



Families, Incomes and Jobs, Volume 7



A Statistical Report on
Waves 1 to 9 of the
Household, Income and
Labour Dynamics in
Australia Survey



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Families, Incomes and Jobs, Volume 7:

A Statistical Report on Waves 1 to 9 of the Household, Income and Labour Dynamics in Australia Survey

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Contents

Introduction	iv	Part B: FEATURE ARTICLES	109
Part A: ANNUAL UPDATE	1	Health and Health Care	110
Households and Family Life	2	22. Prevalence and difficulties caused by health conditions	111
1. Family dynamics: Changes in household structure, 2001 to 2009	2	23. Health care utilisation	119
2. Changes in marital status and marriage satisfaction	5	24. Child health and health care utilisation	128
3. Parenting stress and work–family stress	11	25. Health care expenditure and private health insurance	138
4. Child care: Issues and persistence of problems	14	26. Expectations about health and length of life	148
5. Life events in the past 12 months	18	Other Topics	155
Incomes and Economic Wellbeing	23	27. Hours of work and job mobility <i>Mark Wooden</i>	155
6. Income levels and income mobility	24	28. The stability of personality traits <i>Mark Wooden</i>	157
7. Relative income poverty	33	29. Employment transitions of mothers	159
8. Welfare reliance	39	30. Determinants of subjective wellbeing <i>Gary Marks</i>	168
9. Financial stress	45	Glossary	171
10. Household consumption expenditure	49		
Labour Market Outcomes	56		
11. Mobility in labour force status	56		
12. Wages and wage changes	63		
13. Job mobility	66		
14. Hours worked, hours preferred and individual-level changes in both	73		
15. Jobless households and ‘job-poor’ households	78		
16. Job satisfaction and job security	83		
Life Satisfaction, Health and Wellbeing	89		
17. Life satisfaction and satisfaction with specific aspects of life	89		
18. Physical and mental health, 2001 to 2009	94		
19. Social capital deficits and their persistence	99		
20. Social exclusion in Australia	102		
21. Labour force and education participation, 2001 to 2009	105		

Introduction



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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 Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) 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 seventh volume of the Annual Statistical Report of the HILDA Survey, examining data from the first nine waves of the study, which were conducted between 2001 and 2009.

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. Cross-sectional data are of course very important, providing snapshots of the community at a given point in time—for example, the percentage of the people married, in employment, or with a disability. But such data also have important limitations for understanding economic and social behaviour and outcomes. Longitudinal data, by contrast, provide a much more complete picture because we can see the life-course a person takes. We can examine how they respond to life events,

at the time of the event and down the track, we can examine how long they persist in certain modes of behaviour or activities and how persistently the outcomes are experienced.

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 data-set. 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 sample 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 9): 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 19,917 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, 11,993 were re-interviewed 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 and 9,245 in Wave 9; 7,721 have been interviewed in all nine waves.

The total number of respondents in each wave is greater than the number of Wave 1 respondents interviewed in that wave, for at least three 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. Most importantly, 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.

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

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	4,784	–	13,969
Wave 2	7,245	13,041	4,275	86.8	11,993
Wave 3	7,096	12,728	4,089	90.4	11,190
Wave 4	6,987	12,408	3,887	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	3,692	94.7	9,628
Wave 8	7,066	12,785	3,575	95.2	9,354
Wave 9	7,234	13,301	3,623	96.3	9,245

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

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 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. The weights in 2009 sum to 21.5 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 9 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 and components of income.

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 the public 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, a similar approach is taken to that with respect 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 seventh volume of the HILDA Survey Annual Statistical Report examines data from the first nine waves of the HILDA Survey. As in previous volumes, it contains two main parts. Part A contains short articles on changes in key aspects of life in Australia that are measured by the HILDA Survey every year. Four broad and very much overlapping 'life domains' are covered: household and family life; incomes and economic wellbeing; labour market outcomes; and life satisfaction, health and wellbeing.

While Part A of the report is represented as an 'annual update', the analysis undertaken for each article in fact varies considerably from one volume to the next. For this volume, particular emphasis is given to analysis of the implications of the recent economic downturn. Following the collapse of Lehman Brothers in September 2008, Australian economic growth slowed appreciably and a sustained increase in the unemployment rate ensued for the first time since late 2001, when Wave 1 of the HILDA Survey was conducted. In August 2008, Australia's unemployment rate (seasonally adjusted) stood at 4.3 per cent; by May 2009, it had risen to 5.8 per cent, at which approximate level it remained until October 2009. While this was a mercifully mild economic downturn, particularly compared with the 1991 recession, it nonetheless means that Wave 9 provides the first data from the HILDA Survey which can capture effects of an economic slowdown on the behaviour and outcomes of Australians—it is the first time we have data on individuals both before and after the slowdown. This creates opportunities for some valuable insights into the effects of the macroeconomy on household and family life, and is thus a recurring theme in the analysis presented in Part A of this report.

The second part of the report, Part B, contains articles on irregular topics, to a significant extent influenced by wave-specific questions included in the survey. In Wave 9, the main focus of the 'rotating' content in the interview component of the

survey was health-related topics. This included questions on difficulties caused by health conditions, private health insurance and hospital admissions previously administered in Wave 4 and questions on eating habits previously administered in Wave 7. There were also new questions on child health and utilisation of health services by children, serious illness conditions and their treatment, health expectations, government concession cards and utilisation of (non-hospital) health services. Correspondingly, much of Part B is given over to analysis of the health-related data, with articles on: health conditions; health care utilisation; child health and health care; health expenditure; and health expectations. Part B additionally contains an article on employment transitions of mothers, as well as two articles by Mark Wooden, on hours of work and job mobility and on the stability over time of personality traits, and one article by Gary Marks, on the determinants of subjective wellbeing.

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 very 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 article 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 the *HILDA User Manual*.

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ANNUAL UPDATE

Households and Family Life 2

Incomes and Economic Wellbeing 23

Labour Market Outcomes 56

Life Satisfaction, Health and Wellbeing 89



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 2009 period of five aspects of family life: family structure dynamics; changes in marital status and satisfaction with marriage; family-related stresses and strains; child care issues and their persistence; and major life events in the last 12 months. Note also that Part B contains some feature articles on particular aspects of family life, including the employment transitions of mothers and child health and health care utilisation.

1. Family dynamics: Changes in household structure, 2001 to 2009

Long-term trends in household structures in Australia are reasonably well understood. As de Vaus (2004), Australian Bureau of Statistics (2004) 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, showing the proportion of individuals, including children, in each household type, from 2001 to 2009. 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 10 per cent lived alone. While the proportion of individuals in most types of household has remained quite steady

between 2001 and 2009, it seems that group households have become less popular, with only 1.5 per cent of all individuals living in a group household in 2009, compared to 2.5 per cent in 2001.

Changes in household structure

While the proportion of households of each type, and the proportion of individuals in each household type remained quite stable over this nine-year period, for many individuals, their household structure would have changed at least once during this time.¹ Some may have had household members leave because of a relationship breakdown and some may have had adult children leave the family home. For others, the household structure may have changed due to the death of a household member. The household structure could also have changed as new members join the household, for example, due to the birth of a baby, the adoption of a child, or a couple moving in together.

Between 2008 and 2009, couple families were the most stable, with 90.8 per cent of individuals

Table 1.1: Household type of individuals, 2001 to 2009 (%)

Household type	2001	2003	2005	2007	2008	2009
Couple family without children	20.8	21.1	21.4	20.8	21.5	20.8
Couple family with children	51.7	51.5	52.0	52.5	52.2	52.2
Couple family with children under 15	37.2	36.8	36.2	36.3	36.1	35.7
Couple family with children aged 15 or older	14.5	14.7	15.8	16.2	16.1	16.5
Lone-parent household	11.6	12.1	12.5	12.5	12.4	12.1
Lone parent with children under 15	7.4	7.2	7.3	6.5	6.3	6.2
Lone parent with children 15 or older	4.2	4.9	5.2	6.0	6.1	5.9
Lone person	9.8	9.8	9.6	9.6	9.4	9.5
Group household	2.5	1.5	1.2	1.2	1.1	1.5
Other related family	1.2	1.4	1.1	0.9	0.9	1.2
Multi-family household	2.4	2.5	2.2	2.6	2.5	2.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes: Couple family and lone-parent households with children under 15 may also have children aged 15 or older in the household, while couple family and lone-parent households with children aged 15 or older only have children aged 15 or older. Percentages may not add up to 100 due to rounding.

who were in a couple-only household in 2008 remaining in that category in 2009, and 92.2 per cent of individuals in couple-with-children households in 2008 still in that household type in 2009. Of those who were no longer in couple-only households, the most common reason for the change was the addition of a child, with 5.5 per cent of individuals who were in couple-only households in 2008 changing to couple-with-children households in 2009. Lone-parent households were also quite stable, with 83.2 per cent of individuals who were living in lone-parent households in 2008 still living in a lone-parent household in 2009. While 88.5 per cent of people who were living alone in 2008 were still doing so in 2009, 7 per cent had moved in with a partner; and of that 7 per cent, 32.8 per cent had either had a new baby or moved in with a partner who already had at least one child, thereby creating a couple-with-children household. More than three-quarters (76.6 per cent) of individuals who were in 'other related family' households in 2008 were still in this type of household in 2009, and 64.5 per cent of those who were living in a group household in 2008 were still in the same situation in 2009. Of all the household types, multi-family households were the least static between 2008 and 2009, with only 60.8 per cent of individuals who were living in multi-family households in 2008 remaining in a multi-family household in 2009—15.3 per cent had changed to couple-with-children households, 13 per cent to lone-parent households and 10.6 per cent to couple-only households.

Table 1.2 compares the changes in the household type of individuals, including children, between 2001 and 2002, 2004 and 2005, and 2008 and 2009.

The proportion of individuals whose household type changed between 2008 and 2009 was 10.7 per cent, slightly higher than the proportion of individuals whose household type changed between 2004 and 2005, but lower than the proportion of individuals who experienced a change in household structure between 2001 and 2002.

The proportion of individuals experiencing specific changes in household structure were quite similar in each of the three observation periods shown in Table 1.2. The proportion of individuals who had changed from being in a couple-only household to a couple-with-children household ranged from 1.5 per cent between 2001 and 2002 to 1.3 per cent between 2008 and 2009, and approximately 1 per cent had changed from a couple-with-children household to a couple-only household. Compared to previous periods, the proportion of individuals moving from couple households to single person or lone-parent households was slightly lower between 2008 and 2009, with 2.4 per cent making this change compared to 2.9 per cent between 2001 and 2002 and also between 2004 and 2005; while the proportion changing from lone person or lone-parent households to couple households remained quite stable at just under 2 per cent.²

While the proportion of individuals remained quite stable in each of the three periods examined in Table 1.2, the proportion of individuals experiencing an increase in household size increased from 7.5 per cent between 2001 and 2002 to 8.8 per cent between 2008 and 2009 and the proportion experiencing a decrease in household size decreased from 12.8 per cent between 2001 and 2002 to 9.7 per cent between 2008 and 2009. Evidence from Table 1.1 suggests that these

	2001–2002	2004–2005	2008–2009
Couple without children to couple with children	1.5	1.4	1.3
Couple with children to couple without children	0.9	0.9	1.2
Couple to single	2.9	2.9	2.4
Couple without children to lone parent	*0.0	*0.1	*0.1
Couple without children to lone person	0.5	0.5	0.5
Couple with children to lone parent	1.5	1.3	1.0
Couple with children to lone person	0.8	0.9	0.8
Single to couple	1.8	1.9	1.7
Lone parent to couple without children	0.1	0.2	0.1
Lone parent to couple with children	1.0	1.0	0.9
Lone person to couple without children	0.4	0.5	*0.4
Lone person to couple with children	0.1	0.3	0.2
Lone parent to lone person	0.6	0.5	0.7
Lone person to lone parent	0.2	0.3	0.2
Other changes ^a	3.7	2.5	3.3
Any change in household type	11.6	10.4	10.7
Increase in household size	7.5	8.1	8.8
Decrease in household size	12.8	10.7	9.7

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding. ^a This category includes all transitions into, and out of, group households, multi-family households and 'other related' households.

differences are likely to be a result of increases in the proportion of individuals in (couple or lone-parent) households with children aged 15 and older. That is, compared to 2001–2002, adult children appear to be leaving home at a later age, possibly due to increased costs of living.

Table 1.2 has shown the changes in household structure from one year to the next, but how much do households change over a longer period of time? Table 1.3 shows that more than a quarter of individuals were living in a different household type in 2009 compared to 2005, and almost 40 per cent had changed household type since 2001.

The proportion of individuals moving from couple households to single or lone-parent households changes substantially depending on the length of the period of observation. Between 2007 and 2009, the proportion of individuals moving from couple households to single households is 4.2 per cent. However, over a longer period of time, for example between 2001 and 2009, the proportion making this change is increased to 10.4 per cent. Changes in the proportion of individuals moving from single or lone-parent households to couple households are not as large, increasing from 2.7 per cent between 2007 and 2009 to 5.5 per cent between 2001 and 2009.

There is also a considerable increase in the proportion moving into, or out of, the less common types of households (group households, multi-family households and other family households)—from 3.7 per cent between 2007 and 2009 to 7.7 per cent between 2001 and 2009. For most people, these types of households are a temporary situation, possibly only while studying at university, or until they move in with a partner or are able to afford to live

alone. In fact only 21.4 per cent of individuals who were in either multi-family or ‘other related’ households in 2001 were still in the same type of household in 2009, and only 11.2 per cent of individuals who were in group households in 2001 were still living in a group household eight years later.

Discussion

While the overall proportion of households of each type, and the proportion of individuals living in each type of household, changes very little from year to year, 10.7 per cent of individuals were living in a different household structure in 2009 compared to 2008, and 38.2 per cent had a different household arrangement in 2009 than they did in 2001.

In couple households, the most common changes in household structure are a result of adult children leaving home—resulting in a change from a couple-with-children household to a couple-only household—and new children entering the household, which changes a couple-only household into a couple-with-children household. For most people who live in a group household, it is a temporary situation, with only 11 per cent of individuals who were living in a group household in 2001 still in this type of household in 2009. It is also relatively uncommon for multi-family households and ‘other related’ households to continue for several years, with only 25 per cent of individuals who were living in these types of households in 2001 still in the same household arrangement in 2009.

Endnotes

- 1 The average number of individuals per household was 2.6 in every wave from 2001 to 2009.

Table 1.3: Longer term changes in household structure (%)

	2007–2009	2005–2009	2003–2009	2001–2009
Couple without children to couple with children	2.6	4.7	6.2	8.3
Couple with children to couple without children	1.7	3.0	3.1	3.8
Couple to single	4.2	6.6	8.6	10.4
Couple without children to lone parent	*0.1	0.1	0.2	0.3
Couple without children to lone person	0.8	1.2	1.9	2.4
Couple with children to lone parent	2.1	3.1	3.5	4.1
Couple with children to lone person	1.3	2.1	2.9	3.7
Single to couple	2.7	4.5	5.0	5.5
Lone parent to couple without children	0.3	0.6	0.8	0.9
Lone parent to couple with children	1.4	2.3	2.2	2.8
Lone person to couple without children	0.7	1.0	1.1	0.9
Lone person to couple with children	0.4	0.6	0.9	0.9
Lone parent to lone person	1.0	1.6	2.0	2.1
Lone person to lone parent	0.2	0.3	0.4	0.3
Other changes ^a	3.7	5.1	5.5	7.7
Any change in household type	16.2	25.8	30.7	38.2
Increase in household size	12.0	15.9	16.9	17.7
Decrease in household size	15.8	23.7	29.8	35.9

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding. ^a This category includes all transitions into, and out of, group households, multi-family households and ‘other related’ households.

- 2 Table 1.2 shows that the proportion of individuals moving from couple households to single households is higher among those who were in couple-with-children households compared to couple-only households. It is important to note that these results do not imply that separation is more common among couples with children. This is simply a result of the fact that the presence of children increases the number of individuals involved in the transition.

References

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2. Changes in marital status and marriage satisfaction

The HILDA Survey data show that in 2009 approximately 60 per cent of Australians aged 15 and over were legally married or living in a de facto relationship, just over a quarter had never been married and were not living with a partner, 7 per cent were separated or divorced and had not re-partnered and the remaining 5 per cent were widows or widowers.¹ In 2009, there were 120,118 registered marriages—an increase of 1.1 per cent from 2008 (ABS, 2010). This is the highest number of marriages ever registered in a single year and continues the relatively steady increase in the number of marriages each year since 2001. The number of divorces granted in Australia in 2009 was 49,448—an increase of 4.7 per cent compared to the previous year, following a steady decline in the number of divorces granted each year since a high of 55,330 divorces in 2001 (ABS, 2010). Table 2.1 summarises the changes in marital status among HILDA Survey respondents who were interviewed in both 2008 and 2009.

Most people (98 per cent) who were married in 2008 were still married in 2009. Of those who were in a de facto relationship in 2008, 10.5 per cent had married and 9.4 per cent were no longer living with a partner by 2009. A small proportion (6.4 per cent) of people who were divorced in 2008 had either remarried or begun a de facto relationship by 2009.² Among those who had never married and were not in a de facto relationship in 2008, 6.1 per cent had begun a de facto relationship and 1.4 per cent were married by 2009.

While things remained relatively stable during this 12-month period, a lot more happened over the five years from 2004 to 2009, as shown in Table 2.2. In the five years from 2004 to 2009, the most stable group was the widowed, with 95.5 per cent retaining that status in 2009. Of those who were married in 2004, 92.3 per cent were still married in 2009—to the same person in 96.8 per cent of cases. Of those whose marital status in 2004 was divorced, 9.1 per cent had remarried by 2009 and a further 8.3 per cent were cohabiting with a partner. More than one-quarter of people who were never married and not living with a partner in 2004 were living with a spouse or partner in 2009—15.9 per cent had moved into a de facto relationship and 10.9 per cent were married.

The most volatile groups seem to be separated people and those in de facto relationships. However, most of the separated people who had changed marital status after 2004 had proceeded with a divorce, and a large proportion (66.9 per cent) of the 50.2 per cent of de factos who changed status after 2004 got married, 67.2 per cent of them marrying the person they were living with in 2004. Furthermore, among those who were in de facto relationships in both 2004 and 2009, 65.1 per cent were still living with the same partner.

Relationship satisfaction

Each year, individuals living with a spouse or partner at the time of their interview are asked to rate

Table 2.1: Changes in marital status, 2008 to 2009 (%)

Marital status in 2008	Marital status in 2009						Total
	Legally married	De facto	Separated	Divorced	Widowed	Never married and not de facto	
Legally married	98.0	0.3	1.1	*0.0	0.5	–	100.0
De facto	10.5	80.1	*1.7	*0.8	*0.1	6.8	100.0
Separated	*4.8	5.7	72.2	16.3	*1.0	–	100.0
Divorced	*3.2	3.2	*1.9	90.1	*1.6	–	100.0
Widowed	*0.1	*0.3	*0.2	*1.5	97.9	–	100.0
Never married and not de facto	1.4	6.1	*0.0	*0.0	*0.0	92.4	100.0
Total	51.8	10.4	2.6	5.3	4.9	25.0	100.0

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

Table 2.2: Changes in marital status, 2004 to 2009 (%)

Marital status in 2003	Marital status in 2009						Total
	Legally married	De facto	Separated	Divorced	Widowed	Never married and not de facto	
Legally married	92.3	1.0	2.4	1.5	2.8	–	100.0
De facto	33.6	50.2	2.0	2.7	*0.6	11.0	100.0
Separated	15.2	15.8	37.8	27.3	*3.9	–	100.0
Divorced	9.1	8.3	*3.0	77.0	2.6	–	100.0
Widowed	*1.0	*1.0	*0.2	*2.3	95.5	–	100.0
Never married and not de facto	10.9	15.9	*0.2	*0.0	*0.0	72.9	100.0
Total	55.9	10.0	2.7	6.1	5.9	19.5	100.0

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

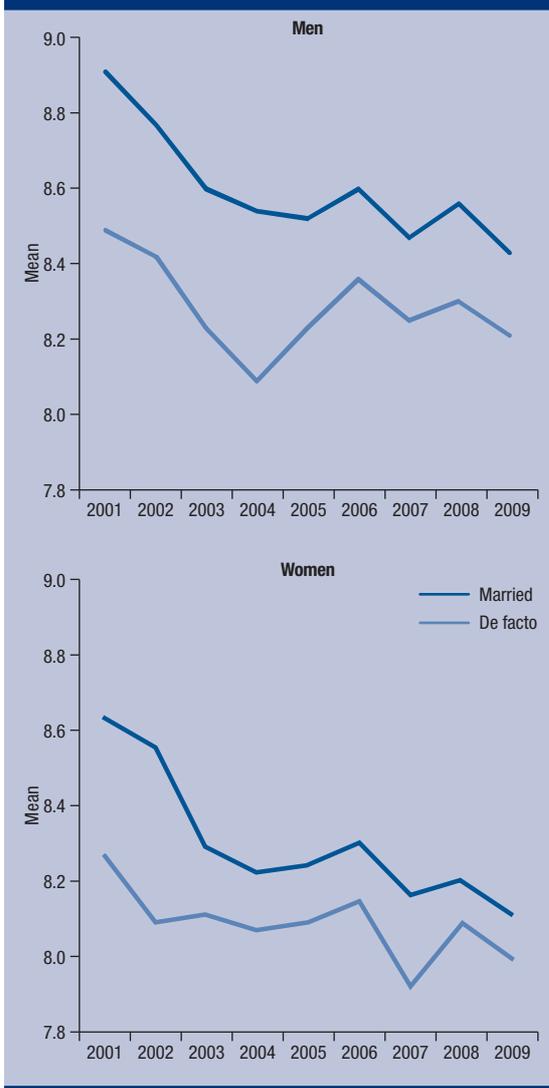
their satisfaction with their relationship with their partner, on a scale of 0 (completely dissatisfied) to 10 (completely satisfied). Average levels of relationship satisfaction by sex and marital status are shown in Figure 2.1. Compared to people in de facto relationships, relationship satisfaction was higher, on average, among those who were married. In 2009 the average level of relationship

satisfaction for married men was 8.6 out of 10, compared to 8.2 out of 10 for men in de facto relationships. For women, the average level of relationship satisfaction was also higher for those who were married—8.2 out of 10 compared to 8.1 out of 10 for women in a de facto relationship.

Changes in relationship satisfaction over time

How much do individual levels of relationship satisfaction change from year to year? Table 2.3 looks at the standard deviation and mean absolute deviation of relationship satisfaction scores across the nine waves for those who were both interviewed in every year from 2001 to 2009 and living with the same spouse or partner in all nine years. Specifically, it presents the 25th, 50th (median) and 75th percentiles of the distribution of standard deviations as well as the mean of the mean absolute deviation. These provide measures of the level of variability in relationship satisfaction from year to year.³

For men, the 25th percentile of the distribution of standard deviations is 0.44. In other words, 25 per cent of men in this sample had standard deviations of their relationship satisfaction scores across the nine waves that were less than 0.44. Looking at the 75th percentile of the standard deviation, we can conclude that 75 per cent of men had standard deviations less than 1.09. For women, the amount of variation in relationship satisfaction during this period was somewhat higher, with the 25th percentile equal to 0.5 and the 75th percentile equal to 1.22. Among men and women who had been in a relationship for at least nine years, the mean absolute deviation in relationship satisfaction scores, that is, the average of the absolute values of the differences between each observation and the mean of all observations for an individual, was 0.6 points and 0.7 points respectively. The differences in the standard deviation of relationship satisfaction scores across males and females, and by age group, are relatively small. However, women have slightly more variation in relationship satisfaction than men and, compared to other age groups, men and women aged between 35 and 49 in 2009 have a relatively high degree of variation over time in reported levels of relationship satisfaction.

Figure 2.1: Mean satisfaction with partner, 2001 to 2009

While Table 2.3 shows that there is not a large amount variation over time in the levels of relationship satisfaction of individuals who have been living with a spouse or partner for at least nine years, it does not provide any information about how levels of relationship satisfaction change with the duration of the relationship. This may be due to couples with low levels of relationship satisfaction separating after a short time, while those with high levels of satisfaction will remain together in the long term. Table 2.4 shows the average levels of relationship satisfaction in 2009 for individuals who were either married or in a de facto relationship, according to how long they had been living together.⁴

For men and women, Table 2.4 shows a decline in the average level of relationship satisfaction over time. Among men who were married in 2009, average levels of relationship satisfaction ranged from 9.3 out of 10 for those who had been living with their wife for less than one year, to 8.0 out of 10 for those who had been living with their wife for 10 to 20 years. The figures are similar for women, with average satisfaction levels of 8.8 out of 10 for women who had been living with their husband for less than one year, compared to 7.8 out of 10 among women who had been living with their husband for 10 to 20 years. However, among married men and women whose relationship had lasted at least 20 years, levels of relationship satisfaction were higher than those of couples who had been together for 10 to 19 years. For de facto couples this is not the case—men and women who had been in a de facto relationship for at least 20 years had, on average, the lowest levels of relationship satisfaction.

Assortative mating and relationship satisfaction

The theory of ‘assortative mating’ suggests that people tend to choose a partner who shares similar characteristics, preferences and attitudes. For example, people may be more likely to choose a partner who has a similar level of education, similar personality traits, the same cultural background or the same religion. Tables 2.5 and 2.7 respectively examine the differences in relationship satisfaction of couples in 2009 according to their similarities in education and personality traits.

The figures in Table 2.5 show that it is quite common for people to choose partners with a similar level of education—36.6 per cent of couples have the same level of education. However, there is very little evidence to suggest that similarities or differences in education have a substantial effect on relationship satisfaction. Overall, there appears to be no difference in average levels of relationship satisfaction between couples who have the same education level, couples in which the husband has a higher level of education than the wife, and couples in which the wife has a higher level of education than the husband.

However, there are some differences in relationship satisfaction for specific combinations of husband’s and wife’s education level. On average, couples in which the wife has an undergraduate degree and the husband’s highest level of education is Year 12 have the highest relationship satisfaction at both an individual level, and also when averaged over both members of the couple. At the couple level, there is no particular combination of

Table 2.3: Variation in relationship satisfaction, 2001 to 2009

Age group in 2009	Men				Women			
	Standard deviation			Mean absolute deviation	Standard deviation			Mean absolute deviation
	25th percentile	50th percentile	75th percentile		25th percentile	50th percentile	75th percentile	
Less than 35	0.44	0.83	1.12	0.64	0.53	0.73	1.13	0.68
35–49	0.53	0.83	1.22	0.74	0.60	0.87	1.39	0.82
50–64	0.44	0.67	1.05	0.61	0.50	0.73	1.22	0.69
65 and over	0.33	0.53	0.97	0.52	0.44	0.60	0.97	0.58
Total	0.44	0.71	1.09	0.62	0.50	0.73	1.22	0.71

Note: See the Glossary for explanations of the standard deviation and mean absolute deviation.

Table 2.4: Mean relationship satisfaction by duration of relationship, 2009

Duration of relationship	Men			Women		
	Married	De facto	Total	Married	De facto	Total
Less than 1 year	9.3	8.9	9.0	8.8	8.8	8.8
1 to < 2 years	8.9	8.7	8.8	8.7	8.4	8.5
2 to < 3 years	8.9	8.4	8.7	8.8	8.1	8.4
3 to < 5 years	8.7	8.2	8.5	8.6	7.9	8.3
5 to < 7 years	8.5	7.8	8.3	8.4	7.4	8.2
7 to < 10 years	8.5	8.5	8.5	8.1	8.1	8.1
10 to < 20 years	8.0	7.6	7.9	7.8	7.3	7.7
20 years or more	8.5	7.3	8.5	8.1	7.2	8.1
Total	8.4	8.3	8.4	8.1	8.0	8.1

husband's and wife's education level which creates a low level of relationship satisfaction; and for men, there are no substantial differences in relationship satisfaction according to the education of the couple. However, for women, average levels of relationship satisfaction are lower among those who completed high school or a post-school qualification, but their husband did not.

Do people tend to choose partners with similar personality traits, or do opposites attract? Personality traits may be defined as stable dispositions which regularly affect a person's thoughts, feelings and behaviour.⁵ In Waves 5 and 9 of the HILDA Survey, a short version of the 'Big Five' personality test, developed by Saucier (1994), was included. Respondents were asked to use a 7-point scale to indicate how accurately adjectives such as 'talkative', 'deep' and 'imaginative' describe themselves. Point 1 on the scale is labelled 'does not describe me at all' and point 7 is 'describes me very well'. Responses to these 36

items were then used to derive measures of the 'Big Five' personality scores—*extroversion*, *agreeableness*, *conscientiousness*, *emotional stability*, and *openness to experience*.⁶

Because the Big Five personality measures are highly correlated with age and it is thought that personality is quite stable from age 30 onwards, the sample of couples in Tables 2.6 and 2.7 is restricted to men and women aged between 30 and 54, who have a partner who is also in this age group.⁷ Average scores for men in this sample were 4.3 out of 7 for extroversion and openness to experience, 5.0 out of 7 for conscientiousness, and 5.1 out of 7 for agreeableness and emotional stability. For women, average scores were 4.2 out of 7 for openness to experience, 4.5 out of 7 for extroversion, 5.2 out of 7 for both emotional stability and conscientiousness and 5.6 out of 7 for agreeableness.

Table 2.6 examines the degree of correlation between the personalities of husbands and wives,

Table 2.5: Mean relationship satisfaction of couples by level of educational attainment, 2009

Education level of husband	Education level of wife	Proportion of all couples (%)	Average relationship satisfaction		
			Husband	Wife	Couple ^a
Year 11 or below	Year 11 or below	12.6	8.5	8.1	8.3
	Year 12	3.2	8.3	7.9	8.1
	Certificate or diploma	5.8	8.5	7.9	8.2
	Undergraduate degree	1.4	8.5	7.9	8.2
	Postgraduate qualification	*0.5	*7.2	*6.3	*6.7
	Total	23.5	8.5	8.0	8.2
Year 12	Year 11 or below	2.5	8.5	8.2	8.4
	Year 12	2.9	8.6	8.3	8.6
	Certificate or diploma	3.0	8.5	8.4	8.5
	Undergraduate degree	1.7	9.1	8.6	8.8
	Postgraduate qualification	0.6	8.6	8.3	8.6
	Total	10.7	8.6	8.4	8.6
Certificate or diploma	Year 11 or below	14.4	8.5	8.2	8.4
	Year 12	6.1	8.4	8.1	8.3
	Certificate or diploma	13.0	8.2	8.0	8.1
	Undergraduate degree	5.4	8.5	8.1	8.3
	Postgraduate qualification	2.7	8.3	8.4	8.3
	Total	41.6	8.4	8.1	8.2
Undergraduate degree ^b	Year 11 or below	1.3	8.6	8.2	8.4
	Year 12	1.8	8.5	8.3	8.4
	Certificate or diploma	2.7	8.2	7.9	8.0
	Undergraduate degree	4.6	8.2	8.1	8.1
	Postgraduate qualification	3.0	8.5	8.2	8.5
	Total	13.4	8.4	8.1	8.3
Postgraduate degree qualification ^c	Year 11 or below	1.1	8.3	8.2	8.3
	Year 12	0.8	8.6	8.5	8.5
	Certificate or diploma	2.0	8.6	8.4	8.5
	Undergraduate degree	3.4	8.1	8.0	8.0
	Postgraduate qualification	3.5	8.3	8.5	8.4
	Total	10.9	8.3	8.3	8.3
Husband and wife have same education level		36.6	8.4	8.1	8.2
Husband has a higher education level than wife		36.1	8.5	8.1	8.3
Wife has a higher education level than husband		27.2	8.5	8.1	8.3
Total		100.0	8.4	8.1	8.3

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding. ^a Average of husband's and wife's relationship satisfaction. ^b This category includes bachelor and honours degrees. ^c This category includes masters degree, doctoral degree, graduate certificate and graduate diploma.

presenting correlation coefficients (which can range between -1 and +1) for the Big Five personality measures. The table shows that there are significant positive correlations between levels of agreeableness, openness and emotional stability within couples. This suggests that individuals tend to choose partners who are similar in terms of these three personality traits. However, there appears to be no significant association between the levels of extroversion and conscientiousness within couples.

Table 2.7 compares the average level of relationship satisfaction for partnered men and women, according to similarities and differences in 'Big Five' personality traits. Almost 20 per cent of couples are in relationships where both partners are highly agreeable and a similar proportion of couples are in relationships where both have a high degree of emotional stability. In less than 1 per cent of these couples, both the husband and the wife have a high degree of extroversion. It is much more common for couples to have both scores less than six on the extroversion scale. The same is true for openness to new experiences, with very few couples both exhibiting high levels

of this personality trait, and 89 per cent of couples both scoring less than 6 out of 7.

At the couple level, average relationship satisfaction ranged from 7.3 out of 10 for couples in which only the wife had a high level of openness to experiences to 8.8 out of 10 for couples in which both the husband and the wife had a high degree of emotional stability. On average, couples' relationship satisfaction appears to be higher among those who have similarly high levels of extroversion, agreeableness, conscientiousness and emotional stability. However, in the case of openness to experience average levels of relationship satisfaction are higher among couples in which both members score less than 6 out of 7. For both men and women, average relationship satisfaction was highest among those in couples where both had a high level of emotional stability. Women in couples where only the husband had a high degree of extroversion also had high levels of relationship satisfaction. On the other hand, relationship satisfaction was quite low for men and women in couples where both the husband and the wife had low levels of emotional stability and couples in which

Table 2.6: Correlation coefficients for the 'Big Five' personality traits—Married and de facto couples aged 30–54, 2009

Husband	Wife				
	Extroversion	Agreeableness	Conscientiousness	Emotional stability	Openness to experience
Extroversion	-0.007⁺	0.030 ⁺	0.075	0.081	-0.017 ⁺
Agreeableness	0.057	0.150	0.100	0.071	0.101
Conscientiousness	0.037 ⁺	0.065	0.012⁺	0.049	0.017 ⁺
Emotional stability	0.043	0.032 ⁺	0.081	0.208	-0.034 ⁺
Openness to experience	0.053	0.123	-0.021 ⁺	-0.077	0.188

Notes: See the Glossary for an explanation of the correlation coefficient. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.

Table 2.7: Mean personality and relationship satisfaction of couples aged 30–54, 2009

Personality trait	Member of couple exhibiting high levels of this trait	Proportion of all couples (%)	Average relationship satisfaction		
			Husband	Wife	Couple
Extroversion	Husband only	5.4	8.3	8.7	8.2
	Wife only	14.3	8.4	8.1	8.5
	Neither	79.4	7.9	7.8	7.8
	Both	*0.9	*8.6	*7.8	*8.2
Agreeableness	Husband only	9.3	8.0	8.0	7.8
	Wife only	38.4	7.9	7.7	7.9
	Neither	33.5	7.8	7.3	7.5
	Both	18.9	8.3	8.5	8.4
Conscientiousness	Husband only	18.3	8.1	7.8	8.0
	Wife only	27.9	8.0	7.8	7.9
	Neither	44.2	7.6	7.5	7.6
	Both	9.7	8.6	8.3	8.4
Emotional stability	Husband only	15.5	7.9	8.1	7.7
	Wife only	17.3	8.1	7.5	8.1
	Neither	48.0	7.4	7.3	7.4
	Both	19.2	8.9	8.7	8.8
Openness to experiences	Husband only	5.1	7.4	7.2	7.7
	Wife only	4.7	7.4	8.0	7.3
	Neither	89.0	8.2	8.0	8.1
	Both	*1.2	*8.4	*6.2	*7.2

Notes: * Estimate not reliable. Individuals who scored 6 or 7 out of 7 are considered to have high levels of that particular trait.

only the husband scored highly on the openness to experience scale. For men, relationship satisfaction was also lower, on average, if only the wife scored highly on the openness to experience scale.

While Table 2.7 provides information about differences in relationship satisfaction according to couples' similarities in each of the five personality traits, it does not provide any information about which particular combinations of these five traits creates the highest, and lowest, levels of relationship satisfaction. At the couple level, average relationship satisfaction is highest among couples in which the wife has a high level of emotional stability and the husband is either highly conscientious or has a high level of emotional stability. Couples in this category have an average level of relationship satisfaction of 8.8 out of 10. On the other hand, couples in which wife scores 6 or higher out of 7 on the openness to experience scale, and the husband scores less than 6 out of 7 on the agreeableness scale have an average level of relationship satisfaction of only 6.4 out of 10.

For men, relationship satisfaction is highest (8.9 out of 10) among those who have high levels of either conscientiousness or emotional stability whose partners scored 6 or higher out of 7 on the emotional stability scale. For these men, average relationship satisfaction was 8.9 out of 10. The combination of personality traits which creates the lowest level of relationship satisfaction for men (6.5 out of 10) is the situation in which the husband does not have a high level of agreeableness and the wife scores 6 or higher on the openness to experiences scale. For women, the situation in which one member of the couple has high levels of emotional stability and the other has high levels of agreeableness produces the highest level of relationship satisfaction (8.8 out of 10), while women who score 6 or 7 on the openness to experiences who are partnered with men who either do not have high levels of agreeableness or high levels of emotional stability have the lowest levels of relationship satisfaction (6.3 out of 10).

Endnotes

- 1 Previous volumes of this report have shown that there has been very little change in these proportions over the nine years from 2001 to 2009.
- 2 This refers to all those whose marital status in 2008 was divorced, not people whose divorce was finalised in 2009.
- 3 As applied in this article, the standard deviation of relationship satisfaction for each sample member is equal to

$$\sqrt{\frac{1}{9} \sum_{i=1}^9 (x_i - \bar{x})^2}, \text{ where } x \text{ is the person's relationship satisfaction in Wave } i \text{ (on a 0 to 10 scale) and } \bar{x} \text{ is the mean value of their relationship satisfaction over the nine waves. The mean absolute deviation is equal to } \frac{1}{9} \sum_{i=1}^9 |x_i - \bar{x}|.$$

- 4 For married couples, the relationship duration is the sum of the amount of time spent living together before marriage and the duration of the marriage.
- 5 Psychologists think of personality traits as relatively stable dispositions which influence a person's behaviour in a wide range of situations. It is thought that personality is quite stable in adulthood, especially from age 30 onwards. There is a semi consensus in psychology that the 'Big Five' personality traits capture most of what is known about adult personality (Headey and Warren, 2008).
- 6 Extroverts are energetic and outgoing and seek gratification in social activities. Adjectives in the extroversion scale include 'talkative', 'lively' and 'quiet' (reversed item). *Agreeableness* is closely related to being cooperative and compassionate rather than suspicious and anxious. Marker adjectives are 'sympathetic', 'cooperative' and 'warm'. *Conscientiousness* is related to being persistent in performing tasks and also to having strong achievement motivation. Adjectives include 'systematic', 'efficient' and 'sloppy' (reversed). People with high levels of emotional stability tend to be calm, and free from persistent negative feelings, stress and anxiety. The trait *openness to experience* relates to being imaginative, curious and adventurous. Adjectives include 'deep', 'imaginative' and 'creative'.
- 7 Extroversion and openness to experience are positively correlated with age, while agreeableness, conscientiousness and emotional stability are negatively correlated with age. Pearson correlations between age and the 'Big Five' for all men: extroversion -0.118 (0.000), agreeableness 0.090 (0.000), conscientiousness 0.206 (0.000), emotional stability 0.173 (0.000) and openness -0.088 (0.000).

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3. Parenting stress and work–family stress

While many parents will tell you that their family is the most important thing in their life, the majority would also agree that being a parent can sometimes be stressful. This stress may be a result of juggling work and family arrangements, finding adequate child care, taking care of ill children or children with disability, parenting adolescents or teenagers, troubles getting along with stepchildren, restrictions on the amount of time available for socialising and leisure activities without the children, or just the daily stresses associated with being a parent.

In each year of the HILDA Survey, individuals with parenting responsibilities for children aged 17 or younger are asked how strongly they agree or disagree with statements related to *parenting stress* like, *'I feel trapped by my responsibilities as a parent'* and *'I find that taking care of my child is much more work than pleasure'*. The response scale runs from 1 (strongly disagree) to 7 (strongly agree). Table 3.1 compares the distribution of responses to the questions about parenting stress in 2009 for lone parents and parents who have a spouse or partner.

It is much more common for women than men to agree with the statements *'Being a parent is harder than I thought it would be'* and *'I often feel tired, worn out or exhausted from meeting the needs of my children'*, and, compared to mothers who had a spouse or partner, it is more common

for lone mothers to agree with these statements. Although the proportion of parents who reported strong agreement with the statements *'I feel trapped by my responsibilities as a parent'* and *'I find that taking care of my child/children is much more work than pleasure'* is relatively small, a higher proportion of lone parents agreed with the statements.

In previous HILDA Statistical Reports, it was found that, based on a measure of parenting stress calculated by taking the average of the responses to the four statements in Table 3.1, average levels of parenting stress were around 4 out of 7, mothers reported higher levels of parenting stress than fathers, and lone parents reported higher levels of parenting stress than parents who were married or in a de facto relationship. Table 3.2 shows the proportion of parents who reported high levels of parenting stress—5 or higher out of 7—between 2001 and 2009.

The proportion of parents reporting high levels of parenting stress has decreased considerably since 2001, from 29.6 per cent in 2001 to 21.2 per cent in 2009. This decrease occurred mainly between 2001 and 2007, with the proportion reporting high levels of stress reasonably similar over the 2007 to 2009 period. In 2009, 30.2 per cent of lone mothers reported high levels of parenting stress, compared

Table 3.1: Parenting stress, 2009 (%)

	Percentage in each response category							Total	Mean response
	Strongly disagree			Strongly agree					
	1	2	3	4	5	6	7		
<i>Being a parent is harder than I thought it would be</i>									
Lone mothers	8.7	12.2	13.8	14.3	17.1	16.9	16.9	100.0	4.4
Partnered mothers	8.8	13.5	10.5	16.3	18.7	19.1	13.2	100.0	4.4
Lone fathers	*8.5	16.1	12.6	24.1	19.5	*9.5	*9.7	100.0	4.0
Partnered fathers	11.2	17.5	14.9	19.2	20.2	12.1	5.0	100.0	3.8
Total	9.8	15.2	12.8	17.7	19.2	15.5	9.9	100.0	4.1
<i>I often feel tired, worn out or exhausted from meeting the needs of my children</i>									
Lone mothers	7.8	11.6	12.3	18.2	20.0	17.2	12.8	100.0	4.3
Partnered mothers	7.8	11.9	10.7	17.5	23.6	16.4	12.1	100.0	4.4
Lone fathers	*10.6	19.4	12.1	23.3	19.2	*12.7	*2.7	100.0	3.7
Partnered fathers	11.4	21.0	15.1	17.7	21.3	10.4	3.2	100.0	3.6
Total	9.4	16.1	12.8	17.9	22.1	13.8	7.9	100.0	4.0
<i>I feel trapped by my responsibilities as a parent</i>									
Lone mothers	30.2	21.7	14.1	10.7	10.1	7.6	5.7	100.0	2.9
Partnered mothers	34.4	26.4	13.8	11.4	7.9	4.1	2.0	100.0	2.5
Lone fathers	23.6	25.7	13.1	18.4	*8.7	*8.5	*2.0	100.0	3.0
Partnered fathers	30.8	29.8	15.5	10.9	7.5	4.3	1.1	100.0	2.5
Total	32.0	27.4	14.5	11.5	8.0	4.7	2.0	100.0	2.6
<i>I find that taking care of my child/children is much more work than pleasure</i>									
Lone mothers	27.8	22.5	15.3	14.4	7.4	8.2	*4.4	100.0	2.9
Partnered mothers	30.3	30.3	14.2	12.9	5.8	4.2	2.3	100.0	2.6
Lone fathers	25.5	28.2	13.7	*12.5	*10.5	*6.4	*3.1	100.0	2.9
Partnered fathers	27.1	32.3	16.8	11.7	6.4	3.7	1.9	100.0	2.6
Total	28.5	30.3	15.4	12.5	6.5	4.5	2.4	100.0	2.6

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

Table 3.2: Proportion of parents with high levels of parenting stress (5 or more out of 7), by sex and marital status (%)

	2001	2003	2005	2007	2008	2009
Lone mothers	41.1	36.7	38.2	28.9	28.9	30.2
Partnered mothers	34.2	26.5	28.4	24.0	25.7	24.7
Lone fathers	29.1	22.8	22.2	14.6	15.9	20.3
Partnered fathers	22.0	16.4	19.9	16.5	17.0	15.7
Total	29.6	23.3	25.7	21.0	22.0	21.2

Table 3.3: Proportion reporting levels of parenting stress of 5 or higher out of 7, by age and gender of children, 2009 (%)

Age and gender of children	Mothers	Fathers
Boy less than 2 years old	27.9	19.7
Boy 2–4	34.8	27.6
Boy 5–8	25.3	18.8
Boy 9–11	21.7	12.0
Boy 12–14	20.6	14.9
Boy 15–17	25.9	14.3
At least one male child under 18	26.1	25.8
Girl less than 2 years old	28.7	16.2
Girl 2–4	26.7	17.3
Girl 5–8	27.7	16.4
Girl 9–11	28.7	21.5
Girl 12–14	29.1	15.9
Girl 15–17	25.9	12.9
At least one female child under 18	26.8	16.8

Note: Parents with more than one child are included more than once.

to 24.7 per cent of partnered mothers, 20.3 per cent of lone fathers and only 15.7 per cent of fathers who were living with a spouse or partner. Each year, women reported substantially higher levels of parenting stress than men, and lone parents reported higher levels of stress than partnered parents.

Does the gender of children affect parenting stress levels?

While most studies examining the effects of children's gender on parental stress find that the gender of children is not a significant factor in the stress levels experienced by parents (McBride et al., 2002; Muslow et al., 2002; Williford et al., 2007), there is some limited evidence to suggest that mothers of young boys experience higher levels of stress than mothers of young girls (Scher and Sharabany, 2005). Other studies have found that the early teenage years are generally the most stressful for parents. For example, in a survey of parents in the United Kingdom, girls were voted the hardest to bring up during adolescence, while boys were more difficult to handle during early childhood (Schlesinger, 2010). In Table 3.3, the proportion of mothers and fathers who reported high levels of parenting stress is broken down according to the age and gender of their resident children.

For both mothers and fathers, the proportion reporting high levels of parenting stress was largest among those who had a male child between the age of 2 and 4—more than one-third of mothers

and almost 30 per cent of fathers with a son in this age group reported high levels of parenting stress. For mothers, having a daughter between the age of 12 and 14 is also stressful, while those with sons in this age group are the least stressed. On the other hand, the proportion of fathers who report high levels of parenting stress is lowest among those with a son aged between 9 and 11. Somewhat surprisingly, only 12.9 per cent of fathers with daughters aged between 15 and 17 report high levels of parenting stress, compared to 22 per cent of fathers with daughters aged between 9 and 11. Of course, there are a multitude of factors aside from the age and gender of children that affect the level of parenting stress. These include the number of children and other adults in the household, the health of the children and other household members, and the work responsibilities of the parents.

Work–family stress

Parents in paid work are also asked how strongly they agree or disagree with statements relating to *work–family stress*. As was the case for parenting stress, the response scale runs from 1 (strongly disagree) to 7 (strongly agree). Table 3.4 compares the average responses to the questions about work–family stress in 2009 for lone parents and parents who have a spouse or partner, according to whether they work full-time or part-time.

Lone parents who are working full-time have the highest levels of work–family stress. On the other hand, partnered parents working part-time have the lowest average work–family stress levels. It is slightly more common for lone parents working full-time to say that they have turned down work opportunities because of family responsibilities. Compared to parents who work part-time, it is more common for parents who are in full-time work to say that they miss out on family activities because of the requirements of their job, and that family time is less enjoyable and more pressured because of their work requirements.

Persistence of family-related stress

In previous HILDA statistical reports, it was found that while some parents manage to reduce their parenting stress, for others the problem persists for a fairly long time. For example, 25 per cent of men and 30 per cent of women who had high levels of parenting stress in 2001 still had high levels in 2006.

Tables 3.5 and 3.6 show the proportion of parents for whom parenting stress and work–family stress persisted for one or two years. For example, of the 30 per cent of parents who reported high levels of parenting stress in 2001, 57.3 per cent also reported high levels of parenting stress in 2002 and for 41.4 per cent of parents who reported high levels of stress in 2001, parenting stress was high in both 2002 and 2003.

High levels of parenting stress appear to persist for some time, particularly for mothers. For example, 68.2 per cent of lone mothers and 62.3 per cent of partnered mothers who reported high levels of parenting stress in 2007 also reported high levels of parenting stress in 2008, and 47.3 per cent of lone mothers and 44.8 per cent of partnered mothers continued to have high levels of parenting stress in 2009. Parenting stress is least persistent

for partnered fathers, with only 30.2 per cent of fathers who reported high levels of parenting stress in 2007 also reporting high levels of parenting stress in both 2008 and 2009. However, although overall parenting stress has decreased since 2001, the proportion of partnered fathers for whom parenting stress persists for one year has increased over time—from 51.3 per cent of partnered fathers who reported high levels of stress in 2001 to 55.6 per cent of fathers who reported high levels of stress in 2007.

Table 3.6 shows that in general, work–family stress is more easily resolved than parenting stress. While just over 50 per cent of parents reporting high levels of work–family stress in one year also report high levels of stress one year later, less than 40 per cent report high levels of work–family stress two years later. For some, the reduction in

Table 3.4: Work–family stress, 2009 (means)

	<i>Because of my family responsibilities, I have to turn down work activities or opportunities that I would prefer to take on</i>	<i>Because of my family responsibilities, the time I spend working is less enjoyable and more pressured</i>	<i>Because of the requirements of my job, I miss out on home or family activities that I would prefer to participate in</i>	<i>Because of the requirements of my job, my family time is less enjoyable and more pressured</i>	<i>Overall work–family stress</i>
Employed full-time					
Lone mothers	3.8	3.5	4.4	3.8	4.0
Partnered mothers	3.1	3.3	4.0	3.4	3.5
Lone fathers	3.9	3.2	3.8	3.4	3.7
Partnered fathers	3.0	3.0	4.2	3.2	3.5
Employed part-time					
Lone mothers	3.5	3.2	3.6	3.2	3.5
Partnered mothers	3.3	2.9	3.2	2.7	3.1
Lone fathers	*3.1	*2.7	*3.6	*3.0	*3.3
Partnered fathers	3.4	2.8	3.4	2.7	3.2
Total	3.2	3.1	3.9	3.1	3.4

Note: * Estimate not reliable.

Table 3.5: Persistence of high levels of parenting stress (%)

	2001		2003		2005		2007	
	1 year	2 years						
Lone mothers	61.1	48.5	61.3	51.9	67.0	44.2	68.2	47.3
Partnered mothers	60.1	44.3	64.3	45.6	63.6	43.0	62.3	44.8
Lone fathers	*52.3	*30.1	*41.5	*32.7	*66.2	*33.5	*61.8	*47.1
Partnered fathers	51.3	33.5	53.1	35.7	48.9	32.0	55.6	30.2
Total	57.3	41.4	59.7	43.1	59.5	39.6	61.0	40.5

Note: * Estimate not reliable.

Table 3.6: Persistence of high levels of work–family stress (%)

	2001		2003		2005		2007	
	1 year	2 years						
Lone mothers	62.8	39.5	56.1	*34.5	60.7	*51.6	54.5	44.2
Partnered mothers	58.4	39.1	57.6	32.9	54.5	44.2	52.2	36.9
Lone fathers	*50.3	*19.6	*41.0	*21.2	*33.2	*19.5	36.1	*19.1
Partnered fathers	47.9	34.4	48.4	31.7	50.3	33.0	53.8	36.1
Total	52.8	35.8	52.1	32.0	52.0	37.5	52.8	36.6

Note: * Estimate not reliable.

work–family stress may have been a result of a reduction in working hours or a change to a less stressful job. For others, work–family stress may have lessened as their children became older and more capable of taking care of themselves.

As was the case with parenting stress, work–family stress is more persistent for mothers than for fathers. For mothers, the proportion for whom work–family stress persisted for at least one year has decreased over time, from 62.8 per cent of lone mothers and 58.4 per cent of partnered mothers who reported high levels of work–family stress in 2001 to 54.5 per cent lone mothers and 52.2 per cent of partnered mothers who reported high levels of work–family stress in 2007. The proportion of partnered fathers for whom high levels of work–family stress persisted for at least one year also increased slightly, from 47.9 per cent of those who reported high levels of stress in 2001 to 53.8 per cent of those who had high levels of work–family stress in 2007.

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4. Child care: Issues and persistence of problems

Issues related to child care have become more important over the last two 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 both accessible 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 (CCR), which allows parents who meet the work or study criteria to claim back a proportion of their out-of-pocket child care expenses each quarter.¹

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 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 (step) brothers or sisters, care by grandparents, care by other relatives, and care by other people such as friends, neighbours, nannies, or babysitters (ABS, 2010).

Table 4.1 shows the proportion of households with children under the age of 15, the proportion of households who had used either formal or informal child care in the 12 months prior to their interview, as well as the proportion that actually used work-related or non-work-related child care.² Work-related child care is more common than non-work-related child care. In 2009, 44 per cent of couple households and 41 per cent of lone-parent households with children under 15 regularly used work-related child care, and 23 per cent of households with children under 15 regularly used child care while the parents did non-work activities (including study).

Each year, approximately 28 per cent of households had at least one child under the age of 15 living in the household. In those households with children under 15, the proportion who used some type of child care while the parents were at work increased from 41 per cent of households in 2002 to 44 per cent in 2007, before dropping back to 41 per cent in 2008 and increasing again to 44 per cent in 2009. In contrast, the proportion of households with children under the age of 15 who used child care while the parents were not at work declined slightly, from 26 per cent of households in 2002 to 22 per cent of households in 2008, but increased to 23 per cent of households in 2009. It is interesting to note that during the seven-year period from 2002 to 2009, the proportion of households using work-related child care increased by 3 percentage points, while the proportion of households using non-work-related

Table 4.1: Child care use (%)

	2002	2003	2005	2007	2008	2009
Proportion of households with children under 15	28.9	28.6	28.3	27.8	27.7	27.4
Of those with children under 15...						
<i>Proportion who used work-related child care in the past 12 months</i>						
Couple households	41.2	40.8	42.5	44.9	42.2	44.4
Lone-parent households	39.3	41.1	36.5	41.0	37.2	40.8
Total	40.8	40.9	41.2	44.2	41.3	43.7
<i>Proportion who used non-work-related child care in the past 12 months</i>						
Couple households	25.4	27.2	24.5	22.9	21.8	22.9
Lone-parent households	28.6	26.2	25.1	23.2	20.2	23.4
Total	26.1	27.0	24.6	22.9	21.5	23.0

Note: In each year, over 80 per cent of lone parents are female.

child care decreased by the same amount. This may reflect the long-term trend increase in female labour force participation, with the participation rate rising from approximately 55 per cent in 2002 to 59 per cent in 2009 (ABS, *Labour Force, Australia*, Time Series Spreadsheets, Catalogue No. 6202.0).

Child care in 2009

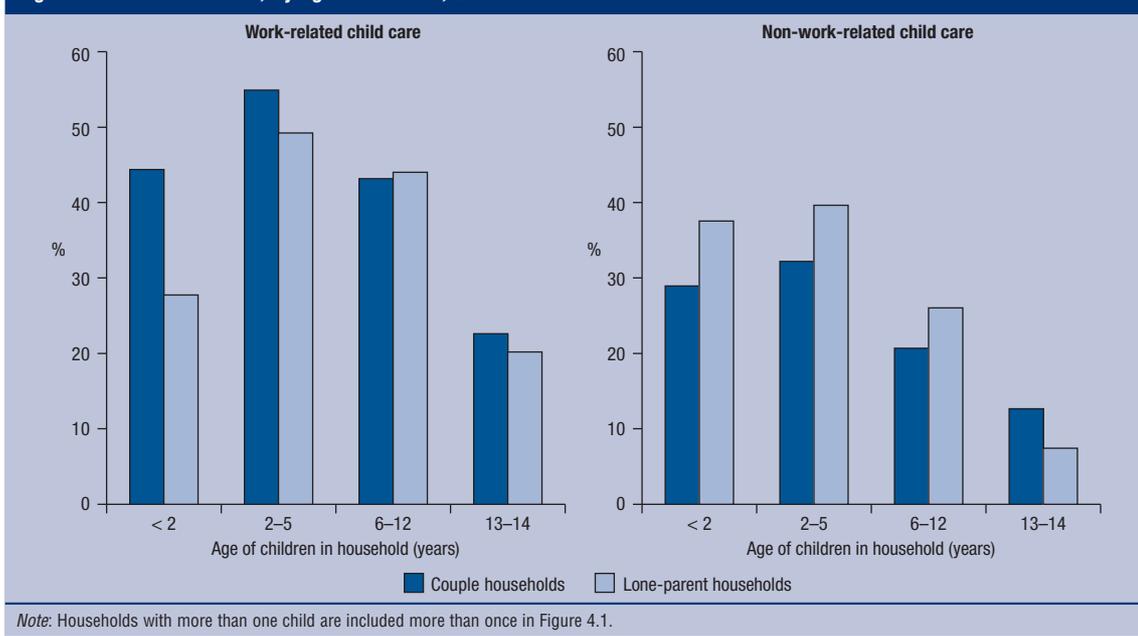
In previous volumes of the HILDA Statistical Report, it was found that use of child care is most common in households with children aged between 2 and 5 years. Figure 4.1 shows the proportion of households with children under the age of 15 who used child care in 2009, broken down by type of household (couple household or lone-parent household) and the age of the children in the household.

In general, work-related child care is more commonly used than non-work-related child care. The use of both work-related and non-work-related child care is most common in households with at

least one child between the ages of 2 and 5. The proportion of couple households in which work-related care is used for children under the age of 2 is substantially higher than that of lone-parent households with children in this age group. However, among households with children aged between 6 and 12, the proportion of couple and lone-parent households using work-related child care is quite similar. In households with children under the age of 13, non-work-related child care is commonly used in lone-parent households; but in households with children aged between 13 and 14, a larger proportion of couple households use non-work-related care.

Changes in the types of child care used, 2001 to 2009

Previous volumes of this report have shown that the type of child care used changes with the age of the child, and also with the reason for using child care. In terms of child care used while the parents are at work, school-age children are much more

Figure 4.1: Child care use, by age of children, 2009

likely to be in informal care, that is, care provided by grandparents, other relatives, friends or neighbours or a paid sitter or nanny; while children who are not yet old enough to attend school are more commonly cared for in formal child care including private or community long day care centres and family day care. However, when child care is used so that parents can undertake activities other than paid work, informal child care is the most common type of care for both school-age children and children who are not yet at school.³ Table 4.2 compares the types of child care used for children under the age of 15 in 2002, 2005 and 2009, according to the age of the child and the reason for using child care.

In households where child care was used for school-age children while the parents were at work, the proportion that only used *formal* child care increased from 24 per cent in 2002 to 27 per cent in 2009, while the proportion of households using only *informal* care decreased from 64 per cent in 2002 to 58 per cent in 2009. The proportion of households using a combination of formal and informal care for their school-age children while the parents were at work increased from 12 per cent in 2002 to 15 per cent in 2009. For lone-parent households, there was a considerable decrease in the proportion using only informal child care, from 64 per cent of lone-parent households in 2002 to 52 per cent of lone-parent households in 2009.

Compared to school-age children, child care arrangements for children who are not yet old

enough to attend school are quite different. It is much more common for children who are not of school age to be in formal child care while their parents are at work. However, the proportion of households using only formal child care declined from 46 per cent in 2002 to 41 per cent in 2009, and the proportion who use a combination of formal and informal child care increased from 25 per cent in 2002 to 34 per cent in 2009.

Looking now at the types of child care used so that parents can undertake non-work-related activities, the proportion of households using only formal child care for children who are not yet at school has decreased from 37 per cent of households in 2002 to 32 per cent in 2009, while the proportion using only informal child care remained quite stable at around 90 per cent. In households where non-work-related child care is used for school-age children, the proportion using only formal care also decreased slightly between 2002 and 2009, while the proportion using only informal care increased from 51 per cent in 2002 to 58 per cent in 2009.

Difficulties with child care

Each year, parents in households that had used or considered using child care are asked about the difficulties they have encountered with specific aspects of child care, such as the cost of child care, finding good quality child care, and finding child care that their children are happy with. Parents are

Table 4.2: Types of child care in households where child care is used on a regular basis for children aged under 15 years, 2002, 2005 and 2009 (%)

	Couple households			Lone-parent households			All households		
	2002	2005	2009	2002	2005	2009	2002	2005	2009
School-age children—work-related care									
Formal care only	24.4	25.8	26.0	23.1	23.9	25.5	23.7	24.5	26.8
Informal care only	63.4	59.9	60.9	63.9	62.8	51.9	63.9	62.0	57.8
Combination of formal and informal care	12.1	14.3	13.2	*13.0	*13.3	*22.6	12.4	13.5	15.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Children not yet at school—work-related care									
Formal care only	46.5	41.8	40.7	48.1	52.5	45.7	45.9	43.2	40.6
Informal care only	29.5	25.8	25.5	20.8	*28.6	*15.3	29.2	26.3	25.3
Combination of formal and informal care	24.0	32.4	33.8	31.1	*18.9	39.0	24.9	30.6	34.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
School-age children—non-work-related care									
Formal care only	32.7	35.2	29.3	48.5	43.4	44.8	36.8	36.9	32.4
Informal care only	57.5	55.7	62.8	33.7	45.9	*36.9	51.4	54.0	58.0
Combination of formal and informal care	9.8	9.0	*7.9	*17.8	*10.7	*18.3	11.8	9.1	9.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Children not yet at school—non-work-related care									
Formal care only	7.8	*3.8	*7.3	*20.6	*16.9	*8.9	10.8	*7.3	7.7
Informal care only	90.9	94.1	90.3	79.4	80.8	83.3	88.2	90.6	88.9
Combination of formal and informal care	*1.3	*2.1	*2.3	*0.0	*2.4	*7.7	*1.0	*2.1	*3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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

asked to rate the level of difficulty they have with these aspects of child care on a scale from 0 to 10, with 0 being 'no problem at all' and 10 being 'very much a problem'. In Table 4.3, the proportion of households in which difficulties with the availability, cost or quality of child care are rated as 5 or higher out of 10 are compared across years.⁴

In couple households, the proportion reporting difficulties with the availability of child care increased from 59.5 per cent in 2001 to 61.5 per cent in 2005, before declining again to 56.1 per cent in 2009. Compared to couple households, lone-parent households experienced more difficulties with the availability of child care, with the proportion of lone-parent households experiencing difficulties with child care availability increasing from 69.8 per cent in 2001 to 78.9 per cent in 2005 and declining to 61.6 per cent in 2009. Difficulties with the quality of child care were also more common in lone-parent households than in couple households. However, in some years, the proportion of couple households reporting difficulties with the cost of child care was higher than the proportion of lone-parent households reporting difficulty with this aspect of child care, possibly because dual-income

households are less likely than lone-parent households to be eligible for government rebates and child care benefits, while lone-parent households may be more likely to use child care that is less expensive (i.e. friends and relatives).

How persistent are problems with child care?

In previous HILDA Statistical Reports, it was found that difficulties with child care usually did not persist for more than one year. The only problem that was likely to persist for several years was finding care for a sick child. Table 4.4 shows the proportion of households for whom difficulties with child care persisted for one or two years. For example, of the 59.5 per cent of couple households who reported difficulties with the availability of child care in 2001, 44.8 per cent also reported difficulties with the availability of child care in 2002 and for 27.7 per cent of these households, difficulties with availability persisted for two years.

In couple households, difficulties with all three aspects of child care appear to have become more persistent over time. For example, only 30.6 per cent of couple households who reported difficulties

Table 4.3: Households experiencing difficulties (5 or more out of 10) with child care (%)

	2001	2003	2005	2007	2008	2009
Couple households						
Availability	59.5	58.7	61.5	56.0	59.8	56.1
Quality	38.3	37.3	37.3	35.8	37.6	33.7
Cost	41.5	43.7	47.7	47.3	48.4	46.0
Any problems	67.3	68.8	68.9	67.9	71.0	66.0
Lone-parent households						
Availability	69.8	70.4	78.9	65.6	72.6	61.6
Quality	48.4	41.9	49.0	35.4	46.0	37.2
Cost	40.4	39.2	48.4	37.5	49.9	42.1
Any problems	76.4	75.1	82.3	69.9	79.0	68.5
All households						
Availability	61.8	61.0	64.9	57.8	61.6	57.0
Quality	40.7	38.2	40.0	35.7	38.7	34.2
Cost	40.9	42.3	47.9	45.8	48.6	45.1
Any problems	69.2	69.7	71.7	68.3	72.0	66.6

Table 4.4: Persistence of difficulties with child care (%)

	2001		2003		2005		2007	
	1 year	2 years						
Couple households								
Availability	44.8	27.7	59.2	40.1	58.1	37.7	53.0	33.2
Quality	30.6	14.7	45.2	22.0	43.8	27.8	52.5	21.7
Cost	38.7	24.5	55.5	36.0	56.5	37.6	54.3	35.0
Lone-parent households								
Availability	47.1	27.7	47.7	34.9	63.5	40.6	61.3	35.3
Quality	32.4	*14.6	41.3	*14.8	45.5	27.7	51.8	*23.0
Cost	29.2	12.9	36.1	*11.5	50.8	*25.3	56.2	*28.2
All households								
Availability	45.3	27.7	56.4	39.1	59.3	38.3	54.8	33.7
Quality	31.1	14.7	44.3	20.3	44.1	27.7	52.3	22.0
Cost	36.7	22.0	51.7	31.0	55.4	35.3	54.6	34.0

Note: * Estimate not reliable.

with the quality of child care in 2001 also reported difficulties in 2002. However, 52.5 per cent of the couple households who reported difficulties with child care quality in 2007 also reported quality problems in 2008 and 21.7 per cent still had difficulties with the quality of child care in 2009.

Difficulties with all three aspects of child care also appear to have become more persistent in lone-parent households, with 61.3 per cent of those who reported availability difficulties in 2007 also having problems with child care availability in 2008 and 35.3 per cent still having difficulties in 2009. More than half of the lone-parent households who reported problems with the quality of child care in 2007 still had difficulties in 2008. Among lone-parent households who reported difficulties with the *cost* of child care in 2007, 56.2 per cent also reported difficulties with child care costs in 2009, and for 36 per cent of these households the problem persisted until 2008. Similarly, of those lone-parent households where the cost of child care was a problem in 2006, 47 per cent also reported difficulties with the cost of child care in 2007 and almost a quarter also reported difficulties in 2008.

Endnotes

- 1 When the CCR was introduced in July 2004, parents were able to claim back 30 per cent of their child care expenses. On 1 July 2008, the CCR was increased to 50 per cent of out-of-pocket expenses for approved

child care costs, capped at \$7500 per child per year for eligible families.

- 2 In 2001, the format of the child care questions was different to that from 2002 onwards. Respondents are asked about child care used in a 'usual week'.
- 3 Informal child care also includes the child coming to the parent's workplace and the child's non-resident parent. Formal child care includes kindergarten or pre-school and formal outside of school hours care (for school-age children). Note that in 2002, there were some differences in the types of child care included in the list of possible options: grandparents were included with other relatives and out of school hours care was separated into two categories—out of school hours care at the child's school and out of school hours care somewhere else. Also note that in previous versions of this report, paid sitters and nannies were included in the formal child care category. However, in order to be consistent with the Australian Bureau of Statistics definitions of child care types, these types of care are now included in the informal care category.
- 4 The category of 'quality' includes finding good quality child care, finding the right person to take care of your child, and finding care your child(ren) are happy with. With the exception of the cost of child care, all other difficulties listed in Table 4.3 are grouped into the 'availability' category.

Reference

Australian Bureau of Statistics (ABS) (2010) *Australian Social Trends, June 2010*, Catalogue No. 4102.0, ABS, Canberra.

5. Life events in the past 12 months

Specific events in life can have a substantial impact on an individual's wellbeing. For example, positive events such as getting married or getting promoted at work are likely to cause an increase in life satisfaction, at least for a reasonable amount of time. On the other hand, negative events, such as being the victim of physical violence are very likely to have a negative effect on both physical and mental wellbeing.

A series of questions about life events was introduced into the HILDA Survey in 2002. Respondents were asked whether they had experienced events such as getting married, the birth of a child, the death of a family member or close friend, or being the victim of physical violence or property crime in the 12 months prior to their interview. Table 5.1 gives an overview of the occurrence of particular life events in each year from 2002 to 2009.

The most common life event, experienced each year by between 15 per cent and 17 per cent of Australians over the age of 15, is serious injury or illness of a close relative or family member, while around 9 per cent had a serious injury or illness themselves. Moving house is the next most

common life event, followed by changing jobs. Other relatively common events, experienced by at least 5 per cent of people each year, include promotion at work, death of a close relative or family member (not including their spouse or children) and death of a close friend. The proportion of individuals experiencing some of the life events listed in Table 5.1 has decreased since 2002. For example, in 2002, 17.2 per cent of individuals reported experiencing the serious injury of a close relative, compared to 14.9 per cent in 2009; 6.9 per cent had been the victim of property crime in 2002, but only 3.9 per cent reported this experience in 2009. Moving house was also slightly less common in 2009 than in 2002, possibly due to the downturn in economic conditions resulting from the Global Financial Crisis.

Of course, some life events are more common among men and women in particular age groups, for example, getting married, separating from a spouse or partner, having a baby, changing jobs and being promoted at work are more common among men and women in their twenties and thirties. Previous versions of this report have shown that males are much more likely than females to have been detained in a jail, people under the age

of 25 were more likely to have been the victim of physical violence, people living in inner regional areas are more likely to have been the victim of physical violence, and people living in outer regional or remote areas were less likely to change jobs, be dismissed or be promoted.

In 2009, an additional item was added to the question about life events, asking respondents whether a weather-related disaster (e.g. flood, bushfire, cyclone) had damaged or destroyed their home. While only one per cent of individuals reported experiencing this event, home damage as a result of a weather-related disaster was more common among those living in Victoria and Queensland. In addition to the Black Saturday bushfires that occurred in February of 2009 in Victoria, flooding occurred on several occasions throughout the year in both northern Queensland and regional areas of Victoria.

Are certain life events more common in particular areas? For example, is the proportion of men and women who have experienced physical violence or property crime higher among those living in areas of high socio-economic disadvantage? The proportion of men and women who experienced specific life events in 2009, according the quintile of relative socio-economic advantage and disadvantage of the area they live in, is shown in Figures 5.1 and 5.2 respectively.¹

For men and women, the proportion who had either been married in the last 12 months, or separated from a spouse or partner was higher among

those living in areas of low socio-economic advantage. However, this is likely to be a result of the fact that income generally increases with age, and those with higher earnings are more likely to live in more affluent neighbourhoods.

Men and women living in areas of lower socio-economic advantage were less likely to have been the victims of property crime in the previous year; and it was more common for men in the top two quintiles of socio-economic advantage to have been the victim of physical violence. However, this is not the case for women—with less than one per cent of women in the highest quintile of socio-economic advantage having been the victim of physical violence in the past year.

As one might expect, having been detained in jail and having had a family member detained in jail was much more common among men and women living in the most disadvantaged areas. On the other hand, being promoted at work was most common among men and women in the highest quintile of socio-economic advantage.

Life events in the past five years

While the proportion of individuals who experience any particular life event in any one year is relatively small, the proportion who experience these events at least once in a five-year period is substantially larger. Table 5.2 shows the proportion of males and females who experienced these life events at least once during the five-year period between 2005 and 2009.²

Table 5.1: Life events, 2002 to 2009 (%)

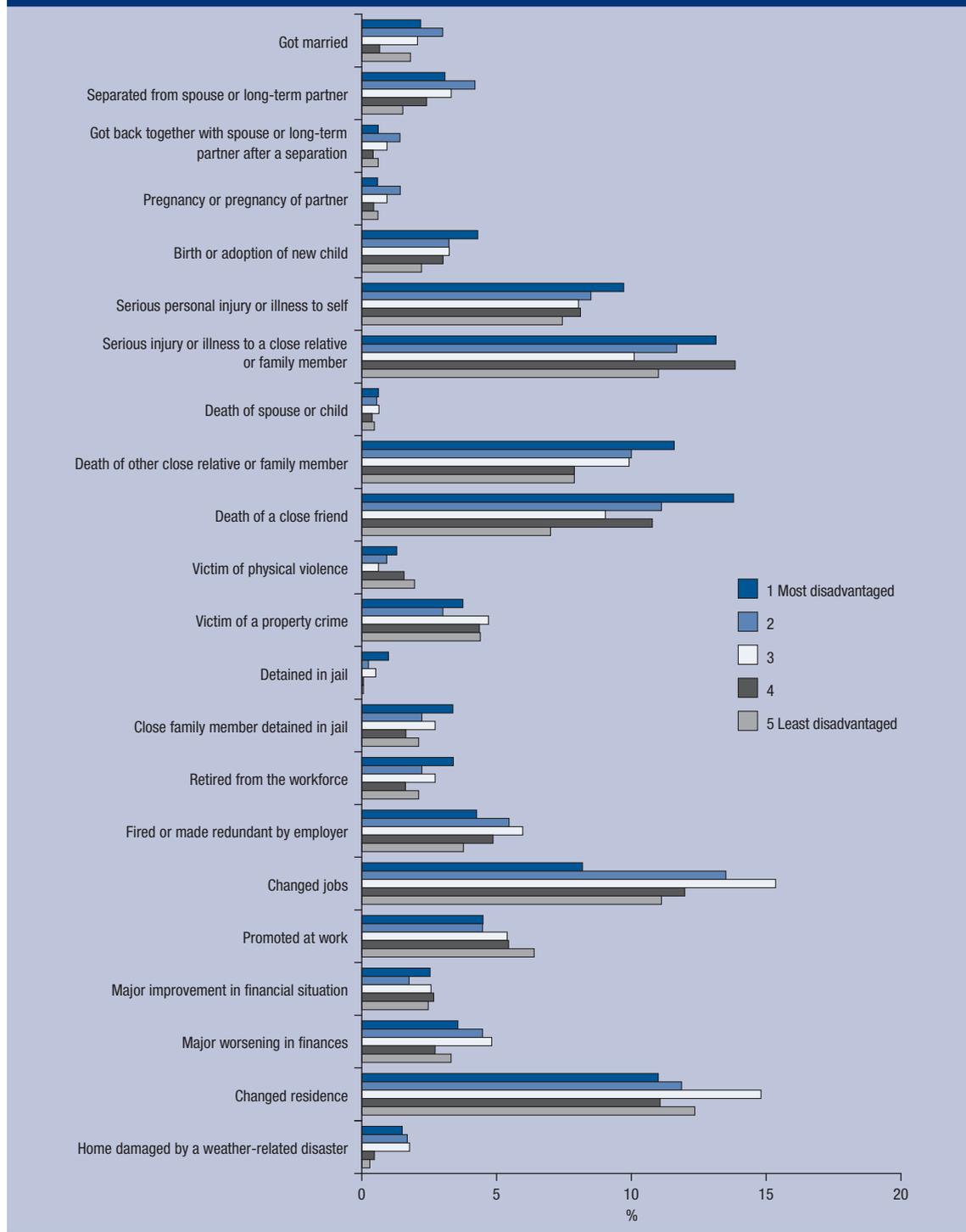
	2002	2004	2006	2008	2009
Got married	2.5	2.8	2.5	2.6	2.0
Separated from spouse or long-term partner	4.4	3.9	3.5	3.4	3.1
Got back together with spouse or long-term partner after a separation	1.4	0.9	1.0	0.7	0.9
Pregnancy or pregnancy of partner	5.2	4.3	4.7	4.5	5.3
Birth or adoption of new child	3.3	3.0	3.3	3.1	3.1
Serious personal injury or illness to self	8.4	8.5	8.8	7.9	8.6
Serious injury or illness to a close relative or family member	17.2	16.3	16.1	15.3	14.9
Death of spouse or child	1.1	1.1	0.7	0.8	0.6
Death of other close relative or family member	11.5	11.5	10.4	11.0	10.7
Death of a close friend	11.2	11.2	11.0	10.7	10.6
Victim of physical violence	2.0	1.5	1.5	1.6	1.3
Victim of a property crime	6.9	5.3	4.9	3.8	3.9
Detained in jail	0.2	0.2	0.2	0.2	0.3
Close family member detained in jail	1.0	1.3	1.4	1.2	1.4
Retired from the workforce	2.8	2.4	2.5	2.8	2.3
Fired or made redundant by employer	3.5	2.6	2.7	2.6	4.0
Changed jobs	12.8	12.9	13.5	13.5	11.8
Promoted at work	6.1	6.3	6.2	7.0	4.9
Major improvement in financial situation (e.g. won lottery, received an inheritance)	3.4	3.1	2.8	2.6	2.5
Major worsening in finances (e.g. went bankrupt)	3.3	2.5	2.6	3.5	3.7
Changed residence	15.2	14.1	13.6	13.1	12.9
A weather-related disaster (e.g. flood, bushfire, cyclone) damaged or destroyed your home ^a	–	–	–	–	1.2

Note: ^a This item was included for the first time in 2009.

As was the case with life events over a one-year period, the most commonly occurring life event over this five-year period was the serious injury or illness of a close relative or family member, with almost 50 per cent of individuals reporting having experienced this event at least once in the last five years. A relatively high proportion (40 per cent) of men and women experienced the death of a close

relative or family member during this period, and 34 per cent experienced the death of a close friend. Changing jobs and moving house were also common events, with 37 per cent of men and 36 per cent of women changing residence at least once between 2005 and 2009, and 34 per cent of men and 32 per cent of women changing jobs during this period.

Figure 5.1: Percentage of males experiencing each major life event, by quintile of relative socio-economic advantage and disadvantage, 2009



Concluding points

The most commonly occurring major life events in any one-year period are changing jobs, moving house, the serious injury or illness of a close relative or family member, the death of a close relative or family member and the death of a close friend. Over a five-year period, more than 30 per cent of individuals over the age of 15 experienced these events at least once.

