

The Retirement Expectations of Middle-aged Australians*

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We use HILDA data to examine the retirement plans of middle-aged Australians. We find that approximately two-thirds of men and more than half of women report a numeric expected retirement age which we refer to as having a standard retirement plan. Still, one in five individuals seem to have delayed their retirement planning and approximately 1 in 11 either does not know when he or she expects to retire or expects to never retire. Retirement plans are closely related to current labour market position, with workers in jobs with well-defined superannuation benefits more likely to report numeric expected retirement ages.

I Introduction

Knowing how Australians plan for retirement is important in predicting aged-pension expenditures, in assessing whether the benefits available to the elderly are satisfactory and in understanding the likely effects of recent changes in the way that superannuation payouts are taxed (Freebairn, 2007 reviews these changes). Unfortunately, there is a

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great deal that we do not know about retirement behaviour in Australia. This gap reflects a lack of suitable data for analysing the issue rather than a lack of interest on the part of researchers and policy-makers. In this article, we use waves 1 and 3 of the Household, Income and Labour Dynamics in Australia (HILDA) survey to examine the retirement plans of middle-aged Australians (aged 45–55 years). HILDA is relatively unique in asking all non-retired respondents, over the age of 45, about the age at which they plan to retire. These data provide an important opportunity to study the retirement plans of a wide cross-section of the Australian population.

There are several reasons for focusing on retirement intentions rather than on actual retirement behaviour. First, retirement is perhaps best thought of as a process rather than as an absorbing state. Although many policy-makers and researchers conceptualise (and model) retirement as a once-and-for-all withdrawal from the labour force, evidence suggests that this characterises the experiences of only half of retirees (Maestas,

2005). Second, there are costs associated with 'not getting it right' with workers suffering financial penalties for failing to plan for retirement or for retiring unexpectedly (Dwyer, 2001; Lusardi and Mitchell, 2008). Third, studying retirement expectations, rather than retirement outcomes, allows us to avoid the 'justification bias' that can occur if individuals retrospectively report job loss or poor health as the cause of their retirement in order to provide a socially acceptable excuse for leaving the labour force.¹ Fourth, as individuals are continually making long-term investment decisions based on their expectations about the future, retirement plans are likely to be quite important for understanding not only actual retirement patterns, but also savings behaviour and wealth accumulation. Finally, public policies targeted towards altering workers' retirement patterns must in the first instance operate by altering workers' expectations about the tradeoffs associated with retirement. This requires a better understanding of the process by which workers formulate their retirement expectations.

Analysing survey-based data on individuals' subjective expectations is often methodologically challenging because expectations questions can be difficult to conceptualise leading many respondents to explicitly refuse to answer or to reply that they do not know. This type of item non-response generates data that are hard to interpret and that pose a number of problems that are difficult to test for and solve in empirical models (see Van Soest and Hurd, 2004a,b; Kleijnans and Lee, 2006). Many HILDA respondents, for example, find it hard to articulate an expected retirement age, reporting instead that they either do not know (or have not begun to plan) or that they never intend to retire. These individuals may in fact be facing greater uncertainty about their options (see Disney and Tanner, 1999) and therefore should be accounted for explicitly in the analysis.²

¹ Justification bias is a form of reverse causality that makes it very difficult to assess the true effect of job loss or poor health on individuals' decisions to retire early. The empirical evidence is limited (Anderson and Burkhauser, 1986; Dwyer and Mitchell, 1999; Cai and Kalb, 2005; Cai, 2007), but there are clear theoretical advantages to analysing future expectations, as opposed to, concurrent outcomes.

² Responses to subjective expectations questions can also be sensitive to social norms, question wording, and the framing of possible responses. See Manski (2004) for a discussion of the issues in measuring expectations.

Our approach to this problem is to use the complexity in individuals' responses to divide our sample into four subgroups with retirement plans that we believe can be interpreted. These subgroups represent approximately 92 per cent of the initial sample, leaving just 8 per cent of individuals whose responses shed little light on their retirement plans. Our goal is first, to assess the factors driving individuals' subgroup membership and second, to develop a deeper understanding of the retirement plans of individuals in each subgroup. In particular, do those who respond 'do not know' appear to face greater uncertainty? Do those who 'never' intend to retire expect to keep working because they want to or because they feel they cannot afford to stop? In the second stage of our analysis, we explicitly consider how changes in circumstances affect individuals' retirement expectations.

We find that approximately two-thirds of men and more than half of women report a numeric expected retirement age, which we refer to as having a standard retirement plan. At the same time, more than one in five middle-aged Australians seem to have delayed their retirement planning and approximately 1 in 11 either does not know when they expect to retire or expect to never retire. Uncertainty in retirement planning is associated with more uncertain employment conditions, while those who anticipate working forever appear to do so out of concerns about the adequacy of their retirement incomes rather than out of increased job satisfaction or a heightened desire to remain employed. Finally, men alter their retirement plans in response to labour market shocks, while women are more sensitive to their own and their partners' health changes.

II What Do We Know about Retirement and Retirement Expectations

Researchers typically follow Bernheim (1990) and model individuals' expectations regarding the timing of future retirement as a function of their optimal retirement age and the information available to them at the time that the expectations are being formed (see Dwyer and Mitchell, 1999; Dwyer, 2001; Benítez-Silva and Dwyer, 2005). Specifically, an individual's expected retirement age (A_t^e) at time t can be expressed as

$$A_t^e = E(A | \Omega_t) \quad (1)$$

where Ω_t represents the available information set at time t and A is the optimal age of retirement. The economic and social factors underlying the

optimal retirement age also determine the age at which individuals expect to retire. If individuals behave rationally and full information is available at time t , then an individual's expected retirement age should be the same as his or her actual retirement age. In reality, however, information may be costly to obtain or may become available only over time creating disjuncture in actual and expected retirement behaviour. Moreover, it is also argued that the self-discipline and complex planning required to successfully save for retirement leaves many people without the financial resources necessary to retire as planned (see Bernheim, 1989; Disney and Tanner, 1999; Gustman and Steinmeier, 2001).

Several studies have used the US Health and Retirement Survey, the US Retirement History Survey and the UK Retirement Survey to examine the accuracy of retirement expectations by comparing them to actual retirement behaviour. They conclude that people form rational retirement plans, in general stick to them, and respond as expected to unanticipated changes in circumstances (Bernheim, 1989; Dwyer and Hu, 1999; Dwyer, 2001; Benítez-Silva and Dwyer, 2005, 2006).

Other studies estimate the determinants of retirement expectations directly. For example, Dwyer and Mitchell (1999) find that although the estimated effects of economic conditions on retirement expectations are statistically significant, they are also small in magnitude. In the US context, the most influential economic factor in the decision to retire appears to be access to health insurance. This and other research have also shown that poor health is strongly correlated with the decision to leave the labour market (Dwyer and Mitchell, 1999; Dwyer, 2001; Benítez-Silva and Dwyer, 2002; McGarry, 2002). Finally, though the evidence is limited, expectations seem to be related to subsequent behaviour. For example, Kleinjans and Lee (2006) conclude that those who believe that they are likely to enter a nursing home, are in fact subsequently more likely to do so, and that there is a link between these expectations and savings behaviour.

Unlike the international research, many of the insights into retirement in Australia have been achieved by examining the determinants of the labour force status of older Australians, without focusing directly on retirement behaviour. Gong *et al.* (2006) review this literature and reach the conclusion that structural change in employment across industries is unlikely to have caused the large fall in employment among older Australians

in last few decades. Thus, there is little evidence that demand-side factors are the predominate driver of Australian retirement patterns. Retirement is more closely linked to those factors influencing people's labour supply decisions. Interestingly, it is higher socioeconomic advantage – rather than disadvantage – that is associated with higher employment rates in older ages (Gong *et al.*, 2006). In recent work, Warren and Oguzoglu (2007) explicitly examine the effect of systematic financial incentives on retirement behaviour. They conclude that while the retirement system in Australia provides financial incentives for men to retire early, women's retirement behaviour is more closely determined by their family circumstances.

