 45-55 age group it falls to around \$72,000 for the 55-65 age group – reflecting propensity to early retirement of high income earners, and thus exclusion from the sample).

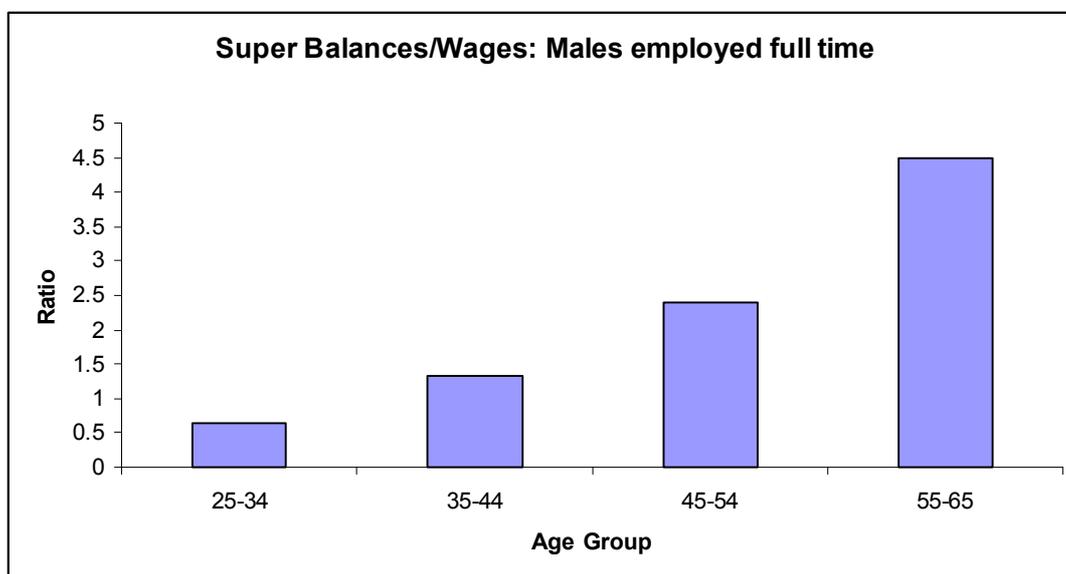
In assessing the implications of the ratios in Figure 3 for retirement readiness, the Retirement Planner on the ASIC MoneySmart website may provide some guidance.² Consider a single male aged 50 with approximately the average income (\$85,000) and super balances (\$205,000) of the 45-55 age group in Figure 3, and with only employer contributions of 9 per cent. The projected income stream available in retirement (at age 65) is \$37,755 p.a. until age 90 (comprising approximately half age pension and half use of super savings), with complete reliance on the age pension thereafter. Using a target replacement ratio of two-thirds of income, the estimated shortfall for retirement income is around \$19,000.

Notably, the projected replacement ratio is not much different for a single male of 40 with approximately the average income (\$88,000) and super balances (\$117,500) of the 35-45 age group. The income stream available in retirement is projected to be \$39,200 p.a.. For a male aged 30 with the average income of \$70,000 and average super balance of \$44,000, the projected retirement income stream is relatively similar, with a shortfall in the replacement ratio and slightly less, but still substantial, reliance on the age pension.

The implication, as is generally well known, is that 9 per cent contributions are not sufficient to achieve commonly accepted target replacement ratios nor prevent partial reliance on the age pension.

² <https://www.moneysmart.gov.au/tools-and-resources/calculators-and-tools/retirement-planner>

Figure 3: Superannuation Balances relative to Wage and Salary Income -2010^a



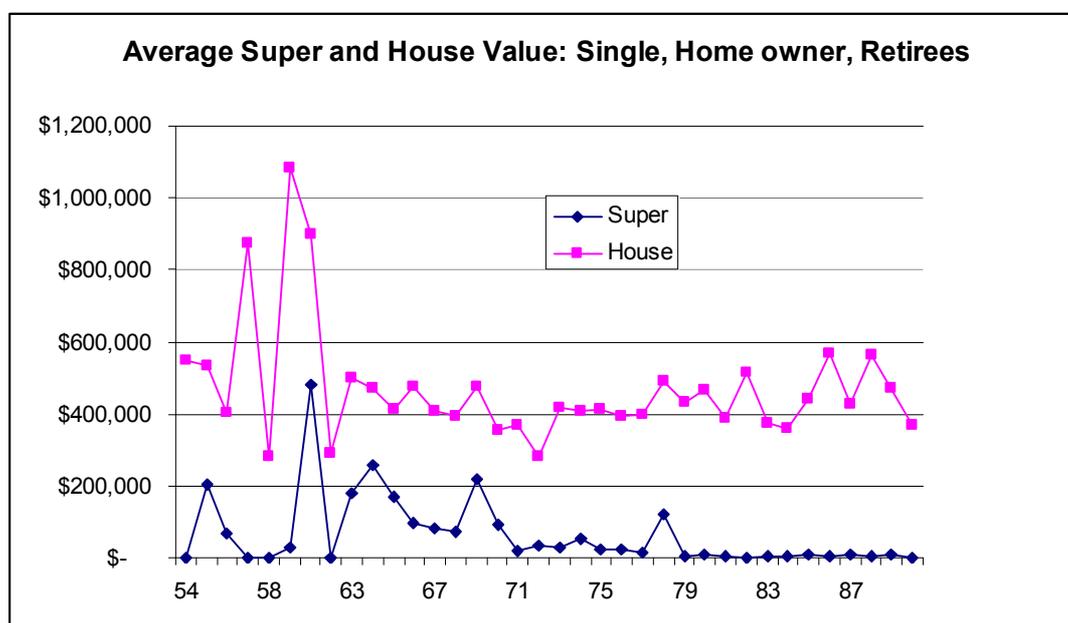
(a) Only males who were in the labor force for the full year and employed for the full year were included. Also individuals who reported an annual wage and salary income of less than \$5,000 were excluded.

Retiree Finances

Figure 4 shows key features of the financial situation of single, homeowner, retirees as at 2010. It is apparent that most of these older retirees have little or no superannuation savings, but that they possess significant wealth in the form of their residence.

There is considerable personal wealth locked up in housing assets of retirees which could potentially be tapped (via reverse mortgages or other means) to supplement retirement living standards. Current means testing arrangements, by excluding the value of the family home from the assets test also works against realization of this potential source of spending power, particularly given a social ethos of passing on the family home to children as part of one's estate (also encouraged by a tax system which does not apply inheritance taxes).