Endnotes

- 1 The SEIFA Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD) is a general socio-economic index that was created using measures of relative disadvantage as well as measures of relative advantage. There are 21 measures included, such as low or high income, internet connection, occupation and education. A low score indicates relatively greater disadvantage and a lack of advantage in general. For example, an area could have a low score if there are, among other things, many

Figure 5.2: Percentage of females experiencing each major life event, by quintile of relative socio-economic advantage and disadvantage, 2009

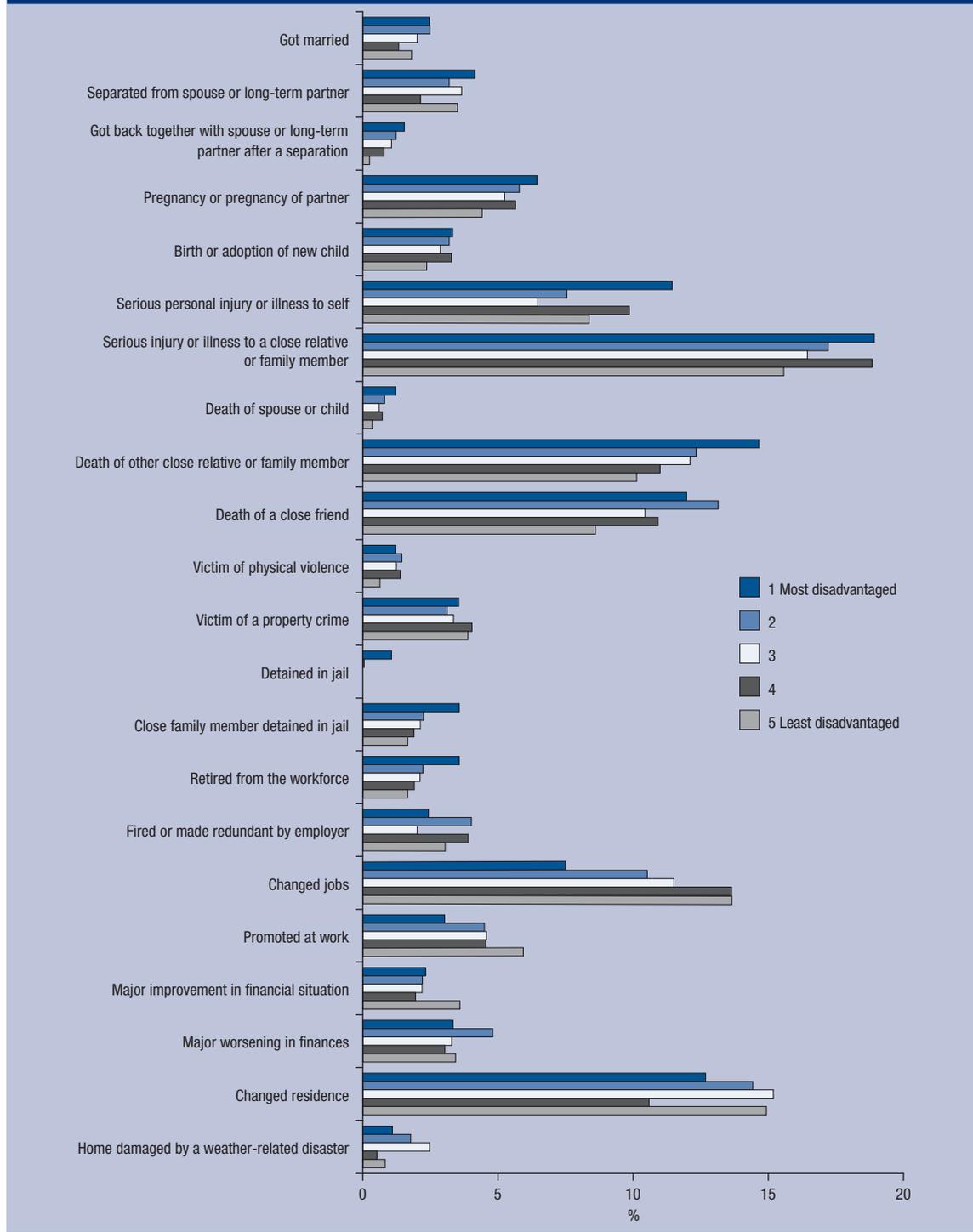


Table 5.2: Life events over the five-year period from 2005 to 2009 (%)

	<i>Males</i>	<i>Females</i>	<i>Total</i>
Got married	9.0	8.5	8.8
Separated from spouse or long-term partner	10.1	9.3	9.7
Got back together with spouse or long-term partner after a separation	2.5	2.6	2.6
Pregnancy or pregnancy of partner	12.6	12.5	12.5
Birth or adoption of new child	11.2	11.1	11.1
Serious personal injury or illness to self	27.6	24.4	25.9
Serious injury or illness to a close relative or family member	44.7	50.9	47.9
Death of spouse or child	2.3	3.7	3.1
Death of other close relative or family member	38.6	41.5	40.1
Death of a close friend	33.6	34.6	34.1
Victim of physical violence	4.3	3.8	3.1
Victim of a property crime	15.4	13.2	14.3
Detained in jail	0.9	*0.2	0.6
Close family member detained in jail	3.3	4.3	3.8
Retired from the workforce	9.4	9.0	9.2
Fired or made redundant by employer	11.9	7.9	9.8
Changed jobs	34.1	31.7	32.9
Promoted at work	19.9	16.9	18.3
Major improvement in financial situation (e.g. won lottery, received an inheritance)	12.0	12.1	12.1
Major worsening in finances (e.g. went bankrupt)	10.7	9.1	9.9
Changed residence	36.7	36.1	36.3

Note: * Estimate not reliable.

households with low incomes, or many people in unskilled occupations; and few households with high incomes, or few people in skilled occupations. A high score indicates a relative lack of disadvantage and greater advantage in general. For example, an area may have a high score if there are, among other things, many households with high incomes, or many people in skilled occupations; and few households with low incomes, or few people in unskilled occupations (ABS, 2006).

2 The sample is restricted to individuals who responded to the questions about life events in each year between 2005 and 2009.

Reference

Australian Bureau of Statistics (2006) *Information Paper: An Introduction to Socio-Economic Indexes for Areas (SEIFA), 2006*, Catalogue No. 2039.0, ABS, Canberra.

Incomes and Economic Wellbeing

Study of the distribution of incomes, and how incomes of individuals change 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 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 very 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 and 81 per cent in 2009–10 (ABS, 2006, 2007, 2009, 2011). 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 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). Note that average household incomes obtained by the HILDA Survey have tended to be higher than obtained by the ABS surveys, but the gap is less than five per cent in most years for which comparisons are available.

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 were modified in Wave 6 and have since been administered in every wave. In total, 29 components of household expenditure are obtained each year, which Wilkins and Sun (2010) estimate account for 75–80 per cent of total household expenditure. 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 households' '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 \$2,000 at short notice and the perceived adequacy of household income has been collected in the self-completion questionnaire in every wave. Furthermore, respondent assessments of their satisfaction with their financial situation have been obtained in the personal interview in every wave to date.

As in previous volumes of the Statistical Report, in this section we present analyses of economic wellbeing drawing on the annually-collected financial data as well as the information on experience of financial stress. In particular, Chapters 6–8 focus on income, respectively examining the overall income distribution, income poverty and welfare reliance. Chapter 9 considers the incidence, persistence and precursors of experience of financial stress. Chapter 10 presents an analysis of the household expenditure data, with a particular focus in this volume on how the composition of expenditure differs across household types, and how this has changed between 2006 and 2009.

References

Australian Bureau of Statistics (2006) *Household Expenditure Survey and Survey of Income and Housing: User Guide, Australia, 2003–04*, Catalogue No. 6503.0, ABS, Canberra.

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Australian Bureau of Statistics (2011) *Information Paper: Survey of Income and Housing, User Guide, Australia, 2009–10*, Catalogue No. 6553.0, ABS, Canberra.

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Wilkins, R. and Sun, C. (2010) ‘Assessing the Quality of the Expenditure Data Collected in the Self-Completion Questionnaire’, HILDA Discussion Paper No. 1/10, Melbourne Institute of Applied Economic and Social Research, University of Melbourne.

6. Income levels and income mobility

Income levels and living standards

Mean and median household annual incomes in each year of the HILDA Survey are presented in Table 6.1, adjusted for inflation using the Consumer Price Index expressed at December quarter 2009 prices. The estimates are for ‘disposable’ income, which is total income from all sources, including government benefits, after deduction of income taxes.¹ 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.

Average household incomes have grown quite strongly for the in-scope population since 2002–03, with mean household annual disposable income expressed at December 2009 prices increasing by approximately \$17,200 to 2008–09, or \$2,866 per year, and the median increasing by

\$16,100. In the absence of substantial changes to household composition over the period—and the last two columns of Table 6.1 would indicate there has been little change—this translates to a significant increase in average material living standards. Significantly, average household income grew substantially between 2007–08 and 2008–09, despite the economic downturn that began in the later months of 2008.

The third column of Table 6.1 shows the estimated number of households in Australia in Wave 9 is 8.35 million. Multiplying this by the mean household income implies total household disposable income of approximately \$623 billion in the 2008–09 financial year. Australian Bureau of Statistics national accounts data for this period put household disposable income at approximately \$760 billion at December 2009 prices. The difference between the two data sources is to some extent accounted for by differences in the in-scope population. The HILDA figures relate to 21.5 million persons, whereas the total Australian population was 22.1 million at the time Wave 9 was conducted.²

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 Australian Bureau of Statistics Consumer Price Index, so that income in all waves is expressed at December 2009 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 (2009) provides details on the methods used to calculate disposable income.

Table 6.1: Household annual disposable incomes (December 2009 prices)

	<i>Mean (\$)</i>	<i>Median (\$)</i>	<i>Number of households</i>	<i>Number of persons</i>
2001	57,717	49,968	7,425,697	18,986,818
2002	57,679	50,021	7,535,509	19,218,072
2003	57,432	49,566	7,630,313	19,454,807
2004	59,690	51,314	7,696,203	19,684,566
2005	62,384	54,318	7,792,815	19,955,825
2006	65,392	56,667	7,929,610	20,265,863
2007	69,091	58,747	8,044,503	20,634,376
2008	72,384	61,880	8,195,377	21,069,248
2009	74,626	65,694	8,354,183	21,513,705

Table 6.2: Distribution of individuals' equivalised household disposable income (December 2009 prices)

	<i>Mean (\$)</i>	<i>Median (\$)</i>	<i>p90/p50</i>	<i>p50/p10</i>	<i>Gini coefficient</i>
2001	34,380	30,383	1.94	2.15	0.306
2002	34,339	30,176	1.94	2.08	0.308
2003	34,239	30,618	1.90	2.14	0.303
2004	35,521	31,957	1.85	2.15	0.300
2005	37,051	33,166	1.88	2.16	0.301
2006	38,846	34,448	1.91	2.10	0.300
2007	41,036	36,125	1.92	2.17	0.312
2008	42,825	37,590	1.93	2.23	0.312
2009	44,250	39,934	1.85	2.21	0.299

Table 6.2 considers the distribution of household income, taking into account potential changes to household composition by examining 'equivalised' income per person. Equivalised income is obtained by dividing household disposable income by the 'modified Organisation for Economic Co-operation and Development (OECD)' equivalence scale, which is equal to 1 for the first household member, plus 0.5 for each additional household member over 15 years of age, plus 0.3 for each child under 15. For example, income is divided by 1.5 for a couple with no children, by 1.8 for a couple with one child under 15 and by 2.1 for a couple with two children under 15.

As well as presenting estimates for equivalised income, Table 6.2 also differs from Table 6.1 by treating the individual as the unit of observation. Every person is assigned an income—the equivalised 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 the poor tend to live in larger households, the proportion of *households* that are poor will be lower than the proportion of *people* that are poor. It is the latter quantity that is relevant, since our interest is in the well-being of people rather than households.

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 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. 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.

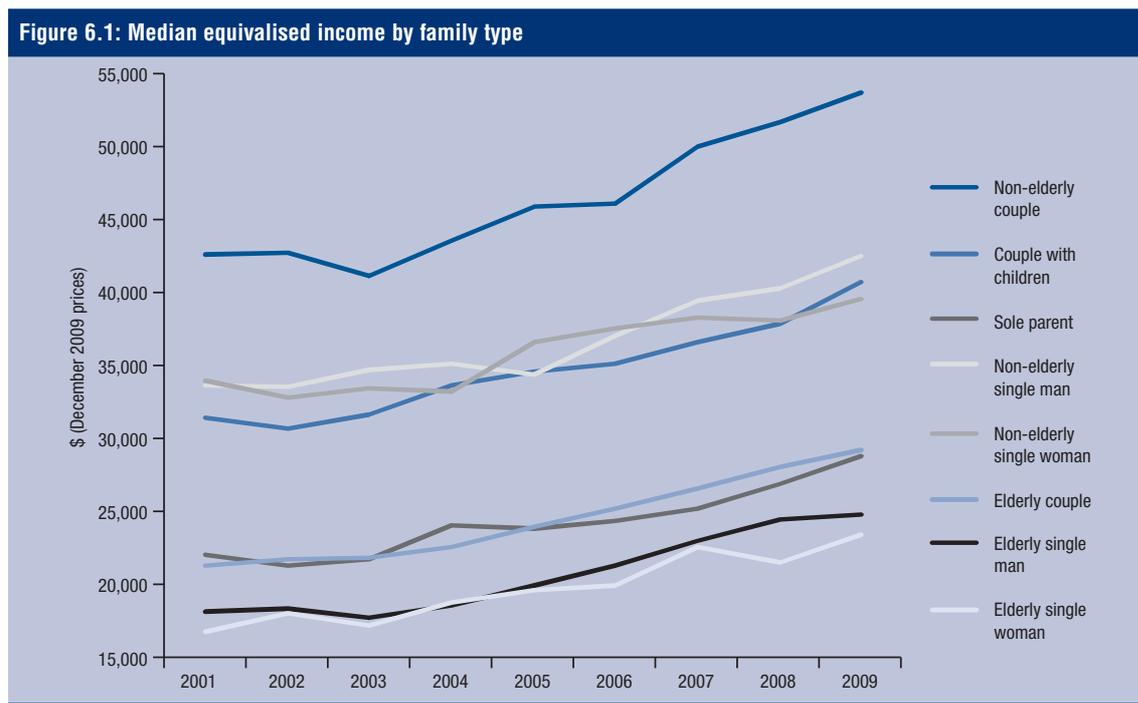
Average income levels are described by the mean and median, while inequality in the income distribution is described by the ratio of the 90th percentile to the median (p90/p50), the ratio of the median to the 10th percentile (p50/p10) and the Gini coefficient. The 90th percentile is the income of the 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 0, where everyone has the same income, to 1, 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 will have been only modest changes in household composition of the population over this period. Up until 2006, income growth appears to have been something of a ‘rising tide lifting all boats’, with the three measures of inequality presented in Table 6.2 remaining essentially unchanged; that is, income growth has applied equally to low-, middle- and high-income persons. Indeed, between 2001 and 2004, the overall tendency was for inequality to decline, meaning lower income individuals were faring comparatively better than higher income individuals. In the two years to 2008, some increase in inequality is evident, particularly as measured by the ratio of the median to the 10th percentile and the Gini coefficient, both of which reached their highest levels in the HILDA Survey period in 2008. In 2009, inequality again decreased, although the ratio of the median to the 10th percentile decreased only slightly. Such

was the magnitude of the decrease in the Gini coefficient, it in fact reached its lowest level of the HILDA Survey period in 2009, after having been at its (equal) highest in 2008.

Figure 6.1 compares median incomes across eight family types—a non-elderly couple, defined to be a couple without dependent children and with at least one member of the couple under 60 years of age; a couple with at least one dependent child living with them; a lone parent living with at least one dependent child; non-elderly single males (aged under 60 years); non-elderly single females; an elderly couple, where both persons are over 60 years of age; elderly single males (aged 60 years 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 male child 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 nine 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, who have the highest incomes; couples with children and non-elderly single persons, who have middle-level incomes; and lone-parent families and elderly couples and single persons, who have low incomes. All family types have experienced growth in median incomes over the full period, although the extent of growth varies somewhat.



Moving towards a measure of '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 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 6.3, the distributions of two-, four- and nine-year equivalised incomes are presented. Income is calculated for each individual as the mean of equivalised income (adjusted for inflation) over the relevant interval. This has the effect of allowing for changes to household composition over time—for example, if total household income over the 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. 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. This is not undertaken.

Consistent with the presence of temporary fluctuations, and lifecycle trends in incomes, there is less inequality in the distribution of income the longer the time-frame over which income is measured. Nonetheless, the degree of inequality in

nine-year income is only marginally less than inequality in annual income. There are thus many persistently high-income persons and many persistently low-income persons. Study of the characteristics of those with low income over the full nine-year period would in particular reveal important information about the identities of the long-term poor.

Income changes and income mobility

Income changes

The cross-sectional snapshots considered in Tables 6.1 and 6.2 and Figure 6.1, and even Table 6.3, tell us little about what is happening to individuals over time. While many people must be experiencing increases in income, it may also be that some people have experienced declines in income, or at least only small increases. The longitudinal structure of the HILDA Survey allows us to directly examine individuals' experiences of income changes. We do this in Table 6.4, which presents median changes in income by initial location in the income distribution. To do this, we divide the population into equal 20 per cent groupings giving 5 quintiles such that quintile 1 is the lowest income group and quintile 5 the highest income group. We then calculate the median change in income for individuals in each of these quintiles. Median changes are expressed as percentages of the median of the initial quintile. For example, the median change in income of those initially in the first quintile is expressed as a percentage of the 10th percentile, which is the mid-point of the first quintile.

Considerable effort is made to collect accurate income data in the HILDA Survey, reflecting the importance of income to living standards. However, this does not mean all components of income are measured, or that those components that are measured are done so without error. Although measurement error in income afflicts all household income surveys, in longitudinal data it poses a particular problem that does not arise in cross-sectional snapshots—namely, the 'regression-to-the-mean' phenomenon. Under- or over-reporting income in one year increases the chances an individual will be

Table 6.3: Distribution of annual income measured over time-frames longer than one year (December 2009 prices)

	Mean (\$)	Median (\$)	p90/p50	p50/p10	Gini coefficient
Two-year income					
2001 and 2002	68,548	61,131	1.87	2.05	0.290
2004 and 2005	72,145	65,943	1.79	2.08	0.286
2006 and 2007	79,447	70,599	1.88	2.04	0.295
2008 and 2009	86,873	77,722	1.84	2.12	0.291
Four-year income					
2001–2004	139,758	126,520	1.80	2.00	0.274
2003–2007	145,037	131,006	1.80	1.96	0.273
2006–2009	166,398	148,689	1.84	2.00	0.282
Nine-year income					
2001–2009	347,104	318,828	1.72	1.93	0.263

located at an extremity of the income distribution. If that individual in the next year accurately reports income, it is likely they will be located closer to the middle of the income distribution in that year. A misleading picture of income mobility can then ensue. Specifically, the apparent changes for individuals at high and low initial incomes will be too large; they will appear to have ‘regressed’ or moved back towards the mean.³

There is no single agreed solution to problems arising from regression-to-the-mean. One simple partial remedy is to focus study on changes of those not initially at an extremity of the income distribution—although this confronts the problem that we are often most interested in people at the extremities, particularly those with low initial incomes. The analysis presented in Table 6.4 does not explicitly exclude those at the bottom and top extremities of the income distribution, but extreme changes of those in the top and bottom quintiles are effectively excluded by our focus on the median change in each quintile, which necessarily excludes the largest half of the changes in the top and bottom quintiles.

A further common partial remedy, also used here, is to calculate changes in income after first combining years. In Table 6.4, we combine Waves 1 and 2 and Waves 8 and 9 and also combine Waves 1, 2 and 3 and Waves 7, 8 and 9. For the analysis that combines two waves, we have:

Change in income equals the mean of equivalised incomes in 2008 and 2009, minus the mean for 2001 and 2002.

This averaging procedure reduces regression-to-the-mean by ensuring that our measure of change is less affected by one-off ‘errors’ due to misreporting or exceptional temporary fluctuations. It is nevertheless probable that the results given in Table 6.4 for those who started at the very top or very bottom ends of the distribution in 2001 to 2002

exaggerate the changes in income which actually occurred by 2008 to 2009. But note, also, that we would expect *real* change to be smaller when we combine waves, because we are removing some real effects of transitory fluctuations in income.

Table 6.4 shows income growth to be clearly ordered by initial location in the income distribution. The strength of the relationship diminishes as we average over more waves, but it remains present even when averaging over three waves. We cannot know the extent to which observed differences by initial location in the distribution are real versus artefacts of measurement error, but it seems very unlikely to be entirely attributable to measurement error. This is because there are ‘real’ reasons to expect such a pattern. For example, we might expect many high-income earners to be approaching retirement and many low-income earners to be at early stages of the lifecycle. Income growth would in general be expected to be low for the former group and high for the latter group, which would help produce the ordering of income growth found in Table 6.4. This example illustrates that we cannot infer that income growth has been pro-poor, at least from a permanent income standpoint. Rather, it highlights that a cross-sectional snapshot tends to overstate the degree of inequality in incomes over the lifecycle.

Table 6.5 considers differences in household income growth between 2001 and 2009 for individuals classified according to their type of family in 2001. It shows the median change in equivalised income, and the median change expressed as a percentage of the median income of the family type in 2001. Growth has been lowest for those initially in childless couples, whether elderly or not, and strongest for those initially in families with dependent children, whether a couple or lone-parent family. This may in part reflect growth in government family payments, particularly in the first half of the decade. However, these differences

Table 6.4: Median percentage change in income by initial quintile of the income distribution (December 2009 prices)

	Overall	Bottom quintile	2nd quintile	3rd quintile	4th quintile	Top quintile
2001 to 2009	24.9	68.4	46.4	34.3	14.3	-4.8
2001–2002 to 2008–2009	21.9	43.6	37.8	25.7	16.7	3.3
2001–2003 to 2007–2009	19.0	31.6	30.3	21.7	15.6	6.1

Table 6.5: Median change in income 2001 to 2009, by family type in 2001 (December 2009 prices)

	Median 2001 (\$)	Median change (\$)	Median change (%)	Percentage in the same family type in 2009
Non-elderly couple	42,169	2,682	6.4	36.3
Couple with children	31,509	11,446	36.3	58.1
Lone parent	21,051	10,264	48.8	37.7
Non-elderly single male	33,083	8,590	26.0	50.7
Non-elderly single female	33,555	9,163	27.3	39.6
Elderly couple	20,942	1,706	8.1	64.0
Elderly single male	18,172	2,643	14.5	61.6
Elderly single female	16,844	2,827	16.8	78.1

could in part also reflect changes in family type between 2001 and 2009. For example, if a lone parent partners between Waves 1 and 9, equivalised income can rise with no change in actual income of each family member. Conversely, a childless couple may have given birth to one or more children, lowering equivalised income even if personal income of each member of the couple does not change. As the last column of Table 6.5 shows, significant numbers of individuals changed family type between 2001 and 2009, particularly among the non-elderly.

Income mobility

Household income mobility refers to the extent to which household incomes change *relative to each other*. Thus, the focus is not on whether individuals' household incomes are rising or falling, but rather on the extent of mobility up and down the distribution. Do most individuals scarcely change their relative position in the distribution, or is it quite common to move from low points in the distribution into the top half, and vice versa? How far do people move, and how does this depend on the time-frame over which we examine mobility?

Table 6.6 examines income mobility over the full period covered by the HILDA Survey. Panel A presents summary measures of the extent of mobility, as measured by the change in each individual's percentile rank, between 2001 and 2009. An individual's percentile rank gives their location in the income distribution. For example, someone at the first percentile has 99 per cent of individuals with higher incomes, while a person at the 99th percentile has only 1 per cent of individuals with higher incomes. In aggregate, the mean change in percentile rank across all individuals must be zero—if one person moves up one place in the ranking, one other person must move down one place in the ranking—so Panel A presents the mean *absolute* change in rank, as well as the proportions in each of four groups for change in percentile rank—up more than 20 percentiles, up between 0 and 20 percentiles (including 0), down between 0 and 20 percentiles (excluding 0), and down more than 20 percentiles.

On average, individuals moved 21.7 percentiles, or slightly more than two deciles, between 2001 and 2009. Just over 28 per cent of people moved up more than 20 percentiles, and 20 per cent moved down more than 20 percentiles. Thus, mobility is evident, but whether this is regarded as high is a matter of subjective assessment. That, over nine years, 52 per cent of people stayed within 20 percentiles of where they were in the income distribution, might be regarded as indicative of low mobility; but equally, that 48 per cent moved more than 20 percentiles might be regarded as indicative of high mobility.

In Panel B, we consider mobility by initial location in the income distribution. We divide equivalised incomes in 2001 into quintiles and assign each individual to one of those quintiles. We then similarly divide equivalised incomes in 2009 into quintiles and, for each quintile in 2001, find the percentage of individuals ending up in each of the 2009 quintiles. For example, in the first row of Panel B, we see that 55.5 per cent of those in the bottom quintile in 2001 were also in the bottom quintile in 2009; 20.9 per cent were in the second quintile, 11.9 per cent were in the third quintile, 6.2 per cent were in the fourth quintile and 5.5 per cent were in the top quintile. The diagonal element in bold shows the percentage remaining in the same quintile. Most people do not move more than one quintile, but equally, relatively few remain in the same quintile. Significantly, however, the proportions remaining in the top and bottom quintiles are relatively high, at 55.5 per cent for the bottom quintile and 46 per cent for the top quintile.

How has income mobility changed over the HILDA Survey period? We can of course consider changes in income mobility in only a limited way over the nine-year span of the data. We do this in Table 6.7 by comparing mobility from one year to the next in all eight pairs of consecutive years. As one would expect, mobility is considerably lower from one year to the next than it is over the nine-year period as a whole. For example, the mean change in percentile rank from one wave to the next is

Table 6.6: Income mobility

A. Percentiles						
	Mean absolute change	Percentage going up more than 20 percentiles	Percentage going up 0–20 percentiles	Percentage going down 0–20 percentiles	Percentage going down more than 20 percentiles	
2001–2009	21.7	28.2	24.5	27.0	20.1	
B. Quintiles						
	Q1 in 2009	Q2 in 2009	Q3 in 2009	Q4 in 2009	Q5 in 2009	Total
Q1 in 2001	55.5	20.9	11.9	6.2	5.5	100.0
Q2 in 2001	29.2	27.9	21.7	13.9	7.3	100.0
Q3 in 2001	15.5	20.8	24.7	24.5	14.4	100.0
Q4 in 2001	9.6	14.9	23.6	28.4	23.6	100.0
Q5 in 2001	7.0	10.7	12.9	23.5	46.0	100.0

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

Table 6.7: Year to year income mobility—Change in percentile rank

	Mean absolute change	Percentage going up more than 20 percentiles	Percentage going up 0–20 percentiles	Percentage going down 0–20 percentiles	Percentage going down more than 20 percentiles
2001 to 2002	14.2	12.9	40.8	33.7	12.1
2002 to 2003	13.7	14.1	39.7	34.3	11.0
2003 to 2004	12.8	13.8	37.6	37.4	10.5
2004 to 2005	13.1	14.6	36.4	37.4	10.7
2005 to 2006	12.6	13.5	35.7	40.1	10.3
2006 to 2007	12.6	14.1	36.9	38.6	10.0
2007 to 2008	12.4	12.4	37.9	39.2	9.8
2008 to 2009	13.8	12.6	39.9	34.5	12.4

generally around 13 per cent, compared with 22 per cent over the full 2001 to 2009 period. No strong pattern in changes in mobility over time is evident in Table 6.7, but there are indications of a slight decrease in mobility up until 2008, with the mean absolute change in percentile rank decreasing from 14.2 to 12.4 and the percentage moving down more than 20 percentiles decreasing from 12.1 per cent to 9.8 per cent. This trend was arrested in the last year-pair, with the mean change in rank increasing to 13.8 and the proportions moving more than 20 percentiles (up or down) increasing from 22.2 per cent to 25 per cent.

Income mobility over time is something of a ‘zero-sum game’ at the aggregate level, so it is not generally appropriate to make assessments of whether mobility over time has been ‘good’ or ‘bad’ at this level. This is not the case when we consider mobility for individual groups in the community. It is possible for changes in location in the income distribution to be favourable for some groups and not so for others. In Table 6.8 we consider differences in income mobility by type of family (the initial family type of the individual). The table presents the mean change in percentile rank and the mean absolute change in percentile rank over three time-frames: 2008 to 2009, 2005 to 2009 and 2001 to 2009.

Sizeable differences in the extent and nature of mobility are evident across the family types. Over all three time-frames, mobility is on average in a downward direction for elderly persons, with the mean decline in percentile ranks tending to be

greater the longer the time-frame. Mobility also tends to be in a downward direction for non-elderly couples without children. This may in part be because some *became* couples with children between 2001 and 2009, which can lower gross income because of reduced labour force participation of one member (usually the mother) and can further lower *equivalised* income because of the extra mouth(s) to feed. Also likely to contribute to this pattern is the retirement of the older members of the ‘non-elderly couples’ group during the time-frame under study, since retirement is usually associated with a decline in income. Mobility tends to be positive for families with children, with lone parents particularly likely to improve their ranking in the income distribution, on average moving up 8.9 percentiles between 2001 and 2009.

The overall extent of mobility is generally lower for elderly persons than others. However, over the one-year time-frame from 2008 to 2009, non-elderly couples—with and without dependent children—have similar levels of mobility to the elderly; it is only when we move to the longer time-frames, particularly the 2001 to 2009 time-frame, that we see a relative increase in income mobility for people in these family types compared with the elderly.

Effect of the 2008–09 government bonus payments on the distribution of income

As noted earlier, average household incomes increased substantially between 2007–08 and

Table 6.8: Income mobility between 2001 and 2009, by initial family type (%)

	2008–2009		2005–2009		2001–2009	
	Mean change in percentile rank	Mean absolute change in percentile rank	Mean change in percentile rank	Mean absolute change in percentile rank	Mean change in percentile rank	Mean absolute change in percentile rank
Non-elderly couple	-2.1	13.9	-6.0	19.1	-10.3	24.5
Couple with children	1.4	12.3	0.8	17.2	3.0	20.8
Lone parent	3.6	14.9	6.1	18.8	8.9	22.4
Non-elderly single male	-1.4	17.9	4.4	23.1	0.5	23.3
Non-elderly single female	0.9	18.3	1.3	23.8	0.4	23.9
Elderly couple	-2.6	13.3	-5.1	15.0	-8.7	17.2
Elderly single male	-4.0	13.3	-2.5	16.5	-5.2	17.2
Elderly single female	-1.0	12.8	-0.6	12.1	-4.1	14.7

Note: The individual’s family type is evaluated in the base (first) year (family type in 2001, 2005 or 2009).

2008–09, despite the economic downturn that began in the latter stages of 2008. It might have been expected that this downturn, which led to a rise in unemployment from 4.4 per cent in October 2008 to 5.7 per cent in October 2009, would have had a negative impact on household incomes. One potential reason that a decline in average incomes did not occur is that the fiscal stimulus policies implemented by the Australian Government in 2008 and 2009 may have counteracted these negative effects. In particular, various cash ‘bonus payments’ were paid to households in late 2008 and early 2009. These payments may also help explain the finding in Table 6.2 of a decrease in income inequality from the 2007–08 financial year to the 2008–09 financial year. Summary measures of the distribution of these payments across households are presented in Table 6.9, showing that they were of significant magnitude. The mean value of the payments was \$2,468 per household, with the median equal to \$1,800 and 10 per cent of households receiving at least \$5,700.⁴

In Table 6.10, we explore the effects of these bonus payments on the distribution of income. The upper panel of the table shows the effects of the stimulus payments on the distribution across households of household disposable income, presenting summary statistics of the distribution of household income before and after including the stimulus payments, and also presenting the difference, which is labelled the ‘effect of stimulus payments’. The bottom panel of Table 6.10 presents the same information for the distribution across individuals of equivalised disposable income.

The estimates indicate the payments had sizeable effects on the income distribution, increasing median household income by \$2,802 and median equivalised income by \$1,742, or 4.7 per cent. The bonus payments proportionately increased incomes of low-income households by more than they increased incomes of high-income households. For example, individuals at the 10th percentile of the distribution of equivalised income had their income increased by 11.1 per cent,

Table 6.9: Distribution of the 2008–2009 stimulus payments (December 2009 prices)

	Mean (\$)	Median (\$)	5th percentile (\$)	10th percentile (\$)	25th percentile (\$)	75th percentile (\$)	90th percentile (\$)
Stimulus payments (per household)	2,468	1,800	0	900	900	3,050	5,700

Table 6.10: Effects of the 2008–2009 stimulus payments on the distribution of income (December 2009 prices)

	Mean (\$)	Median (\$)	5th percentile (\$)	10th percentile (\$)	25th percentile (\$)	75th percentile (\$)	90th percentile (\$)	Gini coefficient
Household income (household the unit)								
Income before stimulus payments	70,794	61,691	12,150	16,500	33,900	94,809	130,519	0.374
Income after stimulus payments	73,261	64,493	13,476	18,010	36,112	97,807	133,027	0.367
Effect of stimulus payments	2,468	2,802	1,326	1,510	2,212	2,998	2,508	-0.007
Equivalised income (individual the unit)								
Income before stimulus payments	41,880	37,462	12,113	16,000	24,845	53,053	71,546	0.313
Income after stimulus payments	43,441	39,204	13,400	17,772	27,024	54,120	72,705	0.299
Effect of stimulus payments	1,561	1,742	1,287	1,772	2,179	1,067	1,160	-0.014

Table 6.11: Effect of the 2008–2009 stimulus payments on mean equivalised income by family type (December 2009 prices)

	Mean income excluding bonus payments (\$)	Mean income including bonus payments (\$)	Mean equivalised bonus payment (\$)
Non-elderly couple	55,025	56,015	990
Couple with children	42,136	43,986	1,850
Lone parent	29,443	32,124	2,681
Non-elderly single man	44,159	45,245	1,086
Non-elderly single woman	41,717	42,793	1,076
Elderly couple	33,573	34,917	1,343
Elderly single man	33,517	34,973	1,455
Elderly single woman	26,942	28,386	1,444

whereas individuals at the 90th percentile had their income increase by 1.6 per cent. The stimulus payments therefore acted to reduce income inequality, for example decreasing the Gini coefficient for equivalised income by 0.014.

Table 6.11 briefly considers differences in impact of the stimulus payments across family types, presenting, for each family type, mean equivalised income before and after the stimulus payments, as well as the difference between these two means, which is equal to the mean equivalised bonus payment. The biggest beneficiaries of the bonus payments were people in lone-parent families, who averaged \$2,681 in equivalised payments—a 9.1 per cent average increase in equivalised income for the year. Couples with children also fared well from the payments, while non-elderly persons without dependent children on average received the least—but still averaged around \$1,000 in equivalised bonus payments.

Endnotes

- 1 Most respondents report *gross* (before-tax) values of each income component (wage and salary income, government benefits, investment income, business income, and so on). Income taxes are estimated for each respondent based on income tax rules applicable to the respondent and are then subtracted from gross income to obtain disposable income. Full details on the methods used to derive disposable income are reported in Wilkins (2009).
- 2 National accounts data on household disposable income is obtained from ABS Catalogue No. 5204.0, Table 36. Household disposable income is equal to gross household disposable income less consumption of fixed capital (or, equivalently, household consumption expenditure plus household net saving). Population data come from ABS Catalogue No. 3101.0.

- 3 Regression-to-the-mean can occur for reasons other than measurement error—that is, because actual (as distinct from *measured*) income really does exhibit regression-to-the-mean. However, from the perspective of obtaining accurate estimates of income change or mobility, our concern is only with regression-to-the-mean deriving from measurement error. For example, inherent randomness in income from one year to the next—which will produce regression-to-the-mean—is part of the ‘real’ dynamics of income in which we are interested.
- 4 The one-off payments comprised: Bonus payment for pensioners, seniors, people with disability, carers and veterans (paid in December 2008); Bonus payment for families (paid in December 2008); Single Income Family Bonus (paid in March 2009); Back to School Bonus (paid in March 2009); Training and Learning Bonus (paid in March 2009); Temporary supplement to the Education Entry Payment (paid in March 2009); Farmers Hardship Bonus (paid in March or April 2009); and Tax bonus for Working Australians (paid around April 2009). While respondents were asked to report whether they received each of these payments, the values reported in the HILDA data are derived for each enumerated person from calculations based on eligibility criteria and payment rates. Note that the bonus payments are all non-taxable.

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7. Relative 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.¹

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 article, 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.

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.

One implication of this approach to defining poverty is that, as societies have grown richer, so has the income required to avoid a situation of poverty. 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 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.²

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 for which ‘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.

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.

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.³

Cross-sectional poverty rates

Figure 7.1 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 2009 period. As in Chapter 6, 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 7.1 can be interpreted as the annual income after taxes and government benefits that a single-person household would 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 the 2001 to 2009 period, the relative poverty line has increased substantially, from \$15,191 to \$19,967 expressed at December 2009 prices. The proportion of the population below this poverty line has fluctuated over time. Following a temporary dip in 2002, the poverty rate remained stable at just over 12.5 per cent until 2005. It then dipped to just under 12 per cent in 2006, rose rapidly to be approximately 14.2 per cent in 2008, and then declined again to approximately 13.2 per cent in 2009. Note, however, that the relatively large changes in the proportion of the population below the poverty line to a significant extent reflect 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 overall growth in relative income poverty between 2001 and 2009 would be regarded by many, if not most, 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 \$15,191 (at December 2009 prices). For this absolute poverty line, the proportion of the population below the poverty line drops from 13.3 per cent in 2001 to 6.1 per cent in 2009. It is therefore clear that, even among the poor, average living standards have increased over the full nine-year period. Nonetheless, it is also true that, even for this absolute poverty measure, there was no decrease in the poverty rate between 2006 and 2008.

Poverty over the medium term

The true value of the HILDA data for the study of income poverty in Australia comes from its longitudinal structure. In Figure 7.2, we make use of all nine years of the survey to examine the amount of time people spend in poverty over the medium term. The figure—and indeed all subsequent analysis in this chapter—examines only the *relative* poverty measure. For people who were in poverty in at least one of the nine years, it presents the proportion in each category of ‘number of years spent in poverty’, which can range from 1 (only in poverty in one of the nine years) to 9 (in poverty in all nine years). Also indicated in the figure is that, according to the HILDA Survey, 38 per cent of the Australian population has been in poverty at some stage during the 2001 to 2009 period. Of

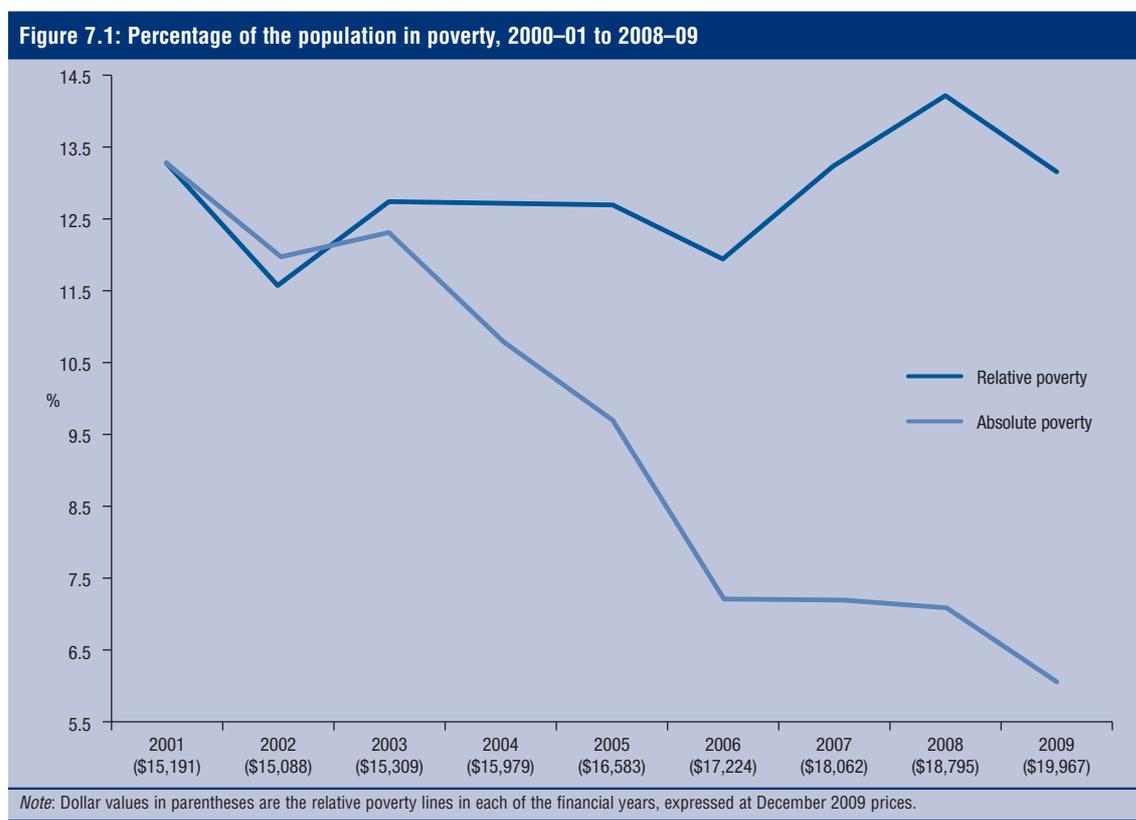
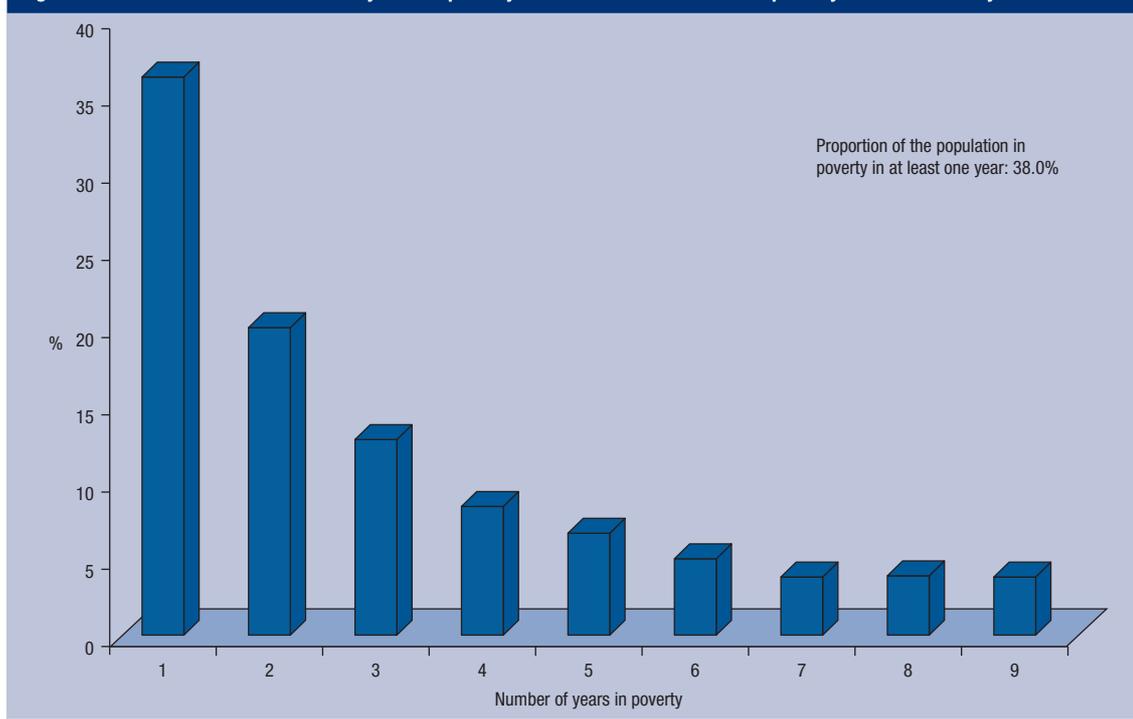


Figure 7.2: Distribution of number of years in poverty 2001 to 2009—Persons in poverty in at least one year

these individuals, 36 per cent were in poverty in only one year and a further 20 per cent were in poverty in only two of the nine years. The persistently poor constitute only a small fraction of all those to experience poverty over the medium term. Nonetheless, they represent a significant number of people: 23 per cent of those to experience poverty between 2001 and 2009, or 8.7 per cent of all people, were in poverty for at least five of the nine years spanned by the survey.

Persistence and recurrence of poverty

Of perhaps as much interest as the extent of poverty in the community are the 'dynamic properties' of individuals' experiences of poverty—that is, how persistent poverty is and, for those who exit poverty, how many return to poverty. Table 7.1 takes one possible approach to examining persistence in poverty, and also allows consideration of whether the degree of persistence has been changing over the HILDA Survey period. It does this by considering only persistence from one year to the next. For each of four year-pairs, the proportions that were out of poverty in both years, in poverty in only the first year, in poverty in only

the second year, and in poverty in both years, are reported. The estimates indicate that approximately 5 to 6 per cent of persons typically enter poverty in any given year, a similar proportion exit poverty each year, and a further 7 to 8 per cent are in poverty in both years of any two-year period.

Trends over time in movements into and out of poverty are difficult to discern, but it does appear that poverty persistence has increased over the survey period. In particular, the proportion in poverty in both of the relevant year-pairs has tended to increase, rising from 6 per cent of the population in 2001–2002 to 7.8 per cent in 2008–2009.

In Table 7.2 we consider persistence beyond one year. Each column presents the proportion of those in poverty in the base year (2001, 2004, 2006 or 2008) that was also in poverty in each successive year. There is evidence of a relatively high degree of persistence and/or recurrence of poverty. Of those in poverty in 2001, 43.8 per cent were in poverty one year later, 44.7 per cent were in poverty two years later, 46.2 per cent were in poverty three years later and, indeed, eight years

Table 7.1: Two-year poverty status (%)

	2001 and 2002	2004 and 2005	2006 and 2007	2008 and 2009
Not in poverty in either year	80.3	81.0	81.4	80.5
Out of poverty in first year and in poverty in second year	6.0	5.6	6.6	5.3
In poverty in first year and out of poverty in second year	7.7	6.0	4.7	6.4
In poverty in both years	6.0	7.4	7.3	7.8
Total	100.0	100.0	100.0	100.0

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

later (in 2009), 48.3 per cent were in poverty. To the extent ascertainable given the shorter time-frames available, similar patterns are evident in the other columns—although, consistent with the findings in Table 7.1, persistence of poverty into the next year tends to be higher in the later years, at 61.2 per cent for those in poverty in 2006 and 55.2 per cent for those in poverty in 2008.

Poverty by family type

Table 7.3 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 in-kind income provided by owner-occupied housing—that is, the rent that homeowners 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.⁴ Poverty rates are also high for lone-parent families, with over one-fifth of

individuals living in lone-parent families in poverty in 2009—although the lone-parent poverty rate did decline between 2008 and 2009. Non-elderly couples, whether with or without dependent children, have consistently low poverty rates.

Poverty over the medium term broken down by family type (in 2001) is considered in Table 7.4. Poverty is clearly more persistent for the elderly than for other family types. Particularly notable is that, while a high proportion of persons in lone-parent families in 2001 experience at least one year in poverty, relatively few (8.8 per cent) were in poverty for five or more of the nine years spanned by the HILDA Survey. These patterns may in part be because lone parents are relatively more likely to change family types, while the elderly are relatively less likely to change family types.

Child poverty

Child poverty is a particular concern for policy-makers, both because children in poverty are unambiguously ‘innocent victims’ who cannot be

Table 7.2: Poverty persistence (%)

	Persons in poverty in 2001	Persons in poverty in 2004	Persons in poverty in 2006	Persons in poverty in 2008
Also in poverty...				
1 year later	43.8	55.1	61.2	55.2
2 years later	44.7	48.7	57.4	–
3 years later	46.2	49.7	53.9	–
4 years later	47.3	53.9	–	–
5 years later	42.7	48.1	–	–
6 years later	42.7	–	–	–
7 years later	47.9	–	–	–
8 years later	48.3	–	–	–

Table 7.3: Poverty rates by family type (%)

	2001	2004	2006	2008	2009
Non-elderly couple	8.8	8.0	6.9	7.4	6.3
Couple with children	8.2	8.4	6.5	8.5	6.7
Lone parent	19.1	14.0	20.3	24.9	21.4
Non-elderly single male	12.8	13.4	10.3	13.7	13.1
Non-elderly single female	14.1	15.9	12.8	15.4	14.7
Elderly couple	21.8	21.3	24.4	26.7	29.5
Elderly single male	38.7	37.5	36.4	35.7	36.1
Elderly single female	44.5	37.4	38.8	40.9	39.0

Table 7.4: Years in poverty by family type in 2001 (%)

	0 years	1 or 2 years	3 to 4 years	5 to 9 years	Total
Non-elderly couple	69.2	16.9	8.1	5.9	100.0
Couple with children	70.6	18.8	6.2	4.4	100.0
Lone parent	44.4	33.2	13.6	8.8	100.0
Non-elderly single male	63.6	22.0	7.0	7.4	100.0
Non-elderly single female	65.2	19.5	6.1	9.3	100.0
Elderly couple	33.9	32.1	11.8	22.3	100.0
Elderly single male	28.5	22.7	16.4	32.4	100.0
Elderly single female	24.2	23.6	11.0	41.3	100.0

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

said to have in any way contributed to their predicament, and perhaps more importantly because of the damage poverty may do to children's future productive capacity and life prospects more generally. Successive governments in Australia have made concerted efforts to improve child living standards, resulting in significant inroads into child poverty in recent decades (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 7.5 shows 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 had some success. However, as the second row of Table 7.5 shows, there is still much room for improvement among lone-parent families, with over 20 per cent of children in such families below the poverty line in all but one of the years examined in the table.

The distribution of the number of years children were poor over the 2001 to 2009 period is provided in Table 7.6 for children under 11 years of age in Wave 1 (and therefore no older than 18 years of age in 2009). Overall, persistence in child poverty appears similar to that evident for the population as a whole. However, associated with the higher incidence of poverty among children living in lone-parent families is a relatively high incidence of persistent poverty, with 9.2 per cent of children under 11 and living in this family type in 2001 experiencing five or more years of poverty in the nine-year period.

Effects of income taxes and transfer payments on poverty

Many people would regard poverty mitigation, or minimising economic deprivation more generally, an important function of government. However, ascertaining how well the government performs this function is not easy, for at least two reasons. First, governments at all levels play an important role in many facets of people's lives relevant to their material wellbeing (e.g. provision of health

care, education, justice services and so on) that are to a significant extent not captured by their incomes. Second, even if we are to focus solely on the effects of government on cash incomes of Australians, simply comparing incomes before payment of income taxes and receipt of government transfers (benefits) with incomes after income taxes and transfers will in general not provide an accurate picture of the effect of the government, because individuals' income earning behaviour is itself likely to be affected by taxes and transfers: in general, we expect people to work less and hence earn less in the presence of taxes and transfers. In particular, labour supply will be higher in the absence of benefits and taxes, at least in the short run, although the magnitude of the increase (and, more pertinently, the increase in employment and earnings) is uncertain. In the longer term, the absence of a tax and benefit system is likely to have profound effects on private income through a variety of mechanisms, and could conceivably have negative effects on the private income of many individuals, for example, by reducing investments in human capital due to inability to finance education.

Notwithstanding these issues, it is instructive to identify the effects of government income taxes and transfers on the income poverty rate absent behavioural responses to the tax and transfer system, since this provides one indicator of the degree of progressivity of the tax and transfer system.⁵ Table 7.7 presents the income poverty rates in each year before and after income taxes and transfers, with the 'poverty rates post-taxes and transfers' ('post-government') simply reproductions of the relative poverty rates presented in Figure 7.1. The poverty line is held fixed at half-median disposable income in comparing the 'pre-government' and 'post-government' poverty rates. However, the last column of the table shows that the poverty rate pre-government is very similar if the poverty line is set equal to half-median *private* income—which is because half of median private income is in fact very close to half of median disposable income (implying any effects of taxes and transfers will not be due to their effects on median income).

Table 7.5: Rates of child poverty—Children under 18 years of age (%)

	2001	2004	2006	2008	2009
Live with both parents	8.6	8.4	6.5	8.5	6.7
Live with one parent	20.5	14.0	20.3	24.9	21.4
All children	11.3	12.7	11.9	14.2	13.2
All persons	13.3	12.7	11.9	14.2	13.2

Table 7.6: Medium-term child poverty: Years in poverty 2001 to 2009 of children under 11 years of age in 2001—Percentage in each category

	0 years	1 or 2 years	3 or 4 years	5 to 9 years	Total
Lived with both parents in 2001	69.9	19.3	6.0	4.8	100.0
Lived with one parent in 2001	41.4	33.9	15.5	9.2	100.0
Total	64.7	22.0	7.7	5.6	100.0

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

Table 7.7: Effects of income taxes and transfer payments on the income poverty rate

	<i>Poverty rate pre-income taxes and transfers (%)</i>	<i>Poverty rate post-income taxes and transfers (%)</i>	<i>Effect of taxes and transfers on the poverty rate</i>	<i>Poverty rate pre-taxes and transfers using poverty line based on private income (%)</i>
2001	27.5	13.3	-14.2	28.6
2002	28.2	11.6	-16.6	29.0
2003	28.7	12.7	-16.0	29.8
2004	28.2	12.7	-15.6	29.2
2005	27.6	12.7	-14.9	28.8
2006	26.3	11.9	-14.4	27.1
2007	26.1	13.2	-12.9	27.1
2008	25.8	14.2	-11.6	27.5
2009	26.8	13.2	-13.6	26.6

Notes: The poverty line used to evaluate the poverty rate in columns 2 and 3 is 'half-median equivalised disposable income'. The poverty line used to evaluate the poverty rate in column 5 is 'half-median equivalised private income'.

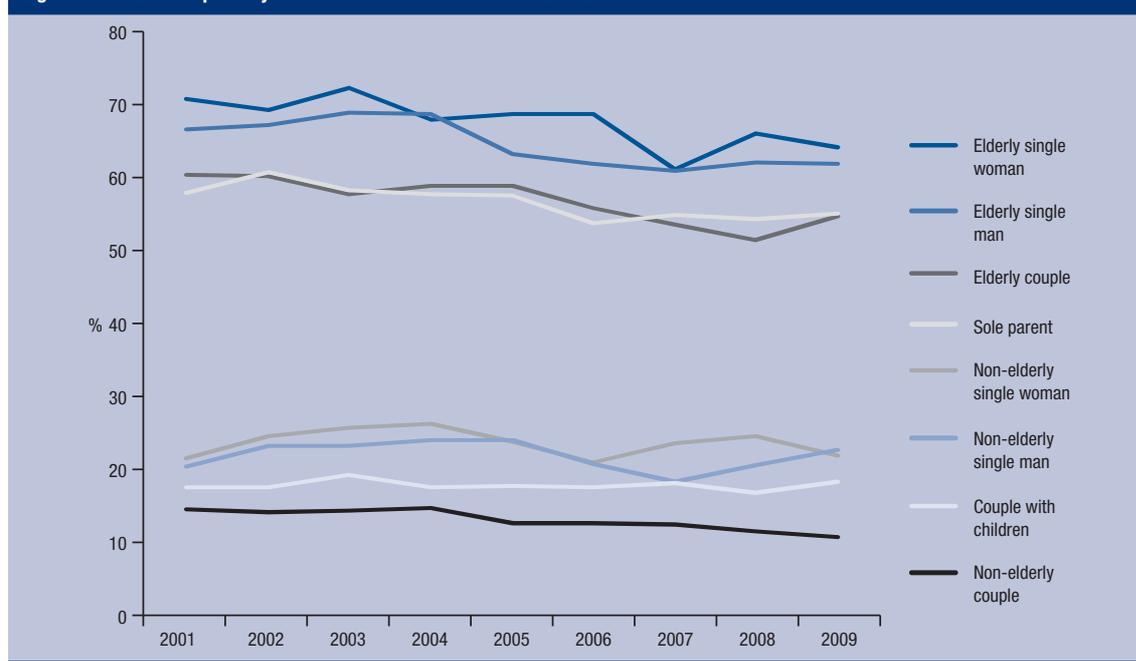
As one would expect, the poverty rate is considerably higher before income taxes and transfers are applied—indeed, government transfers and taxes reduce the poverty rate by about half. Given that the poverty rate is determined by incomes of those at the bottom end of the income distribution, and that there is little net effect of taxes and transfers on median income, it is likely that most of the effect of government on poverty is via transfer payments such as income support payments and family benefits.

Notable in Table 7.7 is that the impact of income taxes and transfers declined between 2002 and 2008. While we do not investigate the reasons for this decline, we note that this period—July 2001 to June 2008—was one of strong employment growth and declining unemployment. Private income poverty was thus tending to decline, reducing the need for government transfers to address poverty. Clearly, the role of transfer pay-

ments in alleviating poverty becomes smaller the stronger the economy. However, there do also appear to be effects of changes to government policy evident in the 2006–07 and 2007–08 financial years, when the decrease in pre-government poverty was 0.5 percentage points, but the decrease in the effects of taxes and transfers was 1.8 percentage points, leading to a 1.3 percentage point rise in the post-government poverty rate. The July 2006 *Welfare to Work* reforms would seem to be a likely explanation for the acceleration in the decline in the effects of income taxes and transfers over this period. Effects of policy are also possibly evident in the 2008–09 financial year, when the increase in the role of government was greater than the increase in pre-government poverty, probably due to the fiscal stimulus payments made that year.

Figure 7.3 examines poverty rates in the absence of income taxes and transfers for different family

Figure 7.3: Income poverty rates in the absence of income taxes and transfers



types. Poverty rates are considerably higher than the poverty rates by family type presented for disposable income in Table 7.4. Reflecting their high rates of welfare dependence, the elderly and people in lone-parent families would have particularly high poverty rates in the absence of transfer payments. There has, however, been some decline in the pre-government poverty rate for these groups. For the elderly, this possibly reflects increasing numbers of self-funded retirees, while for lone-parent families, it may reflect growth in employment participation of lone parents.

Endnotes

- 1 In Chapter 21 we consider a broader concept of socio-economic disadvantage, social exclusion.
- 2 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.

- 3 Note, however, that no Australian Government has ever adopted an official poverty line.
- 4 We also note that the payment rates for the Age Pension were increased significantly in September 2009, which may decrease the prevalence of measured income poverty among the elderly from Wave 10.
- 5 Of course, a broader indicator of the progressivity of income taxes and transfers is obtained by considering their effects on the entire income distribution rather than simply the proportion at the bottom end below a given threshold.

References

- Abello, A. and Harding, A. (2004) 'The Dynamics of Child Poverty in Australia', NATSEM Discussion Paper No. 60, Canberra.
- Citro, C.F. and Michael, R.T. (1995) *Measuring Poverty: A New Approach*, National Academic Press, Washington, DC.

8. Welfare reliance

As in many developed countries, the extent of dependence on welfare has been a significant concern for policy-makers in Australia for some decades now. Whiteford and Angenent (2002) show that the proportion of persons aged 15–64 receiving welfare at any one point in time rose from 3 per cent in 1970 to 18 per cent in 1999. Rising welfare dependence is widely regarded as having adverse consequences, for both welfare recipients and the community at large. 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 several rounds of welfare reforms aimed at reducing the extent of welfare reliance in Australia.

Welfare payments in Australia are known as income support payments, which are benefits 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 data sets 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

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 conceived as a situation in which welfare represents the main source of income. In this report, two alternative specific definitions of welfare reliance are adopted:

- (i) The household received income support payments and more than 50 per cent of household income came from income support and non-income support payments.
- (ii) The household received income support payments and more than 90 per cent of household income came from income support and non-income support payments.

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 and recurrence of welfare reliance.

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 We examine reliance both at the time of the interview (‘current week’) and in the financial year preceding the interview.² 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 8.1 presents cross-sectional estimates of welfare receipt and reliance for selected years, in the

top panel for all persons, and in the bottom panel for ‘workforce-age’ persons (aged 15–64 years). This therefore excludes people receiving the age pension. In 2009, 38.7 per cent of persons were living in a household in receipt of income support at the time of interview, and 38.6 per cent lived in households that had received income support payments at some stage in the preceding financial year. Rates of receipt are somewhat lower among workforce-age persons, at 32.8 per cent for the current week and 33.7 per cent for the preceding financial year. There has been a substantial decline in the rate of receipt of income support payments since 2001. For example, the proportion of people in households receiving income support payments in the previous financial year declined from 46 per cent in 2001 to 38.6 per cent in 2009. However, there are indications that the economic downturn commencing in late 2008 has led to a substantial increase in welfare reliance, with ‘current’ receipt rising from 35.7 per cent in 2008 to 38.7 per cent in 2009.

As would be expected, 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. Both series exhibit similar patterns of change between 2001 and 2009, however. Taking the 50 per cent threshold as our core definition of welfare reliance, we see that reliance declined from 19 per cent of the population in 2001 to 16.7 per cent in 2009. Among those aged 15–64, reliance declined from 12.4 per cent to 10.5 per cent—albeit after increasing to 13.6 per cent in 2004. Welfare reforms of recent years—most particularly, the reforms introduced in July 2006—may therefore be having the desired effects. However, economic growth and declining unemployment over the 2001 to 2008 period is also likely to have been a contributing factor.

Focusing now on annual measures of reliance and on workforce-age persons, Table 8.2 presents the distribution of the number of years on welfare and the number of years welfare reliant. This provides

Table 8.1: Measures of welfare reliance (%)					
	2001	2004	2006	2008	2009
All persons					
<i>Current weekly welfare receipt</i>					
Proportion on welfare	42.6	40.0	38.1	35.7	38.7
<i>Financial year welfare receipt</i>					
Proportion on welfare	46.0	42.3	41.8	38.8	38.6
Proportion reliant (50% threshold)	19.0	20.4	18.5	16.7	16.7
Proportion reliant (90% threshold)	10.9	11.6	9.5	8.8	8.4
Persons aged less than 65					
<i>Current weekly welfare receipt</i>					
Proportion on welfare	37.1	34.3	31.7	29.5	32.8
<i>Financial year welfare receipt</i>					
Proportion on welfare	40.8	36.5	35.8	33.1	33.7
Proportion reliant (50% threshold)	12.4	13.6	12.0	10.8	10.5
Proportion reliant (90% threshold)	7.2	7.5	5.9	5.4	5.2

Table 8.2: Number of years welfare reliant, 2001 to 2009 (%)

	<i>Received welfare</i>	<i>More than 50% of income from welfare</i>	<i>More than 90% of income from welfare</i>
0 years	34.3	76.7	85.2
1 year	15.8	5.6	4.9
2–4 years	22.5	7.8	4.8
5–8 years	15.9	6.8	3.8
9 years	11.4	3.0	1.2

Note: Sample comprises persons aged 15–56 years in 2001.

a better picture of the extent of individuals' welfare reliance by considering the totality of the period spanned by the HILDA Survey. The sample is restricted to persons of workforce age for the entire nine-year period, which translates to persons aged 15–56 years in Wave 1 (and 23–64 years in Wave 9). The first column indicates that more people than not (65.7 per cent) were at some stage of the 2001 to 2009 period living in a household that received income support payments in the preceding financial year. Fully 11.4 per cent of workforce-age persons lived in a household that received income support payments in all nine years; at the other end of the spectrum, 15.8 per cent of workforce-age people lived in a household that received income support payments in only one year.

Adopting the 50 per cent threshold for defining welfare reliance, 23.3 per cent of individuals of workforce age were reliant on welfare at some stage between 2001 and 2009. Just under one-quarter of these individuals (5.6 per cent of 23.3 per cent) were reliant in only one year, while the remaining three-quarters of individuals are reasonably evenly distributed across the 2–9 range for number of years welfare reliant. On the basis of Table 8.2, welfare reliance therefore cannot be characterised as usually highly persistent or usually transitory—it can be either, or anything in-between. Nonetheless, it is clear that, for a significant number of people, welfare reliance is indeed a highly persistent phenomenon.

Persistence and recurrence of welfare reliance

In Table 8.3 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 column presents the proportion of persons who were welfare reliant in the base year who were also 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. To facilitate comparisons across base years, and to focus on workforce-age persons, the sample for each base year is restricted to persons aged 15–57 years in the base year. Taking this approach, we see that welfare reliance is highly persistent. Of those welfare reliant in 2001, 75.8 per cent were still reliant one year later, 73.2 per cent were reliant two years later, 68.1 per cent were reliant three years later, 62.7 per cent were reliant four years later, 55.2 per cent were reliant five years later, 51.9 per cent were reliant six years later, 49.2 per cent were reliant seven years later and 45.3 per cent were reliant eight years later, in 2009. Comparing across base years, there are indications that persistence of welfare reliance has declined over the survey period, particularly from 2004.

Welfare reliance by family type

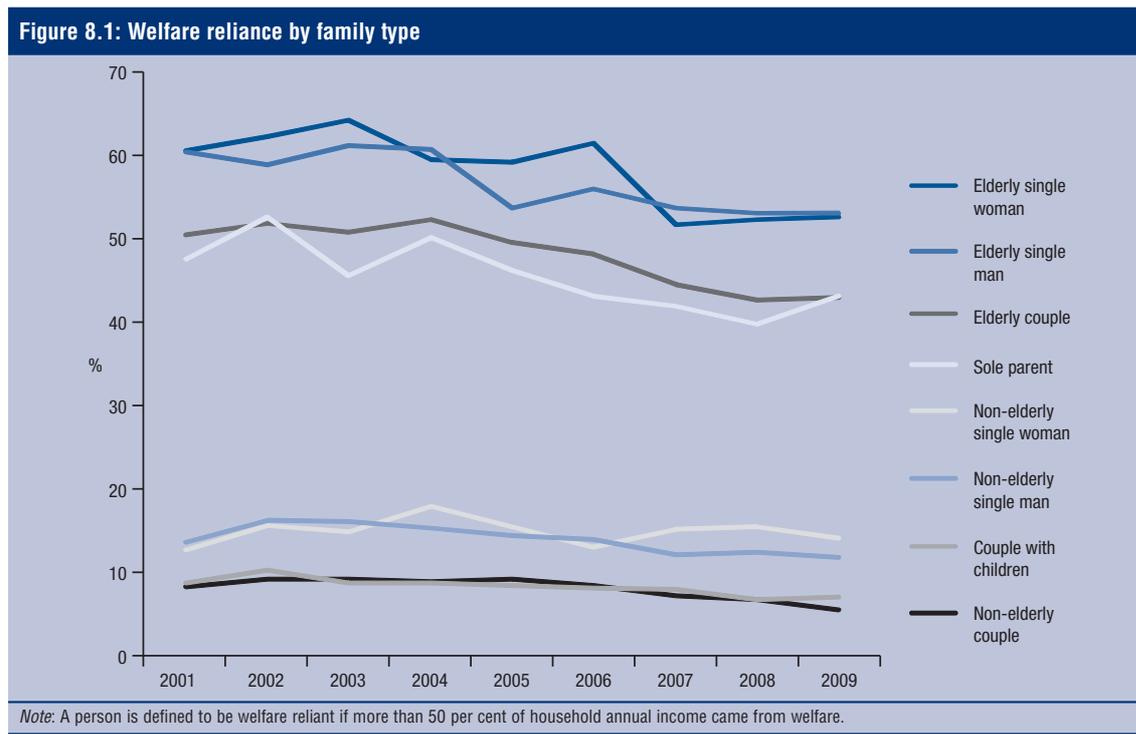
Figure 8.1 shows that welfare reliance is very much a function of lifecycle stage and family type. Throughout the 2001 to 2009 period, over half of single elderly persons were welfare reliant and over 40 per cent of elderly couples were welfare reliant. People living in lone-parent families also had rates of welfare reliance in the 40–50 per cent range throughout the period. Non-elderly couples, with or without children, have comparatively low rates of welfare reliance—almost always less than 10 per cent. Non-elderly single persons have higher rates of welfare reliance than non-elderly couples, but much lower rates than elderly persons and lone-parent families.

Since 2004, rates of welfare reliance have declined substantially for elderly persons, possibly reflecting

Table 8.3: Persistence of welfare reliance (%)

	<i>Persons welfare reliant in 2001</i>	<i>Persons welfare reliant in 2002</i>	<i>Persons welfare reliant in 2003</i>	<i>Persons welfare reliant in 2004</i>	<i>Persons welfare reliant in 2005</i>	<i>Persons welfare reliant in 2006</i>	<i>Persons welfare reliant in 2007</i>	<i>Persons welfare reliant in 2008</i>
Also welfare reliant...								
1 year later	75.8	75.1	79.4	68.6	70.9	70.3	69.6	70.6
2 years later	73.2	70.3	66.3	60.6	60.7	65.8	62.3	–
3 years later	68.1	59.3	61.3	52.9	53.1	58.1	–	–
4 years later	62.7	56.6	54.6	49.3	47.3	–	–	–
5 years later	55.2	49.4	50.7	44.6	–	–	–	–
6 years later	51.9	49.2	46.1	–	–	–	–	–
7 years later	49.2	46.7	–	–	–	–	–	–
8 years later	45.3	–	–	–	–	–	–	–

Notes: The sample used to produce each column comprises persons aged 15–57 years in the base year. For example, in the first column of estimates, the base year is 2001. A person is defined to be welfare reliant if more than 50 per cent of household annual income came from welfare.



greater reliance on superannuation among more recent birth cohorts. Welfare reliance also declined substantially for sole-parent families between 2004 and 2008, perhaps in part because of welfare reforms encouraging increased labour market participation by lone parents. Lone-parent families appear to be the family type most sensitive to the economic downturn in 2008–09, with the rate of welfare reliance in lone-parent families increasing sharply from 39.8 per cent in 2007–08 to 43 per cent in 2008–09. Welfare reliance among other family types has remained relatively stable between 2001 and 2009, with some decrease evident for non-elderly couples (with or without dependent children), particularly after 2005.

Differences in the extent of welfare reliance by family type (in 2001) over the full 2001 to 2009 period are considered in Table 8.4. Reliance is highly prevalent and highly persistent for the elderly. Lone parents also have a high rate of experience of any welfare reliance over the eight-year period, but relatively few were welfare reliant for the entire nine years.

Payment types of welfare recipients

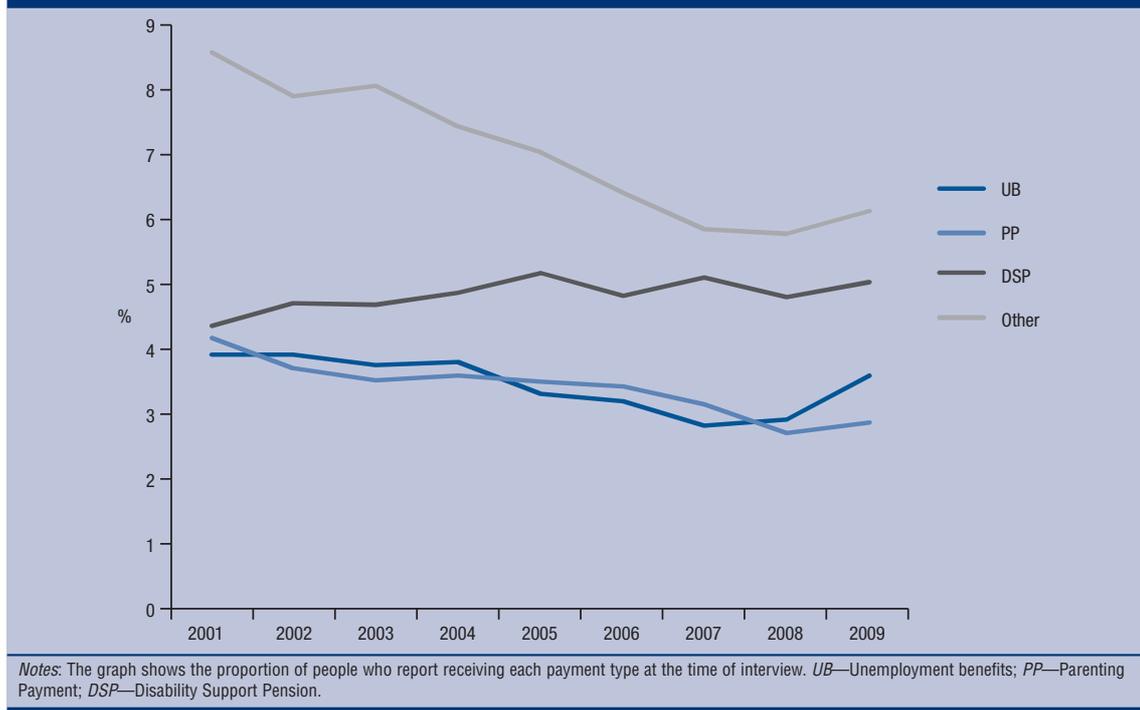
The Australian welfare system addresses a variety of individual and family circumstances that give rise to the need for income support. This is reflected in a variety of different payment types, the names of which generally provide an indication of the circumstances the payment type is intended to address. Examination of receipt of each payment type and movements between payment types 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 (15–64 year old) persons: 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 8.2 plots the percentage of workforce-age persons who report receiving each of these three payment types in each wave (at the time of interview).

Table 8.4: Years welfare reliant by family type in 2001, 2001 to 2009 (%)

	0 years	1 year	2–4 years	5–8 years	9 years
Non-elderly couple	76.0	5.0	7.3	7.7	3.9
Couple with children	79.9	5.7	7.2	5.4	1.8
Lone parent	35.3	8.8	22.8	25.4	7.7
Non-elderly single male	73.6	5.0	9.2	8.1	4.1
Non-elderly single female	69.4	6.8	8.8	9.0	6.1
Elderly couple	27.4	4.1	11.1	25.3	32.2
Elderly single male	21.2	7.8	9.4	24.4	37.4
Elderly single female	18.8	4.5	11.3	30.9	34.4

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

Figure 8.2: Receipt of each income support payment type—Persons aged 15–64

It also presents the percentage receiving all other payment types combined. These 'other' payment types include Youth Allowance (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.

Between 2001 and 2008, the rate of receipt of parenting payments, unemployment benefits and 'other' payments fell, but receipt of DSP grew slightly over this period, from approximately 4.5 per cent to 4.9 per cent of persons aged 15–64. 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 2009 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 for 'other' payments, from approximately 8.6 per cent of workforce-age persons in 2001 to 6.1 per cent in 2009, was especially large, in large part reflecting 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 increasing activity test requirements on recipients of these payment types over the HILDA Survey period

(particularly after July 2006 in the case of Parenting Payments), have resulted in some additional movements from these payment types to DSP. That is, in the face of more stringent activity test requirements for Parenting Payments and unemployment benefits, recipients of these payments who have a disability may be more likely to move on to DSP.

Table 8.5 specifically focuses on movements between payment types. Distinguishing the above four payment type categories, as well as the Age Pension and being off income support altogether, for each 'origin' it shows the percentage of people moving to each 'destination' from one wave to the next. The upper panel presents estimates for all wave-pairs in the 2001 to 2005 period and the lower panel presents estimates for all wave-pairs in the 2006 to 2009 period, capturing the post-*Welfare to Work* reforms period. For example, in the top-most row we see that, on average in the 2001 to 2005 period, of the 3.6 per cent of workforce-age persons initially on unemployment benefits, in the next wave 49.1 per cent were still on unemployment benefits, 3.2 per cent had moved on to Parenting Payments, 4.4 per cent had moved on to DSP, 9.4 per cent had moved on to 'other' payments, 0.7 per cent had moved on to the Age Pension and 33.3 per cent had moved off income support altogether. The numbers in bold on the main diagonal show the percentage remaining on the same payment type (or off benefits in the case of those initially off benefits).

Ignoring the Age Pension, which applies only to a small, and shrinking, proportion of women under 65 years of age, DSP is clearly the most persistent payment type from one wave to the next. In both

Table 8.5: Movements between payment types—Persons aged 15–64 years (%)

	Percentage on payment type at time <i>t</i>	Payment type at time <i>t</i> +1						Total
		Unemployment benefits	Parenting Payment	DSP	Other	Age Pension	Off benefits	
2001–2005								
<i>Payment type at time <i>t</i></i>								
Unemployment benefits	3.6	49.1	3.2	4.4	9.4	0.7	33.3	100.0
Parenting Payment	3.9	2.9	61.1	1.2	5.0	0.0	29.7	100.0
DSP	4.6	0.4	0.4	85.4	3.6	4.0	6.2	100.0
Other	6.7	7.0	2.6	4.2	57.1	3.7	25.4	100.0
Age Pension	1.3	0.0	0.0	0.3	1.9	96.4	1.4	100.0
Off benefits	79.9	1.4	1.2	0.5	2.5	0.3	94.1	100.0
2006–2009								
<i>Payment type at time <i>t</i></i>								
Unemployment benefits	2.9	46.0	3.2	5.7	11.3	2.5	31.4	100.0
Parenting Payment	3.2	3.8	63.1	2.0	5.0	0.0	26.2	100.0
DSP	5.0	0.6	0.3	87.0	2.3	3.8	6.0	100.0
Other	5.4	6.2	1.9	2.6	59.5	3.3	26.6	100.0
Age Pension	0.6	0.0	0.0	0.3	0.0	98.6	1.1	100.0
Off benefits	83.0	1.4	0.9	0.6	1.9	0.3	94.9	100.0
<i>Note:</i> Percentages may not add up to 100 due to rounding.								

sub-periods examined in Table 8.5, the proportion of DSP recipients in one wave still on DSP in the next wave exceeds 85 per cent. Unemployment benefits are the least persistent of the payment types, with less than half remaining on the benefit from one wave to the next. However, unemployment benefit recipients are relatively more likely to move on to another income support payment than Parenting Payment recipients: while the proportion remaining on unemployment benefits is at least 12 percentage points lower than the proportion remaining on Parenting Payments, the proportion leaving income support each year is only 4 to 5 percentage points higher among unemployment benefit recipients than among Parenting Payment recipients.

Comparing the 2006–2009 period with the 2001 to 2005 period, consistent with the hypothesised effects of the 2006 welfare reforms, an increase in flows on to DSP from unemployment benefits and Parenting Payments is indeed evident after 2006, although it is slight. The proportion of unemployment benefit recipients in one wave moving on to DSP in the next wave rises from an annual average of 4.4 per cent in the 2001 to 2005 period to an annual average of 5.7 per cent in the 2006 to 2009 period. For Parenting Payments, the outflow rate to DSP increased from 1.2 per cent to 2 per cent. A reduction in inflows to Parenting Payments from outside the income support system is also evident, with the proportion of people aged 15–64 moving on to the benefit type each year averaging 0.9 per cent in 2006 to 2009, compared with 1.2 per cent in 2001 to 2005.

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 Note, however, the ‘current week’ reliance is based only on employment earnings and government benefits excluding Family Tax Benefit. This is because other income components are only reported or imputed as annual amounts for the previous financial year.

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9. Financial stress

While income approaches remain the most widely accepted basis for defining and measuring inadequacy in material living standards, other measures also potentially provide useful information on individuals' economic wellbeing. Measures of 'financial stress' provide one such piece of supplemental information.

Experience of financial stress refers to an inability to meet basic financial commitments because of a shortage of money. Measures of financial stress therefore provide direct evidence on the adequacy of economic resources of individuals and households. The HILDA Survey obtains information from all respondents on inability to pay bills, having to dispose of possessions, going without meals, being unable to heat the home and obtaining material help from others, which facilitate the construction of measures of financial stress.

