



Families, Incomes and Jobs, Volume 9



A Statistical Report on
Waves 1 to 11 of the
Household, Income and
Labour Dynamics in
Australia Survey

Families, Incomes and Jobs, Volume 9:

A Statistical Report
on Waves 1 to 11 of the
Household, Income and Labour
Dynamics in Australia Survey

Edited by Roger Wilkins

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Introduction

Roger Wilkins

HILDA Survey Deputy Director (Research)



Commenced in 2001, the Household, Income and Labour Dynamics in Australia (HILDA) Survey is a nationally representative panel study of Australian households. The study is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research at the University of Melbourne. Roy Morgan Research has conducted the fieldwork since Wave 9 (2009), prior to which The Nielsen Company was the fieldwork provider. This is the ninth volume of the Annual Statistical Report of the HILDA Survey, examining data from the first 11 waves of the study, which were conducted between 2001 and 2011.

The HILDA Survey seeks to provide longitudinal data on the lives of Australian residents. It annually collects information on a wide range of aspects of life in Australia, including household and family relationships, employment, education, income, expenditure, health and wellbeing, attitudes and values on a variety of subjects, and various life events and experiences. Information is also collected at less frequent intervals on various topics, including household wealth, fertility-related behaviour and plans, relationships with non-resident family members and non-resident partners, health care utilisation, eating habits and retirement.

The important distinguishing feature of the HILDA Survey is that the same households and individuals are interviewed every year, allowing us to see how their lives are changing over time. By design, the study can be infinitely lived, following not only the initial sample members for the remainder of their lives, but also the lives of their children and grandchildren, and indeed all subsequent descendants. The HILDA Survey is therefore quite different to the cross-sectional household surveys regularly conducted by the Australian Bureau of Statistics (ABS). Cross-sectional data are of course very important, providing snapshots of the community at a given point in time—for example, the percentage of people married, in employment, or with a disability. But such data also have important limitations for understanding economic and social behaviour and outcomes.

Household longitudinal data, known as panel data, provide a much more complete picture because they document the life-course a person takes. Panel data tell us about *dynamics*—family, income and

labour dynamics—rather than *statics*. They tell us about *persistence* and *recurrence*, for example about how long people remain poor, unemployed, or on welfare, and how often people enter and re-enter these states. Perhaps most importantly, panel data can tell us about the causes and consequences of life outcomes, such as poverty, unemployment, marital breakdown and poor health, because we can see the paths that individuals' lives took to those outcomes and the paths they take subsequently. Indeed, one of the valuable attributes of the HILDA panel is the wealth of information on a variety of life domains that it brings together in one dataset. This allows us to understand the many linkages between these life domains; to give but one example, we can examine the implications of health for risk of poor economic outcomes.

While in principle a cross-sectional survey can ask respondents to recall their life histories, in practice this is not viable. Health, subjective wellbeing, perceptions, attitudes, income, wealth, labour market activity—indeed most things of interest to researchers and policy-makers—are very difficult for respondents to recall from previous periods in their life. Respondents even have trouble recalling seemingly unforgettable life events such as marital separations. The only way to reliably obtain information over the life-course is to obtain it as people actually take that course.

For these reasons, panel data are vital for government and public policy analysis. Understanding the persistence and recurrence of life outcomes and their consequences is critical to appropriate targeting of policy, and of course understanding the causes of outcomes is critical to the form those policies take. For example, it is important to distinguish between short-term, medium-term and long-term poverty because it is likely that for each issue there are different implications for policy: the nature of the policy, the priority it is accorded, and the target group of the policy.

Panel data are also important because they permit causal inferences in many cases that are more credible than other types of data permit. In particular, statistical methods known as 'fixed-effects' regression models can be employed to examine the effects of various factors on life outcomes such as earnings, unemployment, income and life satisfaction. These models can control for the

effects of stable characteristics of individuals that are typically not observed, such as innate ability and motivation, that confound estimates of causal effects in cross-sectional settings. For example, a cross-sectional model of the determination of earnings may find that undertaking additional post-school education has a large positive impact on earnings of older workers, but this may not be the case if it is simply that more able individuals, who earn more irrespective of additional education, are more likely to undertake additional education. In principle, a fixed-effects model can ‘net out’ the effects of innate ability and thereby identify the true effect of additional post-school education for these workers.

The HILDA Survey sample

The HILDA Survey began in 2001 with a large national probability sample of Australian households occupying private dwellings. All members of those households form the basis of the panel to be interviewed in each subsequent wave. Like virtually all household surveys, the homeless are excluded from the scope of the HILDA Survey. Also excluded from the initial sample were persons living in institutions, but people who move into institutions in subsequent years remain in the sample.¹

Table 0.1 summarises key aspects of the HILDA sample for the period examined in this volume of the Statistical Report (Waves 1 to 11), presenting the numbers of households, respondents and children under 15 years of age in each wave, wave-on-wave sample retention, and Wave 1 sample retention.²

After adjusting for out-of-scope dwellings (e.g. unoccupied, non-residential) and households (e.g. all occupants were overseas visitors) and for multiple households within dwellings, the total number of households identified as in-scope in Wave 1 was 11,693. Interviews were completed with all eligible members (i.e. persons aged 15 and over) at 6,872 of these households and with at least one eligible member at a further 810 households. The total household response rate was, therefore, 66 per cent.

Within the 7,682 households at which interviews were conducted, there were 19,914 people, 4,787 of whom were under 15 years of age on 30 June 2001 and hence ineligible for interview. This left 15,127 persons, of whom 13,969 were successfully interviewed. Of this group, interviews were obtained from 11,993 in Wave 2, 11,190 in Wave 3, 10,565 in Wave 4, 10,392 in Wave 5, 10,085 in Wave 6, 9,628 in Wave 7, 9,354 in Wave 8, 9,245 in Wave 9, 9,002 in Wave 10 and 8,780 in Wave 11; 7,229 have been interviewed in all 11 waves.

The total number of respondents in each wave is greater than the number of Wave 1 respondents interviewed in that wave, for four main reasons. First, some non-respondents in Wave 1 are successfully interviewed in later waves. Second, interviews are sought in later waves with all persons in sample households who turn 15 years of age. Third, additional persons are added to the panel as a result of changes in household composition. For example, if a household member ‘splits off’ from his or her original household (e.g. children leave home to set up their own place, or a couple separates), the entire new household joins the panel. Inclusion of ‘split-offs’ is the main way in which panel surveys, including the HILDA Survey, maintain sample representativeness over the years.

An important innovation in Wave 11 was the addition of a ‘top-up’ sample of 4,009 individuals aged 15 and over in 2,153 households (see final row of Table 0.1). Primarily motivated by the low representation in the HILDA Survey sample of immigrants arriving in Australia after 2001, the sample addition was nonetheless a ‘general’ top-up, obtained using the same methods as employed to select the Wave-1 sample. As well as ensuring the sample of new immigrants was representative of all new immigrants to Australia (up to sampling error), the general top-up approach had the advantage of simultaneously addressing declining representation of individuals more prone to attrition from the HILDA Survey, such as young adults. Significantly,

Table 0.1: HILDA Survey sample sizes and retention

	Sample sizes			Sample retention	
	Households	Persons interviewed	Children under 15	Previous-wave retention (%)	Number of Wave 1 respondents
Wave 1	7,682	13,969	4,787	–	13,969
Wave 2	7,245	13,041	4,276	86.8	11,993
Wave 3	7,096	12,728	4,089	90.4	11,190
Wave 4	6,987	12,408	3,888	91.6	10,565
Wave 5	7,125	12,759	3,897	94.4	10,392
Wave 6	7,139	12,905	3,756	94.8	10,085
Wave 7	7,063	12,789	3,691	94.7	9,628
Wave 8	7,066	12,785	3,574	95.2	9,354
Wave 9	7,234	13,301	3,623	96.3	9,245
Wave 10	7,317	13,526	3,600	96.3	9,002
Wave 11 (continuing)	7,390	13,603	4,315	96.5	8,780
Wave 11 (top-up sample)	2,153	4,009	1,171	–	–

Note: Previous-wave retention—the percentage of respondents in the previous wave in-scope in the current wave who were interviewed.

the Wave-11 top-up household response rate was 69 per cent, 3 percentage points greater than obtained in Wave 1. Watson (2011) provides details on the motivation for the top-up and its implementation. The Wave 11 top-up sample is of course not used in any longitudinal analysis reported in this year's Statistical Report, but it is included in all cross-sectional analyses of Wave 11 data.

Making inferences about the Australian population from the HILDA Survey data

Despite the above additions to the sample, *attrition* (i.e. people dropping out due to refusal, death, or our inability to locate them) is a major issue in all panel surveys. Because of attrition, panels may slowly become less representative of the populations from which they are drawn, although due to the 'split-off' method, this does not necessarily occur.

To overcome the effects of survey non-response (including attrition), the HILDA Survey data managers analyse the sample each year and produce *weights* to adjust for differences between the characteristics of the panel sample and the characteristics of the Australian population.³ That is, adjustments are made for non-randomness in the sample selection process that causes some groups to be relatively under-represented and others to be relatively over-represented. For example, non-response to Wave 1 of the survey was slightly higher in Sydney than in the rest of Australia, so that slightly greater weight needs to be given to Sydneysiders in data analysis in order for estimates to be representative of the Australian population.

The population weights provided with the data allow us to make inferences about the Australian population from the HILDA Survey data. A population weight for a household can be interpreted as the number of households in the Australian population that the household represents. For example, one household (Household A) may have a population weight of 1,000, meaning it represents 1,000 households, while another household (Household B) may have a population weight of 1,200, thereby representing 200 more households than Household A. Consequently, in analysis that uses the population weights, Household B will be given 1.2 times (1,200/1,000) the weight of Household A. To estimate the mean (average) of, say, income of the households represented by Households A and B, we would multiply Household A's income by 1,000, multiply Household B's income by 1,200, add the two together, and then divide by 2,200.

The sum of the population weights is equal to the estimated population of Australia that is 'in-scope', by which is meant 'they had a chance of being selected into the HILDA sample' and which therefore excludes those that HILDA explicitly has not attempted to sample—namely, some persons in very remote regions in Wave 1, persons resident in non-private dwellings in 2001 and non-resident visitors.⁴ In Wave 11, the weights sum to 22.1 million.

As the length of the panel grows, the variety of weights that might be needed also grows. Most obviously, separate cross-sectional weights are required for every wave, but more important is the range of longitudinal weights that might be required. Longitudinal weights are used to retain representativeness over multiple waves. In principle, a set of weights will exist for every combination of waves that could be examined—Waves 1 and 2, Waves 5 to 9, Waves 2, 5 and 7, and so on. The longitudinal (multi-year) weights supplied with the Release 11 data allow population inferences for analysis using any two waves (i.e. any pair of waves) and analysis of any 'balanced panel' of a contiguous set of waves, such as Waves 1 to 6 or Waves 4 to 7. In this report, cross-sectional weights are always used when cross-sectional results are reported and the appropriate longitudinal weights are used when longitudinal results are reported. Thus, all statistics presented in this report should be interpreted as estimates for the in-scope Australian population. That is, all results are 'population-weighted' to be representative of the Australian community.

A further issue that arises for population inferences is missing data for a household, which may arise because a member of a household did not respond or because a respondent did not report a piece of information. This is particularly important for components of financial data such as income, where failure to report a single component by a single respondent (e.g. dividend income) will mean that a measure of household income is not available. To overcome this problem, the HILDA data managers *impute* values for various data items. For individuals and households with missing data, imputations are undertaken by drawing on responses by individuals and households with similar characteristics, and also by drawing on their own responses in waves other than the current wave. Full details on the imputation methods are available in Watson (2004a), Hayes and Watson (2009) and Sun (2010). In this report, imputed values are used in all cases where relevant data is missing and an imputed value is available. This largely applies only to income, expenditure and wealth variables.

The population weights and imputations allow inferences to be made from the HILDA Survey about the characteristics and outcomes of the Australian population. However, estimates based on the HILDA Survey, like all sample survey estimates, are subject to sampling error. Because of the complex sample design of the HILDA Survey, the reliability of inferences cannot be determined by constructing standard errors on the basis of random sampling, even allowing for differences in probability of selection into the sample reflected by the population weights. The original sample was selected via a process that involved stratification by region and geographic 'ordering' and 'clustering' of selection into the sample within each stratum. Standard errors (measures of reliability of estimates) need to take into account these non-random features

of sample selection, which can be achieved by using *replicate weights*. Replicate weights are supplied with the unit record files available to approved researchers for cross-sectional analysis and for longitudinal analysis of all balanced panels that commence with Wave 1 (e.g. Waves 1 to 4 or Waves 1 to 8). Full details on the sampling method for the HILDA Survey are available in Watson and Wooden (2002), while details on the construction, use and interpretation of the replicate weights are available in Hayes (2009).

In this volume, rather than report the standard errors for all statistics, we have adopted an ABS convention and marked with an asterisk (*) tabulated results which have a standard error more than 25 per cent of the size of the result itself. Note that a relative standard error that is less than 25 per cent implies there is a greater than 95 per cent probability the true quantity lies within 50 per cent of the estimated value. For example, if the estimate for the proportion of a population group that is poor is 10 per cent and the relative standard error of the estimate is 25 per cent (i.e. the standard error is 2.5 per cent), then there is a greater than 95 per cent probability that the true proportion that is poor lies in the range of 5 per cent to 15 per cent.

For regression model parameter estimates presented in this report, we take a similar approach to the one applied to the descriptive statistics, with estimates that are not statistically significantly different from zero at the 10 per cent level marked with a 'plus' superscript (+). Estimates that are statistically significant at the 10 per cent level have a probability of not being zero that is greater than 90 per cent.

The HILDA Survey Statistical Report

This ninth volume of the HILDA Survey Annual Statistical Report examines data from the first 11 waves of the HILDA Survey. This year, it is divided into five parts: household and family life; incomes and economic wellbeing; labour market outcomes; life satisfaction, health and wellbeing; and other topics. Each part contains several chapters that are a mixture of updates on regularly collected data, such as on household structures and household income, new analyses of annually collected data, such as the analysis of non-standard jobs and job satisfaction in Part 3, and analyses largely drawing on wave-specific questions included in the survey. In Wave 11, the 'rotating' content in the interview component of the survey included information on non-co-resident partners, retirement plans and transitions, and employment, education, business and housing intentions and plans for the next three years, each of which is the focus of a chapter in Part 5 of the report.

Most of the analysis presented in the Statistical Report consists of graphs and tables of descriptive statistics that are reasonably easy to interpret. However, several tables in this report contain estimates from regression models. These are less easily

interpreted than tables of descriptive statistics, but are included because they are valuable for better understanding the various topics examined in the report. In particular, a regression model provides a clear description of the statistical relationship between two factors, *holding other factors constant*. For example, a regression model of the determinants of earnings can show the average difference in earnings between disabled and non-disabled employees, holding constant other factors such as age, education, hours of work, and so on (i.e. the average difference in earnings when they do not differ in other characteristics). Moreover, under certain conditions, this statistical association can be interpreted as a causal relationship, showing the effects of the 'explanatory variable' on the 'dependent variable'. Various types of regression models have been estimated for this report, and while we do not explain these models in depth, brief outlines of the intuition for these models, as well as guides on how to interpret the estimates, are provided in each chapter in which they appear, as well as in the Glossary.

Despite its wide-ranging content, this report is not intended to be comprehensive. It seeks to give readers an overview of what is available in the data and provide indications of some of the types of analyses that can be undertaken with it, focusing more on panel results rather than cross-sectional results of the kind well covered by ABS surveys. Much more detailed analysis of every topic covered by this volume could be, should be, and in many cases, is being undertaken. It is hoped that some readers will conduct their own analyses, and in this context it should be mentioned that the HILDA Survey data are available at nominal cost to approved users.

Disclaimer

This report has been written by the HILDA Survey team at the Melbourne Institute, which takes responsibility for any errors of fact or interpretation. Its contents should not be seen as reflecting the views of either the Australian Government or the Melbourne Institute of Applied Economic and Social Research.

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Endnotes

- 1 See Watson and Wooden (2002) for full details of the sample design, including a description of the reference population, sampling units and how the sample was selected.
- 2 More detailed data on the sample make-up and in particular response rates can be found in the HILDA User Manual, available online at <http://www.melbourneinstitute.com/hilda/doc/doc_hildamanual.html>.

- 3 Further details on how the weights are derived are provided in Watson and Fry (2002), Watson (2004b) and Summerfield et al. (2011).
- 4 In principle, the in-scope population in Waves 2 to 10 excludes most immigrants arriving in Australia after 2001. However, due to a lack of suitable external benchmarks for this population sub-group, these immigrants are in practice included in the in-scope population. Consequently, in all waves, the HILDA Survey weights sum to the total Australian population inclusive of new immigrants.

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Part 1: Households and Family Life



Households and Family Life

Every year, the HILDA Survey collects information on a variety of aspects of family life. These aspects comprise family and household structures; how parents cope with parenting responsibilities, including the care arrangements they use and the care-related problems they face; issues of work–family balance; perceptions of family relationships; and perceptions of and attitudes to roles of household members. Periodically, information is also obtained on other aspects of family life, such as fertility plans, relationships with parents, siblings, non-resident children, grandchildren and non-resident partners, marital relationship quality, and use of domestic help.

In this section of the report, we present analyses for the 2001 to 2011 period of three aspects of family life: family structure dynamics; family circumstances and care arrangements of children; and experience of various major life events.

1. Household dynamics, 2001 to 2011

Markus Hahn and Roger Wilkins

Long-term trends in household structures in Australia are reasonably well understood. As de Vaus (2004), Australian Bureau of Statistics (2010) and others have shown, the average household size has decreased over the last century and is projected to continue declining, and household types have in recent decades become increasingly diverse, with the traditional nuclear family accounting for an ever-decreasing proportion of households. The HILDA Survey data provide the opportunity to examine, within this broader context, the experiences at the individual level of household structure changes over time.

We begin in Table 1.1 by showing the proportion of individuals, including children under the age of 15, in each household type from 2001 to 2011. Looking at household type on an individual level, approximately 52 per cent of all Australians were living in a couple-with-children household each year, around 21 per cent were in couple-only households, 12 per cent were in lone-parent households and just under 10 per cent lived alone. While

the proportion of individuals in most types of households has remained relatively steady between 2001 and 2011, it seems that there has been a slight decline in the proportion living in lone-person households and, since 2005, an increase in the proportion living in group, multiple-family and other-related-family households.

Changes in household structure

While the proportion of individuals in each household type remained quite stable over this 11-year period, for many individuals their household type would have changed at least once during this time. Individuals may have moved in with a partner or separated from a partner, or they may have given birth to a child, or had an adult child leave the family home. Adult children may move back in with their parents, and elderly parents may go to live in one of their children's households. Individuals in group households may move out and form a single-person household, and individuals in single-person households may move in with unrelated people.

Table 1.1: Household type of individuals, 2001 to 2011 (%)

	2001	2003	2005	2007	2009	2011
Couple family without children	20.8	21.2	21.4	20.9	20.8	21.3
Couple family with children	51.7	51.4	52.2	52.5	52.2	51.2
Couple family with children aged under 15	37.2	36.7	36.3	36.3	35.7	35.4
Couple family with children aged 15 and over	14.5	14.6	15.9	16.2	16.5	15.8
Lone-parent household	11.6	12.3	12.4	12.4	12.0	11.5
Lone parent with children aged under 15	7.4	7.3	7.2	6.4	6.1	5.7
Lone parent with children aged 15 and over	4.2	5.0	5.2	5.9	6.0	5.7
Lone person	9.8	9.8	9.6	9.6	9.5	9.4
Other household type	6.1	5.4	4.4	4.6	5.5	6.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes: 'Other household type' comprises 'group', 'multiple family' and 'other related family' households. Couple families and lone-parent households with children under 15 years of age may also have children aged 15 and over in the household, while couple families and lone-parent households with children aged 15 and over only have children aged 15 and over. Children aged 15 and over may be dependent (aged 15–24, studying full-time and not employed full-time) or non-dependent (aged 25 and over, or aged 15–24 and, if studying full-time, employed full-time). A household containing a parent or parents living with a child is classified as an 'other household type' if the child lives with a partner or a child of their own. Percentages may not add up to 100 due to rounding.

Changes in household structure at the individual level over various time-frames are shown in Table 1.2. The top three panels show changes in household type from 2001, examining time-frames of one year (2001 to 2002), five years (2001 to 2006) and ten years (2001 to 2011). The bottom two panels show changes in household type from 2006, examining time-frames of one year (2006 to 2007) and five years (2006 to 2011). Each row of the table shows, for each initial household type, the proportion of individuals in each household type in the subsequent year under examination. For example, the first row of the table shows that for individuals in couple-family-with-children households in 2001, 91.9 per cent were still in that household type in 2002, while 2.9 per cent were in couple-without-children households, 2.7 per cent were in lone-parent households, 1.7 per cent were in lone-person households and 0.9 per cent were in group, multiple-family or other-related-family household types.

Couple families, with or without children, are the most persistent household type over a one-year time-frame, with 90 per cent or more of individuals in those household types in the same household type one year later. Lone-person households are also highly persistent from one year to the next, with just under 90 per cent of people in lone-person households still in that household type one year later. The category comprising group, other-related-family and multiple-family households is the least persistent from one year to the next: only 60.9 per cent of those in one of these household types in 2001 were still in one of those household types in 2002. Note, however, that in 2006 one-year persistence in this household type category increased to 67.9 per cent.¹

As might be expected, individuals are more likely to change household types over five years than over one year, and are even more likely to change

Table 1.2: Changes in household structure over various time-frames (%)						
Household type in 2002						
Household type in 2001	Couple with children	Couple without children	Lone parent	Lone person	Other household type	Total
Couple with children	91.9	2.9	2.7	1.7	0.9	100.0
Couple without children	4.4	91.8	0.2	2.5	1.1	100.0
Lone parent	8.9	1.6	81.7	5.4	2.5	100.0
Lone person	1.6	5.0	1.7	89.5	2.2	100.0
Other household type	10.0	12.7	2.9	13.6	60.9	100.0
Household type in 2006						
Household type in 2001	Couple with children	Couple without children	Lone parent	Lone person	Other household type	Total
Couple with children	74.3	10.8	6.5	5.1	3.3	100.0
Couple without children	16.2	72.6	1.1	9.2	0.9	100.0
Lone parent	18.1	5.3	58.9	14.0	3.7	100.0
Lone person	6.3	10.7	2.8	78.4	1.8	100.0
Other household type	18.4	24.8	10.0	21.1	25.8	100.0
Household type in 2011						
Household type in 2001	Couple with children	Couple without children	Lone parent	Lone person	Other household type	Total
Couple with children	61.3	19.1	8.2	8.2	3.2	100.0
Couple without children	19.0	64.8	2.2	13.3	0.7	100.0
Lone parent	23.7	10.0	41.7	19.6	5.2	100.0
Lone person	11.9	12.3	3.6	70.2	2.0	100.0
Other household type	34.5	21.4	9.9	19.4	14.9	100.0
Household type in 2007						
Household type in 2006	Couple with children	Couple without children	Lone parent	Lone person	Other household type	Total
Couple with children	93.2	2.7	1.8	1.4	1.0	100.0
Couple without children	6.4	90.0	0.2	2.1	1.3	100.0
Lone parent	6.4	1.8	85.7	4.2	1.9	100.0
Lone person	2.6	4.8	1.3	89.6	1.8	100.0
Other household type	8.8	8.4	6.4	8.5	67.9	100.0
Household type in 2011						
Household type in 2006	Couple with children	Couple without children	Lone parent	Lone person	Other household type	Total
Couple with children	75.1	11.0	6.4	5.0	2.5	100.0
Couple without children	17.6	74.2	0.8	6.2	1.2	100.0
Lone parent	14.9	6.4	60.1	13.9	4.7	100.0
Lone person	8.8	12.5	4.3	72.3	2.1	100.0
Other household type	22.3	21.2	10.6	13.8	32.2	100.0

Note: Percentages may not add up to 100 due to rounding.

household types over ten years. Significantly, over the longer time-frames, the lone-person household type is clearly the most persistent household type. For example, of those in lone-person households in 2001, 70.2 per cent were in that same household type ten years later. This compares with ten-year persistence rates of 64.8 per cent for couples without children, 61.3 per cent for couples with children, 41.7 per cent for lone-parent families and only 14.9 per cent for the ‘other household type’ category.

While persistence of household types declines over longer timeframes, it necessarily follows that people are more likely to transition from each household type to another as the time-frame increases. For example, of those in couple-without-children households in 2001, 4.4 per cent were in couple-with-children households in 2002, 16.2 per cent were in couple-with-children households in 2006, and 19.0 per cent were in couple-with-children households in 2011. The relative frequencies of transitions from each household type to each other household type are, however, reasonably stable across the time-frames examined in Table 1.2. For example, for all time-frames examined in the table, the most common transition from both couple-with-children and lone-person households was to couple-without-children households, while the most common transition from both couples-without-children and lone-parent households was to couple-with-children households. Indeed, the ordering from most-common to least-common transitions is the same across all five panels of Table 1.2 for these household types.

An exception to the finding that the most common type of transition for each household type is insensitive to the time-frame is the pattern evident for the ‘other household type’ category. The most common transition from this category depends on the time-frame examined: between 2001 and 2002, the most frequent transition was to a lone-person household; between 2001 and 2006, it was to a couple-without-children household; and between 2001 and 2011, it was to a couple-with-children household. This result may be driven by young adults, some of whom may initially move from a group household to a single-person household (within one year), move in with a partner (within five years), and then have a child (within ten years).

Changes in household structure are of course possible without any change in household type occurring. For example, a couple with children may have another child, or those with more than one child may have one of their children leave home. In Table 1.3, a broader range of changes to household structure is considered. The table shows the proportion of the population (including children under 15 years of age) experiencing various changes in household composition over various time-frames. The first row presents the proportion of people experiencing any change to household composition,

whether this arises from the individual moving or from another person entering or leaving that person’s household. The second row presents the proportion experiencing an increase in household size and the third row presents the proportion experiencing a decrease in household size. The remaining rows present the proportion of people experiencing particular changes to household composition: partnering, separation of partners, birth of a child, child moving out, child moving in, death of a household member, other source of increase in household size, and other source of decrease in household size.

Changes are examined over one, three, five and ten years from 2001, over one, three and five years from 2006, and over one year from 2010. The one-year estimates are constructed by comparing an individual’s household composition in the initial wave with that individual’s household composition in the next wave. The multiple-year estimates are constructed in a similar fashion, but in this case we examine the changes occurring between every wave within the time-frame being examined. For example, changes in household composition between 2001 and 2004 (a three-year time-frame) are evaluated by examining the changes in the individual’s household membership between Waves 1 and 2, between Waves 2 and 3, and between Waves 3 and 4. It is therefore possible for an individual to have both an increase and a decrease in household size over multiple-year time-frames, and indeed it is possible for an individual to experience all of the changes examined in the table in any given time-frame of three or more years—including both partnering and separation.²

From one year to the next, approximately 20 per cent of people experience at least one change in household composition, be it through someone leaving the household or by someone joining the household. Over a five-year period, slightly more than half of the population experiences at least one change in household composition; while over a ten-year period, nearly two-thirds experience at least one change in household membership.

The lower panel of the table identifies the more obvious sources of changes in household composition—partnering, separation, birth of a child, a child moving into or out of the parental home, and death of a household member—although it is clear that there are other significant sources of change in household composition, as reflected by the proportions experiencing ‘other’ sources of increase or decrease in household size. These would include moves of other related family members as well as moves of unrelated people.

The most important driver of changes in household composition, be it over one, three, five or ten years, is change related to children in the household. The single most common source of change in the composition of an individual’s household is a child

Table 1.3: Changes in household composition, 2001 to 2011 (%)

	2001				2006			2010
	1 year	3 years	5 years	10 years	1 year	3 years	5 years	1 year
Household composition changed (someone left and/or someone entered)	22.8	41.1	51.8	64.1	19.7	40.9	51.4	20.1
Household size increased	7.8	19.7	29.1	41.5	7.7	21.5	30.4	7.3
Household size decreased	12.2	27.8	37.5	52.5	9.6	26.0	36.1	10.4
Nature of change in composition								
Partnering	3.3	8.0	12.9	22.3	2.9	7.8	13.2	2.7
Separation	2.2	6.5	9.9	16.0	1.8	5.9	9.4	2.0
Birth of a child	4.9	9.9	13.3	18.0	5.2	11.1	14.6	5.2
Child moving into parent home	3.9	9.1	14.4	21.9	3.2	9.9	14.5	2.5
Child moving out of parent home	10.9	24.7	33.9	47.6	9.5	25.3	35.3	10.3
Death of a household member	0.4	1.8	2.5	4.6	0.4	1.3	2.4	0.5
Other source of increase in household size (entry)	1.6	3.8	5.9	10.9	1.2	4.1	6.8	1.6
Other source of decrease in household size (exit)	3.4	6.7	8.8	13.4	2.1	4.6	7.5	2.1

leaving the parental home, with approximately 10 per cent of individuals experiencing this source of change to the composition of their household in any given year, and approximately 48 per cent experiencing it over ten years. Children moving (back) into the parental home and the birth of children are also important sources of change in household composition.³ Over a one-year period, partnering and separation are relatively unimportant sources of change in household composition, with 'other source of decrease in household size' in particular more important than separation. However, over longer time-frames (three or more years), both partnering and separation become relatively more important sources of change in household composition.

Table 1.4 examines differences in household changes experienced by individuals of different ages. The table takes a more individual-based perspective on changes in household composition than Table 1.3, examining the changes experienced by individuals, rather than the changes experienced by their household. For example, in Table 1.3, estimates are presented of the proportion of individuals who lived in a household that had a child leave the parental home, whereas in Table 1.4 we present the proportion of individuals who themselves left the parental home, and also the proportion of individuals who had their (or their partner's) child leave their home. For a household member who is neither the parent nor the child who moved (e.g. a sibling of the child), such a move would be classified in Table 1.4 as 'non-partner non-child moves out'.

Clear lifecycle patterns of household compositional changes are evident in Table 1.4. Moving out of the parental home, and indeed moving into the parental home, is primarily concentrated on those aged 18 to 24 in the initial year, although there are significant numbers in older age groups who make such moves. For example, 9.9 per cent of those

aged 30 to 34 in 2001 moved out of the parental home between 2001 and 2011, and 4.9 per cent moved in with their parents.

Moving in with a partner is also strongly related to age, with 38.3 per cent of those aged 18 to 24 in 2006 moving in with a partner over the course of the next five years, compared with 20.2 per cent of those aged 25 to 29, 14.2 per cent of those aged 30 to 34, 8.8 per cent of those aged 35 to 39, 6.9 per cent of those aged 40 to 49, and 4.6 per cent of those aged 50 to 59. Over the ten-year period from 2001, more than half (54 per cent) of those aged 18 to 24, and 37 per cent of those aged 25 to 29, moved in with a partner. Separation from one's partner is less closely related to age, with the proportion experiencing it over five years ranging 7.8 to 14.7 per cent among those in the age groups below 50 years of age.

The likelihood of birth of a child, over a five- or ten-year time-frame, is highest for those initially aged 25 to 29, with over 40 per cent of people in this age group experiencing this change over five years, and 55.7 per cent experiencing it over ten years. Experience of one's children moving in or out peaks in the 40 to 49 and 50 to 59 age groups.

Non-partner non-child moves are most prevalent among those aged 18 to 24. Many of these changes are siblings moving out of or into the household. Finally, as we might expect, experience of partner death is concentrated among those aged 70 and over, with 6.8 per cent of people in this age group in 2001 experiencing the death of their partner over the next five years, and 11.0 per cent experiencing it over the ten years to 2011.

Discussion

While the overall proportion of households of each type changes very little from year to year, at the individual level changes in household composition are

Table 1.4: Changes in household composition, by age group, 2001 to 2011 (%)

	Age in the initial year							
	18–24	25–29	30–34	35–39	40–49	50–59	60–69	70 and over
2001 to 2006								
Stop living with parent(s)	41.2	15.0	6.8	3.2	1.3	*0.8	*0.0	*0.0
Move in with parent(s)	9.9	6.1	2.9	*1.8	1.5	*0.9	*0.2	*0.0
Partner	36.4	27.8	13.2	10.6	6.9	3.7	*1.6	*1.3
Separate	11.4	14.7	10.1	9.9	8.5	5.1	*1.6	*1.7
Birth of a child	16.1	41.4	36.4	13.7	2.8	*0.4	*0.0	*0.0
Own/partner's child moves in	2.3	3.0	5.3	8.1	14.5	11.8	6.3	3.6
Own/partner's child moves out	5.1	17.4	17.9	20.9	37.1	33.3	15.3	3.7
Non-partner non-child moves in ^a	23.7	10.9	7.8	6.5	9.4	7.9	4.3	3.1
Non-partner non-child moves out ^a	59.7	24.9	14.2	12.1	9.3	7.4	6.4	4.2
Partner dies	*0.1	*0.1	*0.2	*0.4	*0.7	1.7	3.6	6.8
Other household member dies	*0.7	*0.3	*0.4	*1.6	*1.4	*1.4	*1.3	*1.0
Any of the above	83.5	77.6	60.0	43.8	52.4	45.3	26.0	16.9
2006 to 2011								
Stop living with parent(s)	44.0	10.7	6.3	5.4	3.0	*1.3	*0.0	*0.0
Move in with parent(s)	10.2	4.9	3.1	3.3	1.5	*0.5	*0.3	*0.0
Partner	38.3	20.2	14.2	8.8	6.9	4.6	*1.5	*0.8
Separate	11.8	9.8	9.9	10.8	7.8	3.3	1.8	*1.0
Birth of a child	20.2	44.7	38.8	17.2	3.6	*0.2	*0.0	*0.0
Own/partner's child moves in	1.6	3.4	5.3	8.5	12.4	13.2	7.0	3.8
Own/partner's child moves out	7.3	15.9	22.3	22.4	35.1	37.0	13.7	3.6
Non-partner non-child moves in ^a	23.2	15.1	7.9	8.5	11.3	9.4	5.7	2.7
Non-partner non-child moves out ^a	50.0	24.6	12.0	9.8	10.8	9.8	5.9	3.4
Partner dies	*0.2	*0.0	*0.1	*0.2	*0.4	1.1	2.4	8.3
Other household member dies	*1.2	*1.2	*0.8	*1.8	*1.3	1.6	*1.2	*0.4
Any of the above	80.8	74.3	64.2	48.6	50.2	47.0	24.7	18.2
2001 to 2011								
Stop living with parent(s)	48.9	19.9	9.9	4.7	3.0	*1.1	*0.0	*0.0
Move in with parent(s)	13.4	8.3	4.9	3.2	2.4	*1.0	*0.1	*0.0
Partner	54.0	37.2	20.1	16.8	11.7	5.8	*1.8	*1.6
Separate	18.1	24.0	18.5	15.7	12.7	6.5	2.3	*1.6
Birth of a child	38.1	55.7	38.0	14.0	3.3	*0.5	*0.0	*0.0
Own/partner's child moves in	4.4	6.7	10.5	15.5	23.5	16.7	8.9	4.6
Own/partner's child moves out	14.8	32.7	30.8	35.4	54.2	41.3	17.2	4.5
Non-partner non-child moves in ^a	33.5	16.6	12.2	12.4	16.5	12.5	6.2	3.9
Non-partner non-child moves out ^a	67.5	30.8	19.3	16.5	16.8	12.9	8.3	5.2
Partner dies	*0.2	*0.2	*0.4	*0.8	1.5	3.2	6.5	11.0
Other household member dies	*1.4	*1.0	*2.3	*2.4	3.0	2.5	*1.5	*1.2
Any of the above	91.7	86.4	70.5	58.7	69.4	54.6	32.3	22.6

Notes: ^a includes situations where the individual moves in with non-partner non-child or moves out from living with non-partner non-child. * Estimate not reliable.

very common, with approximately one-fifth of individuals experiencing a change in household composition each year, and nearly two-thirds of individuals experiencing a change in household composition over ten years. The most common source of change to household composition is children leaving the parental home, although childbirth, partnering and separation are of course also important sources of change in household composition.

Endnotes

1 The lower apparent persistence of the 'other household type' category in 2001 may in part be due to some Wave-1 households splitting into two or more households in Wave 2 without any actual change in living arrangements, in turn reflecting improved understanding by respondents in Wave 2 (having experienced one wave of the survey) of the definition of a household for the

purposes of the study. Consistent with this, Table 1.1 shows that the proportion of people living in the 'other' household types declined from 6.1 per cent in Wave 1 to 5.4 per cent in 2002.

2 Note that changes in household composition that occur between waves will not be captured by Table 1.3 if they are reversed between those waves. For example, no change in household composition occurs if an individual separates from their partner subsequent to being interviewed in one wave and then re-partners with that same person prior to the next wave's interview. The extent to which the prevalence of changes is underestimated will, moreover, differ across the different types of changes to household composition. For example, movements of children into and out of the parental home are more likely to be missed than births. Also note that the estimates in Table 1.3 relate to the population alive in all years over the time frame under examination. For example, the estimates for changes in household membership over the ten

years following 2001 relate to the population aged 0 and over in 2001 who were still alive in 2011.

- 3 Note that a change in relation to children in the household will not just apply to the parents in the household: it applies to everyone who was living in the household left by the child, including the child who moves, any siblings, and any other related or unrelated people living in the household.

References

Australian Bureau of Statistics (2010) *Household and Family Projections, Australia, 2006 to 2031*, Catalogue No. 3236.0, ABS, Canberra.

de Vaus, D. (2004) *Diversity and Change in Australian Families: Statistical Profiles*, Australian Institute of Family Studies, Melbourne.

2. Family circumstances and care arrangements of children

Markus Hahn and Roger Wilkins

Previous volumes of the Statistical Report have examined family structures and child care use by families, but analysis has been from the perspective of the household or the parents. In this volume of the report, we take the perspective of children, examining their family circumstances and how this changes over time, and the type of care each child experiences. This is achieved by treating the child as the ‘unit of analysis’ and examining their circumstances and how these change over time. For the purposes of this chapter, a child is someone under the age of 18, although the analysis of child care use is restricted to children under the age of 13.¹

Family circumstances of children

The family circumstances of children in 2001, 2006 and 2011, disaggregated by age group, are described in Table 2.1. For all children under 18, in 2001 and 2006 71.3 per cent were living with both (natural or adoptive) parents, while in 2011 74.0 per cent were living with both parents. The proportion of children under 18 living with one parent in a lone-parent family was 19.3 per cent in both 2001 and 2006, but had fallen to 17.9 per cent in 2011. The proportion

living with one parent and his or her partner (a group that incorporates children living with one parent and a step parent) was 7.2 per cent in 2001, 7.7 per cent in 2006 and 6.5 per cent in 2011. Children under 18 living with neither parent accounted for 2.2 per cent of all children in 2001, 1.8 per cent of all children in 2006, and 1.7 per cent of all children in 2011.

The proportion living with both parents is highest for young children under 6 and lowest for children aged 13 to 17, which is consistent with most children initially living with both parents and then some parents subsequently separating as the children get older. Furthermore, while the proportion living in a lone-parent family is similar for children aged 6 to 12 and children aged 13 to 17, the proportion living with one parent and his or her partner is highest for children aged 13 to 17.

These patterns are consistent with individuals who become lone parents subsequently re-partnering with a new partner, which—because of the inherent sequencing of these events—means older children are more likely to be living with one parent and his or her partner.

Table 2.1: Family circumstances of children, by age group, 2001, 2006 and 2011 (%)

	Age group			All aged under 18
	Less than 6	6–12	13–17	
2001				
Both parents	79.3	69.2	64.8	71.3
One parent in lone-parent family	17.5	21.1	18.9	19.3
One parent and his/her partner	2.5	8.1	11.5	7.2
Neither parent	*0.8	1.6	4.8	2.2
2006				
Both parents	83.1	68.7	61.9	71.3
One parent in lone-parent family	14.0	20.8	22.9	19.3
One parent and his/her partner	2.2	9.0	11.9	7.7
Neither parent	*0.8	1.4	3.4	1.8
2011				
Both parents	83.7	71.1	66.1	74.0
One parent in lone-parent family	13.6	19.8	20.5	17.9
One parent and his/her partner	1.8	7.4	11.0	6.5
Neither parent	*1.0	1.7	2.4	1.7

Note: * Estimate not reliable.

Table 2.2 focuses on 2011 and compares the characteristics of children and their households across the four family situations examined in Table 2.1. Consistent with Table 2.1, children living with both parents are disproportionately aged under 6, with 39.0 per cent of children in these situations aged under 6, 35.4 per cent aged 6 to 12 and 25.6 per cent aged 13 to 17. By contrast, 26.2 per cent of children living with one parent in a lone-parent family are aged under 6, 40.9 per cent are aged 6 to 12 and 32.9 per cent are aged 13 to 17. Children living with one parent and his or her partner tend to be the oldest, with 9.3 per cent aged under 6, 42.2 per cent aged 6 to 12 and 48.5 per cent aged 13 to 17.

Children living with both parents are more likely to live in major urban areas than other children, while children living with one parent and his or her partner are the most likely to live in other urban areas. Children living with neither parent are the least likely to live in major urban areas, and are the most likely to live in non-urban areas. Associated with these regional differences, children living with both parents have the highest mean SEIFA decile, followed by children living with one parent (whether partnered or not) and then children not living with either parent, who have a very low mean SEIFA decile of 3.6 (compared with an average for the Australian population of 5.5).

The mean number of children under 18 in the household is similar across the family situations, the minor exception being that the mean is slightly lower for children living with one parent in lone-parent families. For children living with both parents, 95.6 per cent have at least one parent who is employed (and 61.6 per cent have both parents employed), while the co-resident parent (i.e. the parent who the child lives with) is employed for 59.7 per cent of children living with one parent in a lone-parent family and for 67.2 per cent of children

living with one parent and his or her partner. Children living with both parents have the highest equivalised household income, followed by children living with one parent and his or her partner. Children in lone-parent families have considerably lower average household income, while children living with neither parent have the lowest average household income.

Dynamics of children's family circumstances

The dynamics of family circumstances of children are examined in Table 2.3. The table shows, for each initial living arrangement, and for children initially aged under 6 and children initially aged 6 to 12, the proportion of children subsequently in each living arrangement one year later, five years later and, for children initially aged under 6, ten years later. The estimates in bold on the main diagonal of each panel show the proportion remaining in the same living arrangement, and therefore measure persistence of each living arrangement.

The most stable arrangement for children is living with both parents. Among children initially living with both parents, approximately 97 per cent remain in this situation one year later, while 87.9 per cent of children initially aged under 6 and 90.2 per cent of children initially aged 6 to 12 are still in this living situation five years later. Even ten years later, 80.2 per cent of children initially aged 0 to 6 and living with both parents were still living with both parents.

The other three living arrangements, involving living with only one parent or neither parent, have similar degrees of persistence, although persistence tends to be slightly lower for children initially aged under 6 than for children initially aged 6 to 12. For children initially aged under 6, approximately 88 per cent of children in these situations are still in the same situation one year later, while for children initially aged 6 to 12, approximately 90 per cent are

Table 2.2: Characteristics of children and their households, by family circumstances, 2011

	<i>Live with both parents</i>	<i>Live in lone-parent family</i>	<i>Live with one parent and his/her partner</i>	<i>Do not live with either parent</i>
Age group (%)				
0–5	39.0	26.2	9.3	*20.6
6–12	35.4	40.9	42.2	37.4
13–17	25.6	32.9	48.5	42.0
Total	100.0	100.0	100.0	100.0
Region (%)				
Major urban	64.5	58.4	51.0	35.7
Other urban	19.5	27.6	33.8	26.5
Other region	16.0	14.0	15.2	37.8
Total	100.0	100.0	100.0	100.0
Mean SEIFA decile	5.8	4.4	4.5	3.6
Mean number of children under 18 in household	2.4	2.2	2.5	2.5
One parent employed (%)	34.0	59.7	67.2	–
Both parents employed (%)	61.6	–	–	–
Mean equivalised income (\$, December 2011 prices)	46,042	29,669	40,945	26,207
<i>Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding.</i>				

still in the same situation one year later. Persistence drops to a greater degree for these three living arrangements (compared with living with both parents) when moving to a five-year time-frame, and again when moving to a ten-year time-frame. Over a five-year period, persistence falls to between 63 and 69 per cent for children initially aged under 6, and to between 72 and 76 per cent for children initially aged 6 to 12. Over a ten-year period, persistence (for children initially aged under 6) falls to as low as 49.5 per cent, and is no higher than 58.3 per cent.

The most common transition from 'living with both parents' is to 'living with one parent in a lone-parent family'; each year on average this applies to 3.2 per cent of children aged under 6 and 2.5 per cent of children aged 6 to 12. Over a five-year period, 10.1 per cent of children initially living with both parents and aged under 6 find themselves living with one parent in a lone-parent family at the end of the period, while this transition applies to 7.8 per cent of children initially living with both parents and aged 6 to 12.

For children initially living in a lone-parent family, the most common transition depends on the age of the child and the time-frame examined. For children initially living with one parent and his or her partner, the most common transition, irrespective of the age of the child or the time-frame, is to a lone-parent family.

Contact with non-resident parents and 'shared care' arrangements

As the preceding analysis has shown, a significant number of children live with only one of their par-

ents. However, many of these children still have contact with the other parent, and indeed some children are in a 'shared care' arrangement, where they spend up to 50 per cent of the time with the non-resident parent.² The HILDA Survey collects quite detailed information about contact with non-resident parents, and in this section we draw on this information to examine the amount of contact with non-resident parents and the prevalence and dynamics of shared care arrangements.

Table 2.4 presents descriptive information on the frequency of in-person contact with non-resident parents, for all children with a non-resident parent and disaggregated by the age of the child. The table compares the situation in 2003, the earliest year in which the information was collected by the HILDA Survey, with 2011, the most recent year.

The first row of each panel in Table 2.4 indicates, consistent with Table 2.1, that there has been a marked decline in the proportion of children with a non-resident parent, falling from 24.9 per cent in 2003 to 21.9 per cent in 2011. Overall, 22.4 per cent of children with a non-resident parent had no contact with the non-resident parent in 2003, while in 2011 this proportion had risen slightly to 23.2 per cent. Strikingly, the proportion of children under 6 with a non-resident parent who had no contact with that parent jumped from 16.9 per cent in 2003 to 25.0 per cent in 2011. On the other hand, in both 2003 and 2011, over one-third of children with a non-resident parent had contact with that parent at least weekly, and well over half (58 per cent in 2003 and 58.9 per cent in 2011) had contact at least monthly. Younger children, particularly those aged

Table 2.3: Living arrangement in years subsequent to the base year, by living arrangement in the base year —Children aged under 13 years in the base year, all waves pooled (%)

Living arrangement in base year	Children aged 0–5 in the base year					Children aged 6–12 in the base year				
	Living arrangement 1 year later				Total	Living arrangement 1 year later				Total
	(1)	(2)	(3)	(4)		(1)	(2)	(3)	(4)	
Both parents (1)	96.6	3.2	0.2	*0.0	100.0	97.4	2.5	*0.1	*0.0	100.0
Lone-parent family (2)	6.7	86.8	5.9	*0.5	100.0	2.4	90.2	7.3	*0.2	100.0
One parent and his/her partner (3)	*0.7	11.3	88.0	*0.0	100.0	*0.3	9.4	90.1	*0.2	100.0
Neither parent (4)	*2.2	*9.9	*0.0	87.9	100.0	*0.0	*9.2	*0.7	90.1	100.0
Living arrangement in base year	Living arrangement 5 years later				Total	Living arrangement 5 years later				Total
	(1)	(2)	(3)	(4)		(1)	(2)	(3)	(4)	
Both parents (1)	87.9	10.1	2.0	*0.1	100.0	90.2	7.8	1.1	0.9	100.0
Lone-parent family (2)	8.9	68.6	21.8	*0.7	100.0	4.0	72.3	19.5	4.3	100.0
One parent and his/her partner (3)	*5.1	27.1	66.9	*0.9	100.0	*1.0	16.9	76.4	5.7	100.0
Neither parent (4)	*0.0	*29.9	*7.3	62.8	100.0	*0.0	*14.9	*11.3	73.8	100.0
Living arrangement in base year	Living arrangement 10 years later				Total	Living arrangement 10 years later				Total
	(1)	(2)	(3)	(4)		(1)	(2)	(3)	(4)	
Both parents (1)	80.2	14.4	5.3	*0.1	100.0					
Lone-parent family (2)	16.7	58.3	23.5	*1.5	100.0					
One parent and his/her partner (3)	*10.7	*32.4	* 56.9	*0.0	100.0					
Neither parent (4)	*0.0	*11.3	*39.2	* 49.5	100.0					

Notes: The base years used to produce the estimates comprise 2001 to 2010 for the one-year time-frame, 2001 to 2006 for the five-year time-frame, and 2001 for the ten-year time-frame. * Estimate not reliable. Percentages may not add up to 100 due to rounding.

under 6, are more likely to have at least weekly contact than older children, while children aged 13 to 17 are more likely to have contact only monthly, every three to six months, or once a year or less.

The prevalence of shared care arrangements among children with a non-resident parent is examined in Table 2.5. In both 2001 and 2011, just under 50 per cent of children with a non-resident parent had a shared care arrangement, with shared care arrangements most common for children aged 6 to 12. Most shared care arrangements involve the child spending less than 20 per cent of nights with the non-resident parent. However, among children with a shared care arrangement, there has been a clear upward movement between 2001 and 2011 in the proportion of time the children spend with the

non-resident parent. In 2001, 2.1 per cent of children with a non-resident parent spent (exactly) 50 per cent of nights with that parent; in 2011, this had risen to 5.4 per cent. Likewise, 10.1 per cent of children with a non-resident parent spent at least 20 per cent of nights (but less than 50 per cent of nights) with that parent; in 2011, this had risen to 16.1 per cent. Among children in shared care, the extent of increase in shared care has been greatest for children aged 6 to 12, and indeed children in this age range have experienced an increase in the prevalence of shared care between 2001 and 2011 from 51.3 per cent to 55.5 per cent.

The dynamics of shared care arrangements for children initially with a non-resident parent are considered in Table 2.6, with children initially aged under

Table 2.4: Frequency of contact with non-resident parents, 2003 and 2011 (%)

	<i>Age group</i>			<i>All aged under 18</i>
	<i>0–5</i>	<i>6–12</i>	<i>13–17</i>	
2003				
Have a non-resident parent	17.5	28.9	28.0	24.9
<i>Frequency of contact with non-resident parents</i>				
Daily	15.2	8.0	*7.4	9.3
Weekly	29.2	23.4	22.6	24.3
Fortnightly	16.2	19.5	15.5	17.4
Monthly	*6.5	6.5	7.8	7.0
Every 3–6 months	11.1	12.1	14.1	12.6
Once a year or less	*5.1	6.0	9.6	7.0
Never	16.9	24.5	22.9	22.4
2011				
Have a non-resident parent	14.3	25.1	27.0	21.9
<i>Frequency of contact with non-resident parents</i>				
Daily	8.7	6.3	6.9	7.1
Weekly	32.4	31.0	19.8	27.4
Fortnightly	16.0	19.3	14.7	17.0
Monthly	5.4	6.0	10.4	7.4
Every 3–6 months	*7.9	8.6	13.8	10.2
Once a year or less	4.6	6.8	11.1	7.8
Never	25.0	22.2	23.3	23.2

Note: * Estimate not reliable.

Table 2.5: Shared care arrangements of children with a non-resident parent—Percentage in each category for percentage of nights that stay with the non-resident parent, 2001 and 2011 (%)

<i>Nights with non-resident parent</i>	<i>Age group</i>			<i>All aged under 18</i>
	<i>Under 6</i>	<i>6–12</i>	<i>13–17</i>	
2001				
50%	*1.6	*2.8	*1.4	2.1
20 – <50%	13.3	8.9	9.1	10.1
10 – <20%	16.3	20.0	14.2	17.3
>0 – <10%	11.8	19.6	21.1	18.0
0%	57.0	48.7	54.3	52.6
2011				
50%	*2.9	7.5	4.5	5.4
20 – <50%	18.8	19.6	10.2	16.1
10 – <20%	13.1	14.3	11.8	13.2
>0 – <10%	5.8	14.2	19.1	14.0
0%	59.5	44.5	54.4	51.4

Note: * Estimate not reliable.

6 and children initially aged 6 to 12 examined separately. For the purposes of this analysis, a shared care arrangement is defined as a situation in which the child spends more than 10 per cent of nights with the non-resident parent. For children initially in a shared care arrangement, and for children not initially in a shared care arrangement, the table presents the proportion in a shared care arrangement, and the proportion living with both parents, one year later, three years later and five years later. Shared care arrangements are reasonably persistent, with 64.8 per cent of children under 6 in shared care still in shared care one year later, 57.6 per cent still in shared care three years later, and 50.5 per cent still in shared care five years later. Similarly, 74.4 per cent of children aged 6 to 12 in shared care are still in shared care one year later, 58.4 per cent are still in shared care three years later, and 44.4 per cent are still in shared care five years later. For children with a non-resident parent who are not in shared care, approximately 10 per cent are in shared care one year later, while for children aged under 6, 15.8 per cent are in shared care five years later.

Making the transition to a situation where both parents are living with the child is relatively uncommon, particularly for children aged 6 to 12. Curiously, children in a shared care arrangement are no more likely to be subsequently living with both parents than are children who are not in a shared care arrangement. Indeed, the general impression is that the transition to living with both parents is less common for children initially in a shared care arrangement.

Child care arrangements of children

Issues related to child care have become more important over the last several decades. Changes in female employment patterns and changes in family structures—a growing number of lone-parent families—have created a growing need for child care that is accessible, appropriate and affordable. Most Australian families are eligible for some form of subsidy towards the cost of child care, either in the form of the Child Care Benefit, a means-tested benefit which directly reduces the cost of child care, or the Child Care Rebate (formerly the Child Care Tax Rebate), which allows parents who meet the work

or study criteria to claim back a proportion of their out-of-pocket child care expenses.³ The availability of quality child care is likely to be particularly important for working parents, and in this context child care plays a critical role in facilitating labour force participation of parents.

Table 2.7 presents estimates of the proportion of children under 13 years of age for whom child care is used. Both formal care, such as provided by a child care centre, and informal care, such as provided by grandparents, are included in the definition of child care. Work-related and non-work-related child care are examined separately, where ‘work related’ child care is defined as care used while parents undertake paid work. Estimates are also presented separately for couples (including where children live with one parent and his or her partner) and lone-parent families.

The proportion of children aged under 13 for whom child care is used has fluctuated between approximately 56 per cent and 61 per cent over the HILDA Survey period. Use of child care reached its lowest point (55.6 per cent) in 2005, since which time child care use has been trending upwards. Use of child care for non-work-related purposes has been trending downwards over the whole survey period, while the proportion of children for whom work-related child care is used has risen from a low of 41.4 per cent in 2005 to 46.4 per cent in 2011. Interestingly, work-related child care use is higher

Types of child care

In this report, we distinguish between work-related and non-work-related child care, and between formal and informal child care. Work-related child care is child care which is used while the parents are at work. Non-work-related child care refers to child care that is used while the parents did non-work activities, including study. Formal care refers to regulated care away from the child’s home, such as before or after school care, long day care, family day care, and occasional care. Informal child care refers to non-regulated care, arranged by a child’s parent or guardian, either in the child’s home or elsewhere. It includes (paid or unpaid) care by siblings, grandparents, other relatives, friends, neighbours, nannies and babysitters.

Table 2.6: Living situation in years subsequent to the base year, by shared care status in the base year—Children with a non-resident parent in the base year, 2001 to 2011, all waves pooled (%)

	1 year later		3 years later		5 years later	
	Shared care	Lives with both parents	Shared care	Lives with both parents	Shared care	Lives with both parents
Children aged 0–5 in base year						
In shared care in base year	64.8	5.5	57.6	8.8	50.5	6.6
Not in shared care in base year	10.9	6.8	14.8	7.5	15.8	9.0
Children aged 6–12 in base year						
In shared care in base year	74.4	1.9	58.4	2.3	44.4	*1.5
Not in shared care in base year	9.7	1.6	12.2	2.8	9.5	3.7

Notes: For the purposes of this table, a child is defined to live in a ‘shared care’ arrangement if that child stays with the non-resident parent more than 10 per cent of nights. * Estimate not reliable.

Table 2.7: Child care use for children aged under 13 years (%)

	2002	2003	2005	2007	2009	2011
Proportion for whom work-related child care is used						
Couple family	42.4	42.3	42.5	45.3	45.0	47.0
Lone-parent family	38.8	41.8	36.7	41.5	42.2	43.7
Total	41.7	42.2	41.4	44.6	44.6	46.4
Proportion for whom non-work-related child care is used						
Couple family	16.2	18.3	12.8	11.2	11.7	12.4
Lone-parent family	21.3	18.8	19.7	20.2	18.4	17.3
Total	17.3	18.4	14.2	12.8	12.9	13.2
Proportion for whom any child care is used						
Couple family	58.6	60.6	55.3	56.5	56.8	59.3
Lone-parent family	60.1	60.5	56.4	61.8	60.6	61.1
Total	58.9	60.6	55.6	57.4	57.4	59.6

Note: The unit of analysis is the child.

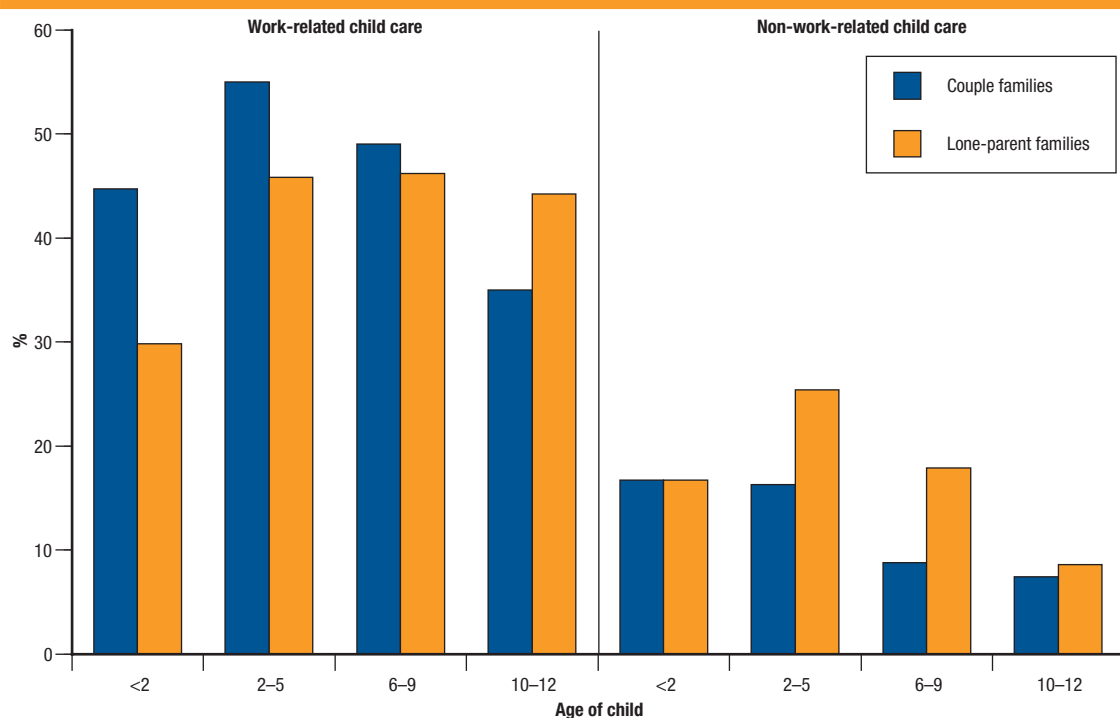
for children living in couple families than children living in lone-parent families, but non-work-related child care use is higher for children living in lone-parent families.

Differences in the 2011 prevalence of child care use by the age of the child are examined in Figure 2.1. Use of work-related child care by couple families is highest for children aged 2 to 5 (applying to approximately 55 per cent of children) and lowest for children aged 10 to 12 (approximately 35 per cent). Use of work-related child care by lone parents is relatively low for children aged under 2 (approximately 30 per cent), but is similar (approximately 45 per cent) for children aged 2 to 5, children aged 6 to 9 and children aged 10 to 12. For couple families, non-work-related child care is most commonly used for children aged under 6. Lone

parents, by contrast, most commonly use child care for children aged 2 to 5, followed by children aged 6 to 9 and then children under 2.

Work-related child care

Table 2.8 focuses on work-related child care, showing the types of care used for children for whom work-related child care was being used in 2011. For children not yet at school, informal child care, most commonly comprising a partner of a parent or a grandparent, is used for 71.8 per cent of children, and formal child care, most commonly a private or community long day centre, is used for 62.1 per cent of children. For children at school but aged less than 10 (and in work-related child care), informal care is used for 82.1 per cent during term time and 92.2 per cent during school holidays.

Figure 2.1: Proportion of children for whom child care is used, by family type and age of the child, 2011

As with children not yet at school, informal care mostly consists of a parent's partner or a grandparent, although significant numbers of children at school aged under 10 also receive informal care from others, including a relative living elsewhere, a friend or neighbour, a sibling or the child himself or herself. Formal care is used for 35.0 per cent of these children during term time (mostly comprising formal care outside of school hours) and by 25.7 per cent during school holidays (mostly comprising vacation care).

For children at school aged 10 to 12, and receiving work-related child care, 91.2 per cent receive informal care during term time and 94.6 per cent receive informal care during school holidays. The informal care used is more evenly distributed across the different types, and for substantial numbers—26.7 per cent during term time and 19.3 per cent during school holidays—informal care used includes the child looking after himself or herself. Formal care is less commonly used for children aged 10 to 12, with it being used for

19.6 per cent of the children in this age range who receive work-related child care during term time, and 18.5 per cent of these children during school holidays.

Table 2.9 focuses on children living in families in which all resident parents are employed. Almost by definition, a family in which all resident parents are employed will use work-related child care; hence, the table shows work-related child care being used for 100 per cent of children in these families. In both couple and lone-parent families, use of formal work-related child care decreases as the child becomes older, while use of informal work-related child care increases. Lone-parent families in which the parent is employed are, in all three groups for the age of the child, somewhat more likely to use formal child care and somewhat less likely to use informal child care.

Difficulties with child care

In every wave of the HILDA Survey, parents who have used or thought about using child care in the last 12 months are asked to rate on a scale of 0 to 10

Table 2.8: Types of work-related child care used—Children aged 0–12 years for whom work-related child care is used, 2011 (%)

	Children not yet at school	Children at school aged less than 10		Children at school aged 10–12	
		During term time	During school holidays	During term time	During school holidays
Informal child care					
Partner of a parent	36.0	49.3	72.7	41.4	62.5
The child's brother or sister	*0.3	8.8	6.1	22.7	15.3
Child looks after self	–	8.7	5.6	26.7	19.3
Child comes to my workplace	–	3.4	*1.7	*2.6	*3.8
Child's grandparent who lives with us	7.4	3.6	3.5	*7.1	*7.5
Child's grandparent who lives elsewhere	30.0	26.0	31.0	28.5	31.3
Other relative who lives with us	*1.1	*0.9	*0.7	*0.8	*0.4
Other relative who lives elsewhere	11.6	9.2	13.4	10.5	18.8
A friend or neighbour coming to our home	2.1	2.9	*2.3	*2.4	*1.2
A friend or neighbour in their home	4.5	8.9	11.2	10.1	9.3
A paid sitter or nanny	6.4	5.1	4.5	*3.0	*2.7
Any informal care	71.8	82.1	92.2	91.2	94.6
Formal child care					
Family day care	16.3	4.1	2.8	*1.3	*1.7
Formal care outside of school hours	–	31.3	–	18.5	–
Vacation care	–	–	23.0	–	16.7
Long day care at workplace	8.9	–	–	–	–
Private or community long day centre	29.6	–	–	–	–
Kindergarten/pre-school	14.1	–	–	–	–
Any formal care	62.1	35.0	25.7	19.6	18.5

Notes: Multiple-response question; columns therefore do not add to 100. * Estimate not reliable.

Table 2.9: Use of work-related child care for children with all resident parents employed, by family type and age of child, 2011 (%)

	Couple families			Lone-parent families		
	Aged 0–5	Aged 6–9	Aged 10–12	Aged 0–5	Aged 6–9	Aged 10–12
All resident parents employed	47.1	63.9	68.2	40.9	56.4	67.1
Of those with all resident parents employed:						
Use any work-related child care	100.0	100.0	100.0	100.0	100.0	100.0
Use formal work-related child care	71.1	43.0	25.0	81.5	54.2	41.2
Use informal work-related child care	65.4	94.4	99.1	53.3	89.0	90.0

how much difficulty they have had in the past 12 months with each of 12 aspects of obtaining child care: (1) Finding good quality care; (2) Finding the right person to take care of your child; (3) Getting care for the hours you need; (4) Finding care for a sick child; (5) Finding care during school holidays; (6) The cost of child care; (7) Juggling multiple child care arrangements; (8) Finding care for a difficult or special needs child; (9) Finding a place at the child care centre of your choice; (10) Finding a child care centre in the right location; (11) Finding care your children are happy with; and (12) Finding care at short notice.