Health issues are also often closely related to employment decisions. For example, in studies using HILDA data, Cai (2007), Cai and Kalb (2004, 2005) and Wilkins (2004) find that disability or poor health is associated with a lower probability of labour market participation, while Gill *et al.* (2006) find that Australians who retire at relatively young ages have worse mental health than their counterparts still in the work force. This mental health gap largely disappears by the time early retirees reach the standard retirement age, leading the authors to speculate that by deviating from an important social norm regarding the conventional retirement age, young retirees may experience psychological distress.

Unfortunately, we know very little about retirement expectations in Australia.³ Early work by Miller (1983) concludes that aggregate trends in male labour force participation rates between 1973 and 1982 were very similar to what would have been expected given retirement expectations expressed in 1973. While additional insights can be gained from the international literature, it is difficult to know how Australians' retirement plans might differ as a result of the substantial differences in pension rules, social benefit availability, home ownership rates and health systems between other countries and Australia. Thus, this article will examine the determinants of retirement expectations in Australia and compare them to international evidence.

³ The Australian Bureau of Statistics (ABS) conducts the Retirement and Retirement Intentions Survey (see ABS, 1998), however, these data are cross-sectional and not easily accessible.

III The Household Income and Labour Dynamics in Australia (HILDA) Survey

In this article, we use data from waves 1 and 3 of the HILDA survey, which is a longitudinal survey of Australian households encompassing approximately 13 000 individual respondents living in more than 7000 households. Unfortunately, respondents aged 45 and older were only asked about the age at which they plan to retire in these two waves.⁴ While many overseas surveys of retirement behaviour, for example the US Health and Retirement Survey (HRS), sample only from the population of older individuals, HILDA is a representative sample of Australians aged 15 and older. Thus, we observe relatively few individuals retiring during the existing waves of the survey, making it difficult to directly study retirement behaviour. At the same time, the HRS asks expected retirement questions only of individuals who are currently employed. In contrast, one advantage of HILDA data is that they allow us to examine the retirement plans of an entire cohort of individuals including those currently out of the labour market.

The first panel of Table 1 shows the retirement status of all HILDA respondents in wave 1. Approximately, 55 per cent of men and women are under the age of 45 and consequently are not asked any of the retirement questions. Overall, one in four men (26.2 per cent) is over the age of 45 and not yet retired, while 18.2 per cent of men indicate that they have retired from the labour force. Retirement is somewhat more common among women, with 21.2 per cent reporting they are retired, while 2.7 per cent of women report that they have never worked.

In the second panel of Table 1, we tabulate the per cent of ever-working men and women at different ages that are retired in wave 1. Among men aged 45–49, 6.1 per cent report being retired. Similarly, 11.3 per cent of men aged 50–54 report being retired, while retirement rates reach 19.9 per cent for men aged 55–59. The comparable

⁴ Specifically, in wave 1 respondents were asked ‘At what age do you plan to retire (completely) from the workforce’. The interviewers were told to try to obtain a point estimate and were given the specific instruction that ‘if a range is provided, probe for the single most likely age’. Subsequently, this question is only asked of all respondents in waves with special retirement modules (e.g. wave 3 and forthcoming in wave 7). Watson (2008) provides more information about HILDA data.

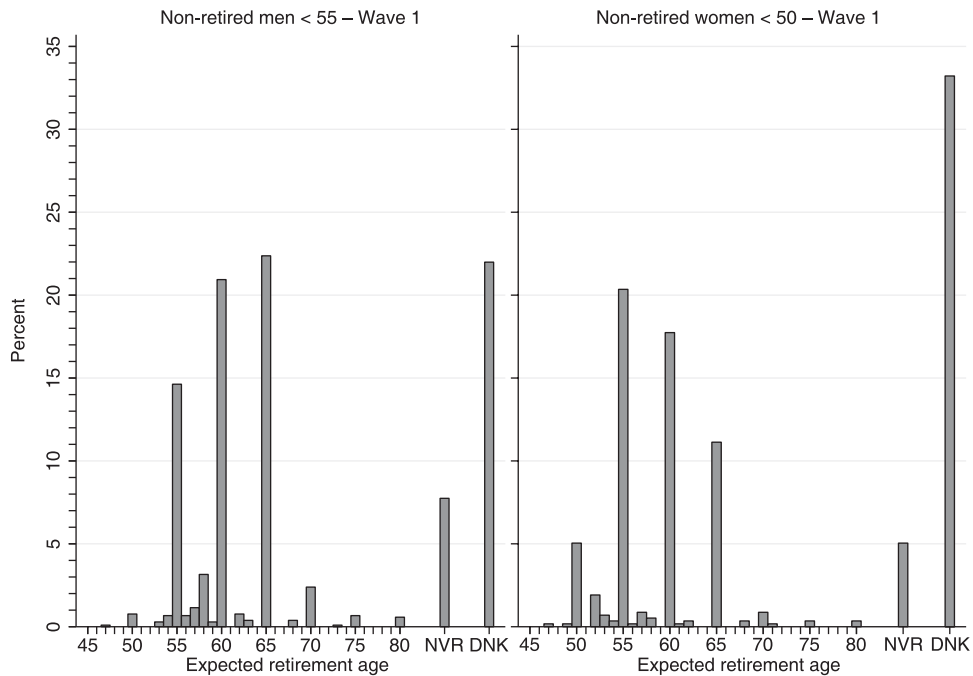
TABLE 1
Retirement Expectations, Desires and Behaviours

	Men	Women
Panel 1: All Individuals in wave 1		
Age < 45 years	55.0%	55.2%
Not retired	26.2%	20.4%
Retired	18.2%	21.2%
Never worked	0.1%	2.7%
DNK/Did not answer	0.5%	0.6%
Observations	6 634	7 535
Panel 2: Percent retired at different ages among ever working age ≥ 45 in wave 1		
Age 45–49 years	6.1%	8.8%
Age 50–54 years	11.3%	17.6%
Age 55–59 years	19.9%	41.7%
Age 60–64 years	46.5%	65.4%
Age 65–69 years	74.3%	85.3%
Age 70–74 years	86.0%	93.7%
Age 75–79 years	95.0%	98.7%
Age 80–84 years	95.2%	97.5%
Age 85+ years	100.0%	100.0%
Observations	2 945	3 047
Panel 3: Non-retired men age < 55 or non-retired women age < 50 in waves 1 and 3		
Expected retirement age in wave 1 (Mean)	60.9	58.4
Expected retirement age in wave 1 (SD)	5.1	5.3
Expected retirement age in wave 3 (Mean)	62.5	59.6
Expected retirement age in wave 3 (SD)	5.0	5.4
Desired retirement age in wave 3 (Mean)	57.5	55.4
Desired retirement age in wave 3 (SD)	6.4	6.7
Expected < Desired retirement age in wave 3	2.5%	4.7%
Expected = Desired retirement age in wave 3	33.5%	35.5%
Expected > Desired retirement age in wave 3	64.0%	59.8%
Individuals in wave 1	735	358
Individuals in wave 3	858	489

Note: All non-numeric responses to expected and desired retirement age are excluded from the summary statistics.

numbers for women at the same ages are 8.8, 17.6 and 41.7 per cent, respectively. Any analysis of retirement expectations based on the total sample of non-retirees will be biased because many individuals expecting to retire at relatively young ages have in fact already retired and consequently are not asked the expected retirement question. Thus,

FIGURE 1
The Distribution of Expected Retirement Age in Wave 1



we restrict our main estimation sample to men aged 45–55 and women aged 45–50 in the first wave of HILDA. This focus on a narrow, relatively young age group allows us to avoid (most of) the selectivity bias associated with age-based retirement, while giving us a large enough sample for our empirical modelling.