In all of the nine waves conducted to date, HILDA Survey respondents have been asked if, since the beginning of that year, because of a shortage of money they:

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

In Table 9.1 we first directly report the incidence of the above seven indicators of financial stress. Results are given for individuals, but it should be noted that there was a high incidence of partners in couple households giving contradictory reports in answering these apparently more or less 'factual' questions. In fact, over half of couples 'disagreed' with each other in their reports of each of the financial problems listed in Table 9.1. Possible reasons for these contradictions are discussed in Breunig et al. (2005). Couples experiencing very severe financial hardship were somewhat less likely to disagree, but it also appears that couples can have quite different perceptions and levels of information about what is happening to them financially and what steps were taken to deal with problems.

We should also note that the incidence of financial stress is quite divergent from the incidence of income poverty. A number of persons in poverty do not report experience of financial stress, and some people who report financial problems have moderate to high incomes. This suggests that, for some people, experience of financial problems

reflects a budgeting or money management problem, rather than inadequacy of income. However, we should not exclude the possibility that expenses to meet basic needs can vary substantially across individuals. For example, a person with a long-term health condition may genuinely experience financial hardship without being classified as income poor or being a bad manager of money. Similarly, certain significant life events—and in particular unforeseen adverse events such as injury—may result in financial problems for people who are not classified income poor.

Financial stress

A person or household is considered to be under financial stress if, *due to a shortage of money*, it is not possible for them to meet basic financial commitments. The measure of financial stress used in this report is based on questions about inability to pay utility bills on time, inability to pay the mortgage on time, having to pawn or sell possessions, going without meals, being unable to heat the home, asking for financial help from friends or family, or asking for help from a welfare or community organisation.

In most years, the most commonly reported financial problem is inability to pay utility bills on time, which was reported by 17.5 per cent of respondents in 2001, 12.9 per cent in 2004, 11.4 per cent in 2006, 10.3 per cent in 2008 and 10.4 per cent in 2009. Needing to ask for financial help from friends or family is also very common, reported by 16.1 per cent in 2001, 12.3 per cent in 2004, 10.7 per cent in 2006, 10 per cent in 2008 and 11 per cent in 2009. The next most commonly reported problem is inability to pay the mortgage or rent on time, followed by pawning or selling a possession. Until 2005, asking for help from a welfare or community organisation was the next most common indicator, but since 2006 it has been at least as common for individuals to report going without meals. The least frequently reported problem is inability to heat the home, although this is relatively more common among persons living in regions with colder winter climates. This notwithstanding, the ordering to a large extent reflects the individuals' prioritisation of expenses. For example, given the choice, individuals are likely to delay paying a utility bill rather than go without meals.

Clearly evident in Table 9.1 is that levels of financial stress fell substantially between 2001 and 2008. For each indicator of financial stress, the proportion of individuals reporting having the financial problem in general steadily fell up until 2008. The lower panel of the table succinctly summarises this trend, showing that the proportion of respondents reporting one or more of the indicators of stress fell from 28.3 per cent in 2001 to 17.8 per cent in 2008. However, the economic slowdown from late

2008 appears to have led to a resurgence in the experience of financial stress. The reported incidence of each indicator increased in 2009, and the percentage of people reporting one or more of the indicators rose from 17.8 per cent to 18.8 per cent. The biggest increases occurred for the indicators ‘asked family or friends for help’ (1 percentage point), ‘went without meals’ (0.8 percentage points), ‘asked welfare agency for help’ (0.7 percentage points) and ‘had to pawn or sell something’ (0.7 percentage points). However, the increase is, in most cases, small and does not return to the 2001 levels.

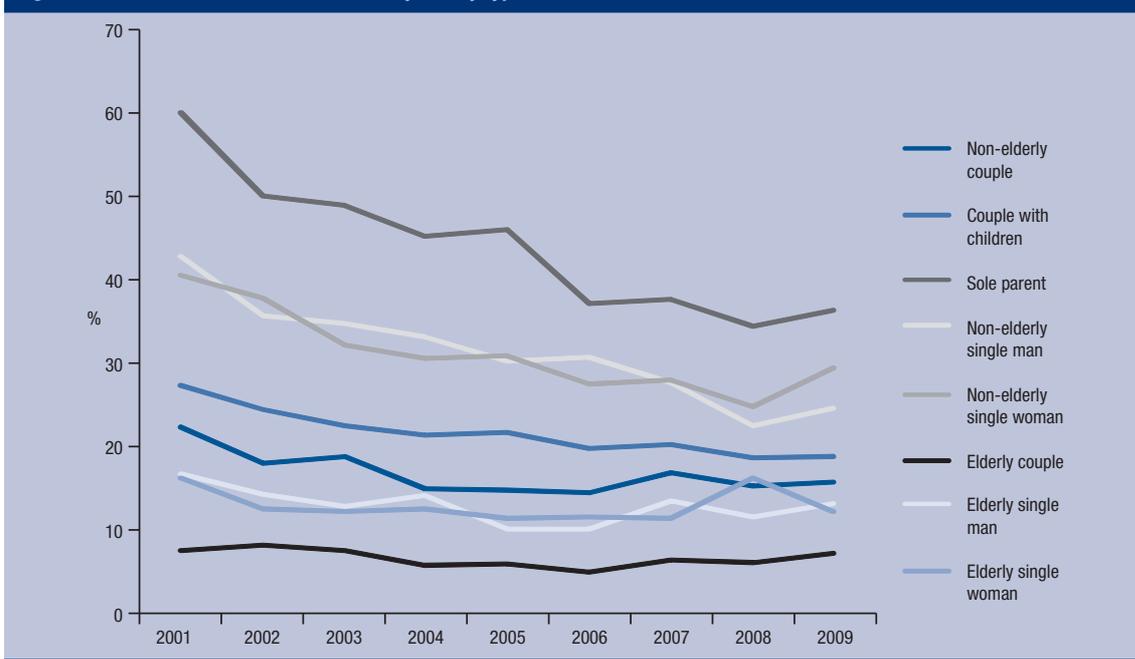
The continued decline in the incidence of financial stress between 2006 and 2008, and then the rise in 2009, is notable for its contrast with the path taken by the rate of income poverty (shown in Chapter 7), which increased between 2006 and 2008 and declined between 2008 and 2009. Investigation of the reasons for this divergence in paths would seem to be an interesting topic for future research.

Figure 9.1 shows, for each wave, the percentage of individuals in each of seven family types who reported one or more symptoms of financial stress. Differences in the incidence of financial stress across families are only partly in line with poverty estimates obtained earlier in this report. Lone-parent households have a high incidence of income poverty and they also report the highest incidence of financial stress. However, elderly people, and single elderly people in particular, have high rates of poverty, yet they have the lowest reported rates of financial stress. This outcome may in part be because elderly people tend to have lower living expenses: they are more likely to own their homes outright, most are eligible for heavily subsidised medications, and most do not have to bear the costs of employment, such as commuting and dressing appropriately for work. Elderly persons are also more likely to have financial assets they can draw on if necessary, and they are likely to have more certainty in their income streams (e.g. the Age Pension is more certain than

Table 9.1: Prevalence of indicators of financial stress (%)

	2001	2004	2006	2008	2009
Unable to pay utility bills on time	17.5	12.9	11.4	10.3	10.4
Asked family or friends for help	16.1	12.3	10.7	10.0	11.0
Unable to pay rent or mortgage on time	8.5	6.1	5.7	5.0	5.5
Had to pawn or sell something	6.2	3.9	3.3	3.2	3.9
Asked welfare agency for help	4.9	3.0	2.6	2.7	3.4
Went without meals	4.3	3.3	2.7	2.7	3.5
Unable to heat home	3.3	2.2	1.6	1.9	2.1
Percentage of persons with...					
1 or 2 indicators of financial stress	19.5	15.6	14.2	12.9	13.2
3 or more indicators of financial stress	8.8	5.7	5.0	4.9	5.6

Figure 9.1: Incidence of financial stress by family type



labour market earnings, particularly when one considers the potential for unemployment), making budgeting easier. However, it may also be that elderly persons tend to be better at budgeting.

All family types exhibited declines in the incidence of financial stress over the 2001 to 2009 period as a whole, with most following the overall pattern of decline up until 2008 and then increase in 2009. However, the extent of the changes differ markedly across the family types. In particular, the declines in the incidence of financial stress up until 2008 were greater for the family types with the highest rates of financial stress, resulting in some degree of convergence in the incidence of financial stress across family types, at least up until 2008.

Persistence of financial stress

In Table 9.2, we briefly consider persistence of financial stress from one year to the next, presenting the percentage of those in financial stress in one year who were also in financial stress in the next year. Two measures of financial stress are employed: (i) any financial stress (one or more of the seven indicators apply); and (ii) severe financial stress (three or more of the indicators apply). For all eight year-pairs examined in Table 9.2, approximately 60 per cent of those who reported any financial stress in one year reported financial stress in the following year. This is a relatively high degree of persistence. Severe financial stress is less persistent, but is nonetheless still highly persistent, with approximately 50 per cent of those severely financially stressed in one year continuing to be severely financially stressed in the next year. For both measures of financial stress, no clear trend change in persistence over the 2001 to 2009 period is evident, despite the substantial changes in overall (cross-sectional) levels of financial stress over the period.

Precursors of financial stress

The very nature of financial stress—an inability to meet basic expenses because of a shortage of money—is such that we would expect low income to be a strong predictor of its experience. However, as we have discussed, many people in poverty do not report experience of financial stress, and many people not in poverty do report

experience of financial stress. Possible reasons for this divergence between poverty and financial stress include differences in expenditure needs across families that are not taken into account by the OECD equivalence scale, such as for health care, and also differences across families in budgeting skills. Also possibly helping to explain the divergence is that financial stress may in part derive from ‘shocks’ to families that do not necessarily put them in poverty measured on a financial-year basis. Such shocks might include temporary job loss, changes in family structure and deterioration in health, all of which result in either increased expenditure needs for the family or falls in income, but possibly only temporarily.

In this section, we consider the roles played by some of the potential determinants of financial stress, including income, family characteristics and a range of ‘shocks’ experienced by the family. Table 9.3 presents estimates from ‘fixed-effects logit’ models of the probability of experiencing financial stress. Results for two measures of financial stress are presented: (i) any financial stress (one or more indicators); and (ii) severe financial stress (three or more indicators). Included in the explanatory variables are dummy indicators for experience in the last two years of each of 12 ‘shocks’, all of which come from the ‘life events inventory’ administered in the self-completion questionnaire in each wave. The ‘fixed-effects’ specification means that all effects reported in the table are derived from changes in the explanatory variables experienced by sample members. For example, the estimate for the variable ‘reside in regional area’ is obtained only from individuals who move into or out of regional areas. In this sense, all of the estimates are for ‘shocks’ (changes) experienced by individuals.¹ The estimates in the table are ‘mean marginal effects’, which show the mean or average effect of the explanatory variable on the probability of experiencing financial stress. As an example of how to interpret the estimates, the upper left cell indicates that, holding all other factors constant, the average effect of a \$1,000 increase in equivalised income is to decrease the probability of reporting any indicator of financial stress by 0.003, or 0.3 percentage points.

A large number of the factors considered in Table 9.3 are statistically significant predictors of financial stress. As expected, in both models we see that the probability of reporting financial stress is lower the higher is equivalised income. ‘Shocks’ occurring in the last two years found to significantly increase the likelihood of financial stress in at least one of the models are (in approximate order of magnitude of effect):

- a household member experiencing a major worsening of finances, such as bankruptcy;
- separation from one’s partner;
- a household member changing jobs;

Table 9.2: Year-on-year persistence of financial stress (%)

	<i>Proportion remaining in financial stress (1 or more indicators)</i>	<i>Proportion remaining in severe financial stress (3 or more indicators)</i>
2001–2002	59.6	46.5
2002–2003	59.4	48.0
2003–2004	61.1	50.5
2004–2005	60.5	54.3
2005–2006	58.3	49.2
2006–2007	61.2	47.9
2007–2008	58.2	46.0
2008–2009	61.5	50.5

- a household member being dismissed from their job;
- a household member being a victim of a property crime;
- self or partner getting pregnant or giving birth; and
- moving house.

Interestingly, a household member retiring from the workforce *decreases* the likelihood of financial stress.

The estimates in Table 9.3 also show:

- financial stress is less likely if someone lives in a regional or remote area;
- people living in couple families, with or without children, are less likely to experience financial stress than in single-person or lone-parent families;

- the larger the number of people in the household, whether adults or children, the less likely is financial stress;
- the housing situation creating the greatest likelihood of financial stress is ‘private rental’, with home-ownership with a mortgage also leading to a relatively high probability of financial stress; curiously, renting public housing does not increase the probability of moderate financial stress, but it is associated with a very large impact on the probability of severe financial stress; and
- employment, both of the respondent and in the household as a whole, is an important factor in decreasing the probability of financial stress, with full-time employment having particularly large effects.

Table 9.3: Precursors of financial stress—Effects of factors on the probability of experiencing financial stress

	<i>Any financial stress (1 or more indicators)</i>	<i>Severe financial stress (3 or more indicators)</i>
Equivalised income (\$'000)	-0.003	-0.003
Reside in regional or remote area	-0.030	-0.021
<i>Family type (Reference category: Single person)</i>		
Couple	-0.057	-0.069
Couple with dependent children	-0.058	-0.062
Lone parent	-0.011 ⁺	-0.034 ⁺
Number of adults in household	-0.017	-0.027
Number of children in household	-0.016	-0.013 ⁺
Have a disability	0.024	0.024 ⁺
A household member has a disability	-0.013 ⁺	0.008 ⁺
General health (SF-36 measure: 0–100 scale)	-0.001	-0.001
Mean general health of household members (SF-36 measure: 0–100 scale)	-0.001	0.000 ⁺
<i>Housing situation (Reference category: Owner with no mortgage)</i>		
Owner with mortgage	0.040	0.090
Public housing	0.017 ⁺	0.192
Private rental	0.059	0.165
<i>Labour force status (Reference category: Employed full-time)</i>		
Employed part-time	0.041	0.048
Unemployed	0.076	0.064
Not in the labour force	0.051	0.064
<i>Household hours of work (Reference category: 35 or more hours)</i>		
Household hours of work 1–34	0.033	0.081
No one in household employed	0.054	0.104
<i>Events in the preceding 2 years</i>		
Separated from partner	0.059	0.054
Became pregnant or gave birth	0.025	0.015 ⁺
A household member was seriously injured	0.009 ⁺	0.015 ⁺
A family member died	-0.019 ⁺	0.048 ⁺
A household member was jailed	0.009 ⁺	0.004 ⁺
A household member was a victim of violent crime	0.018 ⁺	0.026 ⁺
A household member was a victim of property crime	0.029	0.018 ⁺
Moved house	0.023	0.005 ⁺
A household member changed jobs	0.031	0.054
A household member was dismissed from job	0.012 ⁺	0.041
A household member retired from the workforce	-0.021	-0.057
A household member experienced a major worsening of finances	0.151	0.197

Notes: Estimates are mean marginal effects from fixed-effects logit models of the probability of experiencing financial stress. See the Glossary for explanation of these models. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.

Table 9.3 therefore provides quite strong evidence of systematic influences on financial stress other than (equivalised) income. A variety of factors are found to affect the likelihood of financial stress, all of which are consistent with the hypothesis that they capture variation in, or shocks to, economic resources or expenditure needs.

Endnote

- 1 The estimated models use all available data in the nine waves, but because the life events inventory has only

been collected since Wave 2, and two waves of life events data are required for each observation, the estimation sample comprises only Waves 3 to 9 (that is, models of experience of financial stress in Waves 3 to 9 are estimated).

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10. Household consumption expenditure

The HILDA Survey has, from its inception, collected information on household expenditure. However, it was only in Wave 5 that a relatively extensive battery of items about household expenditure was first collected. Most of the information is collected in the self-completion questionnaire (SCQ). Wave 5 was regarded as an experimental phase for the collection of expenditure data and indeed a number of changes were made to the expenditure questions in Wave 6. Furthermore, since Wave 6, only persons with responsibility for paying household bills have been asked to complete the household expenditure section of the SCQ. Longitudinal analysis of expenditure is therefore best restricted to Waves 6 to 9.

The items measured in the HILDA Survey since Wave 6 comprise expenditure on: groceries, alcohol; tobacco; taxis and public transport; child care; meals eaten out; motor fuel; men's clothing; women's clothing; children's clothing; telephone and internet services; holidays; education fees; health care; medicines; health insurance; other insurance; utilities; motor vehicle repairs and maintenance; home repairs and renovations; new cars; used cars; computers and related devices; home audio-visual equipment; household appliances; household furniture; rent on primary residence; and mortgage repayments.

As long as this list is, the HILDA Survey does not attempt to measure all components of household expenditure, and therefore does not provide a comprehensive picture of household expenditure decisions. Wilkins and Sun (2010) show that, from Wave 6 onwards, the HILDA Survey in principle captures between 77 per cent and 80 per cent of total household expenditure on goods and services. Notable exclusions are: entertainment expenses (such as movies, museums, gambling and performances); books, music, magazines, newspapers and online subscriptions; non-fee education expenses (e.g. text books); sport and recreation (e.g. sports equipment, club memberships); gardening products; gifts and donations; council rates; water and sewage; personal and household services (such as provided by cleaners, hairdressers, massage therapists and beauticians);

health and beauty products; ornaments, art and jewellery; and bank fees and other financial service charges. Comparing the HILDA Survey with the ABS Household Expenditure Survey conducted in 2003–04, Wilkins and Sun (2010) furthermore find evidence of under-reporting of 'big ticket' items that are irregularly purchased, which mostly comprise consumer durables—home repairs and renovations, cars, computers and related devices, home audio-visual equipment, household appliances and household furniture.

These limitations notwithstanding, it is likely the household expenditure data collected by the HILDA Survey can provide insights into economic wellbeing beyond those insights obtainable from looking at income. A number of studies have advocated the value of examining the distribution of household consumption expenditure, even when the data collected is incomplete (e.g. Barrett et al., 1999; Crossley and Pendakur, 2006). At the core of the argument in favour of examining expenditure is that consumption is closer to the concept of material wellbeing that concerns economists than is income, or indeed, earnings, which are often studied by researchers. Crossley and Pendakur (2006) demonstrate this by presenting the following chain link from wages (earnings per hour of work) through to material wellbeing:

Wages → *Earnings* → *Income* → *Consumption* →
Material wellbeing

While interest in household expenditure as a measure of economic wellbeing stems from its correspondence to the level of consumption of goods and services by household members, the correspondence is in practice far from exact. Many expenditure items are quite 'lumpy', meaning that *current expenditure* on those items is a poor measure of the *actual consumption* of those items; that is, in any given week, people 'consume' the services provided by various products that were not purchased in that week, and also purchase products in that week that are not completely consumed within the week. Most important in this regard is housing of owner-occupiers, who in most years do not buy a house, yet still consume

housing services in those years; and in those years that a house is purchased, they do not 'consume' the entire house in that year. Other items in this category include motor vehicles and consumer durables. Indeed, for any item that typically lasts beyond one year, expenditure on that item in any given year will not be an inaccurate indicator of consumption of that item.

In principle, to measure economic wellbeing, what is sought is the household's purchases of non-durable goods and services in the period under study, plus the household's consumption in that period of services delivered by durable goods and services (such as housing, cars, household appliances and furniture). However, following the approach of Crossley and Pendakur (2006), and reflecting the limitations of the data, the consump-

tion measure adopted in this article approximates consumption expenditure as equal to the sum of expenditures on groceries, alcohol, tobacco, taxis, public transport, child care, meals eaten out, motor fuel, clothing, telephone and internet services, holidays, education fees, health care, insurance, utilities, motor vehicle repairs and maintenance and rent.¹ To these items we additionally add imputed rent on owner-occupied housing. Different approaches to imputing rent are possible. We take an approach that is common when home values are available in the data, which is to impute annual rent as a fixed proportion of the home value, usually between 4 per cent and 6 per cent (e.g. Smeeding et al., 1993; Frick and Grabka, 2002). We impute rent as equal to 5 per cent of the value of the home.² As per Crossley and Pendakur, no attempt is made to estimate consumption of

Who in the household answers the expenditure questions?

Since Wave 6, only respondents to the self-completion questionnaire (SCQ) who indicate they '...have any responsibility for payment of household bills, such as electricity, gas, water and council rates' are asked to report the amount of household expenditure on each of the 25 expenditure items collected in the SCQ. In 2009, 67 per cent of responding households had two or more SCQ respondents. Of these households, 69.4 per cent had at least one person who did not complete the expenditure questions and, indeed, 2.8 per cent had no one complete the expenditure questions. In total, 34 per cent of SCQ respondents in 2009 did not answer the expenditure questions. Clearly, many people do not regard themselves as having any responsibility for payment of household bills. Indeed, 7.9 per cent of households had no one provide answers to the expenditure questions.

Table 10A provides some insight into who, among multiple-respondent households, responds to the household expenditure questions. It compares response rates to the SCQ household expenditure questions across individuals with different characteristics. The response rates are for individuals living in households with more than one SCQ returned and are presented separately for individuals in each of three household types: couple with children, couple without children and 'other'.

Overall, females are more likely to respond than males, although the difference is slight in couple households without children. People aged 15–24 are unlikely to respond to the expenditure questions, which is unsurprising, as they will often be dependent children. Indeed, in the household type in which they cannot be a dependent child—a couple household without children—their response rates are similar to those of older persons. Differences in response rates by labour force status are not large, but overall full-time employed people are most likely to respond, followed by part-time employed people and then non-employed people. There is a strong ordering of response rates by educational attainment, but this is likely to be at least partly due to the lack of qualifications of dependent children aged 15–24. Supporting this, the last panel of the table, which examines response rates by position in the family, shows that children have very low response rates.

Table 10A: Household expenditure response rates of persons in households with more than one SCQ respondent, 2009 (%)

	<i>Couple with children</i>	<i>Couple without children</i>	<i>Other</i>	<i>All households</i>
Females	57.7	73.2	63.7	63.5
Males	45.3	71.7	42.9	53.6
Aged 15–24	6.4	71.4	15.7	13.9
Aged 25–54	64.8	76.9	69.5	68.0
Aged 55 and over	67.0	69.9	78.7	70.4
Employed full-time	55.1	76.2	63.0	62.3
Employed part-time	53.2	73.4	48.7	56.6
Not employed	43.3	69.1	51.8	55.8
Hold bachelor's degree	65.3	77.5	70.9	70.0
Holds other post-school qualification	60.0	71.5	72.5	65.7
Has no post-school qualifications	40.3	70.4	44.5	49.8
Male parent	60.2	–	91.1	61.5
Female parent	76.0	–	87.7	78.0
Child	6.9	–	19.8	10.5
Other household member	36.9	72.4	63.3	70.7

durables other than housing, since all that is known about the durables for which expenditure data are gathered is the reported value of those purchased in the last year, which—even if not under-reported—will in general be a poor guide to consumption of services of durables. We therefore refer to this measure as ‘non-durable consumption’ expenditure, even though it contains consumption of one durable, housing.

To utilise the full set of expenditure information provided by the HILDA Survey data, we also present estimates on the distribution of expenditure for an additional measure which we label ‘total consumption expenditure’. This is an expanded consumption measure that includes all consumption expenditure items collected by the HILDA Survey, adding home repairs and renovations, new cars, used cars, computers and related devices, home audio-visual equipment, household appliances and household furniture to the non-durable consumption measure. All of these additions are consumer durables.

Non-durable consumption expenditure will generally provide a reasonable estimate of the actual level of consumption of the items included in the measure. The total consumption expenditure measure will not correlate so well with consumption because of the lumpy nature of expenditures on the additional items included. For most of the analysis, we equalise household expenditure in the same manner as income was equalised earlier in this report, for the same reasons as apply to income. The HILDA Survey obtains usual weekly expenditure on groceries, alcohol, tobacco, taxis and public transport, child care and meals eaten out, usual monthly expenditure on motor fuel, clothing and telephone and internet services, and total annual expenditure on all other items. Rental payments are reported for the time-frame chosen by the respondent. For all analysis, expenditure items are converted to annual amounts by multiplying weekly expenditures by 52.14, monthly expenditures by 12 and quarterly expenditures by four. As with income, all dollar values are expressed in December quarter 2009 prices.

Household expenditure over the 2006 to 2009 period

In Table 10.1, expenditure distributions are described for non-durable consumption expenditure and total consumption expenditure. We examine household expenditure of *individuals*—thus, the household expenditure of a four-person household is included four times, whereas that of a one-person household is included only once. The table contains mean (unequalised) household expenditure and summary statistics on the distribution of equalised household expenditure. Estimates are presented for annual expenditure in each year from 2006 to 2009 as well as for total expenditure over the entire three-year period.

Household expenditure and consumption

Households spend money on both non-durable and durable goods and services. Non-durables—goods and services consumed fairly soon after purchase—include such items as groceries, fuel and holiday expenditures. Durables, by contrast, are typically consumed over long periods of time, and include such items as housing, cars, household appliances and furniture. To measure non-durable consumption of a household during a particular period, it is generally sufficient to measure expenditure on non-durables in that period. However, measuring durables consumption is more difficult. First, the full stock of durables held by the household needs to be known—some durables may have been purchased in the period being examined, but most will have been purchased previously. Second, we need to estimate the value of the consumption services delivered by those durables in the period (e.g. impute a rental value for owner-occupied housing), something that is inherently difficult to do.

Mean household non-durable consumption expenditure, expressed in December 2009 prices, increased from \$54,614 in 2006 to \$56,144 in 2009. By construction, the total consumption expenditure of each household exceeds non-durable consumption expenditure, increasing from \$64,008 to \$64,841. For both the non-durable and total consumption measures, equalising almost halves mean expenditure. Dispersion or inequality in equalised expenditure is higher for total consumption expenditure than non-durable consumption expenditure, with the ratio of the 90th percentile to the median (p90/p50), the ratio of the median to the 10th percentile (p50/p10) and the Gini coefficient all greater. This is largely due to the infrequent and irregular nature of purchases of durable consumption goods. For example, only some households will purchase a new car in a given year. These households will have relatively high total expenditure in that year compared with households that do not purchase a new car, which will translate into greater dispersion in the distribution of total expenditure compared with the distribution of non-durable consumption expenditure, which contains only items regularly purchased by most households.

Table 10.1 makes use of the longitudinal expenditure data by examining consumption expenditure over the totality of the four years from 2006 to 2009. This four-year expenditure is derived by adding together the individual’s four annual values of equalised household consumption expenditure. As expected, there is less dispersion in total expenditure over four years than in a single year, since there is less variation across households in purchases of durables. For example, more households will purchase a new car over a four-year period than do over a one-year period. However, inequality in non-durable consumption expenditure is also lower over the four-year period, albeit

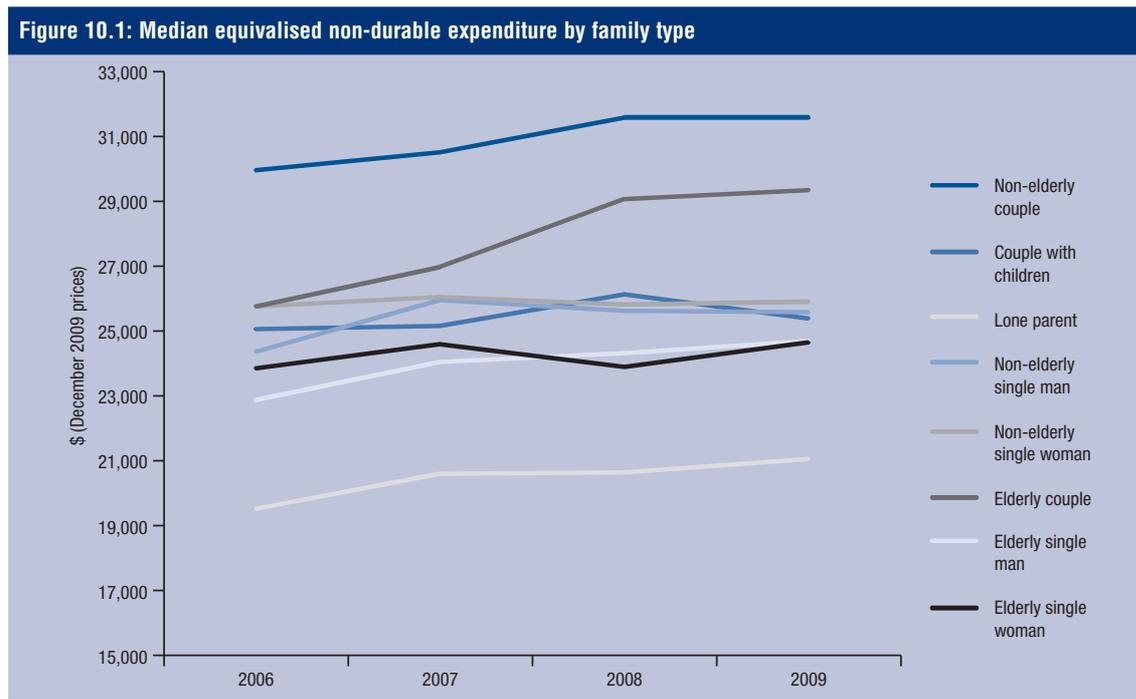
only slightly, with the Gini coefficient decreasing from approximately 0.27 for one-year expenditure to 0.25 for four-year expenditure.

Focusing on non-durable consumption expenditure, we see that inequality in expenditure is considerably less than is inequality in income. In all years, the ratio of the 90th percentile to the 50th percentile is approximately 1.8, the ratio of the 50th percentile to the 10th percentile is equal to approximately 1.85, and the Gini coefficient is approximately 0.27. These compare with respective estimates for equivalised income of 1.88, 2.11 and 0.292 in 2006, 1.90, 2.19 and 0.304 in 2008 and 1.87, 2.25 and 0.305 in 2009.

Differences in equivalised non-durable consumption expenditure levels by family type are com-

pared in Figure 10.1. Median consumption expenditure is consistently lowest for lone-parent households and highest for non-elderly couples. However, differences in median expenditure across family types are not particularly large, especially when compared with income (see Figure 6.1). Most notably, elderly couples have reasonably high average levels of non-durable consumption, despite having low average incomes. To a significant extent, this reflects high rates of (outright) home-ownership among the elderly, and possibly relatively high stocks of consumer durables, leaving more income free to be spent on non-durables. Elderly lone males and females similarly have relatively high average levels of non-durable consumption expenditure, although they are not as well off as elderly couples.

Table 10.1: Distribution of household equivalised expenditure (December 2009 prices)					
	2006	2007	2008	2009	2006 to 2009
Non-durable consumption expenditure					
Mean unequivalised (\$)	54,614	55,807	57,162	56,144	223,498
<i>Equivalised</i>					
Mean (\$)	28,615	29,173	29,928	29,381	119,842
Median (\$)	25,444	25,881	26,777	26,155	108,107
p90/p50	1.78	1.81	1.80	1.80	1.72
p50/p10	1.87	1.84	1.84	1.88	1.75
Gini coefficient	0.274	0.269	0.271	0.273	0.251
Total consumption expenditure					
Mean unequivalised (\$)	64,008	65,194	65,646	64,841	259,862
<i>Equivalised</i>					
Mean (\$)	33,537	34,054	34,290	33,858	139,463
Median (\$)	28,549	29,043	29,430	29,328	123,086
p90/p50	1.95	1.95	1.95	1.92	1.84
p50/p10	1.96	1.93	1.90	1.95	1.83
Gini coefficient	0.308	0.302	0.300	0.300	0.272



Longitudinal analysis of changes in household expenditure

The availability of comparable expenditure data in every wave since Wave 6 creates new possibilities for longitudinal analysis of household expenditure in Australia. There are now four years of data available, allowing medium-term consumption expenditure dynamics to be investigated. Table 10.2 presents statistics on the distribution of *changes* in individuals' equivalised household expenditure from 2006 to 2007, from 2007 to 2008, from 2008 to 2009 and from 2006 to 2009. The mean change in equivalised non-durable consumption expenditure was \$963 from 2006 to 2007, \$880 from 2007 to 2008 and -\$377 from 2008 to 2009. The median change was \$697 from 2006 to 2007, \$613 from 2007 to 2008 and -\$281 from 2008 to 2009. Mean and median changes in the total consumption expenditure likewise are positive between 2006 and 2008 and negative between 2008 and 2009. There are thus clear indications that households reacted to the economic downturn in late 2008 by reducing consumption expenditure, despite the fact that mean and median income changes were still positive (as shown in Chapter 6). This is consistent with National Accounts estimates showing a rise in household saving in 2008–09 (Australian Bureau of Statistics, 2011).

Of course, mean and median changes simply convey the 'central tendency' of changes, and there is considerable variation in changes across individuals. The 10th percentile of changes in equivalised non-durable consumption expenditure was an approximate \$7,800 decrease from 2006 to 2007 and from 2007 to 2008, and a decrease of \$9,380 from 2008 to 2009. The 90th percentile of changes was an increase of \$10,317 from 2006 to 2007, \$9,699 from 2007 to 2008 and \$8,640 from 2008 to 2009. The total expenditure measure exhibits an even greater degree of variation in changes. This is consistent with the 'lumpy' nature of expenditure on the durable items included in the total consumption measure. For example, if a person bought a car in 2006, they were less likely to buy one in 2007 and were therefore more likely to have a decrease in expenditure; while a person who did not buy a car in 2006 was more likely to buy one in 2007 and as a consequence have an increase in expenditure.

The composition of household expenditure

Since the HILDA Survey collects expenditure on each of a number of components, it is possible to investigate the composition of household expenditure. Table 10.3 examines how the composition of household expenditure differs across eight family types and, moreover, how the composition of expenditure has changed for each family type between 2006 and 2009. The upper panel presents the mean proportion of total consumption expenditure spent on each of 19 components in 2009, while the lower panel presents the mean percentage point change in this expenditure share between 2006 and 2009.³ For this analysis, we focus on 'cash flow' in households, and therefore we do not include imputed rent received by owner-occupiers in our expenditure measure, but we do include mortgage repayments.

Across all households, the components with the largest expenditure shares are groceries (23 per cent), mortgage repayments (13.7 per cent), housing rent (8.8 per cent), motor vehicle fuel and maintenance (6.8 per cent) and meals eaten out (5.1 per cent). Significant differences in expenditure shares are evident across family types. Groceries represent a relatively large share of the expenditure of the elderly, averaging between 29.1 per cent and 32.6 per cent, compared with the mean over all households of 23 per cent. Lone-parent families also have a relatively high proportion of their expenditure on groceries. Expenditure on alcohol and tobacco is relatively high for single men, both elderly and non-elderly, while lone-parent households also have relatively high expenditure on tobacco.

Housing costs are on average low for the elderly, while for other family types the nature of the housing cost varies. Non-elderly singles and lone-parent households have high expenditure shares for housing rent, averaging approximately 15 per cent for singles and 18.5 per cent for lone parents. For non-elderly couples, mortgage repayments are much more important, averaging 19.2 per cent of expenditure for couples with children and 16 per cent for other couples. As might be expected, the elderly have relatively high expenditure shares for health care and health insurance, and families with dependent children have

Table 10.2: Change in household equivalised consumption expenditure (December 2009 prices)

	2006 to 2007	2007 to 2008	2008 to 2009	2006 to 2009
Non-durable consumption expenditure				
Mean	963	880	-377	1,249
Median	697	613	-281	1,116
90th percentile	10,317	9,699	8,640	12,742
10th percentile	-7,828	-7,806	-9,380	-10,142
Total consumption expenditure				
Mean	1,007	240	-213	871
Median	732	339	-249	814
90th percentile	15,144	13,493	14,164	18,003
10th percentile	-13,575	-13,766	-14,022	-15,991

relatively high expenditure shares for education and child care. Also notable is that, for elderly couples, 8.1 per cent of the expenditure measured by the HILDA Survey is on holidays; at the other end of the spectrum, only 2.2 per cent of lone-parent expenditure is on holidays.

It is also clear from examination of the four single-person family types that men and women have quite different expenditure patterns, at least when they do not live together. Men spend relatively more on alcohol, tobacco, meals eaten out and motor vehicle

fuel and maintenance, while women spend relatively more on clothing, home repairs, health care, education, utilities, communications and holidays.

Examining changes in expenditure shares between 2006 and 2009, for all households combined, the components with the biggest increases in expenditure shares were housing rent (0.8 percentage points), mortgage repayments (0.6 percentage points) and groceries (0.3 percentage points). The biggest declines in expenditure shares were for motor vehicle fuel and maintenance (1.2

Table 10.3: Composition of household expenditure by family type—Mean expenditure shares in 2009 and mean change in expenditure shares from 2006 to 2009

	<i>Non-elderly couple</i>	<i>Couple with children</i>	<i>Lone parent</i>	<i>Non-elderly single male</i>	<i>Non-elderly single female</i>	<i>Elderly couple</i>	<i>Elderly single male</i>	<i>Elderly single female</i>	<i>All households</i>
Mean expenditure shares in 2009 (%)									
Groceries	19.8	21.1	25.1	22.4	22.4	30.6	29.1	32.6	23.0
Alcohol	3.2	2.4	1.9	4.0	2.8	3.1	5.0	2.0	2.8
Tobacco	1.9	1.5	2.7	2.3	1.8	0.9	2.8	1.6	1.7
Meals eaten out	5.8	4.5	5.2	6.2	5.5	5.1	5.0	4.7	5.1
Clothing	3.2	4.1	4.9	3.1	3.7	3.7	2.5	3.6	3.8
Housing rent	7.9	6.1	18.5	14.9	14.8	2.9	10.3	8.4	8.8
Mortgage repayments	16.0	19.2	8.5	10.5	10.3	3.0	2.8	3.5	13.7
Home repairs	3.5	3.9	1.4	2.0	2.3	3.6	3.3	4.2	3.3
Motor vehicle (MV) purchase	4.8	5.0	2.7	3.4	3.6	4.3	2.7	1.5	4.2
MV fuel and maintenance	6.7	6.8	6.0	7.1	6.1	8.2	8.0	5.9	6.8
Public transport and taxis	0.8	0.6	1.0	1.2	1.2	0.5	1.0	1.5	0.8
Health insurance	2.1	1.7	0.9	1.7	1.8	4.0	2.3	2.5	2.0
Other medical	2.7	2.3	1.6	2.2	2.5	4.4	3.7	4.4	2.6
Education and child care	0.6	3.6	2.9	1.2	1.6	0.2	0.1	0.3	2.1
Utilities	2.9	2.9	3.5	3.1	3.2	4.4	4.1	4.9	3.2
Communications	4.2	3.8	5.4	4.6	4.8	4.7	4.9	5.9	4.4
Insurance	2.9	2.5	1.9	2.6	2.7	4.4	4.5	4.6	2.9
Household goods	4.5	4.0	3.6	3.6	3.6	3.9	3.7	3.7	4.0
Holidays	6.5	4.1	2.2	3.8	5.2	8.1	4.0	4.4	4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean percentage point change in expenditure shares from 2006 to 2009 (by family type in 2006)									
Groceries	0.7	0.3	-0.9	0.1	-0.7	1.1	0.5	0.6	0.3
Alcohol	-0.4	0.1	0.5	-0.5	-0.1	0.0	0.6	0.0	0.0
Tobacco	-0.1	-0.2	-0.2	-0.8	-0.5	-0.3	-0.2	-0.1	-0.3
Meals eaten out	-0.2	0.2	0.8	0.2	-0.4	0.1	-0.9	-0.3	0.1
Clothing	-0.1	-0.4	-1.3	0.0	-0.6	-0.2	0.3	-0.5	-0.3
Housing rent	-0.8	0.8	1.3	2.5	1.9	0.1	2.5	1.0	0.8
Mortgage repayments	2.3	0.2	-1.0	1.3	1.6	-0.3	-1.3	-0.9	0.6
Home repairs	-0.2	-0.1	0.1	0.0	0.0	-0.1	-0.5	0.5	-0.1
MV purchase	-0.1	-0.9	-0.1	-0.9	-0.2	-1.5	-1.1	-0.2	-0.7
MV fuel and maintenance	-1.0	-1.2	-0.2	-1.8	-1.7	-1.2	-1.6	-1.0	-1.2
Public transport and taxis	-0.3	0.1	0.0	0.0	-0.1	0.0	0.2	-0.1	0.0
Health insurance	0.4	0.0	0.3	0.1	0.1	0.7	0.4	0.3	0.2
Other medical	0.3	-0.1	0.0	0.1	-0.1	0.2	0.5	-0.1	0.0
Education and child care	-0.3	0.2	0.1	-0.3	-0.3	0.1	0.0	0.1	0.0
Utilities	0.2	0.1	-0.1	0.0	0.2	0.4	0.0	0.0	0.1
Communications	0.1	0.3	-0.1	-0.1	0.0	0.3	-0.5	0.1	0.2
Insurance	0.3	0.1	0.2	0.1	0.2	0.6	0.7	0.2	0.2
Household goods	-0.7	-0.1	0.2	-0.1	-0.1	0.4	0.1	0.5	-0.1
Holidays	-0.1	0.3	0.3	0.0	1.0	-0.3	0.3	0.0	0.2
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Notes: Expenditure measure comprises total expenditure excluding imputed rent but including mortgage repayments. Totals may not sum to 100 in the top panel, and to zero in the bottom panel, due to rounding.</i>									

percentage points), motor vehicle purchase (0.7 percentage points), clothing (0.3 percentage points), and tobacco (0.3 percentage points). It is likely that these changes mostly reflect price changes, with the notable exception of tobacco, where actual consumption is likely to have declined.

Several notable differences from the pattern for all households combined are evident for individual family types. First, combining housing rent and mortgage repayments, we see that share of expenditure on these components has increased by 3.8 percentage points for non-elderly single men and by 3.5 percentage points for non-elderly single women, well in excess of the 1.4 percentage point increase over all households combined. Clearly, housing costs have become a significantly more important expenditure component for non-elderly single persons in recent years. Second, groceries' share of expenditure increased by 1.1 percentage points for elderly couples and by 0.7 percentage points for non-elderly couples without dependent children, while it decreased by 0.9 percentage points for lone parents and by 0.7 percentage points for non-elderly single women. Third, non-elderly single men had a relatively large mean drop in the expenditure share of tobacco, on average decreasing by 0.8 percentage points, possibly suggesting this group had a relatively high rate of quitting smoking between 2006 and 2009. Finally, the elderly, and in particularly elderly couples, had relatively large increases in the expenditure share of private health insurance.

Endnotes

1 Respondents are asked for their household's expenditure on items over time-frames that vary: weekly expenditure is obtained for groceries, alcohol, tobacco, public transport and taxis, and meals eaten out; monthly expenditure is obtained for petrol, clothing, and telephone and internet charges; and annual expenditure is obtained for all other items.

2 We do not impute rent for non-home-owners paying no rent or public housing tenants receiving subsidised rents.

3 Note that in the lower panel of Table 10.3, it is the mean change in the expenditure share of each component that is presented, not the change in the mean expenditure share of each component. Thus, we are measuring the average change actually experienced by households.

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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, their earnings—both current and in the immediately preceding financial year—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 this section, we present brief overviews of some of the key labour market dimensions on which the HILDA Survey provides unique information in the Australian context, examining: transitions in labour force status; wage progression over time; movements between jobs; changes over time in preferred and actual hours of work; the rate and persistence of jobless and 'job-poor' households; and dimensions of job satisfaction and the factors associated with greater overall job satisfaction. Part B of this report additionally contains two articles on topics related to the labour market, the first on hours of work and job mobility (Chapter 27), and the second on mothers' employment transitions (Chapter 29).

11. Mobility in labour force status

Standard statistical summaries divide the population of workforce-age into three groups: those who are employed, either full-time or part-time; and two groups of non-employed people—the unemployed who are actively looking for work, and persons not in the labour force who are not actively seeking work. The HILDA Survey collects data from the same respondents every year, putting us in a position to assess many aspects of mobility in labour force status—that is, movements over time between different labour force states. For example, the data allow consideration of the extent of mobility of the Australian labour force, and more specifically, whether the same people remain in jobs year after year while others are persistently unemployed, or whether there is a

high degree of movement into and out of unemployment and other labour market states.

In Table 11.1, we provide an overview of the labour force status of the adult population for the nine-year period from 2001 to 2009. Over the eight years to 2008, there was a gradual but sustained increase in the proportion of the population in employment, rising from 67.1 to 70.4 per cent of men aged 15 years and over and from 53.3 to 58.6 per cent of women aged 15 years and over. Unemployment correspondingly declined, although the decline stopped before 2008, with the proportion unemployed in fact rising slightly for women aged 15 and over—from 2.6 per cent in 2007 to 2.8 per cent in 2008. Thus, the early

Labour force status

In this report, insofar as is possible, we follow international and Australian Bureau of Statistics 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.

stages of the economic downturn are evident even in 2008. In 2009, the proportion unemployed increased appreciably and employment rates declined. For men, the decline in employment put the employment-population rate back below its 2005 level.

Overall, the proportion of people working full-time did not change much between 2001 and 2009. The proportion of males employed full-time increased from 56.7 per cent in 2001 to 59.7 per cent in 2008, before declining again to 57.3 per cent in 2009. For females, the proportion working

Table 11.1: Labour force status of the population aged 15 years and over (%)

	2001	2003	2005	2007	2008	2009
Males						
Employed	67.1	68.9	69.6	70.2	70.4	69.3
Employed full-time	56.7	57.1	58.5	58.3	59.7	57.3
Employed part-time	11.2	11.8	11.1	11.8	10.8	12.0
Unemployed	5.3	4.1	3.4	2.9	2.9	4.2
Not in the labour force	26.8	27.0	26.9	26.9	26.6	26.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Females						
Employed	53.3	53.9	56.1	57.7	58.6	57.8
Employed full-time	28.1	27.5	28.4	31.0	31.8	30.6
Employed part-time	25.2	26.4	27.7	27.2	26.9	27.2
Unemployed	3.5	3.0	2.9	2.6	2.8	3.0
Not in the labour force	43.3	43.1	41.0	39.2	38.5	39.2
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 11.2: Changes in labour force status between 2008 and 2009—Males, by age group (%)

Labour force status in 2008	Labour force status in 2009				Total
	Full-time	Part-time	Unemployed	NILF	
Age 15–24					
Full-time	85.9	7.5	3.8	*2.8	100.0
Part-time	14.9	63.2	8.5	13.4	100.0
Unemployed	31.2	16.3	20.1	32.4	100.0
NILF	12.1	19.1	17.4	51.4	100.0
Total	47.4	24.3	9.3	19.0	100.0
Age 25–44					
Full-time	94.0	3.1	1.6	*1.2	100.0
Part-time	30.0	55.4	*6.0	*8.7	100.0
Unemployed	*25.2	*8.8	*37.7	*28.3	100.0
NILF	*16.9	*6.2	*9.7	67.1	100.0
Total	82.3	7.2	3.5	7.1	100.0
Age 45–64					
Full-time	89.8	6.0	1.7	2.5	100.0
Part-time	27.1	59.7	*0.8	12.3	100.0
Unemployed	*18.7	*18.5	*27.6	*35.1	100.0
NILF	*3.0	6.5	*5.3	85.1	100.0
Total	63.1	11.2	2.8	22.8	100.0
Age 65 and over					
Full-time	70.1	17.0	*0.0	12.9	100.0
Part-time	16.3	47.5	1.0	35.2	100.0
Unemployed	*0.0	*0.0	*0.0	*100.0	100.0
NILF	*0.6	1.3	*0.0	98.1	100.0
Total	5.4	5.8	*0.1	88.7	100.0
All					
Full-time	91.1	4.9	1.9	2.0	100.0
Part-time	21.7	58.9	5.1	14.3	100.0
Unemployed	26.9	13.8	27.6	31.6	100.0
NILF	4.7	6.1	5.2	84.0	100.0
Total	58.8	11.4	3.9	26.0	100.0

Notes: NILF—Not in the Labour Force. * Estimate not reliable.

full-time increased from 28.1 per cent in 2001 to 31.8 per cent in 2008 and, as was the case for males, the proportion of females in full-time employment declined slightly in 2009. In all nine years around 11–12 per cent of males and 25–28 per cent of females were employed part-time. Over this nine-year period, the proportion of males working part-time was highest in 2009, possibly due to reduced demand for full-time workers as a result of the Global Financial Crisis. Between 2001 and 2008, the proportion of the adult population who were unemployed dropped from 5.3 per cent for males and 3.5 per cent for females to 2.9 per cent for males and 2.8 per cent for females, but rose to 4.2 per cent for males and 3 per cent for females in 2009. In all nine years, approximately 27 per cent of males were not in the labour force and not looking for work. The proportion of females who were not in the labour force was around 43 per cent between 2001 and 2004, but subsequently dropped to 41 per cent in 2005 and 39 per cent in 2007, 2008 and 2009.

Mobility in labour force status

How many people move into, or out of the labour force from one year to the next? And how many

move from full-time work to part-time work or vice versa? Table 11.2 shows the changes in labour force status for males between 2008 and 2009, disaggregated by age group.² Among males aged 15 and over, most (91.1 per cent) who were working full-time in 2008 were still in full-time work in 2009—only 4.9 per cent had moved to part-time work, 1.9 per cent had become unemployed and 2 per cent had left the labour force. Among male 15 and over who were working part-time in 2008, 58.9 per cent were still working part-time in 2009, 21.7 per cent were in full-time work and 14.3 per cent had left the labour force. Over 40 per cent of the males who were unemployed in 2008 had jobs in 2009, while only 16 per cent of males who were not in the labour force in 2008 had (re-)entered the labour force in 2009.

Focusing now on labour force mobility of men in different age groups, Table 11.2 shows that persistence in full-time employment was highest among males aged between 25 and 44. Transitions from full-time employment to part-time work were more common among men aged 65 and over than for younger men, presumably because many men choose to reduce their working hours as part of a gradual transition to retirement. While only

Table 11.3: Changes in labour force status between 2008 and 2009—Females, by age group (%)

Labour force status in 2008	Labour force status in 2009				Total
	Full-time	Part-time	Unemployed	NILF	
Age 15–24					
Full-time	74.7	13.2	*4.0	8.2	100.0
Part-time	16.7	67.5	4.8	11.0	100.0
Unemployed	*26.9	32.2	21.9	19.0	100.0
NILF	*6.6	22.9	8.3	62.3	100.0
Total	30.0	38.6	6.7	24.7	100.0
Age 25–44					
Full-time	80.3	13.7	*0.6	5.4	100.0
Part-time	16.9	72.4	*1.4	9.3	100.0
Unemployed	*17.3	14.4	38.9	29.4	100.0
NILF	*3.5	15.6	5.9	74.9	100.0
Total	42.0	31.7	3.4	22.9	100.0
Age 45–64					
Full-time	86.2	8.1	*1.1	4.6	100.0
Part-time	12.3	76.4	*1.6	9.7	100.0
Unemployed	*0.0	*21.2	*18.6	60.2	100.0
NILF	*1.0	6.4	*1.3	91.3	100.0
Total	34.7	27.4	1.6	36.4	100.0
Age 65 and over					
Full-time	73.1	*0.0	*0.0	26.9	100.0
Part-time	3.3	68.8	1.2	26.6	100.0
Unemployed	*0.0	*0.0	49.6	50.4	100.0
NILF	*0.2	*0.4	*0.0	99.4	100.0
Total	1.2	3.3	*0.1	95.4	100.0
All					
Full-time	81.6	11.5	1.2	5.6	100.0
Part-time	14.9	72.5	2.3	10.3	100.0
Unemployed	18.1	22.5	28.8	30.6	100.0
NILF	1.8	7.9	2.5	87.8	100.0
Total	31.0	26.9	2.8	39.2	100.0

Notes: NILF—Not in the Labour Force. * Estimate not reliable.

1.9 per cent of males aged 65 and over re-entered the labour force between 2008 and 2009, 48.6 per cent of males aged between 15 and 24 had made a transition from being out of the labour force to either working or looking for employment in 2009. For many of these individuals, this is likely to have been a result of leaving full-time education.

Table 11.3 shows that, 81.6 per cent of females aged 15 and over who were in full-time employment in 2008 were still working full-time in 2009—11.5 per cent had changed to working part-time, 1.2 per cent had become unemployed and 5.6 per cent had left the labour force. Among females who were working part-time in 2008, 14.9 per cent had moved to full-time employment and 10.3 per cent had left the labour force. As was the case for males, over 40 per cent of females who were unemployed in 2008 were employed by 2009. However, more than half of those who had moved out of unemployment had moved into part-time work. For females, returning to the labour force after a period of non-participation was relatively uncommon—only 12.2 per cent of females who were not in the labour force in 2008 were either working or seeking employment in 2009.

Persistence in full-time employment was highest among females aged between 45 and 64, with 86.2 per cent of females in this age group who were working full-time in 2008 still in full-time employment in 2009. Transitions from full-time employment to part-time work were most common among women aged between 25 and 44, possibly because of caring responsibilities. Re-entry into the labour force was also more common among women aged between 25 and 44, with 15.6 per cent of women who were out of the labour force in 2008 having moved into part-time employment in 2009, and a further 3.5 per cent moving from non-participation to full-time work.

How has labour mobility changed over the HILDA Survey period? We can of course consider changes in income mobility in only a limited way over the nine-year span of the data. We do this in Tables 11.4 and 11.5, comparing the labour force mobility of prime-age men and women—aged between 25 and 54—from one year to the next in five pairs of years: 2001 to 2002, 2003 to 2004, 2005 to 2006, 2007 to 2008 and 2008 to 2009.

For prime-age males, persistence in full-time employment, that is, remaining in full-time

Table 11.4: Annual changes in labour force status, prime-age males (%)

	<i>Full-time</i>	<i>Part-time</i>	<i>Unemployed</i>	<i>NILF</i>	<i>Total</i>
2001 to 2002					
Full-time	94.0	2.7	1.8	1.4	100.0
Part-time	36.1	51.8	*3.5	*8.6	100.0
Unemployed	31.4	16.5	30.0	22.2	100.0
NILF	10.2	8.0	*8.2	73.7	100.0
Total	80.0	7.3	3.8	8.9	100.0
2003 to 2004					
Full-time	95.3	2.5	*0.8	1.4	100.0
Part-time	35.7	49.8	*4.0	10.6	100.0
Unemployed	30.5	*11.2	34.1	*24.2	100.0
NILF	12.4	5.9	*7.6	74.1	100.0
Total	80.8	6.6	2.7	9.8	100.0
2005 to 2006					
Full-time	94.5	3.2	*0.8	1.5	100.0
Part-time	35.7	53.5	*5.1	*5.7	100.0
Unemployed	38.5	*9.5	*23.1	*29.0	100.0
NILF	*8.6	*7.2	*11.1	73.1	100.0
Total	82.1	7.3	2.5	8.2	100.0
2007 to 2008					
Full-time	95.7	2.5	*0.8	1.0	100.0
Part-time	37.6	45.4	*4.7	*12.3	100.0
Unemployed	41.4	*7.0	*21.7	*29.8	100.0
NILF	19.0	*7.6	*7.8	65.6	100.0
Total	83.1	6.5	2.2	8.2	100.0
2008 to 2009					
Full-time	93.3	3.7	1.8	1.3	100.0
Part-time	31.0	56.1	*4.5	*8.5	100.0
Unemployed	*24.2	*8.7	*35.9	*31.3	100.0
NILF	12.1	*5.8	*8.8	73.3	100.0
Total	80.7	7.5	3.4	8.4	100.0

Notes: NILF—Not in the Labour Force. * Estimate not reliable.

employment from one year to the next, increased from 94 per cent between 2001 and 2002, to 95.7 per cent between 2007 and 2008, but dropped to 93.3 per cent between 2008 and 2009. Presumably this decline was a result of reduced demand for labour resulting from the Global Financial Crisis. On the other hand, persistence in part-time employment was more common between 2008 and 2009 than in previous years. Again, this is likely to be a result of reduced demand for labour, resulting in a larger proportion of males who had a preference for more working hours not being able to move from part-time employment to full-time work, or accepting reduced working hours in preference to unemployment. Only 31 per cent of prime-age males who were working part-time in 2008 had moved into full-time employment by 2009, compared to around 35.7 per cent between 2005 and 2006 and 37.6 per cent between 2007 and 2008. Re-entering the labour force after a period of non-participation was also less common between 2008 and 2009 than in previous years, with only 26.7 per cent of prime-age males who were out of the labour force in 2008 having returned to the labour force in 2009, compared to 34.4 per cent between 2007 and 2008.

For prime-age females, persistence in full-time employment increased from 83.6 per cent between 2001 and 2002, to 85.3 per cent between 2007 and 2008, before declining to 83.4 per cent between 2008 and 2009. Persistence in part-time employment among prime-age women increased from 73.5 per cent between 2001 and 2002 to 75.6 per cent between 2003 and 2004, declined to 71.8 per cent between 2005 and 2006 and rose to slightly to 73.1 per cent between 2008 and 2009. While the proportion of prime-age women making a transition from part-time work to full-time work remained quite steady at around 16 per cent in 2005–2006, 2007–2008 and 2008–2009, the proportion moving from full-time employment to part-time work increased from 10.2 per cent between 2007 and 2008 to 11.6 per cent between 2008 and 2009. As was the case for males, this is likely to be a result of reduced demand for labour stemming from the Global Financial Crisis. Re-entering the labour force after a period of non-participation was also less common between 2008 and 2009 than in previous years, with 79.6 per cent of prime-age females who were not in the labour force in 2008 remaining in that state in 2009.

Table 11.5: Annual changes in labour force status, prime-age females (%)

	<i>Full-time</i>	<i>Part-time</i>	<i>Unemployed</i>	<i>NILF</i>	<i>Total</i>
2001 to 2002					
Full-time	83.6	11.2	*1.1	4.1	100.0
Part-time	14.1	73.5	2.2	10.1	100.0
Unemployed	24.8	21.8	23.2	30.2	100.0
NILF	4.2	13.6	4.9	77.3	100.0
Total	38.8	31.0	3.2	27.0	100.0
2003 to 2004					
Full-time	84.7	10.2	*0.8	4.4	100.0
Part-time	14.1	75.6	*1.5	8.8	100.0
Unemployed	*13.4	26.5	22.4	37.7	100.0
NILF	3.8	18.3	4.1	73.8	100.0
Total	38.6	32.6	2.5	26.3	100.0
2005 to 2006					
Full-time	85.3	9.8	*0.8	4.1	100.0
Part-time	17.0	71.8	*1.8	9.4	100.0
Unemployed	29.6	24.9	*13.1	32.4	100.0
NILF	4.1	16.5	5.9	73.5	100.0
Total	40.6	32.2	2.8	24.4	100.0
2007 to 2008					
Full-time	85.3	10.2	*0.9	3.6	100.0
Part-time	16.7	72.7	1.8	8.9	100.0
Unemployed	*17.7	29.9	*21.8	30.7	100.0
NILF	4.0	15.9	6.0	74.1	100.0
Total	43.1	31.2	2.9	22.8	100.0
2008 to 2009					
Full-time	83.4	11.6	*0.9	4.1	100.0
Part-time	16.3	73.1	1.5	9.1	100.0
Unemployed	*14.4	15.8	35.0	34.7	100.0
NILF	*2.8	13.0	4.6	79.6	100.0
Total	43.0	30.9	2.9	23.2	100.0

Notes: NILF—Not in the Labour Force. * Estimate not reliable.

The longitudinal nature of the HILDA Survey data allows us to examine changes in labour force status over longer periods of time than just one year. In Tables 11.6 and 11.7, we examine changes in labour force status for prime-age males and females in the one-, two-, four-, six- and eight-year periods to 2009.³

While 93.3 per cent of prime-age males who were in full-time employment in 2008 were still working full-time in 2009, the proportion remaining in full-time employment declines when longer periods of time are considered. For example, 91.4 per cent of prime-age males who were working full-time in 2005 were also in full-time employment in 2009, and 89 per cent of those who were in full-time employment in 2001 were in full-time work in 2009. Previous versions of this report have shown that most prime-age men have a preference for full-time work over part-time work, and only 56.1 per cent of prime-age males who were working part-time in 2008 were still in part-time work in 2009. The proportion of prime-age males who were in part-time employment in both 2007 and 2009 is only 35.7 per cent, and among those who were working part-time in 2001, only 24.9 per cent

were in part-time employment in 2009. For many prime-age males, being out of the labour force also appears to be a temporary situation. While 73.3 per cent of those who were out of the labour force in 2008 were in the same state in 2009, only 63.2 per cent of prime-age males were out of the labour force in both 2007 and 2009, and 53.3 per cent were not employed and not seeking employment in both 2003 and 2009.

Table 11.7 shows that, while 83.4 per cent of prime-age women remained in full-time employment between 2008 and 2009, only 72.8 per cent were working full-time in both 2005 and 2009, and among those who were in full-time work in 2001, only 63.6 per cent were also working full-time in 2009. Similarly, while 73.1 per cent of prime-age women who were in part-time employment in 2008 were also working part-time in 2009, only 57.5 per cent were working part-time in both 2005 and 2009, and among those who were working part-time in 2001, 50.1 per cent were in part-time employment in 2009. While 79.6 per cent of prime-age women who were out of the labour force in 2008 were not participating in the labour force in 2009, only 59.6 per cent of

Table 11.6: Changes in labour force status to 2009, prime-age males (%)

	<i>Full-time</i>	<i>Part-time</i>	<i>Unemployed</i>	<i>NILF</i>	<i>Total</i>
2008 to 2009					
Full-time	93.3	3.7	1.8	1.3	100.0
Part-time	31.0	56.1	*4.5	*8.5	100.0
Unemployed	*24.2	*8.7	*35.9	*31.3	100.0
NILF	12.1	*5.8	*8.8	73.3	100.0
Total	80.7	7.5	3.4	8.4	100.0
2007 to 2009					
Full-time	92.2	4.3	2.0	1.5	100.0
Part-time	46.1	35.7	*6.4	11.8	100.0
Unemployed	39.1	*9.8	*20.9	30.2	100.0
NILF	21.0	8.4	*7.5	63.2	100.0
Total	80.8	7.4	3.3	8.5	100.0
2005 to 2009					
Full-time	91.4	4.7	1.7	2.2	100.0
Part-time	48.8	37.2	*4.4	*9.5	100.0
Unemployed	51.1	*9.0	*27.9	*12.0	100.0
NILF	22.2	12.3	*5.9	59.6	100.0
Total	82.4	7.5	2.9	7.2	100.0
2003 to 2009					
Full-time	89.7	5.3	1.3	3.7	100.0
Part-time	51.0	32.9	*6.1	*10.0	100.0
Unemployed	41.1	*10.6	*17.1	*31.2	100.0
NILF	34.7	*6.5	*5.8	53.0	100.0
Total	80.7	7.6	2.5	9.1	100.0
2001 to 2009					
Full-time	89.0	5.7	2.1	3.2	100.0
Part-time	60.3	24.9	*2.3	*12.6	100.0
Unemployed	49.8	*11.6	*20.4	*18.2	100.0
NILF	28.7	*8.0	*1.7	61.6	100.0
Total	81.4	7.5	2.9	8.1	100.0

Notes: NILF—Not in the Labour Force. * Estimate not reliable.

Table 11.7: Changes in labour force status to 2009, prime-age females (%)

	<i>Full-time</i>	<i>Part-time</i>	<i>Unemployed</i>	<i>NILF</i>	<i>Total</i>
2008 to 2009					
Full-time	83.4	11.6	*0.9	4.1	100.0
Part-time	16.3	73.1	1.5	9.1	100.0
Unemployed	*14.4	15.8	35.0	34.7	100.0
NILF	*2.8	13.0	4.6	79.6	100.0
Total	43.0	30.9	2.9	23.2	100.0
2007 to 2009					
Full-time	79.0	14.1	*0.9	6.0	100.0
Part-time	21.4	65.8	2.6	10.2	100.0
Unemployed	*17.9	31.6	*8.9	41.6	100.0
NILF	6.9	19.9	5.5	67.7	100.0
Total	43.1	31.4	2.7	22.8	100.0
2005 to 2009					
Full-time	72.8	16.7	*1.3	9.3	100.0
Part-time	27.6	57.5	2.1	12.7	100.0
Unemployed	37.8	23.4	*8.4	*30.5	100.0
NILF	10.3	24.7	5.4	59.6	100.0
Total	41.4	32.1	2.8	23.6	100.0
2003 to 2009					
Full-time	67.8	20.4	*1.4	10.3	100.0
Part-time	32.8	53.7	*2.2	11.4	100.0
Unemployed	*26.4	27.3	*12.9	33.4	100.0
NILF	14.5	33.5	3.4	48.6	100.0
Total	41.4	33.9	2.5	22.2	100.0
2001 to 2009					
Full-time	63.6	24.9	*1.0	10.5	100.0
Part-time	35.4	50.1	2.6	11.8	100.0
Unemployed	26.8	31.9	*15.8	25.5	100.0
NILF	18.9	31.6	3.0	46.5	100.0
Total	41.5	34.5	2.5	21.4	100.0
<i>Notes: NILF—Not in the Labour Force. * Estimate not reliable.</i>					

those who were not participating in 2005 were not in the labour force in 2009, and among those who were out of the labour force in 2001, more than half had re-entered the workforce by 2009—18.9 per cent were working full-time, 31.6 per cent were working part-time and 3 per cent were seeking employment.

Endnotes

- 1 The definition of part-time employment adopted in this report differs from the definition employed by the Australian Bureau of Statistics (ABS) for its Labour Force Survey. The ABS definition requires both usual and *current actual* weekly hours to be less than 35.
- 2 The measure of labour mobility examined in this report is based on labour force status at the time of (annual) interview and therefore does not identify all movements

between labour force states. The ABS Labour Force Survey is the best source for changes in short-term labour force status transitions, since respondents are interviewed monthly for eight months. See ABS (2012).

- 3 In Tables 11.6 and 11.7, the sample is restricted to those who were aged between 25 and 54 in both of the years being considered. Some individuals may move from one labour force state to another and back to their original state between interview periods, for example, because of a short period of unemployment. Therefore, persistence in any labour force state will inevitably be overstated in Tables 11.6 and 11.7.

Reference

Australian Bureau of Statistics (2012) *Labour Force, Australia, February 2012*, Catalogue No. 6202.0, ABS, Canberra.

12. Wages and wage changes

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 individual workers' wage progression over time. What is the nature of individual workers' wage changes? Which workers have had wage growth and which workers have not? These are some of the questions which are important to our understanding of the Australian labour market and its evolution over time.

The HILDA Survey does not ask respondents to report their hourly wage; rather, usual weekly 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 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 addition 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.

In the following analysis of wages, we exclude 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). 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. All wages are expressed at December quarter 2009 prices to remove the effects of inflation.

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 12.1 presents summary measures of the distribution of weekly earnings among employees in six of the nine waves, for full-time and part-time employees separately.¹ Mean weekly hours of work is also presented in the table to aid comparisons between full-time and part-time workers. Real earnings have grown reasonably steadily over the 2001 to 2009 period. Mean earnings of full-time employees grew from \$1,069 in 2001 to \$1,202 in 2009, a real (inflation-adjusted) increase of 12.4 per cent. Growth in mean weekly earnings experienced by part-time workers was also 12.4 per cent, rising from \$371 in 2001 to \$417 in 2009.

The growth in weekly earnings has not been restricted to a particular part of the distribution—that is, earnings have 'shifted up' at all levels. This is indicated by the fact that the weekly wages at the 10th percentile, at the 50th percentile (the median) and at the 90th percentile all grew. However, among full-time employees, wages have grown somewhat more strongly for high earners.

Table 12.1: Distribution of weekly earnings (December 2009 prices)

	2001	2004	2006	2007	2008	2009
Full-time employees						
Mean (\$)	1,069	1,086	1,142	1,164	1,181	1,202
Median (\$)	939	949	1,004	1,032	1,021	1,050
10th percentile (\$)	547	572	580	588	592	600
90th percentile (\$)	1,729	1,735	1,840	1,874	1,926	1,965
Gini coefficient	0.271	0.264	0.268	0.269	0.275	0.272
Mean weekly hours of work	43.7	43.3	43.6	43.3	43.2	43.0
Part-time employees						
Mean (\$)	371	387	402	409	409	417
Median (\$)	313	347	342	348	357	357
10th percentile (\$)	75	72	87	88	87	80
90th percentile (\$)	732	720	763	794	769	800
Gini coefficient	0.407	0.396	0.395	0.398	0.394	0.400
Mean weekly hours of work	17.8	18.2	18.4	18.4	18.2	18.4

In 2009, a full-time employee at the 10th percentile of the distribution—with 90 per cent of full-time employees having higher earnings—earned 9.7 per cent more than an employee in the same position in 2001; a full-time employee in the middle of the distribution earned 11.8 per cent more in 2009 than a full-time employee in the middle of the distribution in 2001; and a full-time employee at the 90th percentile of the distribution in 2009—with 90 per cent of full-time employees having lower earnings—earned 13.6 per cent more than a worker in the same position in 2001.

Despite the slightly more favourable changes for high-wage full-time employees than low-wage full-time employees, the Gini coefficient, which provides a summary measure of overall inequality, has remained essentially unchanged over the nine-year period. There is thus no strong evidence that the labour market has become more unequal since 2001, although of course such cross-sectional analysis does not tell us how individual workers have fared.

Weekly earnings patterns over time can be influenced by changes in hours worked, not only among part-time workers, but also among full-time workers. While weekly earnings are clearly a key concern for workers, labour economists studying earnings—as opposed to incomes—have

primarily been interested in the ‘rate’ at which labour is rewarded in the labour market—its ‘price’—and correspondingly have generally focused on hourly earnings.

According to the HILDA data (Table 12.2), in 2009 the mean hourly earnings of full-time employees at December quarter 2009 prices was \$27.89 and the median was \$25.00. The differences between part-time and full-time hourly earnings are much smaller than the differences in weekly earnings, reflecting the longer average hours worked by full-time employees. Nonetheless, hourly earnings are on average lower for part-time employees: in 2009, mean hourly earnings of part-time employees were \$23.03 and median earnings were \$19.88. Changes between 2001 and 2009 are, for full-time employees, of a very similar nature to the changes evident for weekly earnings, implying the distribution of hours worked among full-time employees has not changed significantly over the period. Among part-time employees, the growth in hourly earnings is proportionately similar to the growth in weekly earnings at the 10th, 50th and 90th percentiles, suggesting that the distribution of hours worked has for the most part not changed. However, growth in the *mean* hourly wage of part-time workers between 2001 and 2009 is minimal. Given the decline in the Gini

Table 12.2: Distribution of hourly earnings (December 2009 prices)

	2001	2004	2006	2007	2008	2009
Full-time employees						
Mean (\$)	24.45	25.10	26.12	26.75	27.27	27.89
Median (\$)	21.91	22.53	23.61	24.04	24.30	25.00
10th percentile (\$)	13.02	13.88	14.03	14.82	14.75	15.26
90th percentile (\$)	37.87	38.88	41.18	41.79	42.72	43.44
Gini coefficient	0.249	0.242	0.244	0.244	0.251	0.247
Part-time employees						
Mean (\$)	22.73	22.64	22.94	22.74	22.97	23.03
Median (\$)	17.61	18.70	18.83	19.32	19.29	19.88
10th percentile (\$)	9.08	9.26	9.69	9.41	9.29	10.00
90th percentile (\$)	33.90	34.28	36.33	36.39	37.78	37.50
Gini coefficient	0.367	0.337	0.329	0.321	0.318	0.318

Table 12.3: Median wage growth of low-paid employees compared with other employees, by sex and age group, 2001 to 2009 (%)

	1-year growth		3-year growth		5-year growth	
	Low-paid employees	Other employees	Low-paid employees	Other employees	Low-paid employees	Other employees
Males						
Aged 15–24	24.3	1.4	74.3	11.9	110.8	23.9
Aged 25–44	23.4	1.8	37.6	8.2	67.7	14.2
Aged 45–54	21.1	0.8	36.8	4.3	57.6	6.9
Aged 55 and over	27.4	0.5	57.5	5.6	47.9	8.6
Females						
Aged 15–24	25.7	-1.1	59.0	8.7	92.6	16.6
Aged 25–44	28.4	1.1	43.3	6.6	57.0	12.2
Aged 45–54	21.1	0.4	36.5	4.0	50.7	8.3
Aged 55 and over	17.2	-0.1	36.3	3.2	74.9	3.3

Note: Estimates are conditional on remaining an employee over the period spanned.

coefficient evident for hourly wages of part-time employees, the low growth in mean hourly wages appears to be due to a decline in part-time workers reporting low weekly hours of work, which led them to have very high hourly wages (above the 90th percentile) in earlier waves.

Wage changes for the low-paid

We now turn to the relative strength of HILDA: the ability to examine wage *progression* of individual employees. In particular, we consider changes over time in wages of low-paid employees. The issue of whether low-paid jobs lead to higher paid jobs, or simply lead to continued employment in low-paid jobs, or even cycles between ‘no pay’ (non-employment) and ‘low pay’, is one that has received some attention in recent years (e.g. Stewart and Swaffield, 1997). What do the HILDA Survey data indicate happens to the wages over time of employees who are initially low-paid?

To investigate this question, we can compare wage growth over time of low-paid employees with wage growth of employees who are not low-paid.² Results from such comparisons are presented in Table 12.3. The table shows, for all waves of data combined median real wage growth of low-paid employees over three different time-frames—one year, three years and five years—compared with median real wage growth, over the same time-frames, of employees who are not low-paid. The wage measure in Table 12.3 is the employee’s *hourly* wage, since our focus is on rates of pay (not income). However, in identifying low-paid employees, we follow Hahn and Wilkins (2009) and define ‘low-paid’ as ‘earning less per hour than 120 per cent of the hourly federal minimum wage and less per week than 120 per cent of the weekly federal minimum wage’.³ The weekly earnings criterion avoids the problem of highly-paid full-time employees being classified as low-paid simply because they report working very long hours.

Since low-paid employees are more likely to be young than other employees, to control for this difference, estimates are presented separately by age group. We also consider males and females separately because, given differences in the extent and nature of their participation in the labour market, the evolution of their wages over time is also potentially quite different. Finally, only persons who were employees in all of the waves over which changes are measured are included in producing the estimates presented in the table.

The striking result in Table 12.3 is that median wage growth of low-paid employees is substantially greater than median wage growth of other employees. The differential holds for both males and females and over all age groups, and is larger the longer the time-frame over which wage changes are measured. The evidence from the HILDA Survey data, therefore, is that low-paid jobs do lead to substantially higher-paid jobs—although

we need to be mindful that wage increases over time can be due to minimum wage increases and enterprise agreement wage increases, as opposed to movements into higher-paying jobs. It should also be remembered that the analysis presented in Table 12.3 is restricted to people who remain employees over the entire time-frame under study. For example, five-year wage growth is obtained only for employees who were employed in all five consecutive waves. It is possible that employees in low-paid jobs are more likely to become unemployed (or otherwise non-employed) than other employees, in which case this analysis will probably overstate wage progression of the low-paid compared to other employees.

Discussion

Significant real earnings growth is evident across the eight-year period spanned by the first nine waves of the HILDA Survey. Earnings inequality has also remained relatively stable over this period, implying the growth in earnings has been shared by most employees. This stability in inequality has been maintained despite the substantial employment growth that occurred between 2001 and 2008, and the contraction in employment that occurred in 2009. These employment fluctuations have resulted in significant changes in the composition of employment, but have not translated to sizeable fluctuations in wage inequality. Analysis of wage progression of employees over this period also suggests that low-paid employees who remained in employment achieved very good wage growth over this period, adding support to policy-makers’ focus in recent decades on ‘getting people into (any) jobs’ as a way to improve their economic wellbeing.

Endnotes

- 1 Full-time employment is defined to be a situation in which usual weekly hours of work are 35 or more.
- 2 Note that since our focus in the chapter is on wages, we do not consider movements between non-employment and low-paid jobs, as a number of studies have done.
- 3 The (nominal) minimum wage for a 38-hour week was \$413.40 in Wave 1, \$431.40 in Wave 2, \$448.40 in Wave 3, \$467.40 in Wave 4, \$484.40 in Waves 5 and 6, \$511.86 in Wave 7, \$543.78 in Wave 8 and \$543.78 in Wave 9.

References

- Hahn, M. and Wilkins, R. (2009) ‘A Multi-dimensional Approach to Investigation of Living Standards of the Low-Paid: Income, Wealth, Financial Stress and Consumption Expenditure’, Australian Fair Pay Commission Research Report 4/09, Melbourne.
- Stewart, M. and Swaffield, J. (1997) ‘The Dynamics of Low Pay in Britain’, in P. Gregg (ed.), *Jobs, Wages and Poverty: Patterns of Persistence and Mobility in the New Flexible Labour Market*, Centre for Economic Performance, London.

13. Job mobility

Integral to understanding labour market dynamics is knowledge of the extent and nature of job changes, including how often people change jobs, what sort of jobs they leave, what sort of jobs they go to, why they change jobs and the outcomes experienced by people who change jobs. By its nature, the HILDA Survey is well placed to contribute useful insights into this aspect of the labour market.

Movements between jobs can occur for a wide variety of reasons, but ultimately the key driver is the desire by employers and employees to find better matches between workers and jobs. Mobility is therefore neither inherently good nor bad. It is good from the perspective that it facilitates improved firm–worker matches, but it is bad from the perspective that the need for it only arises because of the existence of ‘inferior’ matches. Note that a match between a worker and an employer will often initially be good, but as circumstances change—for example, as the skills of the worker increase, the nature or size of the firm’s business changes, or new outside opportunities for the employer or employee develop—better potential matches may arise.

In the context of the interpretation of job mobility as the outcome of a ‘match-making’ exercise, it is valuable to understand its pervasiveness, the characteristics of the workers and jobs associated with the most mobility, and the underlying reasons for the initial mismatches (in the origin jobs) or new improved matches (in the destination jobs). The HILDA Survey produces comprehensive information on job changes via the employment and education ‘calendar’ that is obtained from each respondent for at least the 12 months leading up to the date of interview. This calendar provides a complete picture of the respondent’s labour force and education participation status in each third of each month since July 2000, and also records, to the nearest third of a month, the start and end dates of all jobs in the HILDA Survey sample period, allowing all job changes to be identified.

Table 13.1 presents information on job-holding and job mobility in each year derived from the employment and education calendar. It shows, for

people employed at some stage in the financial year immediately preceding the wave, the means of number of jobs held, number of job starts and number of job ends, as well as the percentage of workers who changed jobs once and the percentage of workers who changed jobs twice or more in that financial year. For example, the last row shows that the mean number of jobs held in the 2008–09 financial year by people employed at some stage of that year was 1.23, the mean number of job starts was 0.15 and the mean number of job ends was 0.18, while 8.2 per cent of people employed in that year changed jobs once and 1.5 per cent changed jobs twice or more.¹ These figures are not entirely representative of the rest of the HILDA Survey period; rather, they indicate a decline in job mobility occurred in 2008–09 after relatively stable levels of mobility between 2001–02 and 2007–08. Up until the last financial year, approximately 12 per cent of workers changed jobs each year (at least once), whereas in 2008–09, this fell to under 10 per cent, presumably due to the economic slowdown that began in mid-2008. In all years, a higher rate of job ends than job starts is evident, which appears to reflect recall bias, whereby there is a tendency to report jobs as starting at or prior to the beginning of the reference period (the previous financial year), leading to understatement of job starts within that financial year.