In Table 2.10, these aspects are aggregated into three categories: availability (3–5, 7–10, 12); quality (1, 2, 11); and cost (6). The proportion of children in households experiencing difficulties with each aspect is reported in the table, where a household is classified as experiencing difficulty with an aspect if they rate the extent of difficulty as five or more for

any component of the aspect. For example, if a household scores five or more for any of aspects 3 to 5, 7 to 10 or 12, then the household is defined to have difficulty with the availability of child care.

The table shows a consistent pattern of availability difficulties being the most common, affecting the households of at least half the children in households where the parents had used or thought about using child care. This is perhaps unsurprising, since availability difficulties account for eight of the 12 types of difficulties households could report. The next most common difficulty is cost, tending to affect half of children aged under 6 and 40 per cent of children aged 6 to 12, although the prevalence of quality difficulties is only slightly below the prevalence of cost difficulties.

Difficulties with child care for children aged under 6 reached a peak in 2005 when 83.9 per cent of those in lone-parent families and 76.3 per cent of

Table 2.10: Proportion of children in households experiencing difficulties with child care, by family type and age of child (%)

	2001	2003	2005	2007	2009	2011
Couple family, child aged 0–5						
Availability	63.2	68.8	72.0	61.2	60.2	65.3
Quality	41.4	41.9	42.5	39.5	33.1	40.5
Cost	45.2	48.8	56.5	58.3	52.4	54.7
Any difficulties	71.5	75.2	76.3	73.9	71.0	76.6
Couple family, child aged 6–12						
Availability	56.7	58.8	60.8	61.6	65.8	58.0
Quality	35.6	31.3	33.0	35.1	34.1	30.2
Cost	39.9	41.3	40.6	41.9	43.3	43.2
Any difficulties	64.7	67.1	68.0	68.0	71.0	66.4
Lone-parent family, child aged 0–5						
Availability	71.7	71.8	82.6	68.7	62.9	75.7
Quality	48.4	47.4	57.6	32.6	43.1	56.1
Cost	34.4	48.4	65.3	49.1	48.4	53.1
Any difficulties	77.8	76.8	83.9	77.6	72.0	84.7
Lone-parent family, child aged 6–12						
Availability	73.4	68.0	81.7	73.3	70.7	67.9
Quality	52.4	43.3	53.2	43.4	39.9	44.7
Cost	46.6	38.1	49.3	40.3	48.8	47.6
Any difficulties	79.7	72.2	84.8	76.8	75.1	76.4

Note: A household is defined to have difficulty with an aspect of child care (availability, quality or cost) if a score of 5 or more out of 10 is reported for the extent of difficulty with any of the components of that aspect.

Table 2.11: One-year persistence of difficulties with child care, by age of child in the initial year and family type (%)

	Children aged 0–4 in initial year			Children aged 5–11 in initial year		
	2001 to 2002	2005 to 2006	2010 to 2011	2001 to 2002	2005 to 2006	2010 to 2011
Couple family						
Availability	77.4	81.5	75.4	70.5	75.4	75.2
Quality	52.3	52.7	54.8	48.7	67.0	46.3
Cost	65.2	77.1	66.7	56.0	67.0	66.6
Lone-parent family						
Availability	91.0	85.4	91.1	87.2	87.8	89.0
Quality	68.4	82.3	83.4	61.0	64.9	64.6
Cost	58.3	79.5	67.3	37.3	66.0	83.8

Note: Population comprises children under the age of 12 in the initial year who were living in families who used or thought about using child care in both of the years over which persistence is evaluated.

those in couple families lived in a household experiencing difficulties with availability, quality and/or cost. The prevalence of difficulties with child care then declined markedly for these children between 2005 and 2009, but then increased sharply between 2009 and 2011, from 71.0 per cent to 76.6 per cent for couple families, and from 72.0 per cent to 84.7 per cent in lone-parent families, with the biggest increases in prevalence occurring for availability difficulties and quality difficulties.

For children aged 6 to 12 in lone-parent families, the prevalence of child care difficulties also peaked in 2005, decreased to 2009 and then increased in 2011, although the increase to 2011 was slight, from 75.1 per cent in 2009 to 76.4 per cent in 2011. For children aged 6 to 12 in couple families, the prevalence of child care difficulties continued to rise, albeit slowly, up to 2009 when it reached 71.0 per cent, and then declined to 66.4 per cent in 2011.

Difficulties with child care are a cause for greater concern if they are not able to be resolved by families and therefore tend to persist over time. Persistence of difficulties from one year to the next, and how this has changed over the HILDA Survey period, is examined in Table 2.11 for children in couple families and children in lone-parent families. The estimates presented in the table are the proportion of children living in a household experiencing difficulties with an aspect of child care (availability, quality or cost) in the initial year (2001, 2005 or 2010) who were still living in a household experiencing difficulties with that aspect of child care in the next year (2002, 2006 or 2011). The population examined comprises children who were living in households in which the parents had used or thought about using child care in the last 12 months in both of the two years over which persistence is evaluated, and who were under the age of 13 in both years. Children aged under 5 in the initial year and children aged 5 to 11 in the initial year are examined separately.

Table 2.11 shows a relatively high degree of persistence of child care difficulties from one year to the next. In almost all cases examined in the table, persistence exceeds 50 per cent. For all groups examined in the table, persistence is highest for availability difficulties, while persistence of quality and cost difficulties is not consistently ordered, sometimes being higher for quality difficulties and sometimes being higher for cost difficulties. Lone-parent families have somewhat higher persistence in availability difficulties than couple families, and generally have greater persistence in quality difficulties. Persistence of cost difficulties is generally similar for lone-parent and couple families. No clear trend in persistence is evident for children in couple families, but there has

been a clear upward trend in persistence of difficulties for children in lone-parent families. For all three aspects of child care difficulties, and for both children aged under 5 and children aged 5 to 11, persistence in lone-parent families was higher from 2010 to 2011 than it was from 2001 to 2002.

Concluding comments

While the majority of children live with both parents, over one-quarter of children in Australia live with only one parent, of whom approximately one-quarter never have contact with the non-resident parent. There is, unfortunately, little evidence of improvement over the decade to 2011 in the proportion of children with a non-resident parent having contact with that parent; nor is there evidence of growth in 'shared care' arrangements. However, one development that could be considered positive is that, among children in a shared care arrangement, the amount of time spent with the non-resident parent has on average increased quite substantially between 2001 and 2011.

The total prevalence of child care use does not appear to have changed significantly over the decade to 2011, but its composition has shifted towards work-related care and away from non-work-related care. For children under 6, whether living in couple or lone-parent families, the prevalence of child care difficulties was falling between 2005 and 2009, but then jumped up sharply between 2009 and 2011. The reasons for both the decline and subsequent increase in difficulties are unclear, but are likely to be a function of both labour market conditions (which affect the demand for child care) and recent regulatory changes (which affect the supply of child care). However, considerably more detailed analysis than undertaken in this report is required to identify the determinants of the prevalence of child care difficulties.

Endnotes

- 1 The longitudinal analysis also restricts the age of the children to ensure they are under 18 for the entire period under examination.
- 2 For the purposes of deciding household membership, the HILDA Survey requires an individual to be resident in that household at least 50 per cent of the time. It is therefore possible for a child to be a member of two households, but only if exactly 50 per cent of the time is spent at each household.
- 3 When the Child Care Tax Rebate was introduced in July 2004, parents were able to claim back 30 per cent of their child care expenses. On 1 July 2008, the rebate was increased to 50 per cent of out-of-pocket expenses for approved child care costs, capped at \$7,500 per child per year for eligible families. The name of the rebate was changed to the Child Care Rebate in 2009.

3. Major life events

Roger Wilkins

Since Wave 2, respondents to the self-completion questionnaire have been asked to indicate whether each of a number of significant 'life events' has occurred to them in the preceding 12 months. The events relate to changes in family structure (such as marriage, separation or birth of a child), illness and injury to oneself and one's family, death of a family member or friend, experience of crime, job-related changes (such as promotion or dismissal), major changes in one's financial situation, and change in location of residence. In addition, since Wave 9, a question about experiencing damage to one's home from a weather-related disaster has been included. These events are of course not exhaustive of the many major changes that can happen in individuals' lives, but they are among the most commonly experienced events that are likely to have important implications for individuals' wellbeing.

Figure 3.1 presents the proportion of males and females aged 15 and over reporting experience each of these events over the past 12 months, averaged over all years from 2002 to 2011. Thus, the figure shows the average annual prevalence of each event over the period from 2002 to 2011 (except for home damage caused by a weather-related disaster, for which the average annual prevalence is evaluated over the period from 2009 to 2011).

The most common event reported by females is serious injury or illness of a family member or close relative, with 15.7 per cent of females aged 15 and over reporting this occurrence each year. Only 12.4 per cent of males report this event each year, which may in part be because of differences in perceptions between males and females, but which could reflect a lower propensity for females to be seriously injured or ill. Indeed, consistent with this, 8.0 per cent of males report being seriously injured or ill each year, compared to 7.3 per cent of females.

The most commonly reported event by males is moving house, which is experienced by 12.8 per cent of males each year. For females, this is the second-most common event although it is still more common for females than for males, with an average of 13.3 per cent each year indicating they had moved in the last 12 months. Changing jobs is also relatively common for both males and females, applying to 12.1 per cent of males and 11.2 per cent of females each year. The next most common event is death of a close relative or family member other than a child or spouse, which is reported by 10.5 per cent of females and 9.4 per cent of males each year. Death of a spouse or child is, unsurprisingly, considerably less common, applying to 0.9 per cent of females and 0.5 per cent of males each year. The lower rate for males most likely reflects the propensity for women to outlive their spouses.

Males are more likely than females to report job-related events—retirement, job dismissal, changing jobs, promotion—which at least in part reflects higher labour force participation by males. Conversely, slightly more females than males report pregnancy (of oneself or one's partner) and birth of child, which is to be expected given that some women who get pregnant and give birth to a child will not be partnered. Of note is that pregnancy is more frequently reported than is the birth of a child, which is consistent with a certain proportion of pregnancies being terminated or ending in miscarriage.

Experience (as a victim) of physical violence is relatively rare, applying to 1.4 per cent of males and 1.3 per cent of females each year. More common are experiences of property crimes, which are reported by 3.7 per cent of females and 4.3 per cent of males each year. Unsurprisingly, few people report having been jailed in the last year—0.1 per cent of females and 0.3 per cent of males—although each year there will be some people who do not complete the self-completion questionnaire (or respond to the interview) because of the very fact of being in jail. Indeed, 0.9 per cent of males and 1.3 per cent of females report that a family member was jailed in the last year, suggesting the true proportions jailed each year are higher than 0.1 per cent for females and 0.3 per cent for males.

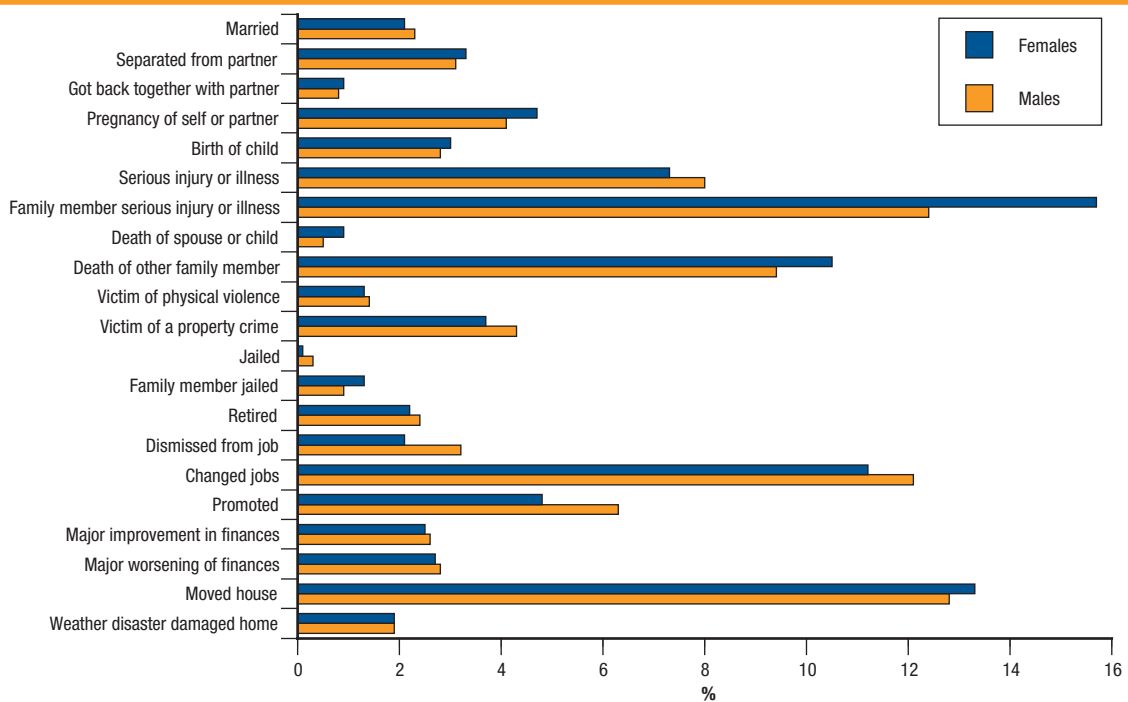
Each year, on average, just over 2.5 per cent of people aged 15 and over report a major improvement in finances, and a similar proportion report a major worsening of finances. Over the 2009 to 2011 period, the annual average proportion of people reporting their home had been damaged or destroyed by a weather-related disaster was 1.9 per cent—or nearly one in 50 people.

Experience of life events over ten years

The longitudinal nature of the HILDA Survey means that we are not restricted to examining only the annual prevalence of major life events. As of Wave 11, up to ten years of data on life events are available for each sample member. This allows us to examine how many people experience each life event at some stage over a ten-year period, as well as the number of years the event was experienced in that ten-year period.

Figure 3.2 presents similar information to Figure 3.1, but instead of showing the average annual prevalence of each life event over the ten years from 2002 to 2011, it shows the proportion of people experiencing each event at any time in the ten-year period—that is, the ten-year prevalence rate. Because we require ten years of data for each individual for this analysis, Figure 3.2 is derived from a 'balanced panel' comprising people who were aged

Figure 3.1: Average annual prevalence of major life events over ten years—Persons aged 15 years and over, 2002 to 2011



Note: 'Weather disaster damaged home' is available only in Waves 9 to 11.

15 and over in 2002 and were still alive in 2011 (and responded in all waves from 2002 to 2011).

As we would expect, for every life event, the proportion of people experiencing the event at some stage over ten years is considerably higher than the proportion experiencing the event in any given year. The life event experienced by more people than any other is serious injury or illness of a family member, with over 70 per cent of females and 64 per cent of males reporting this life event at least once over the ten years to 2011. This is also the most frequently reported life event over the one-year time-frame, reported by 15.7 per cent of females and 12.4 per cent of males each year. The extent to which ten-year prevalence is higher than one-year prevalence does, however, differ somewhat across the life events. Most notably, the death of a close relative or family member other than a child or spouse was the fourth-most commonly experienced event over a one-year period, behind both moving house and changing jobs, but it is the second-most commonly experienced event over a ten-year period. Thus, while in any given year an individual is more likely to move house or change jobs, over ten years it is more likely that an individual will experience the death of a close relative. Serious illness or injury to oneself is also quite common over a ten-year time-frame, applying to 43 per cent of males and 39 per cent of females.

While moving house is relatively less prevalent over ten years than over one year (compared to other life events) it is still a very common experience: approximately 55 per cent of individuals moved

house at least once between 2002 and 2011—although, the corollary of this is that 45 per cent of individuals did not move at all in ten years. Approximately 16 per cent of the population (aged 15 and over in 2002) got married between 2002 and 2011, which was slightly less than the 18 per cent of the population who separated from their spouse or long-term partner over this period. However, approximately 6 per cent of the population got back together with their spouse or long-term partner at some stage over this period. Approximately 17 per cent of people aged 15 and over in 2002 had one or more children between 2002 and 2011, which was only slightly below the 19 per cent who at some stage reported getting pregnant.

For employment-related events, we see that around 47 per cent of males and 43 per cent of females changed jobs at least once, while promotion at work was experienced by 31 per cent of males and 26 per cent of females. Perhaps somewhat alarming is that 22 per cent of males—over one in five—reported being dismissed from their job at some stage between 2002 and 2011; for females, the corresponding figure is 16 per cent. Slightly over 16 per cent of people reported retiring between 2002 and 2011.

Experience of physical violence and experience of property crime apply to significant fractions of the population over ten years. In any given year, only 1.3 per cent of females and 1.4 per cent of males report being the victim of physical violence, but over ten years this rises to 7.5 per cent of females and 8.0 per cent of males. The proportion reporting being the

victim of a property crime similarly rises from 3.7 per cent over one year to 25.4 per cent over ten years for females, and from 4.3 per cent over one year to 29.9 per cent over ten years for males.

All of the life events examined in Figure 3.2 can in principle occur more than once—it is even possible to retire more than once if, subsequent to retirement, a person returns to the labour force. Table 3.1 presents

information on the frequency distribution of the life events over the 2002 to 2011 period. For each event, it shows the proportion reporting it once, the proportion reporting it twice and the proportion reporting it three or more times. Note that many of the events can occur more than once per year, so the estimates should be interpreted as relating to the number of years the event was reported rather than the number of times the event actually occurred.

Figure 3.2: Prevalence of life events over ten years—Persons aged 15 years and over, 2002 to 2011

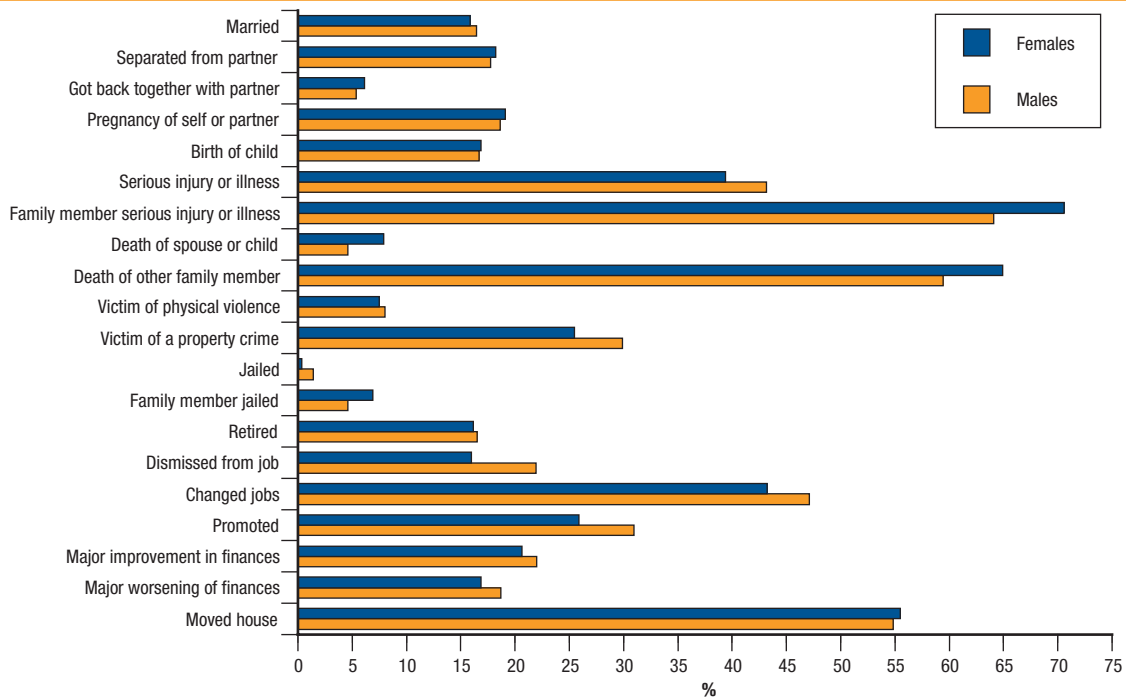


Table 3.1: Frequency of experience of life events over ten years, 2002 to 2011 (%)

Life Event	Once		Twice		3 or more times	
	Males	Females	Males	Females	Males	Females
Married	13.9	13.4	2.1	1.9	0.5	0.6
Separated from partner	10.1	10.8	4.8	4.4	2.9	3.0
Got back together with partner	3.8	4.6	1.1	1.1	0.5	0.5
Pregnancy of self or partner	7.0	6.3	6.1	6.1	5.5	6.7
Birth of child	8.2	8.2	6.6	6.4	1.9	2.2
Serious injury or illness	22.5	21.6	10.2	8.9	10.5	8.9
Family member serious injury or illness	27.8	25.1	16.5	18.1	19.9	27.4
Death of spouse or child	3.8	6.4	0.8	1.3	0.1	0.2
Death of other family member	31.9	33.3	17.4	19.5	10.2	12.1
Victim of physical violence	6.2	5.0	1.0	1.7	0.8	0.8
Victim of property crime	20.5	17.0	6.3	6.1	3.1	2.4
Jailed	1.0	0.3	0.3	0.0	0.1	0.0
Family member jailed	3.0	4.1	1.1	1.1	0.5	1.7
Retired	10.6	10.6	3.9	3.9	2.1	1.6
Dismissed from job	14.6	11.4	5.0	3.2	2.3	1.3
Changed jobs	17.3	15.5	12.0	10.6	17.9	17.1
Promoted	14.2	13.8	8.7	6.9	8.1	5.2
Major improvement in finances	15.8	14.8	4.2	4.3	2.0	1.5
Major worsening of finances	12.2	11.1	3.6	3.4	3.0	2.4
Moved house	20.9	20.5	14.9	15.6	19.1	19.3

Note: An event happening more than once within the one year is only counted as occurring once in that year.

The table shows that serious injury or illness of a family member, moving house, changing jobs and serious injury or illness of oneself are relatively likely to occur multiple times. For example, while approximately 21 per cent of people moved house once, just over 19 per cent moved three or more times. Unsurprisingly, multiple instances of giving birth or adopting a child are also relatively common: while 8.2 per cent of people reported this event only once in the ten-year period, approximately 6.5 per cent reported it twice (implying they gave birth to at least two children), and approximately 2 per cent reported it three or more times (implying they gave birth to three or more children). As we might expect, marriage is relatively unlikely to have occurred more than once over the

ten-year period, although approximately 2 per cent of people report marrying twice, and approximately 0.5 per cent report marrying three or more times within the ten-year period.¹

Experience of life events across the lifecycle

The major life events that happen to an individual are very much dependent on that individual's age, or what we might term their 'lifecycle stage'. Most obviously, marriage, childbirth and retirement are closely related to lifecycle stage; but in fact most life events, including health-related and employment-related events, are more likely to occur at particular ages. Table 3.2 considers the relationship between life events and lifecycle stage by comparing the

Table 3.2: Prevalence of life events over ten years, by age group in 2002 (%)

	15–24	25–34	35–44	45–54	55–64	65 and over
Males						
Married	26.3	31.6	14.6	8.6	7.6	7.2
Separated from partner	33.5	24.8	17.2	14.1	7.9	5.9
Got back together with partner	7.5	8.6	7.1	3.0	2.4	1.7
Pregnancy of partner	25.6	54.6	18.3	2.8	1.9	0.5
Birth of child	23.2	48.6	17.7	2.1	0.8	0.3
Serious injury or illness	31.5	40.2	36.9	45.6	52.6	58.9
Family member serious injury or illness	59.2	57.2	68.2	71.0	62.3	63.9
Death of spouse or child	2.2	3.4	2.5	2.3	6.0	16.5
Death of other family member	56.8	55.2	59.1	64.6	63.6	55.8
Victim of physical violence	17.7	10.6	8.0	5.2	3.8	1.9
Victim of property crime	37.4	36.1	34.5	26.5	22.4	16.5
Jailed	2.7	1.9	1.6	0.9	0.4	0.7
Family member jailed	5.6	3.9	4.9	5.9	3.5	3.1
Retired	2.2	2.8	3.8	23.6	48.8	27.5
Dismissed from job	29.7	27.6	27.2	22.2	12.4	3.8
Changed jobs	86.5	66.0	53.7	39.4	18.3	2.5
Promoted	55.9	49.0	37.8	21.0	8.2	2.3
Major improvement in finances	23.0	18.6	21.2	28.0	23.0	15.4
Major worsening of finances	15.8	19.2	22.4	18.9	18.3	14.6
Moved house	84.2	78.5	52.2	42.9	39.3	23.8
Females						
Married	42.4	28.2	9.9	7.2	3.8	4.8
Separated from partner	33.9	28.5	19.6	12.8	5.7	6.0
Got back together with partner	10.1	11.5	7.7	3.5	1.0	1.2
Pregnancy of self or partner	45.3	55.0	11.6	0.2	0.6	0.2
Birth of child	36.4	51.9	8.6	0.6	0.9	1.1
Serious injury or illness	32.2	27.4	36.4	45.4	42.6	56.1
Family member serious injury or illness	63.5	64.9	73.4	76.0	74.4	69.5
Death of spouse or child	2.5	5.9	3.3	5.3	14.1	21.6
Death of other family member	62.9	60.2	66.9	72.4	66.6	57.4
Victim of physical violence	14.6	9.8	7.8	5.2	4.9	2.1
Victim of property crime	35.6	30.7	26.7	24.1	20.1	12.4
Jailed	0.5	0.3	0.3	0.4	0.5	0.2
Family member jailed	7.1	7.0	9.0	8.0	5.3	3.2
Retired	1.9	4.4	7.0	25.6	41.5	22.2
Dismissed from job	29.7	16.7	19.4	16.6	8.5	1.0
Changed jobs	86.9	63.5	51.2	33.7	12.0	1.1
Promoted	54.4	37.2	29.4	21.0	6.9	0.3
Major improvement in finances	18.9	18.5	23.2	23.2	25.4	12.3
Major worsening of finances	14.3	17.4	19.2	20.3	15.3	11.8
Moved house	91.8	77.6	51.2	42.3	39.0	28.6

ten-year prevalence of life events across age groups which are defined by age in 2002.

Very large differences in prevalence rates are indeed evident across age groups for most life events. There are also some important differences between men and women in the lifecycle profile of life events. Marriage prevalence for males is highest for those aged 25 to 34 in 2002, with 31.6 per cent of this age cohort getting married between 2002 and 2011. For females, by contrast, marriage prevalence is highest for those aged 15 to 24 in 2002, with 42.4 per cent getting married between 2002 and 2011. For both men and women, the prevalence of giving birth is highest for those aged 25 to 34 in 2002, although women aged 15 to 24 in 2002 were considerably more likely to have a child between 2002 and 2011 than men of the same age cohort (36.4 per cent compared with 23.2 per cent), while women aged 35 to 44 in 2002 were considerably less likely to have a child between 2002 and 2011 than men of the same age cohort (8.6 per cent compared with 17.7 per cent). Also of note is that the gap between the prevalence rates of pregnancy and birth is, for women (but not men), largest among those aged 15 to 24 in 2002, which is perhaps consistent with the overall gap between pregnancy and birth rates primarily being driven by terminations, given that miscarriages are less likely at younger ages and that many younger women will not be ready to start a family.

The proportion experiencing serious illness or injury over ten years tends to increase with age, rising from 31.5 per cent of males aged 15 to 24 in 2002 to 58.9 per cent of males aged 65 and over in 2002, and rising from 32.2 per cent of females aged 15 to 24 in 2002 to 56.1 per cent of females aged 65 and over. The relationship is not entirely monotonic, however, with males aged 35 to 44 in 2002 having a lower likelihood of serious illness or injury between 2002 and 2011 than males aged 25 to 34 in 2002, and females aged 25 to 34 in 2002 having a lower likelihood of serious illness or injury over the ten years than females aged 15 to 24 in 2002. Death of a spouse or child is primarily concentrated among men aged 65 and over in 2002 and women aged 55 and over in 2002, indicating that this life event primarily comprises death of a spouse rather than death of a child.

For employment-related events, prevalence rates of job changes, job promotion and job dismissal are all decreasing in age. Significantly, the proportions reporting job dismissal, job promotion and job changing are very similar for males and females aged 15 to 24 in 2002. It is only in older age ranges that higher prevalence rates emerge for males. The prevalence of retirement between 2002 and 2011 is of course quite low among people under 45 years of age in 2002, peaking among those aged 55 to 64 in 2002.

Experience of both physical violence and property crime decreases with age. The decline in prevalence with age is particularly sharp for physical violence, more so for males than females. Table 3.2 shows that males under 35 in 2002 are more likely to be a victim of physical violence than similarly-aged females, whereas females aged 55 and over in 2002 are slightly more likely to be victims of violence than similarly-aged males. Moving house is also strongly related to age, with 91.8 per cent of females aged 15 to 24 and 84.2 per cent of males aged 15 to 24 moving house at some stage over the next ten years, compared with 28.6 per cent of females aged 65 and over and 23.8 per cent of males aged 65 and over.

Concluding comments

The ability to examine the ten-year experience of life events provides valuable insights into people's lives, showing how many people are affected by significant life events over a substantial fraction of their lives. A particular finding is that, while most life events are experienced by a small minority of people each year, the proportion of people experiencing each event over a ten-year period can be quite high, in some cases applying to a majority of the population.

Endnote

- 1 It is possible that some respondents report the same life event more than once. For example, a respondent who married shortly before being interviewed in one wave may, in the next wave, again report that marriage as having occurred in the last 12 months. This is particularly likely if the interval between interviews was less than 12 months, as it sometimes is.

Part 2: Incomes and Economic Wellbeing



Incomes and Economic Wellbeing

Study of the distribution of income, and how an individual's income changes over time, is integral to understanding the economic fortunes of the Australian population. Arguably, the HILDA Survey has the capacity to provide more information on this key dimension of the economic life of Australian households than any other data source. Each year, every respondent is asked to report their personal income received from each of a variety of sources, including employment, government benefits, businesses and investments. This information is then aggregated for each individual to obtain total personal income, which is in turn then aggregated across all household members to obtain household income. By taking this approach—as opposed to simply asking a member of the household to report total household income—the accuracy of the income data is improved, and we are also able to examine individual income components, such as individuals' wage and salary incomes. Moreover, as the number of waves of data grows, we obtain a picture of the evolution of individuals' and households' incomes over an increasingly long time-frame.

This is not to argue that the HILDA Survey provides the best evidence about *current levels* and *recent trends* in incomes. The regular income surveys conducted by the Australian Bureau of Statistics (ABS) include very detailed questions on individual and household incomes and also have relatively high response rates. For example, the percentage of households approached that responded in full or in part to the Survey of Income and Housing was 78 per cent in 2003–04, 81 per cent in 2005–06, 84 per cent in 2007–08, 81 per cent in 2009–10 and 80 per cent in 2011–12 (ABS, 2006, 2007, 2009, 2011, 2013). As explained in the introduction to this report, the HILDA Survey has a slightly lower response rate and unavoidably suffers some respondent attrition. HILDA questions on income are much more detailed than in most academic surveys, but are slightly less detailed than the questions in the ABS income surveys. The small biases in the HILDA Survey results on income, and the extent to which respondent attrition is related to income, are analysed in Watson and Wooden (2004).

In addition to detailed income data, the HILDA Survey regularly collects other information relevant to assessment of economic wellbeing. In every wave, the HILDA Survey has collected information on components of household expenditure, although it was not until Wave 5, when a battery of expenditure questions were included in the self-completion questionnaire, that relatively comprehensive household expenditure data was collected. The expenditure questions in the self-completion questionnaire have been included in every wave since Wave 5, although they were modified in Wave 6, and again in Wave 11, when questions on food and grocery expenditure were also reintroduced into the household questionnaire, having previously been included in Waves 1 to 5. Similar to income, the ABS produces better cross-sectional data on household expenditure, collecting data that is both more detailed and more comprehensive in its six-yearly Household Expenditure Survey, most recently conducted in 2009–10. However, the HILDA Survey provides the only nationally representative longitudinal data on household expenditure in Australia, and is also the only source providing nationally representative data on an annual basis. Completing the set of household 'financial accounts' is the wealth data, first collected in 2002, and since collected in 2006 and 2010. This consists of 16 asset components and 14 debt components, mostly obtained at the household level in the household questionnaire. The ABS has also introduced wealth questions into its income surveys since 2003–04 (excluding the 2007–08 survey), again providing good cross-sectional, but not longitudinal, information.

In addition to objective financial data, information on the experience of financial stress, on the ability to raise funds (\$2,000 up until Wave 8 and \$3,000 since Wave 9) at short notice, and on the perceived adequacy of household income has been collected in the self-completion questionnaire in every wave. Questions on savings habits, saving horizon, and attitudes to financial risk have also been collected in the self-completion questionnaire at least every two years, while data on reasons for saving has been collected on two occasions. Furthermore, respondent assessments of their satisfaction with their financial situation have been obtained in the personal interview in every wave to date.

This section contains three chapters drawing on both objective and subjective financial data. Chapter 4 examines the distribution and dynamics of household income, the composition of income, and the prevalence and dynamics of income poverty. Chapter 5 examines welfare reliance, with a particular focus on duration of spells on welfare and on reliance on the Age Pension. Chapter 6 considers attitudes to financial risk, which have been obtained from respondents in eight of the 11 waves. It examines how risk preferences differ by socio-demographic characteristics and level of economic wellbeing, the extent to which risk preferences change over time, the determinants of risk preferences, and how various behaviours and outcomes are related to risk preferences.

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4. The distribution and dynamics of household income

Roger Wilkins

Income levels and living standards

Mean and median household annual incomes in each year of the HILDA Survey are presented in Table 4.1, adjusted for inflation using the Consumer Price Index expressed at December quarter 2011 prices. The estimates are for 'disposable' income, which is total income from all sources, including government benefits, after deduction of income taxes. The household is the unit of observation, meaning that each household contributes one 'observation' to the calculation of the mean and the median. Note that, as is the case elsewhere in this report, when referring to annual periods, the relevant period is the financial year that ended in the indicated year. For example, annual income estimates for 2001 relate to the 2000–01 financial year (from 1 July 2000 to 30 June 2001).

Mean household disposable incomes have grown quite strongly for the in-scope population over the HILDA Survey period, increasing by \$18,163, or \$1,816 per year, expressed at December 2011 prices. The median has likewise grown, increasing by \$13,264. Growth was particularly strong between 2003 and 2009, when the mean increased by \$17,515, or 28 per cent, and the median increased by \$16,617, or 31 per cent. In the absence of substantial changes to household composition over the period—and the last two columns of Table 4.1 would indicate there has been little change—this translates to a significant increase in average material living standards over this period.

Table 4.2 considers the distribution of household income, taking into account potential changes to household composition by examining 'equivalised' income per person. (See the box below for an

explanation of how equivalised income is calculated.) As well as presenting estimates for equivalised income, Table 4.2 also differs from Table 4.1 by treating the individual as the unit of observation. Every person is assigned an income—the equivalised

Household income

The main household income measure examined in this report is 'real household annual disposable income'. Household annual disposable income is the combined income of all household members after receipt of government pensions and benefits and deduction of taxes in the financial year ended 30 June of the year of the wave (e.g. 2001 in Wave 1). This is then adjusted for inflation—the rise in the general price level in the economy—using the ABS Consumer Price Index, so that income in all waves is expressed at December 2011 prices, to give *real* income. Since prices tend to rise over time, the income statistics we present are higher than what would be obtained by using incomes actually reported by sample members.

Note that HILDA Survey respondents do not actually report their disposable income; rather, each respondent is asked how much income they received from each of a number of sources, including employment, government benefits, investments and any businesses they own. Most respondents report gross (before-tax) values for these components. The disposable income of each respondent is therefore calculated by HILDA data managers by estimating the income tax payable by the respondent and subtracting this from the respondent's total income from all sources. Disposable incomes of all household members are then added together to obtain the respondent's *household* disposable income. Wilkins (2014) provides details on the methods used to calculate disposable income.

Table 4.1: Household annual disposable incomes (December 2011 prices)

	Mean (\$)	Median (\$)	Number of households	Number of persons
2001	61,600	53,316	7,425,697	18,986,818
2002	61,551	53,611	7,535,509	19,218,072
2003	61,607	54,071	7,630,313	19,454,807
2004	63,848	55,584	7,696,203	19,684,568
2005	66,899	58,738	7,792,815	19,955,825
2006	70,304	61,327	7,917,587	20,265,863
2007	74,115	63,981	8,049,252	20,634,375
2008	76,730	66,765	8,184,394	21,069,248
2009	79,121	70,688	8,342,004	21,494,172
2010	79,614	68,461	8,459,863	21,799,276
2011	79,763	66,580	8,587,854	22,109,023

income of that person's household—and the distribution of incomes across all individuals is examined. Persons from the same household are assigned the same equivalised income, on the implicit assumption that income is equally shared among household members. The result is that a four-person household contributes four observations, whereas a two-person household only contributes two observations. The rationale for this approach is that what matters for understanding the distribution of individuals' access to economic resources is not the distribution of income across households, but rather the distribution of income across people. For example, if poorer people tend to live in larger households, the proportion of *households* that are poor will be lower than the proportion of *people* who are poor. It is the latter quantity that is relevant, since our interest is in the wellbeing of people rather than households.

Average income levels are described by the mean and median, while inequality in the income distribution is described by the ratio of the 90th percentile to the median (p_{90}/p_{50}), the ratio of the median to the 10th percentile (p_{50}/p_{10}) and the Gini coefficient. The 90th percentile is the income of the individual who has 10 per cent of individuals with higher incomes and 90 per cent with lower incomes. The 10th percentile is the income of the individual who has 90 per cent of individuals with higher incomes and 10 per cent with lower incomes. The Gini coefficient is an overall measure of inequality that ranges from zero, where everyone has the same income, to one, where one individual has all the income.

As expected, growth in the average level of incomes since 2003 is robust to the move to equivalised incomes and the individual as the unit of analysis, as there have been only modest changes in household composition of the population over this period. Broadly speaking, over the 2001 to 2011 period as a whole, income growth appears to have been something of a 'rising tide lifting all boats', with the three measures of inequality presented in Table 4.2 showing little net change between 2001 and 2011; that is, income growth has applied equally to low-, middle- and high-income persons. It is notable, however, that both the ratio of the 90th percentile to the median and the Gini

coefficient increased between 2009 and 2011, possibly suggesting a recent trend towards greater inequality, driven by greater growth in high incomes than middle and low incomes.

Figure 4.1 compares median incomes across eight family types: non-elderly couples, defined to be

Equivalised income

Equivalised income is a measure of material living standards, obtained by adjusting household disposable income for the household's 'needs'. Most obviously, a household of four persons will require a higher household income than a lone-person household for each household member to achieve the same living standard as the lone-person household. There are, however, many factors other than household size that could also be taken into account in determining need. These include the age and sex of household members, health and disability of household members (since poor health and/or disability increase the costs of achieving a given standard of living), region of residence (since living costs differ across regions) and home-ownership status (since the income measure does not usually include imputed rent for owner-occupiers).

In practice, it is common for adjustment of income to be based only on the number of adult and child household members, achieved by an equivalence scale. In this report, we have used the 'modified OECD' scale (Hagenaars et al., 1994), which divides household income by 1 for the first household member plus 0.5 for each other household member aged 15 and over, plus 0.3 for each child under 15. A family comprising two adults and two children under 15 years of age would therefore have an equivalence scale of 2.1 ($1 + 0.5 + 0.3 + 0.3$), meaning that the family would need to have an income 2.1 times that of a lone-person household in order to achieve the same standard of living. This scale recognises that larger households require more income, but it also recognises that there are economies of scale in 'household production' (e.g. the rent on a two-bedroom flat is typically less than twice the rent on an otherwise comparable one-bedroom flat) and that children require less than adults. Each member of a household is assigned the same equivalised income, the implicit assumption being that all household income is pooled and then shared equally.

Table 4.2: Distribution of individuals' equivalised household disposable income (December 2011 prices)

	Mean (\$)	Median (\$)	p90/p50	p50/p10	Gini coefficient
2001	36,753	32,242	1.95	2.13	0.308
2002	36,782	32,437	1.92	2.11	0.307
2003	37,041	33,003	1.86	2.13	0.303
2004	38,052	34,227	1.85	2.11	0.298
2005	39,778	35,083	1.90	2.07	0.302
2006	41,842	36,711	1.93	2.08	0.304
2007	44,476	38,587	1.92	2.17	0.319
2008	45,405	39,946	1.91	2.18	0.310
2009	47,080	42,612	1.82	2.23	0.300
2010	47,149	41,133	1.92	2.13	0.310
2011	47,406	41,376	1.99	2.17	0.317

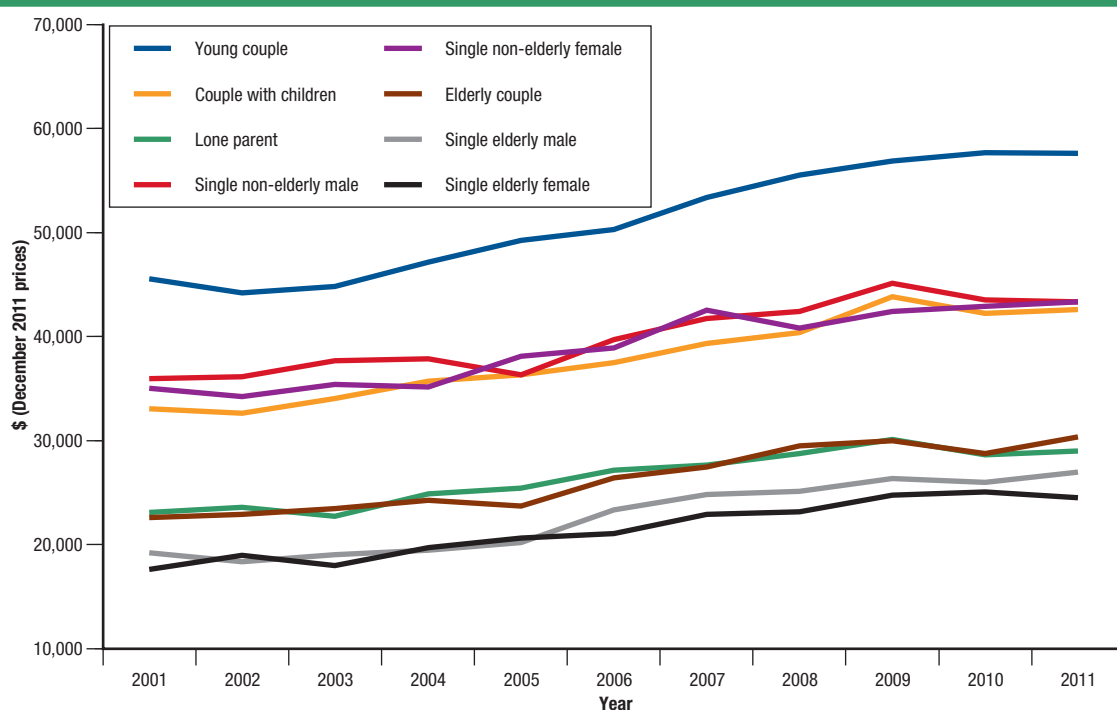
couples (married or de facto) without dependent children with at least one member of the couple under 60 years of age; couples with at least one dependent child living with them; lone parents living with at least one dependent child; non-elderly single males (under 60 years of age); non-elderly single females; elderly couples, where both persons are over 60 years of age; elderly single males (aged 60 and over); and elderly single females. Note that some households will contain multiple 'families'. For example, a household containing a non-elderly couple living with a non-dependent son will contain a non-elderly couple family and a non-elderly single male. All members of this household will, of course, have the same equivalised income.

A reasonably consistent ordering of median incomes by type of family is evident across the 11 waves of the survey, ranging from single elderly

persons at the bottom to non-elderly couples without dependent children at the top. It also appears that there are three broad 'clusters' of family types: non-elderly couples without dependent children, who have the highest incomes; couples with children and non-elderly single persons, who have middle-level incomes; and lone-parent families and elderly people, who have low incomes. All family types have experienced growth in median incomes over the full period, although the extent of growth varies somewhat.

The composition of income

The HILDA Survey does not ask respondents to report total household income, or even total personal income. Rather, respondents are asked to report each of a number of components of income separately. This information is then aggregated by the HILDA Survey data managers to produce

Figure 4.1: Median equivalised income, by family type

measures of total personal and household income. Taxes payable are also estimated by the data managers to produce an ‘after-tax’ or disposable income measure. (See Wilkins, 2014, for details.)

We can therefore use the HILDA Survey data to examine the importance of the different components that make up total income. Figure 4.2 shows the mean proportion of each of three components in total gross income across the 11 years of the HILDA Survey. The components are wages and salaries, government benefits, and private income other than wages and salaries, which primarily comprises investment income and business income. Note that business and investment income can be negative, and therefore so can the total of ‘other private income’. However, for the purposes of this exercise, other private income is constrained to be greater than or equal to zero—that is, negative values are set equal to zero—since income shares are not meaningful for negative components. This analysis will therefore tend to (slightly) overstate the contribution of other private income to the total income of households, and will also tend to smooth income shares over time, since business and investment income is more volatile than other components.

Figure 4.2 shows that wages and salaries are by far the dominant source of household income in Australia, accounting for over 60 per cent of household gross income. Government benefits contribute just over 20 per cent of household income, while other private sources contribute just under 15 per cent. Income shares of the three components have

been reasonably steady over the 2001 to 2011 period, although a clear—albeit slight—trend towards lower government benefits as a share of income is nonetheless evident over much of the period, with the income share falling from 25.4 per cent in 2002 to 21.3 per cent in 2011. (There was a spike in the income share of government benefits in 2009 as a result of the 2008–09 stimulus package, but the longer-term trend has clearly been downwards.) This has been offset by a corresponding rise in the income share of wages and salaries, which rose from approximately 61 per cent in the early 2000s to approximately 65 per cent in 2010 and 2011. Other private income has fluctuated from a low of 12.8 per cent in 2010 to a high of 14.5 per cent in 2005.

Table 4.3 examines how income shares of the three components differ by income quintile and by family type. For each income quintile and family type, it presents the mean income share of each component over the HILDA Survey period (2001 to 2011). The income share of government benefits is strongly related to income level, accounting for 69.9 per cent of income for those in the bottom quintile, 30.9 per cent in the second quintile, 11.7 per cent in the middle quintile, 4.4 per cent in the fourth quintile, and only 1.5 per cent in the top quintile. Wage and salary income rises as a share of income up to the fourth income quintile, accounting for 19.2 per cent of income in the bottom quintile, 54.4 per cent in the second quintile, 75.0 per cent in the middle quintile, 83.5 per cent in the fourth quintile, and 80.9 per cent in the top quintile. This income component is thus the most

Figure 4.2: Mean share of components of household income

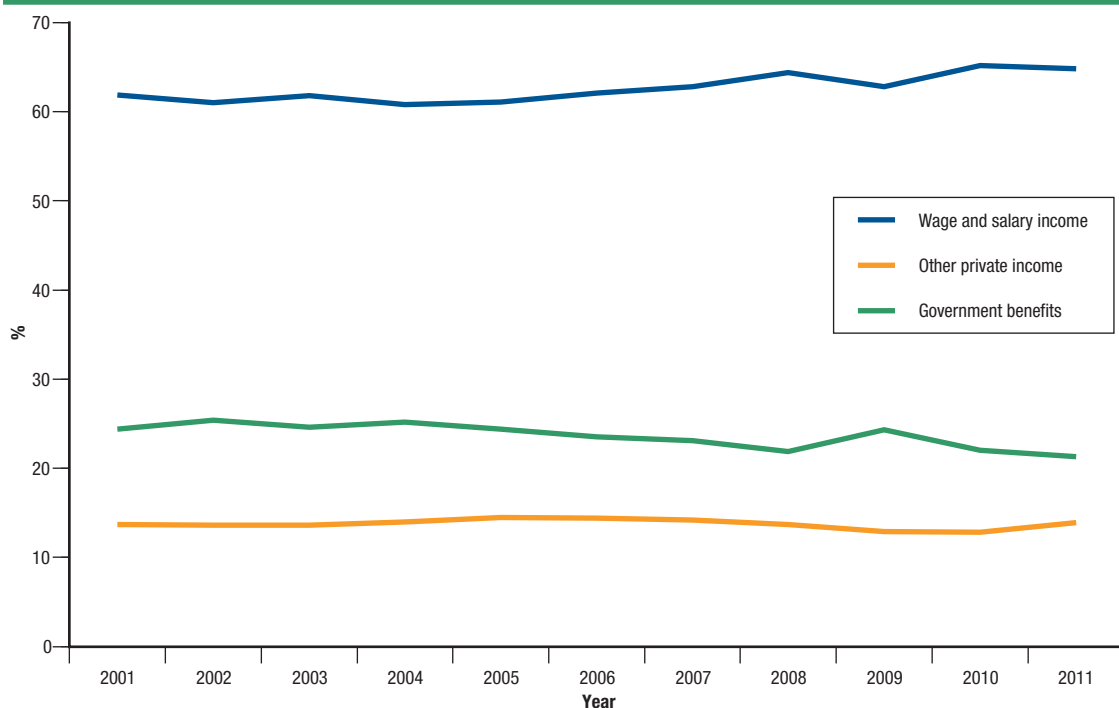


Table 4.3: Mean income shares of household income components, by income quintile and family type, 2001 to 2011 (%)

	<i>Wage and salary income</i>	<i>Other private income</i>	<i>Government benefits</i>	<i>Total</i>
Income quintile				
Bottom	19.2	10.9	69.9	100.0
Second	54.4	14.7	30.9	100.0
Third	75.0	13.3	11.7	100.0
Fourth	83.5	12.1	4.4	100.0
Top	80.9	17.7	1.5	100.0
Family type				
Non-elderly couple	76.6	13.9	9.5	100.0
Couple with children	73.5	10.2	16.3	100.0
Lone parent	39.3	10.0	50.6	100.0
Single non-elderly male	71.9	10.9	17.2	100.0
Single non-elderly female	73.2	9.0	17.9	100.0
Elderly couple	17.7	33.8	48.5	100.0
Single elderly male	16.2	26.9	56.8	100.0
Single elderly female	20.5	19.6	59.9	100.0
Total	62.7	13.7	23.6	100.0
<i>Note: Percentages may not add up to 100 due to rounding.</i>				

important income source for all quintiles other than the bottom. Other private income is relatively important for the top income quintile, contributing 17.7 per cent of income, but differences across income quintiles are not as large as perhaps might be expected, with other private income contributing 10.9 per cent of the income of the bottom quintile, 14.7 per cent for the second quintile, 13.3 per cent for the middle quintile and 12.1 per cent for the fourth quintile.

The lower panel of Table 4.3 shows that there are large differences across family types in the income shares of the wage and salary and other private income components. Wage and salary income accounts for approximately three-quarters of the income of non-elderly couples, couples with dependent children and non-elderly single people, but only 39.3 per cent of the income of lone parents, 20.5 per cent of the income of single elderly women, 17.7 per cent of the income of elderly couples and 16.2 per cent of the income of single elderly men. Other private income represents approximately 10 per cent of income for couples with children, lone-parent families and single persons, but 13.9 per cent of the income of non-elderly couples without children, 19.6 per cent of the income of elderly single women, 26.9 per cent of the income of single elderly men, and 33.8 per cent of the income of elderly couples. Government benefits are most important for elderly people and lone-parent families, contributing 59.9 per cent of income for single elderly women, 56.8 per cent for single elderly men, 48.5 per cent for elderly couples, and 50.6 per cent for lone-parent families. Benefits are least important for non-elderly couples without children, contributing 9.5 per cent of income, followed by couples with children (16.3 per cent), single non-elderly males (17.2 per cent) and single non-elderly females (17.9 per cent).

'Permanent' income

Friedman's (1957) permanent income hypothesis implies that what is important to an individual's living standard is not current income, but rather 'permanent' or (anticipated) lifetime income. Current income is affected by lifecycle stage and by transitory fluctuations and therefore is often not a good measure or reflection of permanent income. Of course, in practice, the stage of life at which income is received also matters, particularly since there is always uncertainty about future income streams. But the permanent income concept is nonetheless relevant and implies that even income measured over a one-year interval may provide a misleading picture because of short-term fluctuations. Income may be temporarily high or—likely more often—temporarily low.

We can go some way to overcoming the limitations of current income using the HILDA Survey data. The longitudinal structure of the data allows us to construct measures of income over longer intervals of time than is typically possible using cross-sectional household surveys. We can potentially obtain a much clearer picture of the resources to which an individual has access by examining income over multiple years.

In Table 4.4, the distribution of five-year equivalised income is presented. Income is calculated for each individual as the sum of annual equivalised income (adjusted for inflation) over the five-year period—that is, equivalised income is obtained for each of the five years and these five values are then added together. This has the effect of allowing for changes to household composition over time—for example, if total household income over the five-year period was divided by the equivalence scale that prevailed in the first year, it could be misleading if the individual's household changed during the period examined.

Table 4.4: Distribution of 'permanent' (five-year) income

	Mean (\$)	Median (\$)	p90/p50	p50/p10	Gini	'Shorrocks' R'
2001–2005	189,506	172,383	1.76	1.97	0.270	0.889
2002–2006	193,108	175,645	1.76	1.95	0.271	0.895
2003–2007	200,834	181,715	1.78	1.93	0.275	0.902
2004–2008	209,547	188,480	1.81	1.95	0.279	0.912
2005–2009	217,181	194,783	1.82	1.94	0.279	0.910
2006–2010	223,706	200,039	1.82	1.98	0.280	0.906
2007–2011	230,331	205,823	1.83	2.00	0.281	0.902

A further possible adjustment is to apply a discount rate to income, since a dollar received today is worth more than a dollar received tomorrow; however, this is not undertaken.

Consistent with the presence of temporary fluctuations and lifecycle trends in incomes, the inequality measures in Table 4.4 indicate there is less inequality in the distribution of our measure of permanent income than in the distribution of one-year income. The last column of Table 4.4 provides a summary measure of the relationship between inequality of permanent income and inequality of one-year income. Specifically, it presents the ratio of the value of the Gini coefficient for five-year income to the average value of the Gini coefficient for one-year income over that five-year period. Known as 'Shorrocks' R' (Shorrocks, 1978), this in fact provides a measure of income mobility. The closer this value is to one, the lower is income mobility; conversely, the closer it is to zero, the greater is income mobility. For example, if no-one's income changed from year to year, the Gini coefficient for one-year income would be equal to the Gini coefficient for five-year income, and Shorrocks' R would be equal to one—and there would indeed be no income mobility, since no-one moves up or down the income distribution from one year to the next. At the other extreme, if everyone had different incomes in any given year (such that, for example, the average Gini coefficient for one-year income was 0.3), but all had the same total income over five years (implying the Gini coefficient for five-year income would be zero), Shorrocks' R would equal zero—a situation of perfect income mobility.

The estimates of Shorrocks' R presented in Table 4.4 indicate that inequality of five-year income is approximately 90 per cent of inequality of one-year income. Thus, some degree of income mobility is evident over five years, but it is relatively limited. It follows that there are many persistently high-income persons and many persistently low-income persons. Study of the characteristics of those with low income over the five-year period would in particular reveal important information about the identities of the entrenched poor.

Income poverty

Although the term 'poverty', as it applies to material living standards, would seem to be widely understood, interpretations of what constitutes

poverty vary greatly. As a consequence, a wide variety of definitions or measures of poverty, or material deprivation, have been employed by economic and social researchers. While recognising this diversity of potential measures, in this chapter we focus on the most commonly employed definition applied to the study of poverty in developed countries, which conceives of poverty as *relative* deprivation or socio-economic disadvantage, and which measures deprivation in terms of inadequacy of *income*. According to this definition, a person is in poverty if the income of that person's household is less than a fixed proportion of the median household income, where all incomes are adjusted for household needs using an equivalence scale.

For many years the Organisation for Economic Co-operation and Development (OECD) and other international bodies defined relative income poverty as having a household income below 50 per cent of median income. More recently, the European Union and some member governments moved to a poverty line set at 60 per cent of median income. Survey evidence tends to suggest that a threshold set at 50 per cent of median income is in fact consistent with community perceptions of what it means to be poor (Citro and Michael, 1995). In this report, we adopt the older 50 per cent line, which has been regularly used by Australian researchers. While based on a degree of public and researcher consensus, it should nonetheless be acknowledged that there is an element of arbitrariness to this—or any other—definition of relative poverty.

One implication of this approach to defining poverty is that, as societies have grown richer, the income required to avoid a situation of poverty has increased. How can we defend such a notion of poverty? The argument is that as average living standards improve so do the community's perceptions of what constitutes a minimum acceptable standard of living. One hundred years ago, access to running

Relative income poverty

A person is in relative income poverty if they are unable to afford the goods and services needed to enjoy a normal or mainstream lifestyle in the country in which they live. In this report, we define a person to be in relative income poverty if household equivalised income is less than 50 per cent of the median household equivalised income.

water and electricity were not considered necessities of life, but a person unable to afford such things in modern society would be regarded by most people as suffering material deprivation or, in other words, living in poverty.¹

Notwithstanding the arguments in favour of relative poverty thresholds or lines, often there is interest in holding the purchasing power of the poverty line constant over time to provide a gauge of society's progress when 'the goalposts are not moving'. Typically, this is achieved by holding constant the real value of the poverty line at the value of the relative poverty line in the base year—in our case, 2001. Such a threshold is known as an absolute poverty line, differentiated from the relative poverty line by its constancy over time, irrespective of changes to average living standards. We produce poverty estimates of this kind also.

Irrespective of whether a relative or absolute poverty standard is adopted, income poverty measures have several limitations and many critics. The main limitations are that access to material resources is sometimes not well captured by contemporaneous income, for example, because the individual has substantial wealth; and the not unrelated problem that income is often not well measured. Income measurement is problematic on two main fronts. First, household surveys do not usually attempt to measure non-cash income, which can be a substantial part of the 'effective' income of a household. Non-cash income can include services provided by housing and consumer durables owned by the household, unrealised capital gains, government-provided or subsidised goods and services, and gifts and other in-kind transfers from other households. Second, cash income can be poorly measured in some circumstances. In particular, some people under-report income, and may therefore be incorrectly found to be below the poverty line.

Despite these inadequacies, and in part reflecting the complexity of and lack of consensus on proposed alternatives, income poverty measures remain useful indicators of material deprivation and are regularly produced in most parts of the world where household income data are available.²

Cross-sectional poverty rates

Figure 4.3 presents relative and absolute poverty rates in each year covered by the HILDA Survey. The relative poverty line is set at half the median household income and the absolute poverty line is the 2001 relative poverty line, adjusted for inflation to maintain its purchasing power over the 2001 to 2010 period. As before, our income measure is household annual disposable income adjusted for household composition using the OECD equivalence scale. Thus, the poverty lines presented at the bottom of Figure 4.3 can be interpreted as the annual income after taxes and government benefits that a single-person household would

Absolute poverty lines

An absolute poverty line is an income poverty threshold which has its real value held constant over time rather than adjusted for changes in average living standards. It is 'absolute' in the sense that the *purchasing power* of the poverty line—the basket of goods and services that it can purchase—remains fixed over time. The level at which an absolute poverty line is set may nonetheless be based on the level of a relative poverty line obtained at a particular point in time, for example the beginning of the time period under study.

require to avoid relative poverty. Poverty rates refer to the proportion of persons (not households) living in poverty.

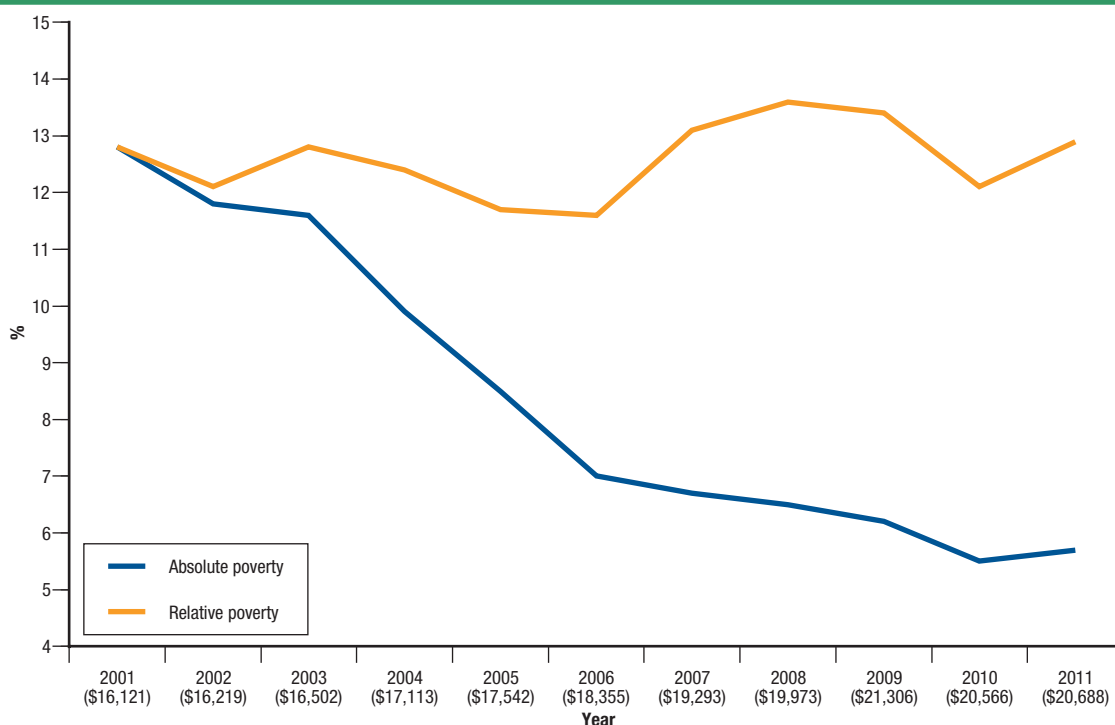
Reflecting the high rate of household income growth that has occurred over much of the 2001 to 2011 period, the relative poverty line has increased substantially, from \$16,121 to \$20,688 expressed at December 2011 prices. The proportion of the population below this poverty line has fluctuated over time, although the net result of this fluctuation is that relative poverty in 2011 has changed little from its level in 2001. Following an initial drop from 12.8 per cent in 2001 to 12.1 per cent in 2002, the poverty rate returned to 12.8 per cent in 2003 before declining gradually over the three years following, to 11.6 per cent in 2006. The poverty rate then increased over the next two years, to 13.6 per cent in 2008, then decreased over the next two years, to 12.1 per cent in 2010, and then increased again in 2011, to 12.9 per cent. A key reason for this fluctuation is that many welfare recipients in Australia have incomes quite close to 50 per cent of median income, so that relatively small movements in government benefits or the median can bring about sizeable changes in the poverty rate.

While the lack of progress in reducing relative income poverty between 2001 and 2011 would be regarded by many people as undesirable, concern may be tempered by the poverty estimates obtained when the real value of the poverty line is maintained at its 2001 level of \$16,121 (at December 2011 prices). For this absolute poverty line, the proportion of the population below the poverty line drops from 12.8 per cent in 2001 to 5.7 per cent in 2011. It is therefore clear that, even among the poor, average living standards have increased over the full 11-year period. Nonetheless, it is also true that, even for this absolute poverty measure, the rate of decrease in the poverty rate slowed considerably after 2006.

Poverty by family type

Table 4.5 shows that poverty rates vary substantially by family type. Rates are consistently high among the elderly, particularly elderly single persons. Note, however, that elderly people are more likely to own their own house than are younger people, and our income poverty measure does not account for

Figure 4.3: Percentage of the population in income poverty



Note: Dollar values at the base of the figure are the relative poverty lines in each of the financial years, expressed at December 2011 prices.

in-kind income provided by owner-occupied housing—that is, the rent that home owners would have to pay for their housing if they did not own it. The income poverty rates for the elderly are therefore likely to overstate the extent of their relative deprivation. Moreover, we can see that the poverty rates for elderly single males and females decreased quite sharply in 2010, from 38.2 per cent to 34.5 per cent for males, and from 42.4 per cent to 35.5 per cent for females. This is likely to be attributable to the increase in the payment rate for single Age Pensioners from September 2009—although it is notable that the poverty rate for elderly couples also decreased between 2009 and 2010 from 30.6 per cent to 26.0 per cent.

Aside from a temporary dip in 2004, poverty rates are also high for lone-parent families, particularly from 2007 (the 2006–07 financial year), which coincides with the period of operation of the ‘Welfare-

to-Work’ reforms. These reforms, which took effect from 1 July 2006, saw some lone parents placed on Newstart Allowance rather than the more generous Parenting Payment Single. The lone-parent poverty rate remained above 23.9 per cent in each year from 2007 to 2011, with the exception of 2009, when the poverty rate dropped to 19.8 per cent, which was a temporary effect of the bonus payments made as part of the 2008–09 fiscal stimulus package. In 2011, 27.4 per cent of people living in lone-parent families were in poverty. By contrast, non-elderly couples (married or de facto), whether with or without dependent children, have consistently low poverty rates.