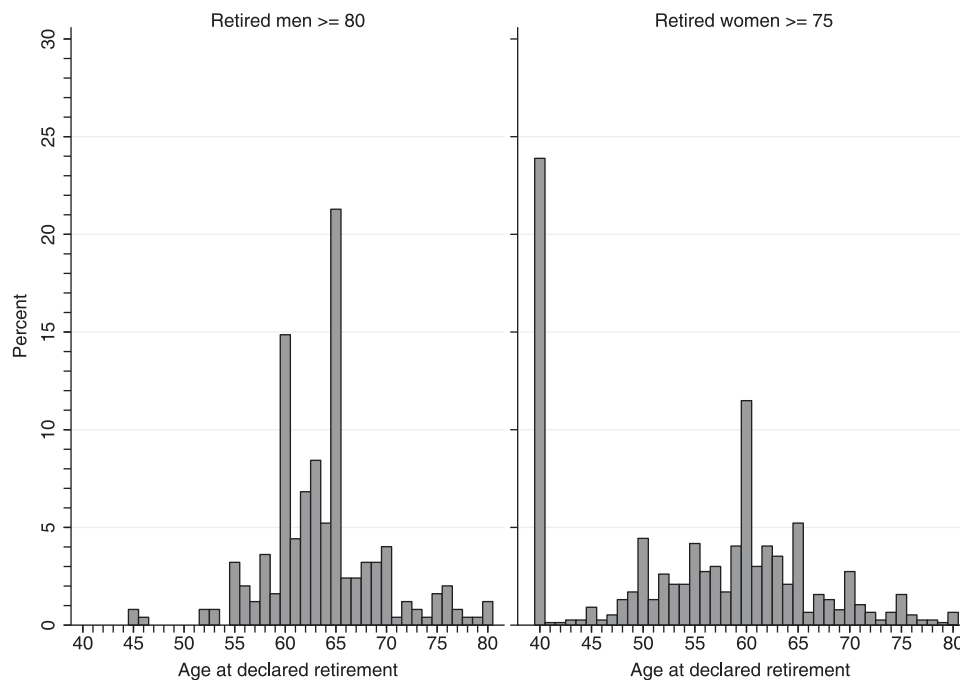
It is interesting to compare the expected retirement age of individuals who have not yet begun to retire with the distribution of actual retirement ages in an age-cohort with completed retirement. In particular, Figure 1 highlights the variation at wave 1 in expected retirement ages among middle-aged, non-retired men (aged 45–55) and women (aged 45–50), while Figure 2 shows the variation in actual retirement ages for older retirees. The results demonstrate that expected retirement ages are highly clustered at five-year age intervals, that is, at ages 55, 60 and 65. A small proportion of individuals also report expecting to retire at ages 50 and 70 and a few people report expecting to retire at intermediate ages. Some non-retired men (8 per cent) and women (5 per cent) report that they ‘never’ expect to retire,

while in wave 1 as many as one in five men and one in three women report that they ‘do not know’ when they expect to retire. In contrast, the ages at which individuals report having retired are distributed much more continuously (see Fig. 2). Although there are certainly spikes at common retirement ages, specifically ages 55, 60 and 65, many people in fact retire at intermediate ages.

Finally, using data from wave 3 of HILDA, we compare individuals’ expected retirement ages to their desired retirement ages.⁵ On average, middle-aged men report wanting to retire at age 57.5, while women would like to retire somewhat earlier at age 55.4 (see panel 3 of Table 1). More than one in three middle-aged Australians anticipate retiring when they would like, while approximately 60 per cent expect to retire later than they desire. Less than 5 per cent expect to retire earlier than they would like suggesting that few people see labour market or health factors as a constraint on their continued employment.

⁵ The question on desired retirement age is only asked in the special retirement supplement in wave 3.

FIGURE 2
The Distribution of Age at Declared Retirement in Wave 1



IV Understanding the Retirement Plans of Middle-aged Australians

Our goal is to understand the factors underlying middle-aged Australians' expectations about the age at which they will retire. Many respondents, however, do not specify the age at which they expect to retire, saying instead that they either do not know (or have not begun to plan) or that they never intend to retire. These non-numeric answers are unlikely to be random and instead convey important information about the way in which people are forming their retirement plans. Thus, these answers must also be explicitly accounted for in the analysis. We approach this problem by first using this complexity to classify individuals into four subgroups whose retirement plans we believe we can interpret. We then move on to consider the retirement plans of each separate subgroup in more depth.

(i) Classifying Individuals' Retirement Plans

As noted above, we focus our analysis on men aged 45–55 and women aged 45–50 in the first year of HILDA to avoid the selection bias

associated with early retirement. In both waves 1 and 3, individuals could respond to the expected retirement question by: (i) reporting a specific expected retirement age; (ii) saying 'never'; or (iii) replying 'do not know'. We use the variation in responses across these two waves to classify individuals into different subgroups. Consequently, we drop from the sample individuals who either did not respond in both waves 1 and 3, who report that they never worked, or who report being retired in either wave. We also drop Aboriginal or Torres Strait Islanders because although we believe that retirement planning is likely to differ for these individuals, they are not numerous enough to examine these differences. Finally, we drop individuals with missing retirement expectations or work experience data. These restrictions result in a sample of 840 men and 462 women on whom we focus the remainder of our analysis (see panel 1, Table 2).

Between wave 1 and 3, there was a change in the wording of the response categories for the expected retirement question. In wave 1, respondents could say that they 'do not know/have not started

TABLE 2
Retirement Expectations Patterns

	Men	Women	Overall
Panel 1: Sample selection (number of individuals)			
All men 45–55 and women 45–50 in wave 1	1471	949	2420
Keep only individuals in both waves 1 and 3	958	564	1522
Drop individuals who report never working	955	547	1502
Drop if retired in either wave 1 or 3	851	476	1327
Drop if aboriginal or Torres straight islander	844	471	1315
Drop if missing values on key variables	840	462	1302
Panel 2: Retirement expectations patterns			
DNK in both wave 1 and wave 3 (uncertain retirement plans)	3.3%	7.6%	4.8%
DNK in wave 1 and something else in wave 2 (delayed retirement plans)	17.3%	26.4%	20.5%
Never in both wave 1 and wave 3 (never plan to retire)	3.9%	1.7%	3.2%
Gives an age in both wave 1 and wave 3 (standard retirement plans)	67.3%	56.9%	63.6%
Other	8.2%	7.4%	7.9%
Individuals having one of the four stylised retirement plans	771	428	1199
Individuals with standard retirement plans	565	263	828
Panel 3: Change in retirement expectations for individuals with standard retirement plans			
Mean difference between waves 1 and 3	1.37	1.56	1.43
Standard deviation difference	4.65	4.59	4.80
Per cent reporting 1–4 year decrease	6.4%	4.2%	5.7%
Per cent reporting no change	46.4%	36.1%	43.1%
Per cent reporting 1–4 year increase	10.1%	10.6%	10.3%

Note: DNK stands for do not know.

to plan' when asked about their expected age of retirement, while, in wave 3, this category was changed to simply 'do not know'. There is a sharp drop in the proportion of men and women reporting that they do not know when they expect to retire between waves 1 and 3, which most likely occurs because of this change in wording. For example, while more than one in three women report 'do not know' in wave 1, this falls to one in ten in wave 3. This information helps identify those who are likely to have not yet begun to plan for their retirement (e.g. individuals allocated to the 'do not know' category in wave 1, but distributed across the other response categories in wave 3) from those who have truly uncertain retirement plans (e.g. individuals reporting 'do not know' in both waves).

Thus, we use the variation in responses across waves to classify individuals into the following four subgroups: (i) those with uncertain plans (i.e. those reporting 'do not know' in both waves 1 and 3); (ii) those who do not plan to retire at all (i.e. those reporting 'never' in both waves 1 and 3); (iii) those who have delayed retirement planning (i.e. those reporting 'do not know' in wave 1 and

something else in wave 3); and (iv) those who have reported a numeric expected age in both waves 1 and 3, whom we will refer to as individuals with 'standard retirement plans' in the remainder of the article. These subgroups, while *ad hoc*, nonetheless seem to us to be a sensible categorisation of the complex patterns of retirement expectations we observe in the underlying data.