To further investigate the nature and consequences of job mobility, we restrict our analysis to job changes from one wave to the next. Specifically, a job change is only defined to occur if the employer in the respondent’s current main job (at the time of interview) changes from one wave to the next. This is because it is only for jobs held at the time of interview that we have information such as occupation, hours, wage and industry, and contemporaneous information about other aspects of the respondent’s life, such as family situation, health and income. We therefore essentially ignore within-wave job transitions when a person changes jobs more than once from one wave to the next. However, as Table 13.1 shows, relatively few people appear to change

Table 13.1: Job transitions in the previous financial year—Persons employed in the previous financial year

	<i>Mean number of jobs</i>	<i>Mean number of job starts</i>	<i>Mean number of job ends</i>	<i>Percentage who changed jobs once</i>	<i>Percentage who changed jobs twice or more</i>
2001	1.24	0.13	0.24	7.2	1.4
2002	1.29	0.19	0.27	10.2	2.3
2003	1.29	0.18	0.26	10.3	2.1
2004	1.28	0.17	0.24	9.6	1.8
2005	1.29	0.19	0.26	10.0	2.4
2006	1.26	0.17	0.24	9.7	1.9
2007	1.28	0.19	0.24	10.4	1.9
2008	1.28	0.19	0.25	10.1	2.2
2009	1.23	0.15	0.18	8.2	1.5

jobs more than once per year, and so there is relatively little information loss from this necessary restriction on the analysis.²

When examining intervals longer than two years, in addition to the job changes identified above, we also assume that if a person was employed in one wave, not employed in the next wave, and then employed in a subsequent wave, that the individual has changed jobs. In some cases, individuals will be returning to the same job, but it is generally not possible to identify these cases.

Table 13.2 examines the prevalence of job changing between Waves 1 and 2, between Waves 4 and 5, between Waves 6 and 7, between Waves 7 and 8, and between Waves 8 and 9. For persons initially employed (in the first of the two waves), it shows the percentage in each of three 'destinations' in the next wave: (i) still in the same job; (ii) employed in a different job; and (iii) no longer employed. For example, the number in the upper left corner indicates that 77.5 per cent of males aged 15 and over employed at the time of interview in Wave 1 were still in the same job at the time of interview in Wave 2. The next cell down indicates that 16.2 per cent were employed in a different job, while the third cell down indicates that 6.4 per cent were no longer employed.

Up until the last wave-pair, approximately 16 per cent of employed males and females were observed to change jobs each year. Female workers were less likely to remain in the same job, but this is because they have a higher rate of ceasing work rather than a higher rate of job changing. Significantly, for both males and females, the rates of job changing are actually higher than those implied by the estimates reported in Table 13.1, based on the job calendar. This suggests that many respondents fail to (correctly) recollect job starts and ends.

An alternative way of interpreting the figures presented in Table 13.2 is that, up until 2008, employed persons on average changed jobs every six years. Of course, some workers will have changed jobs more frequently than others, so we cannot infer how many workers actually changed jobs within a six-year time-frame from this analysis. Furthermore, job

changes can arise via an employed person leaving employment, potentially for an extended period, and then returning to employment. Many of these job changes—in particular, those where the period of non-employment straddles the time of interview—will not be identified from examination of transitions from one wave to the next.

Turning to the last wave-pair in Table 13.2, we see that, between 2008 and 2009, more workers remained in the same job and, as indicated by Table 13.1, fewer workers changed jobs. There was also a slight increase in the proportion moving out of employment. Between 2008 and 2009, more workers remained in the same job and, as indicated by Table 13.1, fewer workers changed jobs. There was also a slight increase in the proportion moving out of employment. Explaining the source and implications of this decline in mobility requires more detailed analysis than presented in this article. However, as noted earlier in this report, the unemployment rate in Australia rose from August 2008 to May 2009, and remained at the May 2009 level until October 2009. It therefore seems that rises in unemployment have a negative effect on job mobility, although it could also be that more general increases in fears associated with the financial crisis were behind at least part of the reduced propensity for job mobility.

In Table 13.3, medium-term job mobility is considered by describing the prevalence of job changing over three-year spans (2001 to 2004 and 2005 to 2009), and also over the full nine waves of the HILDA data. For this analysis, a job change is defined to occur whenever a person reports being in a different job to that when last interviewed, or is observed to be employed in one wave, not employed in the next wave and then employed in a subsequent wave. The sample comprises persons employed in the initial wave (e.g. 2001 for the 2001–2004 analysis).

The table shows that over 35 per cent of employed persons change jobs over the course of the next three years, while approximately 54 per cent change jobs over the course of the next eight years. Over a three-year period, approximately 58 per cent of males and 53 per cent of females

Table 13.2: Prevalence of job changing among persons aged 15 years and over (%)

	2001 and 2002	2004 and 2005	2006 and 2007	2007 and 2008	2008 and 2009
Males					
Stayed in same job	77.5	78.5	77.5	78.9	80.6
Changed jobs	16.2	16.0	16.6	15.3	13.0
Stopped working	6.4	5.5	6.0	5.8	6.4
Total	100.0	100.0	100.0	100.0	100.0
Females					
Stayed in same job	74.4	74.8	74.7	75.8	78.5
Changed jobs	15.3	16.2	17.3	15.9	12.0
Stopped working	10.3	9.0	8.0	8.3	9.5
Total	100.0	100.0	100.0	100.0	100.0

Notes: Sample in each column comprises persons employed in the initial wave. Percentages may not add up to 100 due to rounding.

Table 13.3: Prevalence of job changing over the medium term (%)

	2001–2004	2005–2009	2001–2009
Males			
Changed jobs	35.4	35.3	53.9
Did not change jobs and employed in all waves	57.5	58.0	35.5
Did not change jobs and stopped working	7.1	6.7	10.6
Total	100.0	100.0	100.0
Females			
Changed jobs	35.4	37.0	54.7
Did not change jobs and employed in all waves	52.9	52.6	31.4
Did not change jobs and stopped working	11.7	10.3	13.9
Total	100.0	100.0	100.0

Notes: Sample in each column comprises persons employed in the initial wave. Percentages may not add up to 100 due to rounding.

remain employed in the same job. The remaining 7 per cent of males initially employed and 10–12 per cent of females initially employed leave employment and do not return within the three-year period. Over an eight-year period, approximately 36 per cent of males and 31 per cent of females remain employed in the same job, while the remaining 11 per cent of males and 14 per cent of females leave employment and do not return to employment within the eight-year period.

What changes about the job when a worker changes job?

In Tables 13.4 and 13.5 we examine the nature of job changes, focusing on the relatively immediate

transitions that are observed from one wave to the next. Table 13.4 compares changes in job characteristics of workers who did not change jobs to changes in job characteristics of workers who did change jobs.

The top panel examines changes in occupation. ‘Classified as changing occupations’ is the proportion classified as employed in a different Australian and New Zealand Standard Classification of Occupations (ANZSCO) First Edition (2006) two-digit level occupation based on the respondent’s job title and main duties in his or her current main job. ‘Reported changing occupations’ is the proportion responding in the affirmative to a direct question of whether the respondent has changed

Table 13.4: Changes in employment outcomes from one year to the next—Job changers compared with job stayers (%)

	2001–2002		2004–2005		2006–2007		2007–2008		2008–2009	
	Job change	No job change								
Occupation										
Classified as changing occupations	64.2	31.0	59.9	27.8	65.0	29.2	63.8	30.6	62.4	28.2
Reported changing occupations	61.2	8.4	63.9	8.0	65.4	8.6	64.2	10.7	61.9	6.0
Part-time/full-time status										
Remained employed part-time	21.0	22.3	21.0	24.1	21.4	21.9	17.7	22.3	18.8	22.6
Moved from part-time to full-time employment	14.4	4.3	15.4	4.5	14.3	4.8	16.9	4.8	11.7	4.2
Remained employed full-time	54.6	69.6	54.4	68.4	54.9	69.3	57.0	69.1	57.6	68.4
Moved from full-time to part-time employment	9.9	3.8	9.3	3.0	9.4	3.9	8.4	3.8	11.6	4.6
Weekly working hours										
Increased by more than 5 hours	31.1	15.3	31.9	15.8	29.5	14.3	32.4	14.0	29.3	13.5
Decreased by more than 5 hours	24.4	14.1	20.8	12.3	24.7	12.3	20.5	12.9	23.7	14.1
Did not change by more than 5 hours	44.5	70.7	47.3	71.9	45.8	73.4	47.1	73.1	47.0	72.4
Earnings										
Pay went up more than 10%	46.8	37.4	54.2	40.4	53.4	41.9	52.3	39.3	40.8	38.8
Pay went up 0–10%	9.8	19.4	10.6	21.2	9.6	20.2	9.8	19.4	9.8	19.7
Pay went down	43.4	43.2	35.2	38.4	37.0	37.9	37.9	41.3	49.4	41.5

Notes: A job changer is employed in different jobs in the two waves indicated by the column heading; a job stayer is employed in the same job in both waves. ‘Classified occupation changes’ are based on two-digit level classification.

Table 13.5: Nature of job changes (%)

	2001–2002	2004–2005	2006–2007	2007–2008	2008–2009
Changed industry	66.2	67.0	71.2	71.6	69.4
Employee/employer status					
Remained employee	81.0	84.6	85.9	87.7	84.6
Moved from employee to employer/self-employed	7.9	5.6	6.3	5.3	8.1
Remained employer/self-employed	4.8	3.0	1.8	1.9	2.8
Moved from employer/self-employed to employee	5.2	5.5	4.9	4.8	3.7
Reason left last job					
Dismissed by employer	18.2	10.8	11.1	10.9	26.4
Quit to get better job	48.4	60.6	58.6	63.1	52.6
Quit to stop work	4.3	6.0	5.6	5.2	5.1
Quit for other reasons	7.2	5.3	8.1	7.2	7.2
Other reasons	7.9	5.9	4.9	3.8	6.9
<i>Notes: Figures represent the proportion of job changes for which the change indicated by the row heading is applicable. The reason for leaving last job 'Dismissed by employer' comprises 'Got laid off/no work available/retrenched/made redundant/employer went out of business/dismissed etc.' 'Quit for other reasons' comprises 'Holiday job', 'Self-employed: business closed down or sold for other reasons', 'Spouse/partner transferred' and 'Migrated to a new country'. 'Other reasons' comprise 'Job was temporary or seasonal' and 'Self-employed: business closed down for economic reasons (went broke/liquidated/no work/not enough business)'.</i>					

occupations since the date of last interview. Over 60 per cent of job changers reported that their occupation had changed, which matched the percentage classified as working in a different two-digit occupation. As would be expected, those who did not change jobs had low rates of reporting a different occupation, at approximately 8 per cent. However, approximately 30 per cent were classified as working in a different occupation, even at the fairly aggregated two-digit level. This reflects inherent variability in how respondents describe their occupations more than true variation in occupations.

Just under one-quarter of job changes involve a change in full-time/part-time employment status, which is about three times the rate of change among workers who do not change jobs. Persons who remained in the same job were about equally likely to move from part-time to full-time employment as from full-time to part-time employment. In contrast, up until 2007–2008, the proportion of job changers moving from part-time to full-time employment was approximately 50 per cent higher than the proportion moving from full-time to part-time employment, so changing jobs more often facilitated a transition from part-time employment to full-time employment than the reverse. However, between Waves 8 and 9, workers who changed jobs were equally likely to move from full-time to part-time employment as in the reverse direction. This change arose via both a decline in the percentage moving from part-time to full-time employment and an increase in the percentage moving from full-time to part-time employment. The weaker labour market in 2009 was no doubt responsible for this shift. For workers who did not change jobs, there were also increased movements from full-time to part-time employment and decreased movements from part-time to full-time employment, but the changes were very slight.

Consistent with the higher rate of change in part-time/full-time status, weekly working hours are

more likely to change (by more than 5) for job changers. Over half of those who change jobs significantly change their hours of work, compared with less than 30 per cent of those who remain in the same job.

The last panel of Table 13.4 considers changes in real (inflation-adjusted) weekly earnings. Again, there is a relatively stable pattern up until 2007–2008 that ceases to hold for the 2008–2009 period. Up until 2007–2008, workers who changed jobs were just as likely to experience a decline in earnings as those who did not change jobs, but they were considerably more likely to have a substantial—greater than 10 per cent—increase in earnings. The proportion experiencing substantial pay increases grew for both job stayers and job changers over the 2001 to 2008 period, but it was consistently higher for job changers. For example, 52.3 per cent of workers who changed jobs between 2007 and 2008 had pay increases in excess of 10 per cent, compared with 39.3 per cent of other workers. For the 2008–2009 period, the proportion of job changers experiencing a substantial pay increase dropped to 40.8 per cent, matched by an increase in the proportion experiencing a pay cut to 49.4 per cent. In contrast, workers who did not change jobs between 2008 and 2009 had only slight changes in likelihood of a pay cut or substantial pay increase.

Table 13.5 considers changes in outcomes that by definition should not change for those who remain in the same job, namely industry and employee/employer status. It also summarises the reasons job changers left the last job. Approximately 66 to 72 per cent of job changes involve a change in industry (at the Australian and New Zealand Standard Industrial Classification (ANZSIC), Second Edition (2006) two-digit level, at which 86 industries are distinguished). For most job changes the worker was an employee before and after the job change. The number of job changes involving a switch between employee

and employer/self-employed status—and in particular *from* employee to employer or self-employed—is not insignificant.

Most job changes are precipitated by workers quitting, and the proportion increased up until 2008. Consistent with the ‘improved firm–worker match’ hypothesis, respondents most commonly report that the reason for leaving the last job was to go to (or get) a better job. A small proportion—up to 7 per cent—stop work because of sickness, pregnancy, caring responsibilities, desire to retire or study.³ A similar proportion quit for other reasons, including closure of own business and spouse or partner being transferred. Job changes precipitated by dismissal or retrenchment declined from 18.2 per cent in 2001–2002 to 10.9 per cent in 2008, most likely reflecting the strength of the Australian economy and labour market over this period. However, as we would expect, there was a dramatic rise in job moves precipitated by dismissal or retrenchment, to 26.4 per cent of all job changes between Waves 8 and 9.

Job loss between Waves 8 and 9

Table 13.5 shows that job changes precipitated by job dismissal rose between Waves 8 and 9. It would seem likely that the rise in unemployment between Waves 8 and 9 would have increased the number of dismissed and retrenched workers more generally (inclusive of workers who did not regain employment by the time of the Wave 9 interview, who are not included in Table 13.5). Table 13.6 confirms this to be the case, showing that the proportion of workers dismissed or retrenched rose from 3.5 per cent between Waves 7 and 8 to 5.4 per cent between Waves 8 and 9. The table shows that, in fact, the dismissal rate began climbing after Wave 7, rising from 3.1 per cent between Waves 6 and 7 to 3.5 per cent between Waves 7 and 8, reflecting the early stages of the economic downturn. Up until Wave 7, the dismissal rate had been falling.

Table 13.6 also presents the percentage of dismissed workers who were re-employed by the time of next interview. In the years leading up to the economic downturn, the re-employment rate was approximately 64 to 65 per cent. In the 2008 to 2009 period, the re-employment rate dropped to 58.5 per cent, the lowest it had been in the survey period. Thus, not only did the probability of dismissal or retrenchment increase between Waves 8 and 9, the probability of re-employment within the year also decreased.

Table 13.7 examines the characteristics of employees dismissed between Waves 8 and 9. The table makes two sets of comparisons, the first with employees in Wave 8 who were not dismissed, and the second with employees in Wave 6 who were dismissed between Waves 6 and 7. The first set of comparisons provides information on the types of employees more likely to have been

Table 13.6: Rates of dismissal and re-employment of employees, 2001 to 2009 (%)

	<i>Dismissed</i>	<i>Re-employed</i>
2001–2002	4.4	64.9
2002–2003	3.9	76.9
2003–2004	3.8	61.2
2004–2005	3.8	61.4
2005–2006	3.4	65.3
2006–2007	3.1	64.2
2007–2008	3.5	64.4
2008–2009	5.4	58.5

Notes: ‘Dismissed’ refers to the percentage of employees dismissed or retrenched by the time of the next wave’s interview. ‘Re-employed’ refers to the percentage of employees dismissed or retrenched who had regained employment by the time of the next wave’s interview.

dismissed in the period, while the second set of comparisons indicates how the types of employees dismissed after the financial crisis differed from the types of employees dismissed before the financial crisis. To aid comparisons, the table presents ‘differences’, equal to the value of the characteristic for those dismissed between 2008 and 2009 minus the value of characteristic for those in the comparison group.

Compared with employees not dismissed between Waves 8 and 9, employees dismissed between Waves 8 and 9 were more likely to be male, young (aged 15–24), less educated, living in an urban area, not a member of a trade union, employed full-time, employed on a casual basis, in a small firm (fewer than 20 employees), in the private sector, employed in construction, manufacturing or professional services industries, and/or employed as a technician, trades worker or labourer. They were also less likely to be employed in government, education or health industries, and less likely to be employed as a professional or community or personal service worker.

Many of these differences are consistent with what might be expected in any period, not just during a time of rising unemployment. In particular, it is to be expected that low skills, non-membership of a trade union, casual employment, low job tenure, small business and private sector employment will be associated with higher rates of job dismissal. However, other differences seem more likely to be specific functions of the rise in unemployment experienced in 2008 and 2009. In particular, it is not obvious that men should generally be more prone to dismissal, and that full-time employment, manufacturing, construction and professional services industries and technician and trades worker occupations should always be associated with a higher rate of dismissal.

Comparisons with the characteristics of employees dismissed between Waves 6 and 7 suggest that the rise in unemployment following the onset of the financial crisis did indeed lead to changes in the composition of the workers dismissed. Compared

with employees dismissed between Waves 6 and 7, employees dismissed between Waves 8 and 9 were: somewhat more likely to be male; less likely to be aged 15–24 and more likely to be aged 25–44; more likely to hold a bachelor's degree; less likely to be a union member; more likely to be employed full-time; less likely to be a casual employee; more likely to be employed in a large firm (of 100 or more employees); more likely to be in the private sector; more likely to be employed in construction or professional services industries and less likely to be employed in wholesale or retail trade industries; and more likely to be employed as technicians, trades workers, clerical workers or administrative workers and less likely to be employed as sales workers. Particularly notable is that the economic downturn

saw more dismissals among prime-aged, relatively skilled, permanent full-time workers, and that the dismissal rate was particularly high for workers in construction and professional services industries, and low for sales workers in trade industries.

As shown in Table 13.6, just under 60 per cent of employees dismissed between Waves 8 and 9 managed to regain employment by the time of the Wave 9 interview. Were there systematic differences in the characteristics of those able to regain employment from those who were not? Table 13.8 considers this question, comparing the characteristics of dismissed workers who were able to regain employment by the time of the Wave 9 interview with the characteristics of those who were not. It shows that, compared with those who were not

Table 13.7: Characteristics of employees dismissed between Waves 8 and 9

	<i>Dismissed 2008–2009</i>	<i>Not dismissed 2008–2009</i>	<i>Difference</i>	<i>Dismissed 2006–2007</i>	<i>Difference</i>
Male (%)	61.9	51.0	10.9	59.0	2.9 ⁺
<i>Age group (%)</i>					
15–24	23.9	20.9	3.0	31.1	–7.1
25–44	46.8	45.5	1.3 ⁺	36.3	10.5
45 and over	29.3	33.6	–4.3	32.6	–3.3
<i>Educational attainment (%)</i>					
Degree	16.2	26.8	–10.6	10.7	5.5
Other post-school	32.6	29.4	3.2	31.9	0.7 ⁺
No post-school qualifications	51.2	43.8	7.4	57.4	–6.2
Urban region (%)	73.4	67.9	5.6	70.6	2.8 ⁺
Union member (%)	15.0	26.3	–11.2	19.9	–4.9
Hourly wage (\$)	26.49	26.02	0.5 ⁺	24.11	2.4 ⁺
Job tenure (years)	4.0	6.4	–2.4	3.7	0.2 ⁺
Employed part-time (%)	23.3	30.0	–6.6	37.9	–14.6
Casual employee (%)	26.0	20.9	5.1	39.0	–12.9
Fixed-term contract (%)	7.2	8.4	–1.1 ⁺	6.8	0.4 ⁺
<i>Firm size (%)</i>					
0–20 employees	30.2	20.4	9.8	31.2	–1.0 ⁺
20–99 employees	16.2	15.0	1.2 ⁺	20.4	–4.2
100 or more employees	53.5	64.6	–11.1	48.4	5.1
Private sector (%)	93.9	73.6	20.3	87.1	6.7
<i>Industry (%)</i>					
Agriculture, mining, utilities	3.7	4.2	–0.5 ⁺	4.5	–0.8 ⁺
Manufacturing	20.4	9.6	10.8	24.1	–3.7
Construction	13.2	5.8	7.4	5.7	7.5
Trade	11.3	14.2	–2.9	16.6	–5.3
Hospitality	7.0	6.5	0.5 ⁺	8.7	–1.6 ⁺
Transport, communication	6.4	6.4	0.0 ⁺	9.5	–3.1
Professional services	22.9	15.4	7.4	13.5	9.4
Government, education, health	9.2	32.7	–23.5	11.9	–2.7 ⁺
Arts, recreational and other services	5.9	5.1	0.8 ⁺	5.5	0.4 ⁺
<i>Occupation (%)</i>					
Managers	10.4	10.1	0.3 ⁺	13.4	–3.0
Professionals	13.1	24.3	–11.2	15.3	–2.2 ⁺
Technicians and trades workers	20.4	12.1	8.4	11.5	8.9
Community and personal service work	4.6	11.2	–6.5	9.1	–4.5
Clerical and administrative workers	19.4	15.8	3.6	12.6	6.8
Sales workers	6.8	10.0	–3.2	13.2	–6.4
Machinery operators and drivers	9.1	6.7	2.5	9.1	0.1 ⁺
Labourers	16.2	9.9	6.3	15.7	0.4 ⁺

Note: ⁺ indicates the difference is not statistically significant at the 10 per cent level.

re-employed, those who were successful in regaining employment were: more likely to be female; more likely to be aged 25–44 and less likely to be aged 45 and over; and more likely to hold a post-school qualification below the level of a bachelor's degree and less likely to hold no post-school qualification. Those who regained employment also had a higher mean wage in the job held prior to dismissal, and they were: more likely to have been employed full-time; less likely to have been employed on a casual basis; less likely to have been employed in a small firm and more likely to have been employed in a medium-sized firm; less likely to have been employed in manufacturing or transport industries and more likely to have been employed in professional services industries; and more likely to have been managers or technicians and trades workers,

and less likely to have been clerical and administrative workers or machinery operators and drivers.

Interestingly, some of the differences in characteristics between those re-employed and those not re-employed suggest that there was some tendency for workers who were disproportionately likely to be dismissed as a result of the increase in the unemployment rate to have the most success regaining employment. Conversely, there was also some tendency for workers who were disproportionately less likely to be dismissed as a result of the increase in the unemployment rate to have the least success regaining employment. In particular, workers aged 25–44, employed in professional services and employed as technicians or trades workers were relatively more likely to be dismissed between Waves 8 and 9, but they were also relatively more

Table 13.8: Characteristics of employees dismissed between Waves 8 and 9 by whether re-employed or not

	<i>Re-employed</i>	<i>Not re-employed</i>	<i>Difference</i>
Male (%)	60.9	64.0	-3.2 ⁺
<i>Age group (%)</i>			
15–24	23.1	25.5	-2.4 ⁺
25–44	52.2	36.4	15.8
45 and over	24.7	38.1	-13.4
<i>Educational attainment (%)</i>			
Degree	16.2	16.3	-0.1 ⁺
Other post-school	36.0	25.9	10.1
No post-school qualifications	47.8	57.8	-10.0
Urban region (%)	73.9	72.5	1.4 ⁺
Union member (%)	15.4	14.3	1.1 ⁺
Hourly wage (\$)	27.56	24.43	3.1
Job tenure (years)	3.5	4.9	-1.4 ⁺
Employed part-time (%)	20.1	29.6	-9.6
Casual employee (%)	23.3	31.2	-7.9
Fixed-term contract (%)	6.2	9.2	-3.0 ⁺
<i>Firm size (%)</i>			
0–20 employees	27.3	35.8	-8.5
20–99 employees	18.9	11.0	8.0
100 or more employees	53.7	53.2	0.6 ⁺
Private sector (%)	93.6	94.4	-0.9 ⁺
<i>Industry (%)</i>			
Agriculture, mining, utilities	3.3	4.3	-1.0 ⁺
Manufacturing	17.9	25.3	-7.4
Construction	12.0	15.4	-3.4 ⁺
Trade	10.9	12.0	-1.1 ⁺
Hospitality	8.8	3.7	5.0 ⁺
Transport, communication	3.2	12.6	-9.4
Professional services	27.2	14.8	12.4
Government, education, health	9.6	8.4	1.1 ⁺
Arts, recreational and other services	7.2	3.5	3.7 ⁺
<i>Occupation (%)</i>			
Managers	12.7	6.0	6.7
Professionals	13.8	11.6	2.2 ⁺
Technicians and trades workers	22.4	16.6	5.8
Community and personal service work	4.8	4.4	0.4 ⁺
Clerical and administrative workers	16.0	25.9	-10.0
Sales workers	8.1	4.2	4.0 ⁺
Machinery operators and drivers	6.1	15.0	-8.9
Labourers	16.1	16.3	-0.2 ⁺

Note: ⁺ indicates the difference is not statistically significant at the 10 per cent level.

likely to be re-employed; and workers without post-school qualifications, employed full-time and/or employed on a casual basis were relatively less likely to be dismissed between Waves 8 and 9, but were relatively less likely to be re-employed.

Discussion

While there are costs of job mobility to both employers and workers, it is also important to the efficient functioning of the labour market. In particular, as the evidence from the HILDA data suggests, improved firm–worker matches will generally be the outcome of job mobility. Movements between jobs more often represent a move from part-time to full-time employment than the reverse, and substantial earnings increases are more prevalent for workers who change jobs than workers who do not. It is therefore significant that the economic downturn from mid-2008 appeared to decrease job mobility, since this implies some reduction in efficiency in the operation of the labour market, something that is not usually identified as one of the costs of rising unemployment.

Endnotes

- 1 The number of job changes made by a worker is not always well defined in the case where jobs are held concurrently. For example, a worker may have two jobs during the year with one job starting some months before the other job ends. We make the simple (although not always correct) assumption that a job change occurs if one job ended in the year and another job started in the year. The number of job changes is equal to the minimum of the number of job starts and the number of job ends.
- 2 Also (necessarily) ignored are job changes where the respondent does not change employers. For example, a public servant may move to a different government department or agency, yet will be classified as not changing jobs, even if the nature of the work has changed substantially and/or the respondent has a new employment contract.
- 3 The proportion of all workers leaving a job for these reasons is considerably higher than for the proportion of workers who change jobs from one wave to the next, because most are not employed at the time of the next wave's interview.

14. Hours worked, hours preferred and individual-level changes in both

Each year, the HILDA Survey obtains from all employed persons not only their usual weekly hours of work, but also their *preferred* hours of work. This facilitates examination of a variety of aspects of working hours, including how hours worked and preferred by individuals change over time. Table 14.1 provides information on working hours, showing the average of usual weekly hours (in all jobs) of employed persons in each wave, disaggregated by sex and age group. Average weekly hours worked remained fairly stable during this period, at around 42 hours per week for males and 32 hours per week for females. For males who were working full-time, average working hours dropped from 48 hours per week in 2001 to 46 hours per week in 2009, but for females working full-time, average weekly work hours remained quite stable, at around 43 hours per week. While average full-time working hours were higher for males than for females, the opposite is true for part-time workers, with females who were working part-time working longer hours than males who were employed on a part-time basis. For males who were working part-time (less than 35 hours per week), average weekly working hours increased slightly, from 18 hours per week in 2001 to 19 hours per week in 2009, and for females who worked part-time, average weekly working hours remained steady at approximately 19 hours per week during the period from 2001 to 2009.

In 2009, as in previous years, 'prime-age' males (aged between 25 and 54), work the longest hours. The average weekly hours for work for prime-age males decreased slightly during this period, from 46 hours per week in 2001 to 44 hours per week in 2009. Average working hours for older males also declined by approximately 2 hours between 2001 and 2009. Among employed males aged between 15 and 24, many of whom will still be in full-time education, average working hours increased from 32 hours per week in 2001 to 34 hours in 2008, but dropped back to 32 hours per week in 2009. Females aged between 25 and 54 average around 34 hours of work per week, compared to around 26 hours per week for females aged between 15 and 24 and 31 hours per week for females aged between 55 and 64. Among females aged 65 and over, many of whom will be in partial retirement, average working hours ranged from 19 hours per week in 2003 to 23 hours per week in 2001 and 2007.

Individual changes in working hours

How much do working hours change from one year to the next? Table 14.2 shows the changes in working hours from 2008 to 2009. The single most common outcome in 2009 was for individuals to be in the same hours category as they were in 2008. However, large proportions do change

hours categories—albeit often by increasing or decreasing hours worked only enough to move one category up or down.

Those working part-time and those working long (over 45) hours are particularly likely to change hours categories. Most commonly, the change is an increase in hours for persons employed part-time and a decrease in hours for persons working long hours. For example, almost half of the males and over 30 per cent of females who were working fewer than 10 hours per week in 2008 had increased their working hours by 2009. Of those

working 55 to 64 hours per week in 2008, 44.8 per cent of males and 54.6 per cent of females were working fewer than 55 hours per week in 2009.

Preferred hours of work

Are most people happy with the hours they work? Figure 14.1 shows the proportion of prime-age employees who were working their preferred hours, and those who were not, in 2009.¹

Approximately 60 per cent of all prime-age employees were content with their working hours

Table 14.1: Mean usual weekly hours of work in all jobs, by sex, age and employment status

	2001	2003	2005	2007	2008	2009
Males						
All males	42.8	42.3	42.1	41.6	42.0	41.3
<i>Age group</i>						
15–24	31.6	31.7	32.5	32.8	33.5	32.2
25–54	45.8	45.3	44.9	44.5	44.9	44.3
55–64	42.8	42.7	41.7	40.5	41.4	40.6
65 and over	33.0	34.0	31.8	30.7	28.7	30.9
<i>Employment status</i>						
Full-time	47.8	47.4	46.6	46.4	46.3	46.0
Part-time	17.7	18.0	18.0	18.4	18.3	18.6
Females						
All females	31.7	31.1	31.2	31.8	31.7	31.5
<i>Age group</i>						
15–24	26.4	24.7	26.5	26.0	26.2	25.1
25–54	33.3	33.4	32.9	33.8	33.6	33.8
55–64	30.9	30.6	30.6	31.5	31.3	30.5
65 and over	22.7	18.5	21.4	23.2	21.3	21.0
<i>Employment status</i>						
Full-time	43.3	43.4	43.2	42.9	42.5	42.8
Part-time	18.6	18.3	18.8	19.1	18.9	18.9

Table 14.2: Changes in usual weekly working hours (in all jobs), 2008 to 2009 (%)

Work hours in 2008	Work hours in 2009								Total
	0	1–9	10–19	20–34	35–44	45–54	55–64	65 and over	
Males									
0	86.6	1.8	2.0	3.1	4.3	1.7	*0.3	*0.3	100.0
1–9	23.8	38.1	16.2	*9.0	*10.3	*0.3	*2.4	*0.0	100.0
10–19	22.9	14.3	36.6	12.8	*7.9	*4.1	*0.9	*0.4	100.0
20–34	15.8	*2.4	7.4	45.2	22.3	*3.8	*1.0	*2.1	100.0
35–44	5.2	*0.4	*0.9	5.8	69.7	14.4	*2.4	*1.1	100.0
45–54	3.0	*0.2	*0.8	*2.0	27.2	52.7	12.1	2.0	100.0
55–64	*2.2	*0.1	*0.5	*1.3	9.4	31.3	42.1	13.1	100.0
65 and over	*2.1	*0.0	*0.0	*1.6	*13.4	10.3	27.6	45.0	100.0
Total	29.9	2.1	2.9	6.3	30.2	17.7	7.4	3.4	100.0
Females									
0	88.3	2.2	3.2	3.5	1.9	*0.7	*0.1	*0.1	100.0
1–9	25.6	43.7	20.5	6.8	*2.4	*0.7	*0.2	*0.0	100.0
10–19	13.8	12.8	40.2	23.1	8.3	*0.8	*0.5	*0.5	100.0
20–34	7.7	2.8	8.7	60.3	18.2	*1.5	*0.4	*0.3	100.0
35–44	7.2	*0.6	1.9	11.7	67.7	9.2	1.4	*0.4	100.0
45–54	7.7	*0.2	*0.4	4.2	25.7	48.4	9.3	*4.1	100.0
55–64	*3.1	*0.0	*0.5	*7.4	*16.6	25.8	36.5	*9.9	100.0
65 and over	*2.4	*0.0	*0.0	*1.0	*8.4	*13.1	*32.3	42.8	100.0
Total	42.3	4.5	7.4	15.1	21.2	6.6	2.0	0.9	100.0

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

Preferred hours of work

A difficulty in eliciting individuals' preferred hours of work is that many people are inclined to say that they would like to not work at all, despite clearly choosing work over non-work. To overcome this problem, the HILDA Survey asks respondents the number of hours per week they would like to work, *taking into account the effect this would have on their income*.

in 2009. Among full-time employees, males are more likely to be satisfied with their working hours than are females, but among part-time employees, females are more likely to be satisfied with their working hours. In particular, 40 per cent of female full-time employees prefer fewer hours, compared with 31 per cent of male full-time employees, whereas 45 per cent of male part-time employees prefer greater hours, compared with only 26 per cent of female part-time employees.

Do people who are not working their preferred hours eventually get the hours they want? Using the HILDA Survey data to compare working-time preferences in 2002 and 2004, Wooden (2006) found that while in any year 40–45 per cent of employees were not working their preferred hours, many were working preferred hours a few years later. He found, however, that over-employment—a preference for fewer hours—was more persistent than underemployment—a preference for more hours. Table 14.3 shows the working-time preferences in 2008 and 2009 of prime-age individuals, according to their preferences in the previous year. This allows examination of the proportions of those with mismatches between preferred and actual working-time

who had resolved their mismatches one year later—be this by changing hours worked and/or changing their preferred hours—as well as the proportions of those without mismatches for whom mismatches arose. Note that all prime-age males and females are included in the sample. Those who are unemployed or marginally attached are considered to prefer more hours, and those who were not in the labour force and not marginally attached are considered to be satisfied with their (zero) working hours.

Table 14.3 indicates that a preference for fewer hours is the most difficult working-time preference problem to resolve. Almost 60 per cent of males and females who preferred fewer hours in 2008 were in the same situation in 2009. Slightly more readily resolved is the problem of unemployment or underemployment, whether by increasing actual hours or decreasing preferred hours.

Preferences for more hours were more easily resolved between 2007 and 2008 than between 2008 and 2009, presumably due to a reduced demand for labour in 2009 as a result of the Global Financial Crisis. On the other hand, the proportion of males who were able to resolve a

Figure 14.1: Work hours preferences of prime-age employees, 2009

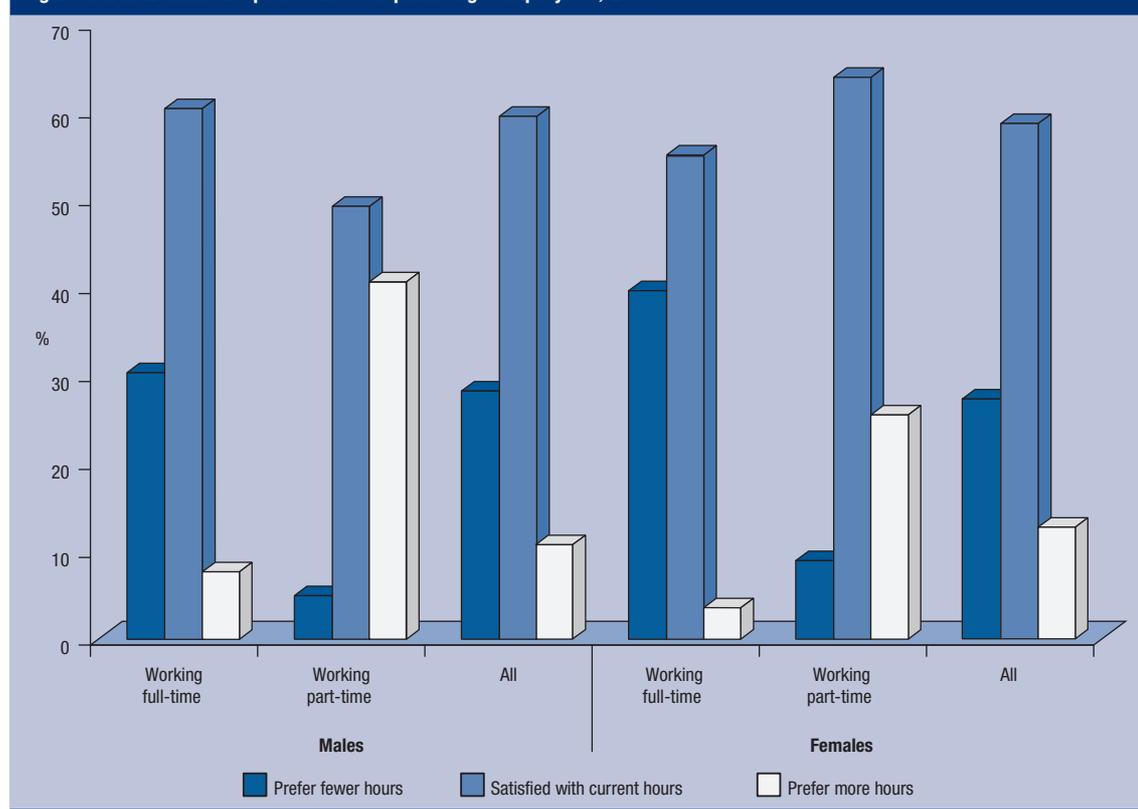


Table 14.3: Changes in preferred working hours of prime-age individuals, 2007 to 2008 and 2008 to 2009 (%)

	Preferences in the following year			Total
	Prefer fewer hours	Prefer current hours	Prefer more hours	
2007 to 2008				
<i>Males</i>				
Prefer fewer hours	61.7	33.1	5.2	100.0
Prefer current hours	16.3	74.1	9.6	100.0
Prefer more hours	9.6	44.8	45.6	100.0
Total	28.2	58.6	13.2	100.0
<i>Females</i>				
Prefer fewer hours	54.8	40.9	4.3	100.0
Prefer current hours	14.7	72.1	13.3	100.0
Prefer more hours	9.0	45.6	45.4	100.0
Total	22.9	60.2	16.9	100.0
2008 to 2009				
<i>Males</i>				
Prefer fewer hours	57.7	37.1	5.2	100.0
Prefer current hours	16.6	73.0	10.4	100.0
Prefer more hours	4.1	43.1	52.8	100.0
Total	26.3	58.7	15.0	100.0
<i>Females</i>				
Prefer fewer hours	56.1	37.7	6.2	100.0
Prefer current hours	12.0	74.9	13.1	100.0
Prefer more hours	5.3	43.2	51.5	100.0
Total	21.1	60.7	18.2	100.0

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

situation in which they were overemployed increased from 38 per cent between 2007 and 2008 to 42 per cent between 2008 and 2009. However, this is not the case for females, with 45 per cent resolving their preference for fewer hours between 2007 and 2008 and 44 per cent doing so between 2008 and 2009.

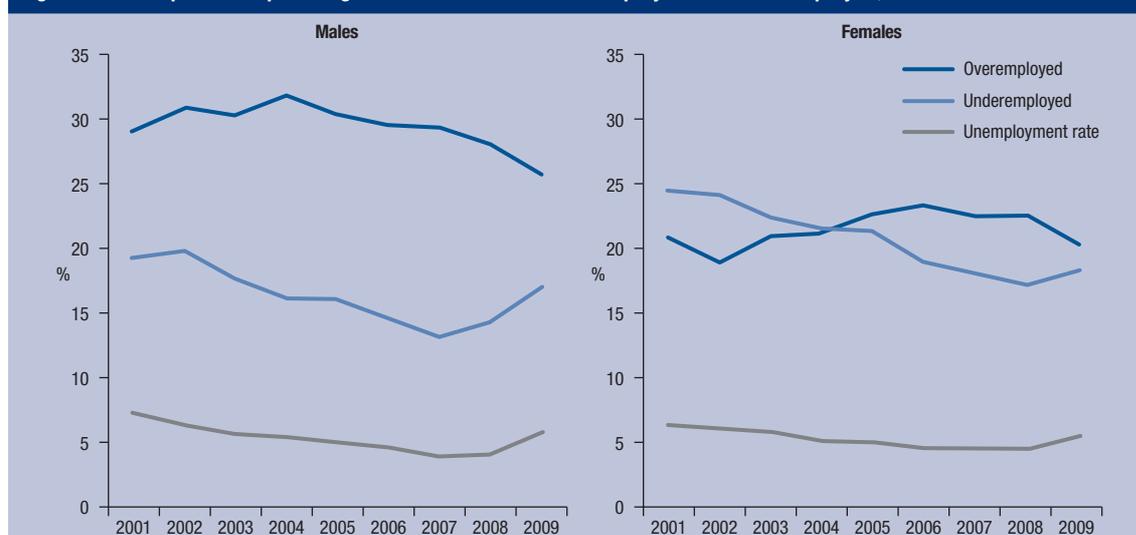
Changes in underemployment and overemployment over time

In Figure 14.2, the proportion of prime-age males and females who are either underemployed or

overemployed in each year from 2001 to 2009 are presented, along with the unemployment rate in September of the corresponding year.

Among prime-age males, overemployment increased from 29 per cent in 2001 to 32 per cent in 2004, before decreasing to 26 per cent by 2009. During this period, the rate of unemployment for prime-age males decreased from 7 per cent in 2002 to 4 per cent in 2007. At the same time, the proportion of prime-age males who expressed a preference for working more hours declined from just under 20 per cent to only 13 per cent. Then, as

Figure 14.2: Proportion of prime-age males and females overemployed and underemployed, 2001 to 2009



Note: Unemployment rates are obtained from ABS (2011).

Table 14.4: Changes in actual working hours of prime-age persons, 2007 to 2008 and 2008 to 2009 (%)

	Change in working hours			Total
	Hours decreased	No change in hours	Hours increased	
2007 to 2008				
<i>Males</i>				
Prefer fewer hours	46.2	31.1	22.7	100.0
Prefer current hours	26.4	41.5	32.1	100.0
Prefer more hours	18.1	34.6	47.4	100.0
Total	30.9	37.6	31.5	100.0
<i>Females</i>				
Prefer fewer hours	49.2	23.4	27.5	100.0
Prefer current hours	23.4	47.1	29.5	100.0
Prefer more hours	15.0	43.2	41.9	100.0
Total	27.8	40.9	31.2	100.0
2008 to 2009				
<i>Males</i>				
Prefer fewer hours	40.9	30.5	28.6	100.0
Prefer current hours	30.2	40.8	29.1	100.0
Prefer more hours	19.4	44.1	36.5	100.0
Total	31.6	38.4	30.0	100.0
<i>Females</i>				
Prefer fewer hours	46.5	25.5	28.0	100.0
Prefer current hours	26.6	45.7	27.7	100.0
Prefer more hours	18.0	47.4	34.6	100.0
Total	29.8	41.3	28.9	100.0

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

rates of unemployment began to increase, underemployment increased to 14 per cent in 2008 and 17 per cent in 2009.

For women, underemployment and overemployment do not appear to be as closely related to the unemployment rate as they are for men.² The proportion of prime-age women who were underemployed declined steadily from 25 per cent in 2001 to 17 per cent in 2008, then increased to 18 per cent in 2009. After falling from 21 per cent in 2001 to 19 per cent in 2002, overemployment among prime-age females increased to 23 per cent in 2006, before falling again to 20 per cent by 2009.

Changes in actual working hours

Table 14.4 examines how working hours change from one year to the next—specifically, whether they decreased, increased or stayed the same—for prime-age men and women based on their working-time preferences in the previous year.

Among those who had a preference for fewer hours in 2007, 46 per cent of men and 49 per cent of women were actually working fewer hours in 2008 than they were in 2007. However, among those who expressed a preference for fewer hours in 2008, only 41 per cent of males and 47 per cent of females had reduced their working hours one year later, and 29 per cent of males and 28 per cent of females were actually working more hours than they were in 2008.

A preference for more working hours appears to have been more easily resolved between 2007 and

2008 than between 2008 and 2009. Again, this is likely to be a result of a reduction in demand for labour due to the Global Financial Crisis. It is also interesting to note that while men were more likely to have resolved issues of underemployment, women were more likely to have overcome issues of overemployment. Among those who had a preference for more hours in 2008, only 37 per cent of men and 35 per cent of women were actually working more hours one year later, while almost 20 per cent of the individuals who had expressed a preference for more hours in 2008 were actually working fewer hours in 2009.

Endnotes

- 1 People who were self-employed were excluded from the hours preference analysis as it is assumed that they ultimately have control over their own working hours. The analysis is further restricted to prime-age persons to avoid the complication of younger people moving from part-time work (and full-time education) to full-time work, and older people reducing their working hours before they gradually retire.
- 2 Note that individuals who are unemployed and actively seeking employment are considered to be underemployed as they have a preference to work more hours than the zero hours they are currently working.

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15. Jobless households and ‘job-poor’ households

In the mid-1990s attention was drawn by researchers to a significant and apparently growing phenomenon in Australia of jobless households (Gregory and Hunter, 1995; Dawkins, 1996). The research highlighted that joblessness, as distinct from unemployment, was particularly prevalent among households with dependent children. This raised the specific concern that, if children grow up in households in which there is no role model in the world of work, they may be more likely to become jobless themselves (Gregory and Hunter, 1995; Headey and Verick, 2005).

With nine years of data now available, the HILDA Survey provides unique evidence for Australia about persistence and recurrence of household joblessness. Prior to the arrival of the HILDA Survey, nearly all evidence was cross-sectional, providing no information on the extent and nature of the more serious policy issue of long-term joblessness. Long-term jobless families probably tend to suffer not only material deprivation, but also some degree of social exclusion. Adverse implications for children living in long-term jobless households also seem likely, with available evidence suggesting intergenerational transmission of joblessness and welfare dependence is a significant problem (e.g. Gottschalk, 1992; Blanden and Gibbons, 2006; Jenkins and Siedler, 2009).

In this chapter, we examine the prevalence and persistence of household joblessness using two measures, one relating to the ‘current’ period—

essentially describing the household’s situation at the time of interview—and the other relating to the (entire) financial year immediately preceding the interview. However, the majority of the results presented are for the current measures. The advantages of the current measure are that it is less subject to recall bias and it more clearly relates to the household as it is currently structured. Household composition can change over the course of a year, making annual measures less straightforward to construct and interpret. The main weakness of a current measure is that some households that are only temporarily jobless are classified as jobless, and some households that are usually jobless may be classified as not jobless.

In addition to joblessness, we also examine households that are ‘job-poor’. For the current measure, this is defined as a situation in which household total usual weekly hours of work are less than 35. The 35-hour threshold corresponds to minimum hours of full-time employment, the implicit premise being that a household without the equivalent of one full-time employed person is at greater risk of poor economic outcomes.¹ For the financial-year measure, job poverty is defined as a situation where the sum across all members of the household of the proportion of the year in employment is less than 100 per cent (i.e. the equivalent of one full-year job). Thus, for example, a household is not job-poor if it had two individuals employed for 50 per cent of the year, even if they were employed for the same half of the year and even if they were only employed part-time. The reason for this approach is that full-time/part-time employment status cannot be established for the financial year—it can only be established for the current period (at the time of interview).

Job-poor households are clearly of less policy concern than jobless households, but are nonetheless of concern, since typically a job-poor household will not generate enough labour income to support the household. Many, if not most, job-poor households will receive income support payments. It should be noted, however, that in some instances it may actually be preferable—from both an individual and a societal perspective—for the household to be ‘job-poor’. For example, an elderly person may be transitioning to retirement by working part-time, and a lone parent may combine caring for children with part-time employment.

Household joblessness is similarly not an issue for certain households—it is primarily an issue for households in which the societal expectation is that someone in the household works. In particular, there is not a widespread expectation that elderly people and people with severe or profound disabilities should be employed. We do not attempt to identify and exclude households containing only

Jobless household

In this report, two alternative definitions of a jobless household are employed. The first definition, ‘current’ joblessness, relates to the household’s employment status at the time of the HILDA Survey interview, whereby a household is jobless if no household member was in paid employment (or on paid leave from employment) at the time of interview. The second definition, ‘financial year’ joblessness, relates to the household’s employment status over the course of the financial year immediately preceding the HILDA Survey interview, whereby a household is jobless if no household member was in paid employment (or on paid leave from employment) at any time in that year.

Job-poor household

There is no accepted standard for determining whether a household is ‘job-poor’. In this report, a household is defined to be currently job-poor if total usual hours of paid employment of all household members combined are less than 35 hours per week. A financial-year measure is also employed, whereby a household is job-poor if the sum across all members of the household of the fraction of the year in employment is less than one—that is, if employment of household members is less than the equivalent of one person employed for the full year.

people with severe or profound disabilities, but we do restrict all analysis in this article to persons under 65 years of age, and allow a household to be classified as jobless or job-poor only if the household contains at least one member aged 15–64 who is not a dependent child.

Trends in household joblessness, 2001 to 2009

Figure 15.1 presents alternative cross-sectional estimates of the percentage of persons living in jobless and job-poor households. To more closely align the reference periods of the financial-year and current measures, the year estimates are ‘shifted back’ one year. For example, the estimates obtained from Wave 1 are presented for 2000–01 for the year measure and for 2001–02 for the current measure. This means that the financial-year estimates start one year earlier and finish one year earlier than the current estimates.

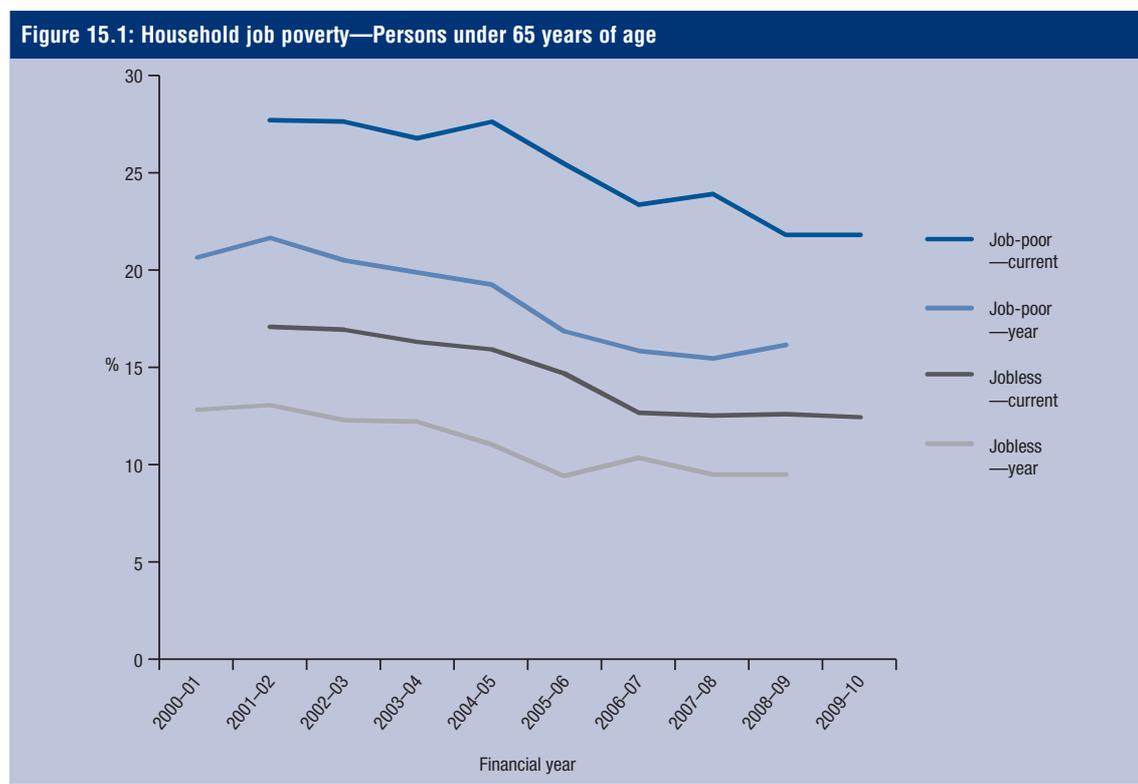
The year measures produce lower rates of joblessness and job poverty than the current measures. In the case of joblessness, this is to be expected, since the year measure requires no one in the household be employed for an entire year, whereas the current measure only requires no one be employed at the time of the interview. For the job-poor measures, the year and current measures are quite different in nature, and so it is unsurprising that the two measures produce quite different estimates—although it was not necessarily to be expected that the year measure would produce lower estimates.

Despite the differences in levels, all four measures follow quite similar paths over the HILDA Survey

sample period. In Wave 1, 17 per cent of people in non-elderly households lived in currently-jobless households, while the rate of year-long joblessness for the preceding financial year was 13 per cent. Since Wave 1, the general trend has been for a steady decline in the rate of household joblessness. By Wave 9, the current jobless rate was 13 per cent and the year-long jobless rate for the previous financial year was just under 10 per cent. Somewhat surprisingly, the proportion of households that were jobless did not increase along with the rise in the unemployment rate from mid-2008; the jobless-household rate remained fairly steady between 2007–08 and 2008–09.

Significantly more households are classified as job-poor on either current or yearly bases, but the trend decline is still evident for both measures. In Wave 1, 28 per cent of persons under the age of 65 years were in currently job-poor households, and 21 per cent were classified as job-poor for the previous financial year. In Wave 9, 22 per cent were currently job-poor and 16 per cent were job-poor for the previous financial year. The proportion job-poor did increase in 2008–09 for the annual measure, but the current measure actually decreased between Wave 7 and Wave 8 and then remained essentially unchanged in Wave 9.

While the year and current measures of joblessness and job poverty are clearly quite different, given that patterns over time are quite similar and that the current measures have advantages over the year measures, the remaining analysis is restricted to current measures. Figure 15.2 disaggregates



jobless and job-poor rates by type of household. Societal expectations about (non-elderly) childless households and couple households are unambiguous: at least one member of the household should be in paid employment. Expectations about lone-parent households are more mixed, but are probably moving towards the expectation that the parent undertake part-time employment, and possibly even full-time employment once the youngest child is beyond the early years of school. Both reflecting and driving this changing expectation, in recent years the Australian Government has progressively increased requirements on lone-parent income support recipients to participate in employment or education, with the most significant changes occurring in July 2006. Figure 15.2 clearly shows that, while lone parents—most of

whom are women—have the highest jobless rate, it fell sharply over the 2001 to 2006 period, from 37 per cent in 2001 to 27 per cent in 2006. The proportion of persons in lone-parent households that are job-poor has also declined, from 58 per cent in 2001 to 48 per cent in 2009, implying many lone parents have moved into full-time work. However, joblessness among lone-parent households has edged upwards since 2006, rising to nearly 30 per cent in 2009.

After lone-parent households, the next-highest rate of joblessness is for ‘other’ household types, which primarily comprise lone person households. As for lone parents, the jobless and job-poor rates have declined since 2001, although two important differences are, firstly, there is no increase in the jobless

Figure 15.2: Proportion of persons living in jobless and job-poor households, by type of household

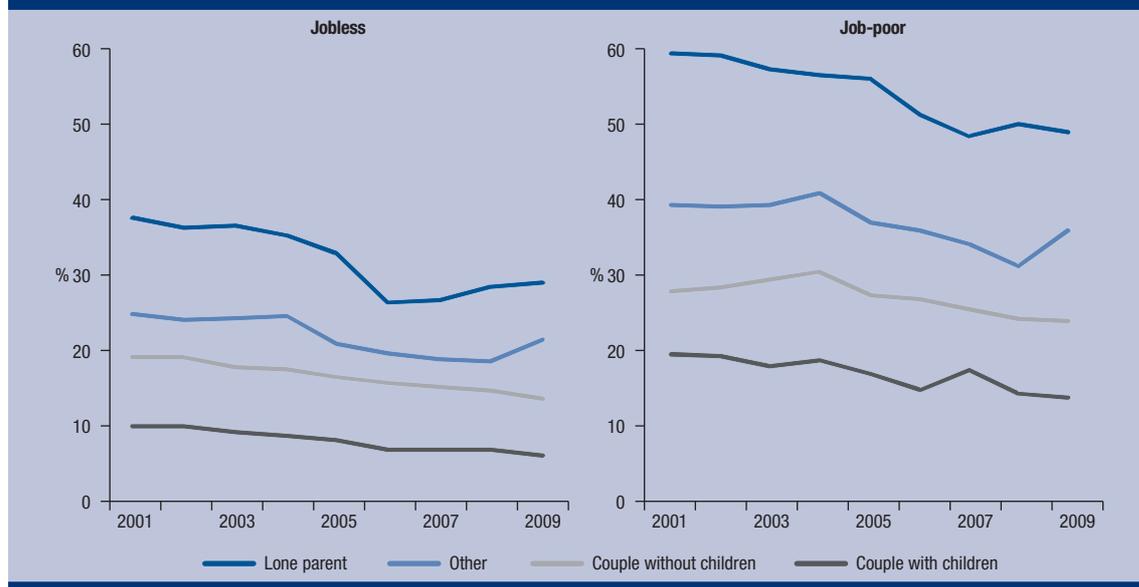
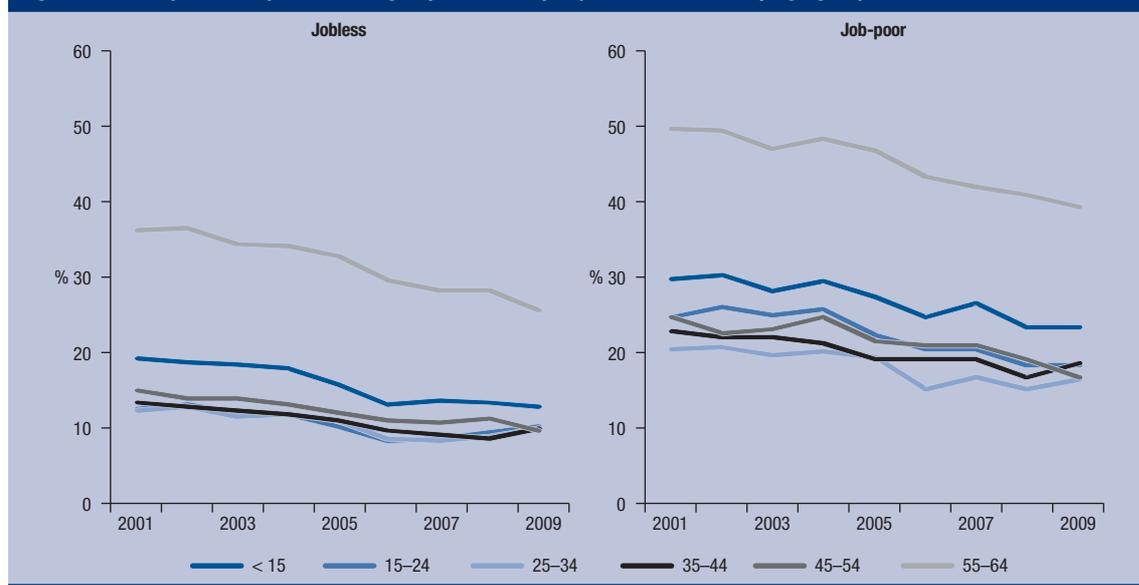


Figure 15.3: Proportion of persons living in jobless and job-poor households, by age group



rate evident between 2006 and 2008; and secondly, there were sharp upward spikes in both jobless and job-poor rates in 2009. Couples without children have the next-highest jobless and job poverty rates, followed lastly by couples with dependent children. Both household types have experienced declines in joblessness and job poverty between 2001 and 2009, with no increases evident in 2009. It should be noted that, in part, the higher rates of jobless and job-poor households for lone-parent and single-person households are deterministic functions of the smaller number of workforce-age people in each of these households. For example, if everyone had an equal chance of being non-employed or part-time employed, jobless and job-poor rates would be lower for couple households because there are at least two household members with a chance of being employed. Either member of the couple (or both combined) can lift the household out of joblessness or job poverty. Most lone-parent and other households have only one person who can do this.²

In Figure 15.3, household joblessness by age of the household members is examined. Six age groups are distinguished: under 15 years, 15–24 years, 25–34 years, 35–44 years, 45–54 years and 55–64 years. All age groups exhibit sizeable decline in joblessness and job-poor rates between 2001 and 2009. The jobless and job-poor rates are consistently highest for people aged 55–64 years, which is unsurprising given that many people in this age group will have retired. Nonetheless, it is significant that, even among this age group, joblessness has declined. Among the remaining age groups, children under 15 years of age have the highest rates of household joblessness and job poverty. The evidence in Figure 15.2 is that these high rates to a significant extent reflect outcomes for lone-parent households.

Longer term household joblessness

While short-term joblessness is a concern, medium-term to long-term joblessness is a more serious policy issue because of the implications for a family's long-term income, wealth, health and social exclusion. Table 15.1 presents information on the number of years households were jobless

and job-poor. Among all members of the population under 65 years of age for the entire sample period, 70.8 per cent have not been in a jobless household in any of the nine years, and 14.2 per cent were in a jobless household in just one or two years. The remaining 15 per cent were in a jobless household in three or more years, and are fairly evenly distributed over the three to eight years range. For persons in this group, joblessness is a persistent and/or recurrent problem.

Living in a job-poor household is experienced by more people and also appears to be more likely to be long term than joblessness. Of the 47.5 per cent of people who experienced at least one year in a job-poor household, well over half (27.5 per cent of all people) were in a job-poor household for three or more years. A sizeable 6.3 per cent of people were in a job-poor household in all nine years from 2001 to 2009.

The last four columns of Table 15.1 focus on children living in jobless households, distinguishing lone-parent and couple households (based on household situation in 2009). Household joblessness for children is very much associated with residing in a lone-parent household: 77.6 per cent of children with both parents present in 2009 were not in a jobless household in any of the nine waves up to that point in time, compared with 38.0 per cent of children with only one parent present in the household in 2009. More importantly, 46.6 per cent of children in lone-parent households were in jobless households for three or more years, and 31 per cent were in jobless households for five or more years. These figures will, furthermore, tend to understate the association between household joblessness and the presence of both parents. This is because some children in couple households in 2009 will have previously lived in lone-parent households, and some children in lone-parent households in 2009 will have previously lived in couple households.

Persistence of joblessness

Table 15.1 presents evidence on the combined effects of persistence and recurrence of household

Table 15.1: Protracted household joblessness—Years in jobless/job-poor household, 2001 to 2009 (%)

Number of years	All persons		Children			
	Jobless	Job-poor	Jobless		Job-poor	
			Couple	Lone parent	Couple	Lone parent
0	70.8	52.5	77.6	38.0	62.0	14.0
1–2	14.2	20.0	14.0	15.4	19.1	13.8
3–4	5.4	8.5	2.9	15.6	6.0	15.1
5–8	6.8	12.7	4.2	25.9	96.8	35.2
9	2.8	6.3	1.3	5.1	3.2	21.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes: All persons comprise those aged 0–64 for the entire nine-year period (i.e. aged 0–56 in 2001). Children comprise those under the age of 18 years for the entire nine-year period (i.e. aged 0–9 years in 2001) and are classified according to their household type in 2009. Percentages may not add up to 100 due to rounding.

Table 15.2: Persistence/recurrence of job poverty—Proportion of those initially in jobless/job-poor households who were jobless/job-poor in each subsequent year (%)

<i>Jobless in...</i>	<i>Proportion jobless...</i>				
	<i>1 year later</i>	<i>2 years later</i>	<i>3 years later</i>	<i>5 years later</i>	<i>8 years later</i>
2001	71.9	65.4	62.1	47.4	40.2
2002	72.1	66.6	58.7	50.1	–
2003	74.2	64.1	54.0	48.4	–
2004	64.4	52.7	51.8	42.4	–
2005	67.4	61.6	56.9	–	–
2006	73.5	69.2	63.2	–	–
2007	75.8	67.0	–	–	–
2008	70.0	–	–	–	–
<i>Job-poor in...</i>	<i>Proportion job-poor...</i>				
	<i>1 year later</i>	<i>2 years later</i>	<i>3 years later</i>	<i>5 years later</i>	<i>8 years later</i>
2001	76.8	69.7	68.2	54.6	44.7
2002	76.0	72.7	66.1	57.5	–
2003	81.5	70.6	63.3	56.3	–
2004	72.8	66.4	63.2	51.3	–
2005	76.3	70.5	65.2	–	–
2006	78.7	70.8	64.6	–	–
2007	77.0	67.4	–	–	–
2008	75.8	–	–	–	–

joblessness. In Table 15.2, we focus on persistence of joblessness by presenting, for those initially jobless, the proportion jobless in each subsequent year. This is presented for each of Waves 1 to 8, which allows us to consider changes in the degree of persistence over the HILDA Survey period. The same information is presented for job-poor households in the lower panel of the table. Perhaps somewhat surprising in light of Table 15.1, is that a relatively high degree of persistence in joblessness is evident. For those found to be in jobless households in 2001, 71.9 per cent were in jobless households one year later, 62.1 per cent were in jobless households three years later, and 40.2 per cent were in jobless households eight years later. As expected based on the Table 15.1 results, persistence in job poverty is greater, with 44.7 per cent of people in job-poor households in 2001 also in job-poor households in 2009.

Tracking down the two panels of Table 15.2 allows us to consider changes over time in the degree of persistence in joblessness and job poverty. No clear trends in persistence of joblessness or job poverty are evident, both seemingly fluctuating rather unpredictably from year to year. However, it does appear that short-term (one-year) persistence in household joblessness was lower in 2004 and 2005, than in other years. The proportion of those in jobless households who were in jobless households one year later was 64.4 per cent in 2004 and 67.4 per cent in 2005.

Discussion

Household joblessness has declined substantially as an economic and social issue for Australia over

the 2001 to 2009 period. The recent economic downturn, most of the effects of which should have been felt by Wave 9, has had a surprisingly small impact on household joblessness, with effects largely confined to single-person households. Nonetheless, job-poor households continue to account for a sizeable proportion of households, and persistence in joblessness remains high. Perhaps most important is that the incidence of children growing up in jobless households, while declining, has remained a significant feature of Australian society in 2009. The issue of intergenerational transmission of joblessness is therefore still an important policy issue for Australia. One caveat to the contention that should be noted, however, is that most children living in jobless households are in lone-parent households. The jobless rate for lone-parent households may overstate the number of children lacking an employed role model, since children may still have regular contact with an employed non-resident parent.

Endnotes

- 1 The choice of this threshold nonetheless has some degree of arbitrariness—in particular, reasonable arguments could be mounted for lower thresholds. It is also arguable that the threshold should vary according to the number of adult household members, since the scope for employment is greater the larger the number of adults. However, the essence of the issue on which we wish to focus is the absence of substantial household engagement with the labour market, rather than market under-utilisation of household labour more generally. We therefore retain the simple and intuitive 35-hour threshold for defining job-poor households.
- 2 This is a point well made by Gregg et al. (2005).

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16. Job satisfaction and job security

In every year of the HILDA Survey, individuals who are employed at the time of interview are asked to rate how satisfied they are with their job on a scale of 0 to 10, with 0 being 'totally dissatisfied' and 10 being 'totally satisfied'. In addition to overall job satisfaction, respondents are also asked about their satisfaction with particular aspects of the job, including the pay, job security, the hours they work and the flexibility available to balance work and non-work commitments. Table 16.1 shows that the average levels of these different aspects of job satisfaction changed very little between 2001 and 2009.

Overall, most people are quite satisfied with their jobs. For males, average levels of overall job satisfaction rose from 7.5 out of 10 in 2001 to 7.6 out of 10 in 2009. For females, average overall job satisfaction declined slightly during this period—from 7.8 out of 10 in 2001 to 7.6 out of 10 in 2009. The aspect of their job with which respondents are, on average, most satisfied, is job security. Average levels of satisfaction with job security rose from 7.5 out of 10 for males and 7.9 out of 10 for

females in 2001, to 8.1 out of 10 for males and females in 2007. While average satisfaction with job security has been high across the entire survey period, it is perhaps significant that, for both males and females, mean satisfaction declined slightly from 2007 to 2008, and again between 2008 and 2009. This decline is most likely attributable to the increased economic uncertainty that accompanied the collapse of Lehmann Brothers in October 2008 and the subsequent Global Financial Crisis that continued into 2009.

Aspects of the job with which people are least satisfied (although scores still average close to 7 out of 10) are their pay and the hours they work. Satisfaction with total pay rose slightly over the nine-year period, from 6.7 out of 10 in 2001 to 6.9 out of 10 for males and 7.0 out of 10 for females in 2009. There are few gender differences in job satisfaction, but females—more of whom hold part-time jobs—are more satisfied than males with their working hours and ability to balance work and non-work commitments.

Table 16.1: Mean job satisfaction, 2001 to 2009

	2001	2003	2005	2007	2008	2009
Males						
Satisfaction with total pay	6.7	6.8	6.8	6.9	7.0	6.9
Satisfaction with job security	7.5	7.8	7.8	8.1	8.0	7.8
Satisfaction with the work itself	7.6	7.6	7.6	7.6	7.6	7.6
Satisfaction with hours of work	7.0	7.0	7.1	7.1	7.2	7.1
Satisfaction with flexibility to balance work and non-work commitments	7.2	7.3	7.4	7.4	7.4	7.4
Overall job satisfaction	7.5	7.5	7.5	7.6	7.6	7.6
Females						
Satisfaction with total pay	6.7	6.7	6.9	7.0	7.0	7.0
Satisfaction with job security	7.9	8.0	8.0	8.1	8.0	7.9
Satisfaction with the work itself	7.7	7.6	7.6	7.6	7.7	7.5
Satisfaction with hours of work	7.3	7.3	7.3	7.3	7.3	7.3
Satisfaction with flexibility to balance work and non-work commitments	7.6	7.6	7.5	7.6	7.5	7.5
Overall job satisfaction	7.8	7.8	7.7	7.7	7.7	7.6

Persistence and recurrence of low job satisfaction

In Volume 1 of the HILDA Statistical Report, it was found that while 11 per cent of workers had experienced low levels of job satisfaction (0–4 out of 10) in one out of three years from 2001 to 2003, it was very unusual for low job satisfaction to persist for more than one year. Either the person leaves the job that is causing dissatisfaction, or there is some improvement that causes their job satisfaction to increase. The same can be said for job security—it was rare for feelings of dissatisfaction relating to job security to persist for more than one year. However, dissatisfaction with total pay, hours of work and job flexibility appear to be ongoing problems for some people.

In Figure 16.1 we consider how long these problems persist. The figure shows, for people who were employed at the time of interview in all five years from 2005 to 2009, the proportion expressing dissatisfaction with the various aspects of their job once, twice, and three or more times in the five-year period, as well as the proportion who did not express dissatisfaction with these aspects at all.¹

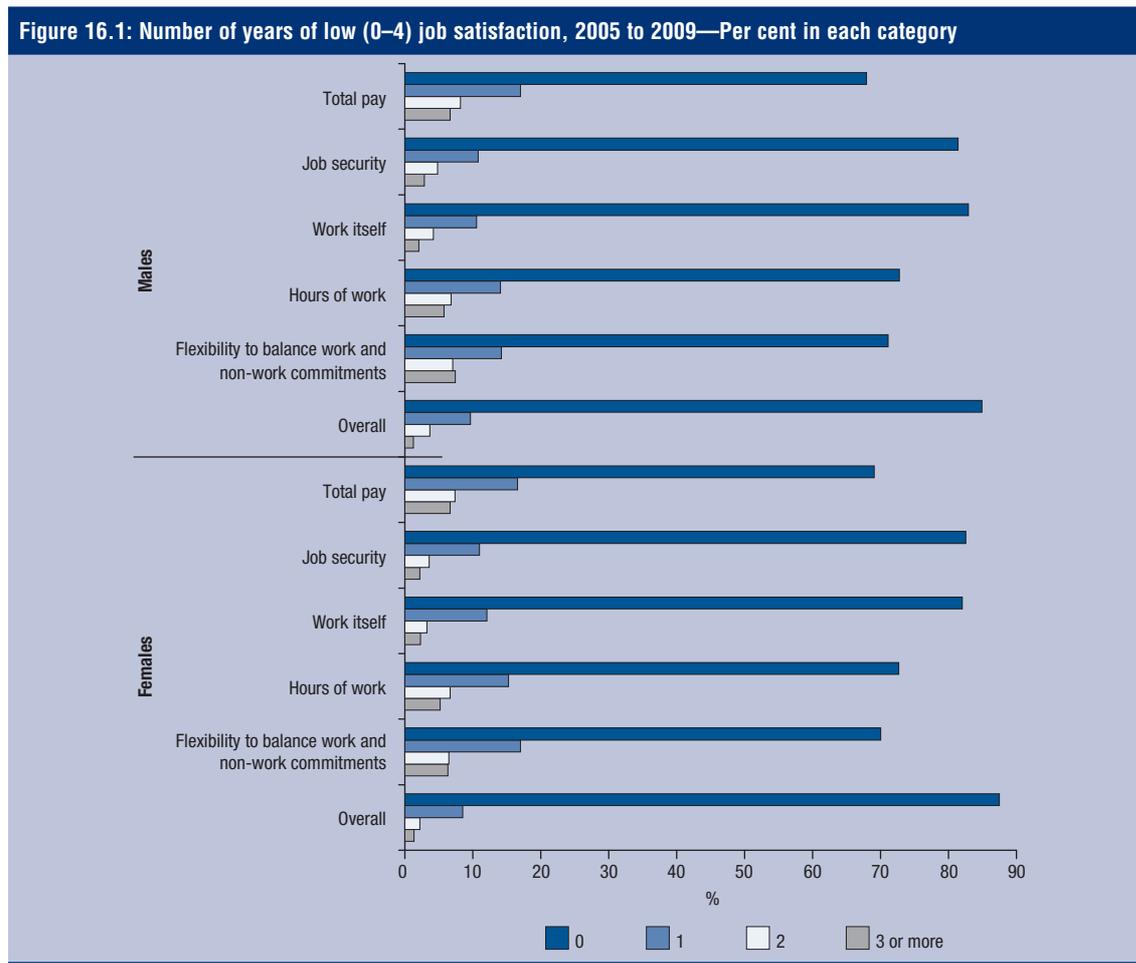
While 15 per cent of male employees and 12 per cent of female employees experience low overall

job satisfaction in at least one of the five years, it is very unusual for dissatisfaction to persist for more than one year. Only 5 per cent of males and 4 per cent of females report low overall job satisfaction in two or more of the five years and less than 2 per cent report low levels of satisfaction in three or more years. On the other hand, dissatisfaction with total pay is an ongoing problem for some people, with 8 per cent of males and 7 per cent of females expressing dissatisfaction with their total pay in two of the five years, and a further 7 per cent of males and females expressing dissatisfaction in at least three of the five years.

It is slightly more common for males than females to experience ongoing dissatisfaction with their working hours—6 per cent of males were dissatisfied with their working hours in three or more of the five years, compared to 5 per cent of females. It is also more common for males to experience continuing dissatisfaction with flexibility to balance work and non-work commitments, with 15 per cent reporting low levels of satisfaction in at least two of the five years, compared with 13 per cent of females.

Persistence of high job satisfaction

It may be that some individuals who report high levels of job satisfaction are just more optimistic,



seeing life more as ‘glass half full’ than ‘glass half empty’. Figure 16.2 shows the number of years that individuals reported high levels of satisfaction (8 or higher out of 10) with various aspects of their job, during the five years from 2005 to 2009.

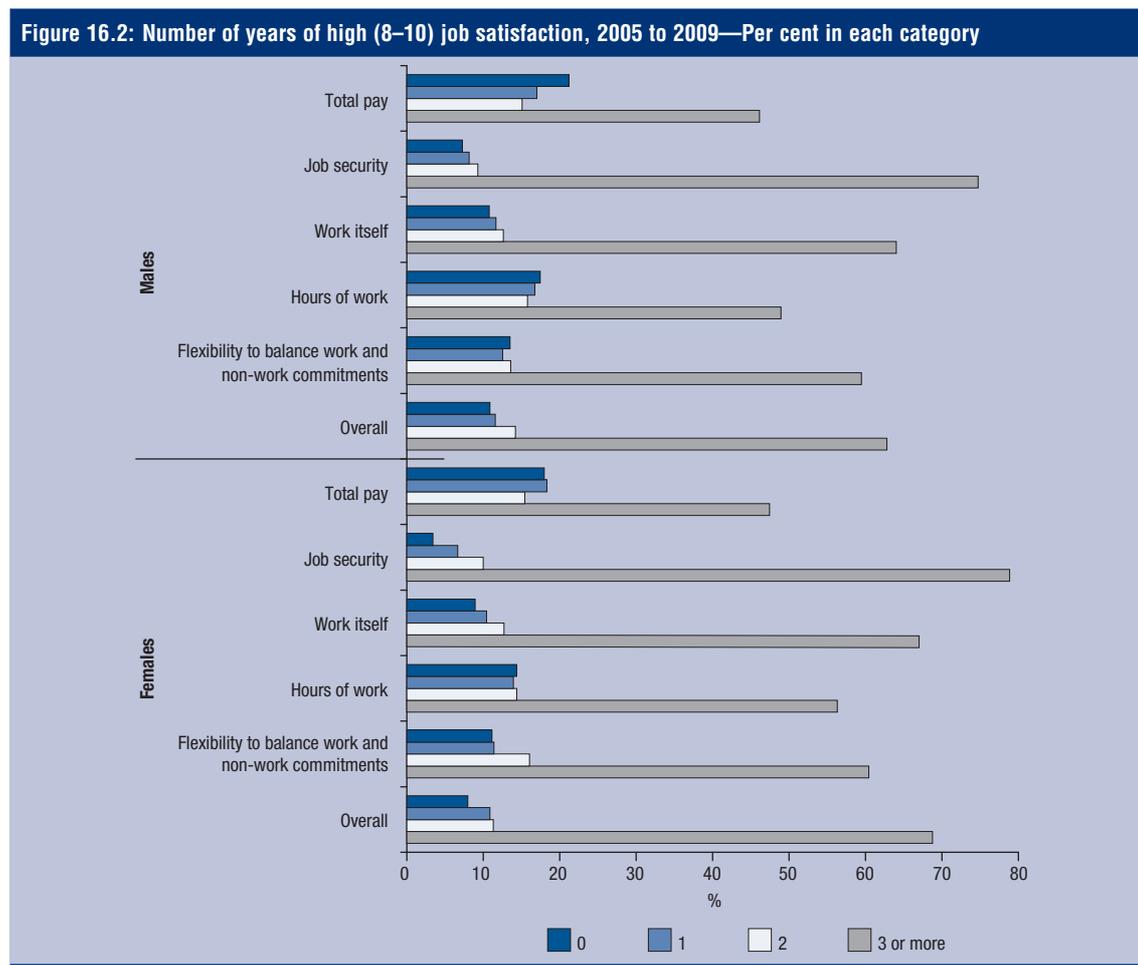
It is quite common for high levels of overall job satisfaction to continue for several years—63 per cent of males and 69 per cent of females reported high levels of overall job satisfaction in at least three of the five years. High levels of satisfaction with job security were very persistent, with 74 per cent of males and 79 per cent of females highly satisfied with the security of their jobs in three or more of the five years. High levels of satisfaction with the work itself were also quite persistent, 64 per cent of males and 67 per cent of females reporting high levels of satisfaction in at least three of the five years. Similarly, 60 per cent of males and 61 per cent of females reported high levels of satisfaction with flexibility to balance work and non-work commitments in three or more of the five years. Persistently high levels of satisfaction with total pay and working hours are less common—only 46 per cent of males and 48 per cent of females had high levels of satisfaction with their total pay in three or more of the five years, and 20 per cent of males and 18 per cent of females reported satisfaction levels of 7 out of 10

or lower in all five years. While 57 per cent of females reported high levels of satisfaction with their working hours in at least three of the five years, the corresponding figure for males is only 49 per cent.