Figure 4: Single, Home owner, Retiree Financial Wealth^a



(a) Based on 387 individuals identified as single, homeowners and retired

Retiree Wellbeing

The single home-owners included in Figure 4 were approximately two-thirds of the total of single retirees. Notably, of the 188 non-home-owner single retirees included in the survey, 163 reported as having zero superannuation balances. What is also notable is that of the 139 in that group who answered the question about their financial position, there were relatively few who classed themselves as poor or very poor. Similar responses were received by other retirees, as shown in Table 1 although, as would be expected, home-owners generally gave a higher rating of their financial situation. But what is apparent from the very low proportion of responses in “poor” and “very poor” categories in Table 1 is that the age pension would appear to be generally meeting the objective of providing a minimum safety-net level of retirement income for current retirement age cohorts. Whether similar assessments would be made by later generations with potentially different expectations is another question.

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Table 1: Financial situation self assessment of retirees with zero superannuation ^a

	Single non home owners	Couple non home owners	Couple home owners
Prosperous	0%	0%	0%
Very comfortable	11%	5%	12%
Reasonably comfortable	43%	46%	61%
Just getting along	40%	48%	21%
Poor	3%	1%	5%
Very Poor	3%	0%	0%

(a) Relatively small sample size means that these estimates should be treated with caution

Superannuation and self-assessed financial wellbeing

ME Bank (2011) recently undertook a survey of just under 1500 individuals to develop a financial comfort index and explore its determinants.³ Among their conclusions were that:

“High-to-very-high comfort levels on the ME Bank Financial Comfort Index were observed when household superannuation balances were greater than approximately \$200,000. Income level was nowhere near as strongly related to comfort as superannuation and, to a lesser degree, property value.” (ME Bank, 2011, p 2).

It is instructive to see whether similar results are found regarding determinants of the financial self assessment by individuals in the HILDA survey. To this end, individual responses to the financial position question were regressed upon household superannuation wealth, housing wealth (net of debt), household income, age, and an indicator variable for whether the individual was single or in a relationship.⁴ Summarizing the results (for non-retirees):

³ ME Bank *Household Financial Health Dynamics Report. Findings from research with Australian households* December 2011 http://www.membersequity.com.au/pdf/household_report.pdf

⁴ Only non-retirees were considered, and only one respondent per household was included, giving 4,475 observations.

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- The median response is “reasonably comfortable” with the mean slightly lower (towards “just getting by”).
- Higher superannuation balances had approximately twice the effect on assessed financial position than did (an equivalent) higher value of home equity, consistent with the ME Bank conclusion. This is consistent with a perspective that housing wealth is not generally seen as available for increasing consumption either because “downsizing” is not attractive, or because of bequest motives
- A one per cent increase in income had a lesser effect than a one per cent increase in superannuation balances on assessed financial position (although the effect was more predictable) consistent with the ME Bank conclusion. This is consistent with a theoretical perspective that only part of higher income might be viewed as permanent, whereas super balances are “in the kitty”.
- Unsurprisingly, couples assessed their financial position as being worse than a single individual with the same level of household wealth and income.
- Surprisingly (given their smaller remaining time to prepare for retirement), there was no evidence that older individuals assessed their financial position as being worse than younger individuals with the same household wealth and income.

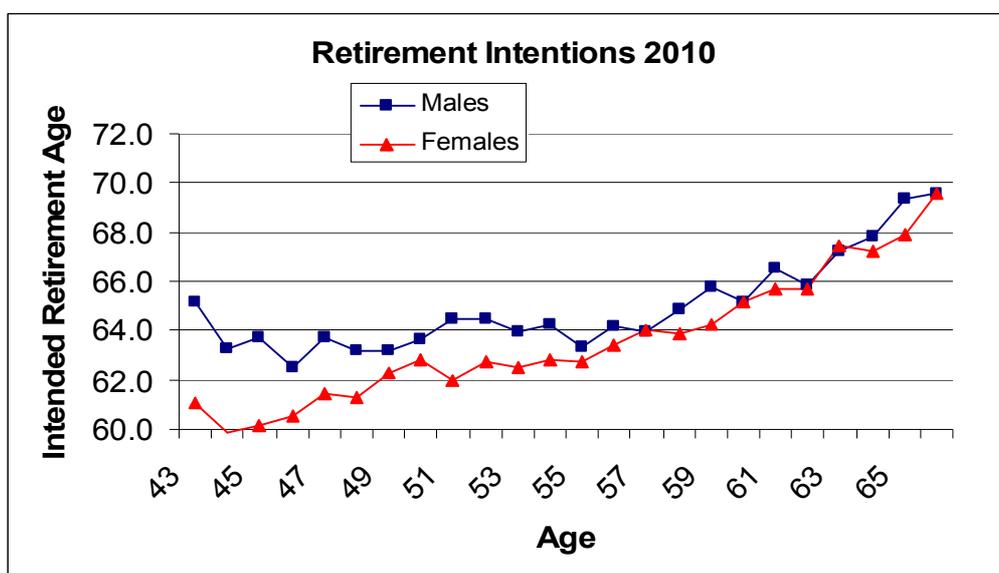
Retirement Intentions

It is tempting in thinking about retirement policy to assume that most individuals will retire at or near to the official pension age - until recently 65 for males, with future staged increase to 67 announced in May 2009. The staged increases imply that for any individual aged around 53 or less at the date of the 2010 survey, the official retirement age will be 67. Clearly, the message had not sunk in for that group as can be seen from Figure 5, implying that either individuals are basing their life-cycle financial planning on misguided assumptions, or that the assumption that individuals will not generally retire until the official pension age is a poor starting point for government policy. Figure 5 shows retirement intentions for (non-retired) males and females of different ages as at 2010. It is noticeable that: (a) while planned retirement age for older cohorts increases

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with their age⁵, this is not so for age cohorts below the mid 50s, where the planned retirement age for males hovers around 64; (b) females have earlier retirement intentions than males – particularly in younger age cohorts. One possible cause of that latter result could be that households plan for a common retirement date for both partners, implying a younger retirement age for females who, on average, are younger than their male partners.