The distribution of our sample across these four subgroups is given in panel 2 of Table 2. Fully two-thirds of men (67.3 per cent) and more than half of women (56.9 per cent) report a numeric expected retirement age in both waves 1 and 3 (i.e. have a 'standard retirement plan'). At the same time, our results indicate that many middle-aged Australians may have delayed their retirement planning. Overall, 26.4 per cent of women and 17.3 per cent of men change their wave 1 'do not know/have not started to plan' response when the failure to plan option is eliminated in wave 3. Uncertainty about one's retirement plans and expectations of never retiring are much less common, though almost 1 in 11 Australians fall into one of these two categories. Interestingly, women are approximately twice as likely as men

to be uncertain about when they expect to retire (7.6 vs. 3.3 per cent), and half as likely to expect never to retire (1.7 vs. 3.9 per cent). Finally, approximately 8 per cent of our sample cannot be classified into one of these four groups.⁶

To understand the underlying characteristics of these groups, we estimate a multinomial logit model of subgroup membership dropping those individuals who cannot be classified. Specifically,

$$\Pr(Y_i = j) = \frac{e^{\beta_j x_i}}{\sum_{k=1}^J e^{\beta_k x_i}} \quad \text{for } j = 1, 2, \dots, 4 \quad (2)$$

where $\Pr(Y_i = j)$ is the probability that individual i belongs to subgroup j and the four subgroups are defined as above. Moreover, x_i is a vector of factors assumed to be related to an individual's retirement plans including demographic characteristics (age, gender, foreign-born status), education, labour market position, work experience, self-assessed health status, household composition, household income, and wealth (home equity, household net worth, pension wealth). As retirement is a household rather than an individual decision, the model also includes information for individuals with partners about their partners' demographic characteristics, education, labour market position, work experience, self-reported health status, and pension wealth.⁷ Finally, β_j are

⁶ This includes those who responded 'never' in one wave and reported either a numeric age or said 'do not know' in the other wave as well as those who gave a numeric age in wave 1 and said 'do not know' in wave 3.

⁷ Specifically, we control for a linear term in the respondent's age and their partner's age, the number of individuals aged 0–15, 16–20 and 21 plus in the household, the household's real income from all sources in 2001 Australian dollars, real housing equity, and real net worth (exclusive of housing equity and pension wealth), the respondent's real pension wealth, and their partner's real pension wealth. We include indicator variables for whether the respondent or their partner responds that they 'do not know' their pension wealth (in which case pension wealth is set to zero). We also include indicator (0/1) variables for the following: the respondent's gender, whether the respondent and their partner are English-speaking-background immigrants or non-English-speaking background immigrants, whether the respondent or their partner has Year 12 education, vocational certificate, or a tertiary degree (omitted education category is less than Year 12), whether the respondent or their partner is self-employed, or not currently employed (omitted employment category is wage/salary employees), or retired in the case of the partner. Self-assessed health is measured on a five-point scale. We combine the worst two categories and include

vectors of parameters to be estimated. These variables are all measured in wave 1 of HILDA except for household wealth which was collected in wave 2.⁸ Marginal effects along with the associated standard errors for these marginal effects are reported in Table 3.⁹

Unfortunately, small sample sizes preclude estimating the model separately for men and women.¹⁰ Controlling for gender, however, we find that women are 8.0 percentage points more likely to have not yet begun to plan for retirement and 9.0 percentage points less likely to be making standard retirement plans. Together, these results point to a great deal of uncertainty in women's retirement planning, which is perhaps not surprising given the complexity of women's labour supply decisions more generally.

Other demographic characteristics are less closely related to whether or not individuals have begun to plan for retirement and, if so, what form those plans take. Although older individuals are

indicators for whether the respondent or their partner is in good, average, and fair/poor health, excluding excellent health. Finally, we include, but do not report coefficients for, indicators for whether the respondent is married/cohabiting, whether conditional on being married/cohabiting they have partner data and separately whether their partner is less than age 45, whether they are missing the wealth data (e.g. home equity, net worth and pension wealth), whether self-reported health status is missing for either the respondent or partner, and for the household's metropolitan area and rurality. All of the variables for the respondent's partner are set to zero for individuals who do not have a partner or who have a partner whose data is missing. Thus, the direct impact of marital status is confounded in the results for these variables and is not explicitly estimated. All partners in this sample are the opposite sex as the respondent and thus there is no need to control for partner's gender.

⁸ Appendix Table 1 reports summary statistics for the main analysis sample and the individuals that have retirement plans that we do not examine.

⁹ All estimation is performed in STATA 10. To identify the model, one β_j is set to 0 leading the estimated coefficients to be measured relative to this base outcome. For ease of interpretation, however, we report unconditional marginal effects which reflect the change in the probability of a specific outcome occurring. As the outcome possibilities are exhaustive and mutually exclusive, the marginal effects sum to one.

¹⁰ Specifically, the model for women fails to converge because few women report never planning to retire. We considered estimating separate models for men and women, dropping this outcome for women, but decided that our results can be more consistently interpreted in the pooled model.

TABLE 3
Determinants of Retirement Expectations (Multinomial Logit Model of Type of Retirement Plans)

	Uncertain retirement plans	Delayed retirement plans	Never plan to retire	Standard retirement plans
Marginal effects (standard errors of marginal effects)				
Age	0.002 (0.003)	0.002 (0.006)	0.001** (0.000)	-0.005 (0.007)
Female	0.013 (0.015)	0.080** (0.035)	-0.003 (0.003)	-0.090** (0.037)
Ed = Year 12	-0.020 (0.021)	-0.047 (0.047)	0.001 (0.003)	0.066 (0.051)
vs. Ed = Year 11 or less				
Ed = Certificate	-0.008 (0.012)	-0.036 (0.032)	-0.001 (0.002)	0.044 (0.033)
vs. Ed = Year 11 or less				
Ed = Tertiary	-0.002 (0.013)	-0.084* (0.040)	0.004 (0.003)	0.082* (0.042)
vs. Ed = Year 11 or less				
Foreign/English born	0.025* (0.013)	0.133*** (0.035)	-0.002 (0.003)	-0.157*** (0.038)
vs. Australian born				
Foreign/Non-English born	0.002 (0.015)	0.053 (0.047)	0.003 (0.003)	-0.059 (0.049)
vs. Australian born				
Number of kids 0-15	-0.002 (0.007)	0.006 (0.015)	0.002 (0.001)	-0.006 (0.016)
Number of kids 16-20	0.000 (0.008)	-0.007 (0.021)	-0.001 (0.001)	0.008 (0.022)
Number of adults 21+	-0.004 (0.008)	0.006 (0.024)	-0.001 (0.002)	-0.001 (0.025)
Not employed vs. Wage/Salary	0.035** (0.016)	0.049 (0.043)	0.001 (0.004)	-0.085* (0.046)
Self-employed vs. Wage/Salary	0.024* (0.014)	0.098** (0.038)	0.005** (0.002)	-0.127*** (0.040)
Years of work experience	-0.001 (0.001)	-0.005* (0.002)	0.000 (0.000)	0.006** (0.003)
Good health vs. Excellent health	-0.002 (0.015)	0.036 (0.044)	-0.002 (0.003)	-0.033 (0.046)
Average health vs. Excellent health	-0.012 (0.015)	0.058 (0.045)	-0.002 (0.003)	-0.044 (0.047)
Fair/Poor health vs. Excellent health	0.011 (0.016)	0.064 (0.054)	-0.006 (0.006)	-0.069 (0.056)
Real household income/10 000	0.000 (0.001)	-0.004 (0.003)	0.000* (0.000)	0.003 (0.003)
Real household net worth/10 000	0.000 (0.000)	0.001*** (0.000)	0.000 (0.000)	-0.001*** (0.000)
Real household home equity/10 000	0.000 (0.000)	0.000 (0.001)	0.000 (0.000)	0.000 (0.001)
Real pension wealth/10 000	-0.001* (0.001)	-0.002 (0.001)	0.000 (0.000)	0.004** (0.002)
DNK pension wealth	-0.004 (0.015)	-0.052 (0.049)	0.001 (0.003)	0.055 (0.052)
Partner characteristics				
Age	-0.004** (0.002)	0.001 (0.005)	0.000 (0.000)	0.003 (0.005)
Ed = Year 12	0.008 (0.021)	0.023 (0.050)	0.000 (0.004)	-0.031 (0.054)
vs. Ed = Year 11 or less				
Ed = Certificate	-0.008 (0.014)	-0.051 (0.039)	-0.001 (0.003)	0.060 (0.041)
vs. Ed = Year 11 or less				
Ed = Tertiary	0.004 (0.019)	0.078* (0.044)	0.000 (0.003)	-0.081* (0.047)
vs. Ed = Year 11 or less				
Foreign/English born	-0.010 (0.017)	-0.016 (0.045)	-0.003 (0.004)	0.029 (0.049)
vs. Australian born				
Foreign/Non-English born	0.051*** (0.017)	-0.054 (0.052)	0.000 (0.003)	0.003 (0.055)
vs. Australian born				
Retired vs. Wage/Salary	0.023 (0.029)	-0.131 (0.086)	0.014*** (0.005)	0.094 (0.088)
Not employed vs. Wage/Salary	0.002 (0.024)	0.081* (0.048)	0.007* (0.004)	-0.089* (0.053)
Self-employed vs. Wage/Salary	0.014 (0.014)	-0.009 (0.046)	0.002 (0.003)	-0.008 (0.049)
Years of work experience	0.002** (0.001)	-0.002 (0.003)	0.000 (0.000)	0.000 (0.003)
Good health vs. Excellent health	0.036** (0.017)	0.039 (0.047)	0.005 (0.004)	-0.080 (0.049)
Average health vs. Excellent health	-0.007 (0.019)	0.033 (0.050)	0.004 (0.004)	-0.031 (0.052)
Fair/Poor health vs. Excellent health	0.015 (0.021)	0.109* (0.061)	0.005 (0.005)	-0.129** (0.065)
Real pension wealth/10 000	0.000 (0.000)	-0.002 (0.002)	0.000 (0.000)	0.001 (0.002)
DNK pension wealth	-0.013 (0.022)	0.047 (0.047)	0.011*** (0.004)	-0.044 (0.051)
Individuals			1199	