Perceptions of job security

In addition to rating satisfaction with job security, employee respondents are also asked each wave to provide an assessment of the percentage chance that, within the next 12 months, they will be dismissed, retrenched or not have their contract renewed. They are then asked for the percentage chance they would be able to find a job that is as good as their current job in terms of benefits and wages, should they lose their current job within the next 12 months. Table 16.2 shows the average percentage chance of job loss, by age and sex.

For those who were employees at the time of interview in any given year, average levels of job insecurity decreased between 2001 and 2007, and increased in 2008 and 2009. The Wave 8 data, mostly collected from September to December 2008, pre-date most of the rise in unemployment that occurred in the wake of the Global Financial Crisis, however, most respondents would have been aware of the crisis at this time. Between September 2008 and September



2009, unemployment rates rose from 4.1 per cent to 5.8 per cent for men and from 4.6 per cent to 5.5 per cent for women (ABS, 2011). Among male employees, the average percentage chance of losing their job dropped from 16 per cent in 2001 to 10 per cent in 2005, 2007 and 2008, but rose to 11 per cent in 2009. For female employees, the average percentage chance of job loss dropped from 13 per cent in 2001 to 9 per cent in 2005 and 2007, before increasing to 10 per cent in 2008 and 11 per cent in 2009.

On average, females are less likely than males to see themselves as being at risk of losing their job. However, this gender gap in average levels of job insecurity has become smaller over time. Differences in average levels of job security by age group varied considerably from year to year. For example, in 2001 males over the age of 55 had the highest average levels of job insecurity; but in 2007 and 2008, average levels of job insecurity for males in this age group was lower than that of males in all other age groups. Similarly, in 2003 and 2005, average job insecurity was lowest among females aged 55 and over, but in 2007 and 2008, females in this age group had the highest average levels of job insecurity. For male employees, increases in average levels of job insecurity between 2007 and 2009 were largest among men aged 55 and over, with average job insecurity increasing from 9 per cent in 2007 to 12 per cent in 2009. On the other hand, average levels of job insecurity among female employees in this age group decreased slightly, from 11 per cent in 2007 and 2008 to 10 per cent in 2009, while job insecurity among women aged between 25 and 54

increased by approximately 3 percentage points between 2007 and 2009. While Table 16.2 shows that there is no clear difference in average levels of job insecurity by age, Table 16.3 shows that people's confidence in their ability to find another job, which is as good as their current job, declines with age.

Overall, the average reported percentage chance of finding a job as good as one's current job increased between 2001 and 2007 and fell slightly in 2008 and 2009. In each year, this figure declined considerably with age. For example, in 2009, the average percentage chance of finding another job as good as the current job was 71 per cent for males and 73 per cent for females aged between 15 and 24, but 56 per cent for males and females aged 55 and over.

Are part-time employees and employees in non-standard jobs more insecure about losing their jobs? One would expect that people who were employed on a permanent or ongoing basis would report lower chances of losing their jobs than casual employees and employees on fixed-term contracts, particularly in the wake of the Global Financial Crisis. Table 16.4 shows that casual employees and those on fixed-term contracts generally report higher levels of job insecurity than those who are employed on a permanent basis.

However, in the period between 2008 and 2009, average levels of job security (in terms of average percentage chance of job loss) among males remained stable only for those in full-time permanent employment, and average levels of job insecurity increased substantially among those who were

Table 16.2: Mean percentage chance of losing job

	2001	2003	2005	2007	2008	2009
Males						
15–24	17.8	10.6	9.6	10.7	10.7	10.5
25–54	14.8	12.0	9.5	9.8	10.5	11.5
55 and over	21.2	11.8	12.4	8.5	9.0	11.9
Total	16.0	11.7	9.8	9.9	10.4	11.3
Females						
15–24	12.8	10.2	9.2	9.0	8.8	10.8
25–54	12.7	9.9	9.2	7.9	9.7	10.5
55 and over	11.0	7.6	5.9	10.5	10.6	10.1
Total	12.6	9.8	8.9	8.5	9.6	10.5

Table 16.3: Mean percentage chance of getting a job as good as the current one

	2001	2003	2005	2007	2008	2009
Males						
15–24	69.6	70.2	69.4	73.0	72.8	71.3
25–54	68.4	64.6	69.4	73.8	71.1	66.2
55 and over	49.6	50.5	53.0	56.5	42.2	56.1
Total	61.2	60.4	64.3	67.7	66.6	65.9
Females						
15–24	75.4	71.7	71.0	74.2	73.8	73.1
25–54	40.5	47.1	51.9	57.7	55.5	68.1
55 and over	25.0	44.2	59.2	42.8	50.2	56.0
Total	65.3	66.2	67.8	68.7	67.9	67.6

Table 16.4: Mean percentage chance of losing job in the next 12 months, by working hours and contract type

	2001	2003	2005	2007	2008	2009
Males						
Full-time fixed-term	20.9	15.5	14.0	13.7	11.6	14.7
Full-time casual	35.5	20.2	17.8	14.8	16.9	18.6
Full-time permanent	12.5	9.9	8.3	8.7	9.7	9.8
Part-time fixed-term	21.6	43.6	8.6	13.9	9.2	23.7
Part-time casual	19.4	12.1	11.5	12.8	10.6	12.8
Part-time permanent	14.7	9.9	6.8	6.0	10.6	10.9
Other	*24.2	*11.9	*36.3	*15.6	*12.2	*32.3
Total	16.0	11.7	9.8	9.8	10.4	11.3
Females						
Full-time fixed-term	14.5	18.7	15.8	22.4	16.4	17.7
Full-time casual	25.6	14.5	19.8	13.0	11.2	17.5
Full-time permanent	9.3	7.7	7.0	5.7	9.1	8.1
Part-time fixed-term	21.1	16.8	15.2	16.8	17.7	18.5
Part-time casual	17.2	11.7	10.4	10.7	10.7	13.2
Part-time permanent	8.3	6.8	6.1	5.5	6.1	8.0
Other	*33.2	*15.2	*48.3	*16.6	*2.4	*7.5
Total	12.6	9.8	8.9	8.5	9.6	10.5

Note: * Estimate not reliable.

employed part-time on a fixed-term contract. Presumably, many of these employees did not expect their contract to be renewed. For female employees, increases in average levels of job insecurity between 2008 and 2009 were most evident among those in full-time casual employment, while female employees in full-time permanent positions were the only group for which average levels of job insecurity decreased between 2008 and 2009.

Do people who report high levels of job insecurity actually change jobs?

What happens to people who report high levels of job insecurity? Do they change jobs, become unemployed, drop out of the labour force, or do

they remain in their current job? Table 16.5 shows employment status in 2009 of males and females who were employees in 2008, according to their level of job insecurity in 2008.

It appears that employee's perceptions of their job security are reasonably accurate, with a much larger proportion of employees who reported high levels of job insecurity in 2008 no longer working for the same employer in 2009. Among employees who rated the chance of losing their job in the next 12 months as 75 per cent or more in 2008, only 42 per cent of males and 48 per cent of females were still working for the same employer in 2009, compared to 79 per cent of males and females who said that there was no chance of

Table 16.5: Employment status in 2009, by reported job security level in 2008 (%)

Percentage chance of job loss in 2008	Employment status in 2009					Total
	Employee –same employer	Employee –different employer	Employer/ Self-employed/ Unpaid family worker	Unemployed	Not in the labour force	
Males						
0	79.2	11.2	4.2	2.0	3.5	100.0
1–24	80.9	11.9	3.0	1.9	2.4	100.0
25–49	75.0	*13.7	*0.7	*3.7	*6.9	100.0
50–74	57.9	21.0	*7.3	*8.1	*5.7	100.0
75 and over	41.8	29.3	*5.3	*12.8	*10.9	100.0
Total	76.9	12.7	3.9	2.8	3.7	100.0
Females						
0	79.2	9.9	1.7	1.5	7.7	100.0
1–24	77.6	13.3	*1.4	*1.3	6.5	100.0
25–49	64.3	*18.2	*2.3	*10.9	*4.3	100.0
50–74	70.8	18.9	*2.5	*3.7	*4.1	100.0
75 and over	47.8	25.6	*1.1	*0.5	*25.0	100.0
Total	76.8	12.0	1.7	1.9	7.6	100.0

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

losing their job and over three-quarters of employees who said that the chance of losing their job was 25 per cent or lower.

Conclusion

Overall, most people are quite satisfied with their jobs, and average levels of job satisfaction changed very little between 2001 and 2009. The aspect of the job with which people are most satisfied with is job security and the aspects of the job that workers are least satisfied with are their pay and hours of work. It is very unusual for low levels of overall job satisfaction to persist for more than one year. However, low levels of satisfaction with total pay, working hours and flexibility to balance work and non-work commitments are an ongoing problem for some. On the other hand, it is quite common for high levels of overall job satisfaction to persist for several years. Ongoing satisfaction with job security and the work itself are also quite common, while persistently high levels of satisfaction with total pay and working hours are less common.

The apparent effects of the Global Financial Crisis on satisfaction with and perceptions of job security are relatively small. Perhaps this is because the dire predictions being made for the economy did not resonate with individuals, seeming to be at odds with their personal circumstances. Indeed, in hindsight, it would seem that individuals' changes in assessments were, on average, quite proportionate to the actual changes in economic

conditions that followed, with the increase in unemployment relatively small by comparison with previous economic downturns. In fact, while other advanced economies contracted by over 3 per cent in 2009, Australia was the only advanced economy to have recorded positive growth (of 0.6 per cent) through the year to June 2009 (Swan, 2010). However, some groups were more affected than others by the economic downturn: men in part-time fixed-term employment and women in full-time casual employment reported significantly higher levels of job insecurity in 2009 than they did in 2008. It is likely that more detailed analysis than undertaken in this report would show that other groups of workers, such as those with low skill levels and those living in some regional areas, also experienced greater than average deterioration in job security.

Endnote

- 1 A substantial proportion had changed jobs at least once between 2005 and 2009. In 2009, 39 per cent of men and women who were employed at the time of interview in each year since 2005 had been working for their current employer for less than five years.

References

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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, 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’, quality of family life, physical and mental health and economic participation of the Australian community. We also draw on this information in conjunction with economic data to examine the extent and nature of ‘social exclusion’ in Australia.

In Wave 9, a range of questions on health-related topics were administered, many for the first time. Part B therefore contains a number of articles drawing on the data generated by these questions. These articles include more detailed investigation of the prevalence and difficulties caused by health conditions and examination of child health and health care, adult health care utilisation, expenditure on health care and expectations about future health and mortality.

17. Life satisfaction and satisfaction with specific aspects of life

Each year, HILDA Survey respondents are asked, ‘*All things considered, how satisfied are you with your life?*’ The response scale runs from 0 to 10, where 0 means ‘completely dissatisfied’ and 10 means ‘completely satisfied’. The question is asked in the context of a battery of items asking about satisfaction with different aspects of life. Table 17.1 reports on the overall life satisfaction of Australians—males and females in different age groups—in 2001, 2003, 2005, 2007, 2008 and 2009.

It is clear that, for the population as a whole, average life satisfaction has been unchanged over the nine-year period, with average levels remaining at about 8. In general, in Australia, females report slightly higher levels of life satisfaction than males. The differences in Table 17.1 are generally

not statistically significant, but have been confirmed in previous studies using different data sets (Headey and Wearing, 1992; Cummins, 1999). Males in the 35–44 years age group had the lowest average life satisfaction, at around 7.5 out of 10 each year. For females in the 35–44 age group, life satisfaction was also lower than average, but this was also the case for females aged between 20 and 34 and females aged between 45 and 54.

Older people report the highest levels of life satisfaction; as previous research has shown, retirement years are very satisfying for many, at least while health holds up (Headey and Wearing, 1992). Teenagers also have higher than average levels of life satisfaction, perhaps because many are yet to face the stresses and responsibilities of adulthood.¹

Table 17.1: Mean life satisfaction by age group

	2001	2003	2005	2007	2008	2009
Males						
15–19	8.2	8.3	8.3	8.4	8.4	8.4
20–24	7.8	7.9	7.7	7.8	8.0	7.9
25–34	7.6	7.8	7.7	7.6	7.7	7.6
35–44	7.5	7.5	7.5	7.5	7.6	7.5
45–54	7.8	7.7	7.7	7.6	7.6	7.5
55–64	8.0	7.9	8.0	7.9	7.9	8.0
65 and over	8.4	8.4	8.3	8.3	8.2	8.2
Total	7.9	7.9	7.8	7.8	7.9	7.8
Females						
15–19	8.1	8.1	8.1	8.2	8.3	8.2
20–24	7.8	7.8	8.0	7.9	7.9	7.8
25–34	7.8	7.8	7.7	7.8	7.8	7.8
35–44	7.8	7.7	7.7	7.7	7.6	7.7
45–54	8.0	7.9	7.8	7.7	7.7	7.7
55–64	8.1	8.1	8.0	7.9	8.0	7.9
65 and over	8.5	8.6	8.4	8.2	8.3	8.2
Total	8.0	8.0	7.9	7.9	7.9	7.8

Aspects of life satisfaction

In addition to being asked about overall life satisfaction, respondents are asked to rate other aspects of their life, such as satisfaction with the home they live in, their financial situation and their employment opportunities. Table 17.2 shows average levels of satisfaction with these various aspects of life.

Average scores for most aspects of life satisfaction barely changed in the period from 2001 to 2009. The largest change in fact was in satisfaction with employment opportunities, which increased from 6.7 for males and 6.6 for females in 2001 to 7.4 for males and 7.1 for females in 2007, then decreased to 7.1 for males and 6.9 for females in 2009. These changes in satisfaction with employment opportunities are entirely consistent with the decline in the unemployment rate and growth in real wages between 2001 and 2007, and the economic downturn in 2008 and 2009. Also consistent with Australia's economic performance over this period, the average level of satisfaction with 'your financial situation' increased slightly from 6.1 for males and 6.2 for females in 2001 to 6.5 for males and 6.6 for females in 2007. However, average levels of satisfaction with financial situation decreased by only 0.1 point (out of 10) between 2007 and 2009, possibly reflecting the fact that, while almost all Australians experienced a substantial drop in superannuation wealth during this period, for a large proportion of the population, the Global Financial Crisis did not have a substantial impact on their current financial situation. The aspects of life people feel most satisfied with are the 'local' ones: their own homes, their neighbourhood and how safe they feel. The aspects which occasioned least satisfaction, although average scores were still over 6, are *your financial situation* and the *amount of free time you have*.

Associations between life satisfaction and self-reported health and prosperity

Life satisfaction is potentially affected by a variety of factors, and the HILDA data, by virtue of the rich information on the characteristics and circumstances of sample members, provides the opportunity to investigate the effects of many of these. In previous versions of this report, we have shown that on average, characteristics such as equivalised household income and region of residence have very little effect on life satisfaction, however significant differences in average levels of overall life satisfaction are evident according to personality traits, employment status and family type.² Headey and Wooden (2005) confirm that objective circumstances of all kinds (such as gender, age and income) appear to have little effect on either well-being or ill-being, which turns out to be much more affected by personality traits, personal relationships and social participation, and ill-being by health problems, marital problems, job problems (including unemployment) and personality. Using data from the second and third waves of HILDA, Hamilton and Barbato (2005) find that the proportion of individuals who indicate they are totally satisfied with life overall (8 or higher out of 10 for overall life satisfaction) *declines* as income increases, but life satisfaction is more or less unaffected by differences in wealth. In a study of the relationship between income and subjective well-being, Easterlin (1974) shows that, in so far as income affects happiness at all, it is relative income—one's income relative to others in one's own country—and not absolute gains in income that make a difference.

In Tables 17.3 and 17.4 we examine whether perceptions about one's circumstances, in terms of financial prosperity and health respectively, have a stronger association with overall life satisfaction

Table 17.2: Mean satisfaction with various aspects of life

Satisfaction with...	2001	2003	2005	2007	2008	2009
Males						
The home in which you live	8.1	8.0	7.9	7.9	8.0	7.9
Employment opportunities	6.7	7.0	7.1	7.4	7.3	7.1
Your financial situation	6.1	6.3	6.4	6.5	6.5	6.4
How safe you feel	8.0	8.1	8.1	8.2	8.2	8.2
Feeling part of local community	6.7	6.6	6.7	6.7	6.7	6.6
Your health	7.4	7.5	7.3	7.3	7.3	7.3
Your neighbourhood	8.0	7.9	7.9	7.9	7.8	7.8
Amount of free time you have	6.7	6.7	6.8	6.7	6.8	6.7
Females						
The home in which you live	8.1	8.0	8.0	8.0	8.0	7.9
Employment opportunities	6.6	6.8	6.9	7.1	7.2	6.9
Your financial situation	6.2	6.4	6.4	6.6	6.5	6.5
How safe you feel	7.8	8.0	8.0	8.0	8.0	8.1
Feeling part of local community	6.7	6.8	6.8	6.8	6.8	6.7
Your health	7.4	7.4	7.2	7.2	7.3	7.2
Your neighbourhood	8.0	8.0	7.9	7.9	7.8	7.8
Amount of free time you have	6.7	6.6	6.7	6.5	6.7	6.5

than more objective measures. Table 17.3 compares average levels of overall life satisfaction according to quintile of equivalised household disposable income and a self-reported measure of prosperity, for the prime-age population, that is, men and women aged between 25 and 54. In Table 17.4, average levels of overall life satisfaction for the prime-age population are broken down according to quintile of general health scores from the SF-36, and a self-reported measure of health.

In each year of the HILDA Survey, respondents are asked the following question: *'Given your current needs and financial responsibilities, would you say that you and your family are: prosperous, very comfortable, reasonably comfortable, just getting along, poor, or very poor?'* Among men and women aged between 25 and 54 in 2009, 52 per cent considered themselves to be 'reasonably comfortable', 16 per cent 'very comfortable' and only 2 per cent considered their family to be prosperous; 27 per cent said that their family was 'just getting along', 3 per cent considered themselves to be poor and the remaining 1 per cent 'very poor'. It is interesting to note that perceptions of prosperity are not strongly associated with equivalised household income. Among those in households in the lowest quintile of equivalised household income, only 14 per cent considered themselves poor or very poor, 44 per cent said they were just getting along, 29 per cent said they were reasonably comfortable, 9 per cent very comfortable and 4 per cent considered themselves to be prosperous. Presumably, those who consider themselves to be prosperous have a reasonably high level of household wealth. On the other hand, only 6 per cent of prime-age individuals in the highest quintile of equivalised household income considered themselves to be prosperous. The majority (61 per cent) said that they were reasonably comfortable, 24 per cent said they were very comfortable, 9 per cent said they

were just getting along and the remaining 1 per cent said they were either poor or very poor.³

Average life satisfaction scores in 2009 range from 6.7 out of 10 for men and 7 out of 10 for women in the lowest quintile of equivalised household income to 7.8 out of 10 for men and 7.9 out of 10 for women in the highest quintile. When life satisfaction is examined according to self-reported prosperity, the difference in average equivalised household income between the poorest group and the most prosperous group is considerably smaller. For example, for men, the difference between average equivalised household disposable income between those in the lowest quintile and those in the highest quintile is \$69,713, while the difference in average equivalised household disposable income among those who consider themselves either poor or very poor and those who consider themselves to be prosperous is only \$36,841. However, when average life satisfaction is disaggregated according to self-reported prosperity, the range of scores widens considerably. Average levels of life satisfaction range from 5.4 out of 10 for men and 6.0 out of 10 for women who consider themselves to be poor or very poor, to 8.2 out of 10 for men who consider their situation to be very comfortable, and 8.8 out of 10 among women who consider their family to be prosperous. It is interesting to note that for men, average levels of overall life satisfaction are lower for those who consider themselves to be prosperous, than for those who consider themselves either reasonably comfortable or very comfortable. Presumably, for many men in this group, the work effort required to achieve and maintain their prosperity has a negative impact on their overall life satisfaction.

In Table 17.4, average levels of overall life satisfaction according to a measure of self-reported health are compared with average levels of life satisfaction disaggregated by quintile of general health

Table 17.3: Mean life satisfaction, by self-reported prosperity and quintile of equivalised household disposable income, 2009

	Men		Women	
	Average life satisfaction	Average equivalised household disposable income (\$)	Average life satisfaction	Average equivalised household disposable income (\$)
Quintile of equivalised household disposable income				
Lowest quintile	6.7	14,180	7.0	15,467
2nd quintile	7.4	29,814	7.7	29,846
3rd quintile	7.6	39,245	7.8	39,409
4th quintile	7.7	50,668	7.8	50,691
Top quintile	7.8	81,612	7.9	80,403
Total	7.6	50,179	7.7	48,414
Self-reported prosperity				
Poor or very poor	5.4	31,426	6.0	25,550
Just getting along	7.1	39,788	7.2	36,607
Reasonably comfortable	7.9	52,388	7.9	51,288
Very comfortable	8.2	61,766	8.3	58,942
Prosperous	7.4	68,267	8.8	92,500
Total	7.6	50,179	7.7	48,414

Table 17.4: Mean life satisfaction, by self-reported health, 2009

	Men		Women	
	Average life satisfaction	Average general health score (SF-36)	Average life satisfaction	Average general health score (SF-36)
Self-reported health				
Poor	4.9	20.8	5.3	19.0
Fair	6.5	41.7	6.7	38.2
Good	7.4	64.7	7.5	63.8
Very good	7.9	79.0	8.0	80.5
Excellent	8.3	91.5	8.6	93.5
Total	7.6	70.3	7.7	70.8
SF-36 general health score				
Lowest quintile	6.4	36.2	6.6	33.7
2nd quintile	7.2	60.6	7.4	61.3
3rd quintile	7.8	72.2	7.8	72.1
4th quintile	7.9	79.4	8.0	79.4
Top quintile	8.3	93.2	8.4	93.5
Total	7.6	70.3	7.7	70.8

from the SF-36.⁴ The association between self-reported health and general health scores is much stronger than that of income quintiles and self-reported prosperity.⁵ That is, those who report being in poor health are much more likely to have low scores on the SF-36 scale and those who report excellent health are very likely to have high SF-36 scores.

Among those who rated their health as poor, general health scores were, on average, extremely low, which suggests that those who rated their health as poor were in fact in worse health, on average, than those in the lowest quintile of SF-36 general health. While those who rated their own health as either good, fair or poor had lower average life satisfaction, and SF-36 scores than those in the lowest, second and third quintiles of general health; the categories of 'very good' and 'excellent' health appear to correspond very closely with the fourth and highest quintiles of SF-36 general health, in terms of both average general health score and average life satisfaction.

Changes in life satisfaction over time

Tables 17.1 and 17.2 show that there is very little change in average levels of life satisfaction and satisfaction with specific aspects of life from one year to the next for the population as a whole. However, as previous HILDA Statistical Reports have indicated, this does not preclude substantial change from year to year at the individual level.

A particular question of interest is the extent to which dissatisfaction with things such as home, community, financial situation, and life in general, persists over time. Table 17.5 shows the number of years that people reported low levels of satisfaction (3 out of 10 or lower) with life in general and with other specific aspects of life, for the period from 2001 to 2009.

The aspect of life with which dissatisfaction arises most persistently is the amount of free time available.

More than 45 per cent reported low levels of satisfaction with this aspect of life in at least one of the nine years from 2001 to 2009; 11 per cent reported low satisfaction in three or four of the nine years, and 8 per cent reported low levels of satisfaction in five or more of the nine years. Dissatisfaction with one's financial situation is also comparatively frequently experienced in multiple years, with 23 per cent reporting low levels of satisfaction with this aspect of life in at least two of the nine years, and 7 per cent reporting low levels of satisfaction for five years or more. Low levels of satisfaction with the home, the neighbourhood and personal safety appear to be much less persistent, with less than 3 per cent of people reporting low levels of satisfaction with these aspects in three or more of the nine years. It seems that it is also very uncommon for dissatisfaction with life in general to persist for several years, with only 1 per cent reporting low levels of life satisfaction in three or more of the nine years from 2001 to 2009.

Overall, the proportion of men and women experiencing low levels of satisfaction with specific aspects of life reported in Table 17.5 are quite similar. However, there are some exceptions—11 per cent of women but only 9 per cent of men reported low levels of satisfaction with their home in one out of the nine years, while 15 per cent of men and 13 per cent of women expressed dissatisfaction with feeling part of their local community in one out of nine years. Dissatisfaction with the amount of free time available is more of a problem for women than for men, with 12 per cent of women and 10 per cent of men reporting dissatisfaction with this aspect of life in three or four of the nine years, and 9 per cent of women and 7 per cent of men reporting low levels of satisfaction in five or more of the nine years.

Can high levels of satisfaction be maintained?

It may be that some individuals are simply more optimistic by nature. Table 17.6 shows the number

Table 17.5: Years of low satisfaction with specific aspects of life, and life in general, 2001 to 2009 (%)

Satisfaction with...	Number of years of low satisfaction					Total
	0	1	2	3 or 4	5 or more	
The home in which you live	83.5	10.4	3.4	2.2	0.5	100.0
Employment opportunities	72.0	13.5	5.3	5.5	3.7	100.0
Your financial situation	62.5	14.5	7.5	8.3	7.3	100.0
How safe you feel	88.4	7.5	2.0	1.4	0.8	100.0
Feeling part of local community	68.6	14.0	6.6	6.2	4.6	100.0
Your health	81.1	8.6	3.2	3.5	3.6	100.0
Your neighbourhood	86.5	8.1	3.1	1.5	0.8	100.0
Amount of free time you have	54.1	16.6	10.4	10.8	8.1	100.0
Overall life satisfaction	92.6	4.8	1.3	0.8	0.4	100.0

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

of years that individuals reported high levels of satisfaction (8 or higher out of 10) with various aspects of life, during the nine years from 2001 to 2009. The aspects of life for which many people have relatively persistent or frequently recurring high levels of satisfaction are their neighbourhood and how safe they feel, with more than 50 per cent of people reporting satisfaction levels of 8 or higher for these aspects of life in at least five of the nine years. High levels of satisfaction with health and the home in which a person lives are also quite persistent or frequently recurring, with around 44 per cent reporting levels of satisfaction of 8 or higher in at least five of the nine years.

Satisfaction with financial situation, the amount of free time available and feeling part of the local community are less persistent. While 79 per cent of people reported high levels of satisfaction with feeling part of their local community in at least one of the nine years, only 27 per cent reported high levels of satisfaction in five years or more. Similarly, while 76 per cent of people reported high levels of satisfaction with the amount of free time they had and 74 per cent reported high levels of satisfaction with their financial situation in at least one of the nine years, only 23 per cent reported persistently high levels of satisfaction with their financial situation and 18 per cent reported high levels of satisfaction with the amount of free time they had in five or more of the nine years between 2001 and 2009.

As was the case with persistence of dissatisfaction with specific aspects of life, persistence of high levels of satisfaction were similar for males and females. Compared to women, the proportion of men who consistently reported high levels of satisfaction with the home and the neighbourhood that they lived in was higher, with 48 per cent of men and 41 per cent of women reporting high levels of satisfaction with their home in five or more of the nine years, and 55 per cent of men and 51 per cent of women reporting high levels of satisfaction with their neighbourhood in at least five of the nine years.

Endnotes

- 1 This result appears to be at odds with previous research (e.g. Backman et al., 1978) indicating that young people's satisfaction tends to improve rather than decline once they leave school.
- 2 The fourth and fifth HILDA Statistical Reports (2009 and 2010) show that individuals with high levels of self-efficacy, extroversion and agreeableness have significantly higher levels of life satisfaction, while those with high levels of neuroticism have significantly lower levels of overall life satisfaction. Mean life satisfaction is 7.8 in the bottom income quintile and the middle income quintile, and increases to 8.1 in the top quintile. Among employed persons, for both males and females average life satisfaction is lower the greater the hours worked, while unemployed people clearly have lower average life satisfaction than persons not in the labour force. Comparing across family types, partnered individuals

Table 17.6: Years of high satisfaction with specific aspects of life and life in general, 2001 to 2009 (%)

Satisfaction with...	Number of years of high satisfaction					Total
	0	1	2	3 or 4	5 or more	
The home in which you live	9.3	10.2	11.2	24.9	44.4	100.0
Employment opportunities	12.3	12.3	12.2	23.5	39.7	100.0
Your financial situation	26.3	16.3	13.4	20.8	23.2	100.0
How safe you feel	6.0	8.1	9.4	22.5	54.1	100.0
Feeling part of local community	20.9	15.8	13.9	22.3	27.1	100.0
Your health	15.3	11.2	10.1	19.8	43.6	100.0
Your neighbourhood	6.6	8.3	9.9	22.4	52.9	100.0
Amount of free time you have	23.7	19.8	15.9	22.5	18.0	100.0
Overall life satisfaction	7.4	8.3	8.6	19.1	56.6	100.0

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

with no resident children have the highest mean level of life satisfaction, while those in lone-parent families have the lowest mean level.

- 3 The Pearson correlation of equivalised household income and the (reversed) self-reported prosperity is 0.337. The Pearson correlation of life satisfaction and equivalised household income is 0.148, while that of life satisfaction and self-reported prosperity is 0.332. All are significant at the 1 per cent level.
- 4 The measure of self-reported health is based on the question: *'In general, would you say your health was excellent, very good, good, fair or poor'*. Described in more detail in Chapter 18 of this report, the General Health measure from the SF-36 Health Survey includes the question about self-reported health described above. In addition, respondents are asked to rate the following statements are on a scale of 1 to 5 with 1 meaning 'definitely true' and 5 meaning 'definitely false': 'I seem to get sick a little easier than other people', 'I am as healthy as anybody I know', 'I expect my health to get worse', and 'My health is excellent'.
- 5 The Pearson correlation of self-reported health and quintile of general health from the SF-36 is 0.749. The Pearson correlation of life satisfaction and self-reported health is 0.425, while that of life satisfaction and general health from the SF-36 is 0.422. All are significant at the 1 per cent level.

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18. Physical and mental health, 2001 to 2009

Every year, HILDA Survey respondents are asked to complete the SF-36 Health Survey. This 36 item questionnaire is intended to measure health outcomes (functioning and wellbeing) from a patient point of view (Ware et al., 2000). 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.¹

The Australian Bureau of Statistics has conducted both general health and mental health studies. Of particular relevance to the HILDA Survey results are the National Survey of Mental Health and Well-Being of Adults conducted in 1997 and the National Health Survey of 2001 (ABS, 1997, 2001). The former included a short version, the SF-12, of the mental health scale in the SF-36. So far as we know, 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). The HILDA Survey results for the general health and mental health scales used in this article are roughly in line with American norms. Mean scores are very close indeed (Ware et al., 2000).² However, the HILDA Survey mental health scale scores have a higher standard deviation than the American scores.

General health, 2001 to 2009

General health scores ranging from 0 to 100 are calculated on the basis of responses to five questions in the SF-36 (Ware, 2007). Firstly, respondents are asked to rate their health in general as excellent, very good, good, fair, or poor. The remaining four questions that make up the general health measure require respondents to rate how true the following statements are on a scale of 1 to 5 with 1 meaning 'definitely true' and 5 meaning 'definitely false':

- *I seem to get sick a little easier than other people.*
- *I am as healthy as anybody I know.*
- *I expect my health to get worse.*
- *My health is excellent.*

Table 18.1 provides the average general health scores, by sex and age group, for 2001, 2003, 2005, 2007 and 2008. Average general health scores remained quite stable between 2001 and 2009.³ For both males and females, general health scores usually decline with age.⁴ In 2009, scores decreased from 76.3 (on the 0–100 scale) for males aged between 15 and 24 to 61.3 for males aged 75 and over. For females general health scores also decline with age, from 71 out of 100 for females

Table 18.1: Mean general health, by sex and age (0–100 scale)

	2001		2003		2005		2007		2008		2009	
	Males	Females										
15–24	76.1	71.2	76.6	70.2	75.9	70.0	75.1	70.6	75.6	71.6	76.3	71.0
25–54	71.1	72.0	70.0	71.1	69.4	70.2	69.8	70.7	69.6	70.6	70.3	70.7
55–64	63.2	65.1	62.3	64.3	62.2	64.0	62.9	65.2	63.5	65.2	64.1	66.1
65–74	62.5	63.8	61.8	64.1	61.5	62.7	61.6	62.5	61.3	62.0	61.7	63.2
75 and over	52.2	57.9	56.0	57.4	57.9	56.6	59.2	55.5	59.0	57.7	61.3	56.7
Total	69.4	69.5	68.7	68.6	68.2	67.8	68.4	68.1	68.4	68.3	69.1	68.4

aged between 15 and 24 to 56.7 out of 100 for females aged 75 and over. In each of the years from 2001 to 2009, females aged between 15 and 24 and females aged 75 and over had lower average general health scores than males of the same age. For all other age groups, average general health scores of females were equal to or higher than the average general health scores for males.

Mental health, 2001 to 2009

The SF-36 mental health score also ranges from 0 to 100 and is based on responses to five questions. Respondents were asked, on a scale of 1 to 6 where 1 means 'all of the time' and 6 means 'none of the time', how much of the time, during the last four weeks:

- Have you been a nervous person?
- Have you felt so down in the dumps that nothing could cheer you up?
- Have you felt calm and peaceful?
- Have you felt down?
- Have you been a happy person?

Table 18.2 shows that, on average, mental health scores are higher for people aged over 65 than for younger people—although in some years there is a considerable drop in average mental health scores for men aged 75 and older compared to men aged 65–74. On average, males in all age groups have higher mental health scores than females, with females under the age of 25 having the lowest average mental health scores.

Table 18.2 furthermore shows that, during the period from 2001 to 2009, there has been a slight increase in average mental health scores for both men and women. In 2009, the average levels of mental health for females ranged from 71.2 out of 100 for females aged between 15 and 24 to 76 out of 100 for females aged 75 and over. For males,

average mental health scores ranged were lowest in the 25–54 age group and highest for men aged between 65 and 74. Unlike general health, the correlation between mental health and age is positive for both males and females.⁵ In other words, mental health improves slightly with age, in part because people with good mental health live longer than those with poor mental health.⁶

The relationship between psychological distress, mental health and general health

In 2009, the HILDA self-completion questionnaire included the following 10 questions about anxiety and depressive symptoms that a person has experienced in the most recent four-week period:⁷

- In the past 4 weeks, about how often did you feel tired out for no good reason?
- In the past 4 weeks, about how often did you feel nervous?
- In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?
- In the past 4 weeks, about how often did you feel hopeless?
- In the past 4 weeks, about how often did you feel restless or fidgety?
- In the past 4 weeks, about how often did you feel so restless you could not sit still?
- In the past 4 weeks, about how often did you feel depressed?
- In the past 4 weeks, about how often did you feel that everything was an effort?
- In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?
- In the past 4 weeks, about how often did you feel worthless?

Table 18.2: Mean mental health, by sex and age (0–100 scale)

	2001		2003		2005		2007		2008		2009	
	Males	Females										
15–24	73.9	69.5	74.9	69.4	74.4	70.8	75.5	71.6	75.5	72.8	75.3	71.2
25–54	74.2	72.2	74.7	72.7	74.1	72.0	74.4	72.4	74.0	72.8	74.5	73.0
55–64	75.2	73.4	75.6	74.4	76.7	73.7	76.1	74.2	76.9	74.9	76.8	73.7
65–74	78.4	75.7	78.9	75.3	77.0	75.0	77.2	75.1	78.4	75.4	78.5	75.4
75 and over	74.1	75.1	75.8	74.9	77.2	74.7	77.1	74.9	77.5	74.7	77.4	76.0
Total	74.6	72.4	75.3	72.7	75.0	72.5	75.3	73.0	75.3	73.5	75.5	73.2

Table 18.3: Kessler Psychological Distress Scale (K10) risk categories, by age group and sex, 2009 (%)

Age group	Kessler Psychological Distress Scale (K10) risk categories				Total
	Low (10–15)	Moderate (16–21)	High (22–29)	Very high (30–50)	
Males					
15–24	60.0	24.8	9.7	5.5	100.0
25–54	66.1	19.8	11.1	3.0	100.0
55–64	70.4	16.5	9.5	3.6	100.0
65–74	75.6	15.6	6.6	*2.2	100.0
75 and over	70.4	20.7	5.8	*3.1	100.0
Total	66.8	19.9	9.9	3.5	100.0
Females					
15–24	49.5	26.8	15.5	8.2	100.0
25–54	60.1	23.0	11.0	5.9	100.0
55–64	66.4	19.9	9.4	4.3	100.0
65–74	71.2	17.2	7.2	4.4	100.0
75 and over	66.5	21.2	10.1	*2.2	100.0
Total	60.7	22.5	11.1	5.6	100.0

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

Table 18.4: Association between Kessler Psychological Distress Scale (K10) risk categories and persistence of low levels of mental health (%)

Years of poor mental health, 2001 to 2009	Kessler Psychological Distress Scale (K10) risk categories				Total
	Low (10–15)	Moderate (16–21)	High (22–29)	Very high (30–50)	
Males					
0	84.1	14.0	1.7	*0.1	100.0
1 or 2	46.3	33.3	18.9	*1.5	100.0
3 or 4	19.5	33.6	36.7	*10.2	100.0
5 or 6	*6.8	*25.4	47.5	*20.3	100.0
7 or more	*0.0	*0.0	*53.5	*46.5	100.0
Total	71.3	18.3	8.3	2.1	100.0
Females					
0	81.7	15.3	2.9	*0.2	100.0
1 or 2	50.4	31.1	15.1	*3.4	100.0
3 or 4	21.1	34.7	32.1	12.1	100.0
5 or 6	*8.4	*13.1	43.0	35.5	100.0
7 or more	*0.0	*10.5	*38.6	*50.9	100.0
Total	67.8	19.4	9.1	3.7	100.0

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

Table 18.5: Association between Kessler Psychological Distress Scale (K10) risk categories and persistence of low levels of general health (%)

Years of poor general health, 2001 to 2009	Kessler Psychological Distress Scale (K10) risk categories				Total
	Low (10–15)	Moderate (16–21)	High (22–29)	Very high (30–50)	
Males					
0	83.5	12.9	3.2	*0.4	100.0
1 or 2	63.1	22.4	13.2	*1.3	100.0
3 or 4	49.9	32.1	15.6	*2.5	100.0
5 or 6	41.6	31.2	24.5	*2.7	100.0
7 or more	29.7	27.0	26.0	17.3	100.0
Total	70.5	18.2	9.0	2.4	100.0
Females					
0	79.5	15.4	4.5	*0.6	100.0
1 or 2	63.0	21.8	12.6	*2.6	100.0
3 or 4	42.2	25.5	22.3	*10.0	100.0
5 or 6	36.2	28.4	20.6	*14.8	100.0
7 or more	28.3	26.7	27.8	17.1	100.0
Total	67.4	18.8	10.0	3.7	100.0

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

For each of the above items, the response options are: 'none of the time', 'a little of the time', 'some of the time', 'most of the time', 'and all of the time'. Each item is scored from 1 for 'none of the time' to 5 for 'all of the time'. Scores for the 10 items are then summed, to give the Kessler Psychological Distress Scale (K10) score for the individual. There is currently no international or Australian standard method for the presentation of the K10 scores. In this article, we follow the method used by the Australian Bureau of Statistics (2003) which defines four levels of psychological distress. Individuals with a score between 10 and 15 are considered to have a low level of psychological distress, those with scores of 16 to 21 are considered to have moderate psychological distress, scores of 22 to 29 indicate high levels of psychological distress and those with scores from 30 to 50 are considered to have very high levels of psychological distress. In Table 18.3 the proportion of men and women with low, moderate, high and very high levels of psychological distress is broken down by age group.

As was the case with the SF-36 mental health scores, the proportion of males and females experiencing psychological distress generally declines with age. For example, 40 per cent of males aged between 15 and 24 had K10 scores of 16 or higher and 15 per cent experienced either high or very high levels of psychological distress. Among men aged 65–74, only 24 per cent had K10 scores of 16 or higher, and 9 per cent had either high or very high levels of psychological distress. However, the proportion of men and women experiencing psychological distress is higher among those aged 75 and over than for those in the 65–74 age group, with 30 per cent of men and 34 per cent of women aged 75 and over scoring 16 or higher on the K10 scale. It is also clear from Table 18.3 that psychological distress is more common among females than males, particularly in the 15–24 age group. More than half of the women aged between 15 and 24 have K10 scores of 16 or higher, and 24 per cent have either high or very high levels of psychological distress, compared to 15 per cent of males in the same age group.

In previous HILDA Statistical Reports, it has been found that poor mental health is much less persistent than poor general health, reflecting the fact that although some mental health problems are chronic, others are cyclical or temporary in nature. In Tables 18.4 and 18.5, we examine the relationship between psychological distress in 2009 and the persistence of mental health problems and general health problems in the nine-year period from 2001 to 2009.

As one might expect, Table 18.4 shows that individuals who had low SF-36 mental health scores at some time between 2001 and 2009 are more likely to experience higher levels of psychological distress.⁸ While more than 80 per cent of males

and females who had SF-36 scores of 50 or higher in each of the nine years from 2001 to 2009 had K10 scores of 15 or lower, among those who had low levels of mental health in one or two of the nine years, 33.3 per cent of males and 31.1 per cent of females were experiencing moderate levels of psychological distress during the four-week period prior to their 2009 interview. A further 20.4 per cent of males and 18.5 per cent of females were experiencing either high or very high levels of psychological distress. Among those who had SF-36 mental health scores below 50 in three or four of the nine years from 2001 to 2009, almost 80 per cent had K10 scores of 16 or higher. It is also interesting to note that those with SF-36 mental health scores of less than 50 out of 100 in 2001 were much more likely to be experiencing at least moderate levels of psychological distress in 2009. Almost 70 per cent of males and females who had SF-36 mental health scores of less than 50 in 2001 were experiencing moderate, high or very high levels of psychological distress in 2009, compared to only 27 per cent of individuals who had SF-36 mental health scores of 50 or above in 2001. This result suggests that although low levels of mental health do not appear to persist for long periods of time, those who have experienced low levels of mental health in the past may be more prone to psychological distress.

Table 18.5 shows that, as was the case for those who had persistently low levels of mental health, those with persistently low levels of general health are also more likely to experience psychological distress.⁹ Among males and females who had SF-36 general health scores of 50 or above in each of the nine years from 2001 to 2009, only 16.5 per cent of males and 20.5 per cent of females had K10 scores of 16 or higher in 2009. However, among those who had low levels of general health in one or two of the nine years, 22.4 per cent of males and 21.8 per cent of females had moderate levels of psychological distress in 2009 and a further 14.5 per cent of males and 15.2 per cent of females had either high or very high levels of psychological distress. Among males and females who had low general health scores in five or six of the nine years from 2001 to 2009, only 41.6 per cent of males and 36.2 per cent of females had low levels of psychological distress in 2009 and among those who had general health problems in seven or more of the nine years, only 29.7 per cent of males and 28.3 females had low levels of psychological distress in 2009.

Endnotes

- 1 It should be understood that, because answers are provided by the public and not by practitioners, the SF-36 cannot be used to diagnose specific physical or mental health problems. Validation tests have shown that SF-36 scores correlate highly with practitioner assessments, but such correlations do not mean that physical and mental health problems can be assumed for individuals with low

- scores. In other words, the SF-36 works well as a screening instrument, but specific assessments by a medical practitioner are required for diagnoses to be made.
- 2 The HILDA Survey means in 2004 were 68.5 for general health and 74.1 for mental health. The American means are both about 2 points higher.
 - 3 2002, 2004 and 2006 are not included in Table 18.1, as there was little change in average levels of general health during this period.
 - 4 Pearson correlation between age and general health for men: -0.27 (2001), -0.28 (2002), -0.28 (2003), -0.26 (2004), -0.26 (2005), -0.25 (2006), -0.26 (2007), -0.25 (2008), 0.24 (2009). Pearson correlation between age and general health for women: -0.19 (2001), -0.21 (2002), -0.18 (2003), -0.17 (2004), -0.18 (2005), -0.21 (2006), -0.20 (2007), -0.20 (2008), -0.20 (2009). All correlations are statistically significant at the one per cent level.
 - 5 Pearson correlation between age and mental health for men: 0.05 (2001), 0.03 (2002), 0.04 (2003), 0.04 (2004), 0.07 (2005), 0.04 (2006), 0.04 (2007), 0.06 (2008), 0.06 (2009). Pearson correlation between age and mental health for women: 0.10 (2001), 0.07 (2002), 0.09 (2003), 0.09 (2004), 0.09 (2005), 0.07 (2006), 0.06 (2007), 0.05 (2008), 0.07 (2009). All correlations are statistically significant at the 5 per cent level.
 - 6 Several studies, including Martin et al. (1995) and Barreira (1999) have found that people with poor mental health, on average, have a lower life expectancy than those with good mental health.
 - 7 This set of questions was also included in the self-completion questionnaire in 2006.
 - 8 In 2009, the Pearson correlation between the SF-36 mental health score and the Kessler K10 Score was -0.799 (0.000) for men and -0.797 (0.000) for women. The SF-36 mental health score ranges from 0 to 100 with 0 being the lowest level of mental health and 100 being the highest. The K10 score ranges from 10 to 50, with 10

representing the lowest level of psychological distress and 50 the highest.

- 9 In 2009, the Pearson correlation between the SF-36 general health score and the Kessler K10 Score was -0.473 (0.000) for men and -0.493 (0.000) for women.

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19. Social capital deficits and their persistence

An increasingly common view in both government and the social sciences is that *social capital* is an important consideration in the assessment of the capabilities that individuals have for living and working effectively in modern society. Most measures of social capital are essentially measures of social networks, although measures of neighbourhood quality and safety are sometimes also included. One's social networks range from intimate attachments to spouse and family, through friendship and social support networks, to acquaintances (including neighbours) whom one may be able to rely on for relatively minor assistance like borrowing household items and keeping an eye on the house while one is away on holiday (Henderson et al., 1981).

In this chapter, the focus is on assessing the incidence of inadequate social capital in the community. The HILDA Survey assesses social capital with two main sets of measures. The first set of measures, 'lives alone (and no partner)', 'not satisfied with partner', and 'not satisfied with other relatives', provides a measure of the availability, or lack thereof, of close, intimate and live-in relationships. The second set of measures, the social networks index, assesses the availability of friendship and social support.¹

Availability of close/intimate and live-in relationships

The 'lives alone (and no partner)' measure is intended to identify individuals who appear to be at risk of lacking an intimate relationship. The 'not satisfied with partner' measure is based on a question asking *How satisfied are you with your relationship with your partner?* This question is put to all married and partnered respondents and is answered on a 0 to 10 scale where 0 means 'completely dissatisfied' and 10 means 'completely satisfied'. Respondents who answer 5 or less on the scale have been classified as 'not satisfied'. The index measuring 'not satisfied with other relatives'

is based on responses to seven other questions, all on the same 0 to 10 scale, about satisfaction with other relationships in the household, as well as satisfaction with relationships with parents. In most cases, one or more of the seven questions is not applicable to the respondent. Similar to the previous measure, a respondent with an average rating on the applicable questions of 5 or less is recorded as 'not satisfied'.

The first row of Table 19.1 shows that, in 2009, 9.3 per cent of persons over 15 years of age were living alone and not partnered, while a further 7.3 per cent were dissatisfied with their partner. These two groups are perhaps at most risk of lacking adequate close relationships. It is important to acknowledge, however, that the HILDA measures are just indicators and that it is certainly possible that some of the apparently 'at risk' individuals, if directly asked, might have reported that they had one or more close relationships and that these were enough to meet their emotional needs. Conversely, persons not living alone may report that they do not have a close relationship.

The remainder of Table 19.1 considers differences by sex and by various potentially 'at risk' groups.² Females have a higher proportion than males reporting dissatisfaction with their partner, and males are slightly more likely to be dissatisfied with other relationships. The elderly are more likely to live alone, putting them at high risk of lacking close relationships, but very few report dissatisfaction with a partner or with their relationships with other relatives. Lone parents (who, by definition, do not live alone) have a relatively high rate of dissatisfaction with relationships with relatives. A significant proportion of those who have divorced or separated also appear to be lacking close relationships.

People with disabilities³ have a somewhat higher rate of living alone than the general population, and dissatisfaction with relationships is also marginally

Table 19.1: Availability of, and satisfaction with, relationships, 2009 (%)

	<i>Lives alone (and no partner)</i>	<i>Not satisfied with partner^b</i>	<i>Not satisfied with other relatives</i>
All persons	9.3	7.3	8.7
Females	9.5	8.1	8.6
Males	9.0	6.6	8.8
Elderly (aged 65 and over)	22.9	4.1	4.6
Lone parent	0.0	5.5	12.7
Divorced or separated ^a	45.2	4.7	13.3
People with disability	13.5	8.0	10.1
NESB immigrant	6.3	10.6	8.0
Regional or remote area	10.0	6.9	8.2
Low income (bottom quintile)	21.6	7.5	10.4
Unemployed, aged 18–64	9.2	9.9	14.6

Notes: Population is persons aged 15 years and over. ^a Divorced or separated persons may be currently partnered; hence, they can be dissatisfied with their current partner. ^b Unpartnered people are treated as not dissatisfied with their partner.

higher. Non-English-speaking background (NESB) immigrants—that is, immigrants from countries other than the main English-speaking countries of the United Kingdom, United States, South Africa and New Zealand—may be at greater risk of lacking close relationships because of language and cultural differences from the broader community, and because of remoteness from extended family. In fact, NESB immigrants have lower rates of living alone and dissatisfaction with other relationships, although they have relatively high rates of dissatisfaction with their partners. People living outside the major cities may face barriers created by geographic isolation. They are indeed slightly more likely to live alone (10 per cent compared with 9.3 per cent for the population), but they are less likely to be dissatisfied with relationships.

Over one-fifth of persons in the bottom 20 per cent of the household (equivalent) income distribution live alone and without a partner, yet the proportion of all people in this income bracket dissatisfied with their partner is still (slightly) higher than for the rest of the population. Clearly, low income is a strong predictor of lack of availability of close relationships. The unemployed, while no more likely to live alone than the rest of the community, are significantly more likely to be dissatisfied with their partners and other relatives.

Social support networks

The HILDA social networks index comprises 10 items asking how much support respondents get from other people. Typical items are, *'I often need help from other people but can't get it'*, *'There is someone who can always cheer me up when I am down'* and *'I often feel very lonely'*. These items are answered on a 1 to 7 scale, where 1 means 'strongly disagree' and 7 means 'strongly agree'. For half of the 10 items, a higher score corresponds to a worse social network, and for the other half, a higher score corresponds to a better social network. To produce an overall indicator of adequacy of social networks, for the latter questions the scores are inverted by subtracting the recorded score from 8, so that scores still range from 1 to 7, but a higher score now corresponds to a worse social network. A person is then defined to have an inadequate social network if the average score on the 10 items is greater than 4.

Table 19.2 shows that more males than females—13.8 per cent compared to 11.7 per cent—report inadequate social networks, a result which replicates much previous research indicating that females are more effective at networking (Flood, 2005; Rubin, 1983). Inadequate social networks are also significantly more prevalent among all of the 'at risk' groups. People with low incomes, those divorced or separated, people with disability and the unemployed are particularly prone to having inadequate social networks.

Table 19.2: Proportion of people aged 15 years and over with a poor social network, 2009 (%)

	Poor social network
All persons	12.7
Females	11.7
Males	13.8
Elderly (aged 65 and over)	16.4
Lone parent	17.1
Divorced or separated	20.0
People with disability	19.5
NESB immigrant	15.0
Regional or remote area	14.0
Low income (bottom quintile)	20.6
Unemployed, aged 18–64	18.3

The persistence and recurrence of low levels of social capital

The results in Tables 19.1 and 19.2 relate just to 2009. But how many of the respondents who reported deficits in social capital in that year reported the same problems in other years as well? Clearly, persistent or recurrent deficits are more serious than deficits perceived at just one point in time. Table 19.3 covers all available measures of social capital and all nine years of the HILDA data, showing how many respondents reported particular deficits in none of the nine years, in only one or two years, in three or four years, and in five or more of the years. People who reported deficits in only one or two years are likely to have experienced only temporary deficits that they have been able to remedy. Persons with deficits for at least five years, by contrast, have deficits that are more persistent or recurrent, and are therefore of more concern.

Experience of poor social networks is very common, with 45.9 per cent of the population classified as having poor social networks in at least one year. For nearly two-thirds of these people, however, this is a temporary phenomenon, arising in only one or two of the nine years. For the remainder—16.2 per cent of the population as a whole—poor social networks are present for at least three years. Fewer people experience the other three social capital deficits: 21.9 per cent lived alone at some stage of the survey period, 26.9 per cent expressed dissatisfaction with a partner at some stage, and 29.4 per cent were at some stage dissatisfied with other relationships. Living alone is the most persistent of the social capital deficits. Of those to live alone at any stage of the survey period, 53.4 per cent lived alone for five or more years. The two measures of relationship dissatisfaction are the most transient, with few dissatisfied for three or more years. At least with respect to partner satisfaction, this is unsurprising. Persistent or recurrent dissatisfaction is likely to lead to dissolution of the relationship in many cases.

Consistent with the 2009 cross-sectional results, the proportions of 'at risk' groups ever experiencing

Table 19.3: Years experiencing social capital deficits—Persons aged 15 years and over, 2001 to 2009 (%)

	<i>All persons</i>	<i>Elderly</i>	<i>Lone parent</i>	<i>Divorced or separated</i>	<i>People with disability</i>	<i>NESB immigrant</i>	<i>Regional or remote area</i>
Lives alone (and no partner)							
Never	78.1	60.5	72.7	33.5	72.4	85.6	76.8
1 or 2 years	7.0	4.9	12.1	9.1	6.3	5.8	7.3
3 or 4 years	3.2	3.1	7.1	6.0	3.8	2.0	3.6
5 or more years	11.7	31.5	8.2	51.5	17.5	6.6	12.3
Not satisfied with partner^a							
Never	73.1	85.8	69.0	76.9	73.8	66.6	74.3
1 or 2 years	18.6	10.6	22.2	15.8	16.9	21.4	18.4
3 or 4 years	4.7	1.6	6.4	4.1	4.7	4.7	4.2
5 or more years	3.6	2.0	2.4	3.1	4.6	7.3	3.0
Not satisfied with other relatives							
Never	70.6	79.1	52.5	55.7	64.7	69.5	72.8
1 or 2 years	19.2	15.9	25.1	25.3	21.3	20.8	16.9
3 or 4 years	5.8	3.2	12.5	9.7	8.1	5.3	5.5
5 or more years	4.3	1.8	9.9	9.3	6.0	4.5	4.9
Poor social network							
Never	54.1	37.8	42.4	40.7	39.8	49.2	54.0
1 or 2 years	29.7	39.5	31.7	32.2	34.1	32.3	29.3
3 or 4 years	8.9	12.5	13.3	14.2	13.9	10.2	9.1
5 or more years	7.3	10.2	12.6	13.0	12.2	8.3	7.6

Notes: 'Elderly', 'lone parent', 'divorced or separated' and 'regional or remote area' status are evaluated in 2001. ^a People are treated as satisfied with their partner in waves in which they were not partnered.

each deficit are higher than for the community at large for all groups other than those living outside the major cities. Although inadequate social networks are important for all groups, the relative importance of the other social capital deficit components does vary somewhat across these groups. For the elderly, 'living alone' is a key source of deficit; for lone parents, it is dissatisfaction with relationships with other relatives; for divorced and separated people, living alone and dissatisfaction with relationships with other relatives are both important sources of deficit; for people with disability, living alone is a key source of deficit; while for NESB immigrants, dissatisfaction with one's partner is considerably more prevalent and persistent.

Discussion

Many people's experience of social capital deficits is only transient—especially inadequate social networks—suggesting many people are able to take action to remedy their situation. Nonetheless, persistent or recurrent social capital deficits are apparent for significant numbers in the community. The evidence suggests that five of the groups identified above—the elderly, lone parents, divorced and separated persons, people with disability and NESB immigrants—are relatively more likely to lack social

capital in Australia. There is also evidence that low income and unemployment are associated with social capital deficits, although it is unclear whether there is a causal effect of low income and unemployment on social capital.

Endnotes

- 1 In some years, questions relating to the local neighbourhood are also included in the HILDA Survey. These too can be regarded as social network questions.
- 2 Note, however, that probably the most at risk are homeless persons, who are not included in the HILDA sample.
- 3 A person is defined to have a disability if he or she has a health condition which has lasted or is likely to last for six months or more and which restricts that person in 'everyday activities'.

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20. Social exclusion in Australia

There has long been considerable dissatisfaction with narrow income-based conceptions of socio-economic disadvantage. The income poverty measures, such as presented in Chapter 7, are widely regarded as informative, but are also regarded by most people in research, policy-making and community sector circles as inadequate for fully identifying and understanding socio-economic disadvantage in the community. Multidimensional approaches have been advocated as providing superior information, and in recent years in Australia this has taken the form of disadvantage conceived as social exclusion. Reflecting this development, the Australian Government in 2009 established the Australian Social Inclusion Board (ASIB), one of the activities of which has been to define and measure social exclusion in Australia (see, for example, ASIB (2010)).

The HILDA Survey is well placed to examine social exclusion in Australia because of the richness of the data, its annual frequency and the capacity to examine persistence and recurrence of exclusion. In work conducted by the Melbourne Institute in conjunction with the Brotherhood of St Laurence, a method for measuring social exclusion was developed and estimates of social exclusion were produced for the 2001 to 2008 period using the HILDA Survey data. In this article we present a brief exposition of these measures of social exclusion, with an emphasis on persistence and recurrence of exclusion. Full details on the development of the measures are available in Scutella, Wilkins and Horn (2009), while more detailed analysis of social exclusion over the 2001 to 2008

period using the HILDA Survey data is presented in Scutella, Wilkins and Kostenko (2009).

The measure of social exclusion we present here is derived from 21 indicators across seven domains of exclusion. The seven domains are material resources; employment; education and skills; health and disability; social support and interactions; community engagement; and personal safety. The premise of the social exclusion approach is that each of these domains is important to the ability of an individual to be a full participant in society—learning, working, engaging with others and having a say in what happens in their communities. The 21 indicators are available in every wave of the HILDA Survey, allowing us to examine change in social exclusion over the entire survey period and to also examine persistence and recurrence of social exclusion.¹ The indicators are summarised in Table 20.1.

The indicators are combined together to produce an overall measure of social exclusion for each individual. This is done by calculating, for each domain, the proportion of indicators present for the individual and then adding up these proportions across all seven domains. For example, if an individual has income less than 60 per cent of median income, but does not experience three or more indicators of financial stress, then one of the two indicators of exclusion in the material resources domain are present, and the individual scores 0.5 for that domain. An individual who scores 0.5 in one domain and has no indicators present in any other domain will obtain an aggregate score of 0.5;

Table 20.1: Indicators of social exclusion

<i>Domains</i>	<i>Indicators</i>
Material resources	Income less than 50 per cent of median income Three or more indicators of financial stress
Employment	Long-term unemployed Unemployed Unemployed or marginally attached Unemployed, marginally attached or underemployed In a jobless household with one or more people aged 15–64 years
Education and skills	Poor English proficiency Low level of formal education Little or no work experience Health and disability Poor general health Poor physical health Poor mental health Has a long-term health condition or disability Household has a disabled child
Social	Little social support
Community	Reported low satisfaction with 'the neighbourhood in which you live' Reported low satisfaction with 'feeling part of local community' Not currently a member of a sporting, hobby or community-based club or association No voluntary activity in a typical week
Personal safety	Low level of satisfaction with 'how safe you feel'

an individual who scores 0.5 in all seven domains will obtain an aggregate score of 3.5; and an individual who has all indicators present will score 7.

Figure 20.1 presents, for each year in the 2001 to 2009 period, the proportions of the population aged 15 years and over: with a social exclusion score of at least one; with a social exclusion score of at least two; and with equivalised income less than 50 per cent of median equivalised income. These can be interpreted, respectively, as the proportion experiencing marginal or worse exclusion, the proportion experiencing deep exclusion, and the proportion in income poverty. The figure shows the proportion of the population in income poverty lies between the proportion deeply

excluded and the proportion experiencing marginal or worse exclusion. Contrary to the pattern evident for income poverty, on both social exclusion measures, the rate of exclusion steadily declines up until Wave 8. Also in contrast to income poverty, marginal social exclusion spiked upwards sharply in 2009. However, deep exclusion continued to decline in 2009. Given the pattern of economic growth and associated employment growth over the period, this would suggest that marginal social exclusion is more responsive to economic conditions than is income poverty or deep exclusion.

Which groups of people are most susceptible to social exclusion? In Table 20.2, rates of social

Figure 20.1: Proportion of the population aged 15 years and over socially excluded

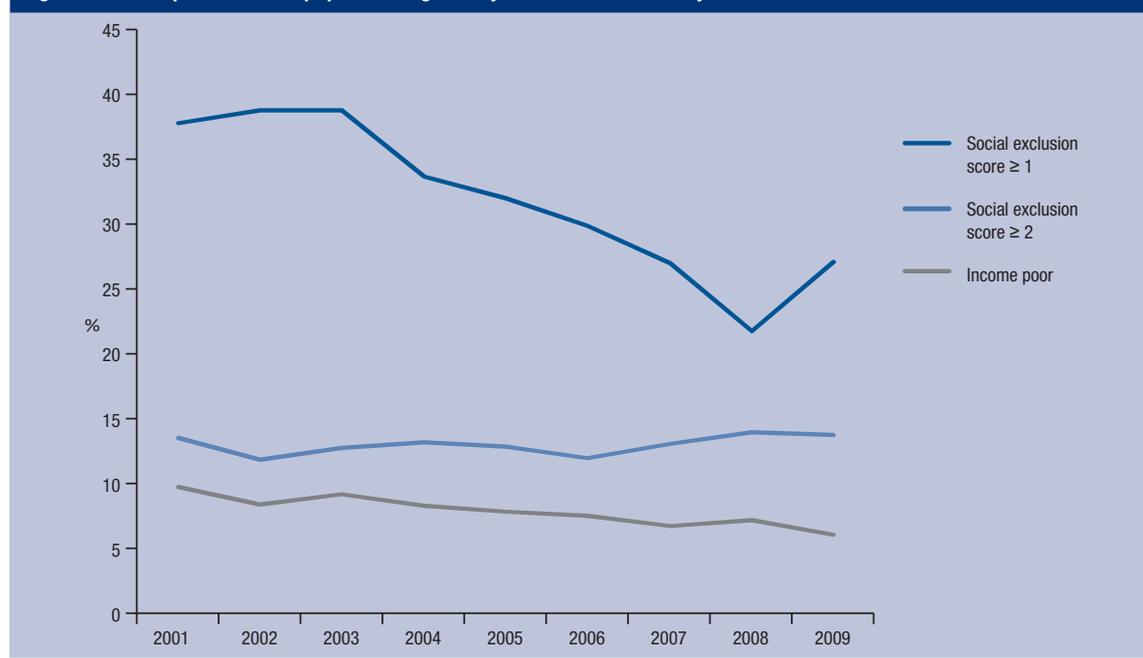


Table 20.2: Social exclusion in Australia—Mean rates over the HILDA Survey period, 2001 to 2009 (%)

	<i>Social exclusion score ≥ 1</i>	<i>Social exclusion score ≥ 2</i>	<i>Income poor</i>
Males	30.0	7.8	11.5
Females	33.6	8.0	14.6
Age group (years)			
15–24	24.1	3.3	12.4
25–34	22.1	5.5	6.8
35–44	27.0	5.6	7.9
45–54	28.8	8.3	8.9
55–64	47.9	14.2	15.2
65 and over	62.0	17.4	30.2
Family type			
Non-elderly couple	31.6	9.0	7.2
Couple with children	25.3	5.6	7.1
Lone parent	40.7	8.1	19.1
Non-elderly single male	28.9	6.3	11.8
Non-elderly single female	23.0	6.1	14.4
Elderly couple	59.6	15.8	22.4
Elderly single male	53.2	14.3	36.4
Elderly single female	68.7	22.2	39.8

exclusion in 2009 for the two measures are compared with rates of income poverty across sex, age and household type groups. In common with income poverty, females are somewhat more susceptible to social exclusion than males, and lone-parent families are more prone to social exclusion than other families with children (or, indeed, other non-elderly couples). The elderly also have similarly high rates of marginal social exclusion and income poverty. However, it is significant that the elderly are, relative to other members of society, much less likely to experience deep social exclusion than they are to be income poor. Elderly couples in particular have a relatively low rate of deep social exclusion, despite 22.4 per cent being classified as income poor. Scutella, Wilkins and Kostenko (2009) further find that, when wealth is taken into account, the apparent situation of the elderly improves even further compared with other members of society.

Persistence of social exclusion

The nature of many of the indicators of social exclusion presented in Table 20.1 is such that we might expect measured social exclusion to be highly persistent over time, although it is not clear whether we should expect social exclusion to be more or less persistent than income poverty. In particular, domains such as health and disability and education and skills seem likely to be highly correlated over time. Table 20.3 provides evidence on the extent of persistence of social exclusion compared with income poverty. For each wave, it presents the probability of exiting social exclusion, calculated as the percentage of people socially excluded in the wave who were not socially excluded in the next wave. The corresponding estimates are presented for income poverty.

Measured on a wave-to-wave basis, persistence is clearly higher for social exclusion than income poverty. On average, over the HILDA Survey period, 25.3 per cent of those in deep exclusion in one wave are no longer in deep exclusion in the next wave. This compares with 48.9 per cent of those in income poverty in a given wave. That is, three-quarters of those deeply excluded in one

wave are deeply excluded in the next wave, whereas just over half of those in income poverty in one wave are in income poverty in the next wave. Persistence is even higher for marginal social exclusion, with only 16.1 per cent on average exiting moderate exclusion from one wave to the next.

This is only one measure of persistence, and indeed, in Volume 6 of this report, we showed that, conditional on being excluded in at least one year, the number of years spent excluded over the HILDA Survey period was very similarly distributed to the number of years spent in income poverty (conditional on being in income poverty in at least one year). Given the higher rate of wave-on-wave persistence for social exclusion, this implies that income poverty has a higher rate of recurrence; conversely, individuals who exit social exclusion are less likely to again become socially excluded.

Discussion

The evidence presented in this brief analysis of social exclusion suggests that, despite some commonalities with income poverty, it is far from equivalent to income poverty. The pattern over time in the incidence of social exclusion between 2001 and 2009 is quite different to that for income poverty. Moreover, while there is clearly considerable overlap, it is also clear that the people who experience social exclusion, particularly deep exclusion, are not simply the same people as those who experience income poverty. For example, the elderly are relatively more likely to be income poor than they are to be deeply socially excluded. Furthermore, social exclusion has considerably more persistence from one year to the next than income poverty, possibly suggesting it better identifies entrenched socio-economic disadvantage.

Endnote

- 1 Scutella, Wilkins and Kostenko (2009) also present analysis drawing on additional indicators that are not available in every wave, including indicators for household wealth, household consumption expenditure, literacy and numeracy, neighbourhood quality, experience of violence and experience of property crime.

Table 20.3: Wave-on-wave persistence of social exclusion and income poverty (%)

	<i>Probability exit moderate social exclusion (score ≥ 1)</i>	<i>Probability exit deep social exclusion (score ≥ 2)</i>	<i>Probability exit income poverty</i>
2001	16.6	20.3	59.6
2002	17.3	19.4	55.4
2003	12.5	23.7	51.5
2004	18.6	43.2	48.7
2005	20.5	35.8	46.8
2006	14.0	27.2	42.8
2007	14.3	13.3	43.2
2008	13.9	17.8	44.7
All waves	16.1	25.3	48.9

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21. Labour force and education participation, 2001 to 2009

At each annual interview, HILDA Survey respondents fill in an 'employment and education calendar' for the period from the beginning of the previous financial year up to the time of interview. In principle, this provides comprehensive information on the labour market and education participation of each respondent over the full period spanned by the HILDA Survey. For each third of the month, the respondent records whether he or she was employed, unemployed or not in the labour force, and also whether he or she was enrolled in school or any course of study. Changes in job are also recorded.

We can use this information to derive a breakdown of the percentage of time employed, unemployed and not in the labour force, and also the percentage of time enrolled in an education course. A person must always be in one of the three mentioned labour force states, so the percentage of time spent in these three states must sum to 100. The percentage of time spent in education can range from 0 to 100, irrespective of the time spent in each of the three labour force states.

In this article, we summarise the labour market and education participation of persons over the nine years covered by the HILDA Survey. We examine three age groups that loosely correspond to different lifecycle stages: 15–24 years, 25–54 years and 55 years and over. In general, we expect education to be relatively more important for youth aged 15–24 years, while employment becomes relatively more important for prime-age people aged 25–54 years. For the oldest age group, it is to be expected that both education and employment activity will be lower than in the other two age groups, reflecting movements into retirement by many in this age group.

Trends in participation, 2001 to 2009

Figure 21.1 presents, for males and females separately, the mean proportion of time spent in employment in each year for each of the three age groups, while Figure 21.2 presents the mean proportion of time spent unemployed in each year. As expected, the mean proportion of the year in

employment is highest for 25–54 year olds. Men in this age range have particularly high levels of employment, on average spending nearly 90 per cent of the year in employment; for females aged 25–54, the average proportion of the year in employment is approximately 70 per cent. Men and women aged 55 and over on average spend the least amount of time in employment—approximately 35 per cent of the year in the case of men and approximately 25 per cent of the year in the case of women. In all three age groups, females spend a lower proportion of the year in employment, although the difference is very slight among 15–24 year olds.

Over the course of the 2001 to 2008 period, the mean proportion of the year in paid employment gradually increased for both males and females in all three age groups. Growth was greater for females than males, and for both males and females was greater for the youngest and oldest age groups. In part, this reflects the groups which in 2001 had the greatest scope for increased employment. In particular, men aged 25–54 have only increased the proportion of the year in employment very slightly, but this is unsurprising given that they are on average spending nearly 90 per cent of the year in employment.

In 2009, the proportion of the year in employment declined for 25–54 year old men and 15–24 year old women, but not for the other four groups in Figure 21.1. It thus appears that adverse effects on employment of the economic downturn were essentially confined to prime-age men and young women. It is not clear why this should be the case.

Like employment, the proportion of time spent unemployed differs considerably across the three age groups; it is highest for 15–24 year olds and lowest for people aged 55 years and over. Effects of the economic downturn on unemployment were similarly ordered by age group. The proportion of the year unemployed surged from below 6 per cent in 2008 to nearly 11 per cent in 2009 for males aged 15–24 and from 5 per cent to nearly 10 per cent for females aged 15–24. The proportion of time spent unemployed rose from approximately

3 per cent to just over 4 per cent for men aged 25–54, from approximately 3 per cent to 3.5 per cent for women aged 25–54, and barely changed for both men and women aged 55 and over. That the proportion of the year employed did not fall in 2009 for males aged 15–24 implies their labour force participation increased in 2009, which is somewhat surprising.

Figures 21.3 and 21.4 present the mean proportion of time spent enrolled in full-time education (Figure 21.3) and in part-time education (Figure 21.4). As expected, 15–24 year olds have by far the highest levels of participation in full-time education, males in this age group averaging nearly 50 per cent of the year in full-time education and females in this age group averaging nearly 55 per

cent of the year in full-time education. Men and women aged 25–54 spend little time in full-time education, and those aged 55 and over spend even less time. Time spent in part-time education is somewhat higher for the older two age groups, and in particular 25–54 year olds, who on average spend nearly as much time in part-time education as do 15–24 year olds.

Participation in education does not appear to have changed substantially over the 2001 to 2009 period, although there has clearly been a slight decrease in the mean proportion of the year spent in full-time education by 15–24 year olds. In 2009, the proportion of the year spent in full-time education was, for females aged 15–24, approximately 3 percentage points lower than it had been in 2001.

Figure 21.1: Mean proportion of time spent employed, by sex and age group

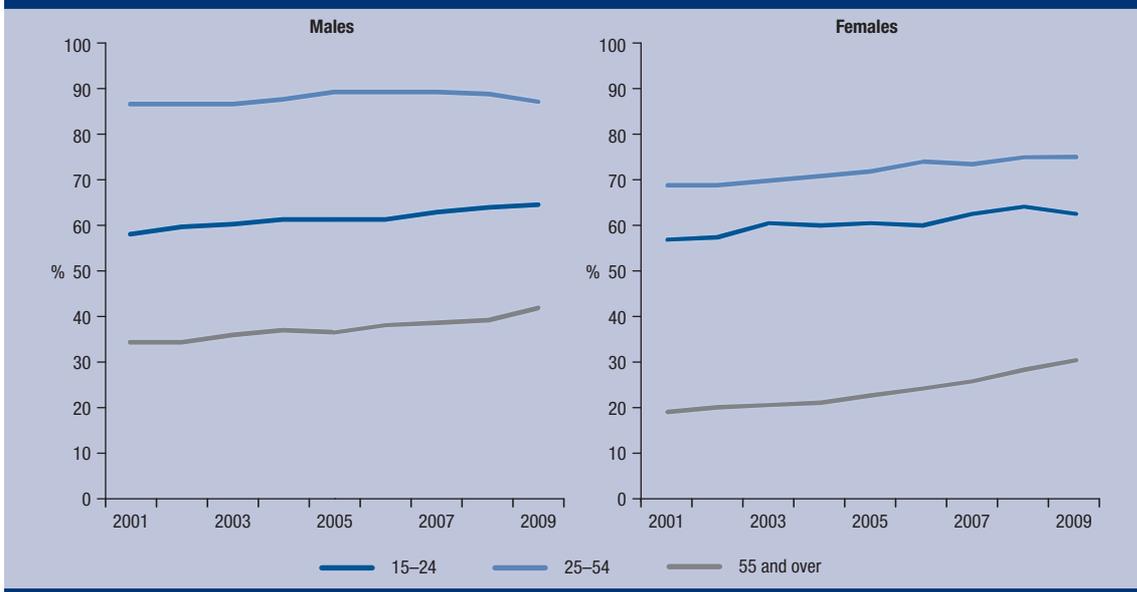


Figure 21.2: Mean proportion of time spent unemployed, by sex and age group



For males aged 15–24, the drop was only about 1 percentage point.

Total employment and education activity over the life of the HILDA Survey

The upper panel of Table 21.1 shows the total proportion of time spent in each labour force and education participation state over the entire nine years from 2001 to 2009. For this analysis, individuals are assigned an age group based on their age in 2001—that is, we examine total participation over the 2001 to 2009 period of persons aged 15–24 in 2001, persons aged 25–54 in 2001, and persons aged 55 and over in 2001. Among males aged 15–24 in 2001, in total, 79.7 per cent of the nine-year period was spent in the employed labour

force state, 5.6 per cent was spent unemployed and 14.7 per cent was spent not participating in the labour force. Among females aged 15–24 in 2001, 69.2 per cent of the time was spent in the employed labour force state, 4.7 per cent was spent unemployed and 26.1 per cent was spent not participating in the labour force. Much of the time spent out of the labour force by 15–24 year olds is likely to be accounted for by enrolment in full-time education (27.1 per cent of time in the case of males and 32.2 per cent of time in the case of females), although of course many full-time students are employed.