Child poverty

Child poverty is a particular concern for policy-makers because of the damage poverty may do to children’s future productive capacity and life prospects more generally. Successive governments

Table 4.5: Poverty rates by family type (%)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Non-elderly couple	8.1	7.3	7.7	6.8	6.1	6.7	7.2	6.6	7.4	5.6	6.2
Couple with children	7.3	6.8	7.6	7.7	6.3	5.8	7.7	7.6	6.3	6.1	6.7
Lone parent	19.8	19.1	21.1	14.3	18.9	20.2	23.9	24.9	19.8	24.1	27.4
Non-elderly single male	12.2	12.6	13.5	13.1	12.4	11.0	11.2	13.6	13.1	10.3	13.1
Non-elderly single female	14.6	15.0	14.6	15.5	13.8	12.7	14.1	14.9	15.4	14.1	13.2
Elderly couple	22.5	20.4	19.3	24.0	23.2	23.5	25.3	26.9	30.6	26.0	23.9
Elderly single male	37.9	39.9	40.2	38.4	38.1	34.3	33.0	35.4	38.2	34.5	33.9
Elderly single female	44.5	40.1	42.9	37.9	37.5	39.0	38.1	40.2	42.4	35.5	36.8

in Australia have made concerted efforts to improve child living standards, resulting in significant inroads into child poverty over the 1980s and 1990s (Abello and Harding, 2004), but continued monitoring of child poverty, and more particularly its dynamic features, of course remains important.

The bottom two rows of Table 4.6 show that the child poverty rate is consistently at or below the community-wide poverty rate. It would therefore seem that policy efforts in this area have continued to have some success over the last decade. However, as the second row of Table 4.6 shows, there is still much room for improvement among lone-parent families; since 2007, with the exception of 2009, when the government bonus payments were made, approximately one-quarter of children who live in lone-parent families have been below the poverty line. Moreover, an alarming increase in lone-parent child poverty is evident in 2011, with 29.5 per cent of children in lone-parent families living in poverty.

'Permanent' income poverty

In the same way that the distribution of 'permanent' income can be examined, it is possible to use the longitudinal structure of the HILDA Survey data to examine 'permanent' income poverty. Indeed, permanent income poverty is of considerably greater policy importance than one-year poverty. Of those poor in any one year, it is likely that a certain proportion of these individuals are only temporarily poor, and will quickly escape

poverty. People in permanent income poverty, by contrast, are by definition long-term poor and less likely to escape poverty.

Table 4.7 shows the proportion of people in relative income poverty for a five-year measure of income, where five-year income is measured in the same way as earlier in this chapter, and where the poverty line is equal to 50 per cent of median five-year equivalised income. Consistent with some people in income poverty in a given year only being temporarily poor, the overall income poverty rate is lower for five-year income than for one-year income. The five-year income poverty rate ranges from 8.5 per cent (2003–2007) to 10.0 per cent (2007–2011), compared with 11.6 to 13.6 per cent for one-year poverty. The table indicates that permanent income poverty was lowest in the 2003–2007 five-year period, at 8.5 per cent. Somewhat concerning is that, since 2003–2007, the permanent income poverty rate has been increasing, reaching 10.0 per cent in the 2007–2011 five-year period.

Permanent poverty broken down by predominant family type is examined in the second panel of Table 4.7. (An individual's predominant family type is defined as the most frequently observed family type of the individual in the five-year period.) Longer-term poverty is clearly more prevalent among the elderly than among people in other family types. Permanent income poverty is nonetheless relatively high among lone-parent families, particularly in the most recent five-year period (2007–2011), when 15.1 per cent of people in lone-parent families had

Table 4.6: Rates of child poverty—Children under 18 years (%)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Live with both parents	7.4	6.4	8.1	7.8	6.8	5.8	8.5	8.3	6.7	7.1	7.2
Live with one parent	21.6	20.7	21.6	15.4	19.8	21.9	25.4	26.7	21.6	24.6	29.5
All children	10.5	9.9	11.3	10.0	10.2	9.3	12.0	12.6	10.0	10.5	11.6
All persons	12.8	12.1	12.8	12.4	11.7	11.6	13.1	13.6	13.4	12.1	12.9

Table 4.7: 'Permanent' income poverty (%)

	2001–2005	2002–2006	2003–2007	2004–2008	2005–2009	2006–2010	2007–2011
All persons	9.2	8.7	8.5	9.1	9.0	9.7	10.0
Family type							
Non-elderly couple	4.7	4.7	4.5	4.9	5.4	4.9	5.2
Couple with children	3.6	3.9	3.6	4.0	3.6	4.6	5.0
Lone parent	13.7	11.4	11.3	14.4	12.1	11.3	15.1
Single non-elderly male	8.6	6.8	6.4	6.8	6.1	7.7	8.1
Single non-elderly female	9.6	9.4	9.9	9.5	8.5	9.8	10.0
Elderly couple	20.2	18.8	19.7	21.7	22.9	23.6	24.0
Single elderly male	38.5	32.4	28.6	29.1	32.7	32.0	29.2
Single elderly female	40.2	39.0	38.2	35.0	38.2	37.0	34.2
Children							
One parent every wave	16.8	13.1	12.8	14.6	12.7	12.9	18.7
One parent majority of waves	11.6	4.9	9.6	12.0	10.7	8.8	11.3
Two parents majority of waves	5.8	6.3	4.4	6.6	5.4	9.3	8.3
Two parents every wave	3.6	4.4	3.6	3.6	2.9	4.6	5.8
All children	6.0	5.7	5.2	5.8	4.8	6.2	7.8

Note: Children are aged 0–13 in the initial year of each five-year period (and are therefore aged 4–17 in the final year of each five-year period).

five-year income below the poverty line. As with one-year poverty, non-elderly couples, with or without children, have relatively lower rates of five-year income poverty.

The bottom panel of Table 4.7 focuses on child poverty for each five-year period, examining children aged under 18 for the entire period (and therefore aged under 14 in the first year, and 4 to 17 in the final year). Prevalence of permanent income poverty is considerably lower among children than among the general population. There has, however, been a sharp rise in child permanent income poverty between 2005–2009 and 2007–2011, rising from 4.8 per cent to 7.8 per cent. It is also clear that long-term child poverty is strongly connected to the presence of only one parent in the household. Children living with only one parent in all five years have the highest permanent income poverty rates, while children living with both parents in all five years have the lowest permanent income poverty rates.

Endnotes

- 1 Note that there is an important distinction between not being able to afford goods and services and choosing not to have them. It is the former criterion that determines poverty status.

- 2 Note, however, that no Australian government has ever adopted an official poverty line.

References

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5. Welfare reliance

Roger Wilkins

Dependence on welfare remains a significant concern for policy-makers in Australia, as it has done for some decades now. Welfare dependence is associated with significant demands on government budgets and reduced economy-wide market output, and individuals' reliance on welfare is often associated with long-term poverty, social exclusion and other adverse outcomes for them and their children. It is therefore not surprising that recent years have seen a series of welfare reforms aimed at increasing employment participation and reducing the extent of welfare reliance in Australia.

Welfare payments in Australia are known as income support payments, which are benefits paid to Australian residents that are intended to represent the primary source of income of recipients. Studies of welfare reliance in Australia correspondingly focus on receipt of income support payments, although supplementary government benefits, known as non-income support payments, are typically included by studies when determining the extent of welfare reliance of those who have received income support payments. Income support payments include the Age Pension, Disability Support Pension, Carer Payment, Parenting Payment (Single and Partnered), Newstart Allowance, Youth Allowance and Department of Veterans' Affairs Service Pension, as well as several other smaller

payment types. Non-income support payments include Family Tax Benefit (Parts A and B), the Baby Bonus and Carer Allowance.

Gottschalk and Moffitt (1994), investigating welfare reliance in the United States, identify three main classes of measure of welfare reliance: (i) benefit spell duration (length of time continuously on benefits); (ii) the proportion of time spent on benefits in a given interval of time; and (iii) the proportion of income received from benefits in a given interval of time. In Australia, a number of studies have investigated the first two 'time-based' dimensions using welfare payments administration data on welfare recipients (e.g. Barrett, 2002; Gregory and Klug, 2002; Tseng and Wilkins, 2003; Tseng et al., 2009). Administrative datasets provide complete information on individuals' welfare payments, but do not contain any information on individuals when they are not on payments. Thus, while time spent on payments can be described using administrative data, income-based measures of reliance cannot be produced because non-welfare income of individuals when they are not on payments is not known.

The HILDA Survey has the key advantage of providing complete income information, at the household level, which allows us to examine 'income-based' measures of welfare reliance of the household over

extended periods. While Australian Bureau of Statistics income surveys allow cross-sectional snapshots of the proportion of income from welfare (e.g. Tseng and Wilkins, 2003), the HILDA Survey is the only data source that makes possible longitudinal study of income-based welfare reliance. Thus, in addition to presenting cross-sectional information on rates of receipt and the proportion of household income derived from welfare payments, we examine persistence of welfare reliance and duration of spells on benefits.

Welfare reliance

While a person may be regarded as to some extent reliant on welfare if *any* welfare payments are received by that person's household, welfare reliance is usually understood as a situation in which welfare represents the primary or main source of income. In this report, two alternative specific definitions of welfare reliance are adopted:

- The household receives income support payments and more than 50 per cent of household income comes from income support and non-income support payments.
- The household receives income support payments and more than 90 per cent of household income comes from income support and non-income support payments.

We adopt two alternative definitions of welfare reliance. Under the first definition, a person is welfare reliant if more than half of household income comes from government benefits in the form of income support and non-income support payments. Under the second definition, a person is only welfare reliant if more than 90 per cent of household income comes from government benefits. There is some degree of arbitrariness in determining the threshold at which an individual's household is deemed welfare reliant. The 50 per cent threshold accords with the intuition that a person is welfare reliant if the majority of household income comes from welfare. The 90 per cent threshold applies if welfare reliance is viewed as a situation in which almost all income comes from welfare.¹ While reliance is defined in terms of household income and welfare receipt, our analysis is of individuals; that is, our analysis is of the

number of *individuals* who are welfare reliant, not the number of households that are welfare reliant.

Extent of welfare reliance

Table 5.1 presents cross-sectional estimates of welfare receipt and reliance for selected years for 'workforce age' persons, defined as people aged 18 to 64. In 2011, 31.8 per cent of individuals aged 18 to 64 were living in a household in receipt of income support at the time of interview, and 34.7 per cent lived in households that had received income support payments at some stage in the preceding financial year. Significantly, there was a substantial decline in the rate of receipt of income support payments between 2001 and 2008. For example, the proportion of working-age people in households that received income support payments declined from 41.3 per cent in 2000–01 to 33.0 per cent in 2007–08. The onset of the Global Financial Crisis in late 2008 saw this proportion subsequently rise to 34.1 per cent in 2009–10 and 34.7 per cent in 2010–11.

As we would expect, the proportion of the population classified as welfare reliant depends on whether the 50 per cent or 90 per cent threshold is employed, with reliance lower adopting the 90 per cent threshold. Between 2001 and 2007, the proportion of people with more than 50 per cent of income from benefits hovered between 12 and 13 per cent, while the proportion with more than 90 per cent of income coming from benefits declined from 7.1 per cent to 6.0 per cent. Thus, while there was no decline in reliance on welfare adopting the 50 per cent threshold, there was some decline in very heavy reliance over this period. Since 2007, both measures indicate a trend decline in reliance, down to 10.1 per cent of working-age people in 2011 for the 50 per cent threshold, and down to 4.8 per cent in 2011 for the 90 per cent threshold. Welfare reforms of recent years, such as the reforms introduced in July 2006, may therefore be having the desired effects.

Table 5.2 presents, for each of four age groups, the distribution of the number of years individuals were in households that received welfare (at some stage of the financial year), the number of years they were in a household that obtained more than 50 per cent of its annual income from welfare benefits, and the number of years they were in a household

Table 5.1: Welfare reliance among people aged 18–64 years, 2001 to 2011 (%)

	2001	2003	2005	2007	2008	2009	2010	2011
Current weekly welfare receipt								
Personally receives welfare	23.0	21.5	20.9	18.5	17.3	18.9	18.3	18.5
Household receives welfare	37.6	35.2	34.2	31.5	30.2	32.1	31.4	31.8
Financial year welfare receipt								
Personally received welfare	25.7	25.2	24.2	21.5	19.8	19.4	20.2	20.4
Household received welfare	41.3	39.7	38.5	34.9	33.0	33.0	34.1	34.7
Proportion reliant (50% threshold)	12.1	13.3	12.4	13.0	11.7	11.5	11.0	10.1
Proportion reliant (90% threshold)	7.1	6.9	6.5	6.0	5.2	5.3	5.4	4.8

that obtained more than 90 per cent of its annual income from welfare benefits. This provides a more complete picture of the extent of individuals' welfare reliance by considering the totality of the period spanned by the HILDA Survey.

Strikingly, for all age groups, only a minority of individuals had absolutely no dependence on welfare over the 11 years from 2001 to 2011. Those aged 25 to 34 in 2001 were the least likely to at some stage live in a household that received income support payments, but even for this age group, this applied to only 37.2 per cent of individuals. The most likely to at some stage receive welfare were those aged 18 to 24 in 2001, with only 19.8 per cent never living in a household that received welfare benefits between 2001 and 2011. Relatively few people, however, received welfare in all 11 years, and very few people were heavily reliant (obtaining more than 90 per cent of household income from welfare) in all 11 years. Indeed, fewer than 15 per cent of people under the age of 45 in 2001, and only approximately 20 per cent of people aged 45 to 54 in 2001, were heavily welfare reliant at any stage of the 2001 to 2011 period.

Nonetheless, on the basis of Table 5.2, welfare reliance cannot be characterised as usually highly persistent or usually transitory—it can be either, or anything in-between. For all age groups, there is a significant proportion of people in each category

for number of years welfare reliant, for all three measures presented in the table. Also significant is that the youngest age group has a relatively high probability of being welfare reliant for one year or for two to five years in the 11-year period, but it is the oldest age group—those aged 45 to 54 in 2001—that has the highest probability of longer-term (six or more years) welfare reliance.

Persistence of welfare reliance

In Table 5.3, we directly consider the extent of persistence in welfare reliance among workforce-age persons, as well as how persistence has been changing over time. Each row presents the proportion of persons who were welfare reliant in the base year (2001, 2003, 2005, 2007, 2008, 2009 or 2010) who were still reliant in each subsequent year. For this table, a person is defined to be welfare reliant if more than 50 per cent of household annual income came from welfare payments. Note that a person must be welfare reliant in all years between the base year and the end year being examined to be classified as 'still welfare reliant'. For example, an individual classified as still welfare reliant three years later will have been welfare reliant in each of the three years subsequent to the base year.

Taking this approach, we see a reasonably high degree of persistence in welfare reliance. Of those

Table 5.2: Number of years welfare reliant 2001 to 2011, by age group in 2001 (%)

	0 years	1 year	2–5 years	6–10 years	11 years
Household received welfare at some stage of financial year					
18–24	19.8	17.6	36.8	19.5	6.3
25–34	37.2	16.5	25.2	14.4	6.6
35–44	34.4	13.9	26.5	15.2	9.9
45–54	32.6	12.4	24.8	16.4	13.9
More than 50% of household annual income from welfare					
18–24	73.8	8.2	11.8	4.7	1.5
25–34	81.1	4.8	7.1	6.0	1.1
35–44	77.8	5.1	9.4	5.7	2.1
45–54	72.6	5.6	8.6	8.5	4.8
More than 90% of household annual income from welfare					
18–24	85.4	6.5	5.5	2.4	0.3
25–34	87.9	3.9	5.1	2.6	0.4
35–44	85.2	5.0	5.2	3.9	0.6
45–54	80.4	5.3	6.4	5.9	2.1

Table 5.3: Persistence of welfare reliance among those initially welfare reliant (%)

	Proportion still welfare reliant					
	1 year later	3 years later	5 years later	7 years later	9 years later	10 years later
2001	75.8	56.0	40.8	32.4	25.7	24.5
2003	76.4	48.0	33.4	27.0	–	–
2005	70.0	46.5	34.1	–	–	–
2007	68.2	45.0	–	–	–	–
2008	69.7	51.0	–	–	–	–
2009	68.8	–	–	–	–	–
2010	77.1	–	–	–	–	–

Notes: The sample used to produce each row comprises welfare-reliant persons aged 18–54 in the base year. A person is defined to be welfare reliant if more than 50 per cent of household annual income came from welfare.

welfare-reliant in 2001, 75.8 per cent were still reliant one year later, 56.0 per cent were still reliant three years later, 40.8 per cent were still reliant five years later, 32.4 per cent were still reliant seven years later, 25.7 per cent were still reliant nine years later, and 24.5 per cent—nearly one-quarter—were still reliant ten years later. There are indications that persistence was declining prior to the latter part of the survey period. One-year persistence decreased from approximately 76 per cent in 2001 to approximately 68 per cent in 2007, and three-year persistence decreased from 56 per cent in 2001 to 45 per cent in 2007. However, it appears that persistence increased sharply in 2011: for those on welfare in 2010, one-year persistence (to 2011) was 77.1 per cent, up from 68.8 per cent in the previous year; and for those on welfare in 2008, three-year persistence (again, to 2011) was 51.0 per cent, up from 45.0 per cent in the previous year.

Welfare reliance by family type

Figure 5.1 shows that welfare reliance among working-age people is very much associated with living in lone-parent families. For each year from 2001 to 2011, it presents the proportion of individuals in each family type with more than 50 per cent of household income coming from welfare benefits. Lone parents have considerably higher rates of welfare dependence than people in other family types, although there has been an appreciable decline in lone-parent welfare reliance over the survey period, falling from a peak of 43.8 per cent in 2002 to a low of 32.6 per cent in 2011. Individuals in couple families, with or without dependent children, have the

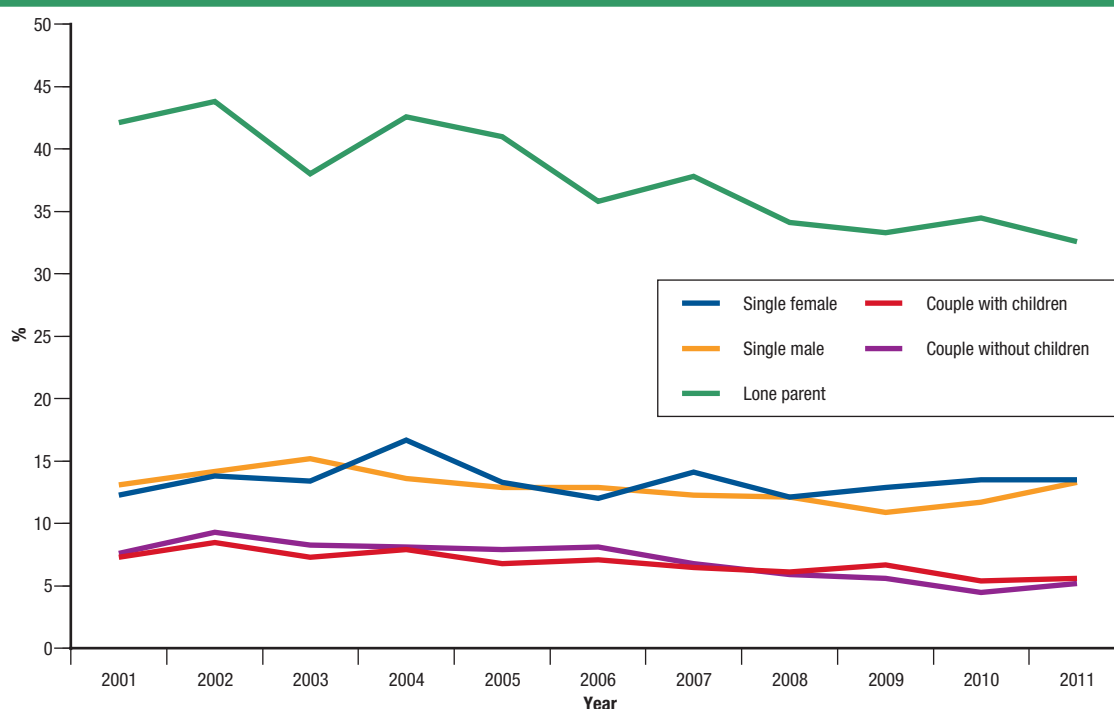
lowest rates of welfare dependence, and there has also been a decline in welfare dependence among these family types from around 9 per cent in 2002 to around 5 per cent in 2011. Single men and women have welfare dependence rates that have fluctuated between 12 and 14 per cent over the 2001 to 2011 period, with no trend decline evident over the period.

Payment types of welfare recipients

The Australian welfare system addresses a variety of individual and family circumstances that give rise to the need for income support. This is reflected in a variety of different payment types, the names of which generally provide an indication of the circumstances the payment type is intended to address. Examination of receipt of each payment type therefore provides information on the composition of welfare recipients as well as the nature of, and reasons for, welfare dependence. Three payment types are particularly important for workforce-age people: Parenting Payment (Single and Partnered), for individuals with parenting responsibilities; the Disability Support Pension (DSP), for people with disability; and Newstart Allowance, for the unemployed (plus Youth Allowance (other) for young unemployed people).

Figure 5.2 plots the percentage of working-age people who report (personally) receiving each of these three payment types in each wave (at the time of interview). It also presents the percentage receiving all other payment types combined. These 'other' payment types include Youth Allowance

Figure 5.1: Welfare reliance, by family type—Persons aged 18–64 years



Note: A person is defined to be welfare reliant if more than 50 per cent of household annual income comes from welfare.

(full-time student), Austudy, Carer Payment, Service Pension, Widow Allowance, Wife Pension, Partner Allowance and Special Benefit, several of which have been closed off to new entrants, or indeed closed off altogether, during the HILDA Survey period. It also includes the Age Pension for women, for whom the minimum age of eligibility has been progressively increasing towards 65 over the survey period.

Rates of receipt of parenting payments, unemployment benefits and ‘other’ payments have fallen over the 2001 to 2011 period, although unemployment benefit receipt increased after 2007, especially between 2008 and 2009, following the onset of the Global Financial Crisis. In contrast to the other payment types, receipt of DSP grew slightly between 2001 and 2011, from approximately 4.5 per cent to 5.5 per cent of people aged 18 to 64. In 2009, receipt of all four categories of payment types increased but, as one might expect, the increase was sharpest for unemployment benefits. Despite this, the clear overall trend over the 2001 to 2011 period is a shift toward disability-related receipt away from all other payment types, in the broader context of overall declining welfare dependence. The decline in receipt of ‘other’ payments, from approximately 7.5 per cent of working-age people in 2001 to 4.8 per cent in 2011, was especially large. In large part this reflects the closure of a number of payments, as well as the progressive increase in the female minimum age of eligibility for the Age Pension. The declines for unemployment benefits and parenting payments are both likely to in part reflect the improving labour market conditions over the period to 2008. However, it is also likely

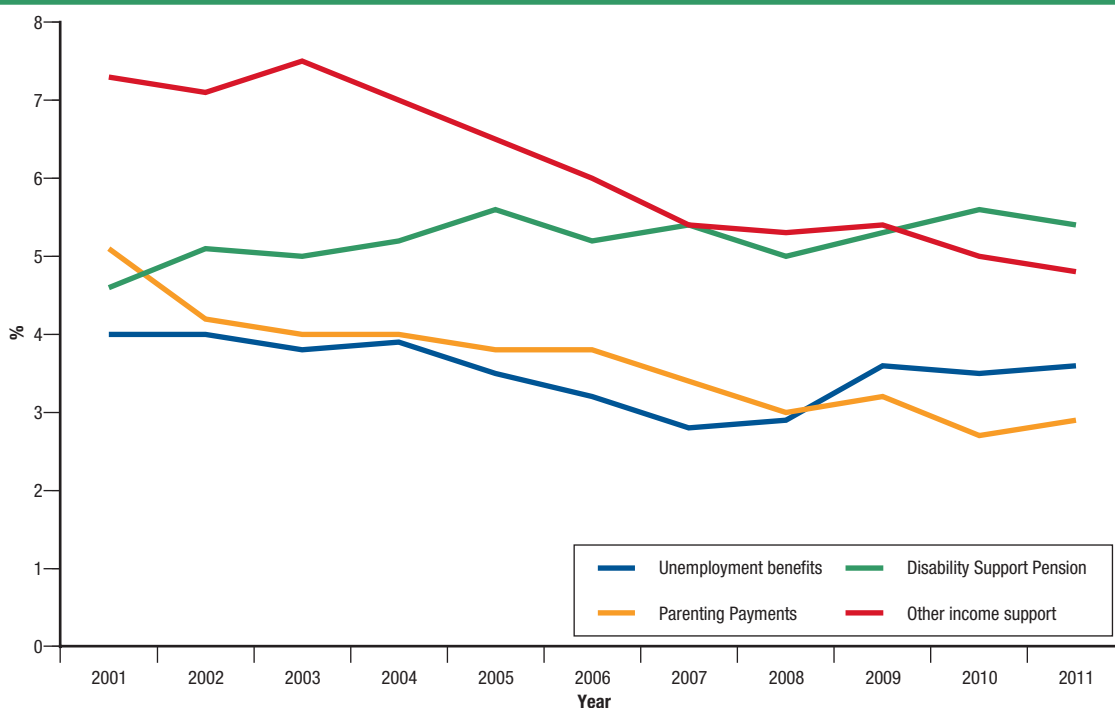
that various welfare reforms have resulted in some additional movements from these payment types to DSP. That is, in the face of more stringent activity test requirements (and in some cases lower benefits), recipients of these payments who have a disability may be more likely to move on to DSP.

Duration of benefit spells

As the length of the HILDA Survey panel grows, it becomes increasingly well suited to examination of durations of benefit spells, whereby we examine the length of time from when an individual commences receiving welfare benefits to when that individual stops receiving welfare benefits. Table 5.4 presents descriptive information on the length of benefit spells, showing the percentage of spells in each of five duration categories. It examines spells on any income support payment (whereby a movement between payment types is treated as a continuation of the same spell) as well as spells on the three main payment types (whereby a movement between payment types precipitates a spell end). The table examines spells commencing in the period from 2002 to 2004, and spells commencing in the period from 2005 to 2007, to investigate—admittedly in a limited way—whether any change in the distribution of spell durations is evident.

A limitation of the HILDA Survey data for the purposes of examining spell durations is that the financial-year information on benefit receipt does not allow precise identification of start and end dates of welfare receipt. In Table 5.4, we instead rely on reports of receipt at the time of interview, and make the simplifying assumption that a single wave on

Figure 5.2: Receipt of each income support payment type—Persons aged 18–64 years



benefits equates to a spell duration of less than one year, two successive waves on benefits equate to a spell duration of at least one year but less than two years, three successive waves on benefits equates to a spell duration of at least two years but less than three years, and so on. This is of course only an approximation of spell duration, particularly since an individual receiving a benefit in two successive waves could have left benefit receipt at some stage between waves.²

Considering first duration of spells on all income support payments, the upper panel of Table 5.4 indicates that 46.9 per cent of spells commenced in 2002 to 2004 had durations less than one year, 13.6 per cent had durations of at least one year but less than two years, 11.9 per cent had spell durations of at least two years but less than three years, 6.3 per cent had spell durations of at least three years but less than four years, and 21.3 per cent had spell durations of at least four years. The lower panel of the table indicates that spells commenced in 2005 to 2007 were somewhat less likely to be less than one year in duration, and somewhat more likely to be of four or more years duration.

As expected, spell durations tend to be shorter for unemployment benefits than for Parenting Payment, which in turn tends to have considerably shorter spell durations than the Disability Support Pension.³ Comparing spells commenced in 2002 to 2004 with spells commenced in 2005 to 2007, slight increases in the proportions of unemployment benefit and Parenting Payment spells lasting four or more years are evident, possibly connected to the rise in unemployment that followed the onset of the 2008 Global Financial Crisis.

Reliance on the Age Pension

The analysis to date in this chapter has focused on people aged 18 to 64, but there is considerable policy interest in welfare dependence among the elderly—more specifically, there is interest in the

extent of dependence on the Age Pension. The introduction of the Superannuation Guarantee in 1992, and subsequent increases in the contribution rate, were very much motivated by concerns about the future fiscal burden of the Age Pension, particularly in the context of an ageing population. As the superannuation system matures, clearly the expectation (or hope) is that it is acting to reduce reliance on the Age Pension. The HILDA Survey data can be used to examine whether there has been any trend reduction in dependence on the Age Pension, and also to investigate the dynamics of reliance. For example, we can investigate the extent to which individuals increase their reliance on the Age Pension as the length of their time in retirement increases and they run down their private resources.

Table 5.5 presents estimates for 2001, 2003, 2005, 2007, 2009 and 2011 of the extent of reliance on the Age Pension among people aged 65 and over, in total, and broken down by age group. For this analysis, rather than examine household income and pension receipt, we use data on personal income and pension receipt and (if applicable) partner income and pension receipt (not household level measures). Panel 1 provides estimates of an overall summary measure, presenting the mean proportion of total income from government benefits (with this proportion set equal to zero if neither the individual nor her partner is on the Age Pension). Panel 2 presents the proportion of people who received (or whose partner received) the Age Pension, Panel 3 presents the proportion obtaining more than 50 per cent of income from government benefits, and Panel 4 presents the proportion obtaining more than 90 per cent of income from benefits.

Among all people aged 65 and over, there is clear evidence of declining reliance on the Age Pension, with the proportion of income from benefits declining from 67.8 per cent in 2001 to 59.9 per cent in 2011. Nonetheless, it is clear that, even in 2011, the Age Pension is the dominant source of income

Table 5.4: Duration of spells on income support—Persons aged 18–59 years (%)

<i>Duration (D) in years</i>	<i>Any income support payment</i>	<i>Unemployment benefits</i>	<i>Parenting Payment</i>	<i>Disability Support Pension</i>
Spells commencing 2002–2004				
D < 1	46.9	68.0	54.7	25.4
1 ≤ D < 2	13.6	16.1	10.7	5.8
2 ≤ D < 3	11.9	8.8	10.5	8.6
3 ≤ D < 4	6.3	2.0	8.0	6.0
D ≥ 4	21.3	5.1	16.2	54.3
Total	100.0	100.0	100.0	100.0
Spells commencing 2005–2007				
D < 1	42.0	66.0	53.2	19.8
1 ≤ D < 2	17.8	17.5	16.7	12.9
2 ≤ D < 3	10.5	6.2	8.8	7.9
3 ≤ D < 4	6.1	2.0	3.4	3.7
D ≥ 4	23.7	8.3	18.0	55.7
Total	100.0	100.0	100.0	100.0

Note: Percentages may not add up to 100 due to rounding.

Table 5.5: Reliance on the Age Pension by age group (%)

	65–69	70–74	75–79	80–84	85 and over	All aged 65 and over
Mean proportion of income from benefits (0 if not on Age Pension)						
2001	58.1	69.1	72.5	77.6	77.0	67.8
2003	58.9	68.6	73.6	76.8	83.7	68.7
2005	54.5	68.7	72.2	73.7	81.2	66.7
2007	54.3	62.0	71.0	73.5	77.5	64.4
2009	47.7	64.4	68.2	72.5	78.6	62.3
2011	47.0	58.6	69.3	73.0	71.4	59.9
Proportion receiving the Age Pension						
2001	74.4	81.0	82.7	90.7	89.3	80.9
2003	73.1	81.0	86.7	88.8	86.5	81.2
2005	74.7	84.0	86.3	85.6	91.1	82.4
2007	73.1	80.1	85.2	88.2	92.4	81.1
2009	67.7	76.2	81.9	82.5	87.0	76.5
2011	67.4	77.0	85.3	89.2	86.1	77.9
Proportion receiving the Age Pension and obtaining more than 50% of income from benefits						
2001	59.8	71.3	73.5	77.0	78.7	69.3
2003	59.8	70.6	76.4	76.8	84.7	70.2
2005	55.7	68.7	75.6	73.6	79.3	67.6
2007	55.3	63.7	75.2	75.9	76.2	66.2
2009	45.6	64.2	69.4	70.7	75.8	61.3
2011	46.6	59.6	73.7	77.6	73.0	61.6
Proportion receiving the Age Pension and obtaining more than 90% of income from benefits						
2001	35.6	46.4	57.7	60.4	60.8	48.0
2003	36.6	44.8	54.3	59.6	71.2	47.9
2005	35.1	41.9	51.0	52.8	62.3	44.8
2007	33.7	39.0	45.4	54.6	61.9	42.8
2009	26.8	40.3	40.1	47.2	63.5	39.1
2011	27.1	35.8	43.6	51.4	51.8	38.0

among the elderly, with 61.6 per cent of people aged 65 and over obtaining more than half their income from government benefits. Moreover, the decline in the proportion of the elderly receiving the Age Pension has been relatively small, falling from 80.9 per cent in 2001 to 77.9 per cent in 2011. The decline in overall reliance has therefore been driven more by reduced reliance among pension recipients than by a reduction in the proportion of people receiving the Age Pension.

As expected, reliance on the Age Pension tends to be higher among older age groups, which reflects the lower accumulated superannuation balances of older retirees (for whom the Superannuation Guarantee was only in place for a small part of their working lives), the higher proportion who are retired (i.e. more people in the younger age groups will not yet have retired) and possibly also reflects the fact that many of the older age groups will have run down their private resources.

Table 5.6 directly investigates the role of the latter two sources of higher reliance on the Age Pension among older age groups. It shows the mean change over five years in the percentage of income from government benefits, disaggregated by age group and time period. The estimate in the lower right cell shows that over the survey period as a whole, and over all people aged 65 and over, the average increase in the proportion of income from government benefits

over five years was 3.7 percentage points. The increase tends to be greater for the younger age groups, averaging 6.2 percentage points for those aged 65 to 69 (in the first year of the five-year period), 2.5 percentage points for those aged 70 to 74, 3.0 percentage points for those aged 75 to 79, 1.0 percentage point for those aged 80 to 84, and –0.6 percentage points for those aged 85 and over. The low increase for the 80 to 84 age group and the decrease for the 85 and over age group on the surface seems counterintuitive, but most likely derives from spousal death, which will often reduce benefit entitlements (since the Age Pension benefit for a single person is less than the benefit for a couple) but not affect private income (since the surviving spouse will typically retain all of the couple's private income, such as from investments).

Comparing across the five-year time-frames examined in Table 5.6 (2001 to 2006 through to 2006 to 2011), a reasonably high degree of variability in the mean five-year change in the proportion of income from government benefits is evident. Most notably, the mean change for those aged 85 and over in the initial year ranges from –6.6 percentage points (between 2005 and 2010) to 4.3 percentage points (between 2001 and 2006). A possible contributor to these fluctuations is volatility in investment returns from year to year, although not all variations over time evident in the table are consistent with share market fluctuations over the period. For example, share market

Table 5.6: Mean five-year change in the percentage of income from government benefits, by age group in initial year

	65–69	70–74	75–79	80–84	85 and over	All aged 65 and over
2001 to 2006	8.5	2.3	4.4	0.8	4.3	4.9
2002 to 2007	5.1	1.3	2.6	–0.3	2.0	2.8
2003 to 2008	6.0	1.3	0.3	2.7	–3.3	2.7
2004 to 2009	4.4	–0.5	4.4	3.5	3.4	2.8
2005 to 2010	7.3	4.8	3.4	3.4	–6.6	5.0
2006 to 2011	5.9	6.2	3.0	–3.1	–4.8	3.9
All years	6.2	2.5	3.0	1.0	–0.6	3.7

performance, as measured by the ASX 200, was weak in 2000–01 (falling approximately 10 per cent) and strong in 2005–06 (rising nearly 20 per cent), yet the five-year period from 2000–01 to 2005–06 was one of relatively high growth in the mean proportion of income from government benefits. This suggests other factors, such as changes to benefit levels and eligibility criteria, have also been important.

Concluding comments

The HILDA Survey data show an encouraging trend of declining welfare reliance among both working-age and elderly people over the 2001 to 2011 period, although recent years have seen some reversal of this trend for working-age people. Moreover, reliance on the Age Pension among people aged 65 and over remains very high, and seems likely to remain very high over coming years. The composition of welfare receipt among working-age people has also changed considerably over the period, with the Disability Support Pension accounting for a growing proportion of welfare payments, despite several rounds of reforms since 2006 aimed at stemming its growth. This is a potentially concerning trend for policy-makers, since the Disability Support Pension tends to be a long-term payment. In particular, growth in receipt of this benefit is likely to translate to growth in long-term welfare dependence—indeed, there is evidence in the HILDA Survey data of relative growth in long-duration benefit spells—associated with which is likely to be growth in entrenched socio-economic disadvantage.

Endnotes

- 1 The 90 per cent threshold was adopted by the Reference Group on Welfare Reform (2000) in its report on the Australian welfare system.
- 2 Estimates of the distribution of spell durations are broadly similar if financial-year benefit receipt is examined instead of current receipt.

- 3 The proportion of Disability Support Pension spells lasting less than one year in fact seems too high—for example, Cai et al. (2008), using payments administration data for the period 1995 to 2002, show that only 10 per cent of spells on the Disability Support Pension were less than one year in duration, and slightly less than 20 per cent of spells were less than two years in duration. A certain proportion (perhaps half) of the short spells on the Disability Support Pension identified in the HILDA Survey data are therefore likely to be due to measurement error, for example, due to misreporting of benefit type.

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6. Attitudes to financial risk

Roger Wilkins

Our attitudes to risk influence many of our decisions around financial investments, job choices, holiday plans, lifestyle choices, and even our personal relationships. The HILDA Survey has, in a number of waves, contained one measure of risk preference in relation to financial investments. While in principle this measure is concerned only with financial risk, it is likely that attitudes to financial risk closely correspond to attitudes to risk more broadly (Dohmen et al., 2011). We can therefore use this measure to investigate the distribution of risk preferences in the community, how they change over time at the individual level, and their associations with characteristics, outcomes and behaviours (including risky behaviours such as smoking, binge drinking, and even business ownership).

The specific measure of attitude to financial risk comes from a question administered in the self-completion questionnaire in all waves other than Waves 5, 7 and 9:

Which of the following statements comes closest to describing the amount of financial risk that you are willing to take with your spare cash? That is, cash used for savings or investment.

- a. *I take substantial financial risks expecting to earn substantial returns*
- b. *I take above-average financial risks expecting to earn above-average returns*
- c. *I take average financial risks expecting to earn average returns*
- d. *I am not willing to take any financial risks*
- e. *I never have any spare cash*

Since Wave 6, this question has been supplemented by a follow-up question to elicit risk preferences of respondents who indicated they ‘never have any spare cash’ (option e):

Assume you had some spare cash that could be used for savings or investment. Which of the following statements comes closest to describing the amount of financial risk that you would be willing to take with this money?

- a. *I take substantial financial risks expecting to earn substantial returns*
- b. *I take above-average financial risks expecting to earn above-average returns*
- c. *I take average financial risks expecting to earn average returns*
- d. *I am not willing to take any financial risks*

As a measure of risk preference, these questions have several potential limitations.¹ First, comprehension of the question is likely to be variable across

respondents. Second, the questions concern only risk preferences in relation to cash investments, which could conceivably diverge from risk preferences more broadly. Third, the first question asks about *behaviour* rather than *preferences*. Thus, for example, a person who already holds a number of risky assets may indicate that spare cash will be used for low-risk investments, but in fact have a considerable appetite for risk. However, while these potential limitations need to be borne in mind, they seem unlikely to be important in practice—that is, in most cases, responses to the questions can reasonably be interpreted as providing a measure of risk preference.

Distribution of risk preferences

Table 6.1 presents the population-weighted distribution of responses to the two risk preference questions in each wave that the questions have been administered. It shows that few people report being prepared to take above-average risks, and even fewer people report being willing to take substantial risks. Indeed, the most common stated preference, applying to approximately half the population (once responses to the question administered to people with no spare cash is taken into account), is to take no financial risks at all. In Waves 1 to 4, between 16.8 and 21.0 per cent of the population aged 15 and over indicated they never have any spare cash, meaning that risk preferences are unknown for these individuals. Responses to the question administered to those with no spare cash from Wave 6 onwards suggest these individuals tend to be more risk averse than those with spare cash. For example, in Wave 11, 49.8 per cent of those with spare cash were not prepared to take any risks, compared with 61.5 per cent of those who never have any spare cash.

Associations between risk preferences and characteristics

Table 6.2 compares risk preferences across demographic groups in 2011 defined by sex, age group, educational attainment and housing tenure type. For this table, risk preferences are given by responses to the second risk preference question if the respondent reported never having any spare cash at the first risk preference question. The table shows that females tend to be considerably more risk averse than males, with 59.1 per cent unprepared to take any financial risk, compared with 44.8 per cent of males. People aged 25 to 54 tend to be less risk averse than both older and younger people. The most risk averse age group is the 65 and over age group, but those aged 15 to 24 also tend to be very risk averse, with 57.7 per cent of this age group not prepared to take on any financial risk—although the 15 to 24 age group does have a relatively high proportion (2.6 per cent) prepared to take substantial risks.

A quite strong relationship between risk preferences and level of educational attainment is evident. The proportion not prepared to take any risks is ordered from lowest for the highest education group (bachelor's degree or higher) to highest for the lowest education group (less than high school completion), while the reverse ordering is evident for the proportion prepared to take average risks. The proportion prepared to take above-average risks is also highest for those with a bachelor's degree or higher, and lowest for those with less than high school completion. Differences in risk preferences by housing tenure type are primarily between renters of public housing and people in other housing situations, with public renters on the whole very risk averse.

Table 6.3 explores whether there are differences in attitudes to financial risk by level of economic wellbeing, as measured by location in the income distribution, location in the wealth distribution, ability to raise \$3,000 at short notice, self-perceived family financial prosperity, and recent (current calendar year) experience of financial stress. For the purposes of this analysis, location in the income and wealth distributions is defined by the individual's quintile in the distribution, where income is measured in 2011, but wealth is measured in 2010 (when household wealth was last measured in the HILDA Survey). The responses to the question below provide the number of indicators of financial stress.

Since January 2011 did any of the following happen to you because of a shortage of money?

Table 6.1: Attitudes to financial risk, 2001 to 2011 (%)						
	<i>Risks prepared to take with spare cash</i>					<i>Total</i>
	<i>Substantial</i>	<i>Above average</i>	<i>Average</i>	<i>None</i>	<i>Never has spare cash</i>	
All persons						
2001	1.6	6.3	34.2	36.9	21.0	100.0
2002	1.5	6.5	34.0	39.0	19.0	100.0
2003	1.5	6.1	35.0	39.0	18.5	100.0
2004	1.7	6.3	36.1	39.1	16.8	100.0
2006	1.8	6.7	34.3	40.2	17.1	100.0
2008	1.9	6.3	34.4	40.1	17.4	100.0
2010	1.6	5.7	34.1	42.6	16.0	100.0
2011	1.7	5.2	33.4	40.0	19.6	100.0
	<i>Risks would be prepared to take if did have spare cash</i>					<i>Total</i>
	<i>Substantial</i>	<i>Above average</i>	<i>Average</i>	<i>None</i>		
People who never have any spare cash						
2006	1.9	6.4	32.9	58.8		100.0
2008	2.4	6.7	28.7	62.2		100.0
2010	1.8	4.9	28.2	65.1		100.0
2011	1.9	5.8	30.8	61.5		100.0

Note: Percentages may not add up to 100 due to rounding.

Table 6.2: Differences in risk attitudes across demographic groups, 2011 (%)					
	<i>Substantial</i>	<i>Above average</i>	<i>Average</i>	<i>None</i>	<i>Total</i>
Sex					
Males	2.6	8.9	43.8	44.8	100.0
Females	1.6	3.8	35.5	59.1	100.0
Age group					
15–24	2.6	4.8	34.9	57.7	100.0
25–34	2.7	8.2	42.7	46.4	100.0
35–44	2.2	9.6	39.4	48.9	100.0
45–54	2.2	7.5	44.4	46.0	100.0
55–64	1.4	4.8	41.8	52.0	100.0
65 and over	1.4	2.5	33.8	62.3	100.0
Educational attainment					
Bachelor's degree or higher	1.8	10.6	53.0	34.5	100.0
Other post-school qualification	2.2	5.8	40.3	51.8	100.0
High school completion	2.9	6.1	37.4	53.6	100.0
Less than high school completion	1.8	3.3	28.2	66.7	100.0
Housing tenure type					
Public housing	2.0	3.2	18.1	76.8	100.0
Private rental	2.9	6.9	35.3	54.9	100.0
Owner with mortgage	1.7	7.7	41.1	49.4	100.0
Owner outright	1.8	4.8	42.9	50.6	100.0

Note: Percentages may not add up to 100 due to rounding.

Table 6.3: Differences in risk attitudes by level of economic wellbeing, 2011 (%)

	<i>Substantial</i>	<i>Above average</i>	<i>Average</i>	<i>None</i>	<i>Total</i>
Income quintile					
Top	2.6	10.3	52.8	34.3	100.0
Fourth	2.0	6.1	43.7	48.2	100.0
Third	1.7	5.4	39.1	53.8	100.0
Second	2.1	4.8	34.3	58.8	100.0
Bottom	2.1	4.2	23.9	69.8	100.0
Net wealth quintile					
Top	2.3	8.5	53.4	35.8	100.0
Fourth	1.8	5.4	44.1	48.7	100.0
Third	1.7	5.7	35.0	57.6	100.0
Second	1.8	4.9	32.5	60.8	100.0
Bottom	2.2	4.7	27.9	65.2	100.0
Difficulty raising \$3,000 in an emergency					
Could easily raise the money	2.1	7.5	46.7	43.7	100.0
Would involve some sacrifices	1.8	5.2	38.8	54.3	100.0
Would require something drastic	2.1	5.1	32.8	60.1	100.0
Could not raise the money	2.1	3.9	17.6	76.4	100.0
Family financial situation					
Prosperous	5.5	19.4	43.9	31.1	100.0
Very comfortable	2.8	8.8	47.7	40.7	100.0
Comfortable	1.8	5.8	43.0	49.4	100.0
Just getting along	1.9	4.8	30.2	63.0	100.0
Poor or very poor	3.2	7.6	20.6	68.6	100.0
Number of indicators of financial stress					
None	1.9	6.4	42.2	49.6	100.0
1–2	1.8	5.6	33.5	59.2	100.0
3 or more	4.6	8.5	25.4	61.6	100.0

Note: Percentages may not add up to 100 due to rounding.

- *Could not pay electricity, gas or telephone bills on time.*
- *Could not pay the mortgage or rent on time.*
- *Pawned or sold something.*
- *Went without meals.*
- *Were unable to heat the home.*
- *Asked for financial help from friends or family.*
- *Asked for help from welfare/community organisations.*

The clear pattern that emerges is that people with higher economic wellbeing have less aversion to risk than people with lower economic wellbeing. The slight wrinkle to this pattern is that a relatively high proportion of those with low economic wellbeing, at least as measured by wealth, perceived family financial prosperity and experience of financial stress, are prepared to take substantial financial risks. Most notably, 4.6 per cent of people who have experienced three or more indicators of financial stress are prepared to take substantial financial risks. For these people, it may well be that their appetite for risk is partly to blame for their experience of financial stress.

Individual-level changes in risk preferences over time

Risk preferences are often viewed as a fixed trait of an individual, but it is quite conceivable that

preferences respond to an individual's life circumstances. The HILDA Survey measure of risk preferences may in particular be prone to change over time, since it measures respondents' stated behaviour (or stated intended behaviour) rather than their more general attitude to financial risk. For example, changed exposure to risk in one life domain could lead to a change in risk appetite with respect to spare cash without any change in the underlying risk preferences of the individual.

Table 6.4 indicates there is indeed considerable change in individuals' measured risk preferences over time. It shows changes in attitudes at the individual level—between 2006 and 2008, between 2008 and 2010, and between 2006 and 2011—by presenting, for each risk preference category in the initial year, the percentage in each risk preference category in the end year. For example, the first row examines risk preferences in 2008 of those who reported taking substantial risks in 2006, showing that only 20.0 per cent still reported taking substantial risks in 2008, while 21.1 per cent were now not prepared to take any risks whatsoever.

The most persistent risk attitude is to take no risks, with approximately 77 per cent of individuals reporting this risk attitude in one year reporting the same attitude two years later. Indeed the bottom row of Table 6.4 shows that 76.4 per cent of those not prepared to take any risks in 2006 gave the same

Table 6.4: Individual changes in attitudes to risk (%)

2006 to 2008					
<i>Attitude in 2006</i>	<i>Attitude in 2008</i>				<i>Total</i>
	<i>Substantial risks</i>	<i>Above-average risks</i>	<i>Average risks</i>	<i>No risks</i>	
Substantial risks	20.0	28.8	30.1	21.1	100.0
Above-average risks	8.5	34.5	41.7	15.4	100.0
Average risks	1.5	7.7	65.0	25.8	100.0
No risks	1.1	1.8	20.1	77.0	100.0
2008 to 2010					
<i>Attitude in 2008</i>	<i>Attitude in 2010</i>				<i>Total</i>
	<i>Substantial risks</i>	<i>Above-average risks</i>	<i>Average risks</i>	<i>No risks</i>	
Substantial risks	21.6	29.4	27.3	21.7	100.0
Above-average risks	6.1	36.4	44.5	13.1	100.0
Average risks	0.7	6.1	65.0	28.2	100.0
No risks	0.8	1.5	19.9	77.9	100.0
2006 to 2011					
<i>Attitude in 2006</i>	<i>Attitude in 2011</i>				<i>Total</i>
	<i>Substantial risks</i>	<i>Above-average risks</i>	<i>Average risks</i>	<i>No risks</i>	
Substantial risks	22.6	17.9	32.8	26.8	100.0
Above-average risks	6.0	27.4	46.3	20.2	100.0
Average risks	1.4	5.9	63.4	29.3	100.0
No risks	0.8	1.7	21.2	76.4	100.0

Note: Percentages may not add up to 100 due to rounding.

answer five years later, in 2011. The least persistent risk preference is the ‘substantial risks’ response option: for individuals who initially reported taking substantial risks, they are in fact less likely to report that risk preference—that is, the percentage in each other risk preference category is higher than the percentage in the ‘substantial risks’ category. The changes between 2006 and 2008 are very similar to the changes between 2008 and 2010. This suggests that changes in economic conditions are not the driver of changes in individuals’ preferences, since the first period was one of strong economic and employment growth, while the latter period was one of weak economic growth and rising unemployment. Also notable from Table 6.4 is that the risk preferences do not seem to change any more over five years than they do over only two years.

The determinants of risk preferences

Comparisons of risk attitudes across demographic groups and by level of economic wellbeing presented in Tables 6.2 and 6.3 provide some indications of the determinants of risk attitudes. In particular, the tables indicate that characteristics associated with greater risk aversion include lower educational attainment, public housing tenure, aged under 25 or over 55, being female, and low economic wellbeing. However, the estimates presented in these tables can be impacted by confounding influences of other factors. For example, low educational attainment and public housing are associated with low economic wellbeing, so it is unclear the extent to which the risk aversion of these groups simply reflects their low economic wellbeing. Moreover, only a limited set of factors are considered in Tables 6.1 and 6.2.

In Table 6.5, a much broader range of factors potentially impacting on risk preferences are considered by estimating probit models of the determinants of risk preferences. Two models are estimated: the first model is of the probability an individual does not (or is not prepared to) take any financial risks; and the second model is of the probability an individual takes (or is prepared to take) above-average or greater risks (i.e. above-average or substantial risks). The first model is interpreted as the probability of being ‘risk averse’, while the second model is of the probability of being ‘risk loving’.² Only data from Wave 6 onwards is used, since it is only from Wave 6 that risk attitudes are measured for all individuals (including those who ‘never have any spare cash’).

The models are estimated as functions of variables for sex, age, family type, position in the family, region of residence, educational attainment, immigrant status, general health, mental health, disability, income decile, labour force status, major life events (partner changes, pregnancy/birth, serious illness or injury, death of spouse or child, experience of physical violence, experience of property crime, retirement, job dismissal and job promotion), and year. Note that some of these factors, particularly major life events, income and labour force status, could be both determinants of risk preferences and outcomes of risk preferences. The estimates, which are ‘mean marginal effects’ estimates (see the Glossary for details), should therefore be interpreted as associations rather than causal impacts of factors.

As we might expect, the two models are in many respects the mirror image of each other. A number of characteristics that are associated with a greater probability of being risk averse also tend to be associated with a lower probability of being risk

Table 6.5: Factors associated with risk attitudes
—Mean marginal effects (%)

Explanatory variable	Model 1: Probability of being 'risk averse'	Model 2: Probability of being 'risk loving'
Male	-13.6	7.0
<i>Age group (Reference category: 15–24)</i>		
25–34	1.3 ⁺	-0.9
35–44	0.4 ⁺	-0.3 ⁺
45–54	-1.0 ⁺	-1.6
55–64	-2.0	-3.4
65 and over	3.0	-6.9
<i>Family type (Reference category: Single)</i>		
Couple	-3.7	0.0 ⁺
Couple with dependent children	-2.1 ⁺	-0.3 ⁺
Lone parent	1.9 ⁺	0.8 ⁺
<i>Position in the family (Reference category: Other)</i>		
Parent	-0.7 ⁺	1.3 ⁺
Child	2.4 ⁺	-0.7 ⁺
<i>Region (Reference category: Major urban)</i>		
Other urban	2.9	-1.4
Other region	-0.1 ⁺	-0.8
<i>Educational attainment (Reference category: Less than high school completion)</i>		
Bachelor's degree or higher	-23.1	4.2
Other post-school qualification	-6.8	0.6 ⁺
Completed high school	-9.4	1.8
<i>Immigrant status (Reference category: Native-born)</i>		
ESB immigrant	1.3	-0.4 ⁺
NESB immigrant	6.5	1.5
In poor general health (SF-36 score <50)	3.5	0.4 ⁺
In poor mental health (SF-36 score <50)	1.6	1.4
<i>Disability status (Reference category: No disability)</i>		
Has disability without work restriction	4.0	-0.4 ⁺
Has disability with moderate work restriction	4.0	-0.7 ⁺
Has disability with severe work restriction	11.5	-1.6
Equivalised income decile	-2.7	0.6
<i>Labour force status (Reference category: Not in the labour force and not marginally attached)</i>		
Marginally attached	-0.2 ⁺	1.2
Unemployed	-2.1 ⁺	3.0
Employed part-time	-1.9	0.1 ⁺
Employed full-time	-0.6 ⁺	0.8 ⁺
<i>Life events in the last 12 months</i>		
Got married	5.4	1.3
Separated from partner	1.4 ⁺	1.0 ⁺
Got back together with partner	2.7 ⁺	0.1 ⁺
Pregnancy or birth	-0.6 ⁺	0.4 ⁺
Serious injury or illness	-0.1 ⁺	0.4 ⁺
Death of spouse or child	-2.1 ⁺	0.1 ⁺
Victim of physical violence	-1.9 ⁺	2.7
Victim of property crime	-3.2	2.3
Retired	0.5 ⁺	2.5
Dismissed from job	1.4 ⁺	-0.9 ⁺
Promoted at work	-1.5	0.3 ⁺
<i>Year (Reference category: 2006)</i>		
2008	0.9 ⁺	-0.5 ⁺
2010	2.7	-1.4
2011	2.7	-1.6

Notes: This table reports mean marginal effects estimates from probit models. See the Glossary for explanations of probit models and mean marginal effects. In Model 1, the dependent variable is equal to one if the individual is not willing to take any financial risks, and zero otherwise. In Model 2, the dependent variable is equal to one if the individual takes (or would take) substantial or above-average risks, and zero otherwise. * indicates the estimate is not significantly different from zero at the 10 per cent level.

loving, and vice versa. However, there are a number of exceptions to this, including some characteristics that increase (or decrease) the probability of both risk aversion and risk loving.

Consistent with the evidence in Table 6.2, males are considerably less likely to be risk averse than females and considerably more likely to be risk loving; holding other factors constant, being male on average decreases the probability of being risk averse by 13.6 percentage points and increases the probability of being risk loving by 7.0 percentage points. The probability of being risk averse does not significantly differ across the age groups up to age 54, but those aged 55 to 64 on average have a 2.0 percentage-point lower probability of being risk averse than those aged 15 to 24, while those aged 65 and over on average have a 3.0 percentage-point higher probability of being risk averse than those aged 15 to 24. There are more significant effects by age group evident for the probability of being risk loving, with all age groups other than the 35 to 44 group having a significantly lower probability than the 15 to 24 age group. Those aged 65 and over on average have the lowest probability of being risk loving, holding all else constant. Significantly, the 55 to 64 age group on average has both a lower probability of being risk averse and a lower probability of being risk loving than the 15 to 24 age group.

The only significant difference in risk preferences by family type and position in the family is that individuals in couple families without dependent children are less likely to be risk averse. Individuals living in urban areas outside the major cities are, all else equal, more risk averse (and less risk loving) than either people living in the major cities or people living in non-urban settings.

Consistent with the evidence in Table 6.2, those holding a bachelor's degree or higher are substantially less risk averse than individuals with lower levels of educational attainment. Significantly, however—and not evident in Table 6.2—individuals who have a highest educational attainment of high school completion are less risk averse than those who hold a post-school qualification below the level of a bachelor's degree.

Immigrants are, all else equal, more likely to be risk averse, although immigrants from countries other than the main English-speaking countries (NESB immigrants) are more likely to be risk loving than other immigrants or native-born Australians. Poor health (as measured by the SF-36 general health and mental health measures) and disability—particularly severe disability—are associated with greater risk aversion. However, individuals in poor mental health are also more likely to be risk loving than individuals who are not in poor mental health.

As expected based on Table 6.3, higher income is associated with decreased risk aversion and, to a lesser degree, increased risk loving. Individuals who are unemployed or marginally attached to the

labour force on average have a higher probability of being risk loving, but no significantly different probability of being risk averse than other people. Part-time employment is associated with lower risk aversion, but not greater risk loving.

In terms of major life events, getting married on average increases the probability of being risk averse by 5.4 percentage points, but also increases the probability of being risk loving by 1.3 percentage points. Being a victim of physical violence is associated with a higher probability of risk loving, as is being a victim of a property crime, which is also associated with a lower probability of being risk averse. However, it seems more likely that risk preferences are affecting exposure to these events, rather than these events impacting on risk preferences. Finally, the estimates for the variables for the years 2010 and 2011 indicate an increase in risk aversion and decrease in risk loving in those years, which is almost certainly due to the economic downturn and deterioration in asset price growth that occurred after 2008.

Association between financial risk preferences and various behaviours and outcomes

Risk preferences can impact on a variety of decisions, including not only financial decisions, but

also decisions in relation to health behaviours, partnering decisions, employment choices and physically dangerous activities. Table 6.6 explores whether there is evidence of differences in various behaviours and outcomes that could potentially be impacted by risk preferences, classifying individuals into three categories: risk lover (take substantial or above-average risks); risk neutral (take average risks); and risk averse (not willing to take any risks). Given that one's lifecycle stage is also likely to impact on these behaviours and outcomes, the comparisons across risk preference groups are undertaken separately for each of three age groups: young adults (18 to 29); 'prime-age' adults (here defined as 30 to 49); and older adults (50 and over).

The behaviours considered in Table 6.6 include wealth portfolio decisions, health behaviours, partnering behaviours, moving house, and employment-related behaviours. The wealth portfolio decisions examined are the share of equities (interpreted as 'risky assets') in total household wealth and the equities share of household financial assets (where we only use data from 2002, 2006 and 2010, when wealth data was collected). The health behaviours examined include smoking, regularly drinking alcohol (five or more times per week), regularly 'binge'

Table 6.6: Behaviours and outcomes potentially influenced by risk preferences, by lifecycle stage and risk preference (%)

	Aged 18–29			Aged 30–49			Aged 50 and over		
	Risk lover	Risk neutral	Risk averse	Risk lover	Risk neutral	Risk averse	Risk lover	Risk neutral	Risk averse
Household wealth portfolio									
Risky asset share of wealth (%)	4.3	2.9	1.4	5.8	3.0	1.1	8.4	6.3	2.8
Risky asset share of financial assets (%)	7.8	6.2	3.2	13.4	7.6	3.1	19.4	16.3	8.8
Health behaviours									
Smoker	31.7	21.3	26.5	17.0	18.8	29.9	11.0	10.2	14.8
Regular drinker	7.0	5.3	4.1	15.2	14.9	11.6	28.2	28.0	18.2
Regular binge drinker	44.8	33.8	32.8	24.3	20.4	26.9	17.8	15.6	14.2
Exercise regularly	54.8	53.2	50.9	49.3	47.6	44.5	52.4	54.2	42.5
Marriage									
Got married	5.2	4.4	4.4	4.0	2.4	3.1	1.7	0.6	0.8
Separated	6.0	5.5	6.5	4.1	3.1	4.3	2.5	1.0	1.7
Got back together with partner	0.9	1.0	1.5	1.4	0.8	1.3	0.7	0.2	0.4
Moved house	31.7	29.0	26.6	16.4	15.7	15.3	8.4	5.6	5.7
Employment-related behaviours/outcomes									
Self-employed	9.2	4.8	2.9	29.6	17.6	10.4	36.3	26.5	17.2
Private sector	88.2	82.5	84.1	83.5	73.9	75.5	79.1	71.0	72.1
Casual employee	27.5	27.4	34.1	9.2	10.8	16.2	17.6	16.6	16.6
Small business (<20 employees)	29.2	26.3	26.9	35.1	28.6	26.9	45.9	37.4	29.8
Changed jobs	24.1	29.1	28.7	14.3	14.0	14.6	8.0	6.9	7.6
Dismissed	3.6	4.2	5.1	3.5	2.5	3.4	2.4	2.6	3.4
Promoted	18.9	15.0	11.7	10.6	10.4	8.4	4.2	3.4	3.3
Other outcomes									
Serious injury or illness	4.5	4.7	5.4	6.2	6.0	7.8	11.9	9.4	13.4
Victim of physical violence	4.1	2.2	2.7	1.7	0.8	1.6	0.5	0.4	0.7
Victim of property crime	7.0	5.2	4.6	5.2	4.5	4.2	4.2	2.8	2.4
Major improvement in finances	3.3	2.7	2.2	3.6	2.9	2.5	4.8	3.9	1.9
Major worsening of finances	4.7	1.7	2.3	5.2	2.7	3.6	6.4	3.0	3.4

Notes: 'Risky asset share of wealth' and 'Risky asset share of financial assets' are only available in Waves 2, 6 and 10, while 'Regular binge drinker' is only available in Wave 11. Employment-related outcomes are restricted to employed people.

drinking (drinking seven or more standard drinks if male, and five or more standard drinks if female, at least twice per month), and regularly exercising (three or more times per week). The first three of these activities are risky behaviours, while regularly exercising could be viewed as a risk-reducing activity. Getting married and separating from one's partner are both risky activities, in that they involve changing one's living situation, as is moving house. For employment-related activities, self-employment, working in the private sector, employment on a casual basis and working in a small business are all associated with greater earnings risk and employment risk, while changing jobs also involves risk.

Table 6.6 also examines outcomes that may be more likely to occur the more risks an individual takes. These include job dismissal and promotion, which may, for example, be more likely in certain types of jobs that are therefore relatively more attractive to risk lovers. Outcomes also include serious injury or illness, experience of property crime and even experience of physical violence, all of which may be more likely the more risks an individual takes. Finally, experience of a major improvement and experience of a major worsening in finances are examined, both of which would be expected to be more frequent events for risk lovers.

There are indeed clear differences in most behaviours and outcomes across the three risk preference groups for all age groups that are consistent with expectations. Those in the risk-loving group are the most likely, and those in the risk-averse group are the least likely, to engage in more risky behaviours and have outcomes consistent with riskier behaviours. The notable exception is that risk averse people are more likely to experience serious injury or illness, possibly because experience of serious injury or illness actually causes one to become more risk averse. Of course, Table 6.6 is simply descriptive, and we should be careful not to entirely attribute these differences in behaviours

and outcomes to risk preferences (or vice versa), but many of the estimates provide a strong prima facie case for substantial impacts of risk preferences on a variety of behaviours.

Concluding comments

The HILDA Survey data indicate that relatively few people are prepared to take above-average or substantial financial risks, and indeed just over half the population report not being prepared to take any financial risk. To some extent, reluctance to take on financial risk can be an indicator of low financial literacy, which is supported by the finding that individuals with higher educational attainment and higher economic wellbeing are more willing to take average or above-average financial risks. A further notable finding from the HILDA Survey data is that, while the risk measure available clearly relates only to financial risk, it nonetheless appears to be a good predictor of many risky activities beyond the financial domain.