Note: All control variables are measured in wave 1, except household net worth, home equity and pension wealth which are measured in wave 2. The regression includes additional control variables for whether the individual is married, whether conditional on being married they have partner data, whether they are missing the wealth data, whether they are missing self-reported health status, whether their partner is missing self-reported health status, metropolitan area and rurality. Standard errors are in parentheses and account for clustering within households.

* Significant at 10%; ** significant at 5%; *** significant at 1%.

significantly more likely to say they never intend to retire and those with older partners are significantly less likely to be uncertain about their retirement plans, both effects are small in magnitude.¹¹ The lack of a strong relationship between individuals' age and their expectations regarding retirement is not surprising given the relative youth and limited age range of the men and women in our sample. A fuller understanding of the effect of age on retirement planning will require more waves of HILDA in which we can begin to observe the completed retirement behaviour of more cohorts of Australians. Interestingly, the number and age structure of children in the household is also not related to retirement planning.

Foreign-born status, on the other hand, appears to have large and direct effects on individuals' expectations regarding retirement. Immigrants from English-speaking backgrounds are much more likely to fail to plan for retirement (13.3 percentage points) or to not know when they will retire (2.5 percentage points) and much less likely to be formulating standard retirement plans (15.7 percentage points). Individuals are also much more uncertain about their retirement plans (5.1 percentage points) when they have a partner who is an immigrant from a non-English-speaking background. These effects are both large in magnitude and highly significant.

There is also a direct effect of education on retirement planning, but only among highly educated individuals. Specifically, having a tertiary education is associated with a substantial increase in the probability that an individual is making standard retirement plans (8.2 percentage points) as well as with a corresponding reduction in the probability that he or she does not know when retirement will occur (8.4 percentage points). At the same time, having a partner with a tertiary education is associated with opposite effects of approximately the same magnitude. The lack of a relationship between education and retirement expectations for other groups is somewhat surprising and seems to suggest that for them education matters only indirectly through its effects on labour market status, income and wealth position.

¹¹ We cannot estimate the effect of marital status/cohabiting on retirement expectations directly in this model because it is interacted with the characteristics of partners, however, when we estimate the model excluding partner characteristics we find that having a partner is associated with an increase in the probability of making standard retirement plans and a reduction in the probability of failing to plan for retirement.

Although Dwyer and Mitchell (1999) found that among HRS respondents in the USA poor health is associated with earlier retirement plans, we find no evidence that the way in which middle-aged Australians are forming their retirement plans depends on their own health status. In particular, those who say they are in excellent health are just as likely as those in fair/poor health to have failed to plan for retirement, to be uncertain about their plans, or to expect to never retire. Married individuals with partners in fair/poor health are significantly less likely, however, to be making standard retirement plans (12.9 percentage points) and significantly more likely (10.9 percentage points) to be making no retirement plans at all.

A number of things might explain a weaker relationship between retirement and health status than is commonly observed in the international literature. First, the HRS is a sample of much older individuals for whom health issues may be generally more pressing. Second, the Australian public health system implies that continued employment is not a prerequisite for access to health care as is so often the case in the USA. Finally, the analysis here considers broad forms of retirement plans, but does not specifically address the question of whether ones health status is related to an expectation of retiring at a younger or an older age. When expected retirement age is explicitly considered, there is some evidence that Australians in better health expect to retire earlier (Cobb-Clark and Stillman, 2005).

Retirement expectations, on the other hand, are strongly related to ones current labour market position. Middle-aged Australians who are either not employed or self-employed are substantially less likely to have formed expectations about the age at which they will leave the labour market. Both groups are significantly more likely to report uncertainty about their expected retirement age, while the self-employed are also significantly more likely to have failed to plan for retirement and to expect to never retire. Thus, anticipating the age at which one will leave the labour market may be easier for workers in jobs with well-defined superannuation benefits and standard retirement ages. Middle-aged Australians who report that they do not know when they expect to retire do, in fact, appear to experience greater uncertainty in their retirement planning as Disney and Tanner (1999) suggest. At the same time, the retirement plans of married individuals are not in general related to the current labour market status of their partners. The exception is that those with a partner

who is already retired are slightly more likely (1.4 percentage points) to say that they never intend to retire.

Retirement expectations are also related to lifelong labour market attachment. Individuals with 10 years of additional work experience are 6 percentage points more likely to have standard retirement plans and 5 percentage points less likely to have delayed retirement plans. On the other hand, those with partners with 10 years of additional work experience are 2 percentage points more likely to have uncertain retirement plans.

Real household net worth (net of superannuation and housing wealth) is also related to retirement expectations, with higher net worth associated with a higher probability of failing to plan for retirement and a correspondingly lower probability of consistently reporting an expected retirement age. However, the effects are fairly small, with a \$100 000 increase in net worth resulting in a 1.0 per cent increase in the probability of having delayed retirement plans and a 1.0 per cent reduction in the probability of having standard retirement plans. Retirement expectations are more closely related to real pension wealth, with higher pension wealth associated with an increased probability of forming standard retirement expectations.

(ii) Understanding the Nature of Different Retirement Plans

Although the above analysis highlights the characteristics that predict membership in our four retirement categories, it tells us little about how the nature of retirement plans themselves might differ across these groups. Specifically, do some people expect to keep working forever because they enjoy their jobs or because they feel they cannot afford to stop? What leads some middle-aged Australians to delay retirement planning?

We address these questions by calculating descriptive statistics for each subgroup and investigating the *P*-values from Wald-tests for significant differences between the mean or pattern of responses for each subgroup relative to the standard retirement plan case (see Table 4).¹² This

¹² These Wald-tests are estimated from either a linear regression model for continuous outcomes or an ordered probit model for ordered outcomes, controlling only for subgroup membership. For the continuous outcomes, this is equivalent to a paired *t*-test. Where available, data are used from both waves 1 and 3 and the Wald-test is adjusted for individual-specific heteroskedasticity of unknown form.

allows us to assess the extent to which individuals' retirement goals, expectations, current savings habits, and attitudes towards risk vary across retirement categories. Consistent with the previous analysis, we again present the results for a pooled sample of men and women.