Among prime-age men, 86 per cent of the nine-year period was spent in employment, 3.8 per cent was spent unemployed and 10.3 per cent was spent out

Figure 21.3: Mean proportion of time-spent enrolled in full-time education, by sex and age group

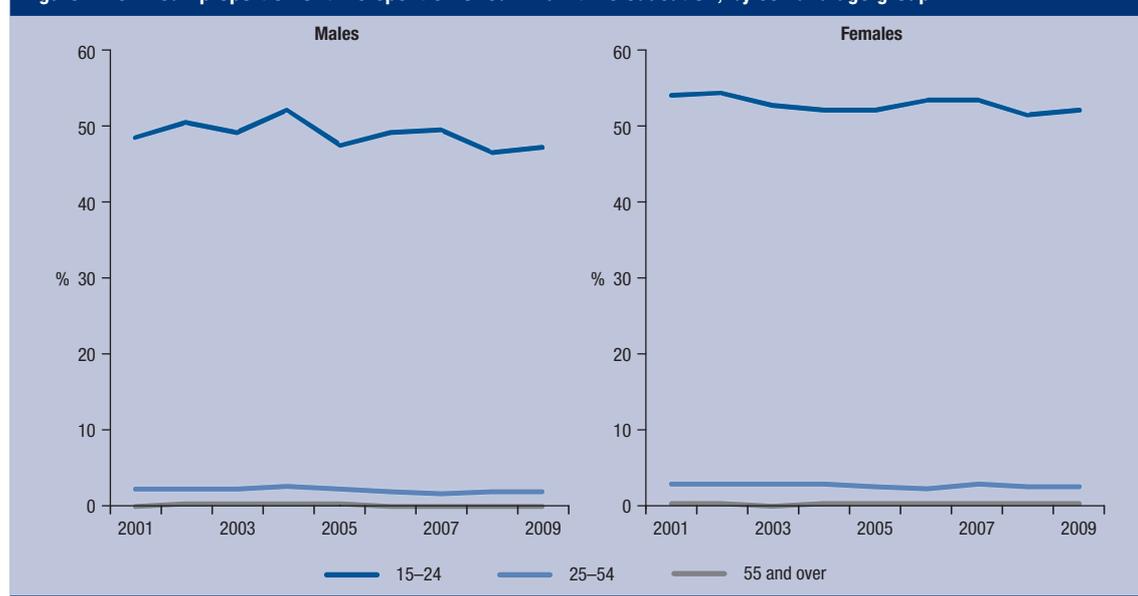


Figure 21.4: Mean proportion of time spent enrolled in part-time education, by sex and age group

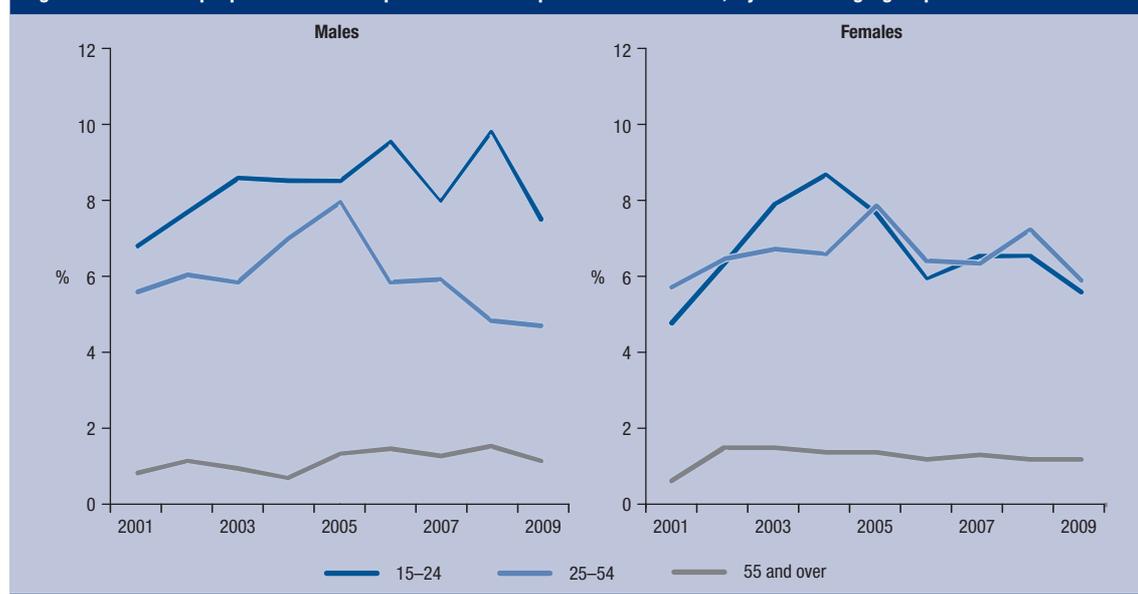


Table 21.1: Education and employment participation over the full nine years of the survey (%)

	<i>Aged 15–24 in 2001</i>		<i>Aged 25–54 in 2001</i>		<i>Aged 55 and over in 2001</i>	
	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>
<i>Proportion of time spent in each activity</i>						
Employed	79.7	69.2	86.0	70.8	25.2	14.2
Unemployed	5.6	4.7	3.8	3.0	1.6	0.6
Not in the labour force	14.7	26.1	10.3	26.2	73.2	85.2
Full-time education	27.1	32.2	1.5	2.2	0.2	0.3
Part-time education	9.8	8.4	5.2	6.1	0.7	0.9
<i>Proportion of population that ever participated in each activity</i>						
Employed	98.4	95.5	95.1	90.0	41.5	26.4
Unemployed	55.5	52.1	29.0	28.9	9.1	4.7
Not in the labour force	67.0	79.2	37.0	63.8	89.4	93.8
Full-time education	70.7	72.8	11.7	14.6	1.8	1.2
Part-time education	55.4	53.7	32.0	38.6	6.3	7.2

of the labour force, while among prime-age women the corresponding figures are 70.8, 3.0 and 26.2. Among men aged 55 and over in 2001 (and therefore at least 63 years of age in 2009), only 25.2 per cent of the nine-year period was spent in employment, with 73.2 per cent of the period spent out of the labour force. Women in this age group had even lower employment participation, spending only 14.2 per cent of the period in employment.

The lower panel of Table 21.1 shows that it would be a mistake to imagine that the same people engage in the same activities every year. Most males and females aged 15–54 in 2001 participated in employment at some stage between 2001 and 2009, and indeed almost all males and females aged 15–24 in 2001 participated in employment at some stage. Among those aged 55 and over, the rate of participation in employment across the full nine-year period is of course much lower, but—at 41.5 per cent for men and 26.4 per cent for

women—it is higher than might appear based on the upper panel of Table 21.1.

As well as high rates of employment participation, those aged 15–24 in 2001 also have very high rates of participation in education, with over 70 per cent enrolled in full-time education, and over 50 per cent enrolled in part-time education, at some stage of the nine-year period. As might be expected, the rate of participation in education by those aged 55 and over is low even over a nine-year period, but among persons aged 25–54 in 2001, we see quite high rates of education participation. Women in particular have high rates of participation, with 14.6 per cent at some stage enrolled in full-time education, and 38.6 per cent at some stage enrolled in part-time education. For men, the corresponding figures are 11.7 and 32, which are still quite high. ‘Adult education’, broadly defined, is thus clearly an extremely important activity of prime workforce-age persons.

B

FEATURE ARTICLES



Health and Health Care

As Table B1 demonstrates, a considerable amount of health-related data is collected by the HILDA Survey every wave, containing information on various dimensions of health, disability, health-related behaviours and health care. The amount of information collected each wave has tended to grow over time, and has periodically been supplemented by additional questions on a specific topic. In Wave 9, the questionnaires included a special focus on health-related topics, incorporating all questions being administered annually as of Wave 8, most of the supplementary questions that had been included in one or more previous waves, and a range of new questions administered for the first time in Wave 9. Summarised in the last column of Table B1, new topics covered included health as a child, health and health care of children in the household, health expectations, government concession cards, out-of-hospital health care and treatment of specific medical conditions. Other topics covered in Wave 9 that have not been included in every wave include questions on specific medical conditions that were administered in Waves 3 and 7, questions on difficulties caused by long-term health conditions, private health insurance and hospital visits that were administered in Wave 4, and questions on diet, dieting, feelings about weight and psychological distress that were administered in Wave 7. The current expectation is that the special health focus will be repeated every four waves, and thus the questions will next be administered in Wave 13.

This section of the report contains five articles drawing on the health-related data collected in Wave 9. These articles primarily focus on providing a sense of what the HILDA Survey has to say about the Australian population's health, use of health care services, expenditure on health care and expectations about their health, with particular emphasis on their demographic and socio-economic correlates. There is of course much more that could, and should, be investigated with this data in future research.

Table B1: Health-related data collected in the HILDA Survey, Waves 1 to 9									
	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	Wave 9
Health									
SF-36 Health Survey	✓	✓	✓	✓	✓	✓	✓	✓	✓
Self-reported health	✓								✓
Satisfaction with health	✓	✓	✓	✓	✓	✓	✓	✓	✓
Health events in the past year		✓	✓	✓	✓	✓	✓	✓	✓
Specific medical conditions			✓				✓		✓
Workers' compensation and sick leave					✓	✓	✓	✓	✓
Height and weight						✓	✓	✓	✓
Psychological distress							✓		✓
Feelings about weight							✓		✓
Health as a child									✓
Health of children in the household									✓
Health expectations									✓
Disability									
Disability indicator and extent of work limitation	✓	✓	✓	✓	✓	✓	✓	✓	✓
Time spent on caring		✓	✓	✓	✓	✓	✓	✓	✓
Type of disability and year of onset			✓	✓	✓	✓	✓	✓	✓
Difficulties caused by disability				✓					✓
Caring activities					✓	✓	✓	✓	✓
Health-related behaviours									
Smoking and alcohol consumption	✓	✓	✓	✓	✓	✓	✓	✓	✓
Smoking history							✓		
Exercise	✓	✓	✓	✓	✓	✓	✓	✓	✓
Diet							✓		✓
Dieting							✓		✓
Health care									
Hospital admissions				✓					✓
Private health insurance				✓					✓
Expenditure on health care					✓	✓	✓	✓	✓
Concession cards									✓
Non-hospital health care									✓
Treatment of specific medical conditions									✓
Health care of children in the household									✓
<i>Note:</i> Not included here are questions found in the sections on employment, non-employment and retirement that ask, for example, about reasons for not working, where health reasons are often nominated.									

22. Prevalence and difficulties caused by health conditions

The Australian Bureau of Statistics (2010) estimates that, in 2009, 18.5 per cent of the Australian population had some form of disability. According to findings from the 2009 Survey of Disability, Ageing and Carers, approximately four million Australians reported having a disability—defined as any limitation, restriction or impairment which restricts everyday activities and has lasted or is likely to last for at least six months. The survey also found that 5.8 per cent had a profound or severe level of core activity limitation, that is, they needed help with self-care, mobility or communication activities.¹

In every year of the HILDA Survey, respondents are asked:

Do you have any long-term health condition, impairment or disability that restricts you in your everyday activities, and has lasted, or is likely to last, for six months or more?

Table 22.1 shows the proportion of men and women who said they had a long-term health condition or disability in 2004, 2007 and 2009. Each year, almost 30 per cent of people aged 15 and over reported having a long-term health condition or disability. While the proportion of men reporting a long-term health condition or disability remained quite steady, at around 27 per cent in all three years, the proportion of women reporting a long-term health condition or disability increased from 26 per cent in 2004, to 28 per cent in 2007 and 30 per cent in 2009. The proportion of people reporting a long-term health condition or disability increases with age. In 2009, 10 per cent of males and 15 per cent of females aged between 15 and 24 reported having a long-term health condition or disability, compared to 69 per cent of males and 72 per cent of females aged 75 and over.

In 2004, 2007 and 2009, individuals who reported having a long-term health condition or disability were asked about the specific type of condition they had, and the difficulties they experienced because of their health conditions. Table 22.2 shows the proportion of men and women who

reported having each type of health condition. Conditions that restrict everyday physical activity or physical work (such as migraines and back problems) were the most commonly reported type of health condition, with 9 per cent of males and 11 per cent of females reporting this type of health problem in 2009. Other commonly reported health conditions were chronic or recurring pain, limited use of feet or legs, and shortness of breath or difficulty breathing.

While it was more common for women than men to report having conditions that restrict physical activity or physical work and chronic or recurring pain, and nervous or emotional conditions which require treatment, hearing problems were more common for men than for women, with around 6 per cent of men reporting having a hearing problem each year, compared to only 3 or 4 per cent of women.² For most of the health conditions listed in Table 22.2, the proportion of women reporting having the condition increased between 2004 and 2009. However, this was less commonly the case for men.

Table 22.3 shows that while some conditions, such as nervous or emotional conditions; blackouts, fits or loss of consciousness; and difficulties learning or understanding things, are clearly not age related, the prevalence of many health conditions increases with age. For example, the proportion of individuals reporting a health condition which restricts their ability to do work or other physical activities increases from 3 per cent of those aged between 15 and 24 to 12 per cent of individuals in the 45–54 age group and 21 per cent of those aged 75 and over. Similarly, while only one per cent of 15–24 year olds reported having limited use of their feet or legs, the proportion reporting this particular health condition increases to 8 per cent of 55–64 year olds and 24 per cent of men and women aged 75 and over.

Among those men and women who reported having a long-term health condition or disability in 2009, 54 per cent reported having more than one

Table 22.1: Proportion with a long-term health condition or disability, by sex and age group, 2004, 2007 and 2009 (%)

Age group	2004		2007		2009	
	Males	Females	Males	Females	Males	Females
15–24	12.0	11.6	9.4	12.8	10.0	15.3
25–34	16.2	14.8	13.0	14.8	14.0	17.6
35–44	22.3	18.0	21.3	19.4	20.6	19.8
45–54	27.2	27.2	26.9	25.8	28.1	30.9
55–64	41.3	37.3	41.7	40.6	41.5	40.2
65–74	53.7	40.8	49.9	50.4	52.2	52.7
75 and over	62.9	61.5	67.5	66.7	68.9	71.6
Total	27.6	25.7	26.6	27.8	27.3	30.2

of the conditions listed in Table 22.3. For example, among those who reported having a health condition that restricts physical activity or physical work, 43 per cent also reported having chronic or recurring pain; 32 per cent said that they had a

long-term condition or ailment which is still restrictive even though it is being treated or medication is being taken for it; 27 per cent reported limited use of their feet or legs; 21 per cent had shortness of breath or difficulty breathing; 18 per

Table 22.2: Type of long-term health condition, 2004, 2007 and 2009 (%)

Type of health condition	2004		2007		2009	
	Males	Females	Males	Females	Males	Females
Any condition that restricts physical activity or physical work (e.g. migraines, back problems)	9.7	9.1	9.2	9.5	9.4	11.0
Chronic or recurring pain	5.4	5.7	5.3	6.5	6.0	8.4
A long-term condition or ailment which is still restrictive even though it is being treated or medication is being taken for it	6.6	6.4	6.6	7.0	7.5	7.8
Limited use of feet or legs	4.9	4.9	5.1	5.2	5.0	5.5
Shortness of breath or difficulty breathing	3.4	3.3	3.3	4.1	4.0	4.9
A nervous or emotional condition which requires treatment	2.9	3.1	3.3	3.7	2.6	4.3
Limited use of arms or fingers	2.9	2.9	2.7	3.6	2.5	4.1
Difficulty gripping things	2.3	2.9	2.1	3.1	2.1	4.0
Hearing problems	6.1	2.9	6.4	3.7	6.3	3.8
Sight problems not corrected by glasses	2.5	2.3	3.0	3.1	3.1	3.4
Any mental illness which requires help or supervision	1.0	0.9	1.5	1.3	1.7	1.4
Difficulty learning or understanding things	1.6	0.9	1.4	1.2	1.4	1.3
Blackouts, fits or loss of consciousness	0.8	0.7	0.6	0.8	0.8	1.1
Long-term effects as a result of a head injury, stroke or other brain damage	1.5	0.8	1.4	1.0	1.2	0.9
Speech problems	0.6	0.3	0.7	0.3	0.8	0.6
Any disfigurement or deformity	0.9	0.5	0.7	0.5	0.7	0.5
Any other long-term condition such as arthritis, asthma, heart disease, Alzheimer's, dementia etc.	9.2	11.6	9.6	12.9	10.2	14.5

Table 22.3: Specific health conditions of people who reported having a long-term health condition or disability, by age group, 2009 (%)

Type of health condition	Age group							Total
	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	
Any condition that restricts physical activity or physical work(e.g. migraines, back problems)	2.7	4.7	7.7	11.8	17.3	18.8	21.3	10.2
A long-term condition or ailment which is still restrictive even though it is being treated or medication is being taken for it	1.8	3.4	3.6	8.0	12.6	17.9	20.4	7.6
Chronic or recurring pain	1.1	2.7	5.3	8.5	11.5	14.4	18.9	7.2
Limited use of feet or legs	0.7	1.1	1.9	4.7	8.3	11.5	24.2	5.3
Hearing problems	*0.7	*0.6	1.9	3.3	7.7	12.5	26.1	5.1
Shortness of breath or difficulty breathing	1.0	1.3	1.6	4.1	7.0	11.6	15.6	4.4
A nervous or emotional condition which requires treatment	1.8	2.4	4.0	4.7	3.8	4.4	4.2	3.5
Limited use of arms or fingers	*0.5	1.1	1.9	2.8	5.9	7.8	10.8	3.3
Sight problems not corrected by glasses	1.0	*1.0	1.9	2.9	3.6	6.9	14.0	3.2
Difficulty gripping things	*0.3	*0.6	1.5	2.8	5.5	8.4	9.5	3.0
Any mental illness which requires help or supervision	0.9	1.8	1.3	1.5	2.5	2.0	*1.3	1.6
Difficulty learning or understanding things	2.0	1.3	*0.8	0.9	0.8	1.9	2.7	1.4
Long-term effects as a result of a head injury, stroke or other brain damage	*0.0	*0.3	*0.4	1.1	1.9	2.0	4.1	1.0
Blackouts, fits or loss of consciousness	0.9	*0.7	*0.3	0.8	1.2	1.6	2.5	0.9
Speech problems	*0.7	*0.4	*0.8	*0.3	*0.6	*0.9	*2.4	0.7
Any disfigurement or deformity	*0.2	*0.4	*0.3	*0.6	1.4	*1.0	*1.3	0.6
Any other long-term condition such as arthritis, asthma, heart disease, Alzheimer's, dementia etc.	3.8	4.7	5.5	9.9	19.5	29.9	42.0	12.4

Note: * Estimate not reliable.

cent had limited use of arms or fingers; 18 per cent reported difficulty gripping things; 17 per cent had hearing problems and 11 per cent reported having sight problems.

Among those who reported having a long-term health condition or disability, the proportion that reported more than one condition increased with age. For example, in 2009, 69 per cent of males and 68 per cent of females reported only one long-term health condition. Among men and women aged 75 and over, only 38 per cent of males and 24 per cent of females reported only one long-term health condition, and 18 per cent of males and 29 per cent of females identified five or more of the health conditions listed in Table 22.3.

Difficulties due to long-term health conditions

In 2004 and 2009, people with long-term health conditions were asked if their condition (or conditions) had caused them to have difficulty with self-care activities, mobility activities, or communicating in their own language.³ Table 22.4 shows the proportion of people with a long-term health condition who reported experiencing these types of difficulties, by sex and age group.

The most commonly reported difficulties resulting from a long-term health condition were difficulties with mobility. In 2009, 18 per cent of men and 24

per cent of women who had a long-term health condition or disability said they had experienced difficulties with mobility activities, down from 27 per cent of men and 32 per cent of women in 2004. The proportion of men and women reporting difficulties with self-care activities was also lower in 2009 than in 2004, with 16 per cent of men and women who reported having a long-term health condition or disability reporting difficulties with self-care activities in 2004, compared to 11 per cent of men and 13 per cent of women in 2009. Difficulties with communication were much less common, and the proportion of men and women reporting this type of difficulty changed very little between 2004 and 2009, with around 5 per cent of men and 3 per cent of women saying they had difficulties communicating because of a long-term health condition or disability.

Of course, the type of difficulty experienced will depend on the particular health condition. Table 22.5 shows the proportion of people who experienced difficulties with self-care activities, mobility and communicating, according to the type of long-term health condition or disability.

It stands to reason that difficulties with self-care activities were more common amongst people who had limited use of their arms or fingers or difficulty gripping things; a high proportion of men

Table 22.4: Difficulties as a result of long-term health condition, by sex and age group, 2004 and 2009 (%)

Age group	2004		2009	
	Males	Females	Males	Females
Difficulties with self-care activities				
15–24	*2.9	*8.8	*9.2	*4.4
25–34	*8.8	14.8	*9.5	8.5
35–44	14.1	17.6	*8.2	10.4
45–54	16.5	16.4	10.8	13.4
55–64	19.5	12.7	11.6	11.6
65–74	17.2	12.1	11.2	12.2
75 and over	21.2	25.7	15.0	22.8
Total	15.6	16.2	11.1	12.9
Difficulties with mobility activities				
15–24	*10.1	*14.2	*10.2	*8.5
25–34	23.0	16.6	10.7	12.3
35–44	24.1	28.5	12.3	18.2
45–54	27.1	33.2	16.5	24.1
55–64	29.0	30.3	24.0	23.7
65–74	28.3	35.4	17.3	24.4
75 and over	40.2	47.6	23.4	41.4
Total	27.1	31.8	17.8	23.9
Difficulties communicating				
15–24	*3.3	*6.5	*4.8	5.3
25–34	7.9	*2.8	*3.7	*2.1
35–44	*1.8	*2.2	5.7	*1.8
45–54	*5.0	*1.8	*2.0	*3.2
55–64	*5.9	*1.6	5.7	*3.3
65–74	*5.3	*1.4	*4.9	*1.0
75 and over	10.0	7.1	*5.3	*3.5
Total	5.6	3.2	4.6	2.8

Note: * Estimate not reliable.

Table 22.5: Difficulties as a result of long-term health condition, by type of health condition, 2009 (%)

Type of health condition	Difficulties with self-care activities	Difficulties with mobility activities	Difficulties communicating
Health condition	16.9	32.4	3.1
Chronic or recurring pain	21.0	38.9	3.5
Limited use of feet or legs	26.5	52.6	5.0
Hearing problems	17.8	22.8	9.6
Shortness of breath or difficulty breathing	23.1	35.6	4.8
A nervous or emotional condition which requires treatment	20.2	29.0	5.1
Limited use of arms or fingers	33.3	42.0	4.1
Difficulty gripping things	31.5	40.8	4.9
Sight problems not corrected by glasses	18.3	28.3	*6.0
Difficulty learning or understanding things	21.5	21.4	20.6
Long-term effects as a result of a head injury, stroke or other brain damage	35.9	50.9	15.0
Any mental illness which requires help or supervision	17.2	26.1	9.6
Blackouts, fits or loss of consciousness	32.7	47.8	*7.2
Any disfigurement or deformity	30.0	44.6	*3.5
Speech problems	36.2	33.7	29.1
A long-term condition or ailment which is still restrictive even though it is being treated or medication is being taken for it	20.6	68.5	4.5
Any other long-term condition such as arthritis, asthma, heart disease, Alzheimer's, dementia etc.	14.1	25.5	3.2

Note: * Estimate not reliable.

and women who had limited use of their feet or legs reported mobility problems, and communication difficulties were most common among people who reported having speech problems. However, some of the difficulties reported do not appear to match up with the type of health condition. For example, 34 per cent of individuals with speech problems also reported difficulties with mobility activities. The reason for this seemingly strange result is that, as mentioned previously, it is quite common for individuals to report more than one long-term health condition. Therefore, the difficulty with a particular activity may be a result of one of several reported health conditions.

In 2004 and 2009, individuals who reported a long-term health condition or disability were asked if they used any aids to help with their condition. The examples given were:

- *Mobility aids—canes, walking sticks, crutches, walking frames, wheelchair, scooter, specially modified car or car aids;*
- *Self-care aids—any aids to help with self-care activities such as bathing, dressing, toileting and managing incontinence;*
- *Non-electronic communication aids—such as picture boards or large print books to assist with communication; and*
- *Electronic communication aids—such as hearing aids, audio tapes, a talking word processor or special computer software to assist with communication.*

Table 22.6 shows the proportion of men and women with a long-term health condition who used mobility aids, self-care aids or communication aids in 2004 and 2009. In 2009, the proportion of people

who used some type of aid to assist with a long-term health condition ranged from less than 5 per cent of males and females aged between 15 and 24, to over 40 per cent of males and almost 60 per cent of females aged 75 and over. For both males and females, the most common type of aid used was a mobility aid, with 11 per cent of males and 17 per cent of females who reported a long-term health condition or disability saying that they used some type of aid to help with mobility. Compared to mobility aids, self-care aids and communication aids were much less commonly used—this was to be expected as self-care and communication difficulties were much less common than mobility problems.

In addition to the question about aids needed because of a long-term health condition, those with a long-term health condition were also asked if their home had been modified in any way because of their condition. Examples of such modifications include ramps, hand rails, kitchen modifications such as handles to turn on taps, visual doorbell, visual telephone, visual smoke alarm, and having doors widened. The proportion of people with a long-term health condition or disability who said that their home had been modified in some way because of their condition in 2009 was 11 per cent (9 per cent of males and 13 per cent of females). As one would expect, the proportion reporting that their home had been modified increased with age, from 3 per cent of males and females aged between 15 and 24, to 15 per cent of males and females in the 65–74 age group and 31 per cent of males and females aged 75 and over.⁴

Specific medical conditions

In 2009, HILDA respondents were asked if, at the time of their interview, they had any specific

Table 22.6: Aids used to assist with long-term health condition, by sex and age group, 2004 and 2009 (%)

Age group	2004		2009	
	Males	Females	Males	Females
Uses a mobility aid				
15–24	*0.6	*0.7	2.9	0.9
25–44	6.0	4.5	3.6	4.4
45–64	12.2	11.0	10.2	9.1
65–74	19.6	19.8	12.9	20.1
75 and over	34.5	49.0	29.0	51.3
Total	13.7	16.8	11.4	16.5
Uses a self-care aid				
15–24	*0.7	*0.4	*0.8	*0.8
25–44	*2.2	*1.9	*1.0	*1.4
45–64	*2.6	*3.3	*3.8	3.6
65–74	*4.9	*4.6	5.3	5.8
75 and over	7.7	12.3	4.8	12.4
Total	3.4	4.6	3.3	4.8
Uses an electronic or non-electronic communication aid				
15–24	*1.6	*3.1	*0.2	*0.3
25–44	*1.0	*0.1	*0.7	*1.5
45–64	*2.8	*1.7	4.8	*2.6
65–74	10.2	5.4	8.8	3.5
75 and over	21.8	12.1	16.1	12.4
Total	5.9	3.9	5.9	4.1
Uses any of the above				
15–24	*2.9	*4.2	*3.1	*1.4
25–44	7.1	5.8	4.5	6.8
45–64	14.7	13.4	14.7	11.6
65–74	30.8	25.3	20.5	23.7
75 and over	50.6	55.2	41.9	57.8
Total	19.0	20.1	16.6	19.7

Note: * Estimate not reliable.

health conditions such as arthritis, asthma, diabetes and heart disease. In Table 22.7, the proportion of males and females who reported having each specific health condition is broken down by age group.

Some medical conditions, for example cancer, bronchitis or emphysema, diabetes and heart disease, appear to be equally prevalent among males and females. On the other hand, the proportion reporting arthritis or osteoporosis, depression or anxiety and high blood pressure or hypertension is slightly higher among females. For both males and females, the likelihood of reporting any one of the conditions listed in Table 22.7 generally increases with age. For example, conditions such as arthritis, osteoporosis, Type 2 diabetes, heart disease and hypertension were much more common among males and females aged 65 and over than for those under the age of 45. One exception is asthma, with 12 per cent of males and 17 per cent of females aged between 15 and 24 saying that they had asthma, compared to 8 per cent of males and 13 per cent of females aged 75 and over.

Not all of the people who reported having a specific health condition considered themselves to have a long-term health condition or disability.

For some, this may be because the condition was only recently diagnosed, while others may not consider their specific condition to be as severe as to be classified as a health condition or disability. In Table 22.8, the proportion of males and females who considered themselves to have a long-term health condition or disability is shown, according to the specific health conditions reported.

More than 80 per cent of males and females with chronic bronchitis, emphysema or a serious circulatory condition considered themselves to have a long-term health condition or disability, as did 80 per cent of those with heart disease and 90 per cent of those who had a mental illness other than anxiety or depression. Among those with arthritis or osteoporosis, diabetes, depression, anxiety or any type of cancer, the proportion reporting a long-term health condition was over 60 per cent. However, among those males and females who had asthma, high blood pressure or hypertension, the proportion who considered themselves to have a long-term health condition was approximately 55 per cent. Presumably, because these types of conditions can often be managed with medication, many respondents did not consider them to be a long-term health condition or disability that restricts everyday activities.

Persistence of health conditions

Many health conditions are 'long term' in the sense that they have lasted for many years, but others may resolve over time or be overcome with medical treatment. In Table 22.9, the number of years that individuals report having a long-term health condition is shown for those who answered the question about having a long-term health condition or disability in each of the nine years from 2001 to 2009.

While almost 40 per cent of individuals reported having a long-term health condition or disability in at least one of the nine years between 2001 and 2009, only 9 per cent of males and 8 per cent of

females reported a long-term health condition or disability in all nine years. The persistence of long-term problems increases with age—only 2 per cent of males and females aged between 15 and 24 in 2001 had a health condition that persisted for all nine years, compared to 20 per cent of males and 28 per cent of females aged 75 and over.

Of course, some health conditions are more difficult, if not impossible to overcome. Table 22.10 examines the persistence of specific health difficulties. That is, the number of times a particular health problem was reported in the three years that the questions about specific health conditions were asked.

Table 22.7: Specific medical conditions, by age group and sex, 2009 (%)

	Age group					Total
	15–24	25–44	45–64	65–74	75 and over	
Males						
Arthritis or osteoporosis	*0.4	4.3	18.9	31.0	38.9	12.5
Asthma	11.9	9.8	7.5	8.1	8.1	9.2
Any type of cancer	*0.2	*0.8	3.7	10.0	13.7	3.1
Chronic bronchitis or emphysema	*0.1	*0.2	2.6	8.1	6.7	2.0
Type 1 diabetes	*0.6	*0.6	1.0	*3.4	*1.9	1.1
Type 2 diabetes	*0.2	*1.1	8.1	17.4	16.7	5.5
Depression or anxiety	3.8	8.2	9.2	6.7	6.6	7.5
Other mental illness	*1.3	1.3	2.0	*1.1	*0.7	1.5
Heart disease	*0.5	*0.5	6.4	14.1	20.6	4.7
High blood pressure or hypertension	*0.3	5.4	23.9	37.3	46.7	15.4
Any other serious circulatory condition (e.g. stroke, hardening of the arteries)	*0.0	*0.6	3.6	5.9	12.4	2.6
Females						
Arthritis or osteoporosis	0.9	5.2	27.4	55.9	58.4	19.9
Asthma	16.8	11.5	11.8	14.3	12.5	12.8
Any type of cancer	*0.3	1.1	3.5	6.7	7.9	2.7
Chronic bronchitis or emphysema	*0.4	*1.0	3.1	4.9	6.3	2.3
Type 1 diabetes	*0.5	*0.7	1.2	*0.7	*1.1	0.8
Type 2 diabetes	*0.2	1.3	6.1	10.1	13.9	4.3
Depression or anxiety	11.6	13.5	13.2	11.9	10.6	12.7
Other mental illness	*1.2	1.7	1.3	*0.6	*0.7	1.3
Heart disease	*0.3	*0.4	4.0	11.4	23.4	4.2
High blood pressure or hypertension	*1.3	4.5	25.3	47.1	54.9	18.1
Any other serious circulatory condition (e.g. stroke, hardening of the arteries)	0.2	*0.6	2.4	6.4	11.7	2.4

Note: * Estimate not reliable.

Table 22.8: Proportion reporting a long-term health condition or disability, by specific medical condition, 2009 (%)

	Males	Females	Total
Arthritis or osteoporosis	69.8	68.9	69.3
Asthma	45.7	57.6	52.7
Any type of cancer	61.6	69.5	65.4
Chronic bronchitis or emphysema	84.4	83.6	84.0
Type 1 diabetes	66.9	63.9	65.6
Type 2 diabetes	64.7	66.7	65.6
Depression or anxiety	67.0	62.4	64.1
Other mental illness	88.1	92.6	90.2
Heart disease	77.7	81.9	79.7
High blood pressure or hypertension	55.0	57.3	56.2
Any other serious circulatory condition (e.g. stroke, hardening of the arteries)	81.3	83.4	82.3

For example, among those who reported a condition that restricts physical work in any of the three years in which this question was asked (2004, 2007 and 2009), 30 per cent reported having this condition in all three years, while 10 per cent reported having this condition in 2004 only, 9 per cent reported having this condition in 2004 and 2007 but not in 2009 and for 11 per cent, the condition was reported in 2004 and 2009, but not in 2007. Presumably for the latter group, the condition is an intermittent, rather than an ongoing problem.

As one might expect, conditions such as arthritis, asthma, heart disease, Alzheimer's, dementia are most difficult to overcome, with 38 per cent of those who reported having these conditions doing so in all three years. Hearing problems were also difficult to overcome, with 37 per cent of those who reported a hearing problem doing so in all three years. Other health difficulties appear to be less persistent. For example, among those who reported sight problems not corrected by glasses in any one of the three years, 15 per cent reported this problem in 2004 only, 23 per cent reported

Table 22.9: Persistence of long-term health conditions, by sex and age group, 2001 to 2009 (%)

Age group in 2001	Number of years with long-term health condition							Total
	0	1	2	3 to 4	5 to 6	7 to 8	9	
Males								
15–24	61.9	16.7	6.9	6.7	4.2	2.1	1.6	100.0
25–44	49.4	13.9	9.1	9.9	7.0	5.3	5.4	100.0
45–64	32.2	13.3	8.4	11.0	8.6	11.5	14.9	100.0
65–74	12.4	8.1	9.1	17.1	16.3	23.0	14.1	100.0
75 and over	*3.1	*11.6	*5.3	*16.2	*17.3	26.5	20.0	100.0
Total	42.0	13.7	8.4	10.4	8.0	8.6	8.8	100.0
Females								
15–24	61.6	11.9	7.4	5.4	7.9	3.6	2.2	100.0
25–44	56.2	10.8	9.0	8.6	6.6	4.4	4.4	100.0
45–64	31.1	14.8	9.7	11.9	10.3	11.9	10.3	100.0
65–74	11.4	14.9	9.8	12.8	13.2	23.4	14.6	100.0
75 and over	*4.9	*8.8	*6.7	12.7	18.4	20.4	28.2	100.0
Total	42.9	12.5	8.9	9.7	9.1	9.0	7.9	100.0

Note: * Estimate not reliable.

Table 22.10: Persistence of specific health difficulties, 2004 to 2009 (%)

	Years reporting health difficulty							Total
	2004 only	2007 only	2009 only	2004 and 2007	2007 and 2009	2004 and 2009	All 3 years	
Any condition that restricts physical activity or physical work (e.g. migraines, back problems)	9.8	10.5	15.8	9.2	13.9	11.4	29.5	100.0
Chronic or recurring pain	11.8	13.2	20.6	7.7	9.1	14.9	22.8	100.0
Limited use of feet or legs	12.9	13.1	20.2	6.1	8.4	13.5	25.9	100.0
Hearing problems	6.1	15.5	13.5	8.0	7.2	12.8	37.0	100.0
Shortness of breath or difficulty breathing	13.4	13.1	23.8	5.2	9.3	15.9	19.4	100.0
A nervous or emotional condition which requires treatment	14.2	16.6	18.3	9.0	8.2	11.5	22.2	100.0
Limited use of arms or fingers	14.4	22.3	22.0	4.2	5.2	16.3	15.6	100.0
Difficulty gripping things	13.6	13.9	25.4	5.3	7.6	16.1	18.2	100.0
Sight problems not corrected by glasses	15.1	22.9	28.3	4.9	*2.1	10.4	16.4	100.0
Difficulty learning or understanding things	19.1	24.2	22.7	*9.3	*5.7	*10.4	*8.6	100.0
Long-term effects as a result of a head injury, stroke or other brain damage	16.7	17.9	26.6	*6.5	*7.0	*6.8	18.6	100.0
Any mental illness which requires help or supervision	*13.2	21.8	24.9	*4.6	*4.4	*14.4	16.7	100.0
Blackouts, fits or loss of consciousness	*15.4	*18.1	27.2	*7.1	*4.5	*11.1	*16.5	100.0
Any disfigurement or deformity	22.3	22.8	18.9	*3.4	*6.9	*9.5	16.2	100.0
Speech problems	*12.6	*22.6	*26.2	*4.7	*4.3	*17.8	*11.8	100.0
A long-term condition or ailment which is still restrictive even though it is being treated or medication is being taken for it	12.6	17.7	20.1	9.7	10.9	12.9	16.1	100.0
Any other long-term condition such as arthritis, asthma, heart disease, Alzheimer's, dementia etc.	6.9	7.4	13.9	8.1	10.1	15.2	38.3	100.0

Note: * Estimate not reliable.

this problem in 2007 only and 16 per cent reported having this problem in all three years. This may be due to greater accessibility to corrective surgery for sight problems such as cataracts, compared to other conditions for which corrective surgery is not as readily available.

Summary

In 2009, approximately 30 per cent of HILDA Survey respondents reported having a long-term health condition or disability that restricts their everyday activities, and has lasted for six months or more. The most commonly reported health conditions among males and females were back problems, migraines and chronic or recurring pain.

Difficulty with mobility activities was the most commonly reported problem resulting from a long-term health condition or disability. In 2009, 18 per cent of males and 24 per cent of females with a long-term health condition or disability reported mobility problems, 11 per cent of males and 13 per cent of females with a long-term health condition reported difficulties with self-care activities, and 5 of males and 3 per cent of females said that they had problems communicating because of their health condition.

Almost 40 per cent of individuals reported having a long-term health condition or disability in at least one of the nine years between 2001 and 2009. However, less than 10 per cent reported a long-term health condition or disability in all nine years. Of course, some health problems are more difficult to overcome than others. For example, among those who reported having a vision problem that could not be corrected by glasses, only 16 per cent reported this problem in each of the three years that HILDA respondent were asked about specific health difficulties. On the other hand, hearing problems and medical conditions such as arthritis, asthma and heart disease are clearly much more difficult to overcome.

Endnotes

- 1 It should be noted that the figures from the ABS are not directly comparable to the HILDA Survey data due to differences in the survey questions used to ascertain disability status. In particular, the ABS survey contains considerably more detailed questions. The disability concept may also differ slightly between the two surveys, with the HILDA Survey explicitly referring to 'long-term health conditions', which the ABS survey does not do.
- 2 Using data from the 1994 National Health Interview Survey, Campbell et al. (1999) also found that hearing loss is more common among men.
- 3 Respondents were shown a list of examples of these types of difficulties. Difficulties with self-care included problems bathing or showering, dressing, eating, going to the toilet and bladder/bowel control. Mobility problems were described as difficulties moving around away from home, moving around at home, or getting in or out of a bed or chair. Communication difficulties included problems understanding or being understood by strangers, friends or family, including use of sign language or lip reading.
- 4 The proportions of males and females who reported having modifications to their home because of a long-term health condition or disability were similar in 2004, with 11 per cent of individuals (8 per cent of males and 14 per cent of females) with a long-term health condition having modifications made to their home to help with their condition.

References

- Australian Bureau of Statistics (2010) *Disability, Ageing and Carers, Australia: Summary of Findings, 2009*, Catalogue No. 4430.0, ABS, Canberra.
- Campbell, V., Crews, J., Moriarty, D., Zack, M. and Blackman, D. (1999) 'Surveillance for Sensory Impairment, Activity Limitation, and Health-Related Quality of Life among Older Adults—United States, 1993–1997', *Morbidity and Mortality Weekly Report: Surveillance Summaries*, vol. 48(SS08), pp. 131–56, <<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss4808a6.htm>>.

23. Health care utilisation

A considerable amount of information on health care utilisation was collected in Wave 9, much of which had not been collected in any previous wave. In particular, collected for the first time in Wave 9 were details about non-hospital health care, including visits to GPs, dentists and other health care providers, treatments being received for specific medical conditions, and health tests received. The Wave 9 questionnaire furthermore contained the series of questions on hospital visits that were administered in Wave 4, augmented by additional questions on hospital visits by children under 15 years of age.

Information on health care utilisation potentially has value for a variety of research questions. It provides indicators of accessibility of health care services and the extent of preventative health care received by individuals, and also provides indirect information on individuals' health. Nationally representative data on health care utilisation is, furthermore, informative on the level and nature of demand for health care in Australia. Moreover, in future waves, it will be possible to investigate relationships between health care use (in Wave 9) and subsequent health outcomes (in Waves 10 and beyond). In this article, we draw on the health care data collected in Wave 9 to describe the extent and nature of hospital and out-of-hospital health care utilisation and the contemporaneous associations between health care use and various demographic, socio-economic and health-related characteristics of individuals.

Non-hospital health care utilisation

GP visits

Respondents to the Person Questionnaire in Wave 9 were asked whether they had visited a family doctor or another GP (General Practitioner) in the last 12 months and, if so, how many times they had

visited one in that 12-month period. Table 23.1 presents a breakdown by sex and age of data coming from these two questions, showing the distribution of the number of GP visits in the last year. The table shows that, in 2009, approximately 79 per cent of males and 88 per cent of females visited a GP at least once in the previous year. The majority of people had visited a GP between one and four times, but 10.9 per cent of males and 16.6 per cent of females had visited a GP at least 10 times in the last year. As these statistics suggest, women tend to visit GPs more often. Disaggregation by age group shows a pattern of increasing use of GPs as people age, the only exception being that males aged 0–14 are more likely to visit a GP (and more often) than males aged 15–24. The frequency distribution for GP visits of males aged under 15 is very similar to the distribution for females aged under 15, probably because parents typically make the decision on whether a child visits the GP. (Note that more detailed analysis of health care utilisation of children is presented in Chapter 24.) Coincident with the movement of decision-making from the parent to the child, moving into the 15–24 years age group sees the lower propensity of males to visit a GP emerge, reflecting the differences between males and females in actual preferences over GP visits.

The relationship between socio-demographic (and other) characteristics and propensity to visit a GP is considered in more detail in Table 23.2, which presents estimates from a regression model (specifically, a tobit model) of the number of visits to the doctor, restricting to people aged 15 years and over. Consistent with the statistics presented in Table 23.1, it shows that males visit the doctor less often than females: holding other characteristics constant, males are predicted to see a GP 2.06 times less per year. People aged 65 years and over visit a doctor 0.95 more times per year than people aged 15–24,

Table 23.1: Number of visits to a GP in the last 12 months, by sex and age group, 2009 (%)

	Age group					All ages
	0–14	15–24	25–44	45–64	65 and over	
Males						
None	25.3	26.9	24.6	16.6	5.4	20.9
1–4	54.7	57.6	59.6	55.1	42.5	55.2
5–9	13.8	8.2	8.9	15.3	22.6	13.0
10–19	5.4	6.3	4.7	8.4	22.5	8.0
20 or more	0.8	1.0	2.1	4.6	7.0	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Females						
None	26.2	13.3	10.2	8.1	5.0	12.4
1–4	55.4	47.6	55.5	51.8	38.7	51.2
5–9	12.4	23.5	19.8	20.8	24.7	19.8
10–19	4.7	10.7	10.2	12.6	21.8	11.4
20 or more	1.3	4.9	4.3	6.7	9.8	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

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

but—seemingly at odds with the statistics presented in Table 23.1—the frequency of visits does not otherwise differ significantly by age. This implies that differences by age group evident in Table 23.1 reflect systematic differences by age in other characteristics included in the regression model.

No statistically significant differences in the number of visits are evident by family type, and Indigenous persons and immigrants from non-English-speaking countries likewise do not significantly differ from other people in their predicted number of GP visits, holding all else constant. However, the region in which the individual lives does significantly impact on the number of doctor visits, which are predicted to be lower the more remote the location. This is consistent with the number of visits being lower the further one has to travel to see a doctor. Less readily explained is that residents of the ACT, Western Australia, South Australia and Victoria are, all else equal, predicted to have fewer visits to the doctor than residents of the other states. Perhaps also not easily explained is that people holding a bachelor's degree (or higher) make 0.37 fewer visits to the doctor than less-educated people, all else equal. One hypothesis is that this may reflect better health, in part because of better health choices, of educated people, leading to less need for medical treatment.

A somewhat reassuring finding is that there is no evidence of an association between doctor visits and household income, suggesting low income is not a barrier to access to GPs. Indeed, holders of concession cards (such as Health Care cards), who are mostly income support recipients and therefore on low incomes, have 1.21 more visits to the doctor holding constant all else. One exception to this favourable picture is that the unemployed have significantly fewer doctor visits than other people.

As expected, disability, general health and mental health are important determinants of the number of visits to a GP. Effects of poor general health and disability are particularly large: a person with a disability who is in poor general health on average has over seven more visits to the doctor in the preceding year than a person in good health and without a disability. A high Body Mass Index (BMI, the ratio of weight (in kilograms) to height (in metres) squared), a crude measure of being overweight, is also associated with more frequent visits to a GP, with a person in the 'obese' category predicted to visit the doctor 0.80 more times than a person with a BMI in the 'normal' range. No significant differences in doctor visits by smoking and drinking behaviour are evident, but regularly exercising is associated with *more* visits to the doctor. At first glance, this appears counter-intuitive. However, it may reflect greater attendance to the individual's health care more generally, inclusive of doctor visits, exercise and possibly other aspects, such as diet. It is also possible that regular exercise leads to more injuries occasioning visits to a GP.

Quality of care is likely to be higher when medical practitioners have a more complete understanding of the medical history and broader life circumstances of the patient. In turn, such understanding is likely to be higher if the patient has attended the same doctor, or at least the same clinic on an ongoing basis. This indeed has motivated moves to

Table 23.2: Determinants of number of visits to the doctor—Persons aged 15 years and over, 2009

	Coefficient estimate
Male	-2.06
<i>Age group (Reference category: 15–24)</i>	
25–44	-0.12 ⁺
45–64	0.16 ⁺
65 and over	0.95
<i>Family type (Reference category: Single person)</i>	
Couple	-0.39 ⁺
Couple with children	-0.40 ⁺
Lone parent	-0.09 ⁺
NESB immigrant	0.21 ⁺
Indigenous	-0.06 ⁺
<i>Region (Reference category: Major urban)</i>	
Other urban	-0.51
Other region	-1.15
<i>State of residence (Reference category: New South Wales)</i>	
Victoria	-0.39
Queensland	-0.02 ⁺
Western Australia	-0.78
South Australia	-0.48
Tasmania	-0.48 ⁺
ACT	-1.13
Northern Territory	-0.22 ⁺
<i>Education (Reference category: No post-school qualifications)</i>	
Degree or higher	-0.37
Other post-school qualification	0.16 ⁺
Equivalised income (\$'000)	0.00 ⁺
Concession card	1.21
<i>Labour force status (Reference category: Not in the labour force)</i>	
Employed full-time	-0.23 ⁺
Employed part-time	-0.09 ⁺
Unemployed	-0.69
Carer	0.87
Disabled	3.18
<i>SF-36 general health (0–100 scale)</i>	
<i>(Reference category: Good (Score ≥ 75))</i>	
Poor (Score < 50)	4.39
Fair (Score ≥ 50 and < 75)	1.31
<i>SF-36 mental health (0–100 scale)</i>	
<i>(Reference category: Good (Score ≥ 75))</i>	
Poor (Score < 50)	0.45
Fair (Score ≥ 50 and < 75)	0.56
<i>Body Mass Index (BMI) group</i>	
<i>(Reference category: Normal (18.5 ≤ BMI < 25))</i>	
Underweight (BMI < 18.5)	-0.534 ⁺
Overweight (25 ≤ BMI < 30)	0.608
Obese (BMI ≥ 30)	0.797
Smoker	-0.065 ⁺
Drinker	-0.221 ⁺
Exercise regularly	0.236
Constant	2.684
Number of observations	9,752
<i>Notes: Tobit model estimates. NESB immigrant—Immigrant from a country other than the main English-speaking countries. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.</i>	

have central databases of patient medical histories (Roxon, 2010).

In Wave 9, HILDA Survey respondents were asked:

Is there a particular doctor you usually see if you are sick or if you need advice about your health?

If they answered no, they were then asked:

Is there a particular clinic or health centre you usually go to if you are sick or if you need advice about your health?

Figure 23.1 presents results from these two questions combined, showing the percentage of people who have a particular doctor or clinic they usually go to, disaggregated by sex and age group. Females are more likely than males to have a particular doctor or clinic, which may in part reflect the higher frequency with which they visit the doctor, but may also reflect greater attention to their health, including quality of health care. For both males and females, a U-shaped pattern with respect to age is apparent, the proportion having a particular doctor or clinic being highest for children, followed by elderly people (aged 65 and over), and with 25–44 year olds having the lowest proportion with a specific doctor or clinic.

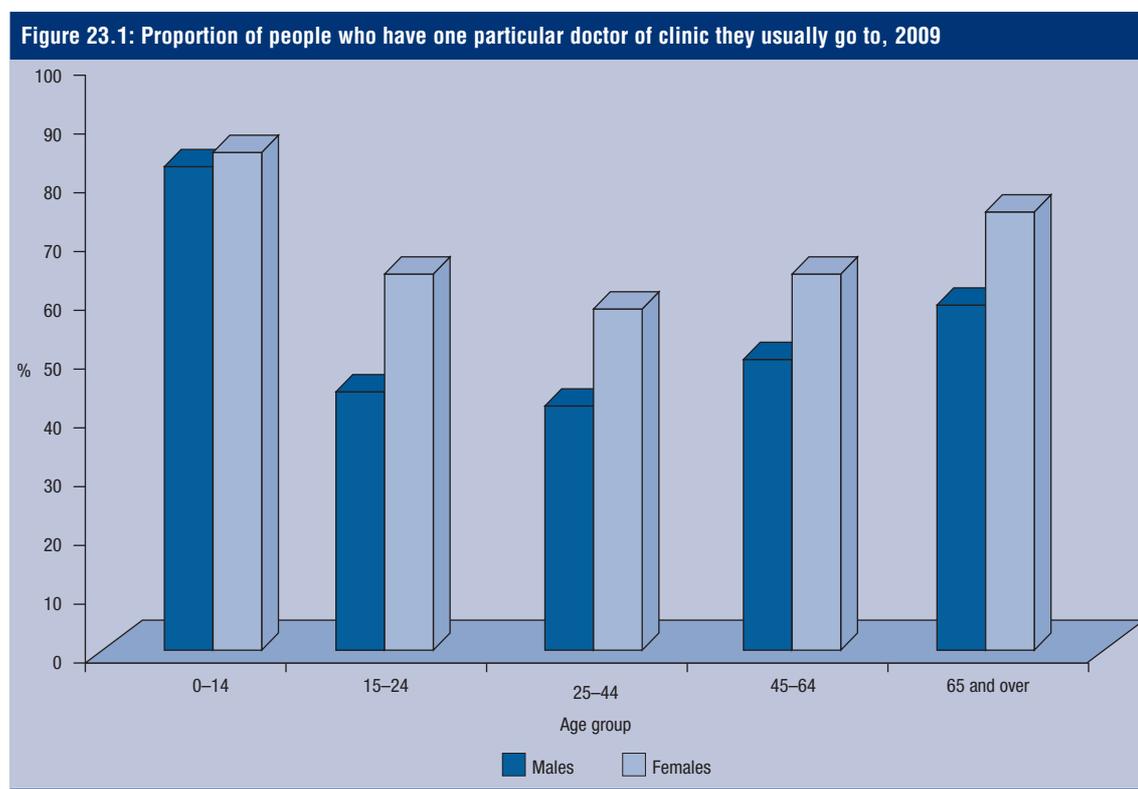
Dental care

A question was asked in Wave 9 about the length of time since last visiting a dentist, asked of all respondents aged 15 years and over and also in respect of all children under 15 years of age. Six response options were provided to respondents:

(i) *Less than 6 months ago*; (ii) *6 to less than 12 months ago*; (iii) *1 to less than 2 years ago*; (iv) *2 to less than 5 years ago*; (v) *5 or more years ago*; and (vi) *Never been to the dentist*. Table 23.3 presents the percentage giving each response option for each of 10 sex-by-age demographic groups.

In 2004, the National Advisory Committee on Oral Health (2004) proposed minimum standards for frequency of general dental check-ups of two years for children and three years for adults. These minimum standards were explicitly ‘starting points’, with one year being regarded as a threshold for ‘favourable’ dental care (Ellershaw and Spencer, 2011) and every six months a ‘rule of thumb’ often recommended by dental practitioners.

In interpreting Table 23.3, note that the estimates are for all dental visits, including visits due to a dental problem, whereas the minimum standards specify the minimum frequency of *general* check-ups. Furthermore, interpreting the duration since last visit to the dentist as the frequency of visits will significantly overestimate the frequency of dental visits. For example, a person may rarely visit the dentist, but just happened to have had a check-up within the last six months. Indeed, even if everyone visited the dentist only once every five or more years, we will find significant numbers in each response category. The table therefore provides only indicative information on frequency of visits. Where it is more reliable is in identifying the proportion of people who, as at a particular point in time (Wave 9), had not seen a dentist within a ‘desirable’ time-frame. For example, we can identify



the percentage of people who have not been to the dentist in the last six months; what we do not know is how many of the individuals who last saw a dentist less than six months ago will have their *next* visit within six months of the last visit. The estimates therefore tell us *upper bounds* on the percentage with each frequency of dental visits. For example, examining the upper left cell of Table 23.3, we know that no more (and almost certainly fewer) than 36.2 per cent of females aged under 15 years visit the dentist at least every six months.

It is therefore clear from Table 23.3 that a minority of people achieve the six-monthly rule of thumb, and many do not meet the minimum standard proposed by the NACOH. The table shows that 35.3 per cent of females and 30.5 per cent of males had seen a dentist in the last six months, implying that at least 64.7 per cent of females and 69.5 per cent of males do not see a dentist every six months. For 28 per cent of females and 33.3 per cent of males, it had been at least two years since the last visit to the dentist. None of the children in this situation will meet the NACOH standard, and it is likely that most of the adults in this situation would also not meet the three-year minimum standard. Comparing across age groups, the elderly are much more likely to have not visited a dentist in the last five years than other age groups, while children are much more likely to be yet to make their first trip to the dentist. Overall, people aged 45–64 years have the ‘best’ dental attendance in the sense that they are more likely to have visited a dentist in the last year.

Similar to Table 23.2 for doctor visits, in Table 23.4 we examine socio-demographic factors associated with visiting the dentist. Specifically, the table presents estimates (from a probit model) of the effects of factors on the probability of having seen a dentist in the last two years. As an example of how to

interpret the table, the estimate in the upper left corner indicates that ‘being male’ on average decreases the probability of having seen a dentist in the last two years by 5.6 percentage points.

The estimates show there is a strong association between dental visits and socio-economic factors, including income, labour force status and educational attainment. Particularly notable is the role of income, which was not a significant factor in doctor visits. The estimates on the variables for income quintiles show a strong ordering of the probability of visiting the dentist in the last two years by level of household equivalised income. A person in the bottom income quintile on average has a 12.3 percentage point lower probability of having visited a dentist in the last two years than a person in the top income quintile; for a person in the second income quintile, the figure is 9.9 percentage points; for a person in the third quintile it is 7.4 percentage points; and for a person in the fourth quintile it is 4.1 percentage points. This is consistent with the relatively low levels of government funding for dental health care compared with GP visits. Most people are ineligible for government assistance for general dental check-ups, whereas almost all doctor consultations are subsidised and many are fully funded by the federal government through Medicare.

Similar to the finding for GP visits, males are less likely to have visited the dentist in the last two years than females, on average having a 5.6 percentage point lower probability, holding all else constant. However, the effects of other demographic characteristics on the likelihood of visiting the dentist in the last two years are quite different from their effects on frequency of GP visits. People aged 15–24 years on average have the highest probability of having visited the dentist, followed by those aged 45–64 years, then those

Table 23.3: Time since last went to dentist, 2009 (%)

	Age group					All ages
	0–14	15–24	25–44	45–64	65 and over	
Males						
Less than 6 months	34.4	32.7	25.2	31.2	32.6	30.5
6 to less than 12 months	18.2	27.0	20.5	22.9	17.5	21.3
1 to less than 2 years	10.7	17.5	18.6	14.1	10.3	14.8
2 to less than 5 years	4.5	11.2	15.9	12.4	13.3	11.8
5 or more years	0.2	10.4	18.7	18.8	25.8	14.8
Never been to the dentist	32.0	1.2	1.1	0.6	0.5	6.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Females						
Less than 6 months	36.2	36.3	31.6	39.1	33.6	35.3
6 to less than 12 months	18.5	24.8	21.9	26.4	17.5	22.3
1 to less than 2 years	8.8	16.5	20.1	13.4	9.2	14.4
2 to less than 5 years	3.1	11.6	14.8	10.5	12.0	10.8
5 or more years	0.3	10.4	11.0	10.4	27.1	11.0
Never been to the dentist	33.1	0.4	0.5	0.2	0.5	6.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

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

aged 25–44, and finally the elderly, who on average have a 16.5 percentage point lower probability of having visited the dentist in the last two years than those aged 15–24 years. People living in couple families without dependent children are more likely to have visited a dentist in the last two years than people in other types of families, while Indigenous persons are significantly less likely than non-Indigenous people to have visited the dentist over the two-year time-frame.

Visits to other medical practitioners

Respondents were also asked in Wave 9 whether they had seen any of 10 other types of medical practitioners over the past 12 months. Table 23.5

lists the practitioner types and presents estimates of the percentage of the population aged 15 years and over that has seen each practitioner type, disaggregated by sex and age group. The most commonly seen practitioner types are specialist doctors, hospital doctors, optometrists, physiotherapists and chiropractors. As with GP visits, females are more likely to see most types of practitioners than are males, the notable exception being the women aged 45 years and over are less likely to have seen a hospital doctor than similarly aged men.

Differences across age groups in the proportions seeing the practitioner type vary considerably depending on the practitioner type. The proportions of people seeing specialist doctors, podiatrists and optometrists are greater the older the age group, but for other practitioner types there are more complicated age patterns. The proportion seeing a hospital doctor declines with age up to the 45–64 years age group and then increases; and the proportions seeing a mental health professional, chiropractor, physiotherapist or other allied health practitioner peak in the 25–44 years age group and then decline with age. For alternative health practitioners and community or practice nurses, age patterns differ between males and females. For males, the proportion seeing a community or practice nurse increases with age, while the proportion seeing an alternative health practitioner increases with age only from the 25–44 group. For females, the proportion seeing an alternative health practitioner is highest for those aged 25–44, followed by those aged 65 and over, those aged 15–24 and, finally, those aged 45–64. The proportion of females seeing a community or practice nurse increases with age from the 25–44 group.

Health tests

In addition to questions about visits to different types of medical practitioners, respondents were asked whether they had received each of a number of common medical tests or checks in the last 12 months. Both men and women were asked if they had received bowel cancer screening, a chest or other x-ray, a blood pressure test or a cholesterol test. Men were further asked if they had received a prostate check, while women were asked if they had received a pap smear or a breast screening. Respondents were also asked if they had received ‘any other blood test’.

The minimum regularity with which tests should be conducted depends on both the nature of the test as well as a range of risk factors. While age is certainly one risk factor, there are many other factors, and so it is not possible to infer from Table 23.6 the extent to which Australians are achieving optimal annual rates of testing. In general, and as one would expect, for most tests the proportion of the population receiving it within the last year is greater the older the age group. The notable exception is x-rays, which are received by

Table 23.4: Socio-economic and demographic characteristics associated with having been to the dentist in the last two years—Persons aged 15 years and over, 2009

	Estimate
Male	-0.056
<i>Age group (Reference category: 15–24)</i>	
25–44	-0.128
45–64	-0.082
65 and over	-0.165
<i>Family type (Reference category: Single person)</i>	
Couple	0.035
Couple with children	0.013+
Lone parent	-0.015+
NESB immigrant	0.025+
Indigenous	-0.070
<i>Education (Reference category: No post-school qualifications)</i>	
Degree or higher	0.121
Other post-school qualification	0.044
<i>Region (Reference category: Major urban)</i>	
Other urban	-0.039
Other region	-0.027+
<i>State of residence (Reference category: New South Wales)</i>	
Victoria	-0.017+
Queensland	-0.002+
Western Australia	0.033
South Australia	-0.003+
Tasmania	-0.074
ACT	0.078
Northern Territory	0.064+
<i>Equivalised income quintile (Reference category: Top quintile)</i>	
Bottom	-0.123
2nd	-0.099
3rd	-0.074
4th	-0.041
Concession card	-0.024+
<i>Labour force status (Reference category: Not in the labour force)</i>	
Employed full-time	-0.056
Employed part-time	0.038
Unemployed	-0.089
Number of observations	13,206
<i>Notes: Estimates are mean marginal effects from a probit model of the probability of having been to the dentist in the last 2 years. NESB immigrant—Immigrant from a country other than the main English-speaking countries. + indicates the estimate is not significantly different from zero at the 10 per cent level.</i>	

Table 23.5: Types of medical practitioners seen in the last year, 2009 (%)

	<i>Age group</i>			
	<i>15–24</i>	<i>25–44</i>	<i>45–64</i>	<i>65 and over</i>
Males				
Hospital doctor	30.2	24.6	21.6	29.1
Specialist doctor	30.2	35.3	48.6	62.1
Mental health professional	8.0	9.8	6.9	3.0
Podiatrist	4.4	5.0	6.9	22.2
Chiropractor	17.4	20.2	18.0	10.2
Physiotherapist	25.9	26.3	18.2	15.8
Optometrist	23.6	27.0	41.4	52.8
Other allied health provider	2.3	9.7	7.5	4.6
Alternative health practitioner	6.0	3.2	4.0	8.3
Community or practice nurse	2.0	2.1	4.6	7.3
Females				
Hospital doctor	32.8	24.9	18.4	26.4
Specialist doctor	32.3	40.8	48.7	55.6
Mental health professional	12.0	12.4	9.9	2.0
Podiatrist	4.9	5.3	14.3	33.3
Chiropractor	13.8	18.9	18.2	8.6
Physiotherapist	18.7	22.6	24.7	20.2
Optometrist	35.8	31.3	48.7	50.2
Other allied health provider	7.0	16.5	14.8	6.8
Alternative health practitioner	9.1	15.0	4.3	12.1
Community or practice nurse	2.8	1.9	4.3	7.1

a relatively high proportion of people aged 15–24 years. Indeed young males are more likely to have received an x-ray than any other age-by-sex group, possibly in part due to a higher likelihood of sporting injuries. Blood pressure tests are also quite frequently received by younger people, but are nonetheless more common the older the age group. Breast screening is most common for women aged 45–64 years, while the proportion of women receiving a pap smear test within the last year peaks in the 25–44 years age group. These age ranges coincide with the targeted age groups for these tests, and could well be a reflection that the campaigns to educate women about breast and cervical cancer are working.

Treatment of specific medical conditions

As discussed in Chapter 21, in Wave 9 the HILDA Survey identified whether respondents had been diagnosed with each of 11 types of medical conditions. Respondents were also asked about doctor visits and prescription medications taken in respect of each of these conditions. Table 23.7 presents summary statistics derived from this information, for each condition showing the proportion of people with the condition, the proportion of these individuals who regularly see a doctor about the condition, and the proportion who take prescription medication for the condition.

Table 23.6: Health tests received in the last year, 2009 (%)

	<i>Age group</i>			
	<i>15–24</i>	<i>25–44</i>	<i>45–64</i>	<i>65 and over</i>
Males				
Prostate check	2.7	8.7	42.7	54.0
Screening for bowel cancer	1.7	5.2	19.1	24.1
Chest or other x-ray	42.1	23.4	25.6	29.8
Blood pressure	45.8	70.2	84.9	88.7
Cholesterol test	12.7	42.8	69.8	71.1
Any other blood test	56.3	56.5	64.4	66.7
Females				
Pap smear	41.6	59.4	47.5	15.3
Breast screening	4.6	15.4	50.6	30.2
Screening for bowel cancer	0.9	3.2	17.8	16.4
Chest or other x-ray	24.2	17.2	22.4	30.1
Blood pressure	48.1	61.2	75.4	86.6
Cholesterol test	8.1	26.8	57.7	64.0
Any other blood test	63.5	60.5	59.6	63.6

Almost all people with cancer, diabetes (Type 1 or Type 2), heart disease, hypertension or other circulatory diseases, and most people with arthritis or osteoporosis, chronic bronchitis or emphysema, depression or anxiety, or other mental illness, regularly see a doctor about their condition. The proportion taking prescription medication is also high for most of these conditions, the main exception being cancer, which has less than one-third of sufferers taking medication, possibly because common

treatments for cancer, such as chemotherapy, are not interpreted by respondents as medication. The proportion taking medication for arthritis and osteoporosis is also comparatively low, at approximately 50 per cent. The conditions with the highest proportion taking medication are Type 1 diabetes and hypertension. Asthma is the only condition where a large proportion—52.9 per cent of males and 36.8 per cent of females—do not regularly see a doctor about the condition. Interestingly, a higher

Table 23.7: Treatment of selected medical conditions—Persons aged 15 years and over, 2009 (%)

	Males			Females		
	Have condition	See doctor	Take medication	Have condition	See doctor	Take medication
Arthritis or osteoporosis	12.4	72.3	48.2	19.9	76.3	50.5
Asthma	9.2	47.1	59.2	12.8	63.2	70.6
Cancer	3.1	92.1	29.9	2.7	92.9	32.7
Chronic bronchitis or emphysema	2.0	83.6	66.9	2.3	87.4	52.9
Type 1 diabetes	1.0	96.8	93.7	0.8	96.0	87.2
Type 2 diabetes	5.5	93.6	78.7	4.3	94.6	76.2
Depression or anxiety	7.5	75.9	67.6	12.7	76.7	64.1
Other mental illness	1.5	82.7	83.6	1.3	86.3	72.2
Heart disease	4.7	92.6	89.7	4.2	95.4	81.9
Hypertension	15.4	89.9	90.4	18.1	92.9	89.9
Other circulatory condition	2.6	94.2	72.1	2.4	90.3	74.7

Table 23.8: Socio-demographic characteristics associated with taking medication for serious illness conditions, 2009

	Arthritis or osteoporosis	Asthma	Type 2 diabetes	Depression or anxiety	Heart disease	Hypertension
General health	-0.005	-0.002	-0.001 ⁺	0.000 ⁺	0.002	0.000 ⁺
Male	-0.003 ⁺	-0.086	0.046 ⁺	0.031 ⁺	0.054 ⁺	0.008 ⁺
<i>Age group (Reference category: 15–24)</i>						
25–44	0.264	0.056 ⁺	-0.053 ⁺	0.164	0.160 ⁺	0.210
45–64	0.358	0.147	0.033 ⁺	0.211	0.383	0.349
65 and over	0.362	0.263	-0.041 ⁺	0.293	0.382	0.420
<i>Educational attainment (Reference category: No post-school qualifications)</i>						
Degree or higher	0.016 ⁺	0.060 ⁺	-0.148	0.030 ⁺	0.002 ⁺	-0.001 ⁺
Other post-school qualification	0.000 ⁺	0.075	-0.075	0.055 ⁺	0.071	0.012 ⁺
Partnered	-0.021 ⁺	-0.016 ⁺	0.019 ⁺	0.067	0.082	0.028 ⁺
Dependent children	-0.090	0.004 ⁺	-0.047 ⁺	0.034 ⁺	-0.090	-0.012 ⁺
NESB immigrant	0.007 ⁺	-0.158	0.135	-0.010 ⁺	-0.022 ⁺	-0.021 ⁺
Indigenous	0.122	-0.032 ⁺	-0.027 ⁺	0.029 ⁺	0.142 ⁺	0.187
<i>State of residence (Reference category: New South Wales)</i>						
Victoria	-0.067	-0.024 ⁺	-0.046 ⁺	-0.021 ⁺	0.015 ⁺	-0.010 ⁺
Queensland	-0.043 ⁺	0.008 ⁺	0.025 ⁺	0.034 ⁺	-0.007 ⁺	-0.012 ⁺
Western Australia	0.006 ⁺	-0.068 ⁺	0.003 ⁺	-0.030 ⁺	-0.032 ⁺	-0.023 ⁺
South Australia and Northern Territory	-0.041 ⁺	0.082 ⁺	-0.027 ⁺	0.061 ⁺	0.056 ⁺	-0.033 ⁺
Tasmania	-0.078 ⁺	0.018 ⁺	-0.013 ⁺	-0.091 ⁺	(omitted)	-0.025 ⁺
<i>Region (Reference category: Major urban)</i>						
Other urban	0.025 ⁺	-0.009 ⁺	-0.037 ⁺	0.009 ⁺	0.020 ⁺	0.022 ⁺
Other region	0.031 ⁺	0.032 ⁺	-0.025 ⁺	-0.023 ⁺	-0.009 ⁺	-0.008 ⁺
Equivalised income quintile (\$'000)	0.000 ⁺	0.000 ⁺	-0.001 ⁺	0.000 ⁺	0.001 ⁺	0.000 ⁺
Concession card	0.068 ⁺	0.088	0.015 ⁺	0.089	-0.061 ⁺	-0.035 ⁺
<i>Labour force status (Reference category: Not in the labour force)</i>						
Employed full-time	-0.118	0.021 ⁺	-0.018 ⁺	-0.013 ⁺	-0.157	-0.034 ⁺
Employed part-time	-0.084	-0.024 ⁺	-0.008 ⁺	0.052 ⁺	-0.080 ⁺	-0.043
Unemployed	-0.068 ⁺	-0.088 ⁺	0.264	0.001 ⁺	-0.082 ⁺	-0.035 ⁺
Number of observations	2,173	1,501	596	1,414	538	2,174
<i>Notes: Estimates are mean marginal effects from a probit model of the probability of taking medication for the condition. NESB immigrant—Immigrant from a country other than the main English-speaking countries. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.</i>						

Table 23.9: Proportion reporting going to hospital in the last year (%)

	2004		2009	
	Males	Females	Males	Females
15–24	7.3	8.3	7.2	10.4
25–44	7.6	15.0	7.6	14.1
45–64	12.1	11.5	10.5	12.6
65 and over	28.4	21.9	24.2	21.6
All aged 15 and over	11.9	13.9	10.8	14.2

proportion of asthma sufferers take prescription medicine for the condition than regularly see a doctor about the condition. Presumably, only irregular visits to the doctor are required to maintain adequate stocks of medication.

In Table 23.8 we examine socio-demographic characteristics associated with taking medication for the six most common specific medical conditions listed in Table 23.7: arthritis or osteoporosis, asthma, Type 2 diabetes, depression or anxiety, heart disease and hypertension. The table presents estimates from (probit) models of the probability people with the condition take medication for that condition. Relatively few factors are found to significantly impact on the likelihood of taking medication for each condition. This is a welcome finding, since it suggests that medical factors rather than socio-economic factors determine use of medicines in Australia. Indeed, where significant effects are evident for demographic factors, arguably this is because they are picking up (unobserved) differences in medical circumstances. In particular, for all conditions other than Type 2 diabetes, the probability of taking medication tends to be increasing with age, which is likely to be because severity of conditions tends to be worse among older persons. Similarly, employment has significant negative effects for arthritis and osteoporosis, heart disease and hypertension (and no significant effects for the other three conditions), again likely to be because employment is associated with lower severity of conditions.

Hospital visits

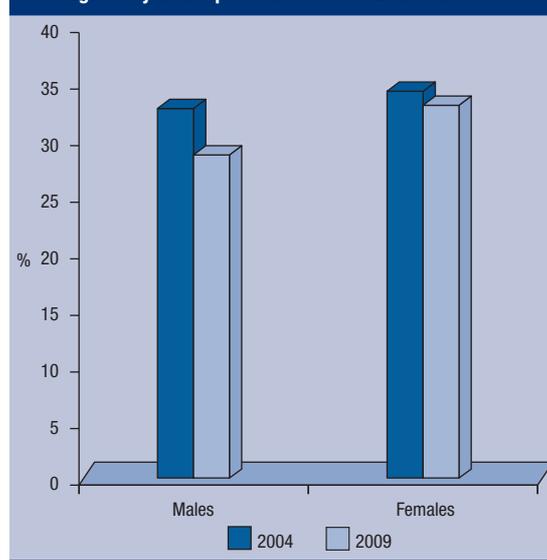
Information on hospital visits has now been collected twice by the HILDA Survey, in Wave 4 and in Wave 9. Table 23.9 compares the percentage reporting going to hospital in the last year in 2004 and 2009. It would seem unlikely that there would be big changes in rates of hospital admission over a five-year period, unless there had been major country-wide changes to treatment practices, which there have not. Table 23.9 confirms the expectation that changes will be small, showing the proportion of females reporting going to hospital in the last year increased from 13.9 per cent in 2004 to 14.2 per cent in 2009, while the proportion of males reporting going to hospital in the last year decreased from 11.9 per cent to 10.8 per cent. The decrease for males is primarily the result of a decrease in the rate of hospital admissions among men aged 65 and over, from 28.4 to 24.2 per cent.

This represents a closing of the gap to women aged 65 and over, who nonetheless still had a lower rate of admission in 2009. It may therefore in part reflect relative improvements in health outcomes for elderly men.

Figure 23.2 shows, for the most recent hospital stay, the proportion that stayed in a private hospital as opposed to a public hospital. Although the figure does not relate to *all* hospital stays, it is likely that the proportion of all hospital stays in private hospitals would produce a very similar graph to that presented in Figure 23.2. It therefore appears that there was some decline between 2004 and 2009 in the proportion of hospital stays that were in private hospitals, the corollary of which is growth in the share of hospital stays that were in public hospitals.

Figure 23.3 examines the hospital type for the most recent visit of people holding private health insurance hospital cover. It provides some indication of the source of the shift from private to public hospitals between 2004 and 2009: people with private health insurance were less likely to go to a private hospital, instead attending public hospitals. In the case of females, all the increase in public hospital admissions was as private patients; for males, the increase was larger and comprised increases in both public and private patients.

Figure 23.2: Most recent hospital stay was in a private hospital—Persons aged 15 and over who had an overnight stay in hospital in the last 12 months



How did individual decisions change between 2004 and 2009? In Table 23.10, we examine the percentage in each of four outcomes for hospital admissions in 2009, broken down by the same four outcomes in 2004. That is, we present the percentages who, in 2009: did not stay in hospital; stayed as a public patient in a public hospital; stayed as a private patient in a public hospital; and stayed in a private hospital, for each of four groups defined by the same four outcomes in 2004. For example, the first row indicates that, of those who did not stay in hospital in 2004, 88.4 per cent did not stay in hospital in 2009, 6.3 per cent stayed as a public patient in a public hospital (on the most recent visit), 1.2 per cent stayed as a private patient in a public hospital, and 4.2 per cent stayed in a private hospital.

The table shows that, of the 20.7 per cent of those who stayed in a private hospital in 2004 who also went to hospital in 2009, 45 per cent (9.3 of 20.7) stayed in a public hospital in 2009. This is less

than the 64 per cent of those who went to hospital in 2009, having not been to hospital in 2004, choosing a public hospital, but it is nonetheless a sizeable proportion. Note, however, that while the high proportion of private patients in 2004 apparently switching to public hospitals in 2009 may in part reflect the move towards public hospitals evident in Figure 23.2, it is also likely to reflect the fact that private hospitals generally perform a narrower range of procedures than public hospitals, so that some switching between private and public systems is likely. Indeed, among those who were private patients in public hospitals in 2004, 16 per cent went to a private hospital in 2009, which is 45 per cent of the 35.6 per cent (10.3 + 9.3 + 16) who went to any hospital in 2009.

Discussion

This chapter has provided a brief overview of the information available on health care utilisation in

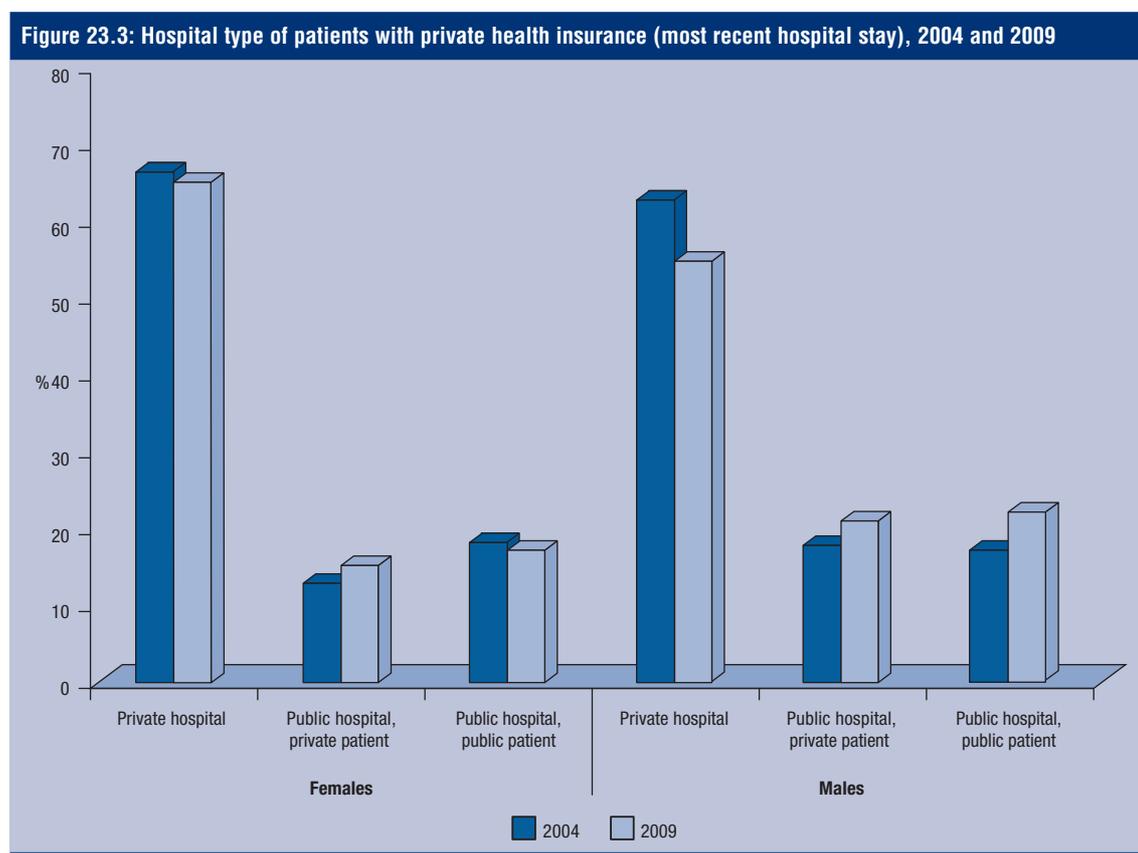


Table 23.10: Hospital stays in 2009, by whether stayed in hospital in 2004 (%)

	<i>Did not stay in hospital in 2009</i>	<i>Public patient in public hospital in 2009</i>	<i>Private patient in public hospital in 2009</i>	<i>Patient in private hospital in 2009</i>	<i>Total</i>
Did not stay in hospital in 2004	88.4	6.3	1.2	4.2	100.0
Public patient in public hospital in 2004	72.8	24.0	1.2	2.1	100.0
Private patient in public hospital in 2004	64.4	10.3	9.3	16.0	100.0
Patient in private hospital in 2004	79.3	5.7	3.6	11.5	100.0

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

the HILDA Survey and how usage is associated with socio-demographic and health-related characteristics of individuals. Among the notable findings of the analysis is that access to GPs appears to be good for most people, although people living outside the major urban areas do have fewer GP visits. Access to dental care is clearly more problematic, with a strong association evident between income and frequency of dental visits. Also notable is that there appears to have been a slight shift from private hospitals to public hospitals between 2004 and 2009, although the nature of the data collected—hospital type is obtained only for respondents' most recent visit—means this is not certain to be the case.

References

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24. Child health and health care utilisation

In Wave 9 of the HILDA Survey, new questions were included about child health and children's utilisation of health services including general practitioners, dentists and other medical specialists. In each household with children under 15 years of age, one adult in the household was asked about the health and health care services utilisation of each child. The respondent was asked to rate the general health of each child in the household on a scale of 1 to 5, with 1 being 'excellent', 2 'very good', 3 'good', 4 'fair' and 5 'poor'. Table 24.1 shows the distribution of responses, according to various characteristics of the child, including their gender, age, birth weight and number of siblings.

According to their parents or guardians, most children are in excellent or very good health. This applies to children across all of the groups distinguished in Table 24.1; in all cases, at least 84 per cent of children were reported as in excellent or very good health. Indeed, differences in perceived child health by sex, age group, number of siblings, birth order and even birth weight are relatively small. However, to the extent that there are differences, they indicate that child health is lower for boys than girls, decreases with age of the child, is lower for children weighing less than 2.5 kilograms at birth, and is lower for 'middle' children (i.e. children with at least one older sibling and one younger sibling).