Endnotes

- 1 The terms 'risk attitudes' and 'risk preferences' are used interchangeably in this chapter.
- 2 An alternative to estimating two separate probit models is to estimate an ordered probit model of risk attitude, where the four risk preference categories are the ordered outcomes. However, estimates from ordered probit models are less easy to interpret. The two separate probit models also allow for the possibility that certain characteristics could increase (decrease) both risk aversion and risk loving—that is, decrease (increase) risk neutrality at the expense of both risk aversion and risk loving. See the Glossary for further details on probit models.

Reference

Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J. and Wagner, G. (2011) 'Individual Risk Attitudes: Measurement, Determinants, and Behavioural Consequences', *Journal of the European Economic Association*, vol. 9, no. 3, pp. 522–50.

Part 3: Labour Market Outcomes



Labour Market Outcomes

A primary focus of the HILDA Survey is the labour market activity of household members. In each wave, detailed information is obtained from respondents to ascertain their labour force status, current and previous financial year earnings, hours worked, the type of work undertaken, employer characteristics and a host of other work-related aspects. Perceptions and attitudes on a range of labour market issues, such as satisfaction with the current main job, likelihood of retaining the current job and preferred hours of work, are also collected every year. Periodically, additional information is gathered on retirement intentions, attitudes to work and, more recently, work-related training and experience of job-related discrimination.

Such an emphasis on the labour market reflects the pivotal role employment plays in determining economic and social wellbeing. Not only is it the key determinant of the majority of households' incomes, it is key to participation in society both economically and socially. Understanding individuals' labour market outcomes, and the causes and consequences of those outcomes, is correspondingly core to the purpose of the HILDA Survey.

In the first chapter in this section, we present a brief overview of labour force status and earnings over the HILDA Survey period, with a particular emphasis on individual-level changes over time. The second chapter, by Hielke Buddelmeyer, examines the relationship between 'non-standard' jobs and job satisfaction, while the third chapter, by Markus Hahn and Mark Wooden, examines couples in which the female partner has higher earnings than the male partner.

7. Labour market dynamics

Roger Wilkins

Labour force status

Standard statistical summaries of the labour force, such as those produced by the Australian Bureau of Statistics for its monthly publication, *Labour Force, Australia* (ABS, 2013a), divide the population aged 15 and over into 'employed' (either full-time or part-time), 'unemployed' (those not working who are actively seeking work) and 'not in the labour force' (those not working who are not actively seeking work). The HILDA Survey collects information from respondents each year enabling classification of all respondents into one of these three categories. This allows us to produce cross-sectional labour statistics of the same kind produced by the ABS but, more importantly, our data facilitate longitudinal analysis of many aspects of labour force status

mobility—that is, movements over time across different labour force states. For example, we can investigate how long people remain in particular labour force states, who moves to different labour market states over time, and how broader labour market conditions impact on labour force status mobility.

A cross-sectional view of labour force status

The labour force status of the population aged 15 and over is presented in Table 7.1 for each year over the 2001 to 2011 period. Employment rates (the percentage of all persons of working age who are employed) consistently increased for men and women from 2001 through 2008. The rates fell in 2009, most likely as a result of reduced demand for labour associated with the Global Financial Crisis.

Labour force status

In this report, insofar as is possible, we follow international and Australian Bureau of Statistics (ABS) conventions in determining an individual's labour force status. In particular:

- A person is classified as employed if that person had a job, business or farm in the week leading up to the interview, and had either worked in the last four weeks or had not worked but: had been in paid work for any part of the last four weeks; or had been on worker's compensation and expected to return to work for the same employer; or had not worked because of a strike or lock-out.
- An employed person is classified as part-time employed if usual weekly hours of work in all jobs total less than 35. Otherwise, an employed person is classified as full-time employed.¹
- A non-employed person is classified as unemployed if that person had actively looked for work at any time in the four weeks preceding the interview and was available to start work in the week preceding the interview; or if that person was waiting to start a new job within four weeks from the date of interview and could have started in the week preceding the interview if the job had been available. Otherwise, a non-employed person is classified as not in the labour force (NILF).

The male employment rate increased in each of the next two years, but the female employment rate only rose between 2009 and 2010 before again declining between 2010 and 2011.

The male unemployment-population rate increased from a low of 3.0 per cent in 2008 to 4.1 per cent in 2009, and then declined to 3.7 per cent in 2010 and 3.3 per cent in 2011. The female unemployment-population rate has changed much less than the male unemployment-population rate over the HILDA Survey period. It reached a low of 2.8 per cent in 2006 and 2007, and has since edged higher each year, to 3.3 per cent in 2011.

A dynamic view of labour force status

Table 7.2 examines labour force status transitions of individuals between an initial year and an end year, where the end year is one year after the initial year, three years after the initial year or five years after the initial year. The table shows, for each initial labour force state, the proportion in each labour force state in the end year. All waves of data are pooled for this analysis, but the table restricts the initial years to 2001 to 2006, so that the same population is examined for all three time-frames (since the five-year time-frame is only available when initial labour force status is measured in 2006 or earlier).

For both males and females, employment is the most persistent state, followed by non-participation (not in the labour force) and then unemployment. This is indicated by comparing across the estimates on the main diagonal (in bold) in each panel; these estimates are consistently highest for employment and lowest for unemployment. Comparing males and females, both employment persistence and unemployment persistence are higher for males, while persistence in non-participation is similar for males and females. It follows that females have somewhat greater mobility in labour force status than males.

Of those who leave employment, the majority move to non-participation, and of those who leave

non-participation, the majority move to employment. For those who are initially unemployed, approximately half are employed one year later, while 28.4 per cent of males and 21.0 per cent of females are still unemployed, and 21.0 per cent of males and 30.5 per cent of females have left the labour force.

As might be expected, mobility is greater the longer the time-frame. For example, 94.2 per cent of employed males are employed in the next year, whereas 89.3 per cent of employed males are employed five years later. Similarly, 90.6 per cent of employed females are employed one year later, but only 82.7 per cent are employed five years later.

An extended labour force framework

Statistical agencies such as the ABS have developed extended labour force frameworks that disaggregate the three labour force status categories examined in Tables 7.1 and 7.2. These have been developed to provide richer information on the level of economic activity of employed people and the nature and extent of underutilisation of labour. Figure 7.1 provides an overview of an extended labour force framework based on the ABS model (ABS, 2013b). Six labour force status categories are distinguished, with the employed category disaggregated into full-time employed, fully employed–part-time employed, and underemployed–part-time employed, and the not-in-the-labour-force category disaggregated into marginally attached to the labour force and not marginally attached to the labour force.

Full-time employment is defined as usual weekly hours of work of 35 or more, while part-time employment is correspondingly defined as usual weekly hours of work less than 35. An individual who is employed part-time is classified as underemployed if usual weekly hours are less than preferred hours, and is otherwise classified as fully employed.² An individual is marginally attached to the labour force if that individual wants to work and was either: actively looking for work, but not available to start work in the last week; or not looking for work, but available to start work within four weeks.

Table 7.1: Labour force status of the population aged 15 years and over, 2001 to 2011 (%)

	Males				Females			
	Employed	Unemployed	Not in the labour force	Total	Employed	Unemployed	Not in the labour force	Total
2001	67.3	5.5	27.3	100.0	53.2	3.6	43.2	100.0
2002	68.4	4.6	27.1	100.0	54.2	3.5	42.4	100.0
2003	68.7	4.0	27.3	100.0	54.5	3.0	42.5	100.0
2004	69.3	3.4	27.4	100.0	55.1	3.2	41.7	100.0
2005	69.9	3.5	26.7	100.0	56.9	2.9	40.2	100.0
2006	70.2	3.3	26.5	100.0	57.6	2.8	39.6	100.0
2007	70.2	3.1	26.8	100.0	58.5	2.8	38.7	100.0
2008	70.2	3.0	26.8	100.0	59.0	2.9	38.2	100.0
2009	69.5	4.1	26.3	100.0	58.1	3.0	38.9	100.0
2010	69.8	3.7	26.5	100.0	58.4	3.2	38.4	100.0
2011	70.4	3.3	26.4	100.0	57.3	3.3	39.4	100.0

Note: Percentages may not add up to 100 due to rounding.

Table 7.2: Labour force status transitions, 2001 to 2011 (%)

Males

Initial labour force status	Labour force status 1 year later			Total
	Employed	Unemployed	Not in the labour force	
Employed	94.2	1.7	4.1	100.0
Unemployed	50.6	28.4	21.0	100.0
Not in the labour force	12.0	4.4	83.6	100.0

Initial labour force status	Labour force status 3 years later			Total
	Employed	Unemployed	Not in the labour force	
Employed	91.8	1.9	6.3	100.0
Unemployed	61.2	17.5	21.3	100.0
Not in the labour force	18.9	3.0	78.1	100.0

Initial labour force status	Labour force status 5 years later			Total
	Employed	Unemployed	Not in the labour force	
Employed	89.3	1.9	8.8	100.0
Unemployed	64.6	12.6	22.8	100.0
Not in the labour force	20.9	2.4	76.8	100.0

Females

Initial labour force status	Labour force status 1 year later			Total
	Employed	Unemployed	Not in the labour force	
Employed	90.6	1.6	7.8	100.0
Unemployed	48.5	21.0	30.5	100.0
Not in the labour force	11.7	3.0	85.3	100.0

Initial labour force status	Labour force status 3 years later			Total
	Employed	Unemployed	Not in the labour force	
Employed	86.3	1.7	12.0	100.0
Unemployed	56.4	15.2	28.4	100.0
Not in the labour force	18.7	2.6	78.7	100.0

Initial labour force status	Labour force status 5 years later			Total
	Employed	Unemployed	Not in the labour force	
Employed	82.7	1.8	15.4	100.0
Unemployed	57.7	11.1	31.3	100.0
Not in the labour force	21.8	2.3	75.9	100.0

Notes: Initial labour force status is restricted to the period from 2001 to 2006. Percentages may not add up to 100 due to rounding.

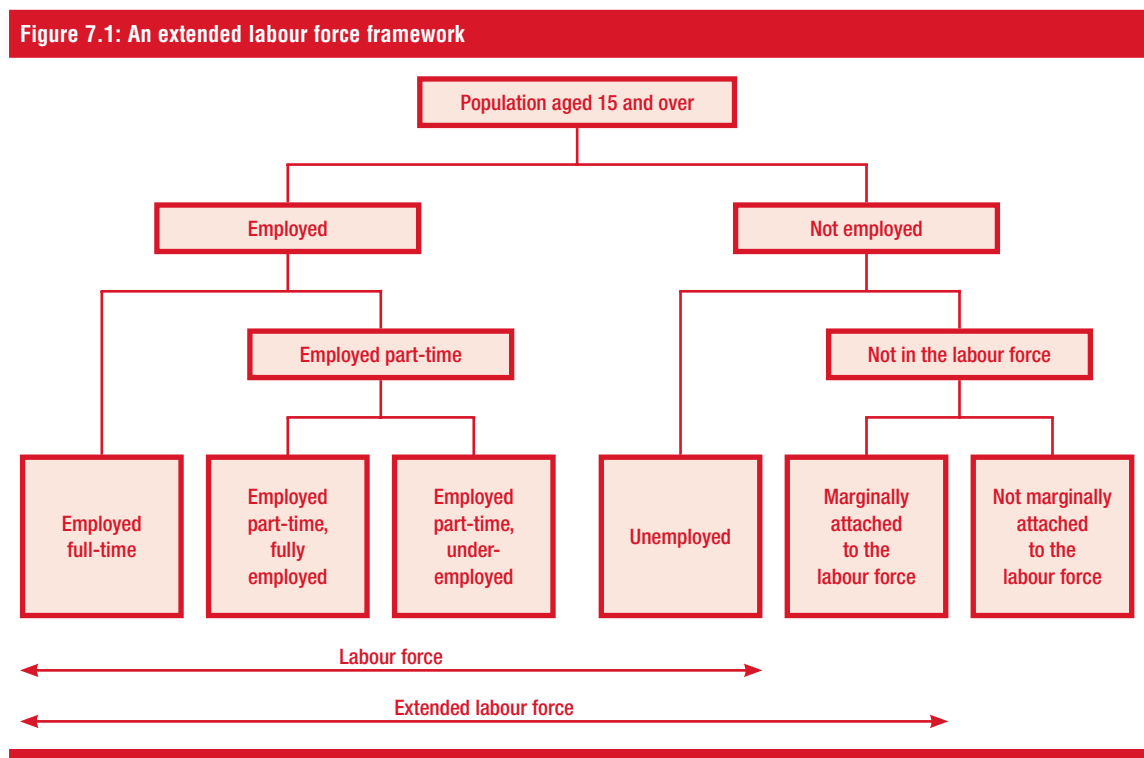


Table 7.3 presents cross-sectional estimates of the proportion of the ‘prime-age’ population (here defined as aged 25 to 54) in each of the six labour force states depicted in Figure 7.1. The full-time employment-population rate is considerably higher for men than women in this age range, while the reverse is true for the part-time employment-population rate (the sum of the second and third rows of each panel of the table). Unsurprisingly given the higher rate of part-time employment among women, underemployment is considerably more common for women than men. Unemployment-population rates tend to be higher for men, while marginal attachment and non-participation (not marginally attached) are both higher for women.

The data indicate that the economic downturn after 2008 led to a decline in full-time employment in 2009 for men, but not women, for whom the decline in full-time employment is not evident until 2010. Full-time employment of both prime-age men and prime-age women declined between 2010 and 2011. Unemployment, underemployment and marginal attachment also all increased for women after 2009. For men, unemployment, underemployment and marginal attachment decreased between 2009 and 2010, and unemployment declined further between 2010 and 2011, while underemployment and marginal attachment increased between 2010 and 2011.

One-year transitions in extended labour force status are examined in Table 7.4 for men and women aged 25 to 54. The table is constructed in the same way as Table 7.2, but does not consider time-frames longer than one year, and therefore the initial years include all ten years up to 2010. For both men and women, one-year persistence is highest for full-time employment and lowest for unemployment. Persistence of non-participation (not marginally attached) is relatively high, at approximately 66 per cent for both men and women, while persistence in

fully employed–part-time employment is higher for women (65.0 per cent) than for men (47.4 per cent). Underemployment is less persistent than fully employed–part-time employment, but it is more persistent than unemployment, particularly for women, with 37.9 per cent of those underemployed still underemployed one year later, compared with 24.7 per cent for unemployment persistence.

The most common destination from underemployment differs for men and women. Full-time employment is the most common destination for men, while underemployment followed by fully employed–part-time employment are the most common destinations for women. This may reflect the fact that underemployed men are more likely to be seeking full-time employment than underemployed women, many of whom may simply want additional part-time hours. A further notable distinction between men and women is that marginally attached men are considerably more likely to move into both full-time employment and unemployment than marginally attached women, who are more likely to move into non-participation or fully employed–part-time employment.

Table 7.5 focuses exclusively on persistence of extended labour force states, presenting for each state the proportion in that same state one, three, five, seven and nine years after the initial year. For this table, the waves included as ‘initial years’ depend on the time-frame examined, comprising 2001 to 2010 for the one-year time-frame, but only 2001 to 2002 for the nine-year time-frame. Note also that the table does not examine continuous persistence in each labour force status—that is, it is possible for the individual to have left the labour force state and then returned to that state by the time of evaluation of subsequent labour force status. For example, the upper right cell indicates that 76.4 per cent of full-time employed men aged 25 to 54 were employed full-time nine years later;

	2001	2003	2005	2007	2009	2010	2011
Men							
Employed full-time	78.8	79.2	81.5	81.0	78.6	81.0	80.4
Employed part-time (fully employed)	3.6	3.4	4.1	4.2	4.5	4.2	4.5
Underemployed	3.7	4.0	3.3	3.8	3.4	3.2	4.3
Unemployed	5.1	3.4	3.0	2.2	4.0	3.7	2.8
Marginally attached	2.7	4.1	3.4	2.6	3.6	2.8	3.7
Not marginally attached	6.2	5.9	4.8	6.2	5.9	5.1	4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Women							
Employed full-time	38.8	38.8	39.0	43.0	43.1	42.4	41.3
Employed part-time (fully employed)	21.2	20.7	23.7	22.0	22.5	23.2	22.2
Underemployed	8.5	8.9	8.9	8.2	7.8	8.8	9.2
Unemployed	3.4	2.6	3.2	2.6	2.6	2.8	3.6
Marginally attached	11.0	9.6	7.9	6.2	6.4	6.5	7.2
Not marginally attached	17.1	19.4	17.3	18.0	17.6	16.3	16.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Note: Percentages may not add up to 100 due to rounding.</i>							

however, some fraction of these men will have temporarily left full-time employment over the nine-year period.

While it is theoretically possible for the measure of persistence examined in Table 7.5 to show higher persistence at longer time-frames, in practice, we see that the persistence measure is monotonically declining in the length of the time-frame for full-time employment and fully employed–part-time employment. For men, unemployment persistence and underemployment persistence are also both lower the longer the time-frame. However, for unemployed and underemployed women, the proportions unemployed and underemployed seven years later are actually lower than the proportions unemployed and underemployed nine years later. This is likely to be driven the changes in broader economic conditions, with the nine-year persistence estimates containing only 2010 and 2011 as end years, when economic conditions tended to be weaker.

Labour market earnings

Wage rates represent a key dimension of labour market outcomes. A worker's wage per hour measures the rate at which his or her labour is rewarded in the labour market, and thus provides a measure of the value of that worker's labour. A worker's wage is also an important contributor to his or her economic wellbeing (along with many other factors, not least of which is the number of hours worked). The HILDA Survey data allow us to not only examine workers' wages at a point in time, and track movements in overall wage levels, but also to track individuals' wage progression over time.

The HILDA Survey does not ask respondents to report their hourly wage; rather, usual weekly (typically gross) earnings and usual weekly hours of work are obtained from everyone who is employed. Hourly rates of pay can then be calculated from this information. The hourly rate of pay so obtained is 'current usual earnings per hour worked'. While the hourly wage rate is the appropriate focus when

Table 7.4: Transitions in extended labour force status from one year to the next—Persons aged 25–54 years, 2001 to 2011 pooled (%)

Extended labour force status in initial year	Extended labour force status 1 year later						Total
	FT	PT	Underemp.	Unemp.	MA	NMA	
Men							
Employed full-time (FT)	94.5	1.5	1.4	1.2	0.6	0.8	100.0
Employed part-time (fully emp.) (PT)	29.8	47.4	11.3	3.0	3.8	4.7	100.0
Underemployed	38.7	15.1	32.2	5.2	5.5	3.3	100.0
Unemployed	35.8	3.5	8.9	28.8	14.8	8.3	100.0
Marginally attached (MA)	20.2	3.7	5.2	16.0	32.9	22.2	100.0
Not marginally attached (NMA)	8.4	4.1	2.9	4.4	13.6	66.6	100.0
Women							
Employed full-time (FT)	84.0	7.7	3.0	1.1	1.2	3.0	100.0
Employed part-time (fully emp.) (PT)	13.8	65.0	11.0	1.0	2.3	6.9	100.0
Underemployed	19.4	30.2	37.9	3.1	4.1	5.4	100.0
Unemployed	19.2	11.1	13.9	24.7	17.3	13.8	100.0
Marginally attached (MA)	6.4	11.5	7.7	8.7	34.4	31.4	100.0
Not marginally attached (NMA)	3.1	10.1	3.4	2.9	14.2	66.4	100.0

Note: Percentages may not add up to 100 due to rounding.

Table 7.5: Persistence of extended labour force status—Persons aged 25–54 years in initial year, 2001 to 2011 (%)

	Proportion in the same labour force state				
	1 year later	3 years later	5 years later	7 years later	9 years later
Men					
Employed full-time	92.3	88.1	84.4	81.0	76.4
Employed part-time (fully employed)	50.2	34.7	26.5	20.0	16.1
Underemployed	39.4	21.0	16.2	12.4	8.7
Unemployed	28.2	19.6	12.9	11.1	9.4
Marginally attached	30.3	18.8	13.3	14.6	10.7
Not marginally attached	84.5	81.7	81.4	81.9	81.4
Women					
Employed full-time	82.9	72.6	65.6	59.1	52.1
Employed part-time (fully employed)	62.3	49.9	42.5	37.7	34.3
Underemployed	42.5	28.4	20.2	17.9	19.6
Unemployed	22.3	15.2	11.1	7.2	9.9
Marginally attached	31.5	20.3	15.7	12.4	10.9
Not marginally attached	83.9	80.2	78.5	76.7	76.2

interest is in the rate at which labour is rewarded, one concern that arises in hourly wage rate analysis is that additional measurement error is introduced by dividing reported weekly earnings by reported weekly hours of work. This provides one rationale for examining weekly earnings, at least as an augmentation to the study of hourly earnings. Another reason for examining weekly earnings is that, for full-time employees who are paid a salary, the notion of an hourly wage is less relevant. For example, a full-time employee may report working more than 40 hours per week, but is implicitly only paid for 40 hours. Possibly, the longer hours of work reflect a preference of the worker to work longer hours at a lower intensity per hour. We consequently examine both weekly and hourly earnings.

We begin by describing the earnings distribution in each year, presenting cross-sectional snapshots in order to provide an overall picture of earnings outcomes and changes over the period spanned by the HILDA Survey. Table 7.6 presents summary measures of the male and female earnings distributions

over the 2001 to 2011 period, examining full-time and part-time employees separately, and presenting estimates for both weekly and hourly earnings.³ Specifically, for each earnings distribution, the table presents the mean, median, 10th percentile, 90th percentile and Gini coefficient.

Real earnings have grown reasonably steadily over the 2001 to 2011 period. Mean earnings of full-time male employees grew from \$1,224 in 2001 to \$1,470 in 2011, a real (inflation-adjusted) increase of 20.2 per cent. Mean earnings of full-time female employees grew from \$973 in 2001 to \$1,133 in 2011, a real (inflation-adjusted) increase of 16.5 per cent. Growth in mean real weekly earnings received by part-time employees was 17.4 per cent for males and 16.7 per cent for females. The estimates for hourly earnings show that part of the increase in weekly earnings of part-time employees was due to growth in hours worked, since hourly earnings of part-time employees increased by 13.0 per cent for males and by only 6.0 per cent for females.

The growth in weekly earnings has not been restricted to a particular part of the distribution—

Table 7.6: Earnings of employees (December 2011 prices)

	Weekly earnings					Hourly earnings				
	Mean (\$)	Median (\$)	p10	p90	Gini	Mean (\$)	Median (\$)	p10	p90	Gini
Males										
<i>Full-time employees</i>										
2001	1,224	1,059	609	2,005	0.283	27.17	24.14	13.82	43.27	0.263
2003	1,229	1,067	611	2,021	0.281	27.39	24.45	14.31	43.71	0.258
2005	1,278	1,097	631	2,084	0.280	28.71	25.13	15.24	45.68	0.259
2007	1,324	1,135	644	2,240	0.288	29.64	26.45	15.43	47.54	0.266
2009	1,368	1,203	656	2,328	0.290	30.90	27.42	15.96	50.72	0.269
2011	1,470	1,250	700	2,500	0.303	32.98	28.33	17.11	53.70	0.277
<i>Change (%)</i>	20.2	18.0	15.0	24.7	6.9	21.4	17.4	23.8	24.1	5.4
<i>Part-time employees</i>										
2001	349	265	66	699	0.459	21.65	16.99	8.82	36.00	0.361
2003	362	289	58	753	0.454	21.57	17.66	7.85	38.05	0.363
2005	356	297	64	715	0.446	23.37	18.03	7.94	35.80	0.402
2007	421	333	67	910	0.471	23.87	19.75	9.33	40.95	0.359
2009	418	317	70	847	0.475	25.26	19.05	8.82	42.19	0.415
2011	410	333	70	806	0.445	24.47	20.00	9.14	41.67	0.369
<i>Change (%)</i>	17.4	25.8	5.8	15.3	-3.0	13.0	17.7	3.6	15.7	2.0
Females										
<i>Full-time employees</i>										
2001	973	874	529	1,456	0.232	23.68	21.60	13.77	35.21	0.218
2003	989	910	559	1,455	0.234	23.89	21.97	14.28	35.74	0.218
2005	1,018	921	557	1,548	0.241	24.52	22.66	14.38	36.54	0.221
2007	1,074	988	601	1,624	0.236	26.04	23.87	15.77	38.78	0.216
2009	1,114	1,018	614	1,723	0.237	27.25	25.14	16.26	41.01	0.214
2011	1,133	1,016	630	1,750	0.242	27.75	25.69	16.54	41.78	0.221
<i>Change (%)</i>	16.5	16.3	19.0	20.2	4.2	17.2	18.9	20.2	18.6	1.3
<i>Part-time employees</i>										
2001	411	364	87	778	0.390	24.96	19.32	10.18	36.15	0.369
2003	401	370	93	753	0.370	22.78	19.71	10.75	35.87	0.292
2005	433	393	101	799	0.371	24.42	20.25	11.12	37.51	0.318
2007	431	373	106	793	0.376	23.89	20.31	10.34	37.34	0.316
2009	449	402	86	847	0.385	23.99	21.17	10.58	39.69	0.298
2011	479	430	100	900	0.381	26.45	21.87	11.00	41.67	0.330
<i>Change (%)</i>	16.7	18.1	14.5	15.6	-2.4	6.0	13.2	8.1	15.3	-10.6

that is, earnings have ‘shifted up’ at all levels. This is indicated by the fact that (both weekly and hourly) earnings at the 10th percentile, at the 50th percentile (the median) and at the 90th percentile all grew. There are, however, differences in their rates of growth. For example, in 2011, a male full-time employee at the 10th percentile of the distribution—with 90 per cent of male full-time employees having higher earnings—earned 15.0 per cent more than a male full-time employee in the same position in 2001; a male full-time employee in the middle of the distribution earned 18.0 per cent more in 2011 than a male full-time employee in the middle of the distribution in 2001; and a male full-time employee at the 90th percentile of the distribution in 2011—with 90 per cent of male full-time employees having lower earnings—earned 24.7 per cent more than a male full-time employee in the same position in 2001. Thus, while earnings growth occurred at the ‘bottom’, ‘middle’ and ‘top’ of the distribution of earnings among male full-time employees, the magnitude of growth was largest for the ‘top’ and smallest for the ‘bottom’, indicating an increase in earnings inequality among male full-time employees. The change in the Gini coefficient over the period is consistent with this, increasing from 0.283 in 2001 to 0.303 in 2011, a 6.9 per cent increase. A similar pattern is evident for female full-time employees, although the magnitude of the increase in the Gini coefficient was smaller, rising from 0.232 to 0.242, or 4.2 per cent.

The patterns evident for part-time employees differ considerably from those evident for full-time employees. They also differ depending on whether weekly or hourly earnings are examined, and differ between male and female employees. Inequality of weekly earnings among part-time employees declined between 2001 and 2011, the Gini coefficient decreasing by 3.0 per cent for men and by 2.4 per cent for women. However, inequality of hourly earnings among part-time employed males, as measured by the Gini coefficient, increased by 2.0 per cent, while among part-time employed females it decreased by 10.6 per cent. Thus changes in the distribution of hours worked have acted to increase earnings inequality among male part-time employees, but to decrease earnings inequality among female part-time employees.

Earnings progression

The cross-sectional earnings information presented in Table 7.6 shows that there has been real earnings growth across the distribution between 2001 and 2011. However, this does not tell us how individual workers have fared, and in particular whether some workers have experienced more rapid earnings progression than others. There are many ways of examining earnings progression over time, and some of these ways have been presented in previous volumes of the Statistical Report. This year, we focus on the particular issue of low-paid work, and the extent to which low-paid workers have transitioned to

higher-paid jobs, versus remaining in low-paid jobs or indeed moving out of employment altogether.

To define low-paid employment, an approach similar to that taken by Fok et al. (2013) is followed. Specifically, an employee is classified as low-paid if that employee’s hourly wage is less than 120 per cent of the hourly minimum wage, and the employee’s weekly wage is less than 120 per cent of the weekly minimum wage for a full-time employee. Earnings of casual employees are deflated by 20 per cent as an approximation to adjust for the absence of paid leave entitlements that is typical of casual employment (with a casual employee defined as low-paid if deflated earnings are less than the minimum wage). For this analysis, the population examined is restricted to individuals aged 21 to 54.

Table 7.7 examines the proportion of all men and women aged 21 to 54 in each of five categories based on a combination of level of pay, employee status and labour force status: low-paid employees; other (higher-paid) employees; other employed persons (self-employed or employer); unemployed or marginally attached; and not marginally attached. The table suggests that the proportion of workers who are self-employed or employers declined between 2001 and 2011, more so for men than women, while the proportion of workers who are ‘higher-paid’ employees rose, from 58.1 to 64.3 per cent for men, and from 46.2 to 51.5 per cent for women. The proportion classified as low-paid fluctuated from year to year, ranging between 7.7 and 11.4 per cent for men, and between 13.5 and 17.7 per cent for women.

Transitions between the five labour market states, over both one year and five years, are considered in Table 7.8. Of primary interest are the rows and columns in each panel headed ‘Low-paid’. The rows show the proportions of low-paid workers remaining low-paid and transitioning to other labour market states. The columns show, for each labour force state, the proportions making the transition into low-paid employment. All 11 waves of the HILDA Survey are used to produce the table.

The table shows that, on average, 40.8 per cent of male low-paid employees move into higher-paid employment in the next year, while five years later 54.7 per cent of male low-paid employees are in higher-paid jobs. For female low-paid employees, transitions into higher-paid jobs are slightly less frequent, with 37.1 per cent moving into higher-paid jobs in the next year, and 48.9 per cent being in higher-paid jobs five years later. It therefore seems clear that a large proportion of low-paid employees do progress into higher-paid jobs. However, it is also true that a sizeable proportion remain low-paid: 46.1 per cent of male low-paid employees, and 48.1 per cent of female low-paid employees, are found to still be in low-paid employment in the next year. Even five years later, 26.4 per cent of males and 29.2 per cent of females are found to still be low-paid.

Table 7.7: Labour market states of individuals aged 21–54 years, 2001 to 2011 (%)

	<i>Employee: Low-paid</i>	<i>Employee: Higher-paid</i>	<i>Self-employed</i>	<i>Unemployed or MA</i>	<i>NMA</i>	<i>Total</i>
Men						
2001	8.9	58.1	18.3	8.4	6.2	100.0
2002	10.5	58.4	17.4	8.6	5.1	100.0
2003	11.1	59.0	16.1	8.2	5.6	100.0
2004	11.4	58.9	17.1	6.5	6.1	100.0
2005	9.3	61.8	17.0	7.1	4.8	100.0
2006	11.0	60.9	16.5	5.9	5.8	100.0
2007	9.3	63.0	15.8	5.6	6.3	100.0
2008	10.8	63.0	15.5	5.9	4.8	100.0
2009	8.2	62.4	15.5	8.3	5.6	100.0
2010	7.7	64.2	15.5	7.4	5.2	100.0
2011	9.2	64.3	14.6	7.4	4.5	100.0
Women						
2001	14.2	46.2	8.6	14.4	16.6	100.0
2002	16.1	44.4	8.4	13.6	17.5	100.0
2003	16.0	44.7	8.2	12.3	18.7	100.0
2004	16.1	46.4	8.6	11.9	17.1	100.0
2005	15.9	48.1	8.2	11.1	16.7	100.0
2006	17.7	47.6	8.5	10.2	16.1	100.0
2007	14.8	51.3	7.8	8.8	17.3	100.0
2008	15.7	51.4	7.7	8.6	16.6	100.0
2009	13.7	52.1	8.0	9.4	16.9	100.0
2010	13.6	53.7	7.2	9.9	15.6	100.0
2011	13.5	51.5	7.6	11.4	16.0	100.0

Notes: Self-employed includes employees of own business. MA—Marginally attached. NMA—Not marginally attached. Percentages may not add up to 100 due to rounding.

Table 7.8: Transitions in labour market states from one year to the next—Persons aged 21–54 years, 2001 to 2011 (%)

Men						
<i>Initial status</i>	<i>Status 1 year later</i>					<i>Total</i>
	<i>Higher-paid</i>	<i>Low-paid</i>	<i>Self-employed</i>	<i>Unemp. or MA</i>	<i>NMA</i>	
Higher-paid	89.2	4.8	3.0	2.2	0.8	100.0
Low-paid	40.8	46.1	4.2	7.1	1.9	100.0
Self-employed	9.6	2.1	85.2	1.9	1.2	100.0
Unemployed or MA	22.2	14.4	4.9	45.4	13.1	100.0
NMA	10.6	6.3	3.5	18.6	61.0	100.0
<i>Initial status</i>	<i>Status 5 years later</i>					<i>Total</i>
	<i>Higher-paid</i>	<i>Low-paid</i>	<i>Self-employed</i>	<i>Unemp. or MA</i>	<i>NMA</i>	
Higher-paid	84.7	3.6	7.6	2.5	1.5	100.0
Low-paid	54.7	26.4	6.9	8.0	4.0	100.0
Self-employed	18.8	2.2	74.2	2.3	2.5	100.0
Unemployed or MA	36.4	14.3	8.8	24.9	15.6	100.0
NMA	20.9	7.6	6.1	16.7	48.7	100.0
Women						
<i>Initial status</i>	<i>Status 1 year later</i>					<i>Total</i>
	<i>Higher-paid</i>	<i>Low-paid</i>	<i>Self-employed</i>	<i>Unemp. or MA</i>	<i>NMA</i>	
Higher-paid	82.1	9.3	2.1	2.5	3.9	100.0
Low-paid	37.1	48.1	3.0	6.0	5.9	100.0
Self-employed	11.0	4.4	75.0	4.2	5.4	100.0
Unemployed or MA	16.0	13.8	3.0	42.2	25.0	100.0
NMA	9.8	5.9	3.2	19.1	62.0	100.0
<i>Initial status</i>	<i>Status 5 years later</i>					<i>Total</i>
	<i>Higher-paid</i>	<i>Low-paid</i>	<i>Self-employed</i>	<i>Unemp. or MA</i>	<i>NMA</i>	
Higher-paid	76.1	7.9	4.9	3.7	7.5	100.0
Low-paid	48.9	29.2	4.0	7.6	10.4	100.0
Self-employed	21.1	7.8	56.0	5.1	10.1	100.0
Unemployed or MA	28.3	18.4	4.2	24.7	24.4	100.0
NMA	19.8	12.3	6.5	13.6	47.9	100.0

Note: Percentages may not add up to 100 due to rounding.

Also evident is that exit rates to unemployment and non-participation are higher for low-paid employees than higher-paid employees. For example, each year, 7.1 per cent of male low-paid employees exit to unemployment or marginal attachment and 1.9 per cent exit to non-participation, compared with corresponding exit rates of 2.2 per cent and 0.8 per cent for male higher-paid employees. Similarly, 6.0 per cent of female low-paid employees exit to unemployment or marginal attachment each year, and 5.9 per cent exit to non-participation, compared with corresponding exit rates of 2.5 per cent and 3.9 per cent for female higher-paid employees. Thus, while many low-paid employees make the progression to higher-paid jobs, they are considerably more likely to move back into non-employment than other employees.

The columns headed 'Low-paid' indicate that transitions from non-employment to low-paid jobs are relatively common, suggestive of a stepping stone function of low-paid jobs. For example, each year, 14.4 per cent of unemployed or marginally attached men make the transition into low-paid employment, which is more than twice the rate of outflow to low-paid employment from any other labour market state. While it is true that the rate of outflow from unemployment and marginal attachment, at 14.4 per cent, is less than the 22.2 per cent who make the transition into higher-paid employment, it is important to be cognisant of the broader context that only 8–11 per cent of men aged 21 to 54 are low-paid, compared with approximately 60 per cent for higher-paid employment. This means that the unemployed and marginally attached are a much more important source of inflows for low-paid employment than they are for higher-paid employment.

Concluding comments

The HILDA Survey data indicate that employment and, more particularly, full-time employment, is the most persistent labour force state, while unemployment is the least persistent labour force state. However, it is also true that unemployment is persistent for a sizeable number of people. There are, moreover, indications that some people cycle

between unemployment and low-paid employment, since the proportions moving between the two labour market states are relatively high. Thus, unemployment is likely to be a recurrent problem for some labour market participants who secure only low-paid jobs. Nonetheless, it is considerably more common for low-paid employees to move into higher-paid employment than unemployment or non-participation, so low-paid jobs are more often than not stepping stones to better-paying jobs.

Endnotes

- 1 The definition of part-time employment adopted in this report differs from the definition the ABS uses in its Labour Force Survey. The ABS definition requires both usual and current actual weekly hours to be less than 35.
- 2 The underemployment definition used here differs from ABS (2013b) in several ways, most important of which is that it does not require the individual to be available to work additional hours.
- 3 Note that the estimates in Table 7.6 relate to earnings of employees and therefore exclude earnings of the self-employed and employers, whose earnings are often confounded with returns on capital invested in the business, either because reported earnings include a return on capital, or because reported capital income includes a component that is actually a return on labour. Full-time employment is defined to be a situation in which usual weekly hours of work are 35 or more. In the case where a respondent holds more than one job, we restrict analysis to earnings and hours worked in the respondent's main job.

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8. Female breadwinner families

Mark Wooden and Markus Hahn

As is widely recognised, profound changes in family structure and employment patterns have taken place in Australia over the last half century or so. Prominent here has been the rise in lone-parent and single-person households and the decline in the traditional nuclear family. Marked change, however, has also occurred within married-couple households. Most important has been the rising prevalence of dual-earner families. Recent Labour Force Survey data reveal that, in June 2012, both husband and wife were employed in 55 per cent of all couple families.¹ And once we remove couples where neither member was employed nor looking for work (most of whom will be older retired couples) that proportion rises to 68 per cent.

Unfortunately, historical data that enable the quantification of changes over time in the incidence of dual-earner couples are scarce. The incidence of dual-earner couples, however, is reflected in the labour force participation rate among married women, and we know this has more than doubled since the mid-1960s. According to Labour Force Survey data, the rate of labour force participation among married women in 1966 was around 29 per cent (ABS, 1986, Table 2). Today the most comparable figure is around 62 per cent.²

Such trends are of large significance given all of the key planks of social and labour market policy and institutions in Australia that were developed in the 20th century were predicated on a male breadwinner model (Cass, 2002). That said, much of the growth in female employment has been in part-time employment and hence the male breadwinner model may still be dominant. That is, it may be that in most couples it is still the male who is the primary breadwinner.

It is this—the incidence of married couples where the female is the major earner, or what we refer to as ‘female breadwinners’—which is at the centre of this chapter. Specifically, we report figures on the extent, characteristics and persistence of female breadwinning couples. These are issues previously examined by Drago et al. (2005). They, however, only had access to two waves of HILDA Survey data and thus could say relatively little about persistence with any confidence. In contrast, we of course now have data that extends over 11 years.

Definitions and measurement

Following Drago et al. (2005), we distinguish between three types of couple families: male breadwinners, female breadwinners, and couples where labour earnings are about equal. Labour earnings are measured by gross wages and salaries from all jobs in the financial year preceding interview, with a male breadwinner defined (somewhat arbitrarily) as

any couple where the male’s earnings exceed that of the female by at least 10 per cent, and a female breadwinner as any couple where the female’s earnings exceed that of the male by at least 10 per cent. The remainder are the couples where we define individual labour earnings to be about equal.

The sample for the analysis is obviously restricted to couples, where couples are defined to include both persons in registered marriages and persons living together in de facto unions. Same-sex couples were excluded. Given our focus on labour market outcomes, we also restricted the sample to couples where both members were below 65 years of age. Finally, we excluded any couple where neither the male nor the female reported any labour earnings during the reference year, ensuring that we do not attribute equality in earnings to joint joblessness.

An important definitional issue is the appropriate reference period. As noted above, we initially opt for a one-year period, but also report estimates based on a three-year time-frame. This, however, is complicated by the instability of many relationships. Thus when examining estimates over a three-year window it only includes those couples who stay together for the full three years. This could potentially be problematic given that this subsample is weighted towards more stable couples which, in turn, may be associated with employment patterns within households. It has, for example, long been argued that the risk of marital separation is greater in couples where the woman is more economically independent. That said, the evidence in support of this hypothesis is weak and ultimately inconclusive (Sayer and Bianchi, 2000).

The incidence of female breadwinners

The population-weighted distribution of couples by relative labour earnings (i.e. breadwinner status) for each survey wave is reported in Table 8.1. This table reveals, based on earnings over the 2010–2011 financial year, that the male is the primary earner in almost 69 per cent of all ‘working’ couples while the female is the primary earner in almost 25 per cent. Further, these rates have been relatively stable over the period observed, but with the female breadwinner proportion rising slightly—from around 23 per cent in the early 2000s.

If many female breadwinner arrangements are only temporary, as Drago et al. (2005) argue, then we might expect the female breadwinner proportion to be lower when earnings over a three-year period are used. The data are consistent with this expectation, though the magnitude of the difference is not large. Thus Table 8.1 also shows that among couples observed over the first three survey waves, only 20 per cent were female breadwinner couples

based on gross labour earnings summed over the three financial years, 2000–01, 2001–02 and 2002–03. Further, it does not appear that this difference between the one-year and three-year estimates is due to differences in the sample scope. After applying longitudinal weights designed to account for sample attrition, 80 per cent of couples identified as female breadwinners in Wave 1 remain together at each of the next two survey waves, exactly the same proportion as found among male breadwinning couples.

The estimates based on three-year earnings also suggest again that the incidence of female breadwinning couples has been slowly rising while the incidence of male breadwinner couples has been declining. The decline in the latter, however, appears to be concentrated entirely in the period prior to the Global Financial Crisis.

Table 8.1: Distribution of couple households, by relative labour earnings, 2001 to 2011 (%)

	Male breadwinner	About equal	Female breadwinner
Financial year			
2000–01	70.1	6.4	23.5
2001–02	69.5	7.4	23.1
2002–03	70.4	6.5	23.0
2003–04	69.2	6.9	23.9
2004–05	68.3	6.9	24.8
2005–06	68.8	7.4	23.8
2006–07	67.3	7.3	25.5
2007–08	67.5	7.3	25.2
2008–09	67.0	6.9	26.0
2009–10	67.4	6.9	25.8
2010–11	68.5	7.0	24.5
3-year period			
2000–01 to 2002–03	73.4	7.5	20.0
2004–05 to 2006–07	69.9	8.5	21.6
2008–09 to 2010–11	70.4	7.3	22.4

In short, the key message from Table 8.1 is that despite signs of gradual change, the male breadwinner model remains the dominant arrangement within Australian couple households.

The characteristics of female breadwinner couples

We next examine how the characteristics of female breadwinner couples differ from those of male breadwinner couples, using just cross-sectional data from Wave 11 (with earnings based on that reported for the 2010–11 financial year). We begin, in Table 8.2, by looking at associations with key selected demographic characteristics disaggregated by sex.

This table reveals that members of female breadwinner couples tend, on average, to be older and in longer relationships. Females in female breadwinner couples are also, on average, more likely to have a university education and work in a managerial or professional occupation. In contrast, the male members of these same households are, relative to men in male breadwinner households, less likely to have a university qualification and less likely to be employed in a managerial or professional occupation.

Perhaps most significantly, there is a large difference between male and female breadwinner households in terms of the presence of children—only one-in-three female breadwinner households have any dependent children present, compared with more than one-in-two male breadwinner households.

There are also clear differences between male breadwinners and female breadwinners in the relative number of paid working hours of the male and the female. As would be expected, there are large differences in the average paid work hours (measured at the time of interview) of men and women in male breadwinner households—43.1 hours per week for the male compared to 19.5 for the female.

Table 8.2: Selected characteristics of members of couple households, by relative labour earnings, 2011

	Males			Females		
	Male breadwinner	About equal	Female breadwinner	Male breadwinner	About equal	Female breadwinner
Age (years)	42.9	42.4	46.1	40.7	40.3	43.4
Duration of marriage/partnership (years)	14.6	13.4	16.9	14.6	13.5	16.7
<i>Country of birth (%)</i>						
Australia	67.4	63.7	66.1	67.7	67.0	67.5
Main English-speaking country	13.0	17.6	16.7	9.8	13.7	13.7
Other	19.6	18.7	17.3	22.5	19.3	18.8
University education (%)	34.0	32.0	27.1	33.4	50.0	40.7
Manager or professional (%)	46.3	43.1	34.9	37.7	54.5	50.0
Any dependent children <15 (%)	52.8	32.5	33.8	52.8	32.4	33.6
<i>Weekly hours of paid work</i>						
All persons	43.1	43.2	32.2	19.5	36.4	32.8
Employed persons only	44.8	44.1	40.6	29.4	38.1	36.0
% of time in previous financial year in paid work	68.5	64.5	58.6	49.7	66.2	70.9
Weekly hours of housework	14.5	15.0	17.6	27.6	20.3	21.5
Weekly hours of child care (if a parent)	12.7	13.3	12.9	28.9	25.2	22.4

In contrast, in female breadwinner households the male and female work almost the same hours per week—32.2 compared to 32.8. Indeed, if we restrict the sample to those currently in employment, the female on average works noticeably fewer hours—36.0 compared to 40.6.

These findings suggest that the higher annual earnings of women in female breadwinner couples are the result of either their higher hourly earnings (reflecting their relatively higher education levels) or a lesser probability of unemployment during the preceding year, or both. It is mostly not because of any lesser willingness on the part of men to work full-time hours. In contrast, in male breadwinner couples the working hours reflect traditional gendered patterns in the division of household labour, with the man typically working full-time hours and the woman either working part-time or not at all.

Further insights into the associations with current employment status are provided in Table 8.3. This table shows that in about one-third of all couple households, both the male and the female are currently employed full-time (i.e. usually work 35 hours or more per week), which we might think of as consistent with modern family arrangements. In another 30 per cent of couple households, the male works full-time and the female works part-time, which might be labelled a neo-traditional arrangement, while a little over 20 per cent of couples have traditional arrangements, where the male works full-time and the female does not work at all. Only about 6 per cent of couples have arrangements which are strongly consistent with female breadwinners—that is, where the female works full-time hours and the male works either part-time hours or not at all.

This latter figure is far smaller than the one-in-four estimate indicated by Table 8.1. This mainly reflects differences in definitions. First, employment status in Table 8.2 is defined at the time of interview whereas the definition of breadwinner is based on relative earnings over the previous financial year, and of course the employment status of many respondents will vary over the course of the year. Second,

employment status simply reflects crude differences in hours worked and not in actual earnings.

An interesting implication of Table 8.3 is that a female breadwinner couple is, on average, not simply the mirror opposite of a male breadwinner couple. In almost 64 per cent of all male breadwinner couple households, the male works both full-time hours and noticeably more hours than the female. The comparable proportion among female breadwinner households is less than 19 per cent. Female breadwinner households instead are relatively more likely to be households where both the male and female work full-time (43.0 per cent) or households where, at the time of interview, the female is only working part-time while the male is working full-time (15.8 per cent), possibly indicating that the higher earnings of the female during the previous financial year were only temporary.

How temporary are these intra-couple working arrangements?

Finally, we look at the extent to which these intra-household working arrangements are persistent or temporary. This involves identifying a group of couples at one point in time and then deriving a measure of the probability that they have the same working arrangements in the future. Since couples can separate, we use as our reference period the time a couple is observed in our data living together.

Table 8.4 presents two sets of estimates that differ according to how and when relative labour earnings are measured. The first set of estimates is based on relative earnings in the 2000–01 financial year of couples living together at the time of the Wave 1 interview. The first row of numbers shows that couples measured as male breadwinners at Wave 1 were still male breadwinners, on average, in 83 per cent of all future survey waves (a maximum of 10 survey waves), conditional on still living together as a couple. This is indicative of very high rates of stability and persistence in this intra-household arrangement. Among households identified as female breadwinners at Wave 1, the rate of persistence—about 56 per cent—is much lower. These female breadwinner arrangements are

Table 8.3: Distribution of couple households, by relative labour earnings and current employment status, 2011 (%)

Current employment status		Male breadwinner	About equal	Female breadwinner	Total
Male	Female				
Full-time	Full-time	26.1	71.5	43.0	33.2
Full-time	Part-time	35.5	16.3	15.8	29.5
Full-time	Not employed	28.1	*3.5	4.4	20.8
Part-time	Full-time	1.0	*4.3	8.1	2.9
Part-time	Part-time	2.4	*2.4	6.8	3.5
Part-time	Not employed	3.1	*0.0	*1.1	2.4
Not employed	Full-time	*0.5	*0.3	10.6	2.9
Not employed	Part-time	0.8	*0.5	6.9	2.2
Not employed	Not employed	2.5	*1.4	3.5	2.7
Total		100.0	100.0	100.0	100.0

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding.

Table 8.4: Persistence of earnings relativities within couples—Percentage of years observed in each relativity category, by initial relativity category

	Male breadwinner	About equal	Female breadwinner	Total
Initial relativity category, based on 2000–01 income				
Male breadwinner	82.9	4.5	12.6	100.0
About equal	43.4	24.3	32.3	100.0
Female breadwinner	35.4	8.3	56.3	100.0
Initial relativity category, based on 2000–01 to 2002–03 income				
Male breadwinner	82.6	4.2	13.2	100.0
About equal	51.6	19.9	28.5	100.0
Female breadwinner	25.4	8.8	65.8	100.0

Notes: Upper panel is evaluated over Waves 2 to 11; lower panel is evaluated over Waves 4 to 11. Percentages may not add up to 100 due to rounding.

clearly not as enduring as male breadwinner arrangements. When we define breadwinners based on total earnings over the three-year period 2000–01 to 2002–03 the rate of persistence (now measured over Waves 4 to 11) of male breadwinning changes hardly at all. Persistence in female breadwinning is, however, noticeably higher. Nevertheless, the key conclusion—that male breadwinning arrangements are more enduring than female breadwinning—remains intact.

Summary

The growth in the number of dual-earner families represents a challenge to the traditional male-breadwinner model that underpins many economic and social institutions in this country. Indeed, according to the HILDA Survey data, females earn noticeably more than their male partners in around one in every four couples.

Female breadwinner couples, however, are not the flipside of male breadwinners. Male breadwinner households mostly conform to the stereotype, with the male typically working full-time hours and the female choosing to work part-time hours or not work at all. In contrast, in female breadwinner households the male is just as likely to work full-time hours as the female. The higher earnings of the female reflects either employment in higher-paid jobs (reflecting her higher levels of education and skills) or a lower risk of experiencing spells of joblessness.

Finally, while female breadwinner arrangements are not typically short-term or temporary arrangements,

they nonetheless do not typically endure for as long as traditional male-breadwinner arrangements.

Endnotes

- 1 Derived from spreadsheet data available from ABS, *Labour Force, Australia: Labour Force Status and Other Characteristics of Families, June 2012*, Catalogue No. 6224.0.55.001. Couples where employment status was indeterminate were excluded.
- 2 The data for 2013 apply a social definition of marriage, and so married couples include both registered marriages and de facto unions.

References

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9. ‘Non-standard’ employment and job satisfaction

Hielke Buddelmeyer¹

Recent decades have seen an increase in the incidence of non-standard forms of employment in many countries. Precisely what constitutes ‘non-standard’ employment is subject to debate, but its antonym, ‘standard employment’, is typically characterised as a full-time permanent wage and salary job. Under this definition, part-time employment is considered non-standard. Temporary and fixed-term contract work, labour hire (or agency) work and casual employment are other forms of non-standard employment, but are often labelled ‘contingent’ employment in contrast to part-time employment (which is often permanent or ongoing). Various forms of temporary or fixed-term contract employment made up 12 per cent of total employment in the OECD in 2011 and part-time employment made up a further 16.5 per cent of total employment, highlighting the prevalence of non-standard employment even if these totals hide large discrepancies between individual countries (OECD, 2012).

It is often claimed that these non-standard jobs are on average low quality jobs and workers only accept such jobs because they have no, or limited, choice. Differences in job quality can be tested objectively based on any chosen characteristics of the job (e.g. hours, training opportunities, benefits), but arguably asking people themselves how they feel about their jobs is another valuable metric. While a finding of a negative relationship between non-standard employment and job satisfaction is most common in the empirical literature, the magnitude of this relationship is usually small and often restricted to specific sub-groups of contingent employees.

Here we use the HILDA Survey to investigate overall job satisfaction distinguishing between five mutually exclusive forms of employment: permanent; casual; fixed-term contracts; labour-hire; and self-employment.²

The principal outcome variable used in this analysis is a single-item measure of overall job satisfaction (with the main job) scored on an 11-point (0–10) bipolar scale, with descriptors attached only to the extreme values on the scale. The survey question reads:

All things considered, how satisfied are you with your job?

Descriptive analysis

The distribution of the pooled sample by employment type is provided in Table 9.1 and captures all employed individuals aged 15 or older with a valid response to the job satisfaction question. The table reveals a very high rate of contingent work arrangements in the HILDA Survey data. Among employed men, just over 80 per cent are employees (in their

main job), and of these almost 30 per cent are employed in some form of non-standard contingent work arrangement. Among women the proportion is even higher. Just over 88 per cent of employed women are employees, with 39 per cent of this group employed in non-standard jobs.

Figure 9.1 shows cross-sectional estimates of mean job satisfaction for each year of the HILDA Survey by employment type and sex. While estimates fluctuate from year to year, Figure 9.1 suggests that, among male workers, both labour-hire workers and casual employees tend to be less satisfied with their jobs than permanent employees. The mean difference between permanent and casual employees, however, seems relatively small. Also, there is little obvious difference between employees on fixed-term contracts and those on permanent contracts.

Among female employees systematic differences between different groups of employees are even less obvious. Indeed, the only notable difference concerns the self-employed, who have higher mean job satisfaction than female workers in all other groups in every year.

Figure 9.2 captures the mean overall job satisfaction for different age groups. For men there is a u-shaped pattern with age, whereas for women the pattern seems to be flat or even rising. Where the rise in job satisfaction is strongest for both men and women is at the point where most people retire. This implies that, in Australia at least, working beyond 65 is not born out of necessity.

A final set of descriptive statistics is given in Table 9.2. Although the emphasis here is on overall job satisfaction, the HILDA Survey does ask about various components of the job and each are scored on the same 11 point (0–10) bipolar scale. It is clear that regardless of contract type and gender, of the five different components (work–life balance; hours; pay; security; the work itself) workers are least satisfied with their pay. The only exception is that labour-hire

Table 9.1: Employment type of employed persons, 2001 to 2011 pooled (%)

	Males	Females
Permanent/ongoing	57.2	55.7
Casual	13.5	22.8
Fixed-term contract	6.7	7.8
Labour-hire	2.8	2.4
Self-employed	19.6	11.1
Other	0.3	0.3
Total	100.0	100.0

Note: Percentages may not add up to 100 due to rounding.

workers, while exhibiting low satisfaction with their pay, are even less satisfied with their job security.

Results from regression models

Simple differences in mean job satisfaction by gender and employment status, useful as they are,

have the potential to sketch a misleading picture when particular job or personal characteristics are predominantly associated with particular forms of employment. If, for argument sake, jobs in the hospitality sector were considered to be unsatisfying because they have long (unsocial) hours, but also

Figure 9.1: Mean overall job satisfaction, by employment type

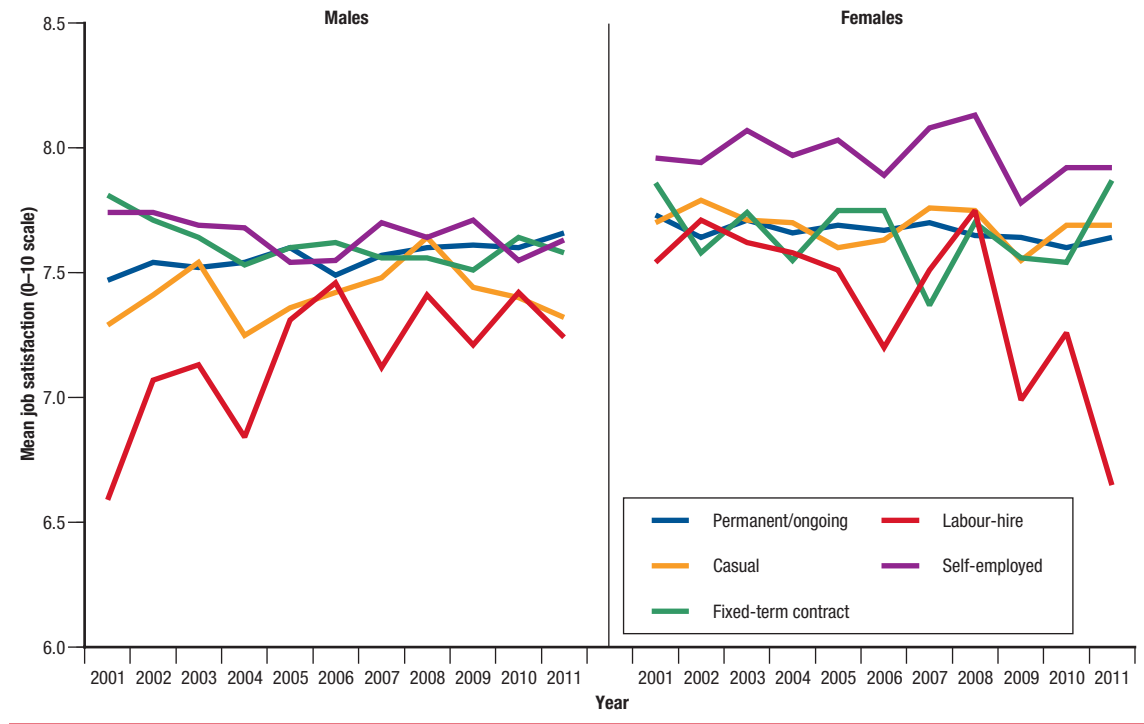


Figure 9.2: Mean overall job satisfaction, by employment type and age group, 2001 to 2011 pooled

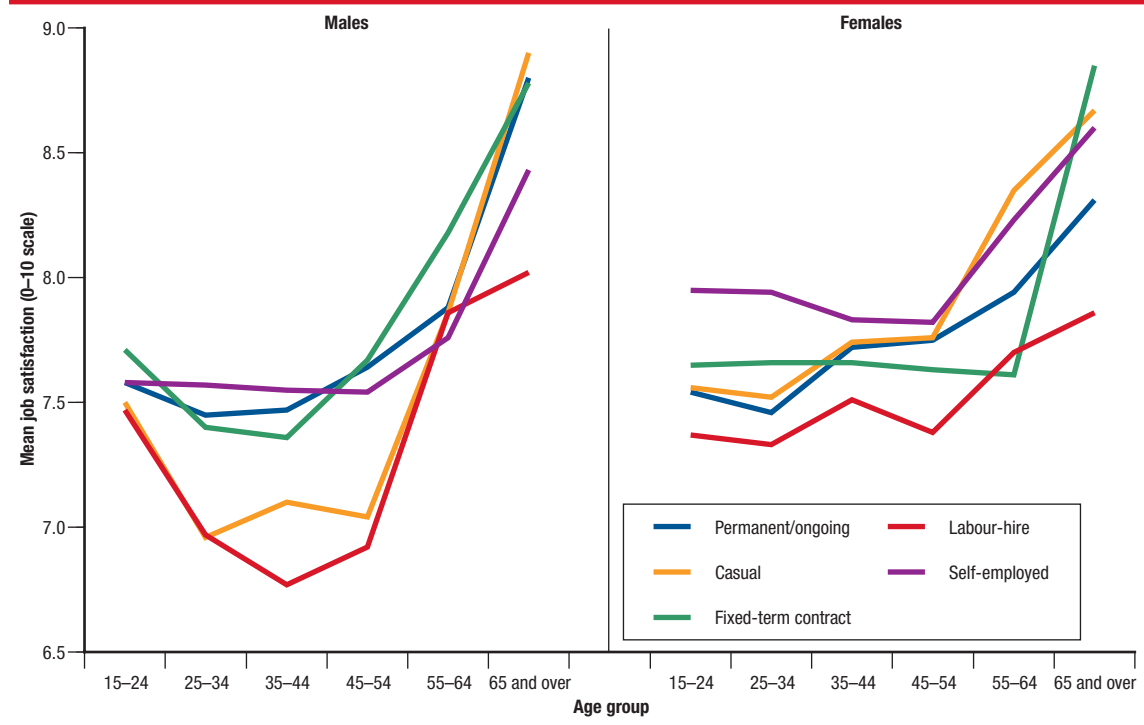


Table 9.2: Mean satisfaction with aspects of job, by employment type, 2001 to 2011 pooled

	Job satisfaction					
	Overall	Balancing work and non-work	Hours	Pay	Job security	The work itself
Males						
Permanent/ongoing	7.57	7.26	7.19	6.97	8.14	7.58
Casual	7.41	7.64	7.00	6.88	7.54	7.25
Fixed-term contract	7.61	7.23	7.18	7.01	7.64	7.70
Labour-hire	7.16	7.11	7.09	6.66	6.43	7.17
Self-employed	7.65	7.54	6.75	6.49	7.42	7.85
Females						
Permanent/ongoing	7.67	7.33	7.33	6.88	8.35	7.61
Casual	7.69	7.91	7.20	7.07	7.67	7.40
Fixed-term contract	7.66	7.33	7.33	6.89	7.15	7.73
Labour-hire	7.42	7.65	7.29	6.88	6.74	7.07
Self-employed	7.97	8.00	7.16	6.61	7.81	8.03

happen to be overwhelmingly casual, then not properly accounting for industry and hours would attribute all this to casual employment. It is therefore important to control for the many confounding factors already identified in the literature to get a clean estimate of the role of employment type. The easiest and most straightforward way to do that when the number of confounding factors is large is by using regression models.

However, even after controlling for observable characteristics such as industry and hours, there is still a possibility that part of the differences in job satisfaction by employment type stems from characteristics that are unobservable. Self-employed individuals may have a greater penchant for risk and reward than do those not seeking self-employment, and if risk aversion is associated with (job) satisfaction then not controlling for individuals self-selecting into particular employment types will lead to biased inference.

To address both issues—netting out the effect of observed confounding factors and controlling for self-selection into employment type—we run an ordered logit regression with fixed effects. Results of the estimation are presented in Table 9.3.

We find that among males both casual and labour-hire workers are significantly less satisfied with their jobs than permanent employees (the reference group). In contrast, fixed-term contract workers are, other things constant, no more or less satisfied with their job. Among women, however, it is only labour-hire workers who are any less satisfied with their jobs.

Less clear is whether the magnitudes of the statistically significant effects that we do observe are small or not. To assess this we derived the average predicted probabilities of reporting different job satisfaction scores from the fixed effects model by employment type and sex. These are reported in Table 9.4. The likelihood of a male worker in a permanent job reporting a satisfaction score in the

Table 9.3: Effects of employment type on job satisfaction—Fixed effects ordered logit coefficient estimates

	Males	Females
Casual	-0.264	-0.001 ⁺
Fixed-term contract	-0.010 ⁺	-0.072 ⁺
Labour-hire	-0.305	-0.189
Self-employed	0.072 ⁺	0.165

Notes: ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level. See Buddelmeyer et al. (2013) for details on the methods used to produce the estimates in this table. The reference category for employment type is 'permanent or ongoing employment'. The sample comprises all employees and self-employed individuals observed during the first 10 waves (2001–2010). Wave 11 data is not used because the regression models include an indicator variable equal to one if the individual's job satisfaction is observed in the next wave (to control for non-random attrition from the sample). The regression equations include controls for age, partnership status, the presence of long-term health conditions, level of education attainment, location, usual weekly hours of work, job tenure, supervisory responsibilities, union membership, occupation (ASCO2 one-digit level), industry (ANZSIC one-digit level), employer size, whether interviewed by telephone, whether other adults were present during the interview, whether the sample member was observed at the next wave, and year. Also included, but not reported in the table, is an 'other employee' category.

bottom half of the scale (i.e. less than 5) is 5.4 per cent, exactly the same as among fixed-term contract workers, but less than among casual employees (6.9 per cent) and among labour-hire workers (7.2 per cent).

At the other end of the scale, the likelihood of a permanent or a fixed-term contract male worker reporting a very high job satisfaction score of 9 or 10 is 30.3 per cent and 30.1 per cent, respectively. By contrast, the comparable probabilities for casual and labour-hire male workers are only 25.3 per cent and 24.6 per cent respectively. In summary, men employed on a casual basis or through a labour-hire firm are more likely to be dissatisfied with their jobs than otherwise comparable men employed on a permanent basis, and are less likely (around 5 percentage points less likely) to be highly satisfied with their jobs.