More than half of middle-aged Australians with no plans to retire expect to be in paid work after the age of 65, and almost one-quarter expect to be in the labour force after the age of 75. Thus, the anticipated employment rate of this group at age 65 is approximately double that of other groups, and at age 75 is approximately five times higher than that of other individuals. Although men and women who have delayed retirement planning or who have uncertain retirement plans are also more likely than those with standard retirement plans to expect to continue working into old age, the differences – though generally significant – are not as dramatic. Approximately 30 per cent of those with uncertain plans and one-quarter of those who have delayed planning expect to continue working after age 65 in comparison with 21.2 per cent of those who have standard retirement plans.

These differences are particularly striking in light of the fact that the age at which people would like to retire does not differ significantly across groups. Irrespective of the type of retirement plans they are formulating, middle-aged Australians consistently report wanting to retire between the ages of 57 and 58, on average. Those who expect to never retire, for example, also say that they would like to leave the labour market when they reach 57.2 years old. Many of these individuals, however, anticipate that they will be working fully two decades longer than they would like to be.

Interestingly, retirement planning is not significantly related to one's job satisfaction. Individuals who are uncertain about their retirement plans or who never expect to retire are not significantly happier in their jobs than are the majority of middle-aged Australians who are forming standard retirement plans. However, the level of satisfaction with one's finances is lower among these individuals than among those planning to retire at standard ages. Although those expecting to never retire are significantly more satisfied with their health, those who have delayed their retirement planning have significantly lower levels of health satisfaction, as well as lower life satisfaction, more generally. Thus, our results imply that delays in retirement planning, uncertainty about the retirement process, and the anticipation of never retiring are not, in

TABLE 4
Characteristics of Individuals with Different Retirement Plans

	Uncertain retirement plans	Delayed retirement plans	Never plan to retire	Standard retirement plans
Mean desired retirement age	57.67	58.05	57.23	57.29
(standard deviation)	(7.33)	(6.29)	(6.10)	(5.62)
{ <i>P</i> -value for difference from standard plans}	{0.76}	{0.09}	{0.97}	
Mean probability in paid work after age 65	29.32	26.52	57.50	21.17
(standard deviation)	(30.19)	(31.67)	(29.14)	(29.78)
{ <i>P</i> -value for difference from standard plans}	{0.04}	{0.02}	{0.00}	
Mean probability in paid work after age 75	5.12	5.70	23.71	2.55
(standard deviation)	(12.46)	(15.71)	(34.90)	(9.92)
{ <i>P</i> -value for difference from standard plans}	{0.12}	{0.00}	{0.02}	
Mean job satisfaction (0–10 Scale)	7.57	7.84	7.81	7.63
(standard deviation)	(2.11)	(1.80)	(2.16)	(1.78)
{ <i>P</i> -value for difference from standard plans}	{0.82}	{0.06}	{0.59}	
Mean financial satisfaction (0–10 Scale)	5.87	6.14	6.17	6.57
(standard deviation)	(2.68)	(2.41)	(2.99)	(2.14)
{ <i>P</i> -value for difference from standard plans}	{0.02}	{0.00}	{0.37}	
Mean health satisfaction (0–10 Scale)	7.22	7.37	8.26	7.57
(standard deviation)	(1.96)	(1.83)	(1.19)	(1.73)
{ <i>P</i> -value for difference from standard plans}	{0.11}	{0.09}	{0.00}	
Mean life satisfaction (0–10 Scale)	7.87	7.72	8.06	7.92
(standard deviation)	(1.62)	(1.57)	(1.61)	(1.41)
{ <i>P</i> -value for difference from standard plans}	{0.80}	{0.03}	{0.56}	
Savings habits				
Do not save – spend more than income (%)	6.7	4.6	2.5	4.5
Do not save – spend as much as income (%)	33.3	20.8	23.8	19.3
Save whatever is left over – no plan (%)	38.3	45.7	46.3	43.8
Spend regular income, save other income (%)	6.7	8.6	5.0	8.5
Save regularly by putting money aside (%)	15.0	20.4	22.5	23.9
{ <i>P</i> -value for difference from standard plans}	{0.00}	{0.27}	{0.72}	
Most important when planning savings and spending				
The next week (%)	26.5	17.4	15.2	13.8
The next few months (%)	23.1	29.9	29.1	25.6
The next year (%)	20.5	16.6	16.5	14.3
The next 2–4 years (%)	9.4	9.8	11.4	12.0
The next 5–10 years (%)	11.1	17.2	20.3	22.7
More than 10 years ahead (%)	9.4	9.2	7.6	11.7
{ <i>P</i> -value for difference from standard plans}	{0.01}	{0.00}	{0.27}	
Financial risk prepared to take				
Substantial (%)	2.5	1.6	8.8	1.3
Above average (%)	6.8	7.8	10.0	9.6
Average (%)	33.9	41.8	38.8	46.1
Not any (%)	31.4	30.9	23.8	29.1
Never have spare cash (%)	25.4	17.9	18.8	13.9
{ <i>P</i> -value for difference from standard plans}	{0.03}	{0.06}	{0.51}	
{ <i>P</i> -value, excluding never have spare cash}	{0.45}	{0.31}	{0.11}	
Main source of funding for retirement				
Age pension/Service pension/Widows pension (%)	35.6	27.4	35.7	21.1
Other government pension or allowance (%)	1.7	5.3	0.0	3.0
Lump sum superannuation payout (%)	22.0	24.5	14.3	27.1
A pension or annuity purchased with super or other funds (%)	13.6	15.5	14.3	26.6
Income from savings and investments (%)	13.6	18.0	14.3	15.3

TABLE 4
(Continued)

	Uncertain retirement plans	Delayed retirement plans	Never plan to retire	Standard retirement plans
Income from a business (%)	8.5	4.1	14.3	3.4
Income or pension from your spouse / partner (%)	1.7	4.1	0.0	2.4
Financial support from family (%)	3.4	0.8	0.0	0.4
Other source (Specify) (%)	0.0	0.4	7.1	0.6
Do you expect your retirement income to be enough to maintain your current standard of living?				
More than sufficient (%)	11.8	7.9	0.0	9.3
Just enough (%)	52.9	53.9	21.4	57.6
Not enough (%)	35.3	38.2	78.6	33.2
{ <i>P</i> -value for difference from standard plans}	{0.97}	{0.16}	{0.00}	
Individuals	63	267	41	828

Note: All non-numeric responses to probability in paid work and desired retirement age are excluded from the summary statistics. *P*-values are Wald-tests for significant differences between the mean or pattern of response for each subgroup relative to the standard retirement plan case given in column 4 estimated from either a linear regression model for continuous outcomes or an ordered probit model for ordered outcomes controlling only for subgroup membership. When available, data is used from both waves 1 and 3 and the Wald-test is adjusted for individual specific heteroskedastic of unknown form.

general, due to higher levels of job, financial, health or life satisfaction that might serve to reduce the impetus for standard retirement planning.

Middle-aged Australians who are uncertain about when they expect to retire are more likely to be spending more than their income and are less likely to be saving regularly than are individuals forming standard retirement plans. Those facing uncertain retirement plans are also more likely to find next week – rather than 10 years ahead – to be the most important period when making their savings and spending decisions. Although there are no significant differences in the savings habits of individuals who have delayed retirement planning or who expect to never retire, the savings and spending goals of these groups are significantly more short-term than are those of respondents with standard retirement plans. Clearly, the ability to form consistent expectations about ones future retirement age is related to regular saving habits and long-range saving goals.

Given these differences, it is perhaps not surprising that the main source of retirement funding also differs across subgroups. More than one-third of those with uncertain plans or who never expect to retire anticipate that their main source of retirement income will be either an age, service or widow pension. In contrast, only 21.1 per cent of

individuals with standard retirement plans anticipate being mainly reliant on these forms of income. More than half report that their main source of income will come from superannuation – either in the form of a lump sum or as a pension or annuity.

Optimism about the adequacy of retirement income is remarkably consistent across groups, despite the differences in its source. Two-thirds of middle-aged Australians with standard retirement plans believe that their retirement income will be sufficient or more than sufficient to maintain their current living standard. Levels of optimism are equally high amongst those who are uncertain about their retirement plans, and only slightly lower (61.8 per cent) amongst those who have not yet begun to plan their retirement. Only those expecting to never retire are noticeably more pessimistic, with fully 78.6 per cent saying that they believe that their retirement income will not be enough to maintain current living standards.