Table 24.1: Factors associated with parent/guardian-reported general health, by characteristics of the child, 2009

	<i>General health of child (percentage in each category)</i>				<i>Total</i>	<i>Mean general health of child</i>
	<i>Excellent</i>	<i>Very good</i>	<i>Good</i>	<i>Fair or poor</i>		
Gender						
Male	57.6	27.5	12.2	2.7	100.0	4.4
Female	63.0	26.8	8.2	1.9	100.0	4.5
Age group						
Under 2	66.9	22.2	9.6	*1.4	100.0	4.5
2–5	59.5	29.4	8.9	2.2	100.0	4.5
6–11	60.4	26.1	10.8	2.7	100.0	4.4
12–14	55.9	30.4	11.4	*2.4	100.0	4.4
Birth weight						
Low birth weight (< 2.5 kilograms)	56.5	28.7	10.8	4.0	100.0	4.4
Birth weight ≥ 2.5 kilograms	60.4	27.2	10.3	2.1	100.0	4.5
Number of siblings						
No siblings	62.2	24.8	9.7	3.2	100.0	4.5
1 sibling	60.7	28.6	8.3	2.4	100.0	4.5
2 siblings	57.4	26.3	14.4	*2.0	100.0	4.4
3 or more siblings	62.2	27.3	8.8	*1.7	100.0	4.5
Birth order						
Oldest child	62.5	27.1	8.9	*1.4	100.0	4.5
Middle child ^a	57.7	26.2	13.9	*2.2	100.0	4.4
Youngest child	59.0	28.7	9.7	2.6	100.0	4.4
Total	60.3	27.2	10.2	2.3	100.0	4.5

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding. ^a At least one older and one younger sibling. For the calculation of the mean, scores are reversed so that 'Excellent' has a score of 5 and 'Poor' has a score of 1.

The health of children may, at least to some extent, be affected by the environment they are growing up in. Table 24.2 examines differences in parent/guardian-reported health of children according to the type of household they live in, whether their parents are employed, their household income and the region in which they live.

On average, the parent/guardian-reported levels of health of children in couple households is higher than that of children in lone-parent households, and children with no resident parents have the lowest levels of parent/guardian-reported health. The employment status of the parents also appears to have an important impact on parent/guardian-reported health of children. In households where both parents are employed, 90 per cent of children were reported as being in either excellent or very good health, compared to only 80 per cent of children in households where both parents are not employed. In lone-parent households where the parent is not employed, 81 per cent of children were reported as being in either excellent or very good health, compared to 85 per cent of children in lone-parent households with an employed parent.

Only 81 per cent of children in households in the lowest quintile of equivalised household income were reported as being in either excellent or very good health, compared to around 90 per cent of children in the other four quintiles of equivalised household income. On average, children living in remote or very remote areas had lower levels of

parent/guardian-reported health. While, approximately 90 per cent of children living in inner regional and outer regional areas and 86 per cent of children living in a major city were reported as being in excellent or very good health, only 84 per cent of children who lived in remote areas were in these two categories.

One might assume that children whose parents have healthy habits, such as exercising regularly and not smoking will be more likely to have healthy habits themselves, resulting in better health. It may also be the case that parents who are better educated may be able to make better choices in terms of their children's nutrition, the activities their children do in their spare time and the health services available to their children, resulting in better health for their children. Tables 24.3 and 24.4 examine the differences in parent/guardian-reported general health of children according to the characteristics of the mother and father respectively.

Children whose mother was less than 20 years old at the time of their birth were less likely than other children to have been reported as being in excellent health. However, when the categories of excellent and very good health are combined, the differences in parent/guardian-reported health according to the mother's age at birth are quite small. The proportion of children in either of these two categories ranges from 85 per cent of children whose mother was 40 or older at the time of their

Table 24.2: Factors associated with parent/guardian-reported general health, by household characteristics, 2009

	General health of child (percentage in each category)				Total	Mean general health of child
	Excellent	Very good	Good	Fair or poor		
Family situation						
Couple (2-parent) household ^a	62.7	25.8	9.8	1.7	100.0	4.5
Lone mother household	48.4	34.5	12.1	4.9	100.0	4.3
Lone father household	65.5	*20.7	*12.2	*1.5	100.0	4.5
No resident parent ^b	*48.9	*27.1	*11.6	*12.4	100.0	4.1
Household employment						
Both parents employed	62.9	27.4	7.4	2.3	100.0	4.5
Father employed only	64.0	22.0	12.8	*1.2	100.0	4.5
Mother employed only	72.2	19.6	*8.1	*0.0	100.0	4.6
Neither parent employed	42.6	37.3	19.0	*1.2	100.0	4.2
Lone parent—employed	53.6	31.4	11.2	*3.8	100.0	4.3
Lone parent—not employed	45.1	35.8	13.3	*5.8	100.0	4.2
Quintile of distribution of equivalised household income						
1 (Lowest)	53.4	27.2	16.1	3.3	100.0	4.3
2	62.3	26.7	9.3	*1.8	100.0	4.5
3	60.6	29.7	8.4	*1.3	100.0	4.5
4	60.6	29.2	8.1	*2.0	100.0	4.5
5 (Highest)	65.9	22.9	8.1	*3.1	100.0	4.5
Region of residence (Accessibility/Remoteness Index of Australia)						
Major city	59.4	26.9	11.0	2.6	100.0	4.4
Inner regional	63.4	26.0	8.8	*1.7	100.0	4.5
Outer regional	59.8	29.7	8.5	*2.0	100.0	4.5
Remote Australia	44.4	39.5	*13.6	*2.5	100.0	4.3
Total	60.3	27.2	10.2	2.3	100.0	4.5
<i>Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding. ^a Includes step or foster parents. ^b In the majority of these cases the child lives with a grandparent or other relative. For the calculation of the mean, scores are reversed so that 'Excellent' has a score of 5 and 'Poor' has a score of 1.</i>						

birth to 88 per cent for children whose mother was aged 25–39 when they were born.

Among children whose mother did not complete Year 12, the proportion reported as being in excellent health is only 51 per cent, compared to 65 per cent of children whose mother has a degree qualification. The proportion of children reported as being in excellent health is also higher for children whose mother does not smoke cigarettes, and, compared to children whose mother does not exercise at all, the proportion of children reported as being in excellent health is considerably larger among those whose mother exercises three times a week or more. Similarly, the proportion of children reported as being in excellent health decreases with the mother's Body Mass Index (BMI, the ratio of weight (in kilograms) to height (in metres) squared)—from 65 per cent of children whose mother has a BMI less than 25, to 59 per cent for children whose mothers are overweight and 57 per cent of children whose mother is considered, according to her BMI, to be obese.

The mother's risk of psychological distress, as measured by the Kessler K10 scale, also appears to be an

important factor affecting children's health, or at least in the way that parents rate their children's health, with the proportion of children rated as being in excellent health ranging from 41 per cent of those whose mother is considered to be at very high risk of psychological distress to 67 per cent of children whose mother is considered to be at low risk of psychological distress. However, it is important to interpret these results with caution as we cannot say for sure that these characteristics actually have an impact on children's health, it may be the case that parents with particular characteristics may be more, or less, 'optimistic' in rating their children's health.

Turning now to the father's characteristics, Table 24.4 shows, compared to children whose father was between the ages of 25 and 39 when they were born, the proportion of children who are reported as being in excellent health is lower among those whose father was either under the age of 20 or aged 40 or older at the time of the child's birth. In terms of the father's education, children whose father did not complete Year 12 are less likely to be reported as being in excellent health than children whose father had completed Year 12 or a post-school qualification.

Table 24.3: Factors associated with parent-reported general health, by characteristics of the mother, 2009

	General health of child (percentage in each category)				Total	Mean general health of child
	Excellent	Very good	Good	Fair or poor		
Age at birth of child						
Under 20	48.1	37.4	*12.8	*1.7	100.0	4.3
20–24	57.1	30.1	10.7	*2.0	100.0	4.4
25–29	62.2	25.5	10.0	*2.3	100.0	4.5
30–34	60.3	27.7	9.5	2.6	100.0	4.5
35–39	62.4	25.4	10.0	*2.3	100.0	4.5
40 and over	54.8	30.2	*14.7	*0.3	100.0	4.4
Highest level of education						
Degree	65.3	24.4	7.6	2.7	100.0	4.5
Certificate or diploma	61.3	28.7	7.9	2.1	100.0	4.5
Year 12	62.6	27.1	8.5	*1.8	100.0	4.5
Year 11 or below	50.6	30.4	16.7	*2.4	100.0	4.3
Smoking status						
Non-smoker (never smoked or quit smoking)	62.7	27.1	7.9	2.4	100.0	4.5
Current smoker	53.1	34.1	9.9	*2.9	100.0	4.4
Frequency of exercise						
No exercise at all	50.8	34.4	13.1	*1.7	100.0	4.3
Less than once a week	59.3	27.0	10.2	*3.5	100.0	4.4
Once or twice a week	56.2	32.7	8.8	*2.3	100.0	4.4
Three times a week or more	65.6	25.9	6.3	2.2	100.0	4.5
Body Mass Index (BMI) group						
Normal or underweight (BMI < 25)	65.2	24.8	7.1	2.8	100.0	4.5
Overweight (25 ≤ BMI < 30)	58.5	31.4	8.0	*2.1	100.0	4.5
Obese (BMI ≥ 30)	56.9	30.7	9.8	*2.6	100.0	4.4
Psychological distress (Kessler K10 scale)						
Low risk	66.6	25.0	6.9	1.4	100.0	4.6
Moderate risk	56.6	33.5	7.2	*2.8	100.0	4.4
High risk	41.9	37.8	15.8	*4.5	100.0	4.2
Very high risk	40.5	35.4	14.8	*9.3	100.0	4.0
Total	60.4	28.7	8.4	2.5	100.0	4.5

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding. The sample in this table is restricted to children who live with their mother. For 'Smoking status', 'Frequency of exercise', 'Body Mass Index' and 'Psychological distress', the sample is further restricted to children whose mother answered the respective questions in the self-completion questionnaire. For the calculation of the mean, scores are reversed so that 'Excellent' has a score of 5 and 'Poor' has a score of 1.

As was the case for mothers, the proportion of children reported as being in excellent health is highest among those whose father exercises at least three times a week, and lowest among those whose father does not exercise at all; compared to children whose father does not smoke cigarettes, the proportion of children reported as being in excellent health is slightly lower among children with a father who smokes; and children whose father is considered to be at low risk of psychological distress, according to the Kessler K10 scale, are much more likely to have been reported as being in excellent health than children whose father was at high risk of psychological distress.

One somewhat surprising result in terms the effect of fathers' characteristics on parent/guardian-reported health of children is that of BMI. The proportion of children reported as being in excellent health is actually higher among children whose fathers are in the overweight and obese categories than among children whose father has a BMI of less than 25. However, this result is likely to be at least partly due to the fact that BMI does not differentiate between body fat and muscle

mass. Therefore, it is possible that some men who are actually fit and healthy may fall into the 'overweight' category according to their BMI. For example, a man who is 175 centimetres tall and weighs 80 kilograms has a BMI of 26.1.

Looking only at averages and distributions, it may appear that particular characteristics of the child, household and the parents have a significant influence on the health of children. However it must be noted that, without controlling for other factors that might impact upon children's health, we cannot say that this is in fact the case. In Table 24.5, the results of an ordered probit regression of children's health, as reported by their parent or guardian, are presented.¹ Four different specifications of the model are presented. The first specification is a simple model controlling for only the characteristics of the child and the household that they live in. For the second specification, the sample is restricted to children living with at least one parent and the employment status of the parents is included in the model. In the third specification, the sample is further restricted to children who are living with their mother and

Table 24.4: Factors associated with parent-reported general health, by characteristics of the father, 2009

	General health of child (percentage in each category)				Total	Mean general health of child
	Excellent	Very good	Good	Fair or poor		
Age at birth of child						
Under 20	56.0	*29.6	*10.4	*3.9	100.0	4.4
20–24	60.7	29.9	*8.6	*0.8	100.0	4.5
25–29	65.0	24.2	10.0	*0.9	100.0	4.5
30–34	64.5	24.7	8.7	*2.1	100.0	4.5
35–39	62.2	26.2	10.2	*1.4	100.0	4.5
40 and over	58.1	27.4	12.0	*2.5	100.0	4.4
Highest level of education						
Degree	63.8	25.3	8.8	*2.2	100.0	4.5
Certificate or diploma	64.5	26.3	7.8	*1.3	100.0	4.5
Year 12	64.6	16.6	16.5	*2.3	100.0	4.4
Year 11 or below	56.6	29.8	11.9	*1.7	100.0	4.4
Smoking status						
Non-smoker (never smoked or quit smoking)	65.6	24.8	7.5	2.1	100.0	4.5
Current smoker	62.7	26.9	9.4	*1.0	100.0	4.5
Frequency of exercise						
No exercise at all	54.8	37.0	*7.2	*1.0	100.0	4.4
Less than once a week	63.0	27.0	7.6	*2.4	100.0	4.5
Once or twice a week	64.4	25.1	7.7	*2.7	100.0	4.5
Three times a week or more	67.5	22.8	8.3	*1.3	100.0	4.6
Body Mass Index (BMI) group						
Normal or underweight (BMI < 25)	60.6	28.2	8.2	2.9	100.0	4.5
Overweight (25 ≤ BMI < 30)	69.5	21.4	7.7	*1.4	100.0	4.6
Obese (BMI ≥ 30)	65.5	26.9	6.2	*1.5	100.0	4.6
Psychological distress (Kessler K10 scale)						
Low risk	68.2	23.9	6.0	1.9	100.0	4.6
Moderate risk	58.8	28.7	10.6	*2.0	100.0	4.4
High risk	49.7	31.1	18.2	*1.0	100.0	4.3
Very high risk	61.5	29.2	*7.6	*1.8	100.0	4.5
Total	65.0	25.4	7.7	1.8	100.0	4.5

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding. The sample in this table is restricted to children who live with their mother. For 'Smoking status', 'Frequency of exercise', 'Body Mass Index' and 'Psychological distress', the sample is further restricted to children whose mother answered the respective questions in the self-completion questionnaire. For the calculation of the mean, scores are reversed so that 'Excellent' has a score of 5 and 'Poor' has a score of 1.

characteristics of the mother are included in the model. For the final specification, the sample is restricted to children living with both parents, and characteristics of both the mother and the father are included in the model.²

The results of Specification 1, which includes the full sample of children under the age of 15, suggest that the parent/guardian-reported health levels of boys are lower than those of girls; children who weighed less than 2.5 kilograms when they were

Table 24.5: Determinants of parent/guardian-reported child health, 2009

	All children under 15	Children under 15 with at least one resident parent	Children under 15 with resident mother	Children under 15 living with both parents
Male	-0.128	-0.123	-0.133	-0.138
Age	-0.006 ⁺	-0.008 ⁺	-0.006 ⁺	-0.006 ⁺
Low birth weight	-0.194	-0.189	-0.219	-0.220
<i>Birth order (Reference category: Oldest child)</i>				
Youngest child	-0.118	-0.117	-0.089	-0.089 ⁺
Middle child	-0.119	-0.118	-0.065 ⁺	-0.070 ⁺
Only child	-0.062 ⁺	-0.072 ⁺	-0.029 ⁺	-0.053 ⁺
Log of equivalised household income	0.081 ⁺	0.085 ⁺	0.029 ⁺	0.085 ⁺
<i>Region of residence (Accessibility/Remoteness Index of Australia) (Reference category: Major city)</i>				
Inner regional	0.119	0.129	0.133	0.161
Outer regional	0.036 ⁺	0.051 ⁺	0.009 ⁺	0.018 ⁺
Remote or very remote	-0.393	-0.361	-0.511	-0.435
<i>Household composition (Reference category: Living with both parents)</i>				
Lone mother household	-0.324 ⁺	-	-	-
Lone father household	-0.033 ⁺	-	-	-
No resident parents	-0.676	-	-	-
<i>Parents' employment status (Reference category: Both parents employed)</i>				
Father employed, mother not employed	-	-0.025 ⁺	0.049 ⁺	0.010 ⁺
Mother employed, father not employed	-	0.081 ⁺	0.126 ⁺	0.087 ⁺
Both parents not employed	-	-0.230 ⁺	0.015 ⁺	0.048 ⁺
Lone parent, employed	-	-0.222	-0.201	-
Lone parent, not employed	-	-0.399	-0.279	-
Mother's age when the child was born	-	-	0.002 ⁺	0.002 ⁺
<i>Mother's highest level of education (Reference category: Year 11 or below)</i>				
Degree	-	-	0.178	0.128 ⁺
Certificate or diploma	-	-	0.129 ⁺	0.038 ⁺
Year 12	-	-	0.068 ⁺	-0.028 ⁺
<i>Mother's exercise frequency (Reference category: Not at all)</i>				
Less than once a week	-	-	0.065 ⁺	0.054 ⁺
1-2 times per week	-	-	0.061 ⁺	0.112 ⁺
3 times per week or more	-	-	0.261	0.343
Mother current smoker	-	-	0.018 ⁺	-0.024 ⁺
<i>Mother's Kessler K10 Psychological Distress (Reference category: Low)</i>				
Moderate	-	-	-0.184	-0.176
High or very high	-	-	-0.458	-0.416
Father's age when the child was born	-	-	-	0.003 ⁺
<i>Father's highest level of education (Reference category: Year 11 or below)</i>				
Degree	-	-	-	-0.033 ⁺
Certificate or diploma	-	-	-	0.013 ⁺
Year 12	-	-	-	0.170 ⁺
<i>Father's exercise frequency (Reference category: Not at all)</i>				
Less than once a week	-	-	-	0.120 ⁺
1-2 times per week	-	-	-	0.048 ⁺
3 times per week or more	-	-	-	0.032 ⁺
Father current smoker	-	-	-	0.039 ⁺
<i>Father's Kessler K10 Psychological Distress (Reference category: Low)</i>				
Moderate	-	-	-	-0.136 ⁺
High or very high	-	-	-	-0.229
Number of observations	3,272	3,069	2,538	1,949

Notes: This table reports coefficient estimates from an ordered probit model of reported child health. In this model, the categories of 'Fair' and 'Poor' are combined, and scores are reversed so that 'Excellent' has a score of 4, 'Very good' has a score of 3, 'Good' has a score of 2 and 'Fair or Poor' has a score of 1. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level. Standard errors are adjusted for clustering on household membership.

born have (statistically) significantly lower levels of parent/guardian-reported health; and, compared to children who live with both their parents, children with no resident parents have significantly lower levels of health reported by their guardians. Compared to children living in major cities, the parent/guardian-reported health of children who live in inner regional areas is significantly higher, but that of children living in remote areas is significantly lower. Birth order also appears to be a significant factor, with children who were either the youngest child or the middle child having significantly lower health scores than children who were the oldest child in the family. However, the age of the child and the income of the household that the child lives in have no significant effect on the level of health reported by the child's parent or guardian.

In Specification 2, in which the sample is restricted to children with at least one resident parent and the employment status of the parents is included in the model, the results concerning gender, age, birth weight, birth order, region of residence and household income are quite similar to those of Specification 1. By controlling for the employment status of parents, we find that compared to children in households where both parents are employed, the level of parent-reported health of children in lone-parent households where the parent is employed is significantly lower, and lower again in lone-parent households where the parent is not employed.

Specifications 3 and 4, which control for the characteristics of the parents, confirm the results found in Specifications 1 and 2 concerning the gender, birth weight and region of residence of children. In terms of the effects of characteristics of the mother, the results of Specification 3 indicate that compared to children whose mother did not complete Year 12, children whose mother had a degree qualification had a significantly higher level of parent-reported health; and compared to children whose mother did no exercise at all, children whose mother exercised at least three times per week had significantly higher levels of parent-reported health. The mental health of the mother also appears to be an important factor in the health of children, with a significant negative association between the mother's level of risk of psychological distress and the parent-reported health of the child.

When the sample is restricted to children living with both parents and the characteristics of both parents are included in the model, the birth order of the child and the education level of the mother are no longer statistically significant. With the exception of the father's mental health, the characteristics of the father are also statistically insignificant. Compared to children whose fathers have a low risk of psychological distress, the parent-reported health of children whose fathers have a high or very high risk of psychological distress is significantly lower.

In summary, the results of the ordered probit model indicate that there are significant associations between a child's health as reported by their parent or guardian and the gender of the child, the child's birth weight, the type of household a child lives in, the exercise habits of the mother, the mental health of both parents, and whether they live in a regional or remote area. However, it should be noted that these models account for only a very small proportion of the variation in children's health because, in most cases, poor health is something that is beyond the control of the child and their parents. Further, in some cases the parent or guardian reports of a child's health may not be an accurate reflection of the actual health of the child, and may depend to some extent on the personal characteristics of the parent who is rating the health of the child.

Health care utilisation

In Wave 9 of the HILDA Survey, new information about health care utilisation of all household members, including children under 15 years of age, was collected. This comprised questions on visits to doctors, dentists and other medical practitioners, as well as questions about hospital admissions.

Doctor visits

Parents with children under the age of 15 were asked how many times each of their children had seen a family doctor or other General Practitioner about their health in the last 12 months. Table 24.6 shows the number of doctor visits according to the age and gender of the child.

Overall, the proportion of children who had seen a general practitioner in the last 12 months was higher for boys than for girls, with 82 per cent of boys and 80 per cent of girls having been to the GP at least once in the last 12 months. On average, children under the age of 15 go to the doctor around three times a year. The average number of doctor visits per year declines with age, and for children under the age of 6, is slightly higher for boys than for girls. However, among children aged 6 and over, the average number of doctor visits per year is slightly higher for girls than for boys.

One indicator of the quality of health care that a child receives is whether they have a particular doctor or clinic that they usually visit when they have a health problem. For those who visit a regular doctor or medical clinic, the practitioner will, over time, be better informed about the medical history and circumstances of the individual. Table 24.7 shows the proportion of children who have a regular doctor or medical clinic that they usually visit when they have a health problem.

Most children have a particular doctor or clinic that they usually go to. In fact, 77 per cent of children under the age of 15 have a particular doctor that they usually visit, and a further 16 per cent attend one particular medical clinic. The proportion of

children who do not attend the same doctor or medical clinic when they have health issues is lowest among children aged between 12 and 14. This may reflect a lower propensity to visit the doctor, with children aged between 6 and 14 comparatively less likely to have seen a doctor in the last 12 months.

Overall, out-of-pocket expenses were incurred for the child's last GP visit in 33 per cent of cases. However, out-of-pocket expenses were less common for consultations where the parents reported that the child attends a regular clinic or health centre (26 per cent) compared to those who have a particular doctor that they regularly go to (34 per cent) and those who have no regular doctor or clinic (34 per cent). Presumably this is because larger clinics or medical centres are more likely to bulk bill for their consultations.

Does the frequency of doctor visits and type of medical clinic attended differ according to whether the child lives in a major city or a remote

area? In Table 24.8, the proportion of children who attend one regular doctor or one regular health centre is compared according to the child's region of residence.

It is interesting to note that, while the proportion of children who go to one regular clinic or health centre is lowest among those living in major cities and highest among children living in regional or remote areas, the proportion of children who have one particular doctor that they go to is considerably higher among children living in major cities compared to those in regional or remote areas. Presumably this is because doctors are less likely to remain in regional or remote areas for long periods of time. The average number of doctor visits in the last 12 months was lower among children living in remote areas, with children living in a major city seeing a doctor an average of 3.5 times per year, compared to 2.8 times per year for children living in inner regional areas, and only 2.5 times per year among children living in outer regional, remote or very remote areas.

Table 24.6: Number of visits to GP in the last 12 months, by age and gender of child, 2009

Age and gender of child	Number of doctor visits (percentage in each category)						Total	Average number of visits
	0	1	2	3-5	6-9	10 or more		
Male								
2 and under	9.4	7.9	16.2	38.7	17.3	10.5	100.0	4.3
3-5	11.6	15.5	14.8	32.2	14.3	11.7	100.0	4.1
6-11	21.1	18.7	18.8	27.7	9.8	3.9	100.0	2.7
12-14	26.1	19.7	24.0	20.1	*6.8	*3.3	100.0	2.3
Total	17.7	16.4	18.3	29.2	11.6	6.8	100.0	3.2
Female								
2 and under	13.7	13.1	14.5	38.6	11.1	9.0	100.0	4.0
3-5	11.2	15.1	24.9	29.2	10.1	9.5	100.0	3.8
6-11	23.5	18.0	20.5	25.9	6.9	5.3	100.0	2.8
12-14	30.1	20.7	17.1	24.6	*4.4	*3.2	100.0	2.4
Total	20.1	17.0	20.1	28.4	7.9	6.5	100.0	3.1

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

Table 24.7: Regular doctor or medical clinic attended, by age of child, 2009 (%)

Age of child	One regular doctor	One regular clinic or health centre	No regular health care provider	Total
2 and under	78.5	15.9	5.5	100.0
3-5	79.1	14.9	6.0	100.0
6-11	76.5	15.8	7.6	100.0
12-14	73.9	18.4	7.7	100.0
Total	77.0	16.1	6.9	100.0

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

Table 24.8: Regular doctor or medical clinic attended, by region of residence, 2009 (%)

Region of residence (Accessibility/Remoteness Index of Australia)	One regular doctor	One regular clinic or health centre	No regular health care provider	Total
Major city	78.0	15.7	6.3	100.0
Inner regional	73.4	18.7	7.9	100.0
Outer regional	68.5	19.7	11.8	100.0
Remote or very remote	57.7	29.6	*12.7	100.0
Total	75.1	17.3	7.6	100.0

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

Visits to other medical practitioners

Parents were also asked how many times in the last 12 months each of their children had seen other medical practitioners, such as psychologists, optometrists, physiotherapists, naturopaths and acupuncturists.³ Table 24.9 shows the frequency of visits to other medical practitioners according to the age and gender of the child.

Overall, the proportion of boys who had been to a medical practitioner such as a physiotherapist, optometrist or psychologist was higher than that of girls, with 37 per cent of boys and 28 per cent of girls seeing one of these practitioners at least once in the last 12 months. For boys, the average number of visits to other medical practitioners did not differ considerably by age, ranging from 0.7 per year in the 12–14 age group, to 0.9 per year among boys aged between 2 and 5. For girls, the average number of visits to other medical practitioners 0.9 per year among those under the age of 2, 0.5 per year for girls in the 2–5 and 6–11 age groups and 0.7 per year among girls aged between 12 and 14.

Visits to these types of practitioners often involve considerable out-of-pocket expenses. Therefore, it

is likely that the frequency of visits depends, at least to some extent, on household income. However, many of these types of treatments are at least partly covered by the 'extras' component of private health insurance. Table 24.10 compares the frequency of visits to other medical practitioners according to quintile of equivalised household income and private health insurance coverage.⁴

While the difference between the proportion of children having been to a medical practitioner such as a physiotherapist, optometrist or psychologist in the past 12 months was lowest among children in the lowest quintile of household income; the overall difference according to equivalised household income was quite small, with 30 per cent of children in the lowest income quintile having seen one of these practitioners in the last 12 months compared to 33 per cent of children in the highest income quintile. However, it appears that having private health insurance which covers this type of medical consultation is an important factor. Among children who had private 'extras' coverage, 37 per cent had seen one of these practitioners in the last 12 months, compared to 29 per cent of children who were not covered by health insurance.

Table 24.9: Number of visits to other medical practitioners in the last 12 months, by age and gender of child, 2009

Age and gender of child	Number of visits (percentage in each category)				Total	Average number of visits
	0	1	2	3 or more		
Male						
Under 2	60.6	19.6	*6.5	*5.9	100.0	0.8
2–5	58.3	14.1	13.0	7.0	100.0	0.9
6–11	63.7	14.8	7.0	7.3	100.0	0.8
12–14	70.6	10.2	8.1	5.6	100.0	0.7
Total	63.0	14.5	8.7	6.7	100.0	0.8
Female						
Under 2	63.6	11.8	7.7	7.8	100.0	0.9
2–5	74.0	12.6	4.6	5.0	100.0	0.5
6–11	74.7	10.5	5.6	4.7	100.0	0.5
12–14	69.1	12.3	4.9	6.8	100.0	0.7
Total	71.7	11.6	5.5	5.7	100.0	0.6

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

Table 24.10: Number of visits to other medical practitioners in the last 12 months, by income quintile and private health insurance coverage, 2009

	Number of visits (percentage in each category)				Total	Average number of visits
	0	1	2	3 or more		
Income quintile						
1	69.8	13.1	6.4	10.8	100.0	0.6
2	66.8	14.7	6.6	12.0	100.0	0.7
3	67.3	10.8	6.9	15.1	100.0	0.8
4	65.5	13.3	7.9	13.3	100.0	0.8
5	66.8	13.4	8.3	11.5	100.0	0.7
Total	67.3	13.1	7.2	12.5	100.0	0.7
Extras cover						
Yes	62.6	14.9	8.1	14.4	100.0	0.8
No	71.3	11.2	6.4	13.0	100.0	0.6
Total	67.3	13.1	7.2	12.5	100.0	0.7

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

Visits to the dentist

Parents were also asked how long since their child last saw a dentist. Table 24.11 shows that 95 per cent of children aged between 1 and 2, and almost 60 per cent of children between the ages of 2 and 5, had never been to the dentist; even though the Australian Dental Association (2004) recommends that a child's first visit to the dentist should take place at 12 months of age, or shortly after the eruption of the first baby teeth, and subsequent visits should take place every six months.

Among children between the ages of 6 and 11, almost half had been to the dentist in the last six months and a further 25 per cent had been to the dentist within the past year, but more than six months ago. However, 7 per cent of children in this age group had never been to the dentist. Among children aged between 12 and 14, around three-quarters had been to the dentist in the past year, but almost 2 per cent had never been to the dentist.

As was the case for medical practitioners other than general practitioners, dental visits can involve substantial out-of-pocket expenses. In Table 24.12, we compare the amount of time since children had been to the dentist, according to their equivalised household income and whether or not they were covered by private health insurance.

The proportion of children who had been to the dentist in the last 12 months ranged from 28 per cent in the lowest quintile of equivalised household income to 44 per cent of children in the

highest income quintile. Private health insurance coverage also seems to be an important factor in how regularly children go to the dentist, with 46 per cent of children who have private extras cover having seen a dentist in the last six months, compared to 26 per cent of children who did not have private extras cover. Furthermore, among children who did not have private extras cover, 37 per cent had never been to the dentist, compared to 27 per cent of those who were covered by private health insurance.

Hospital admissions

Table 24.13 shows that less than 10 per cent of children had been admitted to hospital in the 12 months prior to their parents interview, and, among those who were admitted to hospital, the majority were admitted only once during that 12-month period.

Among children who had been admitted to hospital, the average length of stay in hospital was two nights, with 27 per cent not being admitted overnight, 28 per cent staying in hospital for only one night, 25 per cent for two to four nights and 20 per cent for five nights or more.

For children, hospital admission and duration of stay in hospital is obviously dependent on the need for hospital care, rather than the cost, with the proportion of children being admitted to hospital being 9 per cent for those whose family had private hospital coverage and 8 per cent for those whose family did not have private hospital cover.

Table 24.11: Time since child last saw a dentist, by age, 2009 (%)

Age group of child	Less than 6 months ago	6 to less than 12 months ago	1 to less than 2 years ago	2 or more years ago	Never been to the dentist	Total
1	3.9	1.2	*0.1	–	94.9	100.0
2–5	24.4	10.1	5.7	*1.3	58.5	100.0
6–11	49.6	24.7	13.9	4.8	7.0	100.0
12–14	44.8	29.9	14.0	9.6	1.7	100.0
Total (1–14)	35.3	18.4	9.7	4.1	32.5	100.0

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

Table 24.12: Time since child last saw a dentist, by income quintile and private health insurance coverage, children aged 1–14, 2009 (%)

	Less than 6 months ago	6 to less than 12 months ago	1 to less than 2 years ago	2 or more years ago	Never been to the dentist	Total
Income quintile						
1 (bottom)	28.0	18.6	13.8	3.9	35.7	100.0
2	31.5	15.7	9.7	3.6	39.5	100.0
3	32.5	20.0	8.5	5.6	33.3	100.0
4	42.5	19.0	8.8	5.6	24.0	100.0
5 (top)	43.8	18.4	7.0	*1.4	29.3	100.0
Total	35.3	18.4	9.7	4.1	32.5	100.0
Extras cover						
Yes	46.2	17.1	6.6	3.0	27.2	100.0
No	26.3	19.3	12.4	4.8	37.2	100.0
Total	35.3	18.4	9.7	4.1	32.5	100.0

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

Table 24.13: Number of hospital admissions in the last 12 months, by age and gender of child, 2009

Age and gender of child	Number of admissions (percentage in each category)			Total	Average number of admissions
	0	1	2 or more		
Male					
Under 2	83.1	12.3	*4.7	100.0	1.3
2-5	85.9	9.4	*4.7	100.0	1.3
6-11	92.0	6.6	*1.4	100.0	1.2
12-14	92.3	5.8	*1.8	100.0	1.2
Total	89.1	8.1	2.8	100.0	1.3
Female					
Under 2	88.8	8.8	*2.4	100.0	1.2
2-5	93.6	5.4	*1.0	100.0	1.1
6-11	94.3	4.2	*1.6	100.0	1.3
12-14	96.9	2.6	*0.5	100.0	1.2
Total	93.8	4.9	1.4	100.0	1.2

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

However, among children who had been admitted to hospital in the past 12 months, the number of nights spent in hospital was higher among those with private health insurance. The proportion staying in hospital for five nights or more was 25 per cent among those with private hospital cover, compared to 17 per cent of those with no private health insurance.

Summary

According to their parents or guardians, most children are in excellent or very good health. In most cases, a child's health is likely to be a result of factors which are beyond the control of the child and the parents. However, regression analysis shows that low birth weight, living in a lone-parent household, living in a remote or very remote area and the risk of psychological distress of either parent are negatively associated with the level of health of a child, as reported by their parent or guardian. Furthermore, compared to children whose mother did not exercise at all, children whose mother exercised at least three times a week had higher levels of (parent-reported) health.

In terms of children's utilisation of health services, most children have a regular doctor or clinic that they usually go to when they have a health problem. On average, children under the age of 15 see a doctor three times a year, with the number of doctor visits per year declining with age. Visits to other medical practitioners, such as psychologists, optometrists and physiotherapists, were much less common; and compared to children who were not covered by private health insurance, children who were covered for these types of health services under private health insurance were more likely to have been to one of these practitioners in the last 12 months. Similarly, children who had private extras cover were much more likely to have been to the dentist in the last six months.

Endnotes

- 1 For the purposes of the ordered probit model, the scale is reversed so that children whose health is rated as 'fair'

or 'poor' have a score of 1, and those whose health is rated as 'excellent' have a score of 4. In this case, the variable to be modelled has a natural ordering, but the numbers 1 to 4 mean nothing in terms of value. For example, we cannot infer that a child with a score of 4 is twice as healthy as a child with a score of 2, but we can infer that the parent who assigned these scores to her children would regard the health of the first child as better than the health of the second child. Therefore, an ordered probit model is used for the analysis. It is important to note that the magnitude of the coefficient estimates from the ordered probit model have no direct interpretation. (It is possible to calculate marginal effects of explanatory variables for each of the four categories, but these are not presented to preserve space.) The significance, sign and relative magnitude of the coefficients can be used to provide some insight about the factors affecting children's health ratings.

- 2 The BMI of parents is not included in Specifications 3 and 4 because of the aforementioned shortcoming of this measurement. When mothers' BMI is included in Specification 3, there is no significant effect. However, when the BMI of both parents is included in Specification 4, mothers' BMI is not statistically significant, but the results indicate that there is a significant positive association between the BMI of the father and parent-reported general health of the child.
- 3 Dentists were excluded from this category as a separate question was asked about the amount of time since the child had been to the dentist.
- 4 Children are assumed to have extras cover if at least one of their resident parents reports having family cover including 'hospital and extras' or 'extras only'. The proportion of children whose family has some private health insurance coverage is 49 per cent. Among children with family health insurance coverage, 75 per cent have hospital and extras cover, 13 per cent have hospital over only and 12 per cent have only ancillary (extras) coverage.

Reference

Australian Dental Association (2004), 'Parents Hold the Key to Young Healthy Smiles', <<http://www.ada.org.au/newsroom/article,documentid,19373.aspx>>.

25. Health care expenditure and private health insurance

In connection with the health care utilisation information discussed in Chapter 23, information was also collected in the Wave 9 Person Questionnaire related to health care costs and private health insurance, some of which has already been used in the analysis contained in Chapter 23. This included ascertaining whether the respondent held a government concession card and whether an out-of-pocket expense was incurred for the last visit to the doctor. Private health insurance data collected includes whether the respondent has private health insurance and, if so, who the policy covers and the type of policy held (hospital cover only, extras cover only, or both). In addition, in each wave since 2006, expenditure data collected in the self-completion questionnaire has included expenditure on each of medical practitioners, medicines and private health insurance. In this article we examine these aspects of health care costs, in particular considering the socio-demographic incidence of out-of-pocket fees for doctor consultations, the determinants of household health care expenditure and the determinants of the decision to hold private health insurance cover.

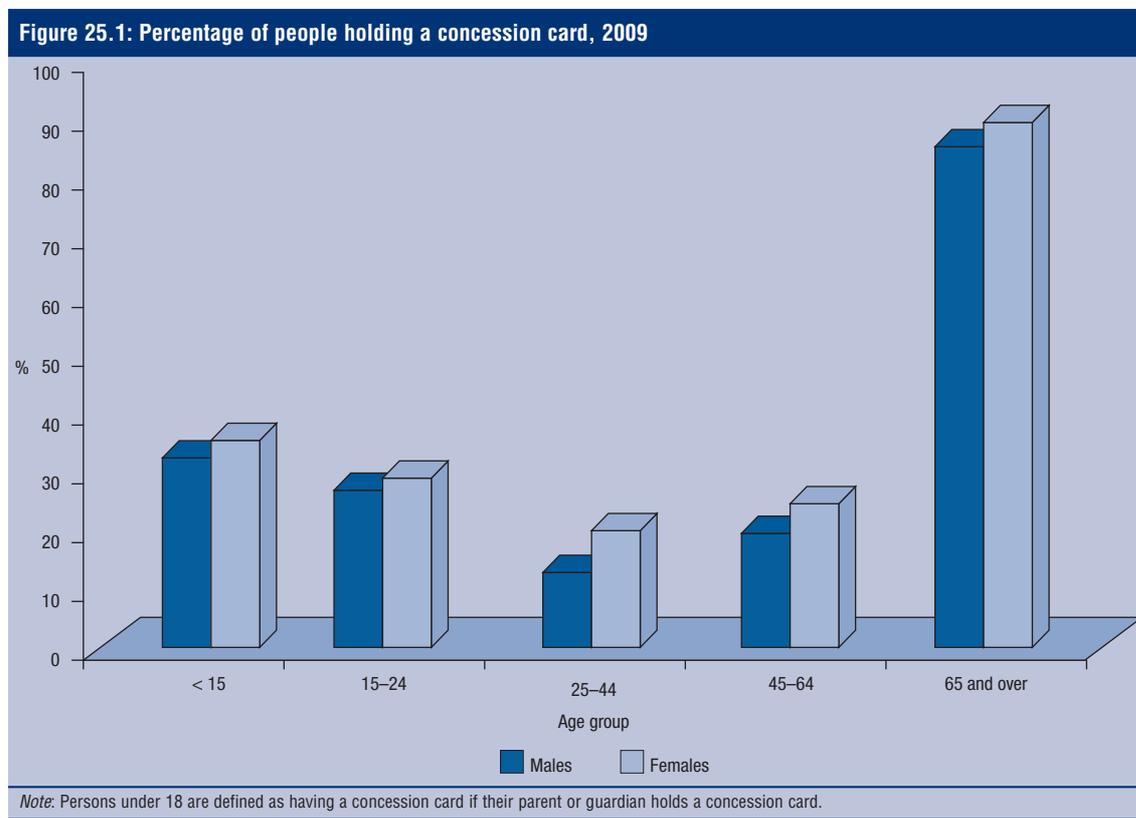
Concession cards

Government ‘concession cards’ are important for ensuring access to affordable health care for low-income households. They comprise:

- Health Care Cards, issued to recipients of government Allowances, Family Tax Benefit Part A (maximum rate) and some other low-income individuals;
- Pensioner Concession Cards, issued to recipients of government Pensions and Parenting Payment Single, and some recipients of certain Allowances;
- Commonwealth Seniors Health Card, issued to self-funded retirees (subject to a test on taxable income); and
- Department of Veterans’ Affairs Treatment Entitlement Cards (Orange, White or Gold), issued to veterans.

The entitlements and concessions differ across the cards, but all cards entitle holders to cheaper prescription medicines and many health care providers have lower fees for cardholders.

The importance of concession cards in Australia is illustrated by Figure 25.1, which shows, for males and females separately, the percentage of each of five age groups holding a concession card. Cards are held by approximately 88 per cent of men aged 65 and over and approximately 92 per cent of women aged 65 and over. Given the high utilisation of health care services by the elderly, concession cards are clearly extremely important to



their wellbeing. However, it is not only the elderly who benefit from concession cards. Over one-third of children under 15 years of age are covered by a concession card, and indeed substantial numbers of people in all age groups hold concession cards. The group least likely to hold a concession card is men aged 25–44, and even then the proportion is 15 per cent.

Out-of-pocket expenses for GP visits

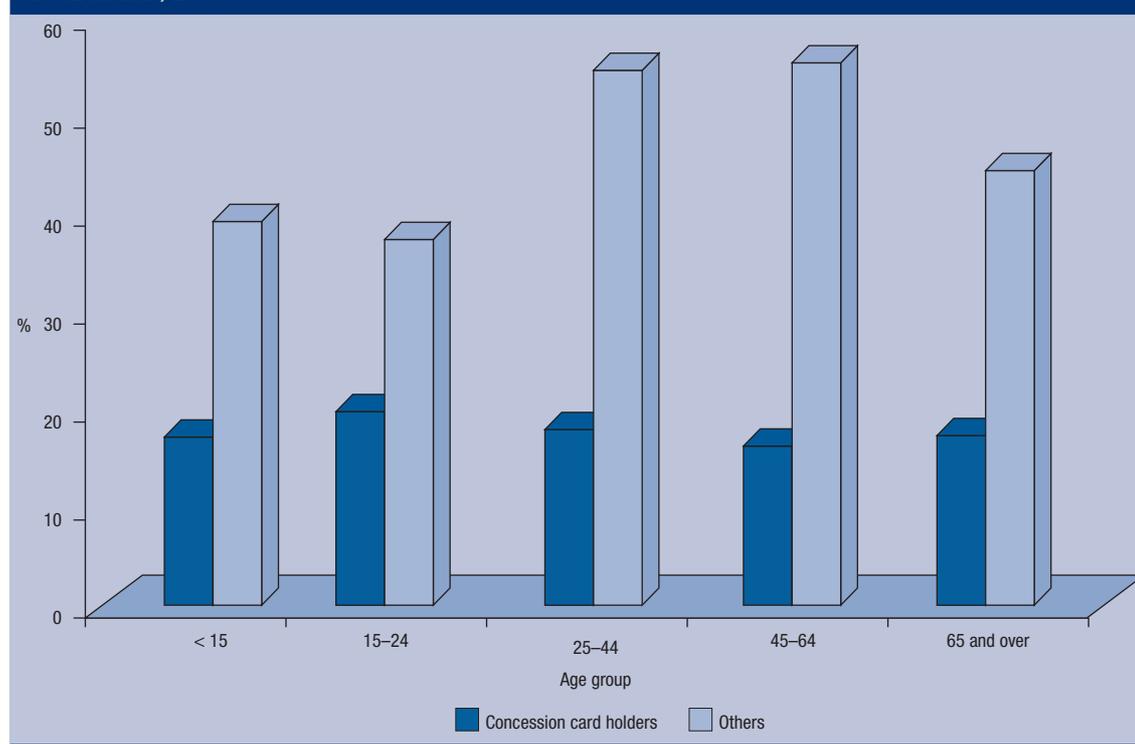
A great deal of public discussion over the years in relation to the Australian health care system has focused on the prevalence of 'bulk billing', a practice whereby medical practitioners charge patients no direct fee and 'bulk bill' the Commonwealth Government at the government-prescribed rates for the services they have rendered. Doctors charging patients a fee in excess of the rate prescribed by the government cannot bulk bill, resulting in an 'out-of-pocket' expense for the patient.

Affordable access to GPs is of course a key requirement of an equitable—and indeed efficient—health care system. While bulk billing by doctors is by no means necessary to achieve affordable access, it is certainly true that widespread use of bulk billing would translate to very affordable access. According to the Australian Government Department of Health and Ageing (2011), 74 per cent of services were bulk billed in the 2008–09 financial year, indicating that the practice is in fact quite widespread. However, aside from producing statistics by state and territory (which show the bulk billing rate ranging

from 63.1 per cent in the ACT to 77.2 per cent in New South Wales), the administrative data from which these figures are derived tell us little about who receives bulk billed services; yet it is important to understand how access to bulk billed services is distributed across the community. For example, affordability of access is not delivered by widespread bulk billing if the most disadvantaged members of the community are in fact the ones who incur out-of-pocket expenses. The HILDA Survey data can therefore provide valuable new information on this front.

Figure 25.2 shows the percentage of people in each age group who incurred an out-of-pocket expense (i.e. were *not* bulk billed) for their most recent visit to a GP. Concession card holders are distinguished from others, and—as is apparent—with good reason. Across all age groups, approximately 18 per cent (slightly more for 15–24 year olds) of concession card holders incurred an expense. By contrast, among people who do not hold a concession card, the fraction is approximately 40 per cent for young people (under 25), 46 per cent for the elderly, and over 55 per cent for people aged 25–64. It is therefore clear that, while 74 per cent of *consultations* may be bulk billed, far fewer than 74 per cent of *people* are bulk billed. How is this possible? Essentially, people who see medical practitioners more frequently are more likely to be bulk billed. The elderly in particular, who have a both a high level of health care utilisation and a high proportion holding concession cards, will have many consultations with no out-of-pocket expense.

Figure 25.2: Percentage incurring an out-of-pocket expense for last GP visit—Persons who have visited a GP in the last 12 months, 2009



In Table 25.1 we consider in more detail who incurs out-of-pocket expenses for consultations, examining the socio-demographic characteristics associated with incurring an expense (and there-

fore not being bulk billed). The table presents mean marginal effects estimates from a probit model of the probability of incurring an out-of-pocket expense for the most recent GP visit. For example, the estimate in the first row indicates that the mean (or average) effect of 'being male' is to decrease the probability of incurring an expense by 0.033, or 3.3 percentage points (since the probability must lie between 0 and 1).

Table 25.1: Socio-demographic characteristics associated with incurring an out-of-pocket expense for most recent GP visit—People who have seen a GP in the last 12 months, 2009

	<i>Estimate</i>
Male	-0.033
<i>Age group (Reference category: Less than 15)</i>	
15–24	-0.007
25–44	0.091
45–64	0.100
65 and over	0.054
<i>Educational attainment (Reference category: No post-school qualifications)</i>	
Degree or higher	0.090
Other post-school qualification	0.026
<i>Family type (Reference category: Single person)</i>	
Couple	0.009+
Couple with children	0.014+
Lone parent	-0.009+
NESB immigrant	-0.145
Indigenous	-0.144
<i>State of residence (Reference category: New South Wales)</i>	
Victoria	0.101
Queensland	0.070
Western Australia	0.104
South Australia	0.055
Tasmania	0.124
ACT	0.299
Northern Territory	0.377
<i>Region (Reference category: Major urban)</i>	
Other urban	0.103
Other region	0.025
<i>Equivalised income quintile (Reference category: Top quintile)</i>	
Bottom	-0.113
2nd	-0.107
3rd	-0.053
4th	-0.007+
Concession card	-0.209
<i>Labour force status (Reference category: Not in the labour force)</i>	
Employed full-time	0.006+
Employed part-time	0.031
Unemployed	-0.042+
Has a disability	0.012+
<i>General health (SF-36: 0–100 scale) (Reference category: Good (Score ≥ 75))</i>	
Poor (Score < 50)	-0.049
Fair (Score ≥ 50 and < 75)	-0.034
<i>Mental health (SF-36: 0–100 scale) (Reference category: Good (Score ≥ 75))</i>	
Poor (Score < 50)	0.012+
Fair (Score ≥ 50 and < 75)	0.014+
Number of GP visits in last 12 months	-0.005
Number of observations	13,851
<i>Notes: Estimates are mean marginal effects obtained from a probit model of the probability of incurring an out-of-pocket expense for most recent visit to a GP. NESB immigrant—Immigrant from a country other than the main English-speaking countries. + indicates the estimate is not significantly different from zero at the 10 per cent level.</i>	

Many of the estimates presented in Table 25.1 suggest that bulk billing is quite well targeted to those who most need it. Most obvious in this regard is that the estimates imply those with fewer resources are less likely to incur an out-of-pocket expense. Holding other characteristics constant, the probability of incurring an out-of-pocket expense is greater the higher is equivalised household income and is considerably lower among concession card holders. Moreover, immigrants from non-English-speaking countries and Indigenous Australians are much less likely to incur an expense, while more highly educated people are more likely to incur an expense.

Also consistent with good targeting is the evidence that people who need a higher quantity of health care are less likely to incur an expense. The lower is general health, the less likely is an out-of-pocket expense, and the greater the number of GP visits in the last 12 months, the less likely is the individual to have incurred and expense for the most recent visit. Furthermore, the elderly are less likely to incur an expense than those aged 25–64, on average having a 5 percentage point lower probability of an expense, other things being equal.

Possibly also reflecting good targeting, because it promotes child health, is that those under 25 years of age on average have a 10 percentage point lower probability of incurring an out-of-pocket expense than persons aged 25–64 years, holding other factors constant.

Only with regards to region of residence do concerns about the distribution of bulk billing across the community arise. Residents of New South Wales have the highest rate of bulk billing, while residents of the ACT and the Northern Territory have very low rates of bulk billing—differences that are not explicable by differences in characteristics such as income. In addition, people living in urban areas outside the major urban areas are considerably more likely to incur an expense than people living in either major urban areas or regional areas. These regional differences would seem to reflect differences in the availability of bulk billing across states and territories and across regions within states and territories, and they will almost certainly translate to some degree of inequity across community members in costs incurred for health care services.

Expenditure on health care

Each wave since 2006, the HILDA Survey has collected household expenditure in each of three health-related categories: 'fees paid to doctors, dentists, opticians, physiotherapists, chiropractors and any other health practitioners'; 'medicines, prescriptions and pharmaceuticals (including alternative medicines)'; and private health insurance. These three categories will not capture all health expenditure by the household, potentially excluding items such as aids and equipment, some diagnostic tests, hospital accommodation costs and 'gaps' not covered by private health insurance. Nonetheless, they are likely to account for most of the health expenditure in most households.

Table 25.2 presents mean household expenditure on each of the three categories of health expenditure, as well as the mean value of health expenditure as a proportion of household disposable income. (See Chapter 10 for details on the expenditure items.) Expressed at December 2009 prices, mean expenditure on health practitioners rose from \$925 in 2006 to \$987 in 2008, and then declined to \$877 in 2009. Mean expenditure on medicines remained essentially unchanged at approximately \$450 in all four years, while mean expenditure on private health insurance rose from \$931 in 2006 to \$1,006 in 2008 and remained unchanged from that level in 2009. In aggregate therefore, mean health expenditure rose slightly between 2006 and 2008 and then declined slightly in 2009. This decline is in line with the broader decline in consumption expenditure that occurred in 2009 (see Chapter 10). The mean income share of health expenditure was 3.8 per cent in 2006, 3.5 per cent in 2007, 4 per cent in 2008 and 3.9 per cent in 2009.

Table 25.3 compares health expenditure, for all four waves over the 2006 to 2009 period com-

bined, by quintile of the equivalised household income distribution. Expenditure on both private health insurance and medicines and health practitioners is strongly ordered by level of income. Households with incomes in the bottom 20 per cent of the income distribution (bottom quintile) averaged \$903 on medicines and health practitioners and \$410 on private health insurance. Households in the top quintile averaged \$2,051 on medicines and health practitioners and \$1,643 on private health insurance. However, the opposite is true when it comes to the proportion of household income spent on health. While households in the middle three quintiles spend the same proportion of their income on health (3 per cent), households in the bottom quintile spend 7.4 per cent of their income on health, while households in the top quintile spend only 2.6 per cent of their income on health. Even for medicines and health practitioners, the expenditure share is 5.2 per cent for the poorest 20 per cent of households, compared with 1.5 per cent for the richest 20 per cent of households. Thus, while bulk billing and subsidised medicines help reduce disparities between rich and poor households in the share of income going on health care, they do not eliminate them.

In Figure 25.3, mean income shares of health expenditure are compared across eight different family types. Large differences across the family types are evident, with elderly people having relatively large expenditure shares and lone parents having relatively low expenditure shares. Interestingly, non-elderly couples without children have slightly higher health expenditure income shares than do couples with dependent children. One would expect health care consumption to on average be higher for couples with dependent children, suggesting government assistance with health care costs is considerably higher for families with children.

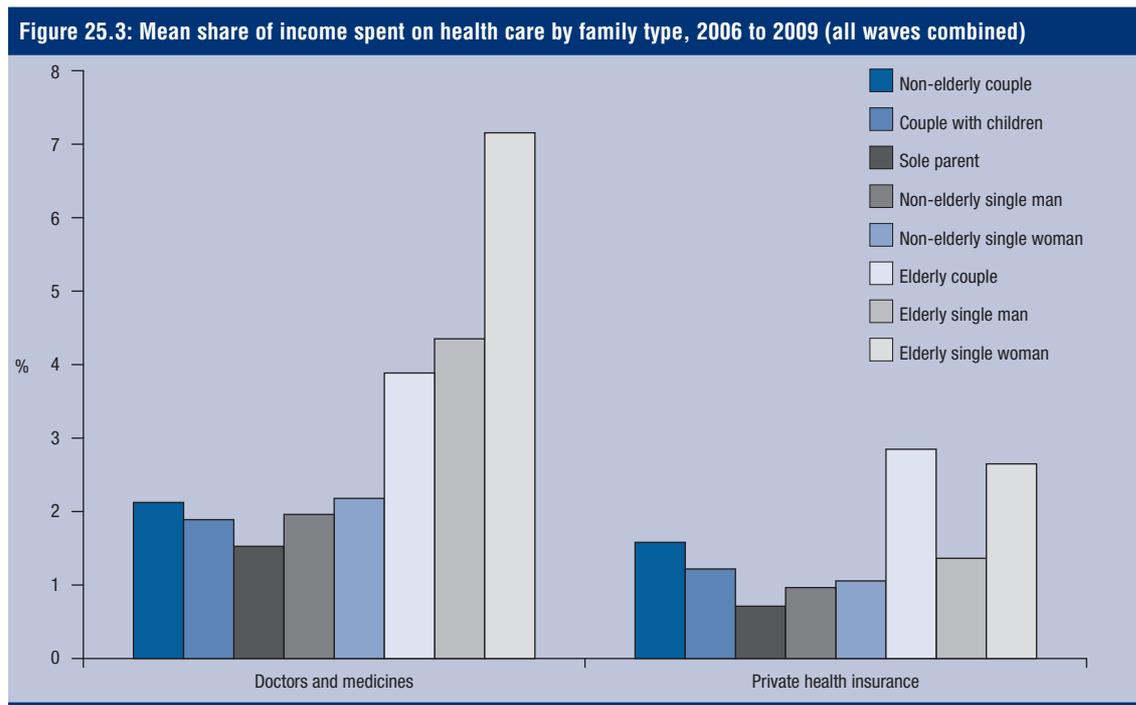
Table 25.2: Household expenditure on health care, 2006 to 2009 (all waves combined)

	<i>Mean expenditure (December 2009 prices)</i>				<i>Mean income share of expenditure (%)</i>			
	2006	2007	2008	2009	2006	2007	2008	2009
Health practitioners	925	938	987	877	1.5	1.4	1.6	1.4
Medicines	458	453	457	452	1.0	0.8	0.8	1.0
Private health insurance	931	945	1,006	1,006	1.3	1.3	1.5	1.5
All health care	2,314	2,336	2,450	2,335	3.8	3.5	4.0	3.9

Note: Estimates are for annual expenditure as assessed by respondents at the time of completion of the SCQ.

Table 25.3: Household expenditure on health care by level of household income, 2006 to 2009 (all waves combined)

	<i>Mean expenditure (December 2009 prices)</i>			<i>Mean income share of expenditure (%)</i>		
	<i>Medicines and health practitioners</i>	<i>Private health insurance</i>	<i>All health care</i>	<i>Medicines and health practitioners</i>	<i>Private health insurance</i>	<i>All health care</i>
Bottom quintile	903	410	1,313	5.2	2.2	7.4
2nd quintile	967	625	1,592	1.8	1.1	3.0
3rd quintile	1,327	937	2,264	1.8	1.2	3.0
4th quintile	1,668	1,229	2,897	1.7	1.3	3.0
Top quintile	2,051	1,643	3,695	1.5	1.2	2.6



The association between health expenditure as a share of income and a range of health and socio-demographic factors is investigated in Table 25.4. It shows estimates from regression models of the proportion of household income spent on medicines and health practitioners, and the proportion of household income spent on all health care, as functions of family type, educational attainment, immigrant and Indigenous status, state of residence, region of residence, equivalised income quintile, concession cardholder status, and disability and health status. Estimates are interpreted as the effect on the percentage of income spent on health care of a one-unit increase in the explanatory variable. For example, the estimate in the ‘all health care’ column and ‘lone parent’ row indicates that, holding all other factors constant, lone-parent families spend 1.104 percentage points less of their income on all health care than non-elderly couples.

Consistent with the findings from Figure 25.3, expenditure shares are significantly higher for elderly family types, and are also significantly lower in lone-parent and non-elderly single man family types than in the other family types. Findings for income are also broadly consistent with the findings from Table 25.3, although a more distinct income ‘gradient’ is evident, with each successively higher income quintile having a lower health expenditure share of income. Concession cards do appear to reduce the share of income spent on doctors and medicines, although the estimate for doctors and medicines is not statistically significant at the 10 per cent level.

Household health expenditure shares are, all else equal, higher for more educated people, lower if

any member of the household is an immigrant from a non-English-speaking country or Indigenous, higher if resident in Western Australia or Victoria (and possibly the ACT and Northern Territory, for which coefficient estimates are quite high, but are statistically insignificant), and higher for people living outside of urban areas. Variables capturing health and disability among household members show poor health and disability are associated with higher shares of income being spent on health care, although only for the disability variable are the effects statistically significant.

Private health insurance

The private health insurance market in Australia is heavily influenced by government policy. Insurance providers are not permitted to offer insurance for certain types of health care, such as GP consultations, restricting the insurance market to essentially hospital expenses (excluding fees incurred from medical practitioners for treatment received in hospital) and certain ‘extras’, largely comprising dental care and a variety of allied and alternative health care services (delivered outside of hospital). Prices are heavily regulated, as are the ‘inclusions’ and ‘exclusions’ of insurance policies. The maintenance of a public hospital system with no user charges alongside a private hospital system funded through private health insurance also profoundly impacts on the nature of the health insurance market. Finally, there are various ‘carrots’ and ‘sticks’ to encourage people to take up private health insurance, which in 2009 included a 30 per cent subsidy of health insurance premiums, a 1 per cent income tax surcharge for high-income earners without hospital cover (the

Table 25.4: Determinants of the share of household income spent on health care, 2009

	<i>Medicines and health practitioners</i>	<i>All health care</i>
<i>Family type (Reference category: Non-elderly couple)</i>		
Couple with children	-0.060 ⁺	-0.157 ⁺
Lone parent	-0.719	-1.078
Non-elderly single man	-1.056	-1.589
Non-elderly single woman	0.177 ⁺	-0.053 ⁺
Elderly couple	1.546	3.357
Elderly single man	1.301	1.383
Elderly single woman	3.073	4.151
<i>Highest educational attainment in household (Reference category: No post-school qualifications)</i>		
Degree or higher	1.059	1.712
Other post-school qualification	0.336	0.820
NESB immigrant member of household	-0.530	-0.574
Indigenous member of household	-1.100 ⁺	-1.810
<i>State of residence (Reference category: New South Wales)</i>		
Victoria	0.402	0.621
Queensland	-0.194 ⁺	-0.009 ⁺
Western Australia	0.732	1.187
South Australia	-0.270 ⁺	0.143 ⁺
Tasmania	-0.288 ⁺	-0.316 ⁺
ACT	0.641 ⁺	0.767 ⁺
Northern Territory	0.538 ⁺	0.489 ⁺
<i>Region (Reference category: Major urban)</i>		
Other urban	-0.021 ⁺	-0.241 ⁺
Other region	0.706	0.431
<i>Equivalised income quintile (Reference category: Top quintile)</i>		
Bottom	4.237	5.683
2nd	0.743	1.102
3rd	0.567	0.802
4th	0.371	0.560
Concession card holder	-1.117 ⁺	-1.667
Household contains a person with a disability	0.517	0.577
<i>Lowest general health in the household (SF-36: 0–100 scale) (Reference category: Good (Score ≥ 75))</i>		
Poor (Score < 50)	0.578 ⁺	0.199 ⁺
Fair (Score ≥ 50 and < 75)	0.211 ⁺	0.206 ⁺
<i>Lowest mental health in the household (SF-36: 0–100 scale) (Reference category: Good (Score ≥ 75))</i>		
Poor (Score < 50)	-0.224 ⁺	-0.324 ⁺
Fair (Score ≥ 50 and < 75)	-0.035 ⁺	-0.149 ⁺
Constant	0.296 ⁺	1.258
Number of observations	7,121	
<i>Notes: Tobit model coefficient estimates. Each household contributes one observation. NESB immigrant member of household—Household contains an immigrant from a country other than the main English-speaking countries. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.</i>		

Medicare Levy Surcharge) and a mandated 2 per cent increase in insurance premiums for every year after age 30 that a person did not hold hospital cover, up to a maximum of 70 per cent (*Lifetime Health Cover*).

Given the complex context within which the private health insurance market operates in Australia and the important role of government policy, it is important to policy-makers to understand who holds private health insurance and the determinants of households' health insurance decisions, and also how private health insurance impacts on families' health and financial circumstances. Information on private health insurance has been collected in Waves 4 and 9. In both waves, respondents were asked whether they held private

health insurance, the membership type (family, couple, lone parent or single), the type of cover (hospital cover only, hospital and extras cover, or extras cover only) and, if hospital cover was not held, whether it was held in the past and, if so, when it was dropped.

Table 25.5 presents the percentage of the population, and the percentage of each of four age groups, with each type of private health insurance cover. There was an increase in the percentage of the population with private health insurance between 2004 and 2009, with hospital cover rising from 46.1 per cent to 48.7 per cent of the population. The increase in coverage was greatest for persons aged 25–44 years, rising from 41.3 per cent to 45.9 per cent, and persons aged 65 and over, rising

from 45.3 per cent to 48.7 per cent. There was no change for 45–64 year olds, who nonetheless maintained the highest rate of hospital cover, with 57.1 per cent holding hospital cover.

Figure 25.4 shows the strong connection between household income and holding private health insurance hospital cover, an association that has indeed become stronger between 2004 and 2009. It presents the proportion of people in each equivalised income quintile holding hospital cover in 2004 and in 2009. Clearly evident is not only that the proportion holding hospital cover is increasing in income, but also that the income ‘gradient’ has become steeper in 2009. In 2004, 26 per cent of people in the bottom income quintile held cover, and 71 per cent of people in the top income quintile held cover. In 2009, the proportion with hospital cover fell slightly among those in the bottom quintile, to 25 per cent, but it rose significantly among those in the top quintile, to 77 per cent.

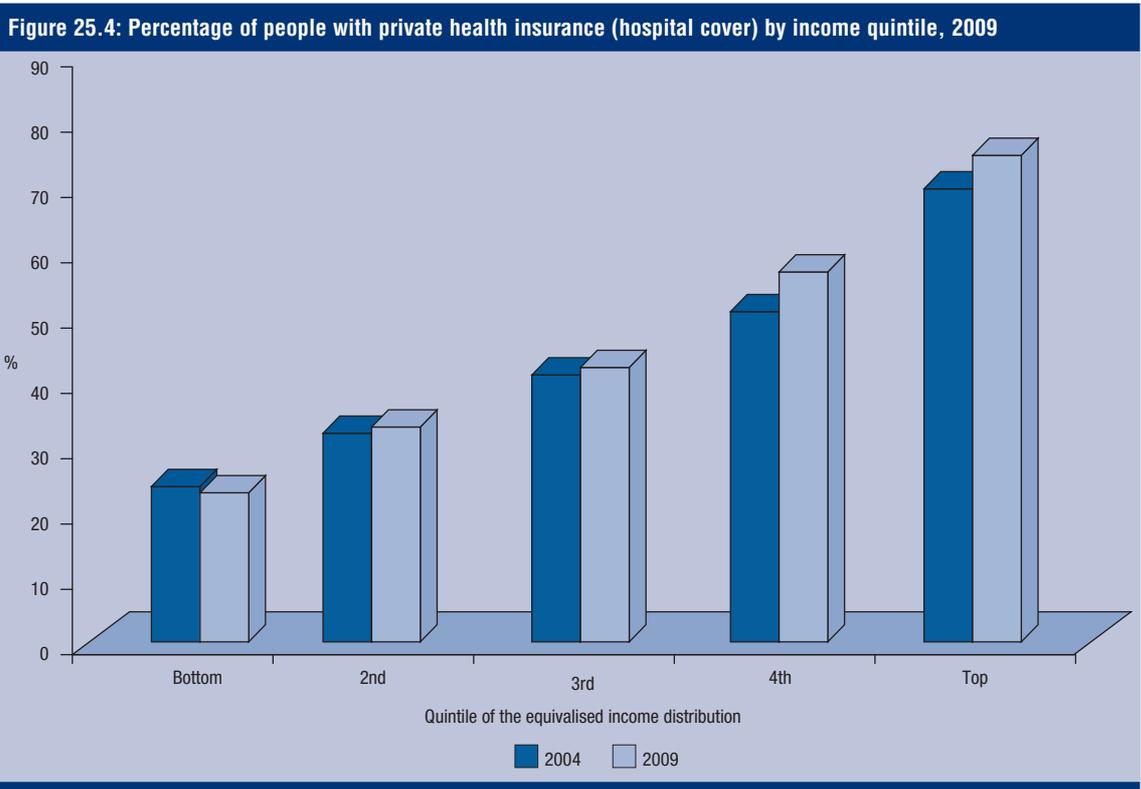
Clearly income is an important determinant of whether someone holds private health insurance, but are there other influences on the decision? In

Table 25.6 we investigate this question, presenting estimates from a probit regression model of the probability of holding private health insurance. The model is estimated on data from both Wave 4 and Wave 9, which improves precision of the estimates and also allows us to also examine if there has been any change over the 2004 to 2009 period in the probability of holding private health insurance, controlling for changes in the factors included in the model. Factors investigated by the model include demographic characteristics, economic factors, health and disability and health-related behaviours. Effects of government policy with respect to private health insurance—specifically, Lifetime Health Cover (whereby the premium faced by individuals is higher the longer they do not hold private hospital cover after age 30) and the Medicare Levy Surcharge (whereby high-income earners who do not hold private hospital cover face a higher Medicare levy rate)—are also considered.

The results in Table 25.6 indicate a number of factors have statistically significant effects on holding

Table 25.5: Proportion of people with private health insurance—Persons aged 15 and over (%)

	2004				2009			
	Hospital cover only	Hospital and extras cover	Extras cover only	Total with hospital cover	Hospital cover only	Hospital and extras cover	Extras cover only	Total with hospital cover
15–24	4.9	33.2	3.5	38.1	4.7	34.8	3.4	39.5
25–44	7.2	34.2	4.2	41.3	5.1	40.8	4.6	45.9
45–64	11.3	45.8	3.5	57.1	7.4	49.6	4.4	57.1
65 and over	14.1	31.3	1.9	45.3	11.6	37.1	2.3	48.7
All ages	9.1	37.1	3.5	46.1	6.8	41.9	4.0	48.7



private health insurance hospital cover. Other things being equal, the probability of holding private health insurance is 4 percentage points higher for females than males, is increasing with age, in particular being higher for those aged 45–64 than those aged younger, and being higher again for those aged 65 and over, and is increasing with educational attainment. Significant differences depending on family composition are also evident, with sole-parent families least likely to hold private health insurance and couple families, with or without dependent children, most likely to hold private health insurance, holding other factors constant. The likelihood of holding private health insurance is furthermore increasing with the number of dependent children in the household; and being a dependent child is itself associated with a higher probability of being covered by private health insurance. Immigrants from non-English-speaking countries and Indigenous Australians on average have a 10 percentage point lower probability of holding private health insurance, holding all else constant.

Residing in Western Australia or South Australia is associated with an increased probability of holding private health insurance, while living in Queensland is associated with a decreased probability. People living outside the major urban areas are also less likely to hold private health insurance, other things being equal. Consistent with the picture displayed in Figure 25.4, the probability of holding private health insurance is greater the higher the income. Holding other factors constant, employed people are more likely to hold private health insurance than non-employed people, with the unemployed particularly unlikely to be covered by private health insurance. These patterns are unsurprising given the high cost of private health insurance and that the Medicare Levy Surcharge provides a tax incentive for higher income earners to take out private health insurance.

For the health-related measures, we find no significant effect of disability, but poorer general health and poorer mental health are both associated with a lower likelihood of holding cover. Smokers are considerably less likely to hold hospital cover, on average having a 13.3 percentage point lower probability of cover than non-smokers, holding other factors constant. However, people who consume alcoholic drinks on five or more days per week ('regular drinkers') are somewhat more likely to hold private health insurance than others. People who exercise at least three times per week ('exercise regularly') do not differ significantly from others in their likelihood of holding private hospital cover, holding other factors constant.

Two government policies likely to impact on an identifiable subset of the population are *Lifetime Health Cover* and the *Medicare Levy Surcharge*. *Lifetime Health Cover* in 2004 applied only to people aged 30–69 and in 2009 applied only to people aged 30–74. The *Medicare Levy Surcharge*

Table 25.6: Factors associated with holding private health insurance hospital cover—Persons aged 15 years and over, 2004 and 2009

	<i>Estimate</i>
Male	-0.039
<i>Age group (Reference category: 15–24)</i>	
25–44	0.008 ⁺
45–64	0.153
65 and over	0.243
<i>Educational attainment (Reference category: No post-school qualifications)</i>	
Degree or higher	0.143
Other post-school qualification	0.037
<i>Family type (Reference category: Single person)</i>	
Couple	0.099
Couple with children	0.099
Lone parent	-0.058
Number of dependent children	0.015
Sample member is a dependent child	0.138
NESB immigrant	-0.096
Indigenous	-0.153
<i>State of residence (Reference category: New South Wales)</i>	
Victoria	-0.014 ⁺
Queensland	-0.041
Western Australia	0.060
South Australia	0.025
Tasmania	0.007 ⁺
ACT	0.023 ⁺
Northern Territory	-0.031 ⁺
<i>Region (Reference category: Major urban)</i>	
Other urban	-0.096
Other region	-0.066
Equivalised income (\$'000, December 2009 prices)	4.5E-03
Equivalised income squared (divided by 100)	-7.8E-05 ⁺
<i>Labour force status (Reference category: Not in the labour force)</i>	
Employed full-time	0.057
Employed part-time	0.055
Unemployed	-0.040
Has a disability	-0.014 ⁺
<i>Lowest general health in the household (SF-36: 0–100 scale) (Reference category: Good (Score ≥ 75))</i>	
Poor (Score < 50)	-0.051
Fair (Score ≥ 50 and < 75)	-0.015
<i>Lowest mental health in the household (SF-36: 0–100 scale) (Reference category: Good (Score ≥ 75))</i>	
Poor (Score < 50)	-0.051
Fair (Score ≥ 50 and < 75)	-0.013 ⁺
Smoker	-0.132
Drink regularly	0.032
Exercise regularly	-0.002 ⁺
Household contains a disabled child	-0.011 ⁺
Lifetime health cover applies	0.061
Medicare Levy Surcharge applies	0.069
Wave 9	-0.042
Number of observations	22,857
<i>Notes:</i> Estimates are mean marginal effects obtained from a probit model of the probability of holding private health insurance hospital cover. <i>NESB immigrant</i> —Immigrant from a country other than the main English-speaking countries. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.	

(1 per cent of taxable income) applies to people with incomes above certain thresholds that depend on family composition. From its introduction in 1997 until 2007–08, it applied to single people with incomes in excess of \$50,000 and families with incomes in excess of \$100,000 plus \$1,500 for each dependent child. In 2008–09, the thresholds were raised to \$70,000 and \$140,000 (plus \$1,500 for each child) and have since been indexed to Average Weekly Ordinary Time Earnings. Two dummy variables were included in the model presented in Table 25.5, the first equal to one if *Lifetime Health Cover* applies—that is, if the individual’s age is in the relevant range for that year—and the second equal to one if the *Medicare Levy Surcharge* applies—that is, if the household income was above the relevant threshold.

The expectation is that if the policy applies to the individual, it is more likely that individual will hold private hospital cover, and this is indeed what the estimates show. Being subject to *Lifetime Health Cover* on average increases the probability of hospital cover by 6.1 percentage points, and being subject to the *Medicare Levy Surcharge* on average increases the probability of hospital cover by 6.9 percentage points.

The mean marginal effect estimate for the Wave 9 dummy indicates that, all else being equal, private health insurance hospital cover was 4.3 percentage points lower in 2009 than in 2004. Of course, not all else is equal—for example, there was income growth between 2004 and 2009—so the proportion of people with cover did not actually decrease. One possible explanation for this estimate is that it captures the effects of increases in the real price of health insurance between 2004 and 2009. It could also be capturing effects of the increases to the Medicare Levy Surcharge thresholds introduced in 2008–09. We do not investigate this further in this report, but it would be an interesting question for future research.

Table 25.6 considers the characteristics associated with holding private hospital cover, but we can also use the longitudinal structure of the HILDA Survey data to examine the subtly different question of the determinants of taking up cover and dropping cover between 2004 and 2009. That is, who took up cover and who dropped cover, and are there specific events or changes in circumstances we can identify as precipitating changes in cover status?

In Table 25.7, we first describe the prevalence of changes, showing the percentage of people who held cover in 2004 but not 2009 (dropped cover) and the percentage of people who did not hold cover in 2004 but did in 2009 (took up cover). Over all persons aged 15 years and over in 2004, 4.5 per cent dropped cover and 7.2 per cent took up cover. Young people were more likely to both drop and take up hospital cover between 2004

Table 25.7: Percentage dropping and percentage taking up private health insurance hospital cover between 2004 and 2009—Persons aged 15 and over

Age in 2004	Dropped cover	Took up cover
15–24	10.6	11.3
25–44	3.4	10.5
45–64	3.1	3.3
65 and over	3.9	2.3
All aged 15 and over	4.5	7.2

and 2009, although the take-up rate among those aged 25–44 in 2009 is also high, at 10.5 per cent.

Table 25.8 presents mean marginal effects estimates from two probit models. The first model examines the determinants of dropping hospital cover between 2004 and 2009 among those who held cover in 2004. The second model examines the determinants of taking up cover among those who did not hold cover in 2004. As well as including variables for demographic characteristics, a number of variables are included for a variety of events and changes occurring between 2004 and 2009 that could have impacted on the decision to hold private insurance. These include changes in income, family circumstances, health and disability, and specific events such as injury, death of a family member, job loss, major worsening of finances and moving house.

Considering first the determinants of dropping hospital cover, estimates for demographic characteristics show men were more likely to drop cover than women and, as indicated by Table 25.5, people aged 15–24 in 2004 were more likely to drop cover than older people. The likelihood of dropping cover is also lower for more highly educated people and for couples compared with other family types, and higher for immigrants from non-English-speaking countries and Indigenous Australians. Changes between 2004 and 2009 found to significantly impact on the probability of dropping cover are a decrease in equivalised income quintile, the Medicare Levy Surcharge applying in 2004 but not in 2009, the Medicare Levy Surcharge applying in 2009 but not 2004, becoming single (from partnered) and becoming employed (from non-employed). Effects are in the expected direction, except for the variable indicating that the Medicare Levy Surcharge applied in 2004 and did not apply in 2009. This would be expected to increase the probability of dropping cover, but the estimate implies the opposite effect, for reasons that are not clear. In terms of specific events, significant positive effects on the probability of dropping cover are evident for death of a close family member, a major worsening of finances (such as bankruptcy), moving house and changing jobs.

The determinants of taking up cover between 2004 and 2009 are quite different from the determinants of dropping cover, and not simply by virtue of

Table 25.8: Factors associated with dropping PHI and taking up PHI between 2004 and 2009

	Probability dropped PHI (for persons holding PHI in 2004)	Probability took up PHI (for persons <i>not</i> holding PHI in 2004)
Male	0.031	-0.008 ⁺
<i>Age group in 2004 (Reference category: 15–24)</i>		
25–44	-0.064	-0.025 ⁺
45–64	-0.084	-0.114
65 and over	-0.082	-0.151
<i>Educational attainment in 2004 (Reference category: No post-school qualifications)</i>		
Degree or higher	-0.050	0.118
Other post-school qualification	-0.026	0.047
<i>Family type in 2004 (Reference category: Single person)</i>		
Couple	-0.053	0.055
Couple with children	-0.017 ⁺	-0.008 ⁺
Lone parent	0.008 ⁺	-0.093
Number of dependent children in 2004	-0.009 ⁺	-0.009 ⁺
NESB immigrant	0.029	0.004 ⁺
Indigenous	0.018 ⁺	-0.068 ⁺
<i>State of residence in 2004 (Reference category: New South Wales)</i>		
Victoria	0.015 ⁺	-0.002 ⁺
Queensland	0.005 ⁺	-0.014 ⁺
Western Australia	-0.019 ⁺	0.047
South Australia	0.017 ⁺	-0.045
Tasmania	-0.007 ⁺	-0.001 ⁺
ACT	-0.030 ⁺	0.037 ⁺
Northern Territory	0.013 ⁺	0.071 ⁺
<i>Region in 2004 (Reference category: Major urban)</i>		
Other urban	0.018 ⁺	-0.049
Other region	-0.004 ⁺	-0.049
<i>Changes between Wave 4 and Wave 9</i>		
Equivalised income quintile decreased	0.042	-0.028
Equivalised income quintile increased	0.020 ⁺	-0.002 ⁺
Medicare Levy Surcharge applied in 2004 but not 2009	-0.045	0.035
Medicare Levy Surcharge applied in 2009 but not 2004	-0.035	0.104
Became partnered	0.009 ⁺	0.045
Became single	0.079	-0.063
No dependent children in 2004 and one or more dependent children in 2009	0.001 ⁺	-0.013 ⁺
One or more dependent children in 2004 and no dependent children in 2009	0.002 ⁺	0.025 ⁺
No disabled children in 2004 and one or more disabled children in 2009	-0.003 ⁺	-0.019 ⁺
Became employed	0.028	-0.039
Became not employed	0.021 ⁺	0.002 ⁺
Became disabled	0.007 ⁺	0.006 ⁺
SF-36 general health decreased by 10 or more	0.012 ⁺	-0.015 ⁺
SF-36 mental health decreased by 10 or more	0.005 ⁺	-0.040
SF-36 general health increased by 10 or more	0.004 ⁺	0.007 ⁺
SF-36 mental health increased by 10 or more	-0.004 ⁺	-0.003 ⁺
<i>Events between Wave 4 and Wave 9</i>		
Injured	0.003 ⁺	-0.009 ⁺
Family member injured	0.007 ⁺	0.016 ⁺
Close family member died	0.066	-0.018 ⁺
Victim of violence	0.024 ⁺	-0.068
Victim of property crime	-0.016 ⁺	-0.010 ⁺
Retired	-0.007 ⁺	-0.017 ⁺
Dismissed from job	0.000 ⁺	-0.067
Major worsening of finances	0.027	-0.064
Moved house	0.026	0.018 ⁺
Changed jobs	0.032	0.058
Major improvement in finances	-0.017 ⁺	0.023 ⁺
Number of observations	4,241	4,157

Notes: Estimates are mean marginal effects obtained from a probit model of the probability of holding private health insurance hospital cover. *PHI*—Private health insurance; *NESB immigrant*—Immigrant from a country other than the main English-speaking countries. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.

estimates taking the opposite sign. Some factors that are significant determinants of dropping cover are not significant determinants of take-up, and vice versa. For demographic characteristics, we find that those aged under 45 in 2004 were much more likely to take up cover than those aged 45 and over, and that the probability of take-up was increasing in educational attainment. Couples who did not have children in 2004 were relatively likely to take up cover, while people in lone-parent families were much less likely than people in other family types to take up cover. Furthermore, people living outside the major urban areas in 2004 were considerably less likely to take up cover.