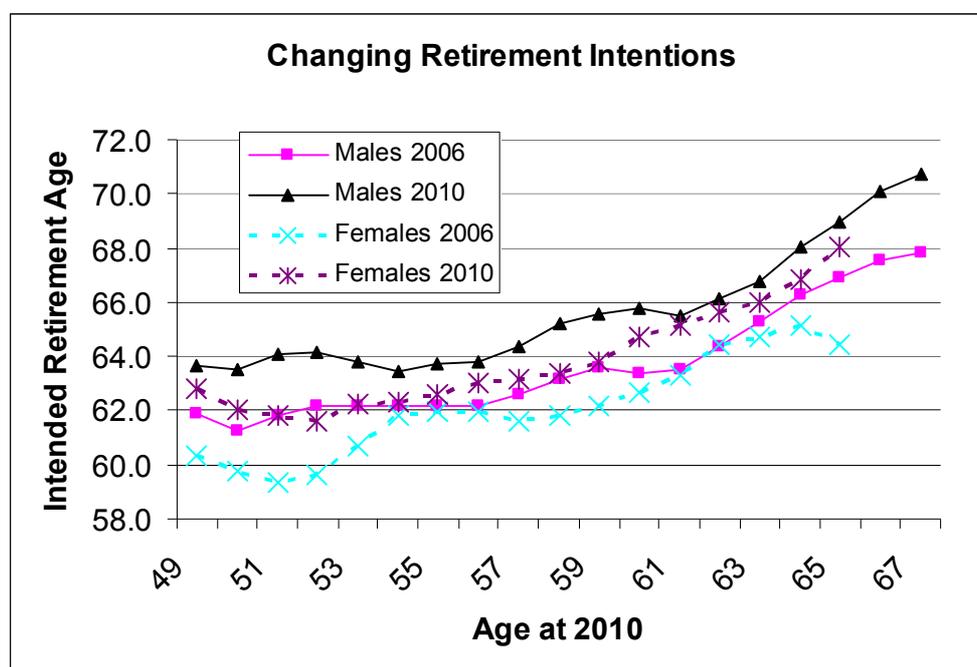
Figure 5: Retirement Intentions in 2010



It is also interesting to ask how retirement intentions have changed over recent years with both the planned change in official retirement age and the wealth destruction experience of the Global Financial Crisis. Figure 6 plots intended retirement age stated in 2006 and 2010 for males and females against their age at 2010. It can be seen that for both males and females there has been an increase in planned retirement age. Surprisingly, given the greater increase announced in 2009 in official retirement age for females, the increase has been no greater for that group, with the average increase being in the order of two years.

⁵ Some part of this increase may be due to “early-retirees” no longer being in the sample.

Figure 6: Changes in Retirement Intentions between 2006 and 2010^a



(a) Based on individuals with responses regarding retirement intentions in both 2006 and 2010. To smooth the graphs a three period moving average is used (such that, for example, the figure for age 50 is an average of responses for ages 49, 50, 51 etc).

Individual contributions

It is well known that the compulsory 9 per cent superannuation contribution is insufficient to generate an adequate replacement ratio (retirement relative to pre-retirement income). Hence, the question of whether employees make additional personal contributions to super is of interest. Table 2 shows the responses to such a question in the 2002, 2006 and 2010 survey. Approximately one-quarter of respondents make additional contributions – with the figure being slightly higher in the 2006 survey where incentives to do so were generally higher.

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Table 2: Employee personal super contributions^a

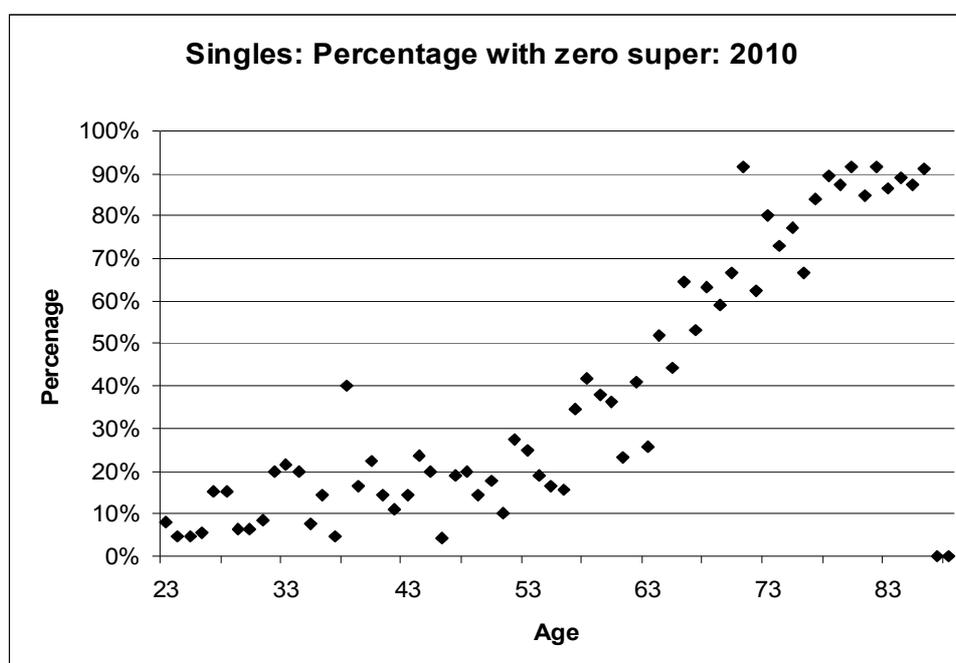
	Employees – do you make extra contributions?		
	2002	2006	2010
No – only receive employer contributions	75%	71%	74%
Yes – occasional lump sum contributions	1%	5%	4%
Yes – make regular contributions	24%	25%	22%

(a) Responses by 4271 (in 2002), 4704 (in 2006) and 4446 (in 2010) individuals asked this question.

Super Anomalies

It is also tempting to think that, at least at younger ages, the introduction of compulsory super means that there will be relatively few without super. However, that appears to be somewhat optimistic as Figure 7 suggests which shows the proportion of single people of each age who report having zero super balances as at 2010.⁶ The very high proportions at ages 65 and above are not unexpected, but in the order of 15 per cent of singles below 50 report having zero superannuation!

Figure 7



⁶ Individuals selected for this analysis were reported as being single in all three waves (2002, 2006, 2010) in order to avoid complications associated with household formation or dissolution.

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Table 3 shows the proportion of couples who reported having zero superannuation balances as at 2010. As would be expected, few younger aged couples report having zero superannuation while two thirds of couples above 70 report having no superannuation.

Table 3: Couples With Zero Superannuation in 2010^a

Age Range	Percent
30-40	0.3%
40-50	1.7%
50-60	6.1%
60-70	19.9%
>70	66.3%

(a) Responses of 1821 couples. Age range is based on average age of couple.

Defined Benefit Schemes

Defined benefit schemes have become less common over time and it is to be expected that the proportion of the workforce whose superannuation has some defined benefit component is likely to have fallen over time. A greater proportion of retirees are likely to have had some defined benefit component than is the case for new entrants into the workforce. That is borne out by the HILDA survey data. The percentage of workers with some defined benefit component to their super fell from 12.9 per cent to 10.6 per cent between 2006 and 2010. While that 10.6 per cent may not all be cases where all of the super is in defined benefit schemes, the numbers do suggest that defined benefit schemes are still of significance – although generally not considered much in super policy discussions.