On the face of it, the level of optimism among some groups is somewhat surprising. Those who are uncertain about their retirement plans are nonetheless quite optimistic that their retirement income will be enough to prevent a fall in living standards despite the fact that they in general do not save regularly, have only short-term savings goals, and expect to be relatively dependent on a

government pension in retirement. One possibility is that these individuals do not anticipate (or do not require) a particularly high standard of living in old age. Alternatively, individuals may be uninformed about the resources necessary to maintain their current standard of living after retirement.

V The Effect of Demographic, Health and Job Shocks on Retirement Expectations

Despite the complexities inherent in retirement planning, the previous results suggest that the vast majority of middle-aged Australians report a numeric expected retirement age in both rounds and thus appear to be formulating standard retirement plans. The mean expected retirement age of this group of people increased by just under 1.5 years in the intervening two-year period between waves 1 and 3 and there is large variation in the distribution of changes (see panel C Table 2 and Appendix Fig. 1). For example, 5.7 per cent of respondents reported expectations that decreased by 1–4 years between the two waves and 10.3 per cent reported expectations that increased by 1–4 years. Thus, it is useful to assess the extent to which these changes reflect changing socioeconomic circumstances. We do this by modelling the determinants of a change in retirement expectations using data from the 67.3 per cent of men (aged 45–55) and 56.9 per cent of women (aged 45–50) who reported an expected retirement age in both waves 1 and 3 of HILDA.

Drawing on the conceptual framework given by Eqn (1), we model individuals' expectations about the age at which they will retire as a function of those factors thought to be related to their optimal retirement age. Specifically, let the expected retirement age of individual i in wave t (A_{it}^e) be given by

$$A_{it}^e = a_i + x_{it}b_i + \gamma_i + \varepsilon_{it} \quad (3)$$

where x_{it} is a vector of the time-varying characteristics affecting optimal retirement behaviour, γ_i captures both observed and unobserved time-invariant effects, and ε_{it} is a random error term. Formulating this model in first differences results in

$$\Delta A_i^e = A_{i3}^e - A_{i1}^e = \alpha + \Delta x_i \beta + n_i \quad (4)$$

where $\Delta x_i = x_{i3} - x_{i1}$ is the change in individual i 's economic circumstances – in particular, in marital status, number of children, employment status, health status, household income, and household location between waves 1 and 3, $\alpha = a_3 - a_1$, β is a vector of parameters to be

estimated and η_i is a random error term.¹³ Equation (4) is estimated separately for the 565 men and 263 women who reported expected retirement ages in both waves 1 and 3, because a Wald-test rejected the pooling of men and women in this model and there are important qualitative differences in the results when the model is estimated separately by gender. Estimation results (OLS coefficients and associated standard errors) are presented in Table 5.

Our results indicate that men's retirement plans are more sensitive to labour market shocks, while women appear to alter their expectations regarding retirement in response to negative health shocks that they – or their partners – have experienced. Specifically, men who were fired or made redundant in this period respond by increasing their expected retirement age by 1.1 years on average. This is inconsistent with the international literature that suggests that displaced workers in the USA retire at substantially higher rates than non-displaced workers (Chan and Stevens, 2002). Chan and Stevens (2002) argue that an increased propensity to retire following displacement occurs because the gain in pension wealth from continued employment falls following displacement.¹⁴ Institutional differences between Australia and the USA in labour market opportunities or benefits for displaced workers may lead retrenched Australian men to expect to prolong rather than shorten their working lives. Positive income shocks are also associated with a significant delay in Australian men's expected retirement age, although the effect

¹³ We attempt to isolate exogenous changes in employment status by only including a measure of whether an individual reports in wave 3 being fired or made redundant since wave 1. We also extend the basic model to include controls for whether an individual's partner has been fired, made redundant or changed retirement status. We account for the ordered nature of the self-assessed health status variables by controlling for whether an individual's health status has improved or declined between waves. We also include a separate (unreported) indicator variable for whether their health status is missing in either wave. In the extended model, additional control variables are added for these same changes in partner's health status for married/cohabiting individuals. Finally, we control for whether the household has moved to a new metropolitan area or changed rurality. This model is consistent with preliminary estimation that showed that baseline characteristics are generally unrelated to changes in retirement expectations.

¹⁴ They also note that employment barriers, high search costs, or other barriers to reemployment may be important explanations for the patterns they observe.

TABLE 5
Determinants of Changes in Retirement Expectations (First Difference Regression of Change Between Waves 1 and 3)

	Men			Women		
	Mean (SD)	(1)	(2)	Mean (SD)	(1)	(2)
Changed married status	-0.014 (0.238)	0.266 (0.847)	0.316 (0.852)	-0.027 (0.238)	-2.024 (1.260)	-1.788 (1.255)
Changed number of kids 0–15	-0.181 (0.539)	-0.462 (0.375)	-0.500 (0.378)	-0.148 (0.459)	0.427 (0.658)	0.065 (0.671)
Fired or made redundant	0.110 (0.313)	1.059* (0.617)	1.118* (0.623)	0.084 (0.277)	-0.215 (1.054)	-0.312 (1.080)
Health status improved	0.143 (0.351)	-0.128 (0.575)	-0.185 (0.579)	0.190 (0.393)	-0.029 (0.801)	0.106 (0.812)
Health status declined	0.274 (0.447)	-0.461 (0.457)	-0.457 (0.460)	0.259 (0.439)	-1.785** (0.730)	-1.622** (0.731)
Change real household income/10 000	0.613 (7.558)	-0.057** (0.026)	-0.059** (0.026)	0.278 (5.357)	-0.049 (0.056)	-0.045 (0.056)
Change MSR or remoteness	0.037 (0.189)	2.104** (1.021)	2.122** (1.026)	0.030 (0.172)	0.540 (1.706)	1.306 (1.746)
Partner fired or made redundant	0.068 (0.253)		-0.115 (0.873)	0.061 (0.241)		-1.944 (1.603)
Change whether partner retired	0.021 (0.290)		0.341 (0.758)	-0.012 (0.110)		-0.969 (3.383)
Partner health status improved	0.144 (0.351)		0.615 (0.632)	0.160 (0.367)		-2.094** (1.046)
Partner health status declined	0.281 (0.450)		-0.050 (0.485)	0.245 (0.432)		-1.074 (0.845)
Constant		1.345*** (0.289)	1.230*** (0.336)		1.905*** (0.463)	2.157*** (0.512)
R^2		0.026	0.031		0.063	0.100
Observations		565			263	

Notes: The regression is restricted to individuals reporting a numeric expected retirement age in both waves, in other words, those with standard retirement plans. Additional controls are included for whether partner data is missing in either round, conditional on having a partner in both rounds, whether self-reported health status is missing in either round and whether partner's self-reported health status is missing in either round. Standard errors are in parentheses. * Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

is small in magnitude. Interestingly, men do not adjust their retirement plans in response to health shocks or to changes in household structure.

Women's retirement plans, on the other hand, are much more closely linked to their health and that of their partners. Relative to women whose health status does not change, middle-aged women who report a decline in their health between waves 1 and 3 bring forward their expected retirement age by an average of 1.8 years. This effect is almost identical to the way in which women change their retirement plans when their partners – rather than themselves – experience improved health. At the same time, women whose partners experience declining health also decrease the age at which they expect to retire, although this effect is not statistically significant. Overall, these results are consistent with the international litera-

ture which suggests that changes in health are very important in triggering changes in both expected and actual employment behaviour (Anderson *et al.*, 1986; Dwyer, 2001).

VI Conclusions and Directions for Future Research

This article examines the retirement plans of middle-aged Australian men and women. Despite the importance of the issue, there are methodological challenges in analysing individuals' subjective expectations about retirement. Retirement is a complex process that often takes place decades into the future. Not surprisingly, many individuals have difficulty articulating their expectations about their own retirement plans. Non-random non-response generates data that are hard to interpret and difficult to analyse. Our approach to this problem is to use the underlying complexity in the

data to categorise respondents into four separate groups with retirement plans we believe we can interpret. This allows us to assess the factors predicting the type of retirement plan each individual has and to develop a deeper understanding of how retirement plans differ across groups.