Among female workers the average predicted probability of a permanent employee reporting a score of 9 or 10 is 34.6 per cent, which compares with

Table 9.4: Average predicted probabilities of job satisfaction scores, by employment type and sex

	$P(JS=0-4)$	$P(JS=5)$	$P(JS=6)$	$P(JS=7)$	$P(JS=8)$	$P(JS=9)$	$P(JS=10)$
Males							
Permanent	0.054	0.057	0.079	0.201	0.306	0.195	0.108
Casual	0.069	0.071	0.093	0.220	0.295	0.167	0.086
Fixed-term contract	0.054	0.058	0.079	0.202	0.306	0.194	0.107
Labour-hire	0.072	0.073	0.095	0.222	0.293	0.163	0.083
Self-employed	0.050	0.054	0.075	0.195	0.307	0.203	0.115
Females							
Permanent	0.050	0.060	0.075	0.181	0.287	0.212	0.134
Casual	0.051	0.060	0.075	0.181	0.287	0.212	0.133
Fixed-term contract	0.054	0.064	0.079	0.186	0.287	0.205	0.126
Labour-hire	0.060	0.070	0.085	0.194	0.284	0.193	0.114
Self-employed	0.043	0.053	0.067	0.168	0.287	0.229	0.153

Note: $P(JS=j)$ is the average predicted probability job satisfaction is equal to j .

34.5 per cent among casual employees, 33.1 per cent among fixed-term contract workers, and 30.7 per cent among labour-hire workers. The differences here are clearly smaller in magnitude than is the case among men.

Many studies into job satisfaction tend to not include self-employed individuals, either because of data unavailability or because they are deliberately dropped from the analysis. However, when treated as just another contract type, results indicate that self-employed individuals obtain the highest levels of overall satisfaction even when they are the least satisfied with their pay.

Endnotes

- 1 This chapter is based on work undertaken by the author in conjunction with Duncan McVicar (Queens University) and Mark Wooden. See Buddelmeyer et al. (2013) for details.

- 2 Respondents are first asked if they are self-employed. A respondent who is an employee is asked about their contract type. A separate question then asks if they are employed through a labour hire firm or temporary employment agency. If they are, this employment status trumps any other.

References

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Part 4: Life Satisfaction, Health and Wellbeing



Life Satisfaction, Health and Wellbeing

While much of the HILDA Survey is concerned with the economic wellbeing of people, extensive information is also collected on the health, lifestyle behaviours, social activity and education participation of respondents. In addition, views and perceptions on a variety of life domains are elicited, including levels of satisfaction with these life domains. In this section, we make use of some of this information to present cursory analyses of the 'subjective wellbeing' and physical and mental health of the Australian community. This year, we also provide new analyses in this section of the extent, nature and correlates of changes in individuals' weight over time (Chapter 11), and the prevalence of carers and their characteristics and wellbeing (Chapter 12).

10. Health, disability and life satisfaction

Roger Wilkins

Every year, respondents to the HILDA Survey are asked to complete the 36-item questionnaire from the SF-36 Health Survey.¹ Moreover, the personal interview each year contains a series of questions on long-term health conditions. These data allow researchers to examine self-reported health and disability of the HILDA population across various dimensions and how these change over time, both at the aggregate level and individually. Respondents also provide data each year about their satisfaction with life and with various aspects of life, including their health. It is therefore also possible to investigate the relationships between subjective wellbeing and various aspects of health.

In this chapter, we present summary statistics on health, disability and life satisfaction, and conduct a cursory investigation of some of their links.

Self-reported health

Ware et al. (2000) describe eight health measures that can be derived from the SF-36 questionnaire:

- *Physical functioning: The extent to which health limits various activities, such as walking, climbing stairs, bathing and strenuous sports.*
- *Role-physical: The extent to which physical health limits work and other activities.*
- *Bodily pain: The extent of pain and degree to which it limits work at home and outside home.*
- *General health: Self-assessed overall health.*
- *Vitality: Level of energy.*
- *Social functioning: The extent to which health problems interfere with social activities.*
- *Role-emotional: The extent to which emotional problems adversely impact on work or other activities.*
- *Mental health: The extent to which a person feels nervous and unhappy or depressed.*

All eight measures are transformed and standardised to a 100-point scale, with higher values corresponding to better health.

Table 10.1 reports mean values for each health measure and the proportion with 'low' scores for each measure, where a score is 'low' if below 50 on the 100-point scale. Estimates are presented separately by sex and age group, but data from all 11 waves are pooled—so estimates represent average health levels and the average proportion in poor health over the 2001 to 2011 period. Several key regularities are evident. Mean levels, and the percentage with low levels, are strongly related to age, with most health measures indicating declining health with age, at least from the 30 to 39 age group upwards. The notable exception is mental health, which in fact appears to be slightly better among older people, particularly those over the age of 60. Males tend to have better self-reported health than females, particularly at younger ages, which may to some extent reflect differences in the way men and women answer the questions rather than real differences in health.

Disability

The HILDA Survey asks respondents each year whether they have any of 17 conditions 'that restricts you in your everyday activities, and has lasted or is likely to last, for 6 months or more'. Consistent with current international conventions (see World Health Organization, 2001), respondents indicating the presence of any of the listed conditions satisfying these requirements may be classified as having a disability. Respondents are also asked to indicate, on a scale from 0 to 10, the extent to which their conditions limit the amount of work they can do, where 0 means 'not at all' and 10 means 'unable to do any work'. This provides a measure of the severity of the disability, although it does not directly measure severity in respect of the ability to engage in the 'core activities' of self-care, mobility and communicating in one's own language.

Table 10.2 presents the proportion of people reporting each of the 17 conditions, as well as the proportion with a condition at each of three different levels of severity measured by the extent of restriction on the amount of work the individual can do: no restriction, moderate restriction (score of 1 to 7) and severe restriction (score of 8 or higher). As with Table 10.1, estimates are disaggregated by sex and age and are presented for all 11 waves pooled.

The most common conditions are, for the most part, non-specific or 'residual' categories: 'any other long-term condition such as arthritis, asthma, heart disease, Alzheimer's disease and dementia' (affecting 9.8 per cent of males aged 15 and over and 13.0 per cent of females aged 15 and over); 'a long-term condition or ailment which is still restrictive even though it is being treated or medication is being taken for it' (7.1 per cent of males

and 7.2 per cent of females); 'any condition that restricts physical activity or physical work (e.g. back problems, migraines)' (9.2 per cent of males and 9.6 per cent of females); and 'chronic or recurring pain (5.5 per cent of males and 6.9 per cent of females). Hearing problems are also relatively common for males, affecting 6.0 per cent of those aged 15 and over, but otherwise the more-specific conditions are relatively uncommon.

Prevalence of conditions is generally higher for older age groups, in many cases much higher. Overall, approximately 60 per cent of people aged 70 and over have one or more of the long-term health conditions, while 48.4 per cent of men aged 60 to 69 and 43.4 per cent of women aged 60 to 69 have one or more of the conditions. At the other end of the age spectrum, 11.2 per cent of males aged 15 to 29 and 12.4 per cent of females aged 15 to 29 report having one or more of the conditions.

Table 10.1: Summary statistics for SF-36 health measures, by age group, 2001 to 2011 pooled							
	15-29	30-39	40-49	50-59	60-69	70 and over	All ages
Means							
<i>Males</i>							
Physical functioning	92.2	91.0	87.2	81.7	74.2	61.4	84.3
Role-physical	91.2	88.3	84.3	78.7	67.4	50.1	80.7
Bodily pain	82.5	79.1	74.8	71.1	66.0	61.9	74.7
General health	74.9	71.9	68.4	65.5	61.2	59.0	68.5
Vitality	65.2	62.7	61.4	62.5	61.8	57.9	62.5
Social functioning	86.7	85.8	84.0	83.0	80.3	74.9	83.5
Role-emotional	87.7	87.5	85.9	85.2	81.2	71.3	84.6
Mental health	74.5	74.6	74.0	75.8	77.0	77.2	75.2
<i>Females</i>							
Physical functioning	91.6	89.7	85.6	78.5	70.8	53.8	81.5
Role-physical	88.6	84.4	81.1	74.2	66.7	47.1	77.2
Bodily pain	80.7	77.7	72.8	67.2	63.8	58.2	72.1
General health	71.6	72.9	69.6	65.7	63.7	59.2	68.3
Vitality	59.8	57.7	58.1	58.2	59.7	55.1	58.3
Social functioning	82.6	82.4	81.7	79.8	79.4	72.8	80.5
Role-emotional	82.6	83.4	83.7	81.9	80.7	70.3	81.3
Mental health	71.4	72.2	72.5	73.0	75.1	75.0	72.8
Percentage with poor health (transformed score less than 50)							
<i>Males</i>							
Physical functioning	5.5	4.5	6.6	10.7	16.3	29.9	10.0
Role-physical	6.0	8.7	12.8	18.3	28.8	45.9	16.2
Bodily pain	6.0	9.0	13.5	18.5	25.4	32.6	14.8
General health	8.9	11.9	17.2	21.6	28.4	31.9	17.5
Vitality	15.9	18.9	21.8	20.1	22.8	29.2	20.3
Social functioning	4.9	5.8	7.0	9.1	11.0	15.5	7.9
Role-emotional	11.7	12.2	13.6	14.1	18.3	28.5	14.9
Mental health	9.0	8.7	9.7	8.4	7.6	7.1	8.6
<i>Females</i>							
Physical functioning	4.8	4.6	6.6	11.4	18.0	39.9	11.5
Role-physical	8.2	12.7	15.4	22.3	29.4	49.2	19.4
Bodily pain	7.7	11.3	16.1	23.5	28.8	40.0	18.4
General health	13.5	12.9	17.5	23.0	25.5	31.7	19.0
Vitality	24.3	29.0	28.2	29.0	25.6	34.1	27.8
Social functioning	7.0	7.6	8.6	11.4	12.2	17.6	9.9
Role-emotional	16.4	16.0	15.5	17.8	18.8	29.6	18.1
Mental health	12.1	11.4	11.8	11.2	9.5	8.0	11.0

In addition to differences across age groups, there are also some significant differences between males and females. Males are considerably more likely to report having hearing problems and somewhat more likely to report being slow at learning or understanding things, while females are considerably more likely to report an 'other condition' and are somewhat more likely to report having limited use of arms or fingers, difficulty gripping things, a nervous or emotional condition and/or chronic or recurring pain.

Also reported in Table 10.2 is the proportion of people with each of three levels of work restriction,

which we interpret as different levels of disability severity. Specifically, individuals reporting that the disability does not limit the amount of work they can do are classified as having no work restriction, scores of 1 to 7 are classified as moderate work restrictions, while scores of 8 to 10 are classified as severe work restrictions. Of the 26.5 per cent of males reporting one or more long-term health conditions, approximately 32 per cent indicate that the condition does not limit the amount of work they can do, while approximately 48 per cent report being moderately restricted in the amount of work they can do. Of the 26.8 per cent of females reporting a long-term health condition, approximately 28 per

Table 10.2: Prevalence of long-term health conditions, by age group, 2001 to 2011 (%)

	15–29	30–39	40–49	50–59	60–69	70 and over	All ages
Males							
Sight problems not corrected by glasses	0.7	1.4	2.5	3.0	4.3	9.1	2.7
Hearing problems	0.7	1.7	3.2	7.0	13.8	23.9	6.0
Speech problems	0.5	0.6	0.5	0.6	0.9	1.6	0.7
Blackouts, fits or loss of consciousness	0.3	0.3	0.5	0.8	1.6	1.6	0.7
Slow at learning or understanding things	1.5	1.3	1.1	1.4	1.8	2.0	1.5
Limited use of arms or fingers	0.7	1.2	2.3	3.6	5.5	6.2	2.6
Difficulty gripping things	0.4	1.0	1.6	2.7	4.7	5.7	2.1
Limited use of feet or legs	1.1	1.8	3.5	5.8	9.3	16.8	4.8
Nervous or emotional condition requiring treatment	1.3	2.5	3.4	3.7	4.2	2.9	2.7
Any condition that restricts physical activity	2.6	5.9	9.1	13.9	17.4	17.6	9.2
Any disfigurement or deformity	0.2	0.6	0.4	1.5	1.2	0.9	0.7
Mental illness requiring help or supervision	0.8	1.5	1.5	1.7	2.4	0.7	1.4
Shortness of breath or difficulty breathing	0.6	0.8	1.6	3.9	9.2	12.6	3.5
Chronic or recurring pain	1.1	3.2	5.9	7.7	11.1	11.0	5.5
Long-term effects of brain damage	0.2	0.6	1.1	1.7	3.0	3.6	1.3
Restrictive long-term condition or ailment	1.7	3.3	5.5	9.5	16.1	18.4	7.1
Other long-term condition such as arthritis and dementia	3.1	3.4	5.7	12.0	22.3	31.0	9.8
Any of the above—no work restriction	5.3	6.4	8.6	9.5	12.6	15.8	8.6
Any of the above—moderate work restriction	5.0	8.0	10.9	14.6	24.7	29.5	12.6
Any of the above—severe work restriction	1.0	2.2	3.8	8.3	11.0	14.6	5.3
Any disability	11.2	16.6	23.3	32.4	48.4	60.0	26.5
Females							
Sight problems not corrected by glasses	0.7	1.0	1.3	1.9	5.2	11.4	2.7
Hearing problems	0.7	1.0	1.8	2.8	5.0	17.0	3.6
Speech problems	0.3	0.2	0.4	0.3	0.5	1.0	0.4
Blackouts, fits or loss of consciousness	0.6	0.6	0.7	0.7	0.8	1.9	0.8
Slow at learning or understanding things	1.3	0.6	0.7	0.7	1.0	1.8	1.0
Limited use of arms or fingers	0.4	1.0	2.6	4.4	7.4	10.2	3.4
Difficulty gripping things	0.2	0.9	2.2	4.4	8.0	10.5	3.4
Limited use of feet or legs	0.6	1.3	2.8	5.6	8.6	20.4	5.1
Nervous or emotional condition requiring treatment	2.2	3.6	4.1	4.8	4.5	4.0	3.7
Any condition that restricts physical activity	3.1	5.4	8.2	13.7	16.4	20.7	9.6
Any disfigurement or deformity	0.1	0.2	0.4	0.8	1.2	0.9	0.5
Mental illness requiring help or supervision	1.2	1.7	1.2	1.2	0.8	0.9	1.2
Shortness of breath or difficulty breathing	1.0	1.2	2.2	3.8	7.0	14.2	3.9
Chronic or recurring pain	1.5	3.1	5.8	10.0	13.5	15.6	6.9
Long-term effects of brain damage	0.2	0.4	0.5	1.1	1.7	3.0	0.9
Restrictive long-term condition or ailment	2.0	3.7	5.5	9.7	12.7	17.9	7.2
Other long-term condition such as arthritis and dementia	4.0	4.7	7.2	15.3	25.3	39.9	13.0
Any of the above—no work restriction	5.4	5.7	6.2	8.3	11.2	14.1	7.7
Any of the above—moderate work restriction	5.9	8.3	12.0	18.2	25.3	33.2	14.6
Any of the above—severe work restriction	1.0	1.7	3.5	6.1	6.7	12.9	4.4
Any disability	12.4	15.8	21.8	32.7	43.4	60.3	26.8

cent report no work restriction, and approximately 54 per cent report a moderate work restriction. For males, disabilities with severe work restrictions are a lower proportion of all disabilities among those under the age of 50: of males with a disability, the proportion with a severe work restriction is 8.9 per cent for those aged 15 to 29, 13.3 per cent for those aged 30 to 39 and 16.3 per cent for those aged 40 to 49. This compares with around 20 to 25 per cent for the older age groups. Severe work restrictions are less common among females than males, but there is a similar pattern of severe work restrictions being relatively more common among the older age groups.

The relationship between health, disability and subjective wellbeing

Health is a key determinant of quality of life, although it is not obvious that better health will always translate to better quality of life, nor that all dimensions of health have the same implications for quality of life. In Table 10.3, we consider how subjective measures of quality of life relate to various health dimensions as captured by the SF-36 health measures and disability measure available in the

HILDA Survey data. The table compares subjective wellbeing of the general population aged 15 and over with subjective wellbeing of individuals in poor health and individuals with disability. Specifically, it reports mean levels of reported satisfaction (on a 0 to 10 scale) with life overall, with one's health, with feeling part of one's local community, and with one's employment opportunities. Estimates are presented for each of the eight SF-36 health measures and for three levels of disability severity. Males and females are examined separately, and all 11 waves are pooled so that the estimates represent average levels over the 2001 to 2011 period.

For all SF-36 health measures, average overall life satisfaction is clearly lower among those in poor health than among the general population. Life satisfaction is on average particularly low for people in poor mental health, while those with poor social functioning also have quite low levels of satisfaction on average. Individuals with low scores for physical functioning, 'role-physical' and/or bodily pain, while also having lower average life satisfaction than the general population, appear to be less adversely affected than those with low scores for the other health measures. Unsurprisingly, for all

Table 10.3: Subjective wellbeing of individuals in poor health or with a disability, 2001 to 2011 (means)

	Satisfaction with...			
	Life	Health	Community	Employment
Males				
All aged 15 and over	7.8	7.4	6.7	7.1
<i>Those in poor health (transformed score <50)</i>				
General health	7.1	4.9	6.2	5.6
Physical functioning	7.5	5.6	6.5	5.7
Role-physical	7.4	5.4	6.5	5.6
Bodily pain	7.3	5.3	6.4	5.6
Vitality	7.0	5.7	6.1	6.0
Social functioning	6.7	4.8	5.9	5.2
Role-emotional	7.0	5.8	6.1	5.8
Mental health	6.3	5.5	5.6	5.6
<i>With a disability</i>				
All with a disability	7.5	5.9	6.5	5.9
No work restriction	7.9	7.0	6.6	6.9
Moderate work restriction	7.5	5.8	6.6	5.8
Severe work restriction	7.0	4.1	6.3	3.4
Females				
All aged 15 and over	7.9	7.3	6.8	6.9
<i>Those in poor health (transformed score <50)</i>				
General health	7.1	4.9	6.2	5.8
Physical functioning	7.6	5.5	6.6	5.5
Role-physical	7.4	5.5	6.5	5.8
Bodily pain	7.4	5.4	6.5	5.8
Vitality	7.2	5.9	6.2	6.2
Social functioning	6.8	5.0	5.9	5.4
Role-emotional	7.1	5.9	6.2	5.9
Mental health	6.5	5.6	5.7	5.6
<i>With a disability</i>				
All with a disability	7.6	5.7	6.6	5.9
No work restriction	8.0	6.9	6.8	6.8
Moderate work restriction	7.5	5.6	6.6	5.7
Severe work restriction	6.9	4.1	6.1	4.0

health measures, satisfaction with health is on average very low among individuals in poor health, although it is poor general health that is associated with the lowest levels of health satisfaction. Satisfaction with community belonging is likewise lower for those in poor health, where it is poor mental health and poor social functioning that are associated with the least satisfaction. Satisfaction with employment opportunities is also lower for individuals in poor health, especially for those with poor social functioning.

Life satisfaction is on average lower for people with disability, but disaggregation by severity shows that it is only disabilities that limit the amount of work one can do that are associated with lower satisfaction. Individuals with moderate work restrictions have somewhat lower average life satisfaction, while individuals with severe work restrictions have considerably lower life satisfaction. The same orderings by disability severity are evident for health satisfaction, satisfaction with community belonging, and satisfaction with employment opportunities.

Inferences on the implications of poor health for subjective wellbeing that are derived from the descriptive comparisons presented in Table 10.3 are susceptible to the confounding effects of other characteristics of people in poor health. For example, Tables 10.1 and 10.2 show that there are substantial age differences between those in poor health and the general population. If age impacts on subjective wellbeing, these age differences will affect the observed differences in subjective wellbeing between the general population and those in poor health.

Regression models can eliminate the effects of confounding influences to allow identification of the impacts on subjective wellbeing attributable to health. Table 10.4 reports estimates of the effects of health and long-term conditions on life satisfaction and health satisfaction derived from 'fixed effects' regression models. These models identify effects from individual-level variation in health, essentially by examining how an individual's life or health satisfaction changes when health changes, controlling for individual fixed traits (the 'fixed effects'). Note, therefore, that the estimated effects are essentially only 'immediate' effects of health changes or onset of long-term health conditions. As such, the models do not shed light on adjustments to health and disability changes. For example, a deterioration in health may produce a decline in life satisfaction in the immediate term (which we will identify) but over the longer term the individual may adapt to the deterioration, so that subjective wellbeing recovers. This potential adaptation is not captured in the models reported in Table 10.4.

For each outcome (life satisfaction and health satisfaction) three models are estimated (for males and females separately). The top panel reports estimates of the effects of the SF-36 health measures, the

second panel reports estimates of the effects of disability, distinguishing three levels of severity, while the bottom panel reports estimates of the effects of specific long-term conditions. Note that the specific-conditions model does not consider the severity of each condition, since severity is only obtained by the HILDA Survey for all conditions collectively.

The health models indicate that general health, vitality, social functioning, role-emotional and mental health all have significant positive impacts on life satisfaction for both males and females. Effects are largest for mental health and smallest for role-emotional. Physical functioning and role-physical do not appear to affect life satisfaction. It is difficult to explain the somewhat perverse finding that a higher score for bodily pain (i.e. less bodily pain) acts to reduce life satisfaction of both males and females. Estimated effects are similar for males and females, with general health and mental health having slightly larger effects for females, and vitality, social functioning and role-emotional having slightly larger effects for males.

Almost all of the health dimensions have significant positive impacts on health satisfaction. The only exception is that the estimate for role-emotional is not statistically significant for females; this is also the health measure with the smallest estimated impact for males. As with life satisfaction, estimates are broadly similar for males and females, with effects of general health, physical functioning, bodily pain, social functioning and mental health slightly larger for females, and effects of role-physical and vitality slightly larger for males. As might be expected, general health is the most important determinant of health satisfaction for both males and females.

Disability also has significant negative effects on both life and health satisfaction for both males and females. Sizeable negative effects are evident even if the disability does not restrict the amount of work the individual can do, although the magnitude of the effect is clearly larger the more severe the disability (as measured by extent of work restriction). For example, for males, a disability that does not cause a work restriction reduces life satisfaction (measured on the 0 to 10 scale) by 0.07, a disability that causes a moderate work restriction reduces life satisfaction by 0.28, and a disability that causes a severe work restriction reduces life satisfaction by 0.59. Estimated effects are, as with health, similar for males and females, although negative effects tend to be slightly larger for females, particularly for health satisfaction.

Looking at specific long-term health conditions—blackouts, fits or loss of consciousness, limited use of feet or legs, nervous or emotional conditions requiring treatment, any condition that restricts physical activity, mental illness requiring help or supervision, chronic or recurring pain, and restrictive long-term conditions or ailments—all of these have significant negative effects on life satisfaction

of both males and females. Slowness at learning or understanding, difficulty gripping things, long-term effects of brain damage and 'other long-term conditions' additionally have significant negative effects on life satisfaction of males, but not females. Sight, hearing and speech problems, limited use of arms or fingers, disfigurement or deformity and shortness of breath or difficulty breathing do not appear to impact on life satisfaction. There is more divergence between males and females in the effects of specific conditions than was evident for disability overall and for the SF-36 health measures. As noted, there are four conditions that negatively impact on life satisfaction of males but not life satisfaction of females. Further, blackouts, fits or loss of consciousness and limited use of feet or legs have greater negative impacts for males than females, while conditions that restrict physical activity and mental illness requiring help or supervision have greater negative effects for females.

Most of the conditions have negative effects on health satisfaction. The only exceptions are: disfigurement or deformity, which has no significant effect for males and actually increases health satisfaction of

females; sight problems for males; and speech problems and difficulty gripping things for females. Adverse effects on health satisfaction are largest for nervous or emotional conditions requiring treatment, while adverse effects are also large for mental illness requiring help or supervision, restrictive long-term conditions or ailments, and chronic or recurring pain.

Persistence of adverse effects of disability

As noted, the estimates presented in Table 10.4 capture only the immediate effects of changes in health because they identify effects from contemporaneous changes in subjective wellbeing and health—that is, changes from one year to the next in health and changes over the same period in subjective wellbeing. One might expect negative effects of adverse health events (and positive effects of improvements in health) to be greatest in the immediate period after the event occurs. Thus, it might be expected that effects dissipate over time. This issue is particularly relevant to long-term conditions, which by definition tend to be long-lasting, and to which individuals may to some extent adapt over time.

Table 10.4: Effects of health and disability on life satisfaction and health satisfaction

	Life satisfaction		Health satisfaction	
	Males	Females	Males	Females
Health model (higher = better health)				
General health	0.0059	0.0070	0.0333	0.0381
Physical functioning	-0.0001+	-0.0003+	0.0036	0.0057
Role-physical	-0.0003+	-0.0001+	0.0034	0.0025
Bodily pain	-0.0007	-0.0008	0.0038	0.0054
Vitality	0.0058	0.0049	0.0076	0.0071
Social functioning	0.0036	0.0028	0.0031	0.0036
Role-emotional	0.0017	0.0013	0.0005	0.0001+
Mental health	0.0164	0.0181	0.0013	0.0016
Disability model				
Disability, no work restriction	-0.0660	-0.0817	-0.4010	-0.4891
Disability, moderate work restriction	-0.2832	-0.2638	-0.9977	-1.1875
Disability, severe work restriction	-0.5871	-0.6033	-1.7763	-1.9080
Specific conditions model				
Sight problems not corrected by glasses	0.0364+	-0.0324+	-0.0611+	-0.1246
Hearing problems	0.0019+	-0.0297+	-0.0863	0.0835
Speech problems	-0.1123+	-0.1301+	-0.3446	0.0285+
Blackouts, fits or loss of consciousness	-0.3157	-0.1554	-0.1849	-0.3284
Slow at learning or understanding things	-0.1494	-0.0109+	-0.1235	-0.0118+
Limited use of arms or fingers	-0.0467+	-0.0533+	-0.1514	-0.1723
Difficulty gripping things	-0.0759	-0.0264+	-0.1418	0.0504+
Limited use of feet or legs	-0.1249	-0.0799	-0.2574	-0.2568
Nervous or emotional condition requiring treatment	-0.3575	-0.3812	-0.5413	-0.5781
Any condition that restricts physical activity	-0.0440	-0.1029	-0.3760	-0.4366
Any disfigurement or deformity	0.0144+	-0.0105+	-0.0150+	0.2642
Mental illness requiring help or supervision	-0.2080	-0.4435	-0.4714	-0.5493
Shortness of breath or difficulty breathing	-0.0521+	-0.0497+	-0.4003	-0.2166
Chronic or recurring pain	-0.0939	-0.0889	-0.4444	-0.4801
Long-term effects of brain damage	-0.2913	-0.0083+	-0.2027	-0.4335
Restrictive long-term condition or ailment	-0.1010	-0.1189	-0.4222	-0.5725
Other long-term condition such as arthritis and dementia	-0.0390	-0.0207+	-0.2629	-0.2730

Notes: Estimates are derived from linear 'fixed-effects' models estimated using data from Waves 1 to 11. All models contain age and time controls. + indicates the estimate is not significantly different from zero at the 10 per cent level.

Table 10.5: Effects of disability on life satisfaction and health satisfaction, by duration of disability

	Life satisfaction		Health satisfaction	
	Males	Females	Males	Females
Duration of disability				
<1 year	-0.2611	-0.2738	-0.8118	-0.9163
1 to <2 years	-0.2572	-0.3007	-0.8253	-1.0535
2 to <3 years	-0.1691	-0.2398	-0.8182	-0.9307
3 to <4 years	-0.2754	-0.1742	-1.0083	-0.9499
4 or more years	-0.2562	-0.3077	-0.8364	-0.9893

Notes: Estimates are derived from linear 'fixed-effects' models estimated using data from Waves 1 to 11. All models contain age and time controls.

To investigate whether effects of long-term conditions dissipate, the models of the effects of disability and specific long-term conditions estimated for Table 10.4 can be augmented by including variables for the length of time the individual has had the disability or condition. Table 10.5 reports results of models of this form, but in the interests of brevity restricts to a single explanatory variable, which is the presence of a disability that either moderately or severely restricts the amount of work the individual can do. The models include five dummy indicator variables for the length of time the individual has had the disability: less than one year; one to less than two years; two to less than three years; three to less than four years; and four or more years. The fixed effects models are estimated on the period from 2005 to 2011, with the waves prior to 2005 unable to be used because disability status four years ago is not known in those waves. (In principle, it is possible to use information obtained in the respondent's first interview on when the disability arose, but it is not known whether the disability was work limiting when it first arose, and estimates would be susceptible to recall error.)

The estimates in Table 10.5 in fact suggest there is no dissipation in the adverse effects of disability on either life satisfaction or health satisfaction. For example, a disability that arose four or more years ago on average decreases male life satisfaction by 0.26, the same as a disability that arose less than one year ago. Similarly, a disability that arose less than one year ago on average decreases female life satisfaction by 0.27, while a disability that arose four or more years ago on average decreases female life satisfaction by 0.31. It therefore seems that adverse effects of disability on subjective wellbeing are very long-lived, and possibly permanent.

Conclusion

The HILDA Survey provides quite rich information on the health and wellbeing of the Australian community. In this chapter, the links between various dimensions of health and subjective wellbeing have been explored, showing there are indeed strong

connections. Poor health and disability unambiguously reduce life satisfaction, and persistent health conditions appear to have persistent adverse effects on life satisfaction, there being no evidence from the analysis undertaken here that individuals adapt to their conditions.

Endnote

- 1 The 36 questions in the SF-36 are intended to measure health outcomes (functioning and wellbeing) from a patient point of view (Ware et al., 2000). The SF-36 was specifically developed as an instrument to be completed by patients or the general public rather than by medical practitioners, and is widely regarded as one of the most valid instruments of its type. The Australian Bureau of Statistics (ABS) has conducted both general and mental health studies using the SF-36. Of particular relevance to the HILDA Survey results are the National Survey of Mental Health and Well-Being of Adults, and the National Health Survey (ABS, 1997, 2001). The former included a short version, the SF-12, of the mental health scale in the SF-36. To our knowledge, there are no established norms for the SF-36 for Australian respondents, although a small sample validation study of an Australian version of the instrument has been done in New South Wales (Sanson-Fisher and Perkins, 1998).

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11. Weight change of individuals over time

Roger Wilkins

As part of a strategy to expand the health-related information collected by the HILDA Survey, in every wave since Wave 6, respondents have been asked to report their height and weight. While it should be recognised that self-reporting will be conducive to measurement error, it is not uncommon for studies to rely on self-reported data, and Wooden et al. (2008) show that the height and weight data compare well against data collected for the 1995 Australian Bureau of Statistics (ABS) National Health Survey (NHS).¹

Previous volumes of the Statistical Report have contained analyses drawing on the height and weight data (see Chapter 33 of Volume 4; Chapter 24 of Volume 5). These analyses were respectively restricted to the Wave 6 and Wave 7 data, and as such were cross-sectional in nature. However, as of Wave 11, there are up to six years of height and weight data available for each respondent to the HILDA Survey, making it now possible to undertake longitudinal analysis of individuals' weight change. In this chapter, we draw on the height and weight data available in Waves 6 to 11 to firstly describe their distributions over the 2006 to 2011 period. We then examine how weight changes over time at the individual level, as well as the determinants of weight change over time.

Height and weight distributions in Australia, 2006 to 2011

Table 11.1 describes the distributions of height and weight of the Australian population aged 15 and over from 2006 to 2011. It presents the 10th, 25th, 50th, 75th and 90th percentiles of the height and weight distributions among males and females in each of seven age groups. Note, however, that women who had become pregnant or given birth within the preceding year are excluded from the sample, as they are in all subsequent analysis in this chapter.

The table shows people in the younger adult age groups tend to be taller than people in the older age groups, although the biggest differences are between those under the age of 60 and those aged 60 and over. The median height is 179 centimetres for males aged 15 to 17, 180 centimetres for males aged 18 to 29, 179 centimetres for males aged 30 to 39, 178 centimetres for males aged 40 to 59, and 175 centimetres for males aged 60 and over. For females, the median height is 165 centimetres for those aged 15 to 39, 164 centimetres for those aged 40 to 49, 163 centimetres for those aged 50 to 59 and 160 centimetres for those aged 60 and over.

In contrast to height, weight tends to be increasing in age up to the 50 to 59 age group, with the increases

Table 11.1: Distribution of self-reported height and weight, by age group, 2006 to 2011 pooled

	15–17	18–24	25–29	30–39	40–49	50–59	60 and over
Height (centimetres)							
<i>Males</i>							
10th percentile	167	168	170	168	168	168	165
25th percentile	173	175	175	174	173	173	170
Median	179	180	180	179	178	178	175
75th percentile	183	185	184	183	183	180	180
90th percentile	188	190	188	188	187	185	183
<i>Females</i>							
10th percentile	155	155	156	154	155	153	152
25th percentile	160	160	160	158	159	157	157
Median	165	165	165	165	164	163	160
75th percentile	170	170	171	170	168	168	165
90th percentile	175	176	176	175	174	173	170
Weight (kilograms)							
<i>Males</i>							
10th percentile	55	61	65	68	68	70	66
25th percentile	62	68	73	75	76	77	74
Median	69	76	82	85	85	86	83
75th percentile	79	86	94	95	96	95	92
90th percentile	90	100	105	107	109	108	102
<i>Females</i>							
10th percentile	47	50	51	53	54	55	54
25th percentile	52	55	57	59	60	61	60
Median	59	62	65	68	68	70	69
75th percentile	65	71	75	80	80	82	79
90th percentile	75	84	90	94	95	95	89

Table 11.2: Distribution of Body Mass Index (BMI), by age group, 2006 to 2011 pooled

	18–24	25–29	30–39	40–49	50–59	60 and over
Males						
Mean BMI	24.4	26.1	27.1	27.6	28.1	27.4
<i>Percentage in each BMI category</i>						
Underweight (<18.5)	3.8	1.5	0.7	0.7	0.4	1.4
Normal weight (18.5 to <25)	59.2	45.4	34.1	29.3	23.6	29.8
Overweight (25 to <30)	26.5	35.3	43.3	43.1	47.1	44.8
Obese (30 or higher)	10.5	17.7	21.8	26.9	28.8	24.0
Females						
Mean BMI	23.7	25.0	26.3	26.8	27.7	27.1
<i>Percentage in each BMI category</i>						
Underweight (<18.5)	9.9	6.3	2.2	2.8	1.2	3.0
Normal weight (18.5 to <25)	59.7	54.2	49.2	43.7	37.1	36.4
Overweight (25 to <30)	19.3	24.2	26.8	28.8	31.2	34.5
Obese (30 or higher)	11.1	15.4	21.9	24.7	30.4	26.1

greatest over the 15 to 39 age range. For males, the median weight is 69 kilograms for those aged 15 to 17, 76 kilograms for those aged 18 to 24, 82 kilograms for those aged 25 to 29, 85 kilograms for those aged 30 to 49, 86 kilograms for those aged 50 to 59 and 83 kilograms for those aged 60 and over. For females, the median weight is 59 kilograms for those aged 15 to 17, 62 kilograms for those aged 18 to 24, 65 kilograms for those aged 25 to 29, 68 kilograms for those aged 30 to 49, 70 kilograms for those aged 50 to 59 and 69 kilograms for those aged 60 and over.

The principal reason for including measures of height and weight in the HILDA Survey was to enable the calculation of the body mass index (or BMI) of each respondent (see definition box below). Table 11.2 presents, for men and women in each of six age groups, the mean BMI and the proportion in each of four BMI categories: underweight, normal weight, overweight and obese.² Consistent with Table 11.1, BMI is increasing in age up to the 50 to 59 age group, averaging approximately 24 for both men and women aged 18 to 24 and rising to an average of approximately 28 for both men and women aged 50 to 59. Correspondingly, the proportion in the normal BMI range declines in age up to the 50 to 59 age group, and the proportions in the overweight and obese BMI ranges increase in age up to the 50 to 59 age group. Men and women are similarly likely to be obese, but men are more likely to be overweight, while women are more likely to be normal weight or underweight.

Body Mass Index (BMI)

BMI is a widely used—albeit imperfect—measure of body fat based on an individual's height and weight. It is equal to weight in kilograms divided by the square of height in metres. Adults are classified as being underweight if BMI is under 18.5, normal (or healthy) weight if BMI is at least 18.5 and less than 25, overweight if BMI is at least 25 and less than 30, and obese if BMI is 30 or higher (WHO, 2000).

Associations of weight with characteristics and health behaviours

Using BMI as our preferred measure of weight, since it is essentially a height-adjusted measure of weight, Table 11.3 compares the socio-demographic characteristics of people by BMI category. The table uses all six waves of data in which height and weight have been collected, but restricts to individuals aged 18 and over on the basis that the BMI categories apply only to adults.

The table shows that there are considerable differences in the characteristics of the BMI groups, a number of which are consistent with a socio-economic 'gradient' for BMI, whereby more disadvantaged groups are more likely to be overweight or obese. The most direct evidence of this is that the mean SEIFA decile, which provides a measure of the socio-economic status of the location of residence, is highest for the normal BMI group, and lowest for the obese group. People living outside the major urban areas are, moreover, more likely to be overweight or obese than residents of the major urban areas. For example, approximately 25 per cent of obese people live in 'other urban' areas, whereas approximately 18 per cent of normal-weight people live in 'other urban' areas.

Normal-weight and overweight men are considerably more likely to hold a bachelor's degree than obese and underweight men; and normal-weight and overweight men are also considerably less likely than underweight and obese men to have less than high school completion as the highest educational qualification. For women, both the underweight and the normal-weight have relatively high proportions holding bachelor's degrees compared with both the overweight and obese. Among both men and women, household equivalised income is on average lowest for the underweight. The normal-weight group has the highest average income for women, but for men, it is the overweight group that has the highest average income. Thus, while for women the normal-weight group is the most educated and highest income BMI group, for men the overweight

BMI group is similarly educated to the normal-weight group, and actually has higher average income than the normal-weight group.

Aside from the findings for overweight men, two further exceptions to the notion of a socio-economic 'gradient' for BMI—that more disadvantaged demographic groups tend to have higher rates of being overweight and obese—are evident in Table 11.3. First, a relatively high proportion of the obese are non-indigenous native-born Australians, and a relatively low proportion are immigrants from non-English-speaking countries (NESB immigrants). Second, relatively high proportions of the overweight and obese men are married.

Differences in health and health behaviours across the four BMI categories are examined in Table 11.4. Health outcomes are clearly worst for the underweight group, for both men and women. The underweight have the lowest average levels of general health and mental health, and the highest

proportions in poor general health and poor mental health. They also have high smoking rates—particularly underweight men, of whom 43.6 per cent smoke—and are relatively unlikely to exercise regularly (three or more times per week). General health is highest for normal-weight people, while mental health is similar for normal-weight and overweight people, but slightly worse for obese people.

Normal-weight people are the most likely to exercise regularly, with 57.1 per cent of men and 49.8 per cent of women in this BMI category indicating they exercise at least three times per week. Interestingly, obese people are less likely to regularly drink alcohol (five or more times per week) than normal-weight and overweight people. Obese women are also less likely to regularly 'binge drink' (consume five or more drinks at least twice a month) than women in the other three BMI categories. Smoking rates of overweight and obese men are, furthermore, relatively low compared with normal-weight men. Thus, there is no

Table 11.3: Characteristics by BMI category, 2006 to 2011 pooled—Persons aged 18 years and over

	<i>Underweight (<18.5)</i>	<i>Normal weight (18.5 to <25)</i>	<i>Overweight (25 to <30)</i>	<i>Obese (30 or higher)</i>
Males				
<i>Region of residence (%)</i>				
Major urban	71.1	68.4	64.7	60.2
Other urban	17.7	18.5	20.7	25.2
Other region	11.2	13.1	14.6	14.5
Mean SEIFA decile	5.3	6.0	5.9	5.2
<i>Immigrant and indigenous status (%)</i>				
Non-indigenous native-born	69.9	71.9	70.7	75.1
Indigenous	3.4	1.3	1.6	1.4
ESB immigrant	12.3	10.0	12.2	11.7
NESB immigrant	14.4	16.7	15.4	11.8
Married (%)	30.6	58.0	73.9	72.8
<i>Educational attainment (%)</i>				
Bachelor's degree or higher	9.5	25.4	24.6	15.8
Other post-school qualification	37.1	32.7	38.9	39.8
Completed high school	22.9	20.3	14.0	13.3
Less than high school completion	30.5	21.5	22.5	31.1
Mean equivalised income (\$, December 2011 prices)	38,596	48,806	50,911	47,704
Females				
<i>Region of residence (%)</i>				
Major urban	73.5	69.4	64.0	60.2
Other urban	16.5	18.1	23.0	24.7
Other region	10.0	12.5	13.0	15.1
Mean SEIFA decile	5.9	6.2	5.5	5.0
<i>Immigrant and indigenous status (%)</i>				
Non-indigenous native-born	68.3	69.5	73.4	75.0
Indigenous	2.7	1.3	1.6	2.7
ESB immigrant	8.9	9.9	10.0	9.6
NESB immigrant	20.1	19.3	15.0	12.7
Married (%)	46.0	65.7	67.5	67.0
<i>Educational attainment (%)</i>				
Bachelor's degree or higher	25.8	29.7	21.9	17.3
Other post-school qualification	23.8	22.7	24.9	24.6
Completed high school	24.7	18.8	15.8	13.2
Less than high school completion	25.7	28.9	37.4	44.9
Mean equivalised income (\$, December 2011 prices)	42,576	49,292	45,301	43,234

unambiguous relationship between drinking and smoking behaviour and BMI for men or women.

The frequency of eating out provides a measure of unhealthy eating behaviour, although it must be acknowledged that there are many healthy options for eating out. It is thus not entirely surprising that the mean number of times per week individuals eat out is actually highest for underweight and normal-weight men and women. Note, however, that this may in part reflect the fact that younger adults, who tend to have a lower BMI, eat out more frequently. It is therefore possible that, controlling for age, overweight and obese people do eat out more often.

Individual-level changes in weight over time

The preceding analysis provides a cross-sectional view of individuals' weight and how it varies by characteristics, but sheds little light on how weight changes over time at the individual level and the factors that impact on weight change. In Tables 11.5 to 11.7, we describe how BMI changes over various time-frames of up to five years.

Table 11.5 examines transitions between BMI categories of men and women aged 21 and over, considering both one-year and five-year time-frames. The one-year time-frame includes all five consecutive year-pairs from 2006 to 2011 (i.e. 2006 to 2007, 2007 to 2008, 2008 to 2009, 2009 to 2010 and 2010 to 2011), while the five-year time-frame is for changes between 2006 and 2011. Each panel shows, for each initial BMI category, the proportion of individuals remaining in that category and the proportions moving into each other BMI category.

While the proportion of individuals who move BMI categories is considerably higher over five years

than over one year, significant numbers nonetheless move into a different BMI category over a one-year period—although, even over five years, most people do not move more than one BMI category. Changes in BMI category tend to be to a higher BMI category—with of course the clear exception for obese people, who can only move down.

The least persistent BMI category is underweight, with 43.8 per cent of underweight men and 59.8 per cent of underweight women still underweight one year later, and 35.0 per cent of underweight men and 35.5 per cent of underweight women still underweight five years later. For normal-weight people, 80.4 per cent of men and 84.4 per cent of women are still normal weight one year later, with most of those who move out of the normal weight category moving into the overweight category. Over five years, 69.5 per cent of normal-weight men and 75.0 per cent of normal-weight women remain normal weight, with 27.7 per cent of the men and 18.4 per cent of the women moving into the overweight category.

Over a one-year time-frame, overweight people are approximately equally likely to move into the normal-weight and obese categories, but over a five-year period they are more likely to move into the obese category. Specifically, 70.6 per cent of overweight men are still overweight five years later, while 13.1 per cent have moved into the normal-weight category and 16.3 per cent have moved into the obese category. For overweight women, 64.0 per cent of are still overweight five years later, while 14.2 per cent have moved into the normal-weight category and 21.7 per cent have moved into the obese category.

Table 11.4: Health and health behaviours by BMI category, 2006 to 2011 pooled—Persons aged 18 years and over

	Underweight (<i><18.5</i>)	Normal weight (<i>18.5 to <25</i>)	Overweight (<i>25 to <30</i>)	Obese (<i>30 or higher</i>)
Males				
SF-36 general health (mean)	56.9	70.4	67.9	61.8
SF-36 mental health (mean)	67.7	75.0	75.8	73.6
In poor general health (%)	32.6	14.7	17.8	25.3
In poor mental health (%)	13.8	8.3	8.1	10.5
Exercise regularly (%)	39.5	57.1	53.3	45.0
Drink regularly (%)	14.2	19.6	23.0	18.0
Binge drink regularly (%)	32.6	29.7	30.4	28.9
Smoker (%)	43.6	25.3	21.3	19.5
Number of times per week eat out (mean)	2.9	3.1	2.7	2.7
Females				
SF-36 general health (mean)	62.7	70.5	66.6	59.6
SF-36 mental health (mean)	67.9	73.6	73.5	71.7
In poor general health (%)	25.9	16.0	20.5	30.9
In poor mental health (%)	17.0	10.2	10.4	12.6
Exercise regularly (%)	44.0	49.8	47.1	35.9
Drink regularly (%)	11.9	13.2	12.0	7.6
Binge drink regularly (%)	17.2	19.2	16.7	14.1
Smoker (%)	22.6	16.8	15.5	17.6
Number of times per week eat out (mean)	2.7	2.2	1.8	1.9

Note: 'Number of times per week eat out' is only available in Waves 7 and 9.

Over a five-year time-frame, the obese BMI category is the most persistent for both men and women—77.7 per cent of obese men and 84.0 per cent of obese women are still obese five years later—which is consistent with the general tendency for an individual's BMI to increase over time.

Table 11.6 examines BMI changes, rather than simply movements between BMI categories, thereby capturing BMI changes that do not involve a change in BMI category. It presents, for men and women separately, the mean change in BMI, and the proportion in each of four categories for extent of change in BMI, over one-, three- and five-year time-frames: (i) a decrease in BMI (a decrease in excess of 1); (ii) no change in BMI (an increase or decrease in BMI of 1 or less); (iii) a moderate increase in BMI (an increase greater than 1 but no more than 3); and (iv) a large increase in BMI (an increase greater than 3).

The table clearly shows the tendency towards increase in BMI at the individual level over time. On average, BMI increases by 0.14 per year for men and by 0.13 per year for women. Over three years, the mean change in BMI is an increase of 0.46 for men and 0.32 for women; while over five years, the mean increase is 0.69 for men and 0.59 for women.

Over five years, the majority of people experience a change in BMI (greater than one in absolute value), and even over one year, over 40 per cent of people experience a change in BMI. Interestingly, the

proportion experiencing a decrease in BMI (greater than one) is relatively insensitive to the time-frame, applying to approximately 20 per cent of people irrespective of the time-frame. By contrast, the proportions experiencing a moderate and, more particularly, a large increase in BMI are increasing in the length of the time-frame. For example, 5.2 per cent of men and 6.9 per cent of women experience a large increase in BMI over one year, while 11.6 per cent of men and 15.3 per cent of women experience a large increase in BMI over five years.³

Differences in mean BMI change of individuals by age group are examined in Table 11.7. With only a couple of minor exceptions, the clear pattern is one of mean BMI change being highest for the youngest age group and monotonically declining in age—for men, to the extent that the mean BMI change among those aged 60 and over is negative. For example, the mean five-year change in BMI for men declines monotonically from 1.67 for those aged 18 to 24 down to –0.18 for those aged 60 and over. For women, the mean five-year change in BMI declines from 1.20 for those aged 18 to 24 down to 0.12 for those aged 60 and over. Thus, while people tend to put on weight as they grow older, the rate of increase in weight is on average lower the older they get.⁴

Determinants of weight change

It is clear from Tables 11.5 to 11.7 that the overall tendency is for individuals' BMI to increase over

Table 11.5: Individual changes in BMI category over one year and over five years, by initial BMI category—Persons aged 18 years and over, 2006 to 2011 (%)

Men					
<i>Initial BMI</i>	<i>BMI category 1 year later</i>				<i>Total</i>
	<i>Underweight</i>	<i>Normal weight</i>	<i>Overweight</i>	<i>Obese</i>	
Underweight	43.8	50.5	*5.1	*0.6	100.0
Normal weight	1.5	80.4	17.5	0.7	100.0
Overweight	*0.2	11.8	77.9	10.1	100.0
Obese	*0.1	*0.7	16.6	82.5	100.0
<i>BMI category 5 years later</i>					
<i>Initial BMI</i>	<i>Underweight</i>	<i>Normal weight</i>	<i>Overweight</i>	<i>Obese</i>	<i>Total</i>
Underweight	35.0	50.5	14.6	*0.0	100.0
Normal weight	1.1	69.5	27.7	1.7	100.0
Overweight	*0.1	13.1	70.6	16.3	100.0
Obese	*0.1	2.0	20.2	77.7	100.0
Women					
<i>Initial BMI</i>	<i>BMI category 1 year later</i>				<i>Total</i>
	<i>Underweight</i>	<i>Normal weight</i>	<i>Overweight</i>	<i>Obese</i>	
Underweight	59.8	39.0	*0.5	*0.7	100.0
Normal weight	2.5	84.4	12.2	0.9	100.0
Overweight	*0.2	14.6	72.7	12.5	100.0
Obese	*0.1	2.0	12.1	85.9	100.0
<i>BMI category 5 years later</i>					
<i>Initial BMI</i>	<i>Underweight</i>	<i>Normal weight</i>	<i>Overweight</i>	<i>Obese</i>	<i>Total</i>
Underweight	35.5	63.8	*0.7	*0.0	100.0
Normal weight	3.6	75.0	18.4	3.0	100.0
Overweight	*0.1	14.2	64.0	21.7	100.0
Obese	*0.2	2.5	13.4	84.0	100.0

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding.

Table 11.6: Changes in BMI over one year, three years and five years—Persons aged 18 years and over, 2006 to 2011

	Men			Women		
	1 year	3 years	5 years	1 year	3 years	5 years
Mean change	0.14	0.46	0.69	0.13	0.32	0.59
Change in BMI (%)						
Decrease	18.5	20.6	20.0	20.3	21.9	21.8
No change	58.8	48.4	43.6	54.0	42.5	38.5
Moderate increase	17.6	22.2	24.9	18.8	23.4	24.4
Large increase	5.2	8.8	11.6	6.9	12.2	15.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: Percentages may not add up to 100 due to rounding.

Table 11.7: Mean change in BMI over one year, three years and five years, by initial age group, 2006 to 2011

	18–24	25–29	30–39	40–49	50–59	60 and over
Men						
1 year	0.38	0.15	0.15	0.12	0.08	–0.05
3 years	1.12	0.35	0.46	0.29	0.10	–0.24
5 years	1.67	0.97	0.77	0.50	0.32	–0.18
Women						
1 year	0.22	0.31	0.28	0.22	0.01	0.00
3 years	0.83	0.59	0.69	0.67	0.26	0.00
5 years	1.20	0.96	1.35	0.71	0.41	0.12

time, but also clear is that there is a great deal of variation across individuals, with some experiencing declines in BMI, some experiencing no change in BMI, and others experiencing very large increases in BMI. It follows that it is of interest, and potentially of high policy importance, to understand what might explain the different ‘BMI paths’ that individuals take. To that end, we can draw on the information available in the HILDA Survey data to investigate whether there are observable predictors of weight change. More particularly, estimation of econometric models of the determinants of BMI can shed light on the reasons why changes in BMI over time vary so much across individuals.

Estimation results of models of the determinants of BMI are presented in Table 11.8. Two models are estimated for both men and women. The first is a ‘random effects’ specification, a type of panel model that accounts for unobserved traits of individuals, but also allows the inclusion of individual traits that do not change over time (see the Glossary for further details). This model shows the association between BMI and characteristics and events, but because the ‘random effects’ assumption may be violated, it does not necessarily provide credible estimates of the causal effects of factors. This motivates the second model, a fixed effects specification (see Glossary), which provides more credible estimates of the causal effects of factors on BMI and is therefore more pertinent for understanding what drives *changes* in BMI. It controls for fixed traits (including genetic factors that predispose one to particular BMI levels) and identifies effects solely from changes in BMI and explanatory factors at the individual level. Necessarily, the fixed effects model requires us to omit variables for fixed traits of individuals.⁵

While in principle the estimates of the fixed effects are to be preferred to the random effects estimates, in practice the estimates presented in Table 11.8 suggest that the random effects assumption is in fact reasonable, since most estimates (for non-fixed traits) are very similar for the random effects and fixed effects models. Both models show that ageing is, quite simply, a big factor in weight gain. The fixed effects estimates show that, throughout the age distribution from age 21 until at least age 69, ageing acts to increase BMI. The estimates in fact imply that the weight-increasing effects continue past the age of 70 for women (although note that the fixed effects estimate for the 70 and over category comes from individuals who move from the 60 to 69 age category to the 70 and over age category, and therefore does not capture effects of ageing beyond the early 70s—which the random effects models do). The magnitude of the ageing effect is, moreover, large. For example, the fixed effects estimates imply that, all else equal, a male aged 60 to 69 has a BMI that is 2.4 higher than a male aged 18 to 24, while a female aged 60 to 69 has a BMI that is 4.0 higher.

Being partnered acts to increase BMI, by 0.46 for men and by 0.53 for women, but the presence of dependent children does not significantly affect weight. The random effects model indicates that living in a more socio-economically disadvantaged region (lower SEIFA decile) leads to higher weight, but the fixed effects estimates are smaller in magnitude and only statistically significant for women. Population density of the region of residence (i.e. whether one lives in a major urban area, other urban area or other region) does not appear to impact on weight.

Table 11.8: Determinants of BMI—Persons aged 18 years and over, 2006 to 2011

	<i>Random effects model</i>		<i>Fixed effects model</i>	
	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>
<i>Place of birth and ethnicity (Reference category: Non-indigenous Australian-born)</i>				
ESB immigrant	-0.108 ⁺	-0.750	-	-
NESB immigrant	-0.423	-1.401	-	-
Indigenous	0.031 ⁺	1.842	-	-
<i>Educational attainment (Reference category: Less than high school completion)</i>				
Bachelor's degree or higher	-0.465	-0.697	-	-
Other post-school qualification	0.079 ⁺	0.034 ⁺	-	-
Completed high school	-0.289	-0.614	-	-
Personality: Extroversion	0.289	0.145	-	-
Personality: Agreeableness	0.090 ⁺	0.300	-	-
Personality: Conscientiousness	-0.375	-0.728	-	-
Personality: Emotional stability	-0.257	-0.242	-	-
Personality: Openness to experience	-0.084 ⁺	-0.149	-	-
<i>Age group (Reference category: 18–24)</i>				
25–29	0.944	0.823	0.736	0.651
30–34	1.444	1.345	1.091	1.116
35–39	1.794	2.037	1.331	1.888
40–44	2.161	2.548	1.703	2.578
45–49	2.448	3.120	2.074	3.365
50–59	2.575	3.387	2.266	3.756
60–69	2.556	3.337	2.445	3.953
70 and over	1.903	2.835	2.283	4.008
Partnered	0.510	0.501	0.463	0.533
<i>Parental status (Reference category: No dependent children)</i>				
Lone parent	0.178 ⁺	0.112 ⁺	0.118 ⁺	0.003 ⁺
Couple parent	0.097 ⁺	-0.035 ⁺	0.084 ⁺	-0.066 ⁺
SEIFA decile	-0.063	-0.142	-0.009 ⁺	-0.040 ⁺
<i>Region (Reference category: Major urban)</i>				
Other urban area	0.056 ⁺	0.171	-0.148	0.171 ⁺
Other region	0.101 ⁺	0.126 ⁺	0.161 ⁺	0.211 ⁺
<i>Labour force status (Reference category: Not in the labour force)</i>				
Employed full-time	0.104 ⁺	0.092 ⁺	0.013 ⁺	0.087 ⁺
Employed part-time	0.017 ⁺	-0.037 ⁺	-0.020 ⁺	0.022 ⁺
Unemployed	0.174	0.200	0.003 ⁺	0.172
Work 50 or more hours per week	0.107	-0.125 ⁺	0.010 ⁺	-0.150 ⁺
Equivalentised income (\$, December 2011 prices)	1.58E-6	-5.14E-7 ⁺	1.61E-06	9.67E-07 ⁺
Regularly exercise	-0.262	-0.373	-0.184	-0.263
Regularly drink	0.002 ⁺	-0.238	0.181	0.137 ⁺
Smoke	-0.461	-0.515	-0.349	-0.645
Poor mental health	0.022 ⁺	0.098 ⁺	0.023 ⁺	0.071 ⁺
<i>Disability (Reference category: No restricting disability)</i>				
Disability, moderate work restriction	0.153	0.265	0.078 ⁺	0.035 ⁺
Disability, severe work restriction	0.259	0.204	0.163 ⁺	-0.113 ⁺
<i>Life events in the last 12 months</i>				
Got (legally) married	-0.049 ⁺	-0.094	-0.081 ⁺	-0.104 ⁺
Separated from partner	-0.183	-0.305	-0.173	-0.276
Serious injury or illness	-0.152	-0.094 ⁺	-0.201	-0.172
Spouse or child died	-0.152 ⁺	-0.007 ⁺	-0.213 ⁺	-0.049
Victim of physical violence	0.078 ⁺	-0.386	0.206 ⁺	-0.483
Retired	-0.043 ⁺	0.076 ⁺	-0.161 ⁺	0.116 ⁺
Dismissed from job	0.234	0.291	0.196	0.243
Changed jobs	-0.058 ⁺	-0.019 ⁺	-0.075	0.018 ⁺
Got promoted at work	-0.100 ⁺	-0.004 ⁺	-0.129	-0.030 ⁺
Major improvement in finances	-0.040 ⁺	-0.004 ⁺	-0.074	-0.024 ⁺
Major worsening of finances	-0.208	-0.193	-0.263	-0.271

Note: ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.

Unemployment appears to cause an increase in the weight of women, but not men; while higher household income appears to cause an increase in the weight of men, but not women. Lifestyle behaviours clearly affect weight, with both regular exercise (three or more times per week) and smoking reducing weight, and regular consumption of alcohol (five or more times per week) increasing the weight of men. A measure of general health is not included in the models because of the potential for weight to affect general health, but included in the models are variables for mental health and disability. Poor mental health (as measured by the SF-36 mental health measure) does not appear to impact on weight, while the estimates for the disability variables are only statistically significant in the random effects model—where they indicate that disability acts to increase weight. However, the statistical insignificance in the fixed effects model may reflect the limited variation in disability at the individual level rather than true absence of an effect of disability on weight. The estimates of the effects of disability obtained from the random effects model may therefore be more reliable.

The estimated models also examine the effects of major life events that have happened to the individual within the last 12 months. Getting married has no effect on weight, but separation from one's partner reduces BMI by approximately 0.17 for men and 0.28 for women. Having been seriously ill or injured within the last year on average reduces BMI by approximately 0.2 for both men and women, while having been the victim of physical violence within the last year on average reduces the BMI of women by 0.48. Job dismissal within the last year acts to increase BMI by 0.20 for men and 0.24 for women, and job promotion on average decreases BMI of men by 0.13. A major improvement in finances reduces the BMI of men by 0.08, while a major worsening of finances acts to decrease BMI by 0.26 for men and 0.27 for women.

The random effects model additionally contains estimates for individual traits that are essentially (although not necessarily) invariant over time: immigrant and indigenous status, educational attainment, and personality. Consistent with the evidence in Table 11.3, the random effects model shows that, all else equal, immigrants from non-English-speaking countries have lower BMIs than other immigrants or native-born Australians. For women, immigrants from English-speaking countries also have lower BMIs than native-born women, while indigenous women, all else equal, have higher BMIs. Also consistent with the evidence in Table 11.3, holders of bachelor's degrees have lower BMIs than other individuals, all else equal, while those with a highest qualification of high school completion have lower BMIs than those who have not completed high school or have a highest qualification of non-degree post-school qualification.

Waves 5 and 9 of the HILDA Survey included a short version of Saucier's (1994) 'Big Five' personality

test, from which personality scores are derived for extroversion, agreeableness, conscientiousness, emotional stability, and openness to experience. The random effects model reported in Table 11.3 contains variables for these personality scores, which are assumed to be fixed for each individual and are set equal to the average of the Wave 5 and Wave 9 scores (unless the personality score is only available in one of the two waves, in which case the score in the available wave is used). The estimates in the table show that differences in personality are also associated with significant differences in BMI. For both men and women, greater extroversion is associated with greater weight, while greater conscientiousness and emotional stability are associated with lower weight. For women, greater openness to experience is associated with lower weight and greater agreeableness is associated with higher weight.

Conclusion

Age is clearly an important determinant of an individual's weight, with a clear general trend towards increasing weight evident throughout adulthood until old age. Nonetheless, there is a great deal of variation across individuals in weight change over time. The HILDA Survey data show that, in part, this variation can be explained by location of residence, labour market activity, health, health behaviours and major life events. There are, however, likely to be a number of other factors influencing weight change that are not captured by the HILDA Survey, and indeed would be hard for any survey to capture.

Endnotes

- 1 The height and weight data in the 1995 NHS data was, in common with the HILDA Survey, self-reported. ABS comparisons of the NHS data with measurements collected by trained nutritionists in the 1995 National Nutrition Survey (ABS, 1998) show upward biases in self-reported height and downward biases in self-reported weight.
- 2 The BMI categories apply only to adults; Table 11.2, and subsequent tables, therefore exclude those aged 15 to 17.
- 3 Some of the measured change in BMI may of course be due to measurement error. However, we would not expect the mean change to be positive due to measurement error, and nor would we expect both the proportion experiencing a change in BMI and the mean change in BMI to be increasing in the length of the time frame. It therefore seems unlikely that our estimated changes in BMI are simply driven by measurement error.
- 4 The finding that the rate of increase in weight is decreasing in age may in part be driven by measurement error, since there is evidence that misreporting is increasing in both age and BMI (Ayre et al., 2012).
- 5 An alternative to the linear models presented in Table 11.8 is to estimate qualitative dependent variable models (such as logit models) of the determinants of the BMI *category* of an individual. These models have the advantage of capturing the potential for certain factors (e.g. poor mental health) to increase the likelihood of both being underweight or overweight.

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12. The characteristics and wellbeing of carers

Roger Wilkins

Unpaid (volunteer) carers have been described as the 'unsung local heroes' of our communities (see, for example, Macklin, 2008). They fulfil a crucial role in taking care of the elderly and people with severe disabilities, with no financial remuneration and indeed often at high personal cost.

In every wave since Wave 5, respondents have been asked whether they provide ongoing help with self-care, mobility or communication to someone who is elderly or who has a disability. Information collected includes whether they live with the person they care for, their relationship to that person, and whether they are the main carer. In this chapter, we

draw on this information to briefly examine the number of people who are carers and the type of caring they do. The information on caring is then combined with other information available in the HILDA Survey to examine both the personal characteristics of carers and their wellbeing.