3. Super over Time

Super Knowledge

One of the concerns of the Cooper Report⁷ was the lack of connection of individuals with superannuation. And one aspect of that is individuals' understanding of how much employers are contributing on their behalf. Table 4 shows the responses of individuals to the question of how much employers contribute on their behalf as a percentage of wage and salary income.

The figures show a pleasing trend in that the percentage of “don't know” or “less than 9 per cent” responses has fallen suggesting that greater awareness of the compulsory arrangements for 9 per cent contribution has occurred. However, it is still the case in 2010 that 15 per cent of respondents fall into these two categories.⁸

Table 4: Individual awareness of employer super contributions^a

	2002	2006	2010
Don't know	21%	18%	12%
less than 9 per cent	14%	5%	3%
9 per cent	55%	65%	72%
greater than 9 per cent	10%	12%	13%

(a) Responses for 2985 individuals who were asked the question in all three surveys.

Super Balances

There are several ways of examining changes in superannuation balances over time. One is to track the balances of individuals, thus showing their experience over time (referred to here as Method 1). Averages can then be taken across individuals in each age cohort (eg all those aged 50 at 2010) or grouped by other relevant characteristics. A second approach is to consider the situation of individuals of a specific age at different point in time (eg the 50 year olds at 2002, the 50 year olds at 2006 etc). This approach (referred to

⁷ Review into the governance, efficiency, structure and operation of Australia's superannuation system, Final Report 30 June 2010.

http://www.supersystemreview.gov.au/content/content.aspx?doc=html/final_report.htm

⁸ Those responses of “greater than 9 per cent” are likely to be members of corporate or public sector schemes where contributions are greater, although some may also indicate lack of understanding of required contributions. Some of the “less than 9 per cent” may be self employed.

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here as Method 1) can help identify how changes in policy are impacting upon different generations at various stages of the life cycle.

We first use Method 1 to consider the experience over time of individuals of particular age cohorts (generations). Figure 8 shows how super balances have changed over time for non-retired males and females in dollar terms. Thus, for example, males in the 43-47 age bracket at 2010 had average super balances in 2002 (when they were 35-39) of around \$50,000, around \$80,000 in 2006 and around \$130,000 in 2010. The increase in super balances for those aged between mid thirties and mid fifties at 2010 (where early retirement and running down of balances is less likely to affect the figures) was around 50 per cent between 2002 and 2006 and a similar order of magnitude between 2006 and 2010.

But it is worth noting that the change between 2006 and 2010 is not as large as the change between 2002 and 2006 for older workers with higher super balances, whereas this is not so for younger individuals. The reason for this can be found in the relative importance of inflow of contributions versus earnings. The negative or poor returns after 2006 impacted heavily on those with large balances (and for whom contributions play a smaller relative role in accumulation), whereas before 2006, high returns were experienced.

Two features of Figure 8 warrant further analysis. First, there appears to be some flattening of the relationship between average balances and age at 2010 for females in the age groups 38-42 and 43-47.⁹ (There is some suggestion of a similar pattern when comparing individuals from different generations, using Method 2, as shown in Figure 12). That could reflect a tendency for females to be out of the labor force or working part-time for some period from the mid thirties while engaged in child rearing activities, such that there are few additional contributions made to their superannuation over that period. While the higher levels of female super balances in 2010 compared to 2006 and 2002 indicate the effect of compulsory superannuation contributions in accumulation of

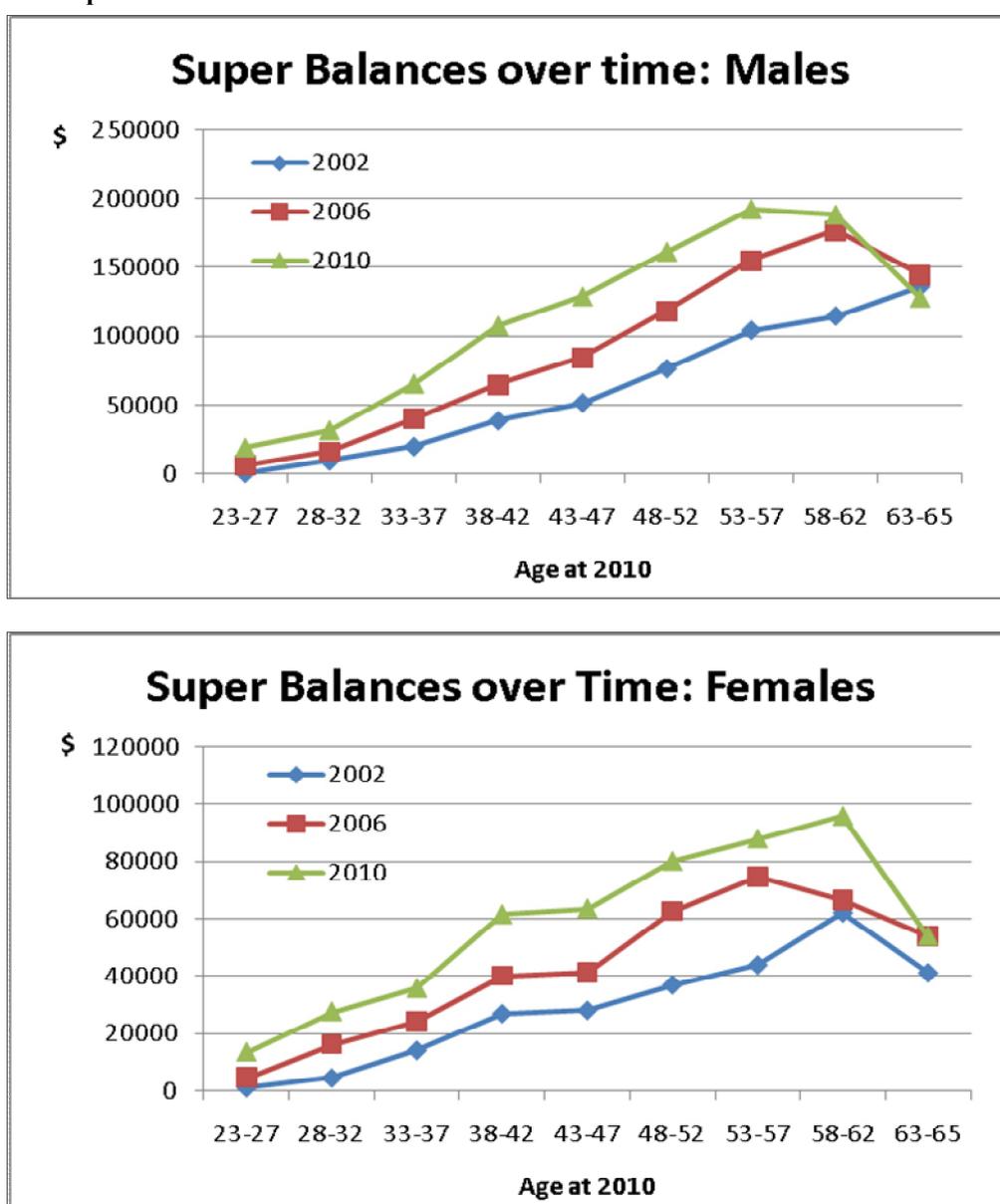
⁹ Although the sampling errors involved in using this data mean that this is suggestive rather than definitive.