Our results indicate that approximately two-thirds of men and more than half of women report a numeric expected retirement in both wave 1 and 3 of HILDA suggesting that they are making standard retirement plans. Still, more than one in five middle-aged Australians seem to have delayed their retirement planning and approximately one in eleven either do not know when they expect to retire or expect to never retire. Retirement plans are closely related to current labour market position. Specifically, formulating expectations about the age at which one will leave the labour market may be easier for workers in jobs with well-defined superannuation benefits and standard retirement ages. Moreover, those who report that they do not know when they expect to retire do in fact appear to be face greater uncertainty in their retirement planning, while concerns about the adequacy of one's retirement income seem to result in some individuals expecting to be employed forever. Finally, men alter their retirement plans in response to being made redundant, while women are more sensitive to their own and their partners' health changes.

This research leaves open a number of important issues. We know very little about the particular challenges that women face in making retirement plans. The changing nature of women's labour market attachment has important implications for their retirement decisions and has led to a literature that examines the retirement behaviour of married couples in a household framework (see Coile, 2004). However, comparable models for understanding the way in which expectations are formed within households do not yet exist. This is unfortunate as our results point to large gender differences, with women being approximately twice as likely as men to be uncertain about then they expect to retire and half as likely to expect never to retire.

It would also be useful to know more about the standard of living individuals feel they require in retirement, as some individuals appear to be surprisingly optimistic. In particular, those who are uncertain about their retirement plans are nonetheless optimistic about their post-retirement standard of living even though they are not regularly saving to fund their own retirement and expect to be primarily dependent on a government pension. These individuals may be optimistic

because they do not require a particularly high standard of living in old age. Alternatively, they may be uninformed about the resources necessary to fund the retirement they desire.

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Appendix

FIGURE A1

The Distribution of Changes in the Expected Retirement Age between Waves 1 and 3

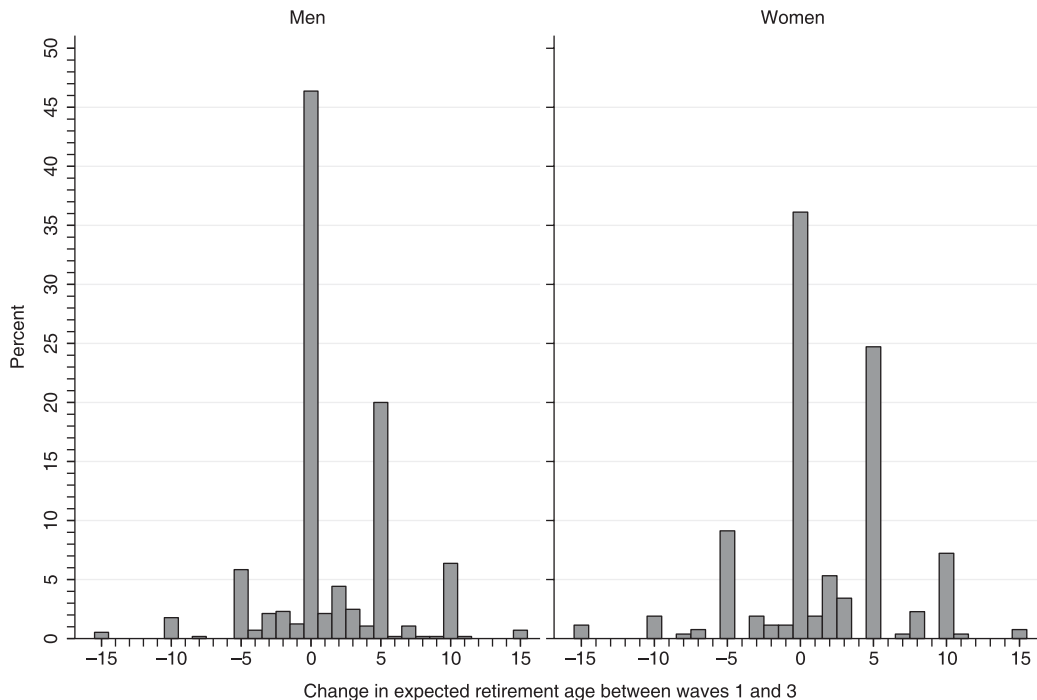


TABLE A1
Characteristics of Individuals in the Regression Sample

	In four main subgroups		Other	
	Mean	Standard deviation	Mean	Standard deviation
Age	49.4	(2.9)	49.3	(2.9)
Female	35.7%	(0.48)	33.0%	(0.47)
Ed = Year 11 or less	28.7%	(0.45)	29.1%	(0.46)
Ed = Year 12	10.1%	(0.30)	12.6%	(0.33)
Ed = Certificate	34.2%	(0.47)	38.8%	(0.49)
Ed = Tertiary	27.1%	(0.44)	19.4%	(0.40)
Australian born	73.1%	(0.44)	76.7%	(0.42)
Foreign/English born	14.5%	(0.35)	11.7%	(0.32)
Foreign/Non-English born	12.3%	(0.33)	11.7%	(0.32)
Married	79.6%	(0.40)	81.6%	(0.39)
Number of kids 0–15	0.60	(0.94)	0.72	(1.04)
Number of kids 16–20	0.40	(0.66)	0.35	(0.58)
Number of adults 21+	2.03	(0.66)	2.00	(0.58)
Not employed	8.2%	(0.27)	10.7%	(0.31)
Wage/Salary	77.9%	(0.40)	65.0%	(0.48)
Self-Employed/Employer	14.0%	(0.35)	24.3%	(0.43)
Years of work experience	28.81	(6.94)	28.72	(7.79)
Excellent health	11.6%	(0.32)	15.5%	(0.36)
Good health	35.7%	(0.48)	26.2%	(0.44)
Average health	35.9%	(0.48)	38.3%	(0.49)
Fair/Poor health	11.9%	(0.32)	11.2%	(0.32)
Missing health/SCQ	5.0%	(0.22)	8.7%	(0.28)
Real household income/10 000	8.71	(7.79)	7.23	(6.04)
Missing wealth data	2.4%	(0.15)	2.9%	(0.17)
Real household net worth/10 000	26.26	(46.99)	32.75	(66.22)
Real household home equity/10 000	21.55	(23.91)	20.35	(22.74)
DNK pension amount	7.3%	(0.26)	7.8%	(0.27)
Real pension income/10 000	8.90	(13.12)	6.10	(10.48)
Partner characteristics				
Age	48.1	(5.5)	47.2	(6.0)
Female	67.9%	(0.47)	71.6%	(0.45)
Ed = Year 11 or less	34.2%	(0.47)	32.7%	(0.47)
Ed = Year 12	11.8%	(0.32)	14.2%	(0.35)
Ed = Certificate	29.9%	(0.46)	26.5%	(0.44)
Ed = Tertiary	24.2%	(0.43)	26.5%	(0.44)
Australian born	73.5%	(0.44)	63.6%	(0.48)
Foreign/English born	13.1%	(0.34)	18.5%	(0.39)
Foreign/non-English born	13.3%	(0.34)	17.9%	(0.38)
Retired	7.0%	(0.25)	4.9%	(0.22)
Not employed	9.9%	(0.30)	12.3%	(0.33)
Wage/Salary	70.4%	(0.44)	64.2%	(0.48)
Self-Employed/Employer	12.8%	(0.33)	18.5%	(0.39)
Years of work experience	24.53	(9.12)	23.74	(9.55)
Excellent health	11.5%	(0.32)	9.3%	(0.29)
Good health	37.6%	(0.48)	31.5%	(0.47)
Average health	35.4%	(0.48)	42.0%	(0.50)
Fair/Poor health	10.7%	(0.31)	13.0%	(0.34)
Missing health/SCQ	4.7%	(0.21)	4.3%	(0.20)
DNK pension amount	9.8%	(0.30)	11.1%	(0.32)
Real pension income/10 000	6.10	(11.24)	4.60	(11.12)
Observations		2398		206

Note: All variables are defined in the article.