Prevalence of caring

Figure 12.1 presents the proportion of males and females aged 15 and over who report being unpaid carers over the 2005 to 2011 period. As well as presenting the overall proportion of people who are carers, the figure also presents the proportion of

Figure 12.1: Percentage of people aged 15 years and over who are carers

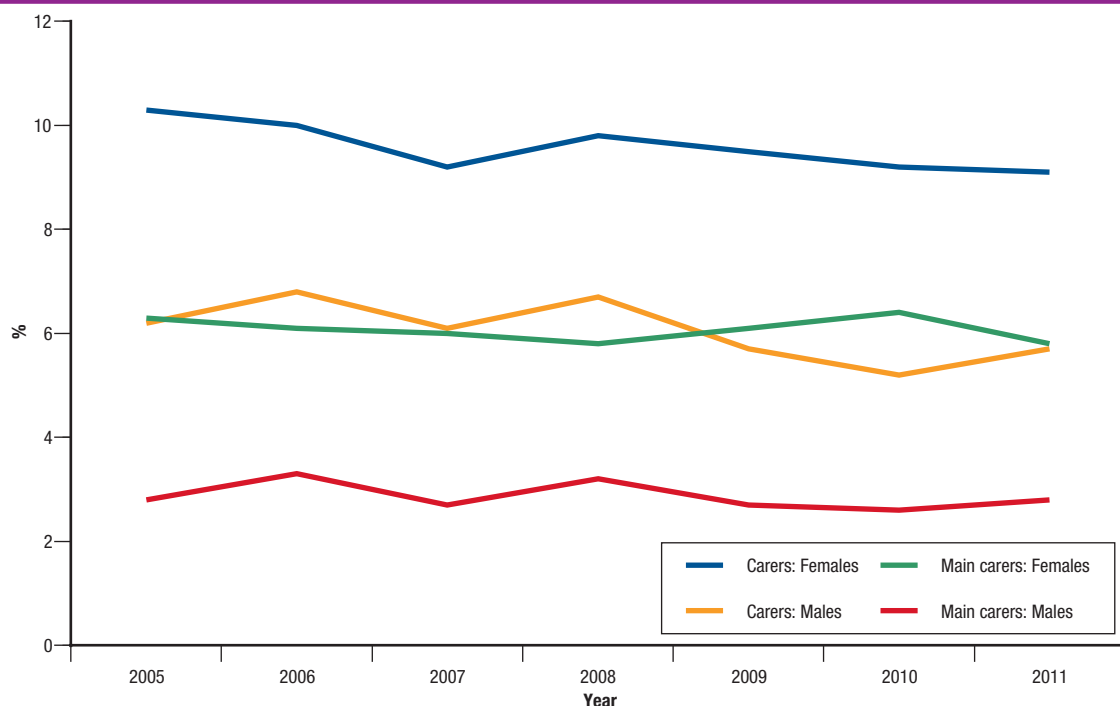
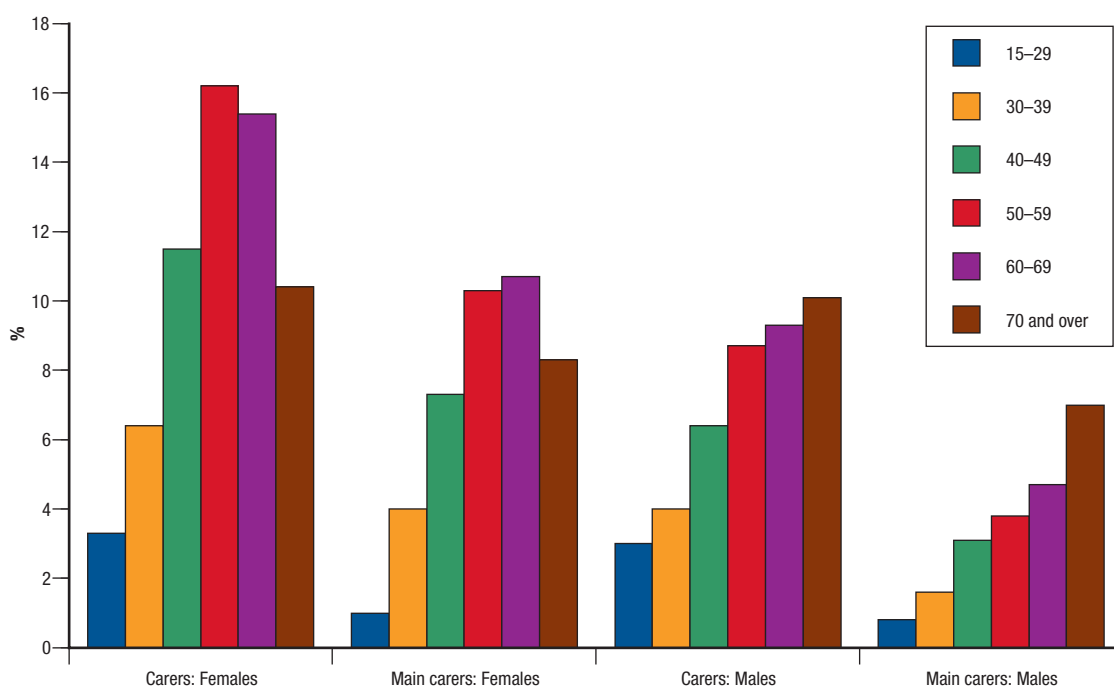


Figure 12.2: Proportion of people who are carers, by age group, 2005 to 2011 pooled


people who are the *main* carers of the care recipient. Females are considerably more likely to be carers than are males, with 9.1 per cent of females aged 15 and over providing unpaid care on an ongoing basis in 2011, compared with 5.8 per cent of males aged 15 and over. Females are also much more likely to be the main carer for their care recipient, with 5.8 per cent of females and 2.8 per cent of males being a main carer. Over the period from 2005 to 2011, there are indications of a very slight decline in the proportion of the population providing unpaid caring. For example, the proportion of females aged 15 and over who are carers fell from 10.3 per cent in 2005 to 9.1 per cent in 2011, while the proportion of males aged 15 and over who are carers fell from 6.3 per cent in 2005 to 5.8 per cent in 2011.

Differences in carer prevalence by age group and sex are examined in Figure 12.2, which examines all seven waves from 2005 to 2011 collectively (i.e. pooled). Women aged 50 to 69 are clearly the biggest providers of unpaid ongoing care, with over 10 per cent being the main carer of an elderly or disabled person. However, relatively high proportions of women aged 40 to 49, and 70 and over, are also carers. For males, caring activity is monotonically increasing in age: those aged under 30 are the least likely to be carers, and those aged 70 and over are the most likely to be carers.

Nature of caring

The location of the caring and the relationship of the care recipient to the carer are examined in Table 12.1. Where a person is the main carer, in 83.4 per

cent of cases the care is provided in their own home (although in 4 per cent of cases, care is provided both at home and elsewhere). By contrast, only 37.4 per cent of other carers provide the care in their own home. Main carers most commonly care for their partner in the carer's own home (44.0 per cent of cases), although significant numbers care for a parent living in the carer's home (15.5 per cent), a parent living elsewhere (13.2 per cent), an adult child living in the carer's own home (10.8 per

Table 12.1: Location of care and relationship to recipient, by whether main carer, 2005 to 2011 pooled (%)

	Main carer	Other carer
Location		
At home	83.4	37.4
Elsewhere	20.6	63.0
Relationship to recipient and location		
Partner at home	44.0	3.4
Own parent at home	15.5	12.7
Partner's parent at home	1.3	2.1
Adult child at home	10.8	9.1
Young child at home	9.2	7.0
Other relative at home	2.3	3.6
Other person at home	2.2	1.0
Partner elsewhere	0.4	0.8
Own parent elsewhere	13.2	30.0
Partner's parent elsewhere	1.9	8.9
Adult child elsewhere	1.1	1.7
Young child elsewhere	0.2	1.1
Other relative elsewhere	2.8	12.6
Other person elsewhere	1.9	9.7

Note: Percentages add up to more than 100 because carers may provide care in more than one location and to more than one person.

cent) or a young child living at home (9.2 per cent). Other carers most commonly care for a parent who lives elsewhere (30.0 per cent of cases), followed by a parent living in the carer's own home (12.7 per cent) and any other relative who lives elsewhere (12.6 per cent).

Characteristics of carers

Consistent with the evidence presented in Figures 12.1 and 12.2, Table 12.2 shows that over two-thirds of main carers are female. Other carers are more evenly split between males and females, with 47.2 per cent male and 52.8 per cent female. Carers, and most particularly main carers, are on average older than non-carers: the mean age of main carers is 54.8 years and the mean age of other carers is 47.5 years, compared with a mean age of 43.4 years for all other people aged 15 and over.

Comparisons across groups defined by immigrant and indigenous status show that main carers are disproportionately immigrants from non-English-speaking countries (NESB immigrants) or indigenous Australians: NESB immigrants account for 22.8 per cent of main carers, but only 16.8 per cent of non-carers; while indigenous Australians account for 3.0 per cent of main carers, but only 2.1 per cent of non-carers. Other carers, by contrast, are disproportionately non-indigenous Australians, who represent 74.2 per cent of other carers but only 71.3 per cent of non-carers (and 65.7 per cent of main carers). Immigrants from the main English-speaking countries (ESB immigrants) are relatively unlikely to be carers, be it main carers or other carers.

Table 12.2 also compares the location of residence of carers compared with non-carers. It shows carers are considerably more likely to be living in non-urban areas, with 17.1 per cent of main carers and 15.9 per cent of other carers living in non-urban regions, compared with 13.2 per cent of non-carers. Main carers are also relatively unlikely to live in the major urban centres, with 62.1 per cent of main carers live in major urban areas, compared with 65.0 per cent of other carers, and 65.8 per cent of

non-carers. Main carers also tend to live in more disadvantaged areas, as indicated by the mean SEIFA decile of 4.7, compared with 5.6 for other carers and 5.7 for non-carers.

Wellbeing of carers

Caring often places heavy demands on the providers of that care, raising important questions about how well they cope with those demands. We can briefly consider this issue by examining outcomes of carers, including how outcomes differ by the length of time an individual has been a carer.

We begin in Table 12.3 by simply comparing mean levels of various objective and subjective measures of wellbeing of main carers, other carers and non-carers aged 15 and over. Clear orderings of outcomes across the three groups are evident for almost all outcomes. Main carers have the lowest mean household equivalised income and the lowest employment rates. They have the highest rates of severe and moderate disability, poor general health (as measured by the SF-36 general health measure) and poor mental health (as measured by the SF-36 mental health measure). And they have the lowest average levels of overall life satisfaction, satisfaction with their financial situation, health satisfaction and satisfaction with the amount of free time they have. Other carers fall somewhere between main carers and non-carers on all of these measures. Table 12.3 therefore provides prima facie evidence of adverse effects of caring on carers. The evidence is, however, far from conclusive since other differences across the three groups (such as their age composition) are likely to be at least partially responsible for the differences in mean outcomes evident in the table.

Table 12.4 focuses on main carers and examines whether there is any evidence that their outcomes depend on the length of time the individual has been a (main) carer. The upper panel first briefly compares characteristics by duration of caring, while the lower panel compares outcomes by duration of caring. Four duration categories are examined: less

Table 12.2: Characteristics of carers, 2005 to 2011—Persons aged 15 years and over (pooled means)

	Main carers	Other carers	Non-carers
Male (%)	31.5	47.2	50.3
Age (years)	54.8	47.5	43.4
Immigrant and indigenous status (%)			
ESB immigrant	8.5	7.0	9.8
NESB immigrant	22.8	16.9	16.8
Indigenous	3.0	1.9	2.1
Non-indigenous native-born	65.7	74.2	71.3
Total	100.0	100.0	100.0
Region (%)			
Major urban	62.1	65.0	65.8
Other urban	20.8	19.1	21.0
Other region	17.1	15.9	13.2
Total	100.0	100.0	100.0
SEIFA decile	4.7	5.6	5.7

Table 12.3: Outcomes experienced by carers, 2005 to 2011 (pooled means)

	Main carers	Other carers	Non-carers
Equivalised income (\$, December 2011 prices)	35,160	44,928	46,381
Employed full-time (%)	18.6	40.6	45.3
Employed part-time (%)	18.1	21.9	19.7
Disability, no work restriction (%)	11.8	13.2	8.3
Disability, moderate work restriction (%)	26.3	18.4	12.8
Disability, severe work restriction (%)	8.9	5.2	5.0
Poor general health (SF-36 general health score <50) (%)	42.1	33.5	29.5
Poor mental health (SF-36 mental health score <50) (%)	27.8	24.3	21.8
Life satisfaction (0–10 scale)	7.6	7.7	7.9
Satisfaction with financial situation (0–10 scale)	6.0	6.4	6.5
Satisfaction with feeling part of local community (0–10 scale)	6.7	6.7	6.8
Health satisfaction (0–10 scale)	6.7	7.1	7.3
Satisfaction with amount of free time (0–10 scale)	6.1	6.3	6.7

than one year (carer in Wave t (the current wave) but not in Wave $t - 1$ (the previous wave)); one to less than two years (carer in Waves t and $t - 1$, but not in Wave $t - 2$); two to less than three years (carer in Waves t , $t - 1$ and $t - 2$, but not in Wave $t - 3$); and three or more years (carer in Waves t , $t - 1$, $t - 2$ and $t - 3$). Since these duration categories require information on carer status in up to three waves prior to the current wave, the estimates presented in Table 12.4 relate only to Waves 8 to 11—that is, in Waves 5, 6 and 7, carer status three waves ago is not known.

Considering the upper panel first, the proportion of main carers who are male is highest, at 34.6 per cent, for the longest duration category (three or more years), but across the three lower duration categories, the proportion who are male is decreasing in duration: males represent 31.3 per cent of those who have been main carers for less than one year, 27.4 per cent of those who have been main carers for at least one year but less than two years, and 26.6 per cent of those who have been main carers for at least two years but less than three years. Those who have been caring for at least three

years tend to be older than those who have been caring less than three years, with the notable exception that those who have been caring at least one year, but less than two years, have a relatively high average age. Socio-economic disadvantage of the region of residence, as measured by SEIFA decile, tends to be greater for longer-duration carers, again with the notable exception for those who have been caring at least one year but less than two years, who have a lower mean SEIFA decile than those who have been caring for at least two years but less than three years.

Turning to outcomes, average equivalised income is clearly ordered by duration of caring, with the mean falling from a high of \$39,013 among those who have been main carers less than one year to a low of \$29,890 among those who have been main carers at least three years. Other outcomes are less clearly ordered by duration of caring, but there is nonetheless an overall tendency for outcomes to be worse the longer the individual has been a main carer. In particular, those who have been caring for at least three years have relatively high rates of poor

Table 12.4: Differences in characteristics and outcomes, by duration of caring, 2008 to 2011 (pooled means)

	Duration of caring			
	<1 year	1 to <2 years	2 to <3 years	3 or more years
Characteristics				
Male (%)	31.3	27.4	26.6	34.6
Age (years)	55.1	57.1	55.1	56.8
SEIFA decile	4.8	4.4	4.6	4.2
Outcomes				
Equivalised income (\$, December 2011 prices)	39,013	34,348	33,380	29,890
Disability, no work restriction (%)	11.2	9.0	15.1	13.7
Disability, moderate work restriction (%)	23.9	32.9	37.0	30.5
Disability, severe work restriction (%)	8.9	10.0	7.0	9.4
Poor general health (SF-36 general health score <50) (%)	37.6	47.7	36.9	45.8
Poor mental health (SF-36 mental health score <50) (%)	23.0	28.5	29.5	30.7
Life satisfaction (0–10 scale)	7.7	7.7	7.4	7.4
Satisfaction with financial situation (0–10 scale)	6.3	6.6	6.2	5.9
Satisfaction with feeling part of local community (0–10 scale)	6.7	6.6	6.8	6.5
Health satisfaction (0–10 scale)	6.7	6.5	6.4	6.4
Satisfaction with amount of free time (0–10 scale)	6.4	6.3	5.5	5.8

general health and poor mental health, and relatively low average levels of satisfaction with life overall and with their financial situation, feeling part of the local community, health and the amount of free time they enjoy.

Concluding comments

The HILDA Survey data indicate that a significant proportion of people in the community work as unpaid carers. Approximately 9 per cent of females aged 15 and over and approximately 6 per cent of males aged 15 and over report being carers for an elderly person or a person with a disability. People who are the main carer for the care recipient typically live with the care recipient, whereas other carers tend not to live with the care recipient. The

descriptive evidence on outcomes experienced by carers presented in this chapter is consistent with there being adverse effects of caring, and with these effects tending to be greater the longer a person has been caring. However, more rigorous analysis is required to establish a causal link between caring and the wellbeing of carers.

Reference

Macklin, J. (2008) 'Carers Week Pays Tribute to Unsung Heroes around Australia', Minister for Families, Housing, Community Services and Indigenous Affairs' Press Release, 19 October, viewed 28 November 2013, <<http://www.former-ministers.dss.gov.au/14886/carers-week-pays-tribute-to-unsung-heroes-around-australia/>>.

Part 5: Other Topics



Other Topics

13. Immigrants to Australia since 2001

Roger Wilkins

Immigrants are an important part of the economic and social fabric of Australia, making up 23 per cent of the total population in 2001 and 27 per cent of the total population in 2011 (ABS, 2003, 2012). In the first wave of the HILDA Survey, conducted in 2001, immigrants were represented in the sample approximately in line with the 2001 population share. The survey has therefore been well suited to study of the life courses of immigrants who arrived in Australia prior to the commencement of the survey.

However, the design of the HILDA Survey up to Wave 10 (2010) has made it increasingly unrepresentative of the Australian population over time. This is because immigrants to Australia arriving after the study commenced had relatively little chance of entering the sample: only if they joined the household of an existing sample member could they themselves become sample members. This declining representativeness was the primary motivation for the sample 'top-up' conducted in Wave 11, which saw 4,009 individuals aged 15 and over in 2,153 households added to the existing sample.

The sample top-up was a 'general' top-up, comprising not only immigrants arriving since 2001, but also other members of the population. Indeed, only 480 of the 4,009 new sample members were immigrants who had arrived in Australia after the commencement of the HILDA Survey (that is, immigrated to Australia in 2001 or later). Nonetheless, the sample top-up, in conjunction with the 229 new immigrants aged 15 and over who had been added as at Wave 11 through entry into households of existing sample members, provides a significantly sized sample of new immigrants in Wave 11. It is therefore an opportune time to draw on the HILDA Survey data to examine the characteristics of immigrants arriving in Australia over the last decade and investigate how they are faring.

Characteristics of immigrants in 2011

Tables 13.1 to 13.4 examine the characteristics of immigrants living in Australia in 2011. While our primary interest is in immigrants arriving after commencement of the HILDA Survey, the analysis includes other immigrants, both to provide a fuller picture of the immigrant population in Australia, and to serve as a point of comparison for the recently arrived immigrants.

According to the HILDA Survey, in 2011, 30.0 per cent of the Australian resident population aged 15 and over was born overseas. This compares with 2011 Census data showing that, among those who

provided information on place of birth, 30.2 per cent was born overseas.¹ Asia is the most important region of origin of immigrants, accounting for 32.9 per cent of all immigrants. The United Kingdom and Ireland are the place of birth for 21.1 per cent of immigrants, while 17.3 per cent of immigrants were born in continental Europe or former USSR countries.² The bottom panel of Table 13.1 shows that 34.7 per cent of all immigrants in 2011 arrived in Australia in the 2000s, compared with 16.9 per cent in the 1990s, 16.2 per cent in the 1980s, 11.7 per cent in the 1970s, 11.1 per cent in the 1960s and 9.3 per cent before 1960.

Table 13.2 shows that there are considerable differences by period of arrival in the region-of-origin composition of the immigrants living in Australia in 2011. The cohorts who arrived in Australia in the 1960s and earlier were overwhelmingly born in Europe, but the fraction of immigrants born in Europe steadily declines as we move to more recent arrivals. Thus, while Europe accounts for 91.6 per cent of all immigrants who arrived prior to 1960, it accounts for only 15.4 per cent of all immigrants who arrived in the 2000s.

The share of immigrants living in Australia in 2011 who were born in Oceania rises from 2.2 per cent for immigrants arriving before 1960, up to a peak of 16.4 per cent for the 1980s arrival cohort, falling to 11.6 per cent of the 1990s arrival cohort and then rising to 13.6 per cent of the 2000s arrival cohort. The

Table 13.1: Place of birth and year of arrival of immigrants in Australia, aged 15 years and over, 2011 (%)

	Estimate
Foreign-born	30.0
Place of birth of immigrants	
Oceania	11.9
United Kingdom and Ireland	21.1
Europe and former USSR	17.3
North America	2.1
Asia	32.9
Other	14.7
Total	100.0
Year of arrival of immigrants	
Before 1960	9.3
1960s	11.1
1970s	11.7
1980s	16.2
1990s	16.9
2000s	34.7
Total	100.0

Note: Percentages may not add up to 100 due to rounding.

table indicates that the share born in Asia has steadily grown over time, rising from 3.8 per cent for those arriving before 1960 to 49.3 per cent of the 2000s arrival cohort. The proportion of immigrants from regions other than Oceania, Europe, North America and Asia has also increased over the last fifty years, with Table 13.2 suggesting a large increase in the 1970s, followed by slight decreases in the 1980s and 1990s, and then an increase in the 2000s.

The bottom panel of Table 13.2 divides all immigrants living in Australia into two groups: those who migrated to Australia prior to 2001 and those who migrated to Australia after 2000. Most of those in the latter immigrant group arrived after the study commenced (and are therefore under-represented in the HILDA Survey sample over the 2001 to 2010 period). The table shows the stark contrast between the composition of immigrants arriving up to 2000 and the composition of the immigrants arriving after 2000. Most notably, 49.8 per cent of the pre-2001 arrival cohort was born in Europe, compared with only 15.3 per cent of the post-2000 arrival cohort. Correspondingly, 24.6 per cent of the pre-2001 arrival cohort was born in Asia, while 49.8 per cent of the post-2000 arrival cohort was born in Asia.

While overall immigrant levels in Australia have, at least in recent decades, primarily been determined by government immigration policy, the origins of immigrants have very much been influenced by both policy and source country factors. Both the winding down of the unofficial 'White Australia' policy through the early to mid 1970s, and the refugee program in the 1970s and 1980s, no doubt contributed to the compositional shifts evident in Table 13.2. But likely to be at least as important as these factors has been the relative decline in the number of people seeking to migrate from Europe (albeit reinforced by the cessation of assisted package schemes in 1981). Growth in the number of people seeking to migrate from Asia may also be a factor in the compositional shift.

Since 2004, the HILDA Survey has collected additional information from immigrants on their visa category on arrival in Australia and their current migration status. The questions on visa category are, however, only asked of immigrants who were, as at the time of interview, Australian citizens or

permanent residents. Moreover, only post-1999 immigrants are asked for their visa category on arrival, with pre-2000 immigrants simply asked whether they came to Australia as refugees or under a humanitarian migration program. A further limiting factor is that the questions on migration status have only been administered to each immigrant once, meaning that if migration status subsequently changes—for example, a permanent resident takes out Australian citizenship—this will not be captured.³

Table 13.3 summarises the information on visa category and migration status as of 2011, distinguishing immigrants arriving prior to 2001 from subsequent immigrants, who—as before—are interpreted as immigrants arriving after the HILDA Survey commenced.

As might be expected, citizenship and migration status is very different for post-2000 immigrants and pre-2001 immigrants. Over three-quarters (78.9 per cent) of pre-2001 immigrants are Australian citizens, compared with only 18.5 per cent of post-2000 immigrants. While permanent residency is more prevalent among recent immigrants than more-established immigrants, the bigger difference is in the proportion (implicitly) reporting being *temporary* migrants: 38.7 per cent of immigrants arriving from 2001 reported being neither Australian citizens nor permanent residents, compared with only 1.2 per cent of immigrants who arrived prior to 2001.

As noted, visa category on arrival is only available for post-1999 immigrants (and even then, only for Australian citizens and non-New Zealander permanent residents). The distribution of visa categories is therefore not presented in Table 13.3 for pre-2001 immigrants, since only (a subset of) those who arrived in 2000 will have this information. For the immigrants arriving after 2000 for whom visa category is available (which amounts to 51.4 per cent of all immigrants arriving after 2000), the table shows that skilled migrants account for 53.4 per cent of immigrants and family reunion migrants account for 29.1 per cent of migrants, while business and humanitarian migrants each account for less than 5 per cent of immigrants. For immigrants who arrived prior to 2001 (and were not temporary

Table 13.2: Place of birth of immigrants aged 15 years and over, by year of arrival in Australia, 2011 (%)

	Oceania	United Kingdom and Ireland	Europe and former USSR	North America	Asia	Other	Total
Before 1960	2.2	36.7	54.9	*0.9	3.8	*1.5	100.0
1960s	7.1	49.5	29.6	*1.2	6.2	6.4	100.0
1970s	13.9	33.3	18.8	3.7	13.5	16.7	100.0
1980s	16.4	19.4	13.6	2.7	32.1	15.8	100.0
1990s	11.6	9.9	15.2	2.3	47.2	13.9	100.0
2000s	13.6	10.0	5.4	1.8	49.3	20.0	100.0
Arrived before Wave 1	11.5	26.7	23.1	2.3	24.6	11.9	100.0
Arrived after Wave 1	13.0	9.8	5.5	1.7	49.8	20.3	100.0

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding.

or from New Zealand), 11.2 per cent reported being humanitarian migrants, which is considerably higher than the 4.4 per cent of post-2000 migrants who reported being humanitarian migrants.

The final panel of Table 13.3 reaffirms the compositional shift in immigration evident in Table 13.2. Recent immigrants are considerably less likely to have been born in one of the main English-speaking countries and, correspondingly, are considerably less likely to report that English is their first language.

The demographic characteristics of various immigrant groups, as well as native-born Australians, are compared in Table 13.4. The first column contains immigrants arriving between 2001 and 2011 ('recent' immigrants). The second column contains all other immigrants in 2011 (i.e. those who arrived pre-2001), the third column examines all immigrants in 2011 collectively, and the fourth column contains all Australian-born individuals in 2011. The fifth, sixth and seventh columns examine the situation in 2001, respectively examining recent immigrants (those arriving after 1990), all immigrants and the Australian-born in that year.⁴

Unsurprisingly, recent immigrants in 2011 were considerably younger than other immigrants in that year, with the mean age just over 20 years younger. Recent immigrants in 2011 were also more highly educated than other immigrants, and somewhat more likely to live in a major urban area. Recent immigrants were similarly likely to be partnered as other immigrants, but less likely to be living in a lone-parent or single-person household, and more likely to be living in a group or multiple-family household.

Recent immigrants in 2011 have a similar mean age to recent immigrants in 2001, but in fact are less

likely to be 15 to 24 or 45 and over, and more likely to be aged 25 to 34. They are considerably more educated than recent immigrants were in 2001, but slightly less likely to live in major urban areas. They were also less likely to be in couple-with-children households, and more likely to be in couple-only households and group and multiple-family households. The proportion partnered was also considerably higher among 2011 recent immigrants than among 2001 recent immigrants.

Compared with Australian-born people, immigrants, and particularly recent immigrants, tend to be more educated. They are much more likely to live in major urban areas, and indeed tend to live in less socio-economically disadvantaged regions than do native-born Australians. Immigrants are more likely to live in group or multiple-family households, and are more likely to be partnered.

How are Australian immigrants faring?

A cursory descriptive examination of outcomes in 2011 for post-2000 immigrants is presented in Table 13.5, with comparisons made with both other immigrants and native-born Australians. The table is stratified by age group—that is, estimates are presented separately for each of three age groups—to control for differences in age composition across the groups examined in the table. For example, recent immigrants tend to be younger than other immigrants, so that failure to control for age could lead to inferred differences that simply reflect differences in age rather than differences related to the timing of immigration (such as changes in origin countries of immigrants). Note, however, that estimates are not presented for individuals aged 65 and over, since there are few recent immigrants

Table 13.3: Visa category on arrival, migration status and English background of immigrants aged 15 years and over, 2011 (%)

	<i>Immigrants 2001 to 2011</i>	<i>Immigrants pre-2001</i>
Proportion of all immigrants	33.0	67.0
<i>Citizenship and migration status</i>		
Australian citizen	18.5	78.9
New Zealand citizen	9.9	5.1
Other permanent resident	33.0	14.9
Other ('Temporary')	38.7	1.2
Total	100.0	100.0
<i>Visa category on arrival</i>		
Skilled	53.4	–
Business	3.1	–
Family	29.1	–
Refugee or Special Humanitarian migrant	4.4	–
Other	10.0	–
Total	100.0	–
Refugee or Special Humanitarian Program	–	11.2
ESB immigrant	27.6	40.3
NESB immigrant	72.4	59.7
English first language	34.2	48.2

Notes: Visa category on arrival (including Refugee or Special Humanitarian Program) is only collected from immigrants who reported being Australian citizens or permanent residents and were not New Zealand citizens on arrival in Australia. These percentages are therefore estimated only over immigrants satisfying these conditions at the time the information was collected. Percentages may not add up to 100 due to rounding.

in this age range in the HILDA Survey sample (and indeed in the Australian population).

Considering first the 15 to 24 age group, both male and female recent immigrants have relatively low rates of full-time employment and relatively high rates of part-time employment, which is consistent with the low mean equivalised income of recent immigrants, both male and female. Recent immigrant males have similar levels of general and mental health (as measured by the SF-36 general and mental health measures) to other immigrants and native-born Australians, but female recent immigrants have considerably better average levels of general and mental health. For example, in 2011, 16.3 per cent of recent-immigrant females aged 15 to 24 were in poor general health, compared with 26.4 per cent of other immigrant females aged 15 to 24 and 25.8 per cent of native-born females aged 15 to 24. Average levels of life satisfaction are slightly lower for immigrants, whether recent or not, more so for males than females.

Turning to 'prime-age' people (here defined as aged 25 to 44), differences in outcomes across recent immigrants, other immigrants and native-born Australians are generally smaller than evident for the 15 to 24 age group. The main differences evident are that equivalised income is somewhat lower for recent immigrants and the part-time

employment rate of recent-immigrant women is lower than the rate for other immigrant women and native-born women, and non-recent immigrants tend to have poorer general and mental health than native-born Australians. Recent-immigrant men and women, however, tend to have similar levels of general and mental health to native-born Australians.

In the 45 to 64 age range, there is again evidence that recent immigrants have somewhat lower equivalised incomes, averaging \$51,488 for men and \$43,666 for women, compared with \$54,603 for other immigrant men, \$50,544 for other immigrant women, \$55,764 for native-born men and \$52,503 for native-born women. As these means for equivalised income would indicate, recent-immigrant men tend to fare better than recent-immigrant women in this age range. In respect of employment, recent-immigrant men in fact have a very high full-time employment-population rate of 79.8 per cent, compared with 65.4 per cent for other immigrant men, and 68.4 per cent for native-born men. Recent-immigrant women, by contrast, have low (albeit statistically unreliable) estimated rates of both part-time and full-time employment. Moreover, the mean hourly wage among those employed was \$36.31 for recent-immigrant men, but only \$21.65 for recent-immigrant women. By comparison, other (non-recent immigrant and native-born) employed men averaged approximately

Table 13.4: Characteristics of immigrants, by year of survey and year of arrival

	2011				2001		
	Immigrants			Australian-born	Immigrants		Australian-born
	Recent	Other	All		Recent	All	
Male (%)	51.1	50.2	50.4	49.0	48.6	50.0	48.8
Age (mean in years)	33.2	53.3	46.7	43.2	34.4	46.2	42.1
<i>Age group (%)</i>							
15–24	17.8	5.0	9.2	21.2	26.6	11.9	19.8
25–34	45.2	9.5	21.3	16.1	30.8	15.6	19.9
35–44	23.7	15.1	17.9	17.4	23.1	20.9	19.0
45–54	7.7	22.5	17.6	16.7	10.3	20.2	16.3
55–64	3.8	22.4	16.3	13.4	3.9	14.5	11.0
65 and over	1.8	25.5	17.7	15.2	5.3	16.8	14.0
<i>Educational attainment (%)</i>							
Bachelor's degree or higher	51.1	27.4	35.2	19.6	31.9	21.6	16.1
Other post-school qualification	19.7	29.5	26.3	30.2	20.2	25.2	24.9
Completed high school	15.5	16.4	16.1	16.3	22.8	18.0	14.5
Less than high school completion	13.7	26.7	22.4	33.9	25.1	35.1	44.5
<i>Region (%)</i>							
Major urban	87.3	77.8	81.0	59.1	92.8	83.7	60.4
Other urban	9.6	12.7	11.7	24.5	5.0	9.7	24.6
Other region	3.1	9.4	7.3	16.4	2.1	6.7	14.9
SEIFA decile (mean)	6.0	5.9	5.9	5.5	6.0	5.8	5.6
<i>Household type (%)</i>							
Couple with dependent children	42.1	42.8	42.6	45.4	50.8	44.2	45.3
Lone parent	5.3	9.9	8.4	11.8	8.8	9.3	9.8
Couple	26.8	30.8	29.4	24.7	18.1	28.2	25.4
Single person	4.1	12.0	9.4	12.6	7.2	10.5	13.0
Other household type	21.7	4.6	10.2	5.5	15.1	7.7	6.5
Partnered (%)	69.7	69.9	69.8	56.7	58.0	67.8	58.0

Notes: Recent immigrants in 2011 are those arriving after 2000. Recent immigrants in 2001 are those arriving after 1990.

\$30 per hour, and other employed women averaged approximately \$27.50 per hour.

Health outcomes for recent-immigrant women aged 45 to 64 are also quite poor, and present a striking contrast with the relative health outcomes of younger recent-immigrant women. Nearly 41 per cent of recent-immigrant women in this age group were in poor general health, and the same proportion was in poor mental health. Among native-born women, 29.0 per cent were in poor general health and only 17.9 per cent were in poor mental health. In contrast to recent-immigrant women, recent-immigrant men have a high average level of general health, and a low proportion with poor general health. Recent-immigrant men do,

however, have a relatively high proportion with poor mental health: 23.7 per cent compared with 20.5 per cent for other immigrant men and 15.7 per cent for native-born men.

Concluding comments

The composition of Australian immigrants has changed markedly over recent decades. In particular, comparing recent immigrants in 2011 (those arriving from 2001) with recent immigrants in 2001 (those arriving from 1991) shows a shift away from Europe towards Asia, an increase in the proportion of 'prime-age' (defined here as aged 25 to 44) and an increase in educational attainment levels, both in absolute terms and relative to the native-born population.

Table 13.5: Outcomes of immigrants aged 15–64 years, by age group, 2011

	Males			Females		
	Recent immigrants	Other immigrants	Native-born	Recent immigrants	Other immigrants	Native-born
15–24						
Employed full-time (%)	*13.7	34.8	33.9	*9.9	*22.1	21.0
Employed part-time (%)	53.2	35.0	28.7	*26.4	40.9	42.8
Unemployed (%)	*4.6	*2.4	8.7	*13.8	*2.8	7.8
Mean hourly earnings of those employed (\$, December 2011 prices)	20.39	22.85	18.16	19.90	16.85	18.26
Equivalised income (mean \$, December 2011 prices)	28,375	44,255	48,093	30,105	39,905	47,495
Mean SF–36 general health (0–100 scale)	62.5	64.1	60.8	69.3	61.9	61.2
Mean SF–36 mental health (0–100 scale)	59.7	61.8	61.4	69.7	59.1	62.4
In poor general health (SF–36 general health score <50) (%)	22.0	17.9	25.8	16.3	26.4	25.8
In poor mental health (SF–36 mental health score <50) (%)	23.5	19.0	25.7	9.1	20.6	23.5
Life satisfaction (0–10 scale) (mean)	7.8	7.7	8.2	8.0	8.1	8.2
25–44						
Employed full-time (%)	78.0	81.6	81.3	41.5	44.7	41.1
Employed part-time (%)	14.5	8.0	8.2	13.4	25.5	34.2
Unemployed (%)	*3.1	*3.9	3.1	*7.2	*5.5	3.3
Mean hourly earnings of those employed (\$, December 2011 prices)	30.21	29.20	30.68	31.16	29.59	27.25
Equivalised income (mean \$, December 2011 prices)	44,298	52,363	55,043	46,091	52,540	51,498
Mean SF–36 general health (0–100 scale)	61.6	56.1	60.8	62.1	57.7	60.6
Mean SF–36 mental health (0–100 scale)	60.0	57.7	63.6	61.6	59.4	61.9
In poor general health (SF–36 general health score <50) (%)	22.9	32.5	25.3	22.5	30.1	27.3
In poor mental health (SF–36 mental health score <50) (%)	25.5	28.5	22.0	21.8	25.5	24.0
Life satisfaction (0–10 scale) (mean)	7.8	7.7	7.7	7.9	7.7	7.8
45–64						
Employed full-time (%)	79.8	65.4	68.4	*18.8	35.2	34.9
Employed part-time (%)	*6.3	12.3	10.5	*15.9	25.8	33.4
Unemployed (%)	*2.5	2.2	2.0	*8.6	*1.3	1.4
Mean hourly earnings of those employed (\$, December 2011 prices)	36.31	29.91	30.08	21.65	27.52	27.69
Equivalised income (mean \$, December 2011 prices)	51,488	54,603	55,764	43,666	50,544	52,503
Mean SF–36 general health (0–100 scale)	67.6	57.7	59.1	47.0	56.5	61.1
Mean SF–36 mental health (0–100 scale)	63.7	64.8	69.4	51.0	64.4	68.0
In poor general health (SF–36 general health score <50) (%)	15.1	31.4	29.4	40.9	37.0	29.0
In poor mental health (SF–36 mental health score <50) (%)	23.7	20.5	15.7	40.9	22.3	17.9
Life satisfaction (0–10 scale) (mean)	7.9	7.6	7.8	7.6	7.6	7.8

Notes: * Estimate not reliable. Recent immigrants are those arriving in Australia from 2001.

The preliminary analysis of outcomes of immigrants that is presented in this chapter suggests there are important differences in how recent immigrants are faring, depending on both their sex and age group. Young recent-immigrant women appear to fare relatively well, but older recent-immigrant women do not; whereas for men, the younger recent immigrants appear to fare less well than the older recent immigrants.

The reasons for the differences between men and women by age group are not investigated here although immigrant selection policy would seem likely to be an important factor. For example, it may be that older recent-immigrant women are less likely to be the principal applicant than younger recent-immigrant women, and this may be connected to differences in characteristics, and hence help explain the outcomes observed. This is, however, somewhat speculative. Identifying the drivers of differences in outcomes across immigrant groups, and the role played by immigrant selection policy, requires considerably more in-depth research than undertaken here, and possibly also a larger immigrant sample than is provided by the HILDA Survey.

Endnotes

- 1 Note that the Census data exclude Australian residents not in Australia on census night, and that approximately 5.5 per cent of individuals did not report their place of birth. These individuals are excluded when calculating the proportion born overseas based on the Census data.
- 2 The 2011 Census one per cent sample file shows a very similar distribution of immigrants by place of birth

although it is not possible to define precisely the same region-of-birth categories. For example, the Census file does not distinguish North America from South America. The Census sample file also shows that 34.9 per cent of immigrants in Australia on census night had arrived between 2001 and 2011. The corresponding figure for the HILDA Survey is slightly lower, at 33.4 per cent. Differences between the Census and the HILDA Survey could reflect sampling error in the HILDA Survey or measurement error in both the HILDA Survey and Census (the latter of which has a non-response rate to immigrant-related questions of 5 to 6 per cent).

- 3 In Wave 14 (in progress at the time of publication), updated information on migration status was obtained from immigrants who had previously reported not being Australian citizens. The intent for future waves is to update migration status at least every four years, and possibly annually.
- 4 Ideally, the characteristics and outcomes of immigrants to Australia would also be examined for more disaggregated groups than presented in this chapter. However, the HILDA Survey sample size does not in general support reliable inferences for more disaggregated groups. Indeed, a number of estimates for the relatively aggregated immigrant groups in Table 13.3 are not statistically reliable.

References

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14. Emigrants from Australia since 2001

Richard Burkhauser, Markus Hahn and Nicole Watson

While substantial information exists on immigrants who have permanently come to Australia, far less is known about the number, let alone the characteristics, of Australian residents who have permanently emigrated. Such information is important to document, first because the loss of these human resources has a potential impact on Australian economic growth, and also because it provides insight into the characteristics of those who, by their own actions, demonstrate that the 'land of the fair go' is no longer for them.

Most information on Australian emigration comes from the self-reported forms that all travellers must complete upon leaving Australia (see, for example, Graeme et al., 2001, or ABS, various years). Permanent emigrants based on these data are often defined as those who state on their departure card (Outgoing Passenger Card) that they are leaving permanently. Most recently, Australian Bureau of Statistics (ABS, 2012) casts some doubt on the value of using this declaration of 'permanent exit intent' to capture the true population of permanent emigrants.

Using administrative records, the ABS tracked, over 16 months, the movement of all Australian residents who in 2010 reported on their departure card that they were leaving Australia permanently. They found that only 20 per cent remained overseas for at least 12 of the 16 months following their initial exit. They then used this additional criterion to define a permanent emigrant. Using this definition, together with other information on the departure cards, the ABS determined the number of permanent Australian emigrants in 2010 and a few of the characteristics of this population—age, gender, place of birth, and last Australian residence.

The use of this additional administrative data to track the actual behaviour of those who report they are leaving permanently better captures the permanent Australian emigrant population. However, it remains the case that some unknown number of Australian residents who state they are only temporarily leaving on their departure cards, stay abroad more permanently and hence are missed in the ABS population of permanent emigrants. But even if one extended the use of administrative records to track the subsequent movement of all Australian residents in and out of the country, regardless of their stated intention to permanently or only temporarily depart, the meagre information contained in these administrative records substantially limits what they can tell us about the socio-economic characteristics of permanent Australian emigrants.

In this chapter, we use HILDA Survey data to provide a first look at a representative sample of Australian residents in 2001, the first wave of HILDA

data, and report the cumulative risk of these residents permanently leaving Australia through to 2010 by their individual characteristics. Because we are especially interested in how their exit impacts the stock of skilled workers in Australia, we primarily focus on Australian residents aged 25 to 54 in 2001. Doing so allows us to follow a population who, by 2001, had reached an age consistent with having completed their formal education but young enough that they would still be of working-age in 2011, the last year of our data. We are especially interested in differences in permanent exit risk of this working-age population by education and generational ties to Australia, characteristics not available in the Outgoing Passenger Card data.

Rather than depend on an individual's stated intention at the time of their exit to determine who is a permanent emigrant, we are able to take advantage of the panel nature of the HILDA Survey to identify the timing and duration of all exits from Australia. We identify a permanent emigrant as someone who has left Australia for at least two consecutive years. We use a person's interview response status to determine whether he or she resides in Australia or overseas in each year through to the most recent year (2011) of our HILDA data.¹

For example, whenever a HILDA Survey interview is successfully obtained, we know the individual was in Australia at the time of the interview. For unsuccessful interviews, the HILDA dataset reports why the interview was unsuccessful. When a person refuses to be interviewed in a particular year, we assume this person was in Australia in that year. In some cases we know when someone has gone overseas because HILDA interviewers are able to directly contact the person. But more often, because the HILDA Survey is a household panel, this information comes from other members of the household who remained in Australia, or from friends, family members or a former neighbour.

In many cases, HILDA Survey interviewers try to maintain contact with residents who go overseas. But in some cases, their location cannot be determined in a given year. We exclude these cases from our analysis except in certain situations.² In all our tables we use survival analysis to show how the risk of permanent exit varies by individual characteristics. In all but one case—employment in the year before exit—our individual characteristics are based on their value in 2001.

In each year beginning with 2002 and ending in 2011, a person in our sample will either reside in or out of Australia. But to consider the exit permanent, we require the person to exit Australia and not return for at least two years. Hence, to measure the cumulative risk of an exit beginning from the

last time they were observed in Australia (in the period 2001 to 2009), we require information on HILDA respondents until 2011. For each year, we estimate the probability of our 2001 population leaving Australia permanently, given they were in Australia in the previous year. We sum these exit probabilities beginning in 2002 and ending with 2010 (the first years we can observe an initial exit) and get the cumulative probability or risk of leaving Australia at any point through to 2010.³ We calculate this estimated risk for various sub-groups of the 2001 Australian population.⁴

The major advantage of our approach over previous studies using departure cards is that the HILDA data allows us to identify all persons who lived in Australia in 2001 and determine who among them emigrated up until 2010 and ascertain if those departures were permanent. Hence, our measure of a permanent emigration is less subject to reporting error than measures that must depend on intentions reported on departure cards. Additionally, the HILDA information on the socio-economic characteristics of our permanent emigration population is far richer.

The number and characteristics of permanent Australian emigrants

In 2001, the population of Australia was about 19 million. As can be seen in Table 14.1, we estimate that 3.68 per cent, or 699,000, permanently emigrated between 2001 and 2010. The numbers were almost equally split between men and women. In the tables that follow we will focus on the 44.1 per

cent (8.37 million) of the total population who were of prime working-age (aged 25–54) in 2001.

In Table 14.2, Panel A, we look at the differences in the risks of a permanent exit from Australia in our working-age population, based on their own and their parent's birth place. Australia is a land of immigrants, so only 53.8 per cent of our working-age population were born in Australia to parents who were both born in Australia (at least third-generation Australians). For this population, permanent emigration was rare—1.57 per cent. It rises to 2.52 per cent for the 17.4 per cent who were born in Australia but have at least one immigrant parent (second-generation Australians). But for the 11.1 per cent of working-age Australians who were born in an English-speaking overseas country (first-generation Australians), the risk increases to 6.15 per cent. For the 17.7 per cent born overseas in a non-English-speaking country, it increases to 8.31 per cent. This difference in permanent emigration risk is even higher for males, reaching 11.69 per cent for working-age males born in a non-English-speaking country.

In Table 14.2, Panel B, we focus on the risk of permanent exit based on educational attainment. The greatest risk of exit (6.31 per cent) is among the 24.2 per cent of the working-age population with a bachelor's degree or higher—the most educated group in Australia. It is lowest among the 32.7 per cent with less than 12 years of education (1.34 per cent). The risks are only slightly higher for males than females in most education categories, but are highest for males with a bachelor's degree or higher—7.87 per cent.

Table 14.1: Number of permanent exits and risk of permanent exit, by sex and age group

Age group (years)	Total persons		Males		Females	
	Number (million)	Risk (%)	Number (million)	Risk (%)	Number (million)	Risk (%)
0–24	6.58	5.21	3.35	4.37	3.23	6.05
25–54	8.37	3.45	4.15	3.98	4.23	2.96
55 and over	4.03	1.01	1.92	1.04	2.12	0.99
Total	18.99	3.68	9.42	3.62	9.57	3.73

Note: Risks are the cumulative hazards at Wave 10 (2010).

Table 14.2: Share of population and risk of permanent exit of immigrant and educational attainment groups (%)

	Total persons		Males		Females	
	Share of population	Risk	Share of population	Risk	Share of population	Risk
Panel A: Born in/parents born in						
Australia/Australia	53.8	1.57	53.0	1.60	54.5	1.55
Australia/overseas	17.4	2.52	18.2	3.61	16.6	1.52
Overseas English-speaking	11.1	6.15	11.8	6.20	10.5	6.10
Overseas non-English-speaking	17.7	8.31	17.0	11.69	18.4	5.80
Panel B: Educational attainment						
Bachelor's degree or higher	24.2	6.31	24.2	7.87	24.2	4.98
Other post-school qualification	28.5	2.33	36.8	2.52	20.5	2.02
Completed high school	14.5	3.65	12.5	3.89	16.5	3.51
Less than high school completion	32.7	1.34	26.5	1.78	38.9	1.09

Notes: Risks are the cumulative hazards at Wave 10 (2010). Sample is restricted to those aged 25–54 in 2001.

The first two columns of Table 14.3 repeat the shares of our working-age population, by their generational tie to Australia and their risk of a permanent exit, that were first reported in the first two columns of Table 14.2. The next four columns report those values by educational attainment in 2001. Even among third-generation or greater Australians, those with a bachelor's degree or higher are more likely to permanently emigrate (3.95 per cent) than those with less education (0.92 per cent). For second-generation Australians the risks increase to 5.54 per cent and 1.52 per cent respectively. For first-generation Australians from English-speaking countries, the risks grow to 8.27 per cent and 5.33 per cent respectively. But it is among first-generation Australians from non-English-speaking countries that the risks are highest, at 12.54 per cent and 6.34 per cent respectively.

The substantially higher risk of permanent emigration by Australian residents with a bachelor's degree or higher across all generations is an important headwind to future Australian economic growth. It is especially troubling that the risk is greatest among the 23.1 per cent of the population holding bachelor's degrees that are first-generation Australians from non-English-speaking countries. While it is possible that some of these individuals are international students who came to Australia to study and left once their studies were completed,

our restriction of the sample to individuals aged 25 and over means they are likely to be a small proportion of this group. Rather, these individuals are, for the most part, likely to be Australian residents trained in highly subsidised Australian universities, who eventually use that training in other countries.

Table 14.3 shows that educational decisions have differential impacts on the risk of a permanent exit across those with longer generational ties to Australia. In Table 14.4, Panel A, we show that partnering decisions also have differential impacts on the risk of a permanent exit across those with longer generational ties to Australia. The first two columns of Table 14.4 once again show the shares of our working-age population as a whole, by their generational tie to Australia and their risk of a permanent exit, as in Table 14.2. The next four columns report those values by partnering status (single versus living with a partner) in 2001.

Single persons have a greater risk of permanent emigration than those living with a partner who was born in Australia, across all three generations. Thus, greater generational ties are enhanced by union with an Australian-born partner in all cases. Union with a non-Australian-born partner lowers the risk of a permanent exit in all but one case. It slightly increases the risk for first-generation working-age persons born in English-speaking countries, suggesting that a

Table 14.3: Share of population and risk of permanent exit of immigrant groups, by educational attainment (%)

	<i>Total persons</i>		<i>Bachelor's degree or higher</i>		<i>Less than bachelor's degree</i>	
	<i>Share of population</i>	<i>Risk</i>	<i>Share of population</i>	<i>Risk</i>	<i>Share of population</i>	<i>Risk</i>
Born in/parents born in						
Australia/Australia	53.8	1.57	47.1	3.95	55.9	0.92
Australia/overseas	17.4	2.52	17.7	5.54	17.3	1.52
Overseas English-speaking	11.1	6.15	12.3	8.27	10.8	5.33
Overseas non-English-speaking	17.7	8.31	23.1	12.54	16.0	6.34

Notes: Risks are the cumulative hazards at Wave 10 (2010). Sample is restricted to those aged 25–54 in 2001.

Table 14.4: Share of population and risk of permanent exit of immigrant and educational attainment groups, by partner status (%)

	<i>Total persons</i>		<i>Single persons</i>		<i>Partnered persons^a</i>			
	<i>Share of population</i>	<i>Risk</i>	<i>Share of population</i>	<i>Risk</i>	<i>Partner Australian-born</i>		<i>Partner foreign-born</i>	
	<i>Share of population</i>	<i>Risk</i>	<i>Share of population</i>	<i>Risk</i>	<i>Share of population</i>	<i>Risk</i>	<i>Share of population</i>	<i>Risk</i>
Panel A: Born in/parents born in								
Australia/Australia	53.8	1.57	53.4	3.03	66.9	1.00	24.9	2.20
Australia/overseas	17.4	2.52	20.4	4.20	18.8	1.71	11.2	3.22
Overseas English-speaking	11.1	6.15	9.0	7.35	9.0	3.37	19.4	9.25
Overseas non-English-speaking	17.7	8.31	16.1	14.65	5.7	2.15	44.6	7.45
Panel B: Educational attainment								
Bachelor's degree or higher	24.2	6.31	23.6	10.97	22.4	3.09	28.8	8.89
Less than bachelor's degree	75.8	2.15	76.4	2.98	77.6	0.90	71.2	4.42

Notes: Risks are the cumulative hazards at Wave 10 (2010). Sample is restricted to those aged 25–54 in 2001. ^a In these columns we exclude approximately 5 per cent of our sample who were missing partner's country of birth information. These cases are included in the 'Total persons' column.

Table 14.5: Number, share of population, and risk of permanent exit of partner groups, by child status

	No children			Children		
	Number (million)	Risk (%)	Share of population (%)	Number (million)	Risk (%)	Share of population (%)
Partner status in 2001						
Single	1.91	6.32	22.8	0.55	1.97	6.6
Partnered	2.09	3.29	24.9	3.83	2.63	45.7

Note: Risks are the cumulative hazards at Wave 10 (2010).

return to the partner's English-speaking country or to another English-speaking country may offset the act of union itself. It is also the case that first-generation working-age persons from non-English-speaking countries who form unions with non-Australian-born partners are more likely to permanently exit Australia (7.45 per cent) than those who form unions with Australian-born partners (2.15 per cent). But they are still much less likely to do so than those who are single in 2001 (14.65 per cent).

As can be seen in Table 14.4, Panel B, single persons also have a substantially greater risk of permanent emigration than those living with a partner who was born in Australia, regardless of educational attainment. But this is not uniformly the case if they form a union with a non-Australian-born partner. For those with a bachelor's degree or higher, the risk of permanent emigration is slightly lower if they form a union with a non-Australian partner (8.89 per cent) than if they are single (10.97 per cent), but this is not the case for those with less than a bachelor's degree (4.42 per cent versus 2.98 per cent).

This pattern of a familial stake in Australia is also seen in Table 14.5 with respect to children. The highest risk of a permanent exit from Australia is among those working-age persons who are not responsible for a dependent child. The 22.8 per cent of working-age persons who are single without dependent children have the highest risk (6.32 per cent). The next highest risk is among the 24.9 per cent with a partner but without dependent children (3.29 per cent). The next is among the 45.7 per cent with a partner and dependent children (2.63 per cent). The lowest risk is among the 6.6 per cent single persons with dependent children.

While greater generational and familial ties to Australia reduce the risk of permanent emigration, economic factors also matter. Those with higher educational attainment have greater opportunities outside of Australia than those with lower educational attainment and are more likely to permanently emigrate across all levels of generational and familial ties. However, there is another economic factor that can enforce or erode these generational and familial ties—employment status. Unlike gender and generational ties that are fixed in 2001, employment status can vary substantially over the period of our analysis.

In Table 14.6 we compare the cumulative risk of permanent emigration by the employment status of

Table 14.6: Risk of permanent exit of gender, immigrant and educational attainment groups, by employment status in the year prior to exit (%)

	Employed	Not employed
Total population	2.74	2.98
Panel A: Gender		
Males	3.14	4.45
Females	2.30	3.60
Panel B: Born in/parents born in		
Australia/Australia	1.48	1.25
Australia/overseas	2.84	0.92
Overseas English-speaking	5.41	6.83
Overseas non-English-speaking	6.27	7.91
Panel C: Educational attainment		
Bachelor's degree or higher	5.33	9.91
Less than bachelor's degree	1.75	1.79

Notes: Risks are the cumulative hazards at Wave 10 (2010). Sample is restricted to those aged 25–54 in 2001.

our working-age population conditional on their employment status in each year. The risk of permanent emigration is slightly higher (2.98 per cent versus 2.74 per cent) for those who are not employed at the previous interview. But there is substantial heterogeneity across our gender, generational and educational attainment groups. Table 14.6, Panel A, shows the risk of permanent emigration rises for both men and women who are not employed. In fact, the relative importance of employment varies much more by generational ties. As can be seen in Table 14.6, Panel B, first-generation Australians who are not employed at the start of the period have a higher risk of emigrating than those who are employed. This is not the case for those who are Australian-born. Panel C shows that for those with a bachelor's degree or higher, a lack of employment substantially increases the risk of emigration. This is not the case for those with less than a bachelor's degree.

Discussion

We estimate that just under 700,000 of the 19 million Australians who were living in Australia in 2001 (3.68 per cent), permanently emigrated by 2010. Here we focused on the 8.37 million (44.1 per cent of the total population), who were of prime working-age (aged 25–54) in 2001. We estimate that just under 289,000 of the prime working-age Australians permanently emigrated by 2010. While their average cumulative risk of a permanent exit over this period was relatively low (3.45 per cent), there was substantial heterogeneity

across this working-age population. Those with weaker generational and familial ties to Australia were more likely to permanently exit. Furthermore, men were more likely to exit than women.

Generational and familial ties were either enhanced or eroded by economic factors. Across all working-age groups in 2001 with respect to education, those with a bachelor's degree or higher were the most likely to exit. Their risk of a permanent exit was 6.31 per cent (Table 14.2). Even among this group there was substantial heterogeneity. For Australians who are third generation or greater the risk was 3.95 per cent, but for first-generation Australians born in non-English-speaking countries it was 12.54 per cent (Table 14.3).

Employment status also matters (Table 14.6). For those with fewer generational and familial ties—first-generation Australian—and particularly those with a bachelor's degree or higher, employment is an added tie that binds them to Australia. Indeed, the risk of permanent exit rises when they are not employed. This loss of human capital creates a drag on future economic growth and bears additional investigation.

Endnotes

- 1 Some persons in our sample who we define as permanent leavers—those who have not returned two years later

—do eventually return to Australia. For instance, of the 113 persons in our sample that leave Australia 'permanently' in 2002, the exit group we are able to follow for the most years, 91 of them or 81 per cent had not returned by 2010.

- 2 If a person's location in a given year (or streak of years) is 'Unknown' but that person's location in the following year is 'Overseas', we change that person's location from 'Unknown' to 'Overseas'. That is, we assume that this person went overseas at the time the location is unknown.
- 3 This cumulative risk is commonly known as the cumulative hazard.
- 4 A person contributes data as long he or she is alive and their location is known.

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15. Time spent in paid and unpaid work

Roger Wilkins

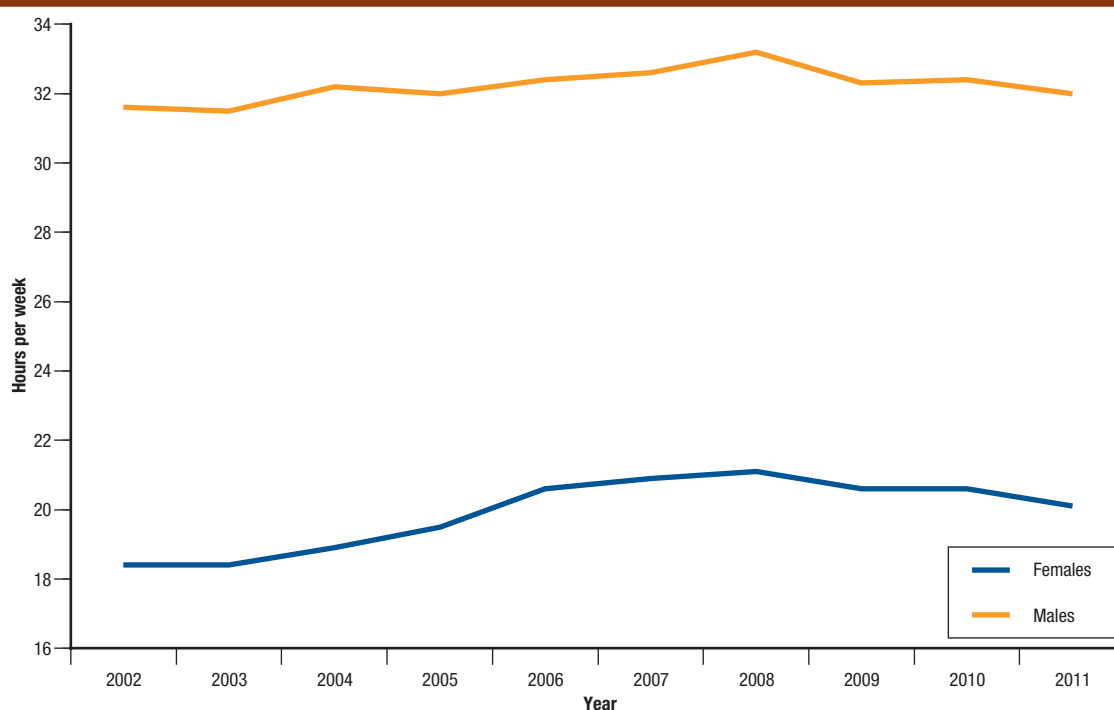
Unpaid or non-market work, and the output that results, are largely invisible in conventional economic statistics, yet this output is likely to be an important component of the 'real' economy that comprises both market and *non-market* production. Much of this non-market work can be classified as household production, involving child care, housework and preparation of meals, but non-market work also includes unpaid caring for elderly people and people with disability, and voluntary work (e.g. for a charity). Self-evidently, if all household production, unpaid caring and voluntary work were to cease, many people would be adversely affected, in many cases profoundly so. It therefore follows that unpaid work makes an important but largely unmeasured contribution to our living standards.

The HILDA Survey places a great deal of emphasis on paid work, collecting information on labour force status (which relates to paid work only), the extent and nature of paid employment, earnings from employment, job characteristics, and labour market participants' preferences and subjective assessments in relation to paid work. Nonetheless, a considerable amount of information is also collected on unpaid work. For instance, we have data on the amount of time spent each week on a variety of activities that can be interpreted as unpaid work: household errands (such as shopping, banking, paying bills, and keeping financial records); housework (such as preparing meals, washing dishes,

cleaning house, washing clothes, ironing and sewing); outdoor tasks (including home maintenance, car maintenance and gardening); looking after one's own children (including playing with them, helping them with personal care, teaching, coaching or actively supervising them, and getting them to child care, school and other activities); looking after other people's children (aged under 12) on a regular unpaid basis; volunteer or charity work (e.g. canteen work at the local school or unpaid work for a community club or organisation); and caring for a disabled spouse or adult relative, or caring for elderly parents or parents-in-law. This information is collected in the self-completion questionnaire in conjunction with information on time spent in paid work and time spent travelling to and from paid work, facilitating a relatively comprehensive assessment of the time allocated to both paid and unpaid work.¹

Figure 15.1 draws on the information provided by respondents in the self-completion questionnaire on the number of hours spent each week in paid employment and travelling to and from the place of work. For each wave, the figure presents the mean total time in paid work (inclusive of travel to and from work) for all males and females aged 15 and over. Up until 2008, the mean was increasing for both males and females, since which time it has gradually declined. As expected, the mean for males is higher than the mean for females, although the

Figure 15.1: Mean time spent in paid work each week—Persons aged 15 years and over



gap narrowed slightly over the decade, particularly between 2002 and 2008, when the mean time in paid work grew more quickly for females than males. In 2002, the mean among all males aged 15 and over was approximately 31.5 hours per week, and the mean among all females aged 15 and over was approximately 18.5 hours per week, a difference of 13 hours. In 2011, the respective means were approximately 32 and 20, a difference of 12 hours.

Figure 15.2 examines time spent in unpaid work over the 2002 to 2011 period. It presents, for males and females separately, the mean time spent on each of seven activities: household errands, housework, outdoor tasks, caring for own children, caring for others' children, voluntary work, and caring for a disabled or elderly relative. The most striking feature of Figure 15.2 is that the mean time spent on housework is much higher for females than males. Indeed, females average greater amounts of time on all unpaid work activities other than voluntary work, the average time spent on which is similar for males and females, and outdoor tasks, the average time spent on which is higher for males.

Some narrowing of the gap between males and females in time spent on housework is evident between 2002 and 2011, arising from a decline in the mean of approximately 1.5 hours per week for females, and a rise in the mean of approximately one hour per week for males. That the decline for females is greater than the increases for males means that, in 2011, Australians were on average spending approximately half an hour less per week on housework than they were in 2002. Time spent on outdoor tasks has also on average declined between 2002 and

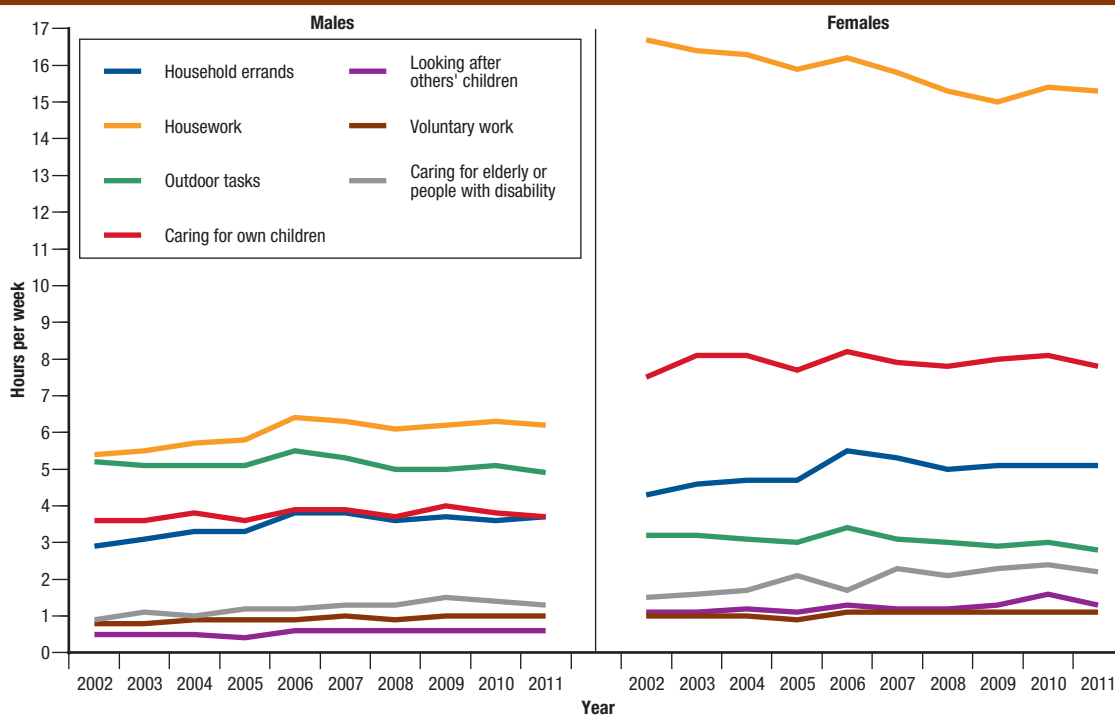
2011, the mean falling by approximately 20 minutes per week for both males and females. Curiously, however, time spent on household errands has increased over the period, rising by an average of 0.8 of an hour per week for both males and females. This increase primarily occurred between 2002 and 2006, with little change between 2006 and 2011. The increase may reflect an increase in the time spent on (discretionary) shopping, in turn deriving from the growth in household incomes over the period (see Chapter 4). It is also possible that time spent travelling to and from various services has increased as a result of increases in both the degree of 'centralisation' of services and in traffic congestion.

Total time spent on paid and unpaid work

Differences in total time spent working by 'family situation' are examined in Figure 15.3 and Table 15.1. For males and females separately, individuals are classified into one of seven categories for family situation: child (of another household member) aged under 35; single person (not living with a partner or dependent child) and aged under 65; member of a couple without dependent children, and aged under 65; couple with dependent children; lone parent with dependent children; member of a couple and aged 65 or over; and single person aged 65 or over. Both the figure and table pool data from all waves between Wave 2 and Wave 11 and therefore provide estimates of average values over the ten years to 2011.