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balances, the effect on super accumulation of absence from the workforce associated with childrearing is notable and a potential area for policy concern.

The second feature of Figure 8 is the marked drop in super balances for the oldest age group. This is most likely due to a propensity of those with higher super balances to retire earlier, thus causing the average for non-retirees in the oldest age group to be pushed down.

Figure 8: Super Balances over Time – Method 1

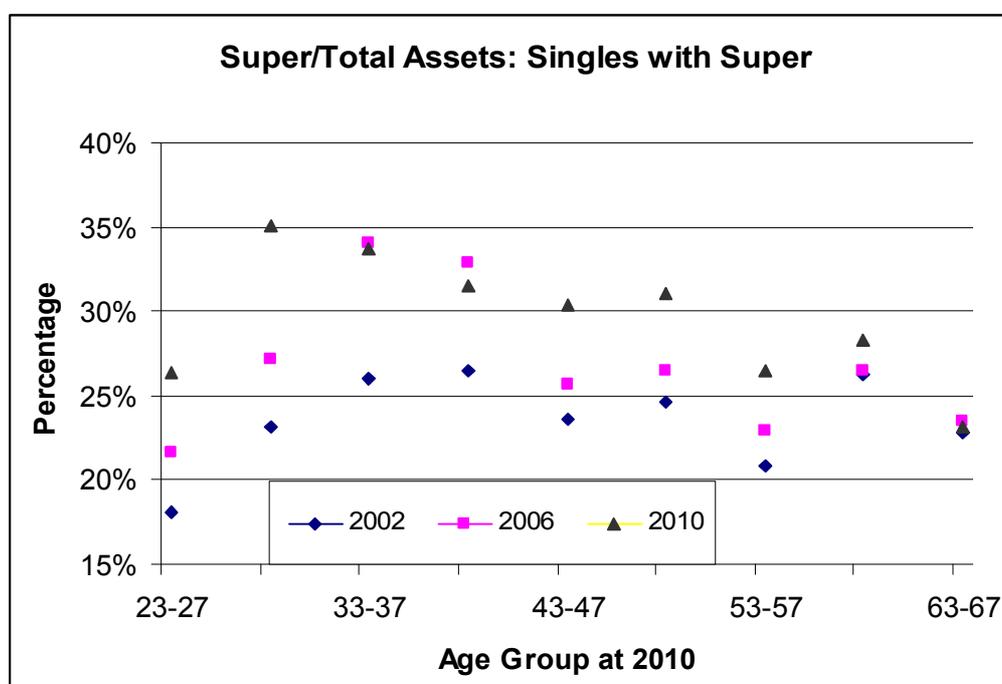


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Averages hide lots of variation by type of individual, and household experiences may also be more relevant. One difficulty in tracing household experiences over time is that the household status may change due to marriage, separation, death etc. Hence, to keep the analysis feasible, we examine only the experience over time of households which have not changed. First, we examine the experience of single individuals. Figure 9 shows how the importance of super as a component of total assets has increased over time for those singles who report having superannuation.

It is noticeable that, as would be expected, across all generations superannuation has increased over time as a proportion of total assets, except between 2006 and 2010 for those in their thirties at 2010. That latter anomaly is most likely due to the decline in the value of superannuation assets during the global financial crisis. What is also noticeable is that superannuation is a smaller part of total wealth for older generations, reflecting both greater home-ownership (and the effect of increased dwelling values over time) as well as a lower proportion of working life and asset accumulation in the superannuation system.

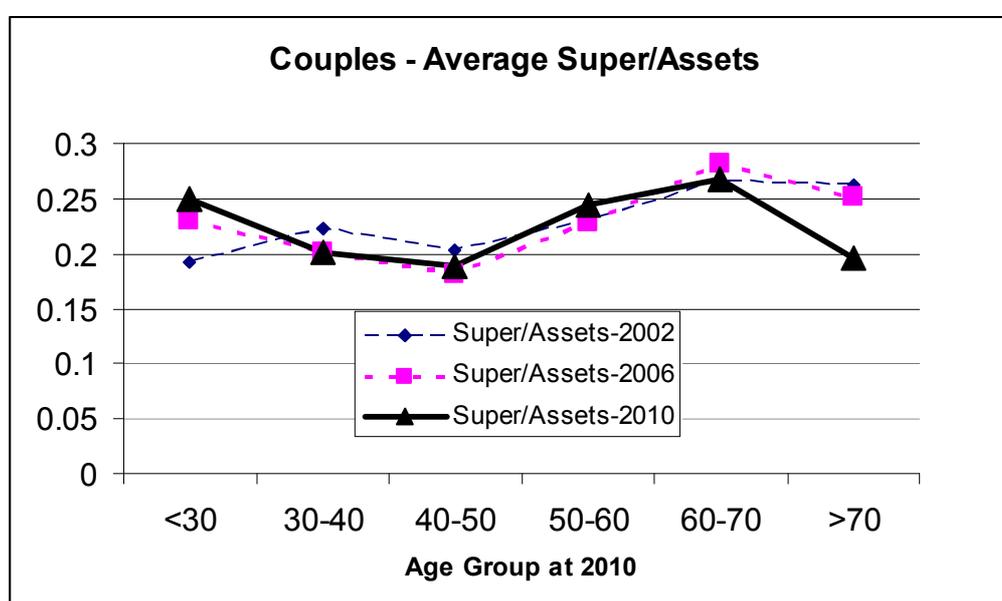
Figure 9: Super v Other Assets - Singles



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Figure 10 shows how superannuation as a proportion of total assets has changed over time for couples classified by their age group as at 2010. (Only included are couples with unchanged relationships over 2002 to 2010 to avoid complications arising from separation etc). Thus for couples with an average age of between 40 to 50 as at 2010, the ratio of household super balances to total assets has remained relatively constant at around 20 per cent between 2002 to 2010. The relative constancy over time at all age groups is most likely reflecting the substantial increase in housing prices over the decade.

Figure 10: Super v Other Assets - Couples



An alternative perspective (Method 2) is to examine how the superannuation system is changing the accumulation experience of different age cohorts. That is, for example, how do the super balances of individuals aged 40 differ between 2002, 2006, and 2010? Figures 11 and 12 provide an overview of average super balances for male and female non-retirees of different ages. Three features stand out. First, males have higher super balances, although the difference is less marked at lower age groups (reflecting the fact, for example, that 25 year olds have had little time in the super system regardless of whether the year considered is 2002 or 2010). Second, there was more significant increases in average balances for given ages between 2002 and 2006 than between 2006 and 2010 – reflecting the better rates of average return on investments in the earlier period. Third, and significantly, the marked decline in average balances for older age

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groups apparent in 2002 appears to have become less pronounced, suggesting that compulsory super is having an impact on preparation for retirement. (In 2010, 60 year olds had some 18 years in the compulsory system – with 9 years at 9 per cent contribution rates, whereas in 2002 they had been in the system for around 10 years with almost all of that at lower contribution rates).

Figure 11

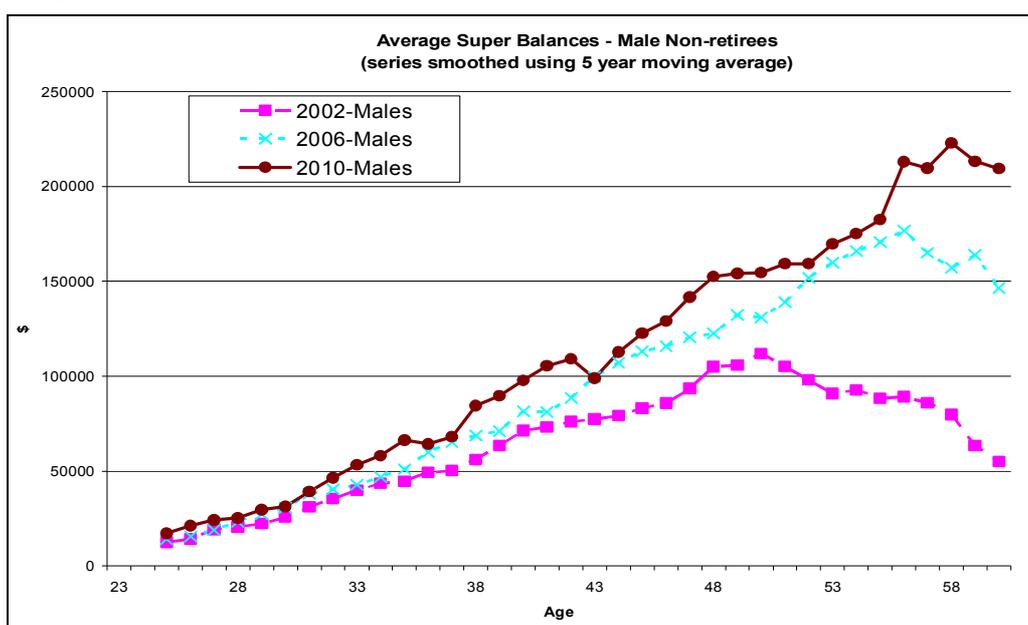
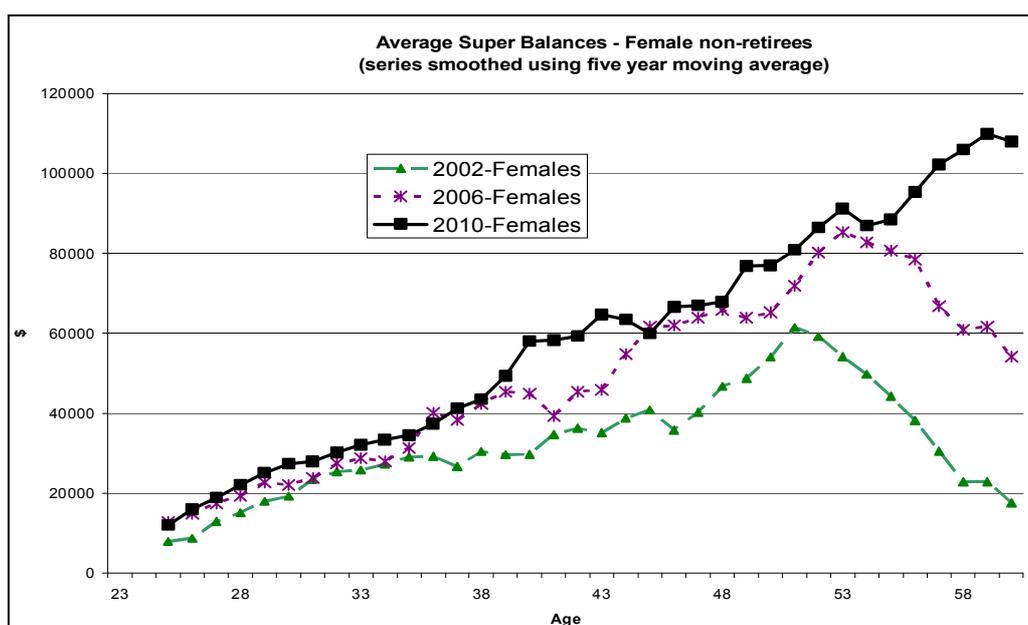