The height of each bar in Figure 15.3 indicates the mean time spent per week on all (paid and unpaid) work for people in the relevant category, while the

Figure 15.2: Time spent on unpaid work—Persons aged 15 years and over



colours of the bar indicate the composition of that work, distinguishing six categories: paid work, household errands, housework, outdoor tasks, caring for own children, and other unpaid work (caring for other people's children, caring for disabled adult relatives or elderly parents, and voluntary work). Table 15.1 restricts attention to the total time spent working, but examines the distribution of working time within each family-situation category.

Men and women with dependent children clearly have the highest weekly working hours, averaging over 70 hours per week on paid and unpaid work combined. Partnered women with children have the highest average working hours (76.4) of all the groups examined, followed by partnered men with children (73.0), lone-parent men (72.2) and lone-parent women (70.1). Even more striking is that 10 per cent of women with dependent children work 113 or more hours per week, while 10 per cent of lone-parent men work 109 hours or more, and 10 per cent of partnered men with dependent children work 101 hours per week. Figure 15.3 shows that the composition of working hours differs markedly between men and women, with a significantly higher proportion of men's working hours being paid. Interestingly, mean hours of paid work is considerably higher for lone-parent men than for lone-parent women, while the means of time spent doing housework and caring for one's own children are considerably lower for lone-parent men than for lone-parent women. This may be because lone-parent

fathers are less likely to be caring for young children than lone-parent mothers.

Working times are on average lowest for individuals aged under 35 who are living with their parents, partnered elderly men, and single elderly men and women, who all have average working hours of approximately 30 hours per week. Partnered elderly women have somewhat longer average working hours of 41.6, primarily driven by time spent on housework, which is considerably higher than time spent on housework by partnered elderly men.

A significant feature of Figure 15.3 is that, in all of the family-situation categories, men average more time in paid work, and women average more time in unpaid work. Social and cultural factors would seem to be important determinants of this pattern, since the pattern holds among people without children, and even among young single people.

Paid and unpaid work of couples with children

Figure 15.3 and Table 15.1 showed that partnered men and women with dependent children both have very high working hours, but that the composition of those hours differs markedly. In particular, unpaid work is a much larger proportion of women's working hours. The figure and table examined average levels over the 2002 to 2011 period as a whole, and therefore did not consider whether there has been any discernible trend change over the HILDA Survey period. Figure 15.4

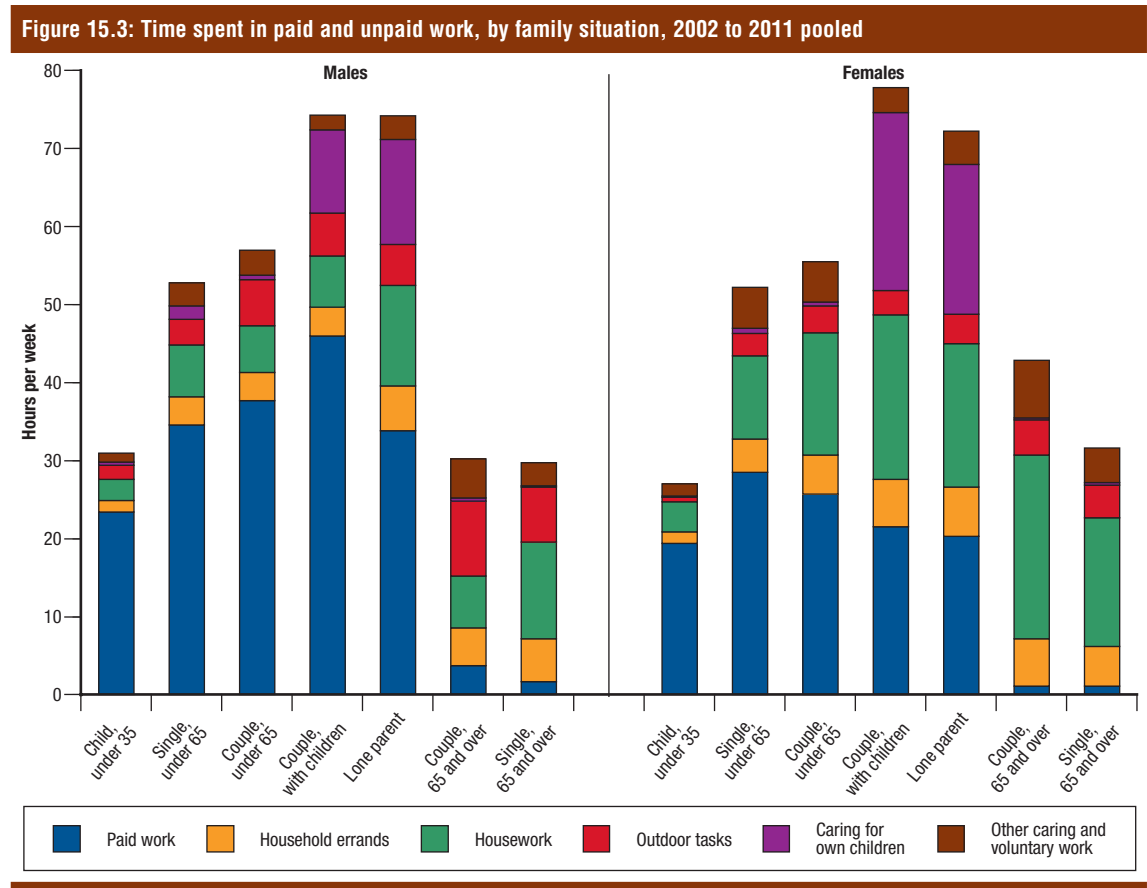


Table 15.1: Distribution of total time spent in paid and unpaid work, by family situation, 2002 to 2011 pooled (hours per week)

	Mean	25th percentile	Median	75th percentile	90th percentile
Males					
Child, under 35	29.5	6	23	50	62
Single, under 65	50.8	33	53	66	82
Couple, under 65	55.5	43	58	70	82
Couple, with children	73.0	60	73	86	101
Lone parent	72.2	53	72	88	109
Couple, 65 and over	29.3	12	24	40	61
Single, 65 and over	28.2	10	22	40	60
Females					
Child, under 35	25.9	7	19	44	55
Single, under 65	50.2	31	51	64	81
Couple, under 65	53.4	38	54	67	82
Couple, with children	76.4	57	74	96	114
Lone parent	70.1	50	68	89	113
Couple, 65 and over	41.6	23	36	54	77
Single, 65 and over	30.8	12	26	43	64
Total	52.4	28	53	72	92

Note: Individuals aged 35–64 who are living with a parent (or both parents) are classified as ‘Single, under 65’.

focuses on this question, examining trends in the means of time spent on paid work and time spent on unpaid work by couples with dependent children.

Trend increases in unpaid work by men and in paid work by women are indeed evident between 2002 and 2011 although the pace of change is somewhat glacial. Unpaid work of partnered men with children averaged just over 25 hours per week in 2002, and had risen to just over 28 hours per week by 2011. Very much tracking this change in unpaid work by partnered men with children has been a corresponding increase in paid work by partnered women with children, with mean paid working time rising from just over 19 hours per week in 2002 to just over 22 hours per week in 2011. The trends in unpaid work of men and paid work of women have therefore worked to produce some degree of convergence between men and women in couple families with dependent children. However, Figure 15.4 does show that unpaid work has not, on average, decreased for partnered women with children, while time spent on paid work by men has on average actually increased slightly, from 45 to 46 hours per week. Thus, the changes for unpaid work of women and paid work of men have not contributed to the convergence. Moreover, the total effect of the changes in average time spent in paid and unpaid work is that both men and women with dependent children were working longer total hours in 2011 than in 2002.

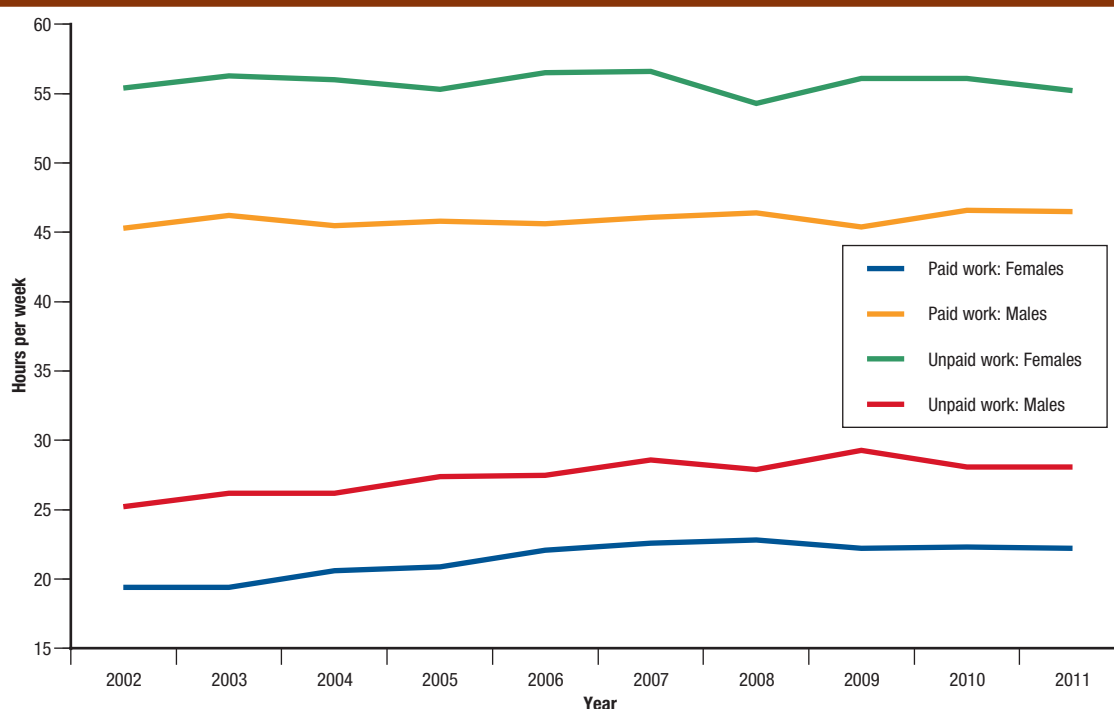
Individual-level changes in paid and unpaid working time

The longitudinal structure of the HILDA Survey data can be used to describe how paid and unpaid working time changes from year to year and, more importantly, the interdependencies between changes in paid and unpaid working time, and the

determinants of the two components of working time. We begin in Table 15.2 by describing mean individual-level changes in paid, unpaid and total working time over a five-year period, disaggregated by age group to show how changes are related to lifecycle stage. The estimates are for all waves pooled, so all possible five-year intervals (2002–2007 through to 2007–2011) are included, while the age groups refer to the age group of the individual at the beginning of the five-year interval.

Mean changes in both paid and unpaid working time show quite different age patterns for males and females. For males, the mean change in hours of paid work over five years is an increase of 16.6 hours per week for those initially aged 15 to 24, an increase of 1.5 hours for those initially aged 25 to 34, and a mean increase of 0.6 hours for those initially aged 35 to 44. For the three highest male age groups (45 to 54, 55 to 64, and 65 and over), the mean change in paid working time is negative, peaking at –10.1 for those initially aged 55 to 64. The mean change over five years in time spent by males in unpaid work, by contrast, is positive for all six age groups, although the mean change is largest for the 15 to 24, 25 to 34 and 55 to 64 age groups. While this will in part reflect the ‘age profile’ of unpaid work by males—that is, that males tend to increase their time spent in unpaid work as they get older—it will also in part reflect the secular rise in time spent in unpaid work by males over the 2002 to 2011 period, as indicated by Figure 15.4.

For females, it is clear that child-rearing has large impacts on average changes in time spent in paid and unpaid work. Thus, the mean change in time spent in paid work is an increase of 11.3 hours per week for those initially aged 15 to 24, but a decrease of 0.9 hours per week for those initially aged 25 to 34, then an increase of 4.1 hours for

Figure 15.4: Mean time spent in paid and unpaid work, by couples with children

those aged 35 to 44. Thereafter, at older ages, the mean change in paid working time is negative.

Time spent in unpaid work on average increases sharply over five years for women initially aged 15 to 24 (9.6 hours per week) and women initially aged 25 to 34 (9.2 hours per week), changes that are likely to be largely driven by child-rearing, although perhaps also partly due to partnering. The average five-year change in unpaid work is then negative for the 35 to 44 and 45 to 54 age groups, positive for the 55 to 64 age group, and negative for the 65 and over group.

Significantly, the quite different patterns in changes in time spent in paid and unpaid work evident for men and women actually combine together to produce quite similar mean changes in total working time, whereby working time increases in the younger age categories, and then (slowly) decreases in the older age categories.

The interdependencies between paid and unpaid work are briefly considered in Table 15.3. For each of 12 groups defined by sex and age, the table shows the mean change from one year to the next in unpaid working time and total working time, firstly among those who *increased* their paid working time by more than one hour, and secondly among those who *decreased* their paid working time by more than one hour. For most of the groups examined in the table, there is clear evidence of a compensating or offsetting effect of changes in paid working time on unpaid working time: those who increase paid working time on average decrease time spent on unpaid work, and

those who decrease paid working time on average increase time spent on unpaid work. However, for all age groups of both males and females, changes in paid working hours are on average not matched by offsetting changes in unpaid hours: those who increase paid working time on average experience an increase in total working time, and those who decrease paid working time on average experience a decrease in total working time.

Determinants of working time

The associations between working time and personal characteristics can be examined by estimating regression models of the determinants of working

Table 15.2: Mean individual-level changes in working time over five years, by initial age group, 2002 to 2011 pooled (hours per week)

	Paid work	Unpaid work	Total work
Males			
15–24	16.6	5.0	21.9
25–34	1.5	4.1	5.4
35–44	0.6	1.1	1.2
45–54	–2.9	0.8	–2.3
55–64	–10.1	3.6	–6.2
65 and over	–2.3	0.6	–1.4
Females			
15–24	11.3	9.6	21.2
25–34	–0.9	9.2	7.8
35–44	4.1	–4.5	–0.5
45–54	–1.6	–1.1	–3.2
55–64	–5.3	2.6	–2.4
65 and over	–0.4	–1.8	–2.0

Table 15.3: Effects of changes in paid working time on unpaid and total working time, by age group, 2002 to 2011 pooled (hours per week)

	<i>Paid working time increased from one year to the next (by more than 1)</i>		<i>Paid working time decreased from one year to the next (by more than 1)</i>	
	<i>Mean change in unpaid working time</i>	<i>Mean change in total working time</i>	<i>Mean change in unpaid working time</i>	<i>Mean change in total working time</i>
Males				
15–24	0.3	17.4	1.1	–11.7
25–34	0.4	12.0	2.0	–8.9
35–44	–1.0	9.5	1.2	–9.9
45–54	–0.7	10.6	0.9	–10.9
55–64	–1.2	10.0	1.7	–13.7
65 and over	–1.2	10.4	5.2	–13.9
Females				
15–24	–0.2	15.7	3.9	–8.2
25–34	–4.0	9.9	11.4	–4.2
35–44	–4.8	7.6	3.9	–8.6
45–54	–2.9	7.1	1.9	–9.5
55–64	–3.7	6.5	3.3	–10.1
65 and over	0.9	9.9	–0.5	–11.3

time. These models allow us to identify the independent ‘effect’ of each characteristic on working time, controlling for the effects of other characteristics. Results of two sets of ‘random effects’ regression models are presented in Table 15.4. (See the Glossary for an explanation of random-effects models.) The first model examines the determinants of time spent in unpaid work, while the second model examines the determinants of total time spent in (paid and unpaid) work. The models investigate the effects of an extensive range of factors, including demographic characteristics, income, region, disability and health, health behaviours, employment outcomes, personality, attitudes and values, partner characteristics, and year.

Unsurprisingly, given the descriptive findings presented above, for both males and females, time spent undertaking unpaid work is lowest for the 15 to 24 age group and also relatively low for the 25 to 34 age group. Total working time is also lowest for the 15 to 24 age group, which is consistent with this age range being an ‘investment’ stage of life, when people are more likely to be enrolled in education (and probably also socialise more which could, at least in part, be represented as an investment in finding a partner). Perhaps reflecting the same phenomenon, living with one’s parents (the ‘child’ variable) has very large negative impacts on both unpaid and total working time.

Immigrants from the main English-speaking countries (ESB immigrants) do not, all else equal, significantly differ from native-born Australians in unpaid or total working time, but other immigrants (NESB immigrants) have significantly lower total working times—2.37 hours per week less in the case of males, and 1.4 hours per week less in the case of females. Female immigrants from non-English-speaking countries also have lower predicted weekly hours of unpaid work. University-level

educational qualifications are associated with greater total working time of men (2.94 hours more than those without a bachelor’s degree), and greater unpaid and total working time of women (2.43 hours more and 6.81 hours more, respectively).

Partner status has significant impacts on both unpaid and total (unpaid and paid) working time of males and females, and effects depend on the age of the individual. Noting that the effects on paid working time are the difference between effects on total working time and effects on unpaid working time, the estimates imply that partnering acts to increase unpaid and paid working hours of men under the age of 35, decrease unpaid and paid working hours of men aged 35 to 54, and have no effect on unpaid and paid working hours of men aged 55 and over. For women, partnering has no effect on unpaid working hours of women aged under 35 or 45 to 54, and acts to decrease unpaid working hours of those aged 35 to 44 and increase unpaid working hours of those aged 55 and over. Partnering also acts to increase paid working hours of those under 35, but decrease paid working hours of those aged 35 and over.

Effects of children on working time are captured by variables for parental status, the number of dependent children, the age of the youngest child, and the number of non-dependent children. A dummy indicator variable is also included to capture the effect of (one’s partner in the case of men) getting pregnant or giving birth within the last year. Consistent with the descriptive evidence, being a parent increases unpaid working time: the effect is larger the greater the number of children (both dependent and non-dependent), and also larger the lower is the age of the youngest child. There is also an additional positive effect on unpaid working time of pregnancy or birth occurring within the last year. All the effects of children on unpaid working

time are approximately double in magnitude for women compared with men, with the exception that the unpaid working time of men increases slightly more rapidly with the number of non-dependent children.

The effects of children on the total working time of women tend to be slightly smaller than their effects on unpaid working time of women, implying that children cause women to decrease paid working time. However, the difference is slight and overall children clearly cause large increases in the total working time of women. For example, a (partnered) woman with two dependent children, the youngest of which is aged under 5, is predicted to spend 41.32 hours more per week on unpaid work, and 32.99 hours more per week on all work, than a woman with no children who otherwise has the same characteristics. For men, the effects of children tend to be slightly larger for total working time than unpaid working time, implying men on average increase time spent in paid work in response to having children. For example, a (partnered) man with two dependent children, the youngest of which is aged under 5, is predicted to spend 15.84 hours more per week on unpaid work, and 18.07 hours more per week on all work, than a man with no children who otherwise has the same characteristics.

Also evident in respect of partner status and parenting status, is that being a lone parent has different effects for men and women. For men, being a lone parent significantly increases time spent on unpaid work (by 3.21 hours per week), but has no significant effect on total working time, implying it causes an essentially offsetting decrease in time spent in paid work. For women, being a lone parent has no significant effect on time spent on unpaid work, but does increase total time working (by 1.98 hours per week), implying an increase in time spent in paid work.

Location in the distribution of income (as measured by quintile of the distribution of equivalised income) is more strongly related to total working time than unpaid working time, which probably reflects the causal effect of working more paid hours on income, rather than the effect of income on working hours. Nonetheless, the males in the top three income quintiles are, all else equal, predicted to spend approximately 0.6 fewer hours per week on unpaid work than males in the bottom two quintiles, while females in the top quintile are predicted to spend 0.85 fewer hours per week on unpaid work than females in the bottom quintile, 1.2 fewer hours than females in the second quintile, and approximately 0.6 fewer hours than females in the third and fourth quintiles.

Home-owners spend approximately one hour more per week on unpaid work than non-home-owners, while time spent on unpaid work is, all else equal, lowest for people living in major urban areas and highest for people living in non-urban regions.

Disability that causes a moderate work restriction reduces time spent in paid work (by 2.39 hours per week for males and by 1.21 hours per week for females), but not time spent on unpaid work; while disability that causes a severe work restriction decreases time spent on unpaid work by 2.16 hours for males and 4.69 hours for females, and decreases total working time by 6.5 hours per week for males and 6.9 hours per week for females. Unpaid working time does not appear to be significantly affected by general health or mental health (as measured by the SF-36 health measure (Ware et al., 2000)), but for males a significant positive effect on total working time is evident for general health, and a *negative* effect is evident for mental health—that is, better mental health is associated with less time spent working. However, this mental health association seems more likely to reflect adverse effects of long working hours on mental health, rather than better mental health leading to lower working hours.

Being a smoker is associated with longer unpaid and total working hours, which again could reflect long working hours causing people to smoke. Males who regularly drink alcohol (five or more days per week) also have higher predicted total working hours, which likewise may reflect an effect of long hours on drinking.

An indicator variable for whether the individual is employed in paid work shows there is a substitution effect between paid and unpaid work, since being in paid employment on average decreases weekly hours of unpaid work by 4.01 hours for males and 3.67 hours for females. However, consistent with the evidence presented in Table 15.3, the magnitude of the substitution effect is relatively small, since employment in paid work is associated with 22.02 more hours per week of total work for males and 13.65 more hours per week of total work for females. A variable for the number of hours of paid work is also included in the model of time spent on unpaid work, providing a quantification of the substitution effect: each additional hour of paid work on average decreases unpaid work by 0.11 hours for males and by 0.27 for females.

The models also include a variable for the wage rate for people in paid employment. For individuals in paid employment, the variable is equal to usual weekly earnings in all jobs divided by usual weekly hours of work in all jobs, while for other people it is set equal to zero. A higher wage rate in paid employment might be expected to decrease unpaid work in favour of paid work, since paid work should be relatively more attractive, but in fact it is negatively associated with both unpaid and paid working time (and indeed the effect on unpaid working time of males is not statistically significant).

Waves 5 and 9 of the HILDA Survey included a short version of Saucier's (1994) 'Big Five' personality test, from which personality scores are derived for

Table 15.4: Determinants of time spent on unpaid work and all work—Persons aged 15 years and over

	Unpaid work		All work	
	Males	Females	Males	Females
<i>Age group (Reference category: 15–24)</i>				
25–34	3.53	3.74	6.56	5.55
35–44	8.33	9.47	12.89	11.72
45–54	9.40	10.34	12.64	11.60
55–64	8.89	9.10	7.09	7.08
65 and over	9.67	8.16	2.56	4.28
<i>Immigrant status (Reference category: Australian-born)</i>				
ESB immigrant	-0.16 ⁺	-0.75 ⁺	0.09 ⁺	-0.86 ⁺
NESB immigrant	-0.88 ⁺	-1.69	-2.37	-1.40
Hold a bachelor's degree	0.43 ⁺	2.43	2.94	6.81
Partnered	2.06	-0.21 ⁺	3.93	3.18
Partnered, aged 35–44	-4.15	-3.30	-6.30	-5.15
Partnered, aged 45–54	-4.02	-1.34 ⁺	-5.80	-3.75
Partnered, aged 55 and over	-2.21	2.04	-3.80	-0.19 ⁺
Child	-6.50	-7.40	-17.26	-15.19
Parent	1.66	6.64	-0.20 ⁺	3.62
Lone parent	3.21	1.05 ⁺	1.19 ⁺	1.98
Number of dependent children	1.03	2.20	2.86	2.57
<i>Age of youngest child (Reference category: No children under 15)</i>				
0–4	12.12	30.28	12.55	24.23
5–9	8.10	15.79	8.45	12.17
10–14	3.03	5.31	3.23	4.50
Number of resident non-dependent children	1.25	0.93	4.96	3.37
(Partner) got pregnant or gave birth in last 12 months	1.46	5.16	2.08	2.55
<i>Income quintile (Reference category: Bottom quintile)</i>				
Second quintile	-0.05 ⁺	0.35 ⁺	1.04	1.16
Third quintile	-0.66	-0.23 ⁺	2.46	1.84
Fourth quintile	-0.62	-0.19 ⁺	3.91	3.15
Top quintile	-0.62	-0.85	5.61	3.57
Home-owner	1.04	1.43	0.97	1.31
<i>Region (Reference category: Major urban)</i>				
Other urban	1.09	1.88	0.85	1.43
Other region	2.45	3.22	2.53	3.10
<i>Disability (Reference category: No restricting disability)</i>				
Disabled, moderate work restriction	0.20 ⁺	0.14 ⁺	-2.39	-1.21
Disabled, severe work restriction	-2.16	-4.69	-6.50	-6.90
SF-36 general health	0.01 ⁺	0.01 ⁺	0.02	0.01 ⁺
SF-36 mental health	-0.01 ⁺	-0.01 ⁺	-0.01	-0.00 ⁺
Smoker	1.76	1.94	2.67	3.03
Drink regularly	0.14 ⁺	-0.22 ⁺	0.57	0.11 ⁺
Employed in paid work	-4.01	-3.67	22.02	13.65
Hours of paid work	-0.11	-0.27	–	–
Hourly wage (\$, December 2011 prices)	-0.006 ⁺	-0.015	-0.015	-0.033
Personality: Extroversion	0.16 ⁺	-0.45	0.50	-0.37
Personality: Agreeableness	0.32 ⁺	1.98	0.65	1.93
Personality: Conscientiousness	0.70	0.49	1.21	1.02
Personality: Emotional stability	-0.18 ⁺	0.55	-0.82	0.19 ⁺
Personality: Openness to experience	0.71	1.39	0.03 ⁺	1.12
Extent to which have traditional views on marriage and children	0.02 ⁺	-0.01 ⁺	0.04	-0.02 ⁺
Extent to which have traditional views on parenting and work	-0.03	0.09	-0.04	0.03
Partner has bachelor's degree	0.14 ⁺	-0.56 ⁺	-1.30	-1.86
Partner employed	0.79	1.87	1.72	1.90
Partner's hourly wage (\$, December 2011 prices)	0.001 ⁺	-0.001 ⁺	-0.004 ⁺	-0.011
Partner has a disability with a moderate work restriction	1.48	0.43 ⁺	1.46	0.54 ⁺
Partner has a disability with a severe work restriction	9.51	6.64	9.20	6.73
Extent to which partner has traditional views on marriage and children	0.00 ⁺	0.02 ⁺	-0.00 ⁺	0.02 ⁺
Extent to which partner has traditional views on parenting and work	-0.05 ⁺	0.07	-0.05	0.03 ⁺
Year	0.27	0.18	0.41	0.32

Notes: Estimates are obtained from random effects models estimated on Waves 2 to 11. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.

extroversion, agreeableness, conscientiousness, emotional stability, and openness to experience. These personality scores (assumed fixed, and averaged over Waves 5 and 9 if available) are included in the models reported in Table 15.4. Significant effects of personality traits are evident. Greater conscientiousness acts to increase both unpaid and paid working time of both males and females, while greater openness to experience acts to increase time in unpaid work, but not paid work, for both males and females. Effects of other personality traits differ somewhat for males and females, affecting paid working time of males, but unpaid working time of females. Thus, extroversion positively impacts on paid working time of males, and negatively impacts on unpaid working time of females, agreeableness acts to increase paid working time of males and increase unpaid working time of females, and greater emotional stability acts to decrease paid working time of males and increase unpaid working time of females.

An individual's social attitudes can potentially be important determinants of time spent in paid and unpaid work (particularly for partnered people). Two measures of the extent to which a respondent has 'traditional' social attitudes are included in the models of the determinants of working time. Both measures are based on responses to batteries of questions included in the self-completion questionnaire. The first measure relates to marriage and children, while the second measure relates to parenting and paid work.²

The results for these two variables presented in Table 15.4 indicate that extent to which an individual has traditional views on marriage and children does not significantly impact on unpaid working time for males or females, but more traditional views do translate to increased paid working time of males holding those views. More traditional views on parenting and work, by contrast, act to significantly decrease unpaid working time of males holding those views and increase unpaid working time of females holding those traditional views. More traditional views on parenting and work also act to decrease paid working time of females holding those views, but do not increase paid working time of males holding such views.

The effects of various partner characteristics are also considered in the regression models. A partner holding a university qualification has no effect on unpaid working time, but acts to reduce paid working time by 1.3 hours per week in the case of men and 1.86 hours per week in the case of women. Having a partner in paid employment increases both paid and unpaid working time in the case of men (by 1.72 hours per week in total), but only increases unpaid working time in the case of women (by 1.87 hours per week). The partner's wage does not affect men's working time, but does negatively affect women's paid working time—each one-dollar increase in the partner's wage decreases

the woman's paid working time by 0.01 hours. Partner disability has significant effects on unpaid working time: moderate disability of one's partner increases men's unpaid working time by 1.48 hours per week, while severe disability increases men's unpaid working time by 9.51 hours per week and women's unpaid working time by 6.64 hours per week. No significant effects of the partner's views on marriage and children are evident, but more traditional views of the partner on parenting and work act to increase unpaid working time of women.

Finally, the estimates for the 'year' variable show the trend increase in working time over the decade evident for both males and females: holding all else constant, each year acts to increase total working time of males by 0.41 hours per week and total working time of females by 0.32 hours per week. These translate to respective increases of 4.1 and 3.2 hours per week over the 2002 to 2011 period (or 6 to 8 per cent of the overall average working time of approximately 50 hours per week). For males, about two-thirds of the increase (0.27 of 0.41) has been in unpaid work, while for females just over half the increase (0.18 of 0.32) has been in unpaid work.

Conclusion

The information on time use collected by the HILDA Survey each year provides a more complete picture of the total working time, and therefore economic contribution, of members of the community. It also provides valuable information on the composition of unpaid work, showing the relative importance of household chores, child care, other caring and voluntary work, and how they differ between men and women and by lifecycle stage and family situation. What seems clear from the analysis presented in this chapter is that men and women aged 35 to 54 are the 'production powerhouses' of the economy. Not only is their time spent in paid work higher than any other age group, but their time spent in unpaid work is at least as high as any other age group, to a large extent reflecting the considerable time resources required to raise children.

Endnotes

- 1 Time spent in paid work and looking after others' children was not collected in Wave 1, which is therefore excluded from the analysis presented in this chapter.
- 2 The measure for views on marriage and children is based on the extent of agreement, on a seven-point Likert scale, with the following nine statements:
 - a. *It is alright for an unmarried couple to live together even if they have no intention of marrying;*
 - b. *Marriage is a lifetime relationship and should never be ended;*
 - c. *Marriage is an outdated institution;*
 - d. *It is alright for a couple with an unhappy marriage to get a divorce even if they have children;*
 - e. *A woman has to have children in order to be fulfilled;*

- f. Children will usually grow up happier if they have a home with both a father and a mother;
- g. It is alright for a woman to have a child as a single parent even if she doesn't want to have a stable relationship with a man;
- h. When children turn about 18–20 years old they should start to live independently; and
- i. Homosexual couples should have the same rights as heterosexual couples do.

The total score for the extent to which views about marriage and children are 'traditional' is calculated as $(8 - a) + b + (8 - c) + (8 - d) + e + f + (8 - g) + h + (8 - i)$, potentially ranging from 8 to 56.

The measure for views on parenting and paid work is based on the extent of agreement with the following 14 statements:

- a. Many working mothers seem to care more about being successful at work than meeting the needs of their children;
- b. If both partners in a couple work, they should share equally in the housework and care of children;
- c. Whatever career a woman may have, her most important role in life is still that of being a mother;
- d. Mothers who don't really need the money shouldn't work;
- e. Children do just as well if the mother earns the money and the father cares for the home and children;
- f. It is better for everyone involved if the man earns the money and the woman takes care of the home and children;
- g. As long as the care is good, it is fine for children under 3 years of age to be placed in child care all day for 5 days a week;
- h. A working mother can establish just as good a relationship with her children as a mother who does not work for pay;
- i. A father should be as heavily involved in the care of his children as the mother;
- j. It is not good for a relationship if the woman earns more than the man;
- k. On the whole, men make better political leaders than women do;
- l. A pre-school child is likely to suffer if his/her mother works full-time;
- m. Children often suffer because their fathers concentrate too much on their work; and
- n. If parents divorce it is usually better for the child to stay with the mother than with the father.

The total score for the extent to which views about parenting and work are 'traditional' is calculated as $a + (8 - b) + c + d + (8 - e) + f + (8 - g) + (8 - h) + (8 - i) + j + k + l + (8 - m) + n$, potentially ranging from 14 to 98.

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16. Non-co-resident partners

Markus Hahn and Roger Wilkins

The HILDA Survey data show that 64.6 per cent of Australians aged 18 and over were legally married or living in a de facto relationship in 2011, but not all of the remaining 35.4 per cent of the adult population are without a 'significant other'—that is, many people who are not living with a partner are in an 'intimate, ongoing' relationship with another person. These relationships, while not the within-household relationships on which the HILDA Survey primarily focuses, are nonetheless potentially important to understanding the economic and social lives of Australians, including household formation decisions, employment activity and geographic mobility.

In Waves 5, 8 and 11, information has been collected by the HILDA Survey on 'non-co-resident partners' of respondents aged 18 and over who are not living with a partner. In addition to ascertaining the existence of a non-co-resident partner, this information has included the proximity, frequency of contact, employment status and educational attainment of the non-co-resident partner as well as the respondent's intentions to live with that non-co-resident

partner within the next three years.¹ In this chapter, we present cross-sectional descriptive information on non-co-resident partners, and also take a longitudinal perspective to examine how such relationships correlate with subsequent co-resident partnerships.

Prevalence of non-co-resident relationships

Table 16.1 presents the proportion of men and women who are single (not living with a partner) and the proportion of these individuals who have a non-co-resident partner, disaggregated by age group. Estimates are presented for each of the waves the information has been collected by the HILDA Survey. For men, the proportion who are single is highest among the youngest (18 to 24) age group and is progressively lower as we move into older age groups. For example, in 2011, 88.3 per cent of men aged 18 to 24 were single, compared with 39.4 per cent of men aged 25 to 34, 23.7 per cent of men aged 35 to 44 and 22.3 per cent of men aged 45 and over. Women in the younger age groups are less likely to be single than men, and women in the oldest age group (45 and over) are

more likely to be single than women aged 35 to 44, which reflects the tendency for women to outlive their partners. The trend decline in the proportion of women who are single is, however, maintained in moving from the 18 to 24 age group to the 25 to 34 age group, and then moving to the 35 to 44 age group. For example, in 2011, 76.7 per cent of women aged 18 to 24 were single, compared with 35.7 per cent of women aged 25 to 34, 22.3 per cent of women aged 35 to 44 and 33.6 per cent of women aged 45 and over.

The lower panel of Table 16.1 shows that significant proportions of single people have non-co-resident partners. It is also evident that, conditional on being single, the likelihood of having a non-co-resident partner tends to be decreasing in age. For example, in 2011, the proportion with a non-co-resident partner was 39.2 per cent for single women aged 18 to 24, 32.3 per cent for single women aged 25 to 34, 18.8 per cent for single women aged 35 to 44, and 7.0 per cent for single women aged 45 and over. For men, a similar pattern is evident although the differences by age are not as large, and the 18 to 24 age group and the 25 to 34 age group both have very similar proportions with non-co-resident partners. For example, in 2011, the proportion with a non-co-resident partner was 26.7 per cent for single men aged 18 to 24, 28.0 per cent for single men aged 25 to 34, 20.6 per cent for single men aged 35 to 44, and 12.6 per cent for single men aged 45 and over.

Characteristics of non-co-resident relationships

Descriptive information on the proximity of non-co-resident partners and the frequency of contact with them is presented in Table 16.2 for Wave 11, disaggregated by the same age groups as in Table 16.1, but for men and women collectively. Nearly three-quarters of non-co-resident partners live in the same city or town as each other, while just under 10 per cent live in different states or countries. The proportion living in the same city or town declines slightly with age, from 76.2 per cent for the 18 to 24 age group down to 70.1 per cent for the 45 and over age group, while the proportion living in the same state,

but in a different city or town, rises slightly with age, from 15.3 per cent for the 18 to 24 age group up to 20.9 per cent of the 35 to 44 age group and 20.0 per cent of the 45 and over age group. The proportion with a partner interstate or overseas does not appear to differ systematically by age.

Travel time between residencies is of course closely related to geographic proximity, but the information available essentially allows finer distinctions in proximity to be drawn among the three-quarters of non-co-resident partners who live in the same city or town. Systematic differences in travel times across age groups are difficult to discern, but it is notable that 77.5 per cent of non-co-resident partners live within an hour's travel of each other. It follows that at least some of those who do not live in the same city or town, and possibly some of those who live in different states, nonetheless live quite close to each other.

The bottom panel of Table 16.2 summarises the distribution of frequency of in-person contact between non-co-resident partners. Approximately 88 per cent of non-co-resident partners have in-person contact at least once per week, with over one-quarter seeing each other daily or almost daily (6 days per week). Frequency of contact tends to be highest for younger people and decreasing in age. For example, the proportion seeing their non-co-resident partner six to seven times per week is 30.0 per cent for those aged 18 to 24, 27.7 per cent for those aged 25 to 34, 18.5 per cent for those aged 35 to 44 and 15.4 per cent for those aged 45 and over.

Table 16.3 compares the educational attainment of non-co-resident partners in 2011, distinguishing those who hold a bachelor's degree or higher from those who do not. For men who report being in non-co-resident relationships, the table shows that 18.4 per cent hold a degree and reported their partner also holds a degree, 8.5 per cent hold a degree and reported their partner does not hold a degree, 15.1 per cent do not hold a degree and reported their partner does hold a degree, and 58.0 per cent do not hold a degree and reported their partner also does not hold a degree. For women who report

Table 16.1: Percentage of people who are single, and percentage of single people in non-co-resident relationships, by sex and age group

	2005		2008		2011	
	Men	Women	Men	Women	Men	Women
Single						
18–24	87.0	77.4	86.7	74.8	88.3	76.7
25–34	43.1	33.6	41.3	31.7	39.4	35.7
35–44	27.1	21.6	25.9	23.8	23.7	22.3
45 and over	18.8	33.3	20.8	33.4	22.3	33.6
Single people with a non-co-resident partner						
18–24	32.2	41.2	34.9	40.6	26.7	39.2
25–34	35.5	29.6	31.8	31.8	28.0	32.3
35–44	21.2	20.6	24.1	22.7	20.6	18.8
45 and over	15.0	7.5	13.6	6.1	12.6	7.0

Table 16.2: Proximity and frequency of contact of non-co-resident partners, 2011 (%)

	18–24	25–34	35–44	45 and over	All aged 18 and over
Location					
Same city or town	76.2	74.2	70.8	70.1	74.0
Same state but different city or town	15.3	14.8	20.9	20.0	16.6
Other state or overseas	8.5	11.0	*8.3	10.0	9.4
Travel time between residences					
Less than 15 minutes	33.9	27.5	27.0	35.7	31.7
15–30 minutes	28.5	23.0	30.3	21.3	26.0
30–60 minutes	20.7	19.7	19.3	17.8	19.8
1–2 hours	5.4	11.3	*8.3	8.7	7.9
More than 2 hours	11.6	18.5	15.2	16.5	14.7
Frequency of in-person contact					
6–7 times per week	30.0	27.7	18.5	15.4	25.7
3–5 times per week	48.7	37.1	46.0	38.6	43.5
1–2 times per week	12.4	22.5	17.9	29.3	18.6
At least once per month	4.2	9.7	14.7	10.9	8.0
Less than once per month	*4.8	*3.0	*3.0	*5.7	4.3

Note: * Estimate not reliable.

Table 16.3: Educational attainment of non-co-resident partners, 2011 (%)

	Partner's educational attainment		Total
	Bachelor's degree	No degree	
Own educational attainment			
<i>Men</i>			
Bachelor's degree	18.4	8.5	26.9
No degree	15.1	58.0	73.1
Total	33.5	66.5	100.0
<i>Women</i>			
Bachelor's degree	13.6	11.1	24.8
No degree	13.6	61.7	75.3
Total	27.2	72.8	100.0

Note: Percentages may not add up to 100 due to rounding.

being in non-co-resident relationships, 13.6 per cent hold a degree and reported their partner also holds a degree, 11.1 per cent hold a degree and reported their partner does not hold a degree, 13.6 per cent do not hold a degree and reported their partner does hold a degree, and 61.7 per cent do not hold a degree and reported their partner also does not hold a degree.² The estimates therefore imply, for both men and women, that in over three-quarters of non-co-resident relationships, either both partners hold a bachelor's degree or neither partner holds a bachelor's degree. Note, however, that a proportion of men appear to overstate the qualifications of partners holding bachelor's degrees, since 33.5 per cent reported their partner having a degree, whereas only 24.8 per cent of women with a non-co-resident partner held a degree.

Partnering intentions of people with non-co-resident partners

The intentions of individuals who have a non-co-resident partner to live with that partner within the next three years are summarised in Table 16.4. The majority of people under 45 years of age with a non-co-resident partner intend living with their partner within the next three years. Those aged 25 to 34

with non-co-resident partners are the most likely to intend moving in with their partner. Women aged under 35 are more likely to intend moving in with their partner than similarly aged men, but men aged 35 and over are more likely to intend moving in with their partner than women in this age range.

Partnering outcomes of people with non-co-resident partners

The HILDA Survey data do not allow us to precisely identify whether an individual with a non-co-resident partner subsequently starts living with that

Table 16.4: Proportion intending to live with current non-co-resident partner within the next three years, by age group (%)

	Men	Women	Total
18–24	62.0	70.2	66.2
25–34	69.2	82.0	74.9
35–44	58.5	52.0	55.5
45 and over	33.0	29.8	31.5

Notes: Estimates draw on data from Waves 5, 8 and 11. Estimates are the percentage responding 'yes' to the question 'Do you intend to start living with your current partner during the next three years?', with the remainder comprising both 'no' and 'don't know' responses.

partner, but it is possible to examine whether the individual subsequently has a co-resident partner (who may or may not be the earlier-identified non-co-resident partner). Table 16.5 examines the subsequent partner status of persons who had a non-co-resident partner in 2005, and persons who had a non-co-resident partner in 2008. It presents, by sex and age group, the proportions living with a partner one year later, three years later and, for those with a non-co-resident partner in 2005, five years later and six years later.

Quite high proportions of people with non-co-resident partners are subsequently found to have a co-resident partner. For example, among men with a non-co-resident partner in 2005, 24.5 per cent were living with a partner one year later, 42.2 per cent were living with a partner three years later, 49.6 per cent were living with a partner five years later and 53.4 per cent were living with a partner six years later. Very similar rates are evident for women who had a non-co-resident partner in 2005.

In the short to medium term (one to three years), those aged 25 to 34 have the highest rates of co-resident partnering. For example, of those aged 25 to 34 and with a non-co-resident partner in 2005, 51.3 per cent of men and 47.0 per cent of women were living with a partner three years later. This is consistent with the evidence in Table 16.4 that people in this age group are the most likely to intend living with their partner within the next three years. However, over longer time-frames (five to six years), the rate of co-resident partnering is similarly high for the 18 to 24 and 25 to 34 age groups. For example, among those with a non-co-resident partner in 2005, the proportion found to be living with a partner six years later was 60.8 per cent for men aged 18 to 24, 55.1 per cent for men aged 25 to 34, 58.4 per cent for women in the 18 to 24 age group, and 63.8 per cent for women aged 25 to 34.

As noted, it is not possible to determine whether new co-resident partners are previously observed non-co-resident partners. It is, however, possible

to examine the persistence of non-co-resident relationships over time from the information gathered in Waves 5, 8 and 11. This is because respondents with non-co-resident partners are asked the month and year that the relationship started. In Table 16.6, we draw on this information to examine changes in the partner situation of individuals in non-co-resident relationships over three-year and six-year time-frames. Specifically, the table presents for those individuals initially (in 2005 or 2008) in a non-co-resident relationship, the proportions subsequently (three and six years later) in each of four partner situations: still in the same non-co-resident relationship; in another non-co-resident relationship; single and not in a non-co-resident relationship; and living with a partner (married or de facto).

It is readily apparent that non-co-resident relationships are not highly persistent over three or more years. Three years after being observed in a non-co-resident relationship, only 11 to 12 per cent of individuals were still in a non-co-resident relationship with the same person. Six years after being observed in a non-co-resident relationship, only 2.2 per cent are found to be in the same non-co-resident relationship (an estimate that is not statistically reliably different from zero). It seems that, in most cases, the relationship either becomes co-resident, or it dissolves. There is clear evidence of high rates of dissolution in that approximately 21 per cent of those initially in a non-co-resident relationship are in a different non-co-resident relationship three years later, while 26 per cent do not have a partner at all three years later. We do not have direct evidence that a high proportion of non-co-resident relationships end by becoming co-resident relationships. However, approximately 42 per cent of people in non-co-resident relationships have co-resident partners three years later, and approximately 54 per cent have co-resident partners six years later; presumably, in many cases, the co-resident partner will have been the non-co-resident partner observed three (or six) years earlier.

Table 16.5: Persons in non-co-resident relationships—Proportion living with a partner in subsequent years, by sex and age group (%)

	1 year later		3 years later		5 years later		6 years later	
	Men	Women	Men	Women	Men	Women	Men	Women
2005								
18–24	14.2	15.1	43.0	42.8	55.0	54.7	60.8	58.4
25–34	45.6	29.6	51.3	47.0	52.5	54.7	55.1	63.8
35–44	*21.9	*26.0	36.5	45.2	42.8	49.7	46.2	46.1
45 and over	*18.4	*17.5	28.8	24.5	33.6	26.5	35.8	33.8
Total	24.5	19.7	42.2	41.0	49.6	49.3	53.4	54.0
2008								
18–24	13.4	18.9	38.9	40.2	–	–	–	–
25–34	36.9	31.4	56.5	56.2	–	–	–	–
35–44	*24.7	*13.2	42.4	36.3	–	–	–	–
45 and over	*9.8	*17.0	25.7	25.3	–	–	–	–
Total	20.7	20.5	41.9	41.4	–	–	–	–

Note: * Estimate not reliable.

Differences in subsequent partner situations across age groups are perhaps not as large as might have been expected. In particular, one might have expected less persistence in non-co-resident relationships among young people, and more persistence among older people. There is, however, little evidence to suggest this is the case, with the exception that the 45 and over age group appears to have slightly more persistence in non-co-resident relationships than the other age groups. However, this age group also has the lowest proportion becoming co-resident partnered. There is therefore no evidence that the non-co-resident relationships themselves are more persistent overall for the 45 and over age group—that is, it appears that more of the non-co-resident relationships in the younger age groups become co-resident relationships.

Partnering intentions compared with outcomes

Table 16.7 examines how the partnering intentions of individuals with non-co-resident partners correlate with their subsequent social marital status. Specifically,

the table presents the proportion partnered (married or de facto) three years and six years after 2005 for those in non-co-resident relationships in 2005, and three years after 2008 for those in non-co-resident relationships in 2008. The upper panel compares individuals who intended to start living with their partner in the next three years with those who did not. The lower panel compares across individuals classified according to the stated likelihood of marrying their non-co-resident partner within the next three years.

While individuals observed to be subsequently living with a partner may or may not be living with the previously observed non-co-resident partner, Table 16.7 nonetheless shows that co-resident partnering rates are considerably higher for those who stated an intent to live with their non-co-resident partner. The proportion married is also higher the greater the stated likelihood of marrying their current non-co-resident partner.

On the other hand, the proportion living with a partner is well short of 100 per cent for those who

Table 16.6: Subsequent partner situation of persons initially in non-co-resident relationships, by age group (%)

	18–24	25–34	35–44	45 and over	Total
2005 to 2008					
Still with partner, but living apart	12.5	*8.7	*5.3	12.7	10.7
Has other non-resident partner	20.1	18.7	23.9	26.4	21.2
Single, no partner	24.5	23.1	30.2	34.2	26.4
Lives with a partner	42.9	49.6	40.6	26.8	41.6
Total	100.0	100.0	100.0	100.0	100.0
2008 to 2011					
Still with partner, but living apart	12.5	*11.1	*8.6	15.7	12.1
Has other non-resident partner	22.1	15.0	23.1	20.9	20.3
Single, no partner	25.8	17.6	28.5	37.9	26.0
Lives with a partner	39.5	56.3	39.8	25.6	41.7
Total	100.0	100.0	100.0	100.0	100.0
2005 to 2011					
Still with partner, but living apart	*1.8	*0.6	*4.4	*4.1	*2.2
Has other non-resident partner	17.2	18.0	18.1	12.7	16.8
Single, no partner	21.4	23.0	31.4	48.4	27.3
Lives with a partner	59.5	58.4	46.1	34.8	53.7
Total	100.0	100.0	100.0	100.0	100.0

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding.

Table 16.7: Partnering and marriage intentions and outcomes of people with non-co-resident partners (%)

	2005		2008
	Partnered 3 years later	Partnered 6 years later	Partnered 3 years later
Intention to live with partner in next 3 years			
Yes	51.1	63.3	53.5
No	24.2	35.9	19.0
	2005		2008
	Married 3 years later	Married 6 years later	Married 3 years later
Very likely	36.2	49.8	30.6
Likely	12.7	31.2	*12.0
Not sure	*6.9	12.6	*3.1
Unlikely	*2.5	*16.0	*8.6
Very unlikely	*4.7	*6.5	*1.1

Note: * Estimate not reliable.

intended living with their partner within the next three years, as is the proportion married for those who indicated it was highly likely they would marry their partner within the next three years. For example, 51.1 per cent of those who in 2005 intended living with their non-co-resident partner within the next three years were actually living with a partner. While this is over twice the percentage for those who indicated they did not intend living with their partner (24.2 per cent), it appears that they are almost as often wrong as right—that is, in at least 48.9 per cent of cases, they were not living with their non-co-resident partner three years later. It is likely that some people did move in with their partners, but had moved apart again by the time three years had passed, so the proportion ‘getting it wrong’ may be less than 48.9 per cent. However, it is also likely that some of the people observed to be living with partners three years later will be living with a different person, implying the proportion getting it wrong could be *more* than 48.9 per cent. Regardless, it appears that people tend to be overly optimistic about the longer-term prospects of their (intimate) non-co-residential relationships.

Concluding comments

While the HILDA Survey is primarily concerned with within-household relationships, it is clear that non-co-resident relationships are an important determinant of changes in household structure and composition. The information collected on these relationships every three years since Wave 5 is therefore a valuable addition to the HILDA Survey. It can improve our understanding of household dynamics, family formation and fertility decisions, as well as decisions with respect to other aspects of life, including employment, geographic location of residence and finances.

Non-co-resident relationships tend to be quite short-lived—indeed a person in a non-co-resident relationship is nearly twice as likely three years later to be in a different non-co-resident relationship as opposed to being in that same non-co-resident relationship. Of course, one of the important sources of the relatively short duration of non-co-resident relationships is that they often become co-resident relationships, since almost all co-resident relationships are preceded by non-co-resident relationships. Nonetheless, many non-co-resident relationships do not become co-resident. In that context, it is notable that, while intentions are predictive in the sense that co-resident partnering and marriage are considerably more likely among those who report an intent to live together or marry, people are on average overly optimistic about the prospects of their intimate non-co-resident relationships.

Endnotes

- 1 The question sequence on non-co-resident partners implicitly assumes the respondent has only one partner. Respondents indicating they had multiple partners were instructed to answer in respect of the most significant relationship or, if they could not identify the most significant relationship, the longest-running relationship.
- 2 In principle, the estimates in Table 16.3 for men should be close to the mirror image of the estimates for women, with relatively small differences arising from same-sex relationships and relationships with people under 18 years of age or living overseas. For example, the proportion of men in non-co-residential relationships who hold a bachelor’s degree and report their partner not holding a bachelor’s degree should be similar to the proportion of women in non-co-residential relationships who do not hold a bachelor’s degree and report their partner does hold a bachelor’s degree. However, in practice differences can arise because of misreporting of educational attainment of partners and because of systematic differences between men and women in their interpretation of ‘intimate, ongoing’ relationships.

17. Retirement expectations and outcomes

Roger Wilkins

In 2003, 2007 and 2011, a special retirement module was included in the HILDA Survey questionnaire, asking men and women aged 45 and over about their retirement intentions, expectations and experiences. Now that the retirement questions have been asked in three waves, spanning eight years, we are able to examine how the plans and experiences of men and women have changed over the eight-year period and, moreover, how individuals' intentions and expectations compare with the retirement outcomes they have actually experienced.

In this chapter, updated cross-sectional information is presented on retirement outcomes and expectations, following which expectations pre-retirement are compared with outcomes in subsequent years, where the emphasis is on the extent to which expectations have been met.

The retired population

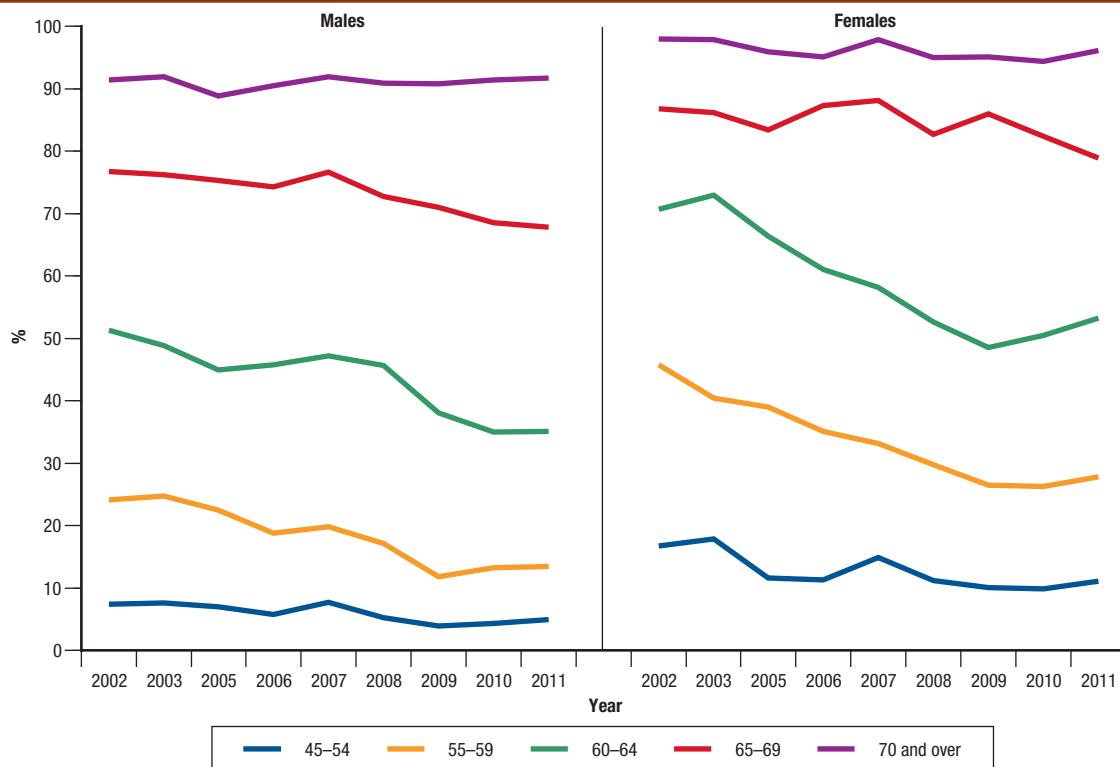
While the retirement module has only been administered in 2003, 2007 and 2011, retirement status is ascertained by the HILDA Survey every wave (although the measures obtained in 2001 and 2004 are not consistent with the measure obtained in other years). Figure 17.1 shows trends over the HILDA Survey period (excluding 2001 and 2004) in the proportion of each of five age groups of men and women that is retired. Unsurprisingly, the proportion

retired is lowest for the 45 to 54 age group and is progressively higher for each successively older age group. Less than 10 per cent of men aged 45 to 54 was retired across the whole period, while over 90 per cent of men aged 70 and over were retired in all years. Similarly, less than 20 per cent of women aged 45 to 54 were retired, while well over 90 per cent of women aged 70 and over were retired in every year.

The clear trend, for both men and women and all age groups other than the 70 and over group, has been for a declining proportion of the age group to be retired up until around 2009. After 2009, slight upticks in retirement rates are evident for men under 60 and women under 65.¹ The declines in retirement rates to 2009 were particularly sharp for women aged 55 to 59, and 60 to 64, no doubt in part because of the increases in the minimum age of eligibility for the Age Pension for women that were occurring over this period.

Table 17.1 examines the retirement ages of the retired population in 2003 and 2011. Consistent with the evidence in Figure 17.1, the table shows that the retirement ages of the stock of retired people tend to be somewhat higher in 2011 than in 2003. The mean age at retirement among those who had retired was 58.5 years for retired men in 2003 and 59.3 years in 2011. More striking is that the mean age at retirement among retired women

Figure 17.1: Proportion of the population that is retired, by age group



rose from 50.7 years in 2003 to 53.2 years in 2011. These are sizeable increases given that many of the men and women who were retired in 2003 were also retired in 2011.

The second row of the table shows more clearly the change in retirement ages, comparing the mean retirement age of two comparable cohorts: those who retired in the eight years to 2003 (1996 to 2003) and those who retired in the eight years to 2011 (2004 to 2011). The average age at retirement of men who retired between 2004 and 2011 was 62.6, compared with 59.8 for the men who retired between 1996 and 2003. The average age at retirement of women who retired between 2004 and 2011 was 59.7, compared with 57.7 for the women who retired between 1996 and 2003.

The bottom panel of Table 17.1 provides useful information on the nature of the change in the distribution of retirement ages among those who retired in the eight years to 2003 and in the eight years to 2011. In particular, it shows a large 11 percentage point drop in the proportion of men who retired before 55 years of age, and an even larger 12 percentage point drop for women. The proportion retiring aged 55 to 59 also declined for both men and women, while the proportion that retired age 60 and over increased. For women, the greatest increase was in the proportion retiring aged 60 to 64 but, for men, the greatest increases were in the proportions retiring aged 65 to 69 and aged 70 and over, with both increasing by 7 percentage points.

While the Age Pension changes for women noted earlier are clearly a factor in the increase in retirement ages of women, they cannot explain the increases in retirement ages for men, and indeed are unlikely to be the full explanation of the rises in retirement ages of women. Table 17.2 broadly hints at some of the other factors at play by showing that, in the context of a declining retirement rate, the proportion of retirements that were involuntary was considerably lower in the eight years to 2011 than in the eight years to 2003.

Reasons for retirement are classified in the table into one of five categories: involuntary—job-related

(dismissed, reached compulsory retirement age, could not find another job, pressure from employer or others at work to retire); involuntary—own poor health; involuntary—poor health of spouse or another family member; voluntary (became eligible for Age Pension, otherwise financially ready to retire, fed up with working, partner retired or wanted me to retire, to spend more time with family members, to have more leisure time); and any other reasons. The table examines the *main* reason for retirement, comparing the proportions in each of the five categories among those who retired in the eight years up to 2003 with the proportions among those who retired in the eight years up to 2011.

Comparing the two columns of Table 17.2, we see a decrease in involuntary retirement and an increase in voluntary retirement between 2003 and 2011, for both men and women. Voluntary retirements accounted for 40.7 per cent of all male retirements in the eight years to 2003, and 49.1 per cent of all male retirements in the eight years up to 2011. The increase in voluntary retirements was similar for women, rising from 45.5 per cent of all retirements in the eight years to 2003 up to 53.1 per cent of all retirements in the eight years to 2011. The decline in job-related involuntary retirement, particularly for women, is consistent with the fact that labour demand conditions were generally stronger over the eight years to 2011 than they were over the eight years to 2003. Changes over time in the nature of work, away from manual labour, particularly for men, has probably been a key driver in the decline in the proportion of male retirements due to poor health.

Reliance on government benefits by retired people

The Superannuation Guarantee, introduced in July 1992, requires employers to make contributions to an approved superannuation fund for each employee (subject to certain conditions, such as the employee having sufficiently large earnings). Initially, the minimum contribution rate was 3 per cent of wage and salary income. This was gradually increased over the next ten years to 9 per cent, at

Table 17.1: Retirement ages of retired persons, 2003 and 2011

	Men		Women	
	2003	2011	2003	2011
Mean retirement age of all retired persons (years)	58.5	59.3	50.7	53.2
Persons who retired in the last 8 years				
Mean retirement age (years)	59.8	62.6	57.7	59.7
<i>Percentage in each age-of-retirement group</i>				
Less than 55	19.9	8.9	32.0	20.3
55–59	25.6	20.3	26.2	24.2
60–64	24.4	27.1	22.2	32.6
65–69	22.7	29.4	12.5	16.3
70 and over	7.4	14.4	7.1	6.6
Total	100.0	100.0	100.0	100.0

Note: Percentages may not add up to 100 due to rounding.

Table 17.2: Main reason for retirement—Persons who retired in the last eight years, 2003 and 2011 (%)

	2003	2011
Men		
Involuntary—job-related	15.6	12.2
Involuntary—own poor health	36.7	31.4
Involuntary—poor health of spouse or other family	3.2	3.9
Voluntary	40.7	49.1
Other reason	3.8	3.5
Total	100.0	100.0
Women		
Involuntary—job-related	13.4	8.6
Involuntary—own poor health	26.2	26.6
Involuntary—poor health of spouse or other family	9.7	9.2
Voluntary	45.5	53.1
Other reason	5.3	2.5
Total	100.0	100.0

Note: Percentages may not add up to 100 due to rounding.

which level it stayed from 1 July 2002 until 30 June 2013. On 1 July 2013, the minimum contribution rate increased to 9.25 per cent.

In addition to improving the living standards of people in retirement, a key motivation for the Superannuation Guarantee was to reduce reliance on the Age Pension, and thus reduce the demands placed on the government budget by retirees—a particularly important consideration in the context of an ageing population. But can we see any evidence in the HILDA Survey data of a decline in reliance on government benefits? Table 17.3 considers this issue by comparing 2003 and 2011, showing in each year the mean share of household income of retired people coming from government benefits, and the proportion of retired people for whom government benefits are the main source of income. The table examines couples, single men

and single women separately, and also disaggregates by age group.

In both 2003 and 2011, retired couples tend to be less reliant on government benefits than retired single people, while younger retired couples tend to less reliant than older retired couples. There are no systematic differences in reliance on government benefits by age among retired single people. Overall, there has been a clear decline in the extent of reliance on government benefits by retired people between 2003 and 2011. Over all retired people, the mean share of household income from government benefits fell from 64.3 per cent to 61.1 per cent, and the proportion of retired people for whom government benefits are the main source of income declined from 65.8 per cent to 63.5 per cent. It therefore appears that, as the superannuation system matures, it is increasingly acting to reduce reliance on government benefits, and in particular, the Age Pension. However, the reduction in reliance over the eight-year period is relatively small, and government benefits remain the dominant source of income for retired people, still representing 61.1 per cent of their total income in 2011. Moreover, declines in reliance on government benefits have not occurred for all of the groups examined in Table 17.3. For example, slight increases in the proportion of income from government benefits are evident for couples aged 75 and over and all retired single men other than those aged 70 to 74.

Retirement expectations of people not yet retired

We have seen that the average age at retirement has been increasing over the HILDA Survey period, but have expectations of when people will retire, and indeed their preferences about when to retire, correspondingly changed over this period? In Waves 3, 7 and 11, respondents aged 45 and over

Table 17.3: Importance of government benefits to the incomes of retired persons, by age group, partner status and sex

	2003				2011			
	Couples	Single men	Single women	Total	Couples	Single men	Single women	Total
Mean share of household income from government benefits (%)								
45–59	42.9	79.3	78.6	52.5	34.9	87.0	78.7	50.4
60–64	43.7	54.7	78.3	49.4	40.4	85.5	69.1	49.7
65–69	58.8	63.9	81.1	62.6	47.9	67.5	72.7	54.4
70–74	69.6	82.9	78.0	72.5	59.7	64.4	84.7	61.3
75–79	71.2	75.2	85.7	75.8	74.6	87.4	81.1	71.2
80 and over	76.6	77.5	79.5	78.0	79.2	79.7	82.8	75.9
Total	57.7	73.4	80.4	64.3	52.2	74.8	77.3	61.1
Proportion of retired people for whom government benefits are the main source of income (%)								
45–59	40.6	79.9	80.9	51.3	36.8	83.3	79.2	49.4
60–64	41.9	55.9	79.9	48.5	42.1	78.3	66.7	49.6
65–69	59.9	64.0	84.0	63.9	47.5	67.8	70.6	55.0
70–74	74.7	87.3	82.8	77.5	56.5	63.7	81.0	64.4
75–79	76.0	78.4	89.0	80.1	66.1	82.0	78.7	77.7
80 and over	78.5	76.8	80.7	79.2	70.8	75.6	80.5	80.9
Total	58.8	74.6	83.0	65.8	54.6	78.1	79.4	63.5

who were not yet retired were asked about both their *expected* retirement age and their *preferred* retirement age. Specifically, they were asked the following two questions:

At what age do you expect to retire from the paid workforce?