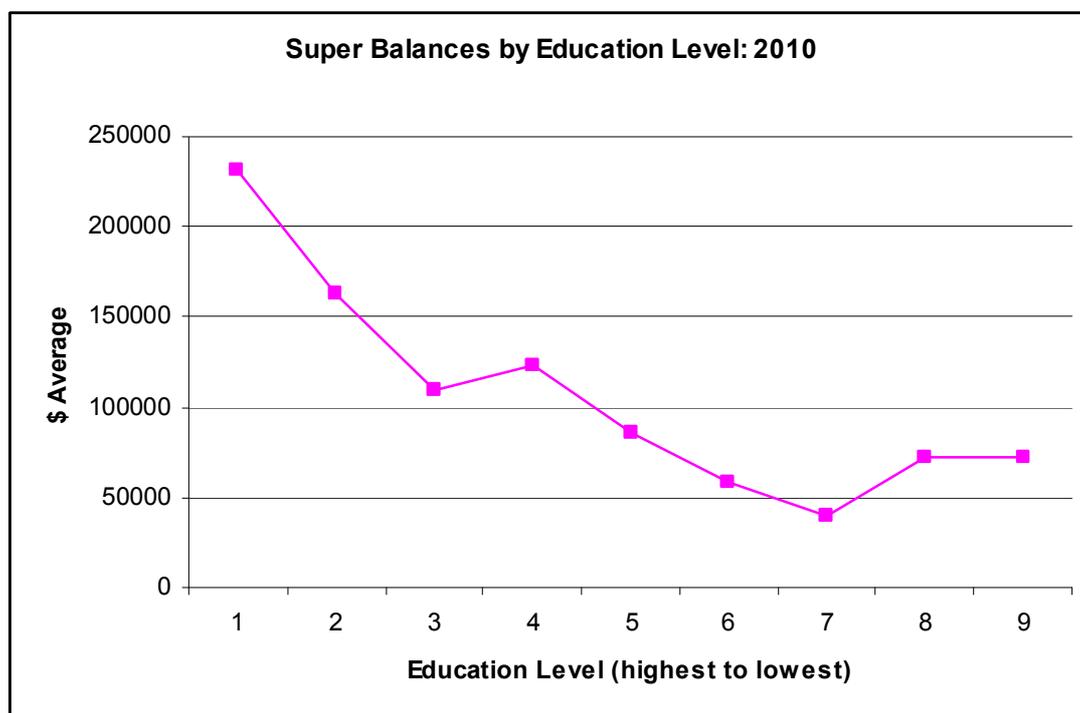
Figure 12



4. Determinants of Superannuation Balances

There are a number of obvious determinants of individuals' superannuation balances such as age, income, time in the labor force, education and the relationship between some of these and average balances at 2010 are shown in the following figures 13 to 16. The data used here is for individuals in the labor force in 2010 and comprises 4575 observations

Figure 13



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Figure 14

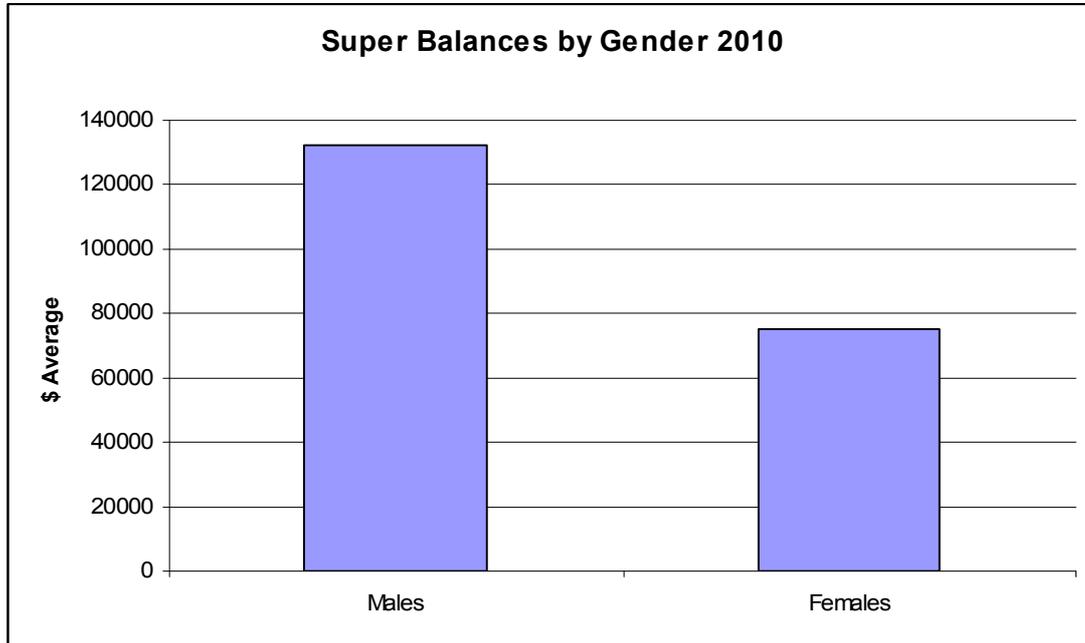


Figure 15

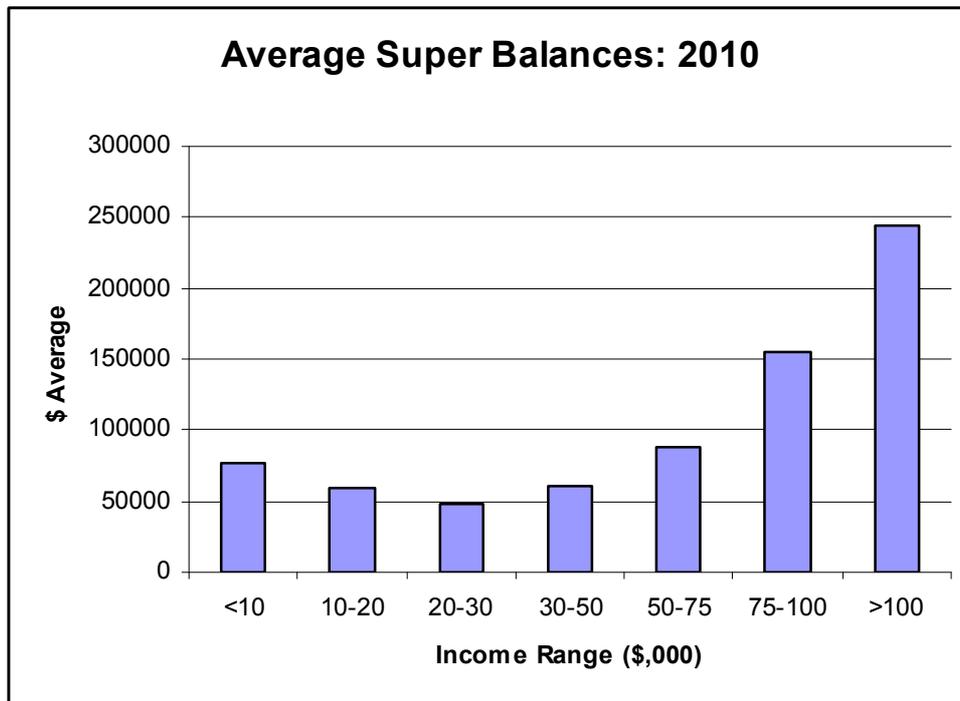
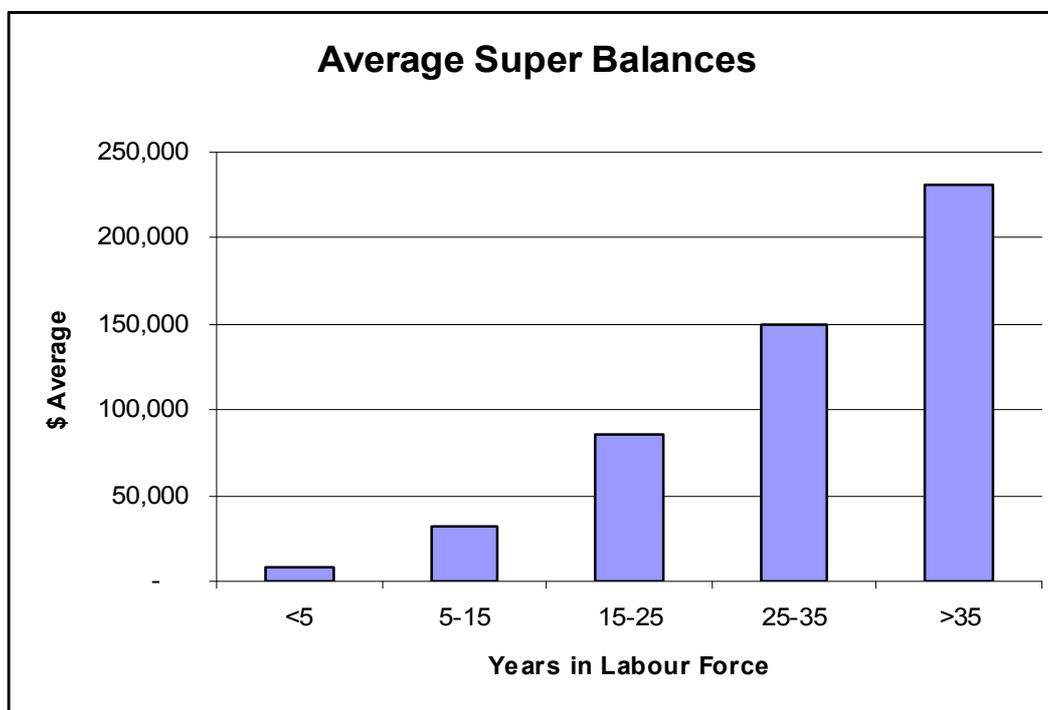


Figure 16



However, such graphical bi-variate comparisons can hide the underlying relationships and determinants. In that regard, there are three features from those charts warranting further investigation. First, is the gender difference in super balances actually a “gender” difference or a result of other labor force characteristics which are related to gender? For example, if income, time in the labor force, education etc are controlled for, is there a separate role for gender? Second, there appears to be an anomaly in the plot of super balances against current income, which exhibits something of a “U-shape” with the lowest income groups having higher balances than those in slightly higher income ranges. It seems likely that this is due to individuals in those lowest income groups either experiencing a temporary drop in income (such as due to employment) or being in a “pre-retirement” phase of part-time employment. Third, differences in superannuation balances appear to be strongly related to educational levels – but that may be more a result of correlation between education and income levels.

To assess these possibilities, it is necessary to resort to multivariate statistical techniques such as regression analysis. While there are a number of approaches of differing

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complexity which could be used, this study adopts a relatively simple linear multivariate regression of the form:

$$Y = \beta_0 + \beta_1 \text{Edu} + \beta_2 \text{LFTTime} + \beta_3 \text{IncChange} + \beta_4 \text{Gender} + \beta_5 \text{Income} + e_t$$

Where:

Y = superannuation balances at 2010; Edu = education level (1 = highest, 9 = lowest); LFT = years in labor force; IncChange = change in income between 2006 and 2010, Gender = 1 for Male, 2 for Female, Income = 2010 wage and salary income. Age is not included because years in the labor force is closely related to it.

The results can be summarized as follows¹⁰:

- (a) around one-quarter of individual differences in superannuation balances can be explained by these variable (the regression $R^2 = 24\%$)
- (b) Educational differences are significant with an average difference of around \$55,000 being observed in super balances between lowest and highest educational groups once differences in the other variables such as income and time in the labor force are controlled for. But while significant, around 2/3 of the apparent difference seen in Figure 12 above disappears.
- (c) Gender is not a significant determinant of super balances once other characteristics such as time in the labor force and income are controlled for
- (d) Current income is a significant determinant of super balances (with each extra \$1,000 of annual income being associated with approximately a \$1,600 higher level of super balances)
- (e) Those individuals who have had a drop in income between 2006 and 2010, have significantly higher super balances than would be predicted by looking solely at 2010 income levels

¹⁰ Details are available on request. These results should be viewed as indicative of the relationships involved. More complex and detailed econometric specifications would most likely generate some differences in the quantitative results.

5. Conclusion

The preceding analysis of individual experiences with superannuation over the past decade highlights several consequences of the introduction of compulsory superannuation. First, although longer time in super and longer at the higher 9 per cent contribution rate is increasing superannuation balances of each generation, 9 per cent contributions are not sufficient to achieve commonly accepted target replacement ratios nor prevent partial reliance on the age pension. Second, while super balances of younger females do not appear to be currently substantially lower than those of males, experience of older generations suggests that a gap is likely to emerge with age due to factors such as time out of the workforce. For older females, the gap is very large – although it is not due to gender *per se* but rather due to factors such as average income and workforce participation which are related to gender. Third, many retirees with minimal superannuation assets have substantial wealth and potential spending power locked up in equity in dwellings, raising the question of why the asset test for the old age pension, by excluding the value of the family home, reduces incentives for accessing this source of retirement consumption expenditure (including by downsizing).

Notably, awareness of features of the super system has grown over time with a declining proportion of individuals not being aware of the level of employer contributions. Nevertheless, there remains a perception, particularly among those in their forties that retirement will be possible before age 65 (and despite the announcement of the eligibility age for the pension increasing to 67. While there has been some increase in the age of planned retirement of survey respondents between 2006 and 2010, it is not clear whether this is a reaction to the wealth destruction associated with the global financial crisis or recognition of later age of access to the old age pension. It is also noticeable that there are still a large number of individuals (for example around 15 per cent of singles under 50) who report having zero superannuation. While some proportion of these may be self-employed and thus not captured by compulsory contribution arrangements, it is perhaps surprising that greater use of the tax concessions associated with superannuation would not be made – and there is minimal reporting of zero superannuation by couples! And

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among employees, only around 25 per cent make extra personal contributions in addition to compulsory employer contributions.

It is also worth noting that the survey responses suggest that age pension arrangements currently appear to meet an objective of providing a minimal safety net. Very few retirees without super responded that they were “poor” or “very poor”. Amongst non-retirees, survey responses confirmed findings of a separate ME Bank survey that super balances appear to have a greater (dollar for dollar) impact than housing wealth on how people assess their financial position. This possibly reflects the perception of super as being available for eventual consumption whereas housing is seen as a necessary asset for which equity cannot be run down for consumption purposes. The ongoing importance of housing wealth relative to superannuation wealth, and the apparent unwillingness of retirees to unlock their super to finance retirement consumption, suggests that this should be an important feature of the policy agenda – albeit one charged with intergenerational interests and equity considerations.