If you had the choice, at what age would you like to retire from the paid workforce?

Both questions allowed for the response options 'never' and 'don't know'.

Table 17.4 examines the distributions of expected and preferred retirement ages in 2003 and 2011 of people aged 45 and over who were not yet retired. Individuals aged 45 to 59 are examined separately from individuals aged 60 and over. Note that, in the older age group in particular, expected and preferred retirement ages are biased by the exclusion of people who have already retired. For example, the estimates will exclude a retired person aged 65 but include a non-retired person aged 65, the latter of whom by definition has a higher expected retirement age than the retired person (but may not have a higher preferred retirement age). For this reason, the estimates for the 45 to 59 age group, which are much less affected by this bias, are more easily interpreted.

It is evident that people generally prefer to retire earlier than they expect to retire. In 2011, the mean

expected retirement age of non-retired men aged 45 to 59 was 64.3 years, whereas their mean preferred retirement age was 59.2 years. For women aged 45 to 59, the mean expected retirement age in 2011 was 62.7 years, while the mean preferred retirement age was 58.5 years. Men on average expect to retire later than women, but their preferred retirement ages tend to be quite similar. For example, in both 2003 and 2011, at least 90 per cent of men and women aged 45 to 59 indicated a preference for retiring at age 65 or earlier.

Somewhat surprisingly, there is greater uncertainty about the expected retirement age among those aged 60 years and over than among those aged 45 to 59. Possibly, this derives from a higher proportion of older non-retired people hoping to keep working as long as their health permits, which is inherently uncertain. Also of note is that women are more likely than men to not know when they expect to retire, possibly because the timing of their retirement is more likely to be contingent on their partner's retirement decision.

Turning to changes in expectations and preferences between 2003 and 2011, Table 17.4 shows that the expected retirement ages of people yet to retire have increased between 2003 and 2011. In 2003, the mean expected retirement age of men aged 45 to 59 who had not yet retired was 62.9 years. This

Table 17.4: Expected and preferred retirement ages of persons not yet retired

	Expected retirement age		Preferred retirement age	
	2003	2011	2003	2011
Men				
<i>Aged 45–59</i>				
Mean (years)	62.9	64.3	58.2	59.2
10th percentile (years)	56.0	59.0	50.0	50.0
90th percentile (years)	70.0	70.0	65.0	65.0
Never retire (%)	8.3	8.2	6.4	5.9
Don't know (%)	6.2	6.7	3.0	2.9
<i>Aged 60 and over</i>				
Mean (years)	68.2	68.4	66.9	67.6
10th percentile (years)	64.0	65.0	61.0	62.0
90th percentile (years)	75.0	75.0	75.0	75.0
Never retire (%)	19.0	19.0	21.0	15.2
Don't know (%)	17.2	8.5	8.9	4.3
Women				
<i>Aged 45–59</i>				
Mean (years)	60.9	62.7	57.4	58.5
10th percentile (years)	55.0	55.0	50.0	50.0
90th percentile (years)	65.0	70.0	65.0	65.0
Never retire (%)	6.6	5.7	6.2	3.3
Don't know (%)	10.7	8.8	6.1	3.9
<i>Aged 60 and over</i>				
Mean (years)	67.5	67.6	66.2	66.8
10th percentile (years)	63.0	64.0	61.0	62.0
90th percentile (years)	72.0	74.0	75.0	75.0
Never retire (%)	20.2	13.9	21.3	10.8
Don't know (%)	21.4	11.2	13.6	7.5

Note: Mean and percentiles are evaluated over people reporting an expected/preferred retirement age and therefore exclude people who expect/prefer never to retire and people who don't know when they expect/prefer to retire.

Table 17.5: Proportion of non-retired individuals who expect the main source of funding in retirement to be government benefits (%)

	Aged 45–59		Aged 60 and over	
	2003	2011	2003	2011
Men	28.4	25.6	44.5	33.4
Women	38.1	31.6	39.5	40.8

had increased to 64.3 years in 2011. Similarly, the mean expected retirement age of women aged 45 to 59 who had not yet retired increased from 60.9 years in 2003 to 62.7 years in 2011. Among non-retired people aged 60 and over, the increase in the mean expected retirement age is only slight—0.2 years for men and 0.1 years for women. Note, however, as Figure 17.1 showed, a higher proportion of people aged 60 and over were non-retired in 2011 than was the case in 2003, which may act to constrain the increase in the mean expected retirement age in this age group.

Increases in preferred retirement ages are also evident in Table 17.4, although the increase in the mean preferred retirement age for those aged 45 to 59 (1.0 years for men; 1.1 years for women) is smaller than the increase in the mean expected retirement age.

As Table 17.3 showed, the decline in reliance on government benefits between 2003 and 2011 was relatively small. Table 17.5 examines *expectations* about the main source of funding in retirement, and shows a greater decline in expected reliance on government benefits than has occurred for actual reliance. The proportion of non-retired men aged 45 to 59 expecting government benefits to be the main funding source in retirement fell from 28.4 per cent in 2003 to 25.6 per cent in 2011. The proportion of non-retired women aged 45 to 59 expecting government benefits to be the main funding source in retirement fell from 38.1 per cent in 2003 to 31.6 per cent in 2011. However, changes in expectations among non-retired people aged 60 and over differ for men and women. The proportion of non-retired men aged 60 and over expecting government benefits to be the main funding source in retirement fell from 44.5 per cent in 2003 to 33.4 per cent in 2011, but the proportion of non-retired women aged 60 and over expecting government benefits to be the main funding source in retirement actually rose slightly from 39.5 per cent in 2003 to 40.8 per cent in 2011.

Retirement occurring between 2003 and 2011

Table 17.6 presents, for each of five age groups based on age in 2003, the proportion of men and

women who retired between 2003 and 2011, conditional on having not been retired in 2003. It shows that only 5.8 per cent of non-retired men aged 45 to 49 in 2003 retired by 2011, while at the other end of the spectrum, 73.1 per cent of non-retired men aged 65 and over in 2003 retired by 2011. For women, 14.1 per cent of those aged 45 to 49 and not yet retired in 2003 retired between 2003 and 2011, while 76.8 per cent of those aged 60 to 64 and not yet retired in 2003 retired over the same period.

Thus, conditional on not having already retired, women aged 60 to 64 and men aged 65 and over in 2003 were the most likely to retire by 2011, while men and women aged 45 to 49 in 2003 were the least likely to retire by 2011. Also notable is that, for both men and women, those under the age of 60 in 2003 who had not yet retired were less likely than not to retire between 2003 and 2011, while those aged 60 and over in 2003 were more likely than not to retire between 2003 and 2011.

Retirement expectations compared with retirement outcomes

In Table 17.7, retirement expectations in 2003 are compared with retirement outcomes over the subsequent eight years. Specifically, for individuals not yet retired in 2003, the proportions in each of four categories are presented: did not expect to be retired in 2011 and was not retired in 2011; did not expect to be retired in 2011 and was retired in 2011; expected to be retired in 2011 and was not retired in 2011; and expected to be retired in 2011 and was retired in 2011. As in previous tables, estimates are presented disaggregated by sex and age group in 2003 (45 to 59; 60 and over). Note that individuals who in 2003 indicated they never intended to retire are classified as not expecting to be retired in 2011. Individuals who did not know when they expected to be retired are excluded from the analysis.

It is clear from Table 17.7 that retirement expectations are very often not realised. For non-retired men aged 45 to 59 in 2003, 29.5 per cent expected to be retired in 2011, but only 11.9 of this 29.5 (i.e. 40 per cent of those who expected to be retired) were actually retired by 2011. For non-retired

Table 17.6: People not yet retired in 2003—Proportion who were retired in 2011, by age group in 2003 (%)

	45–49	50–54	55–59	60–64	65 and over
Men	5.8	14.3	44.9	68.5	73.1
Women	14.1	27.6	48.7	76.8	63.1

Table 17.7: Retirement expectations in 2003 and retirement outcomes in 2011—Persons not yet retired in 2003 (%)

Expectation in 2003	Outcome in 2011					
	Aged 45–59 in 2003			Aged 60 and over in 2003		
	Not retired in 2011	Retired in 2011	Total	Not retired in 2011	Retired in 2011	Total
Men						
Did not expect to be retired in 2011	63.6	6.9	70.5	11.1	15.6	26.7
Expected to be retired in 2011	17.6	11.9	29.5	19.4	53.9	73.3
Total	81.2	18.8	100.0	30.5	69.5	100.0
Women						
Did not expect to be retired in 2011	48.2	9.4	57.6	8.0	13.8	21.8
Expected to be retired in 2011	24.6	17.7	42.4	21.1	57.1	78.2
Total	72.9	27.1	100.0	29.1	70.9	100.0

Note: Percentages may not add up to 100 due to rounding.

women aged 45 to 59 in 2003, 42.4 per cent expected to be retired in 2011, but only 17.7 of this 42.4 (i.e. 42 per cent of those who expected to be retired) were actually retired by 2011. Errors are less common among those aged 45 to 59 in 2003 in the reverse direction: only 6.9 per cent out of the 70.5 per cent of men who expected not to be retired had actually retired by 2011, and 9.4 per cent out of the 57.6 per cent of women who expected not to be retired had actually retired.

For non-retired people aged 60 and over in 2003, the opposite pattern is evident. It is more common to expect to be retired by 2011, and this is mostly correct. Not expecting to be retired by 2011 applies to only 26.7 per cent of non-retired men aged 60 and over in 2003 and 21.8 per cent of non-retired women aged 60 and over in 2003, and this expectation is more often not realised than realised: 15.6 per cent of the 26.7 per cent of men expecting not to be retired were in fact actually retired in 2011, and 13.8 per cent of the 21.8 per cent of women expecting not to be retired were in fact retired.

Table 17.8 compares the expected (in 2003) and actual retirement ages of those who retired between 2003 and 2011. It presents, for men and women aged 45 and over who were not retired in 2003, the mean difference between actual and expected retirement ages (actual minus expected) of those who actually retired between 2003 and 2011. The proportions for whom the difference was positive (retired later than expected) and negative (retired earlier than expected), and the mean differences for these two groups, are also presented in the table.

In interpreting Table 17.8, it is important to note that people who had not retired by 2011 are necessarily excluded from the calculation of the mean difference between actual and expected retirement ages because this difference is not known for them as of 2011. This creates a significant downward bias in the mean difference between the actual and expected retirement ages (actual minus expected), since the actual retirement age is known to be greater than the expected retirement age for individuals who expected to be retired by 2011 but were not in fact retired. As Table 17.7 shows, this applies to 17.6 per cent of non-retired men aged 45 to 59 in 2003, 19.4 per cent of non-retired men aged 60 and over in 2003, 24.6 per cent of non-retired women aged 45 to 59 in 2003, and 21.1 per cent of non-retired women aged 60 and over in 2003.

This limitation notwithstanding, the estimates show that, among those who actually retired between 2003 and 2011, on average they retired 2.8 years earlier than expected in the case of males, and 4.2 years earlier than expected in the case of females. Strikingly, men who retired earlier than expected on average retired 7.6 years before the expected age of retirement, and women who retired earlier than expected on average retired 9.3 years before their expected age of retirement. Nonetheless, a sizeable 28.1 per cent of men who retired and 31.8 per cent of women who retired did so at an older age than they had anticipated. Moreover, as noted above, a significant number of people who did not retire by 2011 will end up retiring later than expected. We therefore cannot ascertain from Table 17.8 whether people approaching retirement

Table 17.8: Difference between expected and actual age of retirement of those who retired between 2003 and 2011

	Men	Women
Mean difference (actual minus expected) (years)	-2.8	-4.2
Proportion retiring later than expected (%)	28.1	31.8
Proportion retiring earlier than expected (%)	48.1	54.0
Mean difference among those who retired later than expected (years)	2.9	2.6
Mean difference among those who retired earlier than expected (years)	-7.6	-9.3

Notes: Mean differences are evaluated only over individuals who in 2003 expected to retire. The proportion retiring earlier than expected includes individuals who in 2003 intended to never retire but were in fact retired in 2011.

have a systematic tendency to retire earlier or later than expected.

Expectations and outcomes in respect of the main source of income in retirement are compared for people who retired between 2003 and 2011 in Table 17.9. In 2003, 58.2 per cent of people aged 45 and over who retired between 2003 and 2011 expected the main source of income to be private, while 41.9 per cent expected government benefits to be the main income source. In 2011, government benefits were the main source of income (50 per cent or more) for 44.1 per cent of those who retired between 2003 and 2011. This is reasonably close to the 41.9 per cent of people who in 2003 thought government benefits would be their main income source. However, to a significant extent, the people who in 2003 thought they would be primarily relying on government benefits in retirement are not the same people actually relying on government benefits in 2011. Of those who thought they would

be relying on government benefits in retirement, 27 per cent (11.2 of 41.9) were actually relying on private sources in 2011. Further, of those who thought they would not be relying on government benefits in retirement, 23 per cent (13.4 of 58.2) were in fact relying on government benefits in 2011.

It should be noted that some of those relying on private sources in 2011 may, over the course of their entire retirement, rely primarily on government benefits. That is, 2011 will be relatively early in the retirement phase for most of those who retired between 2003 and 2011, and it is likely that some people will draw down private resources reasonably quickly, such that government benefits become the primary income source a few years after retirement. Thus, it is likely that many of the 11.2 per cent of people retiring between 2003 and 2011 who expected to mainly rely on government benefits, but were relying on private sources in 2011, will predominately be reliant on government

Table 17.9: Expected and actual main income source of people who retired between 2003 and 2011 (%)

Expectation in 2003	Main income source (more than 50% of income) in 2011		Total
	Private sources	Government	
Private sources	44.8	13.4	58.2
Government	11.2	30.7	41.9
Total	56.0	44.1	100.0

Note: Percentages may not add up to 100 due to rounding.

Table 17.10: Perceptions of wellbeing since retirement of people who retired between 2003 and 2011, by whether retired earlier than expected, when expected, or later than expected, 2011 (%)

	Retired earlier than expected	Retired when expected	Retired later than expected
Income more or less than expected when retired?			
Less	52.3	27.5	27.4
Same	35.7	55.6	59.6
More	11.9	17.0	13.0
Total	100.0	100.0	100.0
Standard of living better or worse since retired?			
Worse	29.2	11.6	11.0
Same	58.1	52.2	74.1
Better	12.7	36.2	14.9
Total	100.0	100.0	100.0
Financial security better or worse since retired?			
Worse	45.1	24.2	20.6
Same	44.5	44.8	65.0
Better	10.4	31.0	14.4
Total	100.0	100.0	100.0
Health better or worse since retired?			
Worse	47.3	24.8	21.6
Same	32.2	49.6	58.2
Better	20.5	25.6	20.2
Total	100.0	100.0	100.0
Overall happiness better or worse since retired?			
Worse	12.5	4.8	3.3
Same	29.2	28.8	31.0
Better	58.3	66.4	65.7
Total	100.0	100.0	100.0

Note: Percentages may not add up to 100 due to rounding.

benefits over the course of their retirement as a whole. Indeed, this is likely to also apply to a significant fraction of the 44.8 per cent of people retiring between 2003 and 2011 who were, consistent with expectations, relying on private sources in 2011. That is, some of these people are likely to predominantly rely on government benefits over the course of their retirement as a whole, even though in 2011 they predominately relied on private sources. Overall, it therefore seems likely that future reliance on government benefits in retirement is underestimated by people approaching retirement.

Wellbeing in retirement

One of the key considerations of people who are asked to nominate a particular expected retirement age is when they will be financially 'ready' for retirement. It therefore follows that if people retire earlier than expected for involuntary reasons, such as poor health or inability to find work, it is likely that many of these people will not fare as well as people who retire when they expected. This issue is briefly considered in Table 17.10, which compares perceptions of wellbeing in retirement of people who retired between 2003 and 2011 classified into three groups: retired earlier than expected; retired when expected; and retired later than expected. The table examines whether income in retirement is more, less or the same as expected by the individual when they retired, and whether they believe their standard of living, financial security, health and overall happiness are better, worse or the same since they retired.

People who retired earlier than expected clearly fare worse in retirement, at least relative to their pre-retirement standards and their expectations. Income is less than expected for 52.3 per cent of those who retired earlier than expected, compared with 27.5 per cent for those who retired when expected and 27.4 per cent for those who retired later than expected. Similarly, 29.2 per cent of people who retired earlier than expected believe their post-retirement standard of living is worse, compared with 11.6 per cent of people who retired when expected, and 11.0 per cent of people who retired later than expected. The same pattern is evident for financial security, and indeed, even health is worse since retirement for a considerably higher proportion of those who retired earlier than expected.

Given the perceptions about income, living standards, financial security and health, it is not surprising that overall happiness has become worse for a higher proportion of those who retired earlier than expected than those who retired when expected or later than expected. However, even in this premature-retirement group, relatively few people report that their overall happiness has deteriorated since retirement: only 12.5 per cent of this group report that their overall happiness has become worse since retirement.

Conclusion

The trend over the HILDA Survey period has been towards later retirement, which is likely to be welcomed by the Australian Government given concerns about the economic implications of Australia's ageing population. However, there are indications of some reversal of this trend towards the end of the sample period (from 2009), which is further supported by more recent ABS (2013) evidence. Moreover, while there has been some decline in reliance on government benefits, the majority of retired people still primarily depend on government benefits as their main source of income. If expectations about age at retirement and about reliance on government benefits in retirement are reliable, then the scale of decrease in reliance over future years should be greater than experienced to date. However, there are indications from the HILDA Survey data that many people incorrectly forecast their future retirement age and reliance on government benefits, so this is by no means guaranteed. Thus, combined with the effects of the ageing of the baby boomer cohort, even with some increase in workforce participation of older people, there are likely to be large increases in fiscal demands associated with the Age Pension over coming years.

Endnote

- 1 Australian Bureau of Statistics (2013) indicates that the retirement rates further increased between 2011 and 2013.

Reference

Australian Bureau of Statistics (2013) *Retirement and Retirement Intentions, Australia*, Catalogue No. 6238.0, ABS, Canberra.

18. Study, paid work and moving house: Intentions and outcomes compared

Roger Wilkins

In Waves 5, 8 and 11, information has been obtained on people's intentions over the next three years regarding moving house, study activity and employment activity. In this chapter, we examine the stated intentions of individuals, and then compare these intentions with the actual behaviour of individuals over the next three years. In doing so, we can gauge the extent to which moving, education and employment intentions of individuals are fulfilled, and the extent to which moving, education and employment changes that do occur are anticipated by individuals.

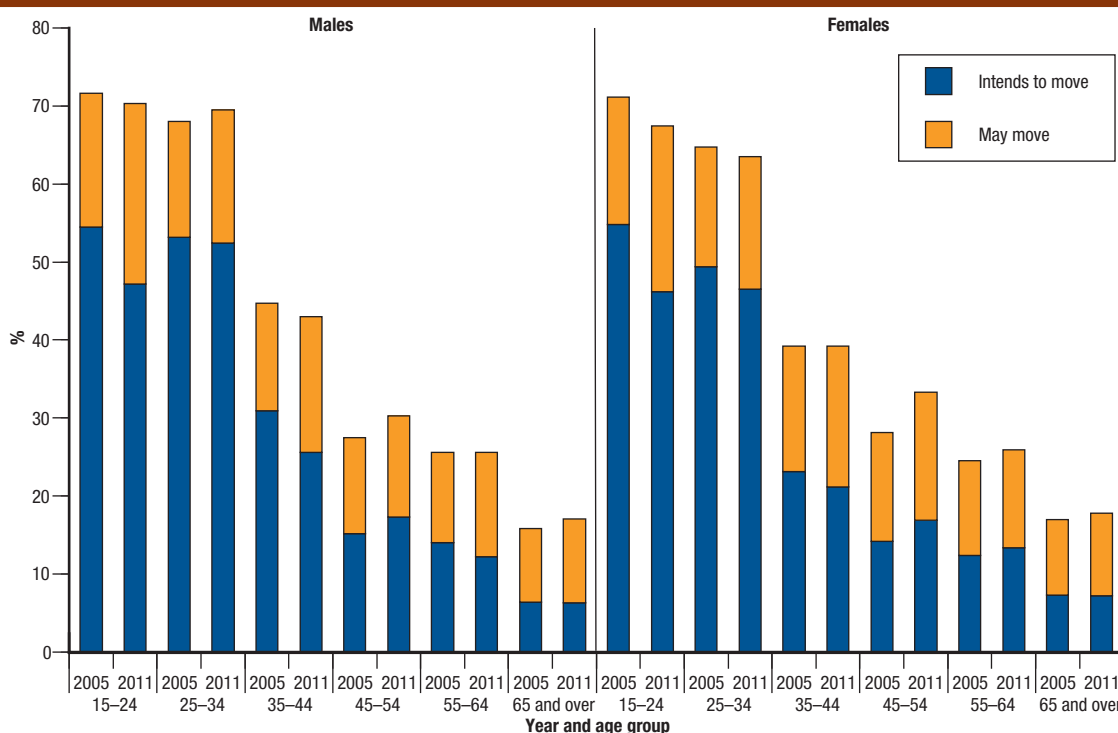
Figures 18.1 to 18.5 summarise the intentions of individuals to move house, commence study, stop paid employment, change jobs and start paid employment. For 2005 and 2011, they present the proportions indicating a definite intention to make the relevant change, as well as the proportions indicating they *may* make the relevant change, disaggregated by sex and age group.¹

Figure 18.1 shows that the proportion of people intending to move over the next three years is approximately 50 per cent for both males and females aged 15 to 24, and 25 to 34. The proportion intending to move then declines with age, with the proportion intending to move approximately 25 per cent for those aged 35 to 44, approximately 15 per cent for those aged 45 to 54, approximately

10 per cent for those aged 55 to 64, and approximately 5 per cent for those aged 65 and over. The proportion indicating they *may* move over the next three years is around 15 per cent for the two youngest age groups, and is around 10 per cent for the remaining age groups. No consistent trend change in moving intentions is evident over the 2005 to 2011 period.

Study intentions are even more strongly related to age than moving intentions, with the proportion of individuals not currently studying reporting that they intend to begin a course of study over the next three years highest for the 15 to 24 age group and lowest for the 65 and over age group. At all ages, females are more likely to intend commencing study than males. For example, in 2011, approximately 35 per cent of males aged 15 to 24 who were not currently studying intended to commence a course of study in the next three years, compared with approximately 50 per cent of females in this age group. There appears to be a relatively high degree of uncertainty about study activity over the next three years, with over 15 per cent of males under 45 and females under 54 indicating they *may* begin a course of study. There are also indications in Figure 18.2 of a decline in study intentions between 2005 and 2011, particularly among people

Figure 18.1: Proportion intending to move house over the next three years



aged 25 to 34. The proportion of men aged 25 to 34 intending to commence study declined from approximately 30 per cent in 2005 to approximately 22 per cent in 2011, and the proportion of women aged 25 to 34 intending to commence study declined from approximately 29 per cent in 2005 to approximately 21 per cent in 2011.

Figure 18.3 examines intentions to cease paid work by people currently in paid work. Unsurprisingly, relatively few males under the age of 55 intend to cease paid work in the next three years—although employed males aged 15 to 24 have a slightly elevated proportion indicating an intention to stop work, presumably reflecting an intent to commence

Figure 18.2: Proportion of those not currently studying who intend to begin a course of study over the next three years

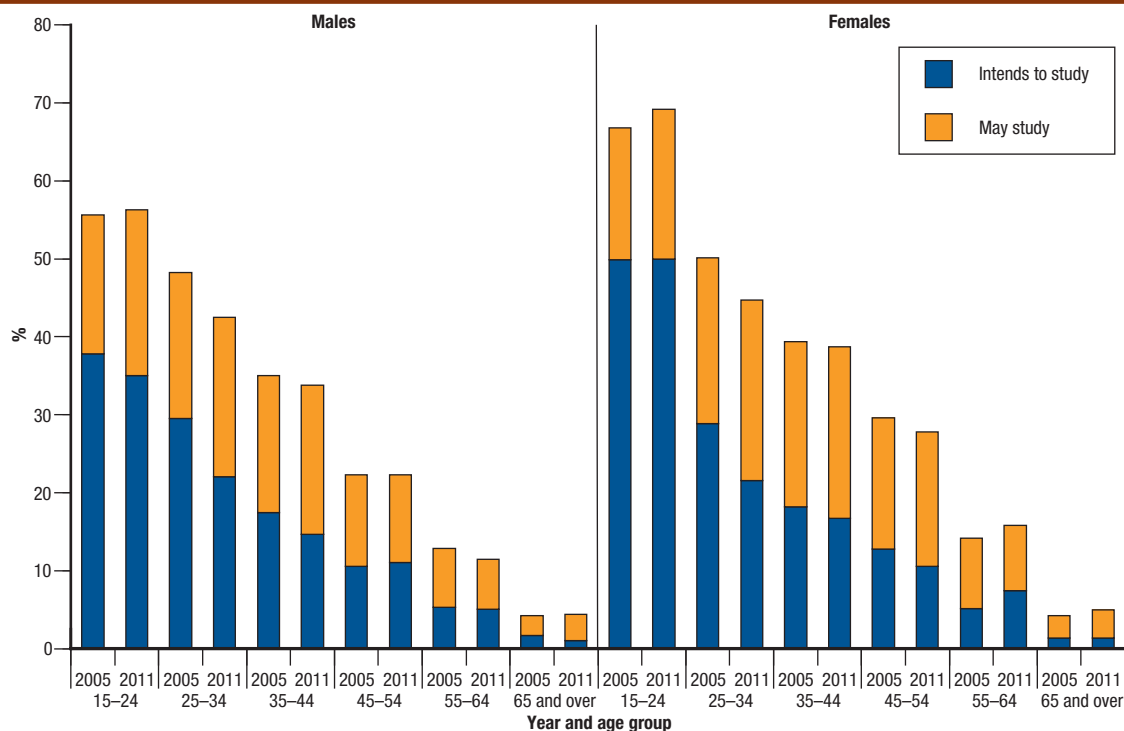
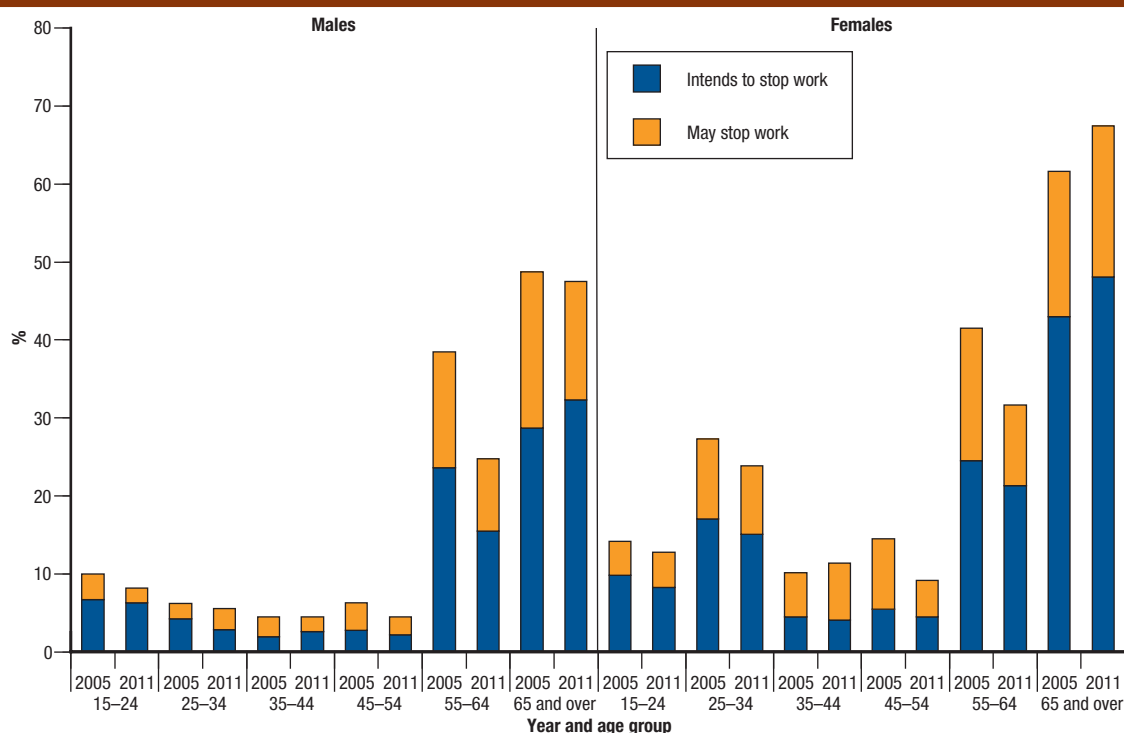


Figure 18.3: Proportion of those currently in paid work who intend to stop paid work over the next three years



a course of study. Employed women have a distinctly different pattern of intentions to stop paid work by age. At all ages, the proportion intending to cease working is higher for women than men. Moreover, women aged 25 to 34 are more likely to intend ceasing work in the next three years than

women in any of the other age groups under 55. This is likely to reflect intentions to have children. Consistent with the evidence in Chapter 17 of this report that actual and expected retirement ages increased in the period to 2011, the proportion of employed individuals aged 55 to 64 who intended

Figure 18.4: Proportion of employees who intend to change employer or become self-employed over the next three years

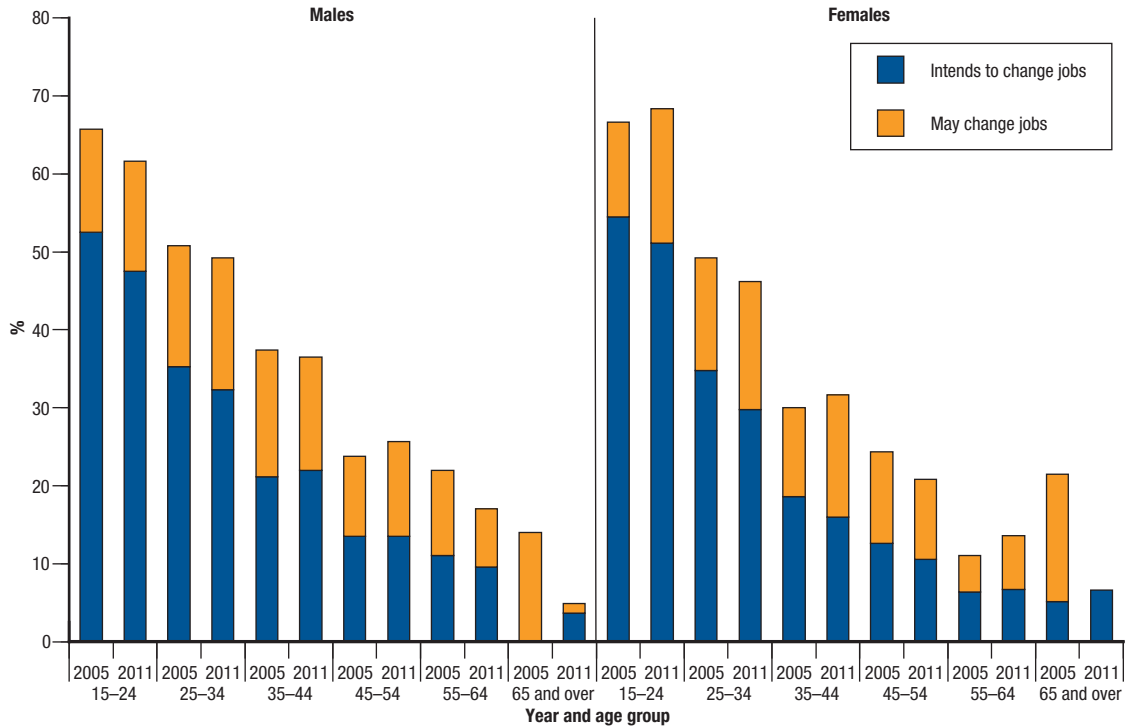
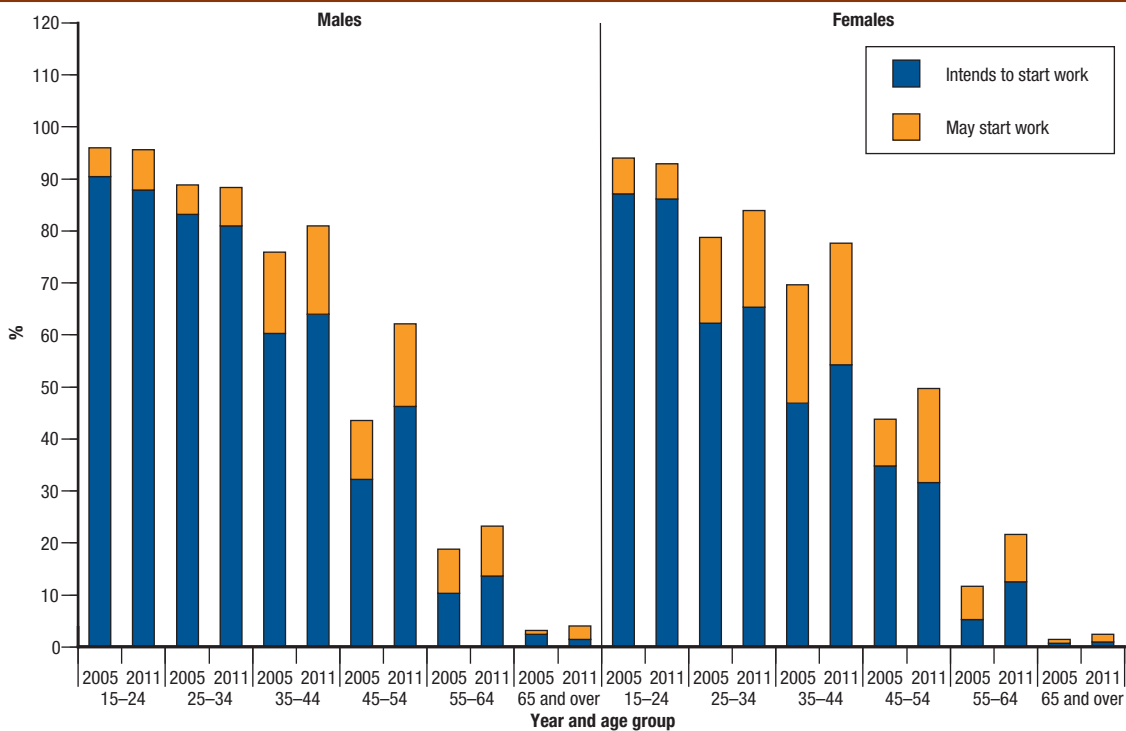


Figure 18.5: Proportion of those not currently in paid work who intend to start paid work over the next three years



to cease paid work in the next three years declined between 2005 and 2011—from approximately 24 per cent to approximately 16 per cent for men, and from approximately 25 per cent to approximately 21 per cent for women.

Figure 18.4 shows that intentions of employees to change jobs—either by changing employer or by becoming self-employed—decrease with age. The proportions intending to change jobs are similar for men and women. Comparing 2005 and 2011, there is evidence of a decline in the proportion of employees aged 15 to 34 intending to change jobs. For example, approximately 53 per cent of male employees aged 15 to 24 intended changing jobs over the next three years in 2005, compared with approximately 48 per cent in 2011. This decline between 2005 and 2011 may reflect a deterioration in perceived job opportunities, since unemployment was edging upwards in 2011, whereas in 2005 the economy was expanding very rapidly and unemployment was falling.

Intentions to start paid work by people not employed at the time of interview are examined in Figure 18.5. Over 85 per cent of people aged 15 to 24 who are not employed intend to commence paid employment within the next three years. The proportion of non-employed men aged 25 to 34 intending to start paid work is similarly high, but is somewhat lower for women. Indeed, in all age groups, intentions by the non-employed to start paid work in the next three years are lower for women than men. Women also appear to have greater uncertainty about taking up paid work in the near future, with relatively high proportions indicating they *may* start paid work, particularly in the 25 to 34 and the 35 to 44 age groups.

Intentions compared with outcomes

As with other aspects of life for which expectations are obtained, the longitudinal structure of the HILDA Survey data allows us to compare moving, education and labour market intentions for the next three years with actual behaviour over that three-year period. This provides insights about the extent to which people carry out planned changes, and also the extent to which changes occur that are not anticipated or planned. For each of the five potential changes examined in Figures 18.1 to 18.5—moving house, beginning study, stopping paid work, changing jobs and starting paid work—Table 18.1 compares stated intentions (using data from both 2005 and 2008) with actual outcomes over the next three years. For example, the first row in the upper panel of the table shows that 67.4 per cent of those who reported an intention to move house over the next three years did in fact move, while 32.6 per cent did not move house. The second row shows that 31.7 per cent of those who indicated they *may* move did in fact move, while the third row shows that 12.0 per cent of those who reported no intention to move nonetheless moved over the

three-year period. The row headed ‘Total’ indicates that 29.8 per cent of all people aged 15 and over moved house over a three-year period.

As the estimates for moving house indicate, intentions are certainly predictive of subsequent behaviour. For all five potential changes, people intending to make the change are more likely to do so than people who do not intend to make the change. Of course, intentions are far from perfectly predictive, with sizeable proportions of people intending to make each change not doing so, and sizeable proportions of people not intending to make each change in fact doing so.

Overall, intentions to *not* take an action are considerably more likely to eventuate than intentions to take an action. Indeed, intentions to begin a course of study, stop paid work or change jobs are less likely to be realised than not. By contrast, in all cases, intentions to not take an action are realised at least 78.5 per cent of the time (and as much as 91.8 per cent of the time in the case of beginning a course of study). This is perhaps not surprising, since an intention to not do something requires no action or effort. Nonetheless, significant numbers of people do make changes contrary to a stated intention to not make those changes, presumably because of unforeseen changes in circumstances. This is least

Table 18.1: Intentions compared with outcomes (%)

Intention	Outcome over the next 3 years		Total
	Occurred	Did not occur	
Moving house			
Yes	67.4	32.6	100.0
Maybe	31.7	68.3	100.0
No	12.0	88.0	100.0
Total	29.8	70.3	100.0
Begin a course of study			
Yes	39.7	60.3	100.0
Maybe	20.4	79.6	100.0
No	8.2	91.8	100.0
Total	15.1	84.9	100.0
Stop paid work			
Yes	48.1	51.9	100.0
Maybe	28.0	72.0	100.0
No	13.3	86.7	100.0
Total	17.1	83.0	100.0
Change employer or become self-employed			
Yes	48.1	51.9	100.0
Maybe	28.0	72.0	100.0
No	13.3	86.7	100.0
Total	17.1	83.0	100.0
Start paid work			
Yes	62.0	38.0	100.0
Maybe	37.8	62.2	100.0
No	21.5	78.5	100.0
Total	34.6	65.5	100.0

Notes: Numbers in bold denote a match between intention and outcome. Estimates are derived from both intentions in 2005 compared with outcomes over the 2006 to 2008 period and intentions in 2008 compared with outcomes over the 2009 to 2011 period. Percentages may not add up to 100 due to rounding.

likely to occur for commencing a course of study and, perhaps somewhat surprisingly, is most likely to occur for starting paid work, where 21.5 per cent of people who did not intend to start paid work over the next three years in fact did start paid work.

Associations between life events and whether intentions are realised

Whether intentions are realised or not is likely to be closely connected to whether subsequent changes occur that were either unforeseen, or their implications were unforeseen. Of course, it may also simply be that people change their minds over time—that is, their intentions change for reasons unrelated to subsequent events and experiences. Table 18.2 explores the extent to which certain life events experienced by individuals differ by whether intentions were realised or not. The table examines moving house, starting paid work, changing jobs and stopping paid work and, for each potential change, four

groups are compared: those who intended to make the change and did make the change; those who intended to make the change and did not make the change; those who did not intend to make the change and did make the change; and those who did not intend to make the change and did not make the change. The table presents simple descriptive statistics only, and therefore does not provide any information about causal effects of events; rather, it simply identifies whether certain events are associated with whether intentions are realised or not.

The table shows there are considerable differences in the proportions of people experiencing a number of the life events we examine, according to whether intentions are realised or not. Among those who intended to move house, the proportions commencing study, changing jobs, starting paid work, getting married, separating from one's spouse, having a child, getting promoted at work and/or experiencing a major improvement in finances are

Table 18.2: Life events associated with whether three-year intentions are realised (%)

	<i>Move house</i>				<i>Stop paid work</i>			
	<i>Intended</i>		<i>Not intended</i>		<i>Intended</i>		<i>Not intended</i>	
	<i>Occurred</i>	<i>Did not occur</i>	<i>Did not occur</i>	<i>Occurred</i>	<i>Occurred</i>	<i>Did not occur</i>	<i>Did not occur</i>	<i>Occurred</i>
Moved house	–	–	–	–	37.1	35.5	32.8	40.1
Began studying	27.7	23.1	11.9	20.0	12.5	13.3	18.3	28.3
Stop paid work	18.7	17.7	16.2	19.4	–	–	–	–
Changed employer	48.6	36.1	21.3	39.4	44.4	26.8	26.7	64.1
Started paid work	55.3	44.1	16.5	31.2	–	–	–	–
Got married	12.3	5.9	3.0	6.9	6.0	8.8	6.3	3.8
Separated from spouse	14.1	9.1	3.2	18.2	3.2	7.1	7.7	8.8
Had a child	16.3	11.2	4.9	11.9	21.4	11.6	9.1	15.4
Serious injury or illness	15.5	18.0	20.1	18.6	18.5	13.4	14.2	23.8
Acquired a disability	15.1	16.3	18.1	18.5	20.2	19.1	15.1	21.9
Spouse or child died	1.4	1.7	2.2	2.5	2.4	0.7	0.8	1.0
Promoted at work	23.2	17.4	8.1	15.6	8.5	18.0	20.8	8.6
Dismissed from job	9.8	9.3	5.3	9.0	14.1	5.3	6.0	26.3
Major improvement in finances	9.1	7.2	6.2	8.3	11.7	7.2	7.4	8.5
Major worsening of finances	8.6	9.0	5.7	10.6	8.2	3.9	5.3	16.4
	<i>Change employer or become self-employed</i>				<i>Start paid work</i>			
	<i>Intended</i>		<i>Not intended</i>		<i>Intended</i>		<i>Not intended</i>	
	<i>Occurred</i>	<i>Did not occur</i>	<i>Did not occur</i>	<i>Occurred</i>	<i>Occurred</i>	<i>Did not occur</i>	<i>Did not occur</i>	<i>Occurred</i>
Moved house	55.1	42.3	24.8	43.4	44.4	33.8	13.4	23.9
Began studying	37.8	21.8	13.3	30.1	48.7	37.3	2.3	11.7
Stop paid work	29.9	31.5	10.2	12.9	–	–	–	–
Changed employer	–	–	–	–	–	–	–	–
Started paid work	–	–	–	–	–	–	–	–
Got married	7.1	6.5	5.5	10.6	5.4	6.5	2.7	0.6
Separated from spouse	12.3	8.9	5.5	8.7	10.7	11.6	3.6	8.5
Had a child	12.5	15.6	8.4	12.8	8.0	14.3	1.9	5.9
Serious injury or illness	14.3	17.9	15.4	14.2	15.8	17.6	28.0	15.2
Acquired a disability	15.2	18.2	16.7	13.7	14.1	18.3	20.5	14.9
Spouse or child died	0.4	1.9	0.7	0.8	1.3	2.0	4.9	3.4
Promoted at work	25.8	20.0	18.2	24.1	–	–	–	–
Dismissed from job	20.5	23.9	3.6	6.4	–	–	–	–
Major improvement in finances	8.0	8.7	6.9	6.1	6.6	4.3	5.4	8.7
Major worsening of finances	9.7	10.2	4.4	5.9	8.8	11.4	6.4	8.8

Notes: The table shows the percentage of people experiencing each life event over the three years following the reported intention. Estimates are derived from both intentions in 2005 compared with outcomes over the 2006 to 2008 period and intentions in 2008 compared with outcomes over the 2009 to 2011 period.

all higher for those who actually moved than for those who did not end up moving in the next three years. Among those who did not intend to move house, the proportions commencing study, stopping paid work, changing jobs, starting paid work, getting married, separating from one's spouse, having a child, getting promoted at work, being dismissed from their job, experiencing a major improvement in finances and/or experiencing a major worsening of finances are all considerably higher for those who (contrary to intentions) moved in the next three years. These differences are all consistent with foreseen changes (such as captured by the life events examined in Table 18.2) of those intending to move not eventuating (resulting in them not moving house), and unforeseen changes occurring to those not intending to move (resulting in them moving house).

People intending to stop work were more likely to actually stop work if they changed jobs, had a child, were seriously injured or became seriously ill, had a spouse or child die, were dismissed from their job, experienced a major improvement in finances, or experienced a major worsening of finances. On the other hand, people intending to stop work were less likely to actually stop work if they separated from their spouse or got promoted at work. People not intending to stop work were more likely to in fact stop work if they moved house, began studying, changed jobs, had a child, became seriously ill or injured, acquired a disability, got dismissed from their job or experienced a major worsening of finances, while they were more likely to continue working if they got married or were promoted at work. Many of these differences are again consistent with foreseen events not occurring and unforeseen events occurring. Note, however, that some events, such as serious illness or injury, make stopping work more likely, while other events, such as job promotion, make it less likely. Consequently, depending on the nature of the life event, the occurrence of unforeseen events could lead to either intentions to stop work not being realised or intentions to not stop work not being realised. Likewise, non-occurrence of foreseen events could lead to either intentions to stop work not being realised or intentions to not stop work not being realised.

Intentions to change jobs were more likely to be realised if the individual moved house, began studying, separated from their spouse or got promoted

at work, and less likely to be realised if the individual stopped paid work, had a child, became seriously ill or injured, acquired a disability, had a spouse or child die or was dismissed from their job. Intentions to not change jobs were more likely to be realised if the individual acquired a disability, and less likely to be realised if the individual moved house, began studying, stopped paid work, got married, separated from their spouse, had a child, got promoted at work, was dismissed from their job or experienced a major worsening of finances.

Intentions to start paid work were more likely to be realised if the individual moved house, began studying or experienced a major improvement in finances, and less likely to be realised if they had a child, became seriously ill or injured, acquired a disability or experienced a major worsening of finances. Intentions to not start paid work were more likely to be realised if the individual got married, became seriously ill or injured, acquired a disability or had a spouse or child die, and less likely to be realised if they moved house, began studying, separated from their spouse, experienced a major improvement in finances, experienced a major worsening of finances or, somewhat surprisingly, had a child.

Conclusion

Intentions regarding moving house, study and labour market activity, even over a relatively short time-frame of three years, are very often not realised. In particular, three-year intentions to begin a course of study, stop paid work and change jobs are more likely to be unfulfilled than fulfilled. As Table 18.2 strongly suggests, to a significant extent, this is likely to reflect the inherent uncertainties of life. Both unanticipated major life events and anticipated major life events that do not eventuate can cause both planned changes to not occur and unplanned changes to occur. However, it is also likely that people find it difficult to forecast how future events will impact on them or, more generally, what their future preferences will be, even in the relatively near future.

Endnote

- 1 Note that for each activity, a small number of people (less than 2.5 per cent) indicate they do not know if they intend doing the activity. These individuals are excluded from the analysis in this chapter.

ANZSIC

ANZSIC is the Australia and New Zealand Standard Industry Classification. Adopted by the Australian Bureau of Statistics (ABS) in 2006, it classifies the economic activity of firms and other employers. It has a structure comprising categories at four levels: 'divisions' (the broadest level); 'subdivisions'; 'groups'; and 'classes' (the finest level). These levels are commonly referred to as 'one-digit', 'two-digit', 'three-digit' and 'four-digit', reflecting the number of digits used in the code to describe each category. At the one-digit level, 17 industry categories are distinguished, while at the two-digit level, 53 categories are distinguished, each of which fits within one of the one-digit categories. See ABS Catalogue No. 1292.0 for details.

ASCO2

ASCO2 stands for the Australian Standard Classification of Occupations, 2nd edition. This is the Australian Bureau of Statistics (ABS) classification scheme for occupations. It is based on a conception of types of tasks and skill-level requirements. It has six 'levels', with 10 occupation groups distinguished at the highest level of aggregation, known as the one-digit level, 54 groups distinguished at the next (two-digit) level of aggregation, and so on. See ABS Catalogue No. 1220.0 for details.

Balanced panel

A longitudinal household survey is known as a household panel study. A **balanced** panel restricts the sample to individuals who have responded to the survey in all waves of the period under study. For example, a balanced panel for Waves 1 to 11 of the HILDA Survey consists of individuals who have responded in all 11 waves.

Body Mass Index (BMI)

Body Mass Index (BMI) is a crude measure of body fat. It is calculated by dividing weight (in kilograms) by height (in metres) squared. That is, $BMI = \text{weight}/\text{height}^2$. A person is classified as 'underweight' if BMI is less than 18.5, 'normal weight' if BMI is at least 18.5 but less than 25, 'overweight' if BMI is at least 25 but less than 30 and 'obese' if BMI is 30 or higher. BMI takes no account of body composition (e.g. muscle mass), and is therefore not regarded as a reliable measure of body fat for individuals, but it is regarded as a useful measure for population groups. Note that the BMI measure in the HILDA Survey data is based on *self-reported* height and weight, which are subject to misreporting. In particular, weight tends to be systematically under-reported, leading to underestimates of BMI—see, for example, Hayes, A.J., Kortt, M.A., Clarke, P.M. and Brandrup, J.D. (2008) 'Estimating Equations to Correct Self-Reported Height and Weight: Implications for Prevalence of Overweight and Obesity in Australia', *Australian and New Zealand Journal of Public Health*, vol. 32, no. 6, pp. 542–5.

Casual employment

Casual employment is a form of employment unique to Australia. It is characterised by flexibility for employers and employees in the number and timing of hours worked from week to week (including the ability for employers to very readily reduce hours to zero). Typically, employees are not entitled to paid annual and sick leave.

Child poverty

Measures of child poverty presented in this report give the number of children under 18 years of age living in households with an equivalised income below the poverty line (be it a relative or absolute poverty standard).

Deciles and quintiles

A decile is any of the nine values that divide data that have been sorted from lowest to highest into ten equal parts, so that each part represents one-tenth of the sample or population. Thus, for example, the first decile of the income distribution cuts off the lowest 10 per cent of incomes, and people in the first (or bottom) decile have the lowest 10 per cent of incomes. A quintile is any of the four values that divide data that have been sorted from lowest to highest into five equal parts; for example, people in the first (or bottom) quintile have the lowest 20 per cent of incomes.

Dependent child

The definition of a dependent child used in this report follows the ABS approach (see Australian Bureau of Statistics (1995) *Standards for Statistics on the Family*, Catalogue No. 1286.0, ABS, Canberra). According to this definition, a dependent child is: (i) any child under 15 years of age or (ii) a child aged 15 to 24 who is engaged in full-time study, not employed full-time, living with one or both parents, not living with a partner, and who does not have a resident child of their own.

Disability

The International Classification of Functioning, Disability and Health (ICF), produced by the World Health Organization, defines disability as an umbrella term for impairments, activity limitations and participation restrictions. It denotes the negative aspects of the interaction between an individual's health conditions and the various contextual (environmental and personal) factors of that individual. In this report, a person is defined to have a disability if they have 'any long-term health condition, impairment or disability that restricts the individual in everyday activities and which has lasted, or is likely to last, for six months or more'. This is an 'operational' definition of disability which is very similar to that used in many household surveys, such as the Australian Bureau of Statistics Survey of Disability, Ageing and Carers.

Disability severity

Disability severity is typically conceived in terms of restrictions in the core activities of self-care, communication and mobility. The HILDA Survey does not collect information in each wave on core activity restrictions, but it does collect information in each wave on the extent to which conditions limit the amount of work an individual can do (on a 0 to 10 scale, where 0 equals 'not at all' and 10 equal 'unable to do any work'). In this report, we use a measure of disability severity based on this information, defining three levels of severity: no work restriction (condition(s) do not limit the amount of work one can do); moderate work restriction (score of 1 to 7 on the scale for the extent of work limitation); and severe work restriction (score of 8 to 10 on the scale for the extent of work limitation).

Dummy variable

Used in regression analysis, a dummy variable is an indicator variable equal to one if a particular characteristic or event is present, and equal to zero otherwise. In OLS regression, the coefficient on a dummy variable is interpreted as the mean effect on the dependent variable of the presence of the characteristic/event, holding all else constant.

Educational attainment

In this report, educational attainment is classified into four levels that are consistent with the ABS classification of education (see Australian Bureau of Statistics (2001) *Australian Standard Classification of Education (ASCED) and Coder, 2001*, Catalogue No. 1272.0.30.001, ABS, Canberra). The four classifications, in order from highest to lowest, are:

1. *Bachelor's degree or higher: Hold a bachelor's degree (awarded by a university) and/or a postgraduate qualification.*
2. *Other post-school qualification: Diploma, Certificate Level 3 or equivalent, or Certificate Level 4 or equivalent.*
3. *Completed high school (and does not hold any of the above qualifications).*
4. *Less than high school completion (and does not hold any of the above qualifications). Includes holders of Certificate Level 1 and Certificate Level 2 qualifications.*

Equivalence scale and equivalised income

Equivalised income is a measure of material living standards, obtained by adjusting household disposable income for the household's 'needs'. In practice, it is common for adjustment of income to be based only on the number of adult and child household members, achieved by an equivalence scale. In this report, we have used the 'modified OECD' scale, which divides household income by 1 for the first household member plus 0.5 for each other household member over 15 years of age, plus 0.3 for each child under 15. A family comprising two adults and

two children under 15 years of age would therefore have an equivalence scale of 2.1 (1 + 0.5 + 0.3 + 0.3), meaning that the family would need to have an income 2.1 times that of a lone-person household in order to achieve the same standard of living.

ESB immigrants and NESB immigrants

These acronyms refer to English-speaking background immigrants and non-English-speaking background immigrants. An ESB immigrant is a person born in one of the main English-speaking countries of the United Kingdom, United States, Canada, New Zealand and South Africa. An NESB immigrant is a foreign-born person born in any other country.

Fixed-effects regression

An econometric technique often applied to panel data, fixed-effects regression involves accounting for the effects of all characteristics of sample members that do not change over time. For example, if we are interested in how life events impact on life satisfaction, a fixed-effects model is useful because we can control for (remove the effects of) fixed individual traits such as optimism and pessimism. This is achieved by examining how the outcome of interest (e.g. life satisfaction) changes at the individual level in response to changes in explanatory variables (e.g. income). For example, a fixed-effects model will find a positive effect of income on life satisfaction if individuals who experience increases in income from one year to the next tend to exhibit increases in life satisfaction over the same period, and individuals who experience decreases in income from one year to the next tend to exhibit decreases in life satisfaction over that period.

Gini coefficient

The Gini coefficient is a measure of dispersion often used as a measure of inequality of income and wealth. It ranges between 0 and 1, a low value indicating a more equal distribution and a high value indicating a more unequal distribution. 'Zero' corresponds to perfect equality (everyone having exactly the same) and 1 corresponds to perfect inequality (where one person has everything and everyone else has nothing).

Household disposable income

The main household income measure examined in this report is 'real household annual disposable income'. Household annual disposable income is the combined income of all household members, after receipt of government pensions and benefits and deduction of taxes, in the financial year ended 30 June of the year of the wave (e.g. 2001 in Wave 1). This is then adjusted for inflation—the rise in the general price level in the economy—using the Australian Bureau of Statistics Consumer Price Index, so that income in all waves is expressed at December 2011 prices, to give *real* income. Since prices tend to rise over time, the incomes statistics

we present for Waves 1 to 10 are higher than what would be obtained from using incomes actually reported by sample members.

Income poverty

A variety of alternative definitions and measures of income poverty exist, but most common are measures that determine poverty status of an individual based on whether income falls above or below a particular threshold. A **relative poverty line** is an income poverty threshold that maintains its value relative to average community living standards over time. It is based on the notion that a person is in poverty if he or she is unable to afford the goods and services needed to enjoy a normal or mainstream lifestyle in the country in which they live. In this report, we define a person to be in relative income poverty if household equivalised income is less than 50 per cent of the median household equivalised income. An **absolute poverty line** is an income poverty threshold which has its real value held constant over time rather than adjusted with changes in average living standards. It is 'absolute' in the sense that the *purchasing power* of the poverty line—the basket of goods and services that it can purchase—remains fixed over time. The level at which an absolute poverty line is set may nonetheless be based on the level of a relative poverty line obtained at a particular point in time, for example the beginning of the time period under study.

Labour force status

Analysts of the labour market distinguish three main labour force states: **employed**, **unemployed** and **not in the labour force**. Both the unemployed and those not in the labour force are not employed, but the unemployed are both actively seeking and available for employment. It is common to further disaggregate these three categories of labour force status. Among the employed, **full-time workers** (35 or more hours per week) are distinguished from **part-time workers**, and among part-time workers, the **underemployed**—those seeking more hours of employment—are distinguished from other part-time workers. Among the unemployed, a distinction is sometimes drawn between those seeking full-time work and those seeking part-time work. Among people not in the labour force, several distinctions are often made based on the degree of 'attachment' to the labour market. This includes identifying the **marginally attached**—people who want to work and are either available to start work but are not currently looking, or are looking for work but are not currently available. The **labour force participation rate** is the ratio of those in the labour force to the total population, with the population usually restricted to people aged 15 years and over.

Logit and probit models

Logit and probit models are statistical techniques used to estimate the effects of factors, such as age

and educational attainment, on a 'qualitative' or categorical dependent variable, such as labour force status. (The variable 'labour force status' is qualitative because it is not naturally 'quantitative' or numerical, such as is the case with income.) The standard logit or probit models examine 'binary' dependent variables, which are variables with only two distinct values, and estimates obtained from these models are interpreted as the effects on the *probability* the variable takes one of those values. For example, a model might be estimated on the probability an individual is employed (as opposed to not employed). The logit and probit models differ in the assumed 'functional form' for the relationship between explanatory variables and the probability of the outcome. Specifically, logit models assume the probability of the outcome is a 'logistic' function of the explanatory variables, while probit models assume the function is the inverse cumulative distribution function of the standard normal distribution. The two models typically produce similar estimates of the effects of factors on the probability of an outcome. **Multinomial** logit and probit models are used when the dependent variable takes on more than two values—for example, when examining the determinants of whether an individual is employed, unemployed or not in the labour force. An **ordered** probit or logit model can be used when there is a natural ordering of the qualitative dependent variable. For example, in this report, ordered logit models are estimated of job satisfaction, which is reported on a 0 to 10 scale. While these categories are numerical values, they indicate an ordering rather than quantification of the amount of job satisfaction. For example, it is not clear that a rating of 10 corresponds to twice the job satisfaction of a rating of 5.

Mean, median and mode

The mean, median and mode are all measures of central tendency. The mean is the statistical term used for what is more commonly known as the average—the sum of the values of a data series divided by the number of data points. The median is the middle data point in data sorted from lowest to highest value; 50 per cent of the data points will lie below the median and 50 per cent above it. The mode is simply the most frequently occurring value of a data series.

Mean marginal effects

Qualitative dependent variable models, such as probit, are 'non-linear', meaning that the effects of explanatory variables on the probability of an outcome depend upon the value of that explanatory variable at which the effects are evaluated, and indeed also depend on the values of the other explanatory variables at which they are evaluated. For example, in the probit models of the probability of being risk averse, presented in Chapter 6, the effect of income decile will depend on the decile level and also the values of the other explanatory

variables. This makes it difficult to interpret coefficient estimates. We therefore report ‘mean marginal effects’ estimates, which provide a straightforward way of ascertaining the effects of explanatory variables that are analogous to those obtained in linear regression models—that is, the effect on the dependent variable of a one-unit increase in the explanatory variable. Specifically, continuing with the example above, the mean marginal effect estimate for the income decile variable is the mean effect on the probability of being risk averse, evaluated over all members of the sample, of a one-decile increase in income decile.

Ordered logit and probit regression—see logit and probit models

Ordinary Least Squares (OLS) regression

OLS regression is a technique for estimating linear associations between a dependent variable (such as earnings) and one or more independent (or explanatory) variables (such as age and educational attainment). The method finds the linear combination of the explanatory variables that minimises the sum of the squared distances between the observed values of the dependent variable and the values predicted by the regression model.

Probit models—see logit and probit models

Quintiles—see deciles

Random-effects regression

An econometric technique often applied to panel data such as the HILDA Survey, random-effects regression differs from fixed-effects regression by allowing estimation of the effects of characteristics that do not change over time. This is made possible by assumptions about the distribution and nature of unobserved fixed individual traits, such as innate ability and intrinsic motivation. The models are relatively complicated. For more information on random-effects models, see, for example, Hsiao, C. (2003) *Analysis of Panel Data*, Cambridge University Press, New York.

Region of residence

There are various ways of characterising the region of residence of sample members. In this report, we primarily characterise regions by population density, classifying households into three categories: major urban (cities with populations of 100,000 or more); other urban (towns and cities with populations of 1,000 to 99,999); and other regions (towns with populations less than 1,000, and rural and remote areas).

Regression models

In statistical analysis, a regression model is used to identify associations between a ‘dependent’ variable (such as earnings) and one or more ‘independent’ or ‘explanatory’ variables (such as measures of educational attainment and work experience). In

particular, it shows how the typical value of the dependent variable changes when any one of the independent variables is varied and all other independent variables are held fixed. Most commonly, regression models estimate how the mean value of the dependent variable depends on the explanatory variables—for example, mean (or ‘expected’) earnings given a particular level of education and work experience. Different types of regression models are used depending on factors such as the nature of the variables and data, and the ‘purpose’ of the regression model. Various types of models are estimated in this report, and are explained in separate entries in this glossary. (See the entries for Ordinary Least Squares (OLS) regression, logit and probit models, and fixed-effects regression.)

Relative standard error

The standard error of an estimate is a measure of the precision with which the estimate is estimated. For example, assuming statistical independence of the values in the sample, the standard error of the mean of a variable (such as income) is the standard deviation of the variable divided by the square root of the sample size, and there is a 95 per cent probability that the true mean lies within 1.96 standard deviations of the estimated mean. The relative standard error of an estimate is the ratio of the standard error to the value of the estimate. In this report, we have marked with an asterisk (*) estimates which have a relative standard error greater than 25 per cent. Note that a relative standard error that is less than 25 per cent implies there is a greater than 95 per cent probability the true quantity lies within 50 per cent of the estimated value.

SEIFA

This acronym refers to the Socio-Economic Index for Areas, constructed by the Australian Bureau of Statistics (ABS) using Census data. SEIFA is a suite of four indexes that can be used to explore different aspects of socio-economic conditions by geographic areas. For each index, every geographic area in Australia is given a SEIFA number which shows how disadvantaged that area is compared with other areas in Australia. In analysis presented in this report, the SEIFA index used is the *Index of Relative Socio-Economic Advantage and Disadvantage*, which is derived from Census variables such as low income, low educational attainment, unemployment, and dwellings without motor vehicles. For more information, see Australian Bureau of Statistics (2009) *Information Paper: An Introduction to Socio-Economic Indexes for Areas (SEIFA)*, Catalogue No. 2309.0, ABS, Canberra.

SF-36 health measures

The SF-36 Health Survey is a 36-item questionnaire that is intended to measure health outcomes (functioning and wellbeing) from a patient point of view. It was specifically developed as an instrument to be completed by patients or the general public rather

than by medical practitioners, and is widely regarded as one of the most valid instruments of its type. See <<http://www.sf-36.org/>> for further details.

Standard deviation

The standard deviation is a measure of variability or 'dispersion' of a variable. It is equal to the square root of the mean squared difference of a variable from its mean value. Expressed formally, the standard deviation of a variable x is

$\sqrt{\frac{1}{N} \sum_{i=1}^N (x_i - \bar{x})^2}$, where there are N values of the variable and \bar{x} is the mean value of the variable—that is, $\bar{x} = \frac{1}{N} \sum_{i=1}^N x_i$.

Statistical significance

In the context of statistical analysis of survey data, a finding is statistically significant if it is unlikely to be simply due to sampling variability—that is, if it is unlikely to be due to random factors causing specific characteristics of the survey sample to differ from the characteristics of the population. A common standard is to regard a difference between two estimates as statistically significant if

the probability that they are the different is at least 95 per cent. However, 90 per cent and 99 per cent standards are also commonly used. The 90 per cent standard is adopted for regression results presented in this report. Note that a statistically significant difference does not mean the difference is necessarily large or significant in the common meaning of the word.

Welfare reliance

While a person may be regarded as to some extent reliant on welfare if *any* welfare payments are received by that person's household, welfare reliance is usually understood as a situation in which welfare represents the primary or main source of income. In this report, two alternative specific definitions of welfare reliance are adopted:

1. *The household received income support payments and more than 50 per cent of household income came from income support and non-income support payments.*
2. *The household received income support payments and more than 90 per cent of household income came from income support and non-income support payments.*