Changes between 2004 and 2009 found to significantly *increase* the probability of taking up cover are the Medicare Levy Surcharge applying in 2004 but not in 2009, the Medicare Levy Surcharge applying in 2009 but not in 2004 and becoming partnered. Changes between 2004 and 2009 found to significantly *decrease* the probability of taking up cover are a decrease in equivalised income, becoming single, becoming employed, and mental health as measured by the SF-36 declining significantly. In addition, changing jobs is associated with a significantly increased probability of taking up cover, while being a victim of a violent crime,

dismissal from a job and a major worsening of finances are all associated with a significantly decreased probability of taking up cover.

Discussion

A finding in Chapter 23 was that, notwithstanding regional differences, access to GPs appeared to be otherwise very good across the socio-economic and demographic spectrum. The findings in this chapter on the incidence of out-of-pocket expenses suggest that good access is perhaps in part due to effective targeting of full subsidisation of consultation fees. Nonetheless, and despite the heavy subsidisation of prescription medications for very low-income households, we also find that the share of the household budget allocated to health care is higher the lower the (equivalised) household income. With regards to the determinants of private health insurance cover, we find that the main drivers are life cycle stage, economic circumstances, family circumstances and health, all in the directions we should probably expect.

Reference

Australian Government Department of Health and Ageing (2011) *Medicare Statistics*, accessed October 2011, <<http://www.health.gov.au/internet/main/publishing.nsf/Content/Medicare+Statistics-1>>.

26. Expectations about health and length of life

A somewhat novel feature of Wave 9 was the inclusion of questions about health-related expectations—specifically, respondents' expectations of their health in four years time, and their assessment of their own life expectancy. Expectations about health in four years were obtained by first asking:

In general, how would you rate your health? Is it excellent, very good, good, fair or poor?

Respondents were then asked the following question, the wording of which depended on their response to the above question:

What do you think is the per cent chance that your health will

still be excellent (if currently excellent)

still be very good or better (if currently very good)

still be good or better (if currently good)

still be fair or better (if currently fair)

have improved significantly (if currently poor)

four years from now?

The question on life expectancy asked people under the age of 65 how likely (very likely, likely, unlikely or very unlikely) they thought it was that they would live to 75. For people aged 65–89, the question depended on their age: if aged 65–69, the respondent

was asked how likely it was they would live to 80; if aged 70–74, this was increased to 85; if aged 75–79, 90; if aged 80–84, 95; and if aged 85–89, the respondent was asked about reaching 100. Respondents aged 90 and over were not asked the question.

While health expectations will in most cases not represent a medically informed assessment, they are nonetheless likely to be important to the decisions people make about many aspects of their lives. Young people's education decisions, prime-age people's family formation, fertility and savings decisions, and older people's retirement decisions, are just some of the choices that are likely to be impacted by individuals' expectations about their health and about how long they expect to live. This information is therefore highly relevant to a study such as the HILDA Survey, which is very much concerned with behaviour and outcomes with respect to family life, incomes and the labour market.

In this chapter, we provide a statistical overview of the health expectations data collected, and how expectations differ depending on the characteristics of the individual. We also briefly examine the association between expectations and various health-related behaviours. However, we leave for future research the exploration of the linkages between expectations and family, income and labour market decisions.

Table 26.1: Per cent chance health will be as good or better in four years—Persons aged 15–89, 2009

	Per cent chance—Proportion in each range (%)					Mean per cent chance
	0	1–49	50–74	75–99	100	
Males	3.4	4.7	22.9	46.6	22.4	76.3
Females	3.8	4.5	24.1	44.4	23.1	75.6
Age group						
15–24	0.1	1.3	16.7	51.2	30.6	84.9
25–44	1.0	2.5	20.3	49.9	26.3	81.4
45–54	4.2	4.8	25.6	47.2	18.2	73.8
55–64	6.2	6.3	28.5	39.8	19.2	70.0
65–74	8.4	11.7	30.1	35.0	14.8	63.8
75–89	14.6	12.1	36.1	25.8	11.3	54.7

Health expectations

Table 26.1 summarises the distribution of responses to the question on expectations about health in four years time, showing the percentage of people in each of five categories (0 per cent chance, 1–49 per cent chance, 50–74 per cent chance, 75–99 per cent chance and 100 per cent chance), as well as the mean response. The upper panel compares males and females, while the lower panel compares responses across six age groups.

On average, both men and women assess the chances of their health remaining as it is (if currently fair or better) or improving (if currently very good or worse) in four years time to be just over 75 per cent. However, significant proportions assess this probability as less than 50 per cent: for males, this is 8.1 per cent, and for females it is 8.3 per cent. At the other end of the spectrum, 22.4 per cent of males and 23.1 per cent of females believe it is certain that their health will remain as it is or improve. The lower panel of Table 26.1 shows there are systematic differences in expectations by age, which are succinctly summarised by the mean assessment given for each age group in the right-most column. This shows the mean assessed percentage chance that one's health will remain as it is or improve is 84.9 for the 15–24 age group, 81.4 for the 25–44 age group, 73.8 for the 45–54 age group, 70 for the 55–64 age group, 63.8 for the 65–74 age group and 54.7 for the 75–89 age group. Note that this pattern of declining expectations is present despite conditioning on current health, which tends to be poorer the older the age group.

In Table 26.2, mean assessments of the per cent chance health will remain as it is or improve are compared across groups defined by category or level of self-assessed health, disability severity and Body Mass Index. Two measures of self-assessed health are presented in the table. The first is simply the responses to the question that immediately precedes the question on expectations for health in four years, while the second is the measure of general health derived from responses to the SF-36 Health Survey administered in the Self-Completion Questionnaire, divided into three categories: good

Table 26.2: Per cent chance health will be as good or better in four years—Persons aged 15 and over, 2009

	Mean per cent chance
All persons aged 15 and over	76.0
Self-rated health	
Excellent	90.8
Very good	83.3
Good	74.5
Fair	61.3
Poor	25.3
SF-36 measure of general health (0–100 scale)	
Good (Score ≥ 75)	86.3
Fair (Score ≥ 50 and < 75)	74.9
Poor (Score < 50)	54.9
Disability severity	
No disability	82.1
No restriction	73.3
Employment restriction only	56.8
Moderate core activity restriction	47.0
Severe core activity restriction	40.9
Body Mass Index (BMI) group	
Underweight (BMI < 18.5)	73.9
Normal range ($18.5 \leq \text{BMI} < 25$)	79.8
Overweight ($25 \leq \text{BMI} < 30$)	76.1
Obese (BMI ≥ 30)	72.4

(score of 75–100), Fair (score of 50–74) and poor (score less than 50). For both health measures, it is clear that an individual's prognosis is very strongly related to their current health. Specifically, the worse the current health, the lower the assessed chances of health remaining as it is or improving. This finding suggests that people tend to be overly influenced by their current health level when forming expectations about their future health: even though there is likely to be a reasonably high degree of persistence in health over time, it is not clear why that should translate to lower chances of *maintaining* current health the worse the current health (over the 'excellent' to 'fair' range).

Self-assessed chances of health remaining as it is or improving are likewise declining in disability severity. The mean per cent chance of health improving or remaining unchanged is 82.1 for people with no disability, 73.3 for people with a

disability that does not restrict them in employment or core activities (self-care activities, mobility activities and communicating in one’s own language), 56.8 for people with a disability that restricts them in employment but not core activities, 47 for people with a moderate core activity restriction, and 40.9 for people with a severe core activity restriction. Given the long-term nature of disabilities, and the tendency for disability prevalence and severity to increase with age, this pattern may reflect reasonably accurate assessments of future health prospects. Certainly, the view that people are overly influenced by current health cannot be assumed to translate to people being overly influenced by current disability.

The final panel of Table 26.2 examines mean expectation by BMI group: underweight, normal range, overweight and obese. Here, mean health expectations are consistent with the healthiness of each group. People in the normal range have the highest mean, followed by people in the overweight category, then people in the underweight category and finally people in the obese category.

Perceptions of own life expectancy

It might be expected that many people will find it difficult to provide an answer to a question on the likelihood of reaching a particular age, but in fact only 3 per cent of respondents were unable or unwilling to provide an answer to this question. Figure 26.1 presents the distribution of responses for the 97 per cent of respondents who did answer the question. It indicates quite different responses from men and women. Women are more likely

than men to believe it is very likely they will reach the relevant age and less likely to believe it is unlikely or very unlikely they will reach that age. This is of course consistent with the lower life expectancy of men.

Table 26.3 examines the proportion of people who believe it very likely or likely that they will reach the relevant age—that is, 75 for those aged 15–64, 80 for those aged 65–69, 85 for those aged 70–74, 90 for those aged 75–79, 95 for those aged 80–84 and 100 for those aged 85–89. The same comparisons are made in the table as were made in Table 26.2 for health expectations. Orderings by health status, disability status and even BMI group are all consistent with objective probabilities. That is, less-healthy people, people with more severe disabilities and people with less-healthy weight (underweight or obese) have a lower proportion believing it is likely that they will reach the relevant age. These patterns provide reassurance that the data generated by this question is meaningful, and is not simply reflecting differences in individuals’ inherent optimism or pessimism.

How do health behaviours correlate with expectations?

The HILDA Survey collected information on various health behaviours in Wave 9 (some of which are collected in every wave), including smoking, alcohol consumption, exercise, diet and dieting. Expectations about one’s health would seem to have the potential to impact on such health-related behaviours, with people with more adverse expectations perhaps adopting healthier behaviours. On

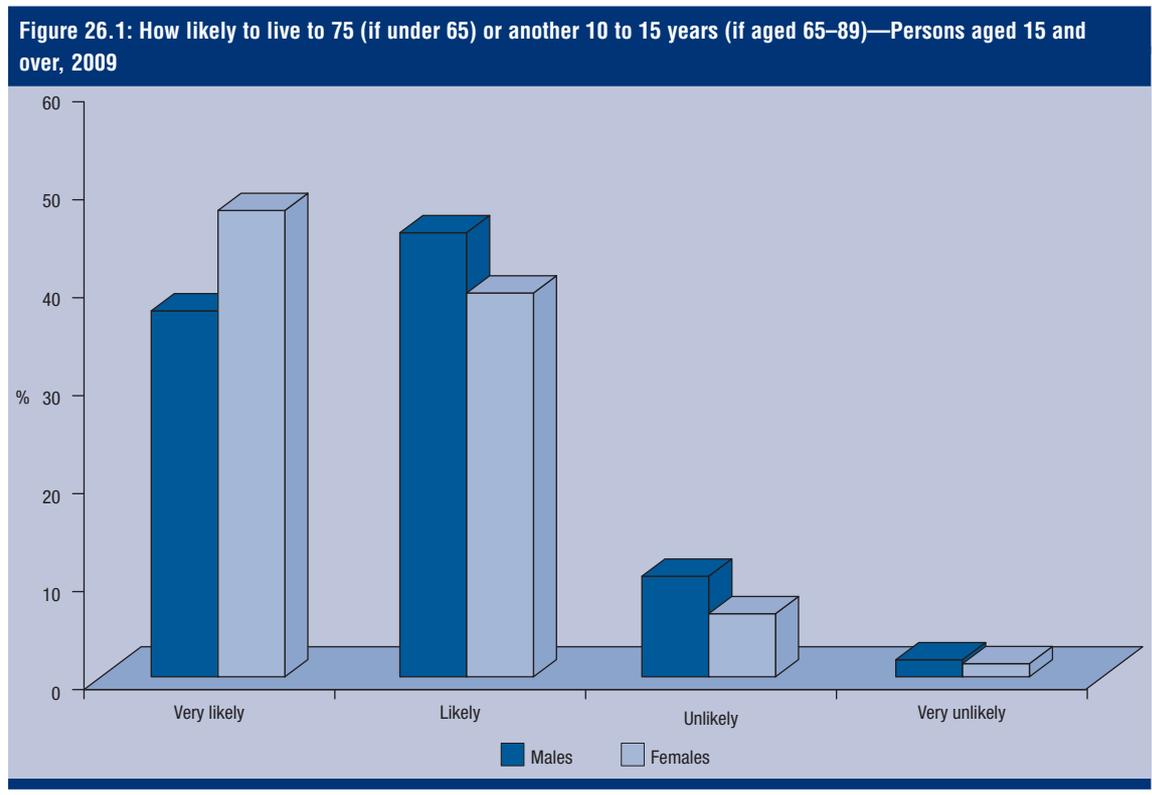


Table 26.3: Proportion believing it very likely or likely that they will to live to 75 (if under 65) or another 10 to 15 years (if aged 65–89)—Persons aged 15 and over, 2009

	Proportion (%)
Self-rated health	
Excellent	95.3
Very good	94.3
Good	86.1
Fair	65.1
Poor	45.9
SF-36 measure of general health (0–100 scale)	
Good (Score ≥ 75)	95.7
Fair (Score ≥ 50 and < 75)	84.6
Poor (Score < 50)	61.7
Disability severity	
No disability	91.2
No restriction	82.3
Employment restriction only	68.3
Moderate core activity restriction	59.0
Severe core activity restriction	48.6
Body Mass Index (BMI) group	
Underweight (BMI < 18.5)	67.8
Normal range ($18.5 \leq \text{BMI} < 25$)	85.1
Overweight ($25 \leq \text{BMI} < 30$)	85.6
Obese (BMI ≥ 30)	80.8

the other hand, health behaviours also have the potential to shape health expectations, with less-healthy behaviours leading to more adverse expectations. It is therefore unclear a priori the nature of the association, if any, we should expect to see between health behaviours and expectations.

In Table 26.4, we look to identify what associations do in fact hold, given the information on health behaviours and expectations available in the HILDA Survey data. For each of five categories of health expectations—three relating to the probability of health remaining as good or improving and two relating to the likelihood of living to 75 or another 10–15 years—the table presents the percentage of people engaging in each of nine health behaviours. For example, the first row reports the percentage of people identifying as smokers, firstly for all persons aged 40 years and over, then by level of self-assessed chances of health remaining as it is or improving in four years, and finally by whether the individual thinks it likely he or she will live to 75 or another 10–15 years.

The table contains four variables for healthiness of diet: very healthy; moderately healthy; unhealthy; and ‘other’. The variables are based on responses to questions about frequency of consumption of various food types. A very healthy diet is defined as one in which it is usual that no salt is added to food after cooking, and weekly food consumption contains at least 21 serves of vegetables and 14 serves of fruit, and fewer than five serves of cakes and biscuits, five serves of confectionery, five serves of chips and potatoes and five serves of processed meats. A moderately healthy diet is

defined as one that does not meet the criteria for a very healthy diet, but is one in which salt is only sometimes added to food after cooking, and weekly food consumption contains at least 14 serves of vegetables and seven serves of fruit, and fewer than seven serves of cakes and biscuits, seven serves of confectionery, seven serves of chips and potatoes and seven serves of processed meats. An unhealthy diet is defined as one in which usual weekly food consumption contains at no serves of vegetables or fruit, and contains at least seven serves of cakes and biscuits, confectionery, or chips and potatoes. Other diets are all diets that do not fit into any of the above categories. These are not comprehensive measures of healthiness of diet, and in particular take no account of the total energy content of the diet, arguably the most important factor determining healthiness of diet. Moreover, the thresholds for distinguishing levels of healthiness are somewhat arbitrary. Nonetheless, the information they provide on diet composition is an important aspect of diet healthiness.

Overall it appears that health behaviours tend to influence expectations rather than expectations influencing behaviour, since health behaviours are for the most part less healthy among those who have worse expectations. The proportion of people identifying as smokers is lower the greater the self-assessed chances of health remaining as it is or improving in four years, with smokers comprising 20.2 per cent of those in the 0–50 per cent category and only 12.8 per cent of those in the 81–100 per cent category. Moreover, smokers comprise 21.4 per cent of those who think it unlikely or very unlikely they will live to 75 or another 10–15 years, and 15 per cent of those who think it likely or very likely. A similar pattern is evident with respect to having an ‘unhealthy’ or ‘other’ diet, while the reverse pattern—but implying the same type of association between behaviours and expectations—is evident for those who regularly exercise and those who have a ‘very healthy’ or ‘moderately healthy’ diet.

People currently on a diet to lose weight, and people who have been a diet to lose weight more than once in the last 12 months, are slightly over-represented in the middle (51 to 80 per cent) category for expectations of health in four years, and slightly under-represented in the bottom and top categories—that is, they are less likely to have very negative or very positive expectations of their health over the next four years. Dieting has a less ambiguous association with life expectancy, with dieters slightly more likely to think it likely or very likely they will live to at least 75 (if under 65) or for at least another 10–15 years (if 65 or over).

The only health behaviour where the negative association between less-healthy behaviours and more adverse expectations does not appear to hold is for consumption of alcohol, there being no

Table 26.4: Health behaviours by level of health expectations—Persons aged 40 and over, 2009 (%)

	Percentage of all persons	Self-assessed probability of health remaining as good or improving			Likelihood of living to 75 or another 10 to 15 years	
		0–50%	51–80%	81–100%	Unlikely	Likely
Smoker	15.8	20.2	15.4	12.8	21.4	15.0
Regular drinker	20.8	19.0	21.6	21.5	21.2	20.8
Regularly exercise	48.1	35.3	50.3	55.9	35.2	51.1
Very healthy diet	4.9	3.1	5.0	6.0	3.7	5.0
Moderately healthy diet	25.2	21.0	26.8	27.0	21.6	26.0
Unhealthy diet	2.6	3.5	2.9	1.7	4.7	2.3
Other diet	67.3	72.4	65.3	65.2	70.0	66.6
Currently on a diet	15.8	15.5	16.7	15.2	14.3	16.3
Frequently on a diet	30.3	28.3	32.1	30.1	26.0	31.3

evidence that expectations differ for regular drinkers (people who usually consume alcohol on at least five days per week) from other people. That is, regular drinkers represent a very similar proportion of each category of health expectations. Note, however, that our measure of alcohol consumption simply captures frequency of consumption and does not take into account the amount consumed on each day. It may be that heavy consumption on each day is associated with adverse expectations.

Determinants of expectations about length of life

In Table 26.5 we probe further into the factors affecting individuals' assessments of their likelihood of living to 75 or, if 65 years and over, their likelihood of living another 10–15 years. For this analysis, we restrict the sample to people aged 40 years and over, on the basis that assessments such as these are likely to be less meaningful for younger people. The table reports estimates of the effects of various factors (characteristics) on the probability of believing it very likely or likely that one will live to the relevant age. For example, the estimate for 'male' indicates that, holding all else constant, the mean effect of 'being male' is to decrease the probability of believing it very likely or likely that one will live to 75 or another 10–15 years by 3.3 percentage points. We can also interpret this estimate as capturing the direction of the effect of the characteristic 'being male' on an individual's 'subjective life expectancy'. Thus, a negative estimate corresponds to a lower life expectancy and a positive coefficient corresponds to a higher life expectancy. Thus men have a lower subjective life expectancy than women, which—as noted earlier—is consistent with their lower *objectively* measured life expectancy.

Subjective life expectancy has an interesting relationship with age, since those aged 55–64 years have a higher life expectancy than those aged 40–54. This may be because they are closer to reaching age 75 and therefore can make an assessment with greater confidence; another way of looking at it is that those aged 55–64 are only

being asked how likely it is they will live another 10–20 years, whereas those aged 40–54 are being asked how likely it is they will live another 20–35 years. Note that interpretation of the effects for other factors included in the model is less difficult, because there is not the systematic variation in the meaning of the question about life expectancy that arises when comparing across age groups.

Educational attainment to the level of a bachelor's degree or higher is associated with higher subjective life expectancy, but no significant effects are in evidence for other demographic characteristics—partner status, place of birth and Indigenous status and region of residence. Furthermore, no significant differences by level of equivalised income are evident. Employed people, whether full-time or part-time employed, and those not in the labour force do not significantly differ in their subjective life expectancy, holding other factors constant, but being unemployed is associated with lower life expectancy.

A variety of health-related measures are also included in the model, and here we see significant impact of a number of variables. There is a strong positive association between an individual's SF-36 measure of general health and subjective life expectancy, and self-rated health (from poor through to excellent) is similarly positively associated with life expectancy, with the exception that individuals rating their health as very good on average have a higher proportion believing it very likely or likely they will live to 75 or for at least another 10–15 years than do individuals rating their health as excellent. Importantly, no significant effects of disability (or disability severity) are evident, and mental health is likewise found not to impact on subjective life expectancy. Dummy indicators for the 10 specific medical conditions identified in Wave 9 are included in the model, showing that cancer, Type 1 diabetes, depression or anxiety, heart disease, hypertension and other circulatory conditions have significant negative effects on subjective life expectancy. No significant effects are found for arthritis or osteoporosis, bronchitis or emphysema and Type 2 diabetes, while asthma and other mental illness are

associated with positive impacts on life expectancy. Differences by BMI group are largely not statistically significant, with the exception that those who are overweight have a slightly higher probability of believing it likely they will reach the relevant age. Perceiving oneself to be overweight is not associated with a significant effect on subjective life expectancy.

Variables for various health behaviours were also included in the model. Individuals with an ‘unhealthy’ diet and smokers have significantly lower subjective life expectancy, but regular drinkers of alcohol, defined by usually consuming alcoholic drinks on five or more days per week,

do not, and people who exercise regularly (at least three times per week) do not have a significantly different subjective life expectancy. Measures of the ‘Big Five’ personality traits were also included in the model (see Chapter 27 of this report for details on their construction and interpretation), primarily as a means of controlling for their potential effects on subjective assessments of likelihood of reaching a particular age. Only for one trait is a significant effect found—agreeableness, which is positively associated with the probability an individual thinks it likely or very likely they will live until at least 75 or at least another 10–15 years.

Table 26.5: Determinants of the probability of it being ‘very likely’ or ‘likely’ one will live to 75 (if under 65) or another 10 to 15 years (if 65 and over)—Persons aged 40–89 years, 2009

	Estimate		Estimate
Male	-0.033	<i>Mental health (SF-36: 0–100 scale)</i>	
<i>Age group (Reference category: 40–44)</i>		<i>(Reference category: Good (Score ≥ 75))</i>	
45–54	-0.012 ⁺	Poor (Score < 50)	-0.013 ⁺
55–64	0.054	Fair (Score ≥ 50 and < 75)	0.012 ⁺
65–74	-0.019 ⁺	<i>Self-rated health (Reference category: Excellent)</i>	
75–89	-0.169	Very good	0.039
Partnered	-0.010 ⁺	Good	0.009 ⁺
<i>Place of birth/Indigenous status</i>		Fair	-0.045
<i>(Reference category: Non-Indigenous Australian-born)</i>		Poor	-0.086
ESB immigrant	-0.010 ⁺	<i>Medical conditions</i>	
NESB immigrant	0.019 ⁺	Arthritis or osteoporosis	-0.002 ⁺
Indigenous	-0.029 ⁺	Asthma	0.043
<i>Educational attainment</i>		Cancer	-0.063
<i>(Reference category: No post-school qualifications)</i>		Bronchitis or emphysema	-0.040 ⁺
Degree or higher	0.034	Type 1 diabetes	-0.112
Other post-school qualification	-0.008 ⁺	Type 2 diabetes	0.005 ⁺
<i>Region (Reference category: Major urban)</i>		Depression or anxiety	-0.032
Other urban	-0.011 ⁺	Other mental illness	0.076
Other region	-0.008 ⁺	Heart disease	-0.043
<i>Equivalised income quintile</i>		Hypertension	-0.019
<i>(Reference category: Top quintile)</i>		Other circulatory condition	-0.053
Bottom	-0.020 ⁺	<i>Body Mass Index (BMI) group (Reference category: Normal range)</i>	
2nd	0.000 ⁺	Underweight (BMI < 18.5)	-0.028 ⁺
3rd	-0.025 ⁺	Overweight (25 ≤ BMI < 30)	0.024
4th	-0.021 ⁺	Obese (BMI ≥ 30)	-0.008 ⁺
<i>Labour force status</i>		Perceive self to be overweight	-0.016 ⁺
<i>(Reference category: Not in the labour force)</i>		<i>Diet (Reference category: Other diet)</i>	
Employed full-time	0.004 ⁺	Unhealthy diet	-0.069
Employed part-time	0.016 ⁺	Moderately healthy diet	-0.005 ⁺
Unemployed	-0.058	Very healthy diet	-0.017 ⁺
<i>Disability severity</i>		Smoker	-0.064
<i>(Reference category: No disability)</i>		Drink regularly	-0.005 ⁺
No restriction	-0.018 ⁺	Exercise regularly	0.003 ⁺
Work restriction only	-0.017 ⁺	<i>Personality</i>	
Moderate core activity restriction	-0.027 ⁺	Extroversion	0.006 ⁺
Severe core activity restriction	-0.023 ⁺	Agreeableness	0.017
<i>General health (SF-36: 0–100 scale)</i>		Conscientiousness	0.001 ⁺
<i>(Reference category: Good (Score ≥ 75))</i>		Emotional stability	-0.003 ⁺
Poor (Score < 50)	-0.147	Openness to experience	0.002 ⁺
Fair (Score ≥ 50 and < 75)	-0.081		
Number of observations	6,295		

Notes: Estimates are mean marginal effects obtained from a probit model of the probability of believing it very likely or likely that one will reach the specified age. NESB immigrant—Immigrant from a country other than the main English-speaking countries. + indicates the estimate is not significantly different from zero at the 10 per cent level.

Concluding comments

Expectations about one's health and length of life are likely to be very important to decisions about many life domains. While it is quite difficult to elicit health expectations from people, the evidence presented in this chapter suggests that the HILDA Survey has managed to collect meaningful information. Expectations vary systematically with

characteristics such as current health and healthiness of lifestyle and do not seem to be strongly related to characteristics that should not (directly) impact on future health outcomes, such as place of birth. Future research investigating the determinants of individuals' family, labour market and financial decisions is therefore likely to benefit from drawing on this data.

Other Topics

27. Hours of work and job mobility

Mark Wooden

During the economic downturn that took place in the wake of the Global Financial Crisis (GFC) of 2009 much was made of the resilience of the Australian labour market. Unlike many other industrialised economies, employment remained relatively strong. The proportion of the population in employment, for example, fell by only a little more than 1 percentage point—from 62.8 per cent in August 2009 (seasonally adjusted) to 61.5 per cent one year later. Since then this ratio has slowly been improving, reaching 62.4 per cent by February 2011. Similarly, while the unemployment rate rose from 4.1 per cent to 5.8 per cent over just a nine-month period, by the end of 2010 it was back to 5.0 per cent, which relative to both recent history and other industrial nations, is quite low (though in the view of this writer, still a long way short of ‘full-employment’—a view supported by Connolly (2011)).¹

Employment-based measures, however, do not provide a complete picture of labour market adjustment, and it is widely believed that job losses have been offset by reductions in working hours. Indeed, some commentators have gone further, claiming that job losses were mitigated by de facto work sharing.² Labour Force Survey data from the Australian Bureau of Statistics are consistent with this picture, with average usual weekly hours worked falling from 36.9 in August 2008 to 36.2 by early 2009, and some two years later were still only at 36.4.

This change in hours worked, however, is not large. Indeed, relative to other OECD countries, the reduction in hours worked during 2009 and 2010 in Australia was very small (see OECD, 2010, p. 28, Figure 1.6). Furthermore, on their own these trends tell us nothing about whether the reductions in hours have been the result of employers cutting the hours of existing workers, or the result of changes in the composition of employment.

We can, however, get an idea of the role that reductions in hours played in the ‘recession’ and the subsequent recovery through use of the HILDA Survey data. Specifically, the HILDA Survey data enable us to identify not just whether and how much usual hours of worked changed, but whether the reductions in hours were concentrated on workers within firms or on workers who changed firms.

We begin by considering the sub-population of persons in employment at one survey wave and their labour market outcome in terms of job mobility (whether they changed employer) and mobility in usual weekly work hours at the next wave. For ease of exposition we identify three categories of workers based on changes in their usual weekly hours: those whose hours did not change; those whose hours increased; and those whose hours declined. Given the strong likelihood of reporting errors (since all data are based on respondent self-reports), we have somewhat arbitrarily defined any person who reports a change of two hours or less as not having had a change in hours. In other words the ‘no change’ category includes persons whose hours do vary, but not by very much.

Table 27.1 shows how the employed at one survey wave are distributed according to the change in their labour market situation as measured at the next survey wave. The table reports data for both men and women and for three successive one-year periods covering survey Waves 6 to 9. Most interviews are conducted in the last four months of the year, so ‘W6–W7’ covers the period late 2006 to late 2007 and hence occurs entirely prior to the GFC. Wave 8 occurs during the peak of the GFC. Employment effects, however, took more than a few months to manifest and hence it is the period ‘W8–W9’ (late 2008 to late 2009) when any

Table 27.1: Hours and job mobility by gender (%)

Change in labour market situation	Men			Women		
	W6–W7	W7–W8	W8–W9	W6–W7	W7–W8	W8–W9
Same employer, same hours	38.4	39.6	39.4	36.1	36.6	38.6
Different employer, same hours	3.7	4.8	4.4	4.2	3.6	3.1
Same employer, more hours	19.3	19.4	20.0	20.9	20.4	20.7
Same employer, fewer hours	20.4	20.3	21.3	18.6	19.0	19.2
Different employer, more hours	6.7	6.3	4.1	6.8	6.5	5.0
Different employer, fewer hours	5.6	3.9	4.5	5.4	5.6	3.8
Exit from employment	6.0	5.8	6.4	8.0	8.3	9.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes: A change in hours is defined as any change in usual weekly hours of 3 hours or more. W6—Wave 6; W7—Wave 7; W8—Wave 8; W9—Wave 9. Percentages may not add up to 100 due to rounding.

effects of the GFC on the labour market are likely to be most apparent.

The figures reported in Table 27.1 show clearly the effects of the GFC. Most obviously, the rate of job loss (exits from employment) increased between Wave 8 and Wave 9; 6.4 per cent of men, and 9.6 per cent of women, who were employed at Wave 8 were no longer working by Wave 9. This compares with rates of 5.8 per cent and 8.3 per cent in the preceding year. The magnitudes of these effects, however, are not large, consistent with the notion that the effects of the GFC on the Australian labour market were modest (in stark contrast to the experience of the United States and some other OECD countries).

Also as expected, rates of job-to-job mobility declined, and in this case the magnitude of the decline is considerable. Thus 13 per cent of men were job mobile between Waves 8 and 9, compared with 15 per cent between Waves 7 and 8, and 16 per cent between Waves 6 and 7. For women the comparable figures are 11.9 per cent, 15.6 per cent and 16.0 per cent.

Of most relevance to this discussion, Table 27.1 also reveals significant levels of annual variations in working hours. Between Wave 8 and Wave 9 around half of all workers (both men and women) reported a change in usual weekly hours of three hours or more, and the bulk of these changes occur without the worker changing employer. These changes, however, occur in both the upwards and downwards directions. Indeed, among women, an increase in hours was still more likely than a reduction.

Evidence in support of the de facto work sharing thesis is found in the form of a rising proportion of workers that remained with the same employer but reported that their weekly working hours had declined. This evidence, however, is far from compelling. Prior to the GFC, 20.4 per cent of male workers reported declines in working hours over a (roughly) one-year period while remaining with their same employer. During the post-GFC period this rose by less than 1 percentage point, to 21.3 per cent. Among women the increase is even smaller—from 18.6 per cent to 19.2 per cent. Furthermore, among men at least, the proportion whose hours increased also rose. Decreasing work hours for some thus coexist with increasing work hours for others.

So was there any sizeable cushioning effect on unemployment from any trend towards an increase in the use of de facto work sharing by firms? If we attribute all of the growth in the share of workers who remain with the same firm and report fewer hours to de facto work sharing, then a simplistic accounting exercise (that also takes into account the mean change in hours worked) suggests that around the equivalent of 61,500 full-time equivalent jobs might have been saved. This in turn would

have meant the unemployment rate might have been about 0.5 of a percentage point higher than it otherwise was; a very sizeable effect indeed.

There are, however, at least two reasons why this estimate is much overstated. First, and as already noted, at the same time as hours were declining for some workers, for others they were rising. It thus may be fairer to subtract from the 61,500 jobs estimate the increase in the number of workers whose hours actually increased. This reduces the number of estimated jobs saved to less than 21,000.

Second, some of the reduction in hours would have occurred among persons working quite long hours every week. Reductions in the hours of these workers are unlikely to have any effect on business costs and hence it is difficult to see how such reductions could save jobs. Indeed, the HILDA Survey data indicate that of those workers whose hours were reduced between Wave 8 and Wave 9, just over 60 per cent were working more than 40 hours per week in Wave 8. Further, approximately 54 per cent of total hours cut lay in the range of 40 per week or more.

In summary, the HILDA Survey data show that a within-firm shift towards shorter work hours did occur in Australia following the GFC, but the size of this effect appears to have been modest. Our best guess based on the HILDA Survey evidence is that, without this change in working hours patterns, the official unemployment rate estimate would have been higher, but not by much—around 0.1 of a percentage point higher, and certainly no higher than 0.2 of a point.³

Endnotes

- 1 All data reported on here come from the Australian Bureau of Statistics, *Labour Force, Australia* (Catalogue No. 6202.0), Time Series Spreadsheets.
- 2 For a discussion of this explanation and how it has played out in the Australian media, see Long (2010).
- 3 Note, however, that the Australian Government, in its 2010–11 Budget Papers (see Box 7 of Budget Paper No. 1), presented cross-sectional ABS data showing that the reduction during the downturn in average hours worked by employed persons was equivalent to 200,000 jobs, which roughly translates to reducing the unemployment rate by 1.7 percentage points.

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28. The stability of personality traits

Mark Wooden

As discussed in a previous report in this series (Headey and Warren, 2009, pp. 118–22), an innovation of Wave 5 was the inclusion of a question (in the self-completion questionnaire) comprising a battery of items intended to measure the main, or Big Five, personality traits in the population—emotional stability (often known by its antithesis, neuroticism), extroversion, openness to experience, agreeableness, and conscientiousness. This question was repeated for the first time, four years later, in Wave 9.

Personality traits are generally described as relatively enduring patterns of thoughts, feelings and behaviour (Roberts, 2009), implying that they should be relatively stable over time, and for the most part research is consistent with this hypothesis (Roberts and DelVecchio, 2000). Nevertheless, most of this research evidence is drawn from small, unrepresentative samples (though, Lee and Hotopf (2005) is a notable exception). The HILDA Survey data thus provide us with an opportunity to test this hypothesis in a large nationally representative population sample.

Measuring personality traits

In the HILDA Survey the Big Five personality traits are measured using the trait descriptive adjectives approach.

Respondents are given a list of words and asked to indicate how well those words describe them on a seven point scale, ranging from ‘does not describe me at all well’ to ‘describes me very well’. Only the extreme values are labelled. The approach used is closely based on that used by Saucier (1994), with many, but not all, of the adjectives included in the HILDA Survey questionnaire drawn directly from the 40-item inventory developed by Saucier. The HILDA Survey only includes 36 items (i.e. descriptive adjectives), only 28 of which are actually used in the derived scales. Scores for each of the five scales are constructed by simply assigning values of 1 through 7 to each item, summing, and then

averaging to obtain an average score also ranging between 1 and 7.¹

The final composition of the scales is provided in Table 28.1, along with the derived reliability coefficients for each survey wave. The reliability coefficient is a measure of the internal consistency of a scale. It ranges between 0 and 1, with values around 0.8 widely regarded as extremely good. As can be seen, the reliability coefficients vary between 0.74 and 0.81, which is perfectly acceptable. Further, the reliability coefficients obtained from Wave 9 data are almost identical to the reliability coefficients obtained from Wave 5 data, providing additional evidence of the robustness of these scales.

Change and variability over time

We begin our consideration of change between the two survey waves by presenting, in the top half of Table 28.2, the mean change in scores on each of the personality dimension scores, disaggregated by age. As can be seen, the average change in these scores is not large. Indeed, the only changes of any note are the rise in conscientiousness among the youngest sample members (persons under the age of 25 in Wave 5), and the decline in openness, agreeableness and conscientiousness among the oldest cohort (persons 75 years and over in Wave 5), and even these changes are not large. All other changes are less than 0.15 in magnitude, and most are within 0.05.

Mean change, however, reveals nothing about the variability in the data, given small changes in the mean can coexist with large variations in both the upwards and downwards direction. To assess stability we thus measure how correlated individual scores are across the two waves using the Spearman’s rank-order correlation coefficient (which is designed for ordinal data). Like all measures of correlation this ranges between 0 and 1, with large coefficients (e.g. in excess of 0.6) indicating that scores in Wave 5 and Wave 9 tend to be similar. Indeed, the squared value of the correlation coefficient indicates the proportion

Table 28.1: ‘Big Five’ personality measures: Trait adjectives and reliability

<i>Emotional stability</i>	<i>Extroversion</i>	<i>Openness to experience</i>	<i>Agreeableness</i>	<i>Conscientiousness</i>
Trait adjectives				
Envious (–)	Talkative (+)	Deep (+)	Sympathetic (+)	Orderly (+)
Moody (–)	Bashful (–)	Philosophical (+)	Warm (+)	Systematic (+)
Touchy (–)	Quiet (–)	Creative (+)	Kind (+)	Inefficient (–)
Jealous (–)	Extroverted (+)	Intellectual (+)	Cooperative (+)	Sloppy (–)
Temperamental (–)	Shy (–)	Complex (+)		Disorganised (–)
Fretful (–)	Lively (+)	Imaginative (+)		Efficient (+)
Reliability (Cronbach’s alpha)				
0.81 (W5)	0.74 (W5)	0.74 (W5)	0.78 (W5)	0.78 (W5)
0.81 (W9)	0.74 (W9)	0.75 (W9)	0.79 (W9)	0.78 (W9)

Note: W5—Wave 5; W9—Wave 9.

of the variance in the personality score at time 2 (Wave 9) that is explainable by the personality score at time 1 (Wave 5).

These correlation coefficients are reported in the bottom half of Table 28.2, and with one exception are all in excess of 0.5. Most are in excess of 0.6 and a number are in excess of 0.7.

While high, they all fall well short of unity, which others have suggested supports the contention that personality traits never stop changing (Roberts and DelVecchio, 2000). On the other hand, much of this variability is just the result of the inherent measurement noise in the data (bearing in mind the highly subjective and reported nature of the data). In this light, correlation coefficients in the vicinity of 0.6 and 0.7 seem quite high.

Trait consistency and age

As found in previous research, for all five personality dimensions the correlation coefficients are all noticeably lower among the youngest sample members (i.e. persons aged 15–24 years) when compared with older prime-age people. Such findings are consistent with the notion that personalities develop most during childhood and adolescence.

But there is also evidence that personalities become more variable at the other end of the age distribution, with correlation coefficients typically declining after age 65. Within the age range 25–64 years, however, the correlation coefficients are quite similar, indicating that for this very large subset of the population the personality scores of most individuals do not change much over time (or at least not over the four-year window observed here).

Trait consistency and gender

Finally we look, in Table 28.3, at differences between men and women. We first report simple mean scores. As can be seen, women score higher than men on all dimensions except openness to experience. Further, these differences, while arguably quite small, are all significantly different.

We next report the correlation coefficient as an indicator of trait consistency. Somewhat surprisingly, and contrary to previous research, reports on the personality measure used in the HILDA Survey are noticeably less variable over time (i.e. the correlation coefficient is higher) for women than for men. Apparently, the personalities of women are more stable over time than men. Further, while these differences are most pronounced among the

Table 28.2: Stability in ‘Big Five’ personality measures between Wave 5 and Wave 9, by age

Age (group) in Wave 5	Personality dimension				
	Emotional stability	Extroversion	Openness to experience	Agreeableness	Conscientiousness
Change in mean value of personality scale between Waves 5 and 9					
15–24	0.12	–0.06	–0.07	–0.01	0.24
25–34	0.12	–0.05	–0.08	0.00	0.01
35–44	0.07	–0.02	–0.03	0.00	0.03
45–54	0.12	0.00	–0.04	0.03	0.04
55–64	0.08	–0.04	–0.11	–0.04	–0.04
65–74	0.08	–0.03	–0.09	–0.05	–0.07
75 and over	0.06	–0.02	–0.21	–0.21	–0.18
Total	0.09	–0.03	–0.07	–0.02	0.03
Correlation coefficient (Spearman’s rho) between Waves 5 and 9					
15–24	0.49	0.63	0.61	0.52	0.56
25–34	0.59	0.75	0.70	0.61	0.69
35–44	0.62	0.77	0.72	0.66	0.71
45–54	0.65	0.75	0.74	0.63	0.73
55–64	0.66	0.75	0.72	0.61	0.70
65–74	0.65	0.71	0.62	0.56	0.67
75 and over	0.55	0.59	0.60	0.54	0.64
Total	0.64	0.73	0.70	0.60	0.69

Table 28.3: ‘Big Five’ personality measures and gender

	Personality dimension				
	Emotional stability	Extroversion	Openness to experience	Agreeableness	Conscientiousness
Mean score over both Wave 5 and Wave 9					
Men	5.17	4.25	4.25	5.14	5.00
Women	5.28	4.51	4.13	5.59	5.19
Correlation coefficient (Spearman’s rho) between Waves 5 and 9					
Men	0.63	0.71	0.67	0.57	0.67
Women	0.65	0.74	0.72	0.59	0.70

very young, they are reasonably constant across all age groups.

Endnote

1 For details on the methods used to select the items included in the scales, see Summerfield (2010).

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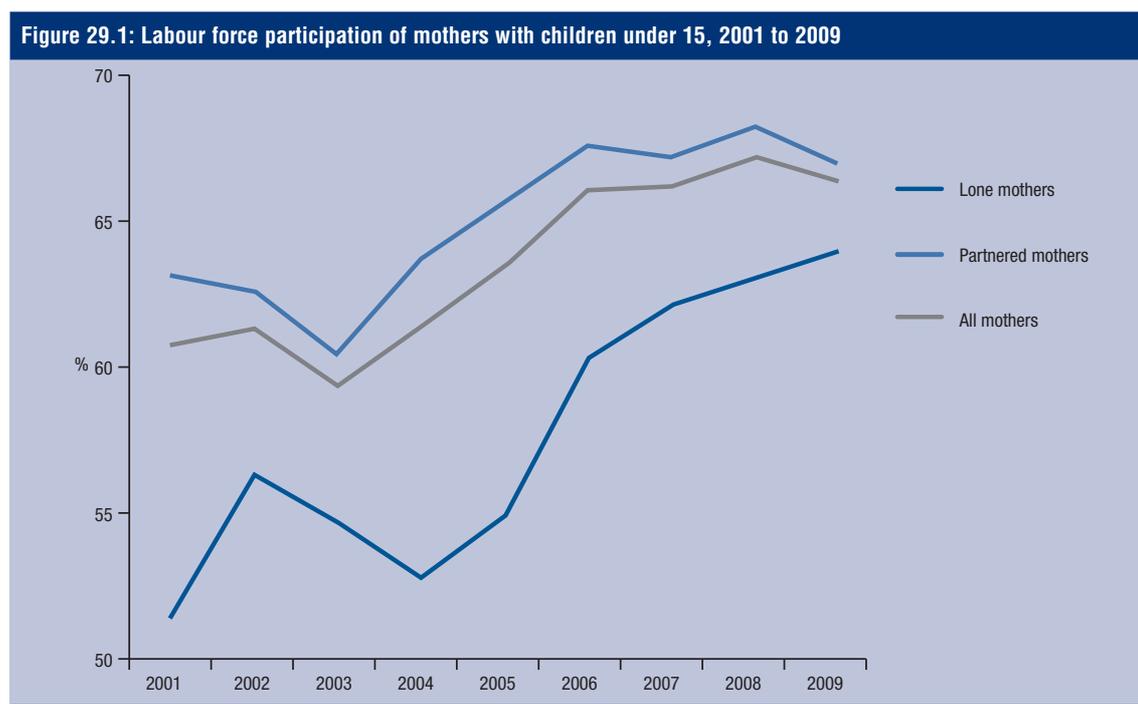
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29. Employment transitions of mothers

For parents, combining work and family responsibilities can be difficult and stressful. This is particularly the case for mothers returning to work after the birth of a child. While some mothers feel they have to return to work because they need the extra income, others choose to return to work because they enjoy their job, it gives them a break from full-time caring responsibilities, or they fear that spending too much time out of the workforce will be detrimental to their career. This article focuses on the labour force transitions of mothers, that is, changes between full-time employment, part-time employment and non-employment.

During the nine years from 2001 to 2009, labour force participation rates of mothers with children under the age of 15 increased from 61 per cent to 66 per cent. Figure 29.1 shows that the increase in labour force participation was most dramatic among lone mothers, with the proportion who were either employed or seeking employment increasing from 51 per cent in 2001 to 64 per cent in 2009. For partnered mothers, participation rates increased from 63 per cent in 2001 to 67 per cent in 2009.

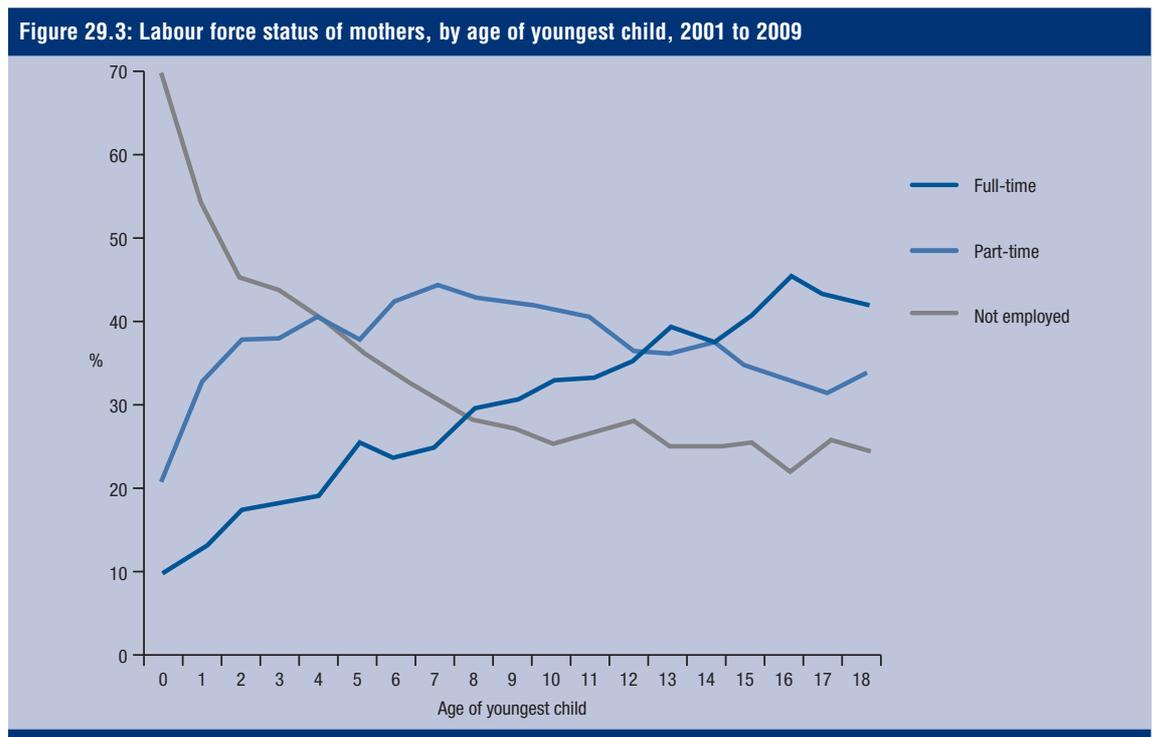
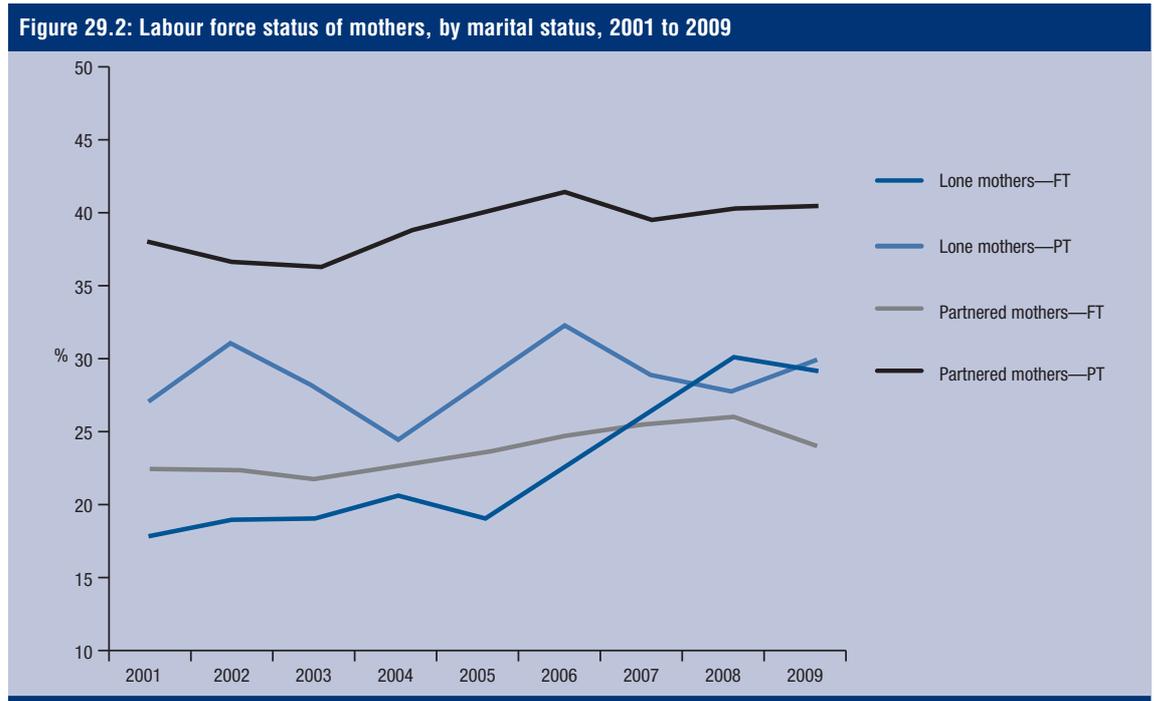
This increase in labour force participation among mothers is likely to be a result of a combination of



factors, including better economic conditions, the need for extra income for the family, a preference for shorter career breaks after the birth of a child and policy changes such as the introduction of the child care tax rebate in July 2004 and its subsequent increase from 30 per cent to 50 per cent in 2008, and the changes in eligibility for Parenting Payments which were part of the *Welfare to Work* changes introduced in 2006.

The proportion of partnered and lone mothers working full-time and part-time over the nine-year

period from 2001 to 2009 is shown in Figure 29.2. For partnered mothers, the proportion in full-time employment remained relatively stable, increasing from 22 per cent in 2003 to 26 per cent in 2008 and falling to 24 per cent in 2009. For lone mothers, the proportion in full-time employment remained quite steady at around 20 per cent between 2001 and 2005, but rose to 23 per cent in 2006—the year that *Welfare to Work* policy changes were introduced—and continued to increase so that by 2008, the proportion of lone mothers in full-time employment was 30 per cent.



Of course, the labour force participation of mothers, and their choice of whether to work full-time or part-time depends to a large extent on their caring responsibilities, and hence the age of their children. The labour force status of mothers, according to the age of their youngest child, averaged over the nine-year period from 2001 to 2009, is shown in Figure 29.3.

As one might expect, the proportion of mothers in both full-time and part-time employment increases, and the proportion who are not working decreases, with the age of their youngest child. Among mothers whose youngest child was less than 1 year old at the time of interview, 10 per cent had returned to full-time work, 20 per cent were working part-time and 70 per cent were not employed. By the time their youngest child had reached the age of 2, only 45 per cent of mothers were not employed, with 38 per cent working part-time and 17 per cent working full-time. Just over 40 per cent of mothers whose youngest child was 4 years old were working part-time, and almost 20 per cent were in full-time employment.

Many children begin their first formal year of primary school, at the age of 5.¹ It appears from Figure 29.3 that some mothers make a transition from part-time work to full-time work at around this time, while others remain in part-time employment until their youngest child has started high school. The proportion of mothers in full-time employment increases from 19 per cent of those whose youngest child is 4 years old to 25 per cent of those whose youngest child is aged 5; and increases steadily with the age of the youngest child. Among mothers whose youngest child is 13 years old, 39 per cent work full-time and 37 per cent are in part-time employment.

In Table 29.1, we examine the transitions between full-time work, part-time work and non-employment for mothers, according to the age of their youngest child, and averaged over the nine-year period from 2001 to 2009.

Among mothers whose youngest child was less than 1 year old, 31 per cent of those who were in full-time work in the previous year were still working full-time, 22 per cent had moved to part-time work and 47 per cent had not yet returned to work. Of those who were working part-time in the year before their youngest child was born, 49 per cent were still in part-time employment and 47 per cent had not yet returned to work. However, among mothers who were not employed in the year before their youngest child was born, 92 per cent were not working one year later.

Table 29.1 shows that there is quite a lot of movement between labour force states among mothers whose youngest child is 1 year old. Among mothers who were working full-time hours the year before, 39 per cent had reduced their working hours to part-time and a further 15 per cent were no longer

in paid employment. For some of these mothers, this reduction in working hours or complete withdrawal from the labour force may reflect a desire for a better work-family balance. Among mothers who were working part-time in the previous year, 15 per cent had increased their working hours to full-time and 16 per cent were no longer employed. Only 7 per cent of mothers who were not employed in the previous year had moved into full-time employment, but 23 per cent were now working part-time.

By the time the youngest child is 2 or 3 years old, transitions between labour force states become less common, with almost 80 per cent of mothers remaining in the same labour force state as the previous year. As children approach school age, persistence in labour force states becomes even higher. For example, among mothers whose youngest child is between 6 and 7 years old, 82 per cent of mothers who were in full-time employment in the previous year were still working part-time, and the figure is the same for persistence in part-time employment. There is also some evidence of mothers returning to the labour force once their child reaches primary school age, with 22 per cent of mothers who were not employed in the previous year moving into part-time employment and a further 4 per cent employed full-time.

Presumably, many women eventually return to the work pattern they had prior to having children. That is, one might expect that, due to differences in preferences about work and working hours, women who were not working before their youngest child was born would be less likely to have moved into full-time employment than a mother who was working full-time in the year before her youngest child was born. Table 29.2 shows the employment status of mothers according to the age of their youngest child and their employment status in the year before their youngest child was born.

It appears that the majority of mothers do eventually return to the working situation they were in before the birth of their youngest child. Among mothers who were working full-time before their youngest child was born, 31 per cent were back in full-time employment before that child was 1 year old, 54 per cent had returned to full-time employment before the child was 4 years old and 63 per cent were working full-time before their youngest child had reached the age of 6. Similarly, among mothers who were working part-time before the birth of their youngest child, 71 per cent were back in part-time employment when their child was aged 4 or 5. However, among mothers who were not employed in the year before their youngest child was born, the proportion who remain in this employment state decreases with the age of the youngest child, from 92 per cent of mothers whose youngest child has not yet reached the age of 1, to 40 per cent of

mothers whose youngest child is aged 6 or 7. For some, this may be a result of a decision not to return to paid work until their youngest child begins primary school. For others, the decision not to work in the year before the birth of their youngest child may have been because they were caring for their existing children, rather than a long-term preference for not working.

Of course, there are many other factors which affect the decision about whether to work, and the number of hours worked. In Table 29.3, the employment status of mothers is compared according to individual characteristics such as age, number of children and education level as well as household characteristics, including region of residence and partner's labour force status.

The proportion of mothers in full-time employment increases with age, from only 11 per cent of mothers under the age of 25 to 29 per cent of mothers in the 45–54 age group. In general, the proportion of mothers in part-time work also increases with age. However, the proportion of mothers working part-time is lower among those aged between 45 and 54 than for mothers in the 35–44 age group, possibly because the decreasing demands of children as they become older and more independent make it easier for mothers to move to full-time employment.

As Figure 29.3 has already shown, the proportion of mothers in full-time employment increases with the age of the youngest child, while the proportion of mothers who are not employed decreases

Table 29.1: Annual labour force transitions of mothers by age of youngest child, 2001 to 2009 (%)

Employment status in the previous year	Current employment status			Total
	Full-time	Part-time	Not employed	
Youngest child less than 1 year old				
Full-time	30.8	21.8	47.4	100.0
Part-time	4.2	48.8	47.0	100.0
Not employed	0.8	7.0	92.2	100.0
Total	6.1	23.0	70.8	100.0
Youngest child 1 to < 2 years old				
Full-time	46.6	38.3	15.1	100.0
Part-time	14.8	68.8	16.4	100.0
Not employed	7.2	22.8	70.0	100.0
Total	13.2	34.6	52.2	100.0
Youngest child 2 or 3 years old				
Full-time	78.2	14.8	7.0	100.0
Part-time	11.0	77.3	11.6	100.0
Not employed	4.6	17.7	77.8	100.0
Total	17.6	38.4	44.0	100.0
Youngest child 4 or 5 years old				
Full-time	83.6	13.6	*2.7	100.0
Part-time	14.2	73.7	12.1	100.0
Not employed	3.8	18.9	77.3	100.0
Total	22.8	39.0	38.2	100.0
Youngest child 6 or 7 years old				
Full-time	82.2	15.5	*2.2	100.0
Part-time	10.6	81.7	7.8	100.0
Not employed	3.6	22.3	74.1	100.0
Total	24.9	44.6	30.5	100.0
Youngest child 8 or 9 years old				
Full-time	82.2	13.8	*4.1	100.0
Part-time	15.6	75.5	9.0	100.0
Not employed	*3.3	21.1	75.7	100.0
Total	30.7	43.4	25.9	100.0
Youngest child 10 or 11 years old				
Full-time	84.9	11.2	3.9	100.0
Part-time	13.9	78.3	7.8	100.0
Not employed	4.3	19.1	76.6	100.0
Total	34.2	40.6	25.1	100.0
Youngest child 12 or 14 years old				
Full-time	84.2	11.7	4.2	100.0
Part-time	15.6	77.7	6.7	100.0
Not employed	5.3	13.9	80.8	100.0
Total	38.3	36.9	24.8	100.0

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

as the youngest child gets older. Full-time employment is slightly more common among mothers with only one child under the age of 15, while mothers who have three or more children under the age of 15 are less likely to be employed.

Over 60 per cent of mothers who reported having a work-limiting health condition or disability were not employed, and only 11 per cent were working full-time, compared to 24 per cent of mothers who did not have any work-limiting health problems. The proportion of mothers who were in full-time work increased with the mother's education level—from 17 per cent of mothers who had not completed Year 12, to 33 per cent of mothers who had a degree qualification. Part-time employment also increased with education—over 40 per cent of mothers with a degree qualification were working part-time, compared to 30 per cent of mothers who had not completed Year 12.

There also appear to be some cultural differences in the employment preferences of mothers. Among mothers who were born in a non-English-speaking country, 50 per cent were not employed. For some, this may be because of a preference not to work, while for others, language difficulties may limit employment opportunities. There are also differences in the proportion of employed mothers

who work part-time according to country of birth. Among mothers who were born in a non-English-speaking country who were employed, almost half (46 per cent) were in part-time work compared to 65 per cent of Australian-born mothers and 62 per cent of mothers who were born in one of the main English-speaking countries. Part-time employment was also more common among mothers who lived in an inner regional area than among those who lived in a major city, outer regional or remote area.

One might expect that, compared to mothers in dual-earner households, lone mothers and mothers with a partner who is not employed would be more likely to be employed full-time, simply due to the fact that they need to work in order to maintain a comfortable standard of living. However, Table 29.3 suggests that this is not the case. The proportion of mothers who work full-time is highest among those whose spouse also works full-time, and part-time work is also most common among this group. However, among mothers whose spouse or partner is not employed, two-thirds are not employed—a proportion that is considerably higher than that of lone mothers. One possible explanation for this is that of 'assortative mating'. That is, individuals tend to choose a partner who shares similar preferences about work and leisure (Deschryvere, 2005).

Table 29.2: Current employment status by age of youngest child and employment status in the year before the birth of youngest child, 2001 to 2009 (%)

<i>Employment status in the year before youngest child was born</i>	<i>Current employment status</i>			<i>Total</i>
	<i>Full-time</i>	<i>Part-time</i>	<i>Not employed</i>	
<i>Youngest child less than 1 year old</i>				
Full-time	30.8	21.8	47.4	100.0
Part-time	4.2	48.8	47.0	100.0
Not employed	*0.8	7.0	92.2	100.0
Total	6.1	23.0	70.8	100.0
<i>Youngest child 1 to < 2 years old</i>				
Full-time	45.5	36.3	18.2	100.0
Part-time	10.4	63.3	26.3	100.0
Not employed	4.3	20.3	75.4	100.0
Total	13.1	36.9	50.0	100.0
<i>Youngest child 2 or 3 years old</i>				
Full-time	54.0	30.3	15.7	100.0
Part-time	16.2	64.7	19.1	100.0
Not employed	6.7	27.7	65.6	100.0
Total	17.7	40.4	42.0	100.0
<i>Youngest child 4 or 5 years old</i>				
Full-time	62.9	29.1	*8.0	100.0
Part-time	16.6	71.2	12.2	100.0
Not employed	11.3	34.1	54.6	100.0
Total	19.7	46.1	34.2	100.0
<i>Youngest child 6 or 7 years old</i>				
Full-time	* 70.2	*29.8	*0.0	100.0
Part-time	23.9	62.4	*13.6	100.0
Not employed	22.9	37.7	39.5	100.0
Total	29.7	44.8	25.5	100.0

Notes: * Estimate not reliable. Percentages may not add up to 100 due to rounding. The sample in this table is limited to mothers with children aged 7 and below, as labour force status in the year before the child's birth is only available for mothers who gave birth to a child since their first HILDA interview. For this reason, the sample size decreases as the age of the youngest child increases.

In terms of other household income, non-employment is highest among mothers with the lowest levels of income from other household members. The proportion of mothers in part-time work increases with other household income, and the proportion of mothers working full-time is lowest among those with over \$100,000 in household income from other household members. This result supports the hypothesis that mothers with high-earning partners are less likely to need to work full-time and are therefore more likely to work part-time.

Looking only at the proportion of mothers in each employment state, it may appear that certain

personal and household characteristics, such as age, education and partner's employment status have a significant influence on the employment states for mothers of children under the age of 15. However it must be noted that, without controlling for other factors that might impact upon labour force status we cannot say that this is in fact the case. Two different approaches are used to examine the effect of the characteristics presented in Table 28.3 on the employment states and labour force transitions of mothers. To identify the effects of specific personal and household characteristics on the current employment state of mothers, a multinomial logit model of current employment

Table 29.3: Employment status of mothers by individual and household characteristics, 2001 to 2009 (%)

	Current employment status			Total
	Full-time	Part-time	Not employed	
Age group				
Under 25	10.7	16.3	73.0	100.0
25–34	18.1	33.1	48.8	100.0
35–44	26.0	41.6	32.4	100.0
45–54	29.2	38.4	32.4	100.0
Age of youngest child				
Under 2	11.2	27.7	61.2	100.0
2–3	17.6	37.7	44.7	100.0
4–5	22.1	38.8	39.1	100.0
6–9	27.1	42.9	30.0	100.0
10–12	33.8	39.3	26.9	100.0
13–14	39.0	35.4	25.6	100.0
Number of children under 15				
1	26.5	36.3	37.2	100.0
2	24.3	38.9	36.7	100.0
3 or more	20.2	34.7	45.1	100.0
Work-limiting health condition				
Yes	11.3	26.2	62.5	100.0
No	24.0	38.0	38.0	100.0
Highest level of education				
Year 11 or below	16.7	30.2	53.1	100.0
Year 12	19.4	37.5	43.1	100.0
Certificate or diploma	22.8	39.2	38.0	100.0
Degree	32.7	42.4	24.9	100.0
Country of birth				
Australia	21.6	39.8	38.6	100.0
Main English-speaking country	25.5	42.0	32.5	100.0
Non-English-speaking country	26.7	23.0	50.3	100.0
Region of residence (Accessibility/Remoteness Index of Australia)				
Major city	23.5	35.4	41.2	100.0
Inner regional area	20.7	41.4	37.9	100.0
Outer regional, remote or very remote area	23.3	36.3	40.4	100.0
Partner's labour force status				
Full-time	22.8	42.4	34.8	100.0
Part-time	19.0	36.0	45.0	100.0
Not employed	19.0	14.5	66.5	100.0
Not living with a spouse or partner	21.7	28.4	50.0	100.0
Income of other household members				
Less than \$10,000	21.9	31.3	46.8	100.0
\$10,000 to less than \$50,000	23.2	34.0	42.8	100.0
\$50,000 to less than \$100,000	24.3	40.5	35.2	100.0
\$100,000 or more	18.8	43.4	37.8	100.0

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

state is used (Table 29.4). Then, to examine the effects of these characteristics on movements between employment states a multinomial logit model of annual labour force transitions is presented (Table 29.5). As co-efficients are difficult to interpret in the multinomial logit model, mean marginal effects are reported. For dummy variables (e.g. work-limiting health condition), the marginal effects can be interpreted as the average change in the probability of being in a particular group if the value of that variable is changed from zero to one, and all other explanatory variables are held constant. For continuous variables (e.g. other household income), the marginal effect is the average change in the probability of being in a particular group when the value of that variable is increased by one unit, and all other explanatory variables are held constant.

The results in Table 29.4 suggest that for mothers of children born since 2001, the likelihood of being in full-time employment is lower among those aged 45 and over than for those under the age of 25. However, age does not appear to have

any significant impact on the likelihood of part-time employment or non-employment.

While the age of the mother herself does not appear to be an important factor affecting the employment status of mothers, the age of the youngest child is very important. Compared to mothers whose youngest child is under the age of 2, the likelihood of mothers whose youngest child is aged between 2 and 3 being employed full-time is 8 percentage points higher, the likelihood of part-time work is 9 percentage points higher and the likelihood of being not employed is 18 percentage points lower. Again compared to mothers whose youngest child is under the age of 2, for mothers whose youngest child is 6 or 7 years old the probability of being in either full-time or part-time employment is 17 percentage points higher, and the probability of being not employed is 35 percentage points lower. The number of children under the age of 15 that a woman has does not appear to have any significant impact on her employment status, nor does her level of education.

Table 29.4: Determinants of current employment state of mothers of children born since 2001, 2001 to 2009

	<i>Full-time</i>	<i>Part-time</i>	<i>Not employed</i>
<i>Current age (Reference category: Under 25)</i>			
25–34	–0.054 ⁺	0.031 ⁺	0.023 ⁺
35–44	–0.075 ⁺	0.028 ⁺	0.047 ⁺
45 and over	–0.108	0.072 ⁺	0.036 ⁺
<i>Age of youngest child (Reference category: < 2 years old)</i>			
2–3	0.083	0.094	–0.178
4–5	0.089	0.147	–0.236
6–7	0.171	0.174	–0.345
Number of children under 15	0.009 ⁺	–0.013 ⁺	0.003 ⁺
Work-limiting health condition	–0.041 ⁺	–0.035 ⁺	0.077
<i>Highest level of education (Reference category: Degree)</i>			
Certificate or diploma	0.006 ⁺	–0.005 ⁺	–0.002 ⁺
Year 12	–0.002 ⁺	–0.022 ⁺	0.024 ⁺
Year 11 or below	–0.014 ⁺	–0.019 ⁺	0.033 ⁺
Living in a major city	0.015 ⁺	–0.037	0.022 ⁺
<i>Country of birth (Reference category: Australian-born)</i>			
Main English-speaking country	0.047	–0.019 ⁺	–0.028 ⁺
Non-English-speaking country	0.013 ⁺	–0.008 ⁺	–0.005 ⁺
Labour force experience ^a	0.001	0.002	–0.003
Occupational status ^b	0.001	0.0003 ⁺	–0.001
Other household income (\$'0,000)	–0.004	0.001 ⁺	0.003
<i>Partner's current labour force status (Reference category: Not living with a spouse or partner)</i>			
Full-time	–0.029 ⁺	0.059	–0.031 ⁺
Part-time	0.029 ⁺	0.029 ⁺	–0.058 ⁺
Not employed	0.068 ⁺	–0.058 ⁺	–0.011 ⁺
<i>Labour force status in the previous year (Reference category: Full-time)</i>			
Part-time	–0.368	0.386	–0.018 ⁺
Not employed	–0.374	0.099	0.274
<i>Labour force status in the year before youngest child was born (Reference category: Full-time)</i>			
Part-time	–0.098	0.054	0.045 ⁺
Not employed	–0.090	–0.024 ⁺	0.114
Number of observations	2,535		
<i>Notes:</i> Estimates are mean marginal effects from a multinomial logit model of the probability of being in each labour force state (full-time employed, part-time employed or not employed). ⁺ Indicates the estimate is not statistically significant at the 10 per cent level. Standard errors adjusted for clustering on Person ID.			
^a Time in employment as a percentage of time since leaving full-time education. ^b Status of current or most recent occupation on a scale of 0 to 100. For more information about the occupational status scale, refer to McMillan et al. (2009).			

Compared to mothers living in inner regional, outer regional or remote areas, mothers living in major cities are less likely to be in part-time employment. Not surprisingly, mothers with a work-limiting health condition are less likely to be employed. Mothers who were born in one of the main English-speaking countries other than Australia are more likely than Australian-born mothers to work full-time. The results in Table 29.4 suggest that, when other factors such as education and labour force experience are controlled for, there are actually no statistically significant differences in terms of employment status of Australian mothers and mothers born in a non-English-speaking country.

Occupational status and work experience have a small but significant effect on the employment status of mothers, increasing the likelihood of working full-time (and also part-time in the case of work experience), and decreasing the likelihood of non-employment. Conversely, other household income increases the likelihood of non-employment and reduces the likelihood of full-time employment. However, the size of this effect is very small—for every \$10,000 of other household income, the likelihood of full-time employment is reduced by 0.4 percentage points and the likelihood of non-employment is increased by 0.3 percentage points. It also appears that partner's employment status has no significant effect on the likelihood of either full-time employment or non-employment. However, compared to lone mothers, mothers whose partner works full-time are more likely to work part-time.

There is also some evidence of state dependence, or persistence in employment status. Compared to mothers who were working full-time in the previous year, the likelihood of part-time employment is 39 percentage points higher among mothers who were working part-time in the previous year, and the likelihood of non-employment is 27 percentage points higher among mothers who were not employed in the previous year.

A mother's labour force status in the year before her youngest child was born is also important. Compared to those who were working full-time in the year before their youngest child was born, mothers who were working part-time are less likely to be working full-time and more likely to be working part-time, and mothers who were not in paid employment in the year before their youngest child was born are less likely to be working full-time and more likely to be not employed.

Table 29.5 presents the results of a multinomial logit model of annual labour force transitions (see the 'Reading Table 29.4' box for guidance on how to interpret the estimates). A mother can be in one of nine categories representing each possible combination of full-time work, part-time work and non-employment. The results of this model indicate that

the likelihood of remaining in full-time employment from one year to the next increases with the age of the youngest child, labour force experience, occupational status and the number of children under the age of 15, and decreases with other household income. Compared to lone mothers, the likelihood of remaining in full-time employment is higher among mothers with a partner who is not employed; and compared to mothers with a degree qualification, continuous full-time employment is less likely among mothers who did not complete Year 12.

Compared to mothers under the age of 25, the likelihood of making a transition from full-time employment to part-time work is around 9 percentage points lower among mothers aged between 25 and 44. On the other hand, the probability of moving from full-time to part-time work increases with the age of the youngest child, and also with occupational status and work experience. Compared to Australian-born women, women born in a mainly-English-speaking country are also more likely to have moved from full-time to part-time work.

The main factor affecting the likelihood of a transition from full-time work to non-employment is poor health. Compared to mothers with no work-limiting health problems, the likelihood of making this type of transition is 27 percentage points lower among those who reported a work-limiting health condition or disability, and the likelihood of remaining in non-employment is 17 percentage points higher. The fact that the likelihood of a transition from full-time employment to non-employment is significantly lower among mothers with a work-limiting health condition may seem counter-intuitive. However, this result is likely to be due to the fact that women with health problems that limit the amount of work they are able to do are less likely to be in full-time employment in the previous year than women who are in good health.

For mothers, the likelihood of remaining in full-time work increases with the age of the youngest child, and also with labour force experience and other household income. However, compared to Australian-born women, the likelihood of remaining in part-time employment from one year to the next is 10 percentage points lower for women who were born in one of the main English-speaking countries.

The likelihood of moving from part-time work to full-time work is higher among mothers aged between 25 and 44 than for mothers under the age of 25, and, compared to mothers whose youngest child is under the age of 2, the probability of moving from part-time to full-time work is lower among mothers whose youngest child is 2 or 3 years old. While labour force experience increases the likelihood of this type of transition by a very small amount, women living in a major city are less likely to move from part-time to full-time work than those living in regional or remote areas.

Table 29.5: Determinants of labour force status—Mothers of children born since 2001

	From FT to:			From PT to:			From NE to:		
	FT	PT	NE	FT	PT	NE	FT	PT	NE
<i>Current age of mother (Reference category: Under 25)</i>									
25–34	-0.040 ⁺	-0.089	0.018	0.027	0.049 ⁺	0.001 ⁺	-0.017 ⁺	-0.008 ⁺	0.059 ⁺
35–44	-0.063 ⁺	-0.086	0.006 ⁺	0.035	0.043 ⁺	-0.010 ⁺	-0.026 ⁺	-0.020 ⁺	0.121
45 and over	-0.110 ⁺	-0.087 ⁺	-0.007 ⁺	0.053 ⁺	0.156 ⁺	-0.028 ⁺	-0.037	0.003 ⁺	0.057 ⁺
<i>Age of youngest child (Reference category: < 2 years old)</i>									
2–3	0.073	0.026	-0.007 ⁺	-0.014	0.139	0.002 ⁺	-0.027	-0.064	-0.129
4–5	0.110	0.036	-0.017	0.010 ⁺	0.174	-0.010 ⁺	-0.033	-0.067	-0.203
6–7	0.233	0.041	-0.017	-0.006 ⁺	0.185	-0.021 ⁺	-0.033	-0.093	-0.290
Number of children < 15 years old	0.025	0.001 ⁺	0.003 ⁺	0.003 ⁺	-0.009 ⁺	-0.016	0.003 ⁺	-0.008 ⁺	-0.002 ⁺
Work-limiting health condition	0.048 ⁺	-0.018 ⁺	-0.273	0.005 ⁺	0.005 ⁺	0.019 ⁺	0.005 ⁺	0.032 ⁺	0.177
<i>Highest level of education (Reference category: Degree)</i>									
Certificate or diploma	-0.024 ⁺	0.018 ⁺	0.002 ⁺	0.011 ⁺	-0.038 ⁺	-0.005 ⁺	0.0003 ⁺	-0.036	0.071
Year 12	-0.020 ⁺	0.002 ⁺	0.002 ⁺	-0.010 ⁺	-0.046 ⁺	-0.001 ⁺	0.004 ⁺	-0.024 ⁺	0.093
Year 11 or below	-0.064	-0.005 ⁺	0.011 ⁺	-0.011 ⁺	-0.024 ⁺	0.006 ⁺	0.005 ⁺	0.003 ⁺	0.080
Live in a major city	0.030 ⁺	-0.007 ⁺	0.004 ⁺	-0.016	-0.040 ⁺	-0.010 ⁺	0.001 ⁺	-0.007 ⁺	0.044
<i>Mother's country of birth (Reference category: Australian-born)</i>									
MESB	0.022 ⁺	0.037	0.026	0.022 ⁺	-0.100	0.017 ⁺	0.014 ⁺	-0.013 ⁺	-0.025 ⁺
NESB	0.063 ⁺	0.010 ⁺	-0.0001 ⁺	0.006 ⁺	-0.028 ⁺	-0.020 ⁺	0.026	-0.009 ⁺	-0.048 ⁺
Labour force experience ^a	0.002	0.001	0.0002 ⁺	0.001	0.005	-0.001	0.0002	-0.0002 ⁺	-0.008
Occupational status ^b	0.001	0.0003	0.0002 ⁺	0.0001 ⁺	0.001 ⁺	-0.0003 ⁺	-0.001 ⁺	-0.0002 ⁺	-0.002
Other household income (\$'0,000)	-0.007	-0.001 ⁺	-0.0003 ⁺	0.0004 ⁺	0.004	-0.0002 ⁺	-0.001 ⁺	0.001 ⁺	0.004
<i>Partner's current labour force status (Reference category: Not living with a spouse or partner)</i>									
Full-time	0.006 ⁺	-0.015 ⁺	-0.028 ⁺	0.003 ⁺	0.024 ⁺	0.035	-0.013 ⁺	0.010	-0.023 ⁺
Part-time	0.036 ⁺	0.003 ⁺	-0.026 ⁺	-0.023 ⁺	0.017 ⁺	0.038 ⁺	-0.015 ⁺	-0.003 ⁺	-0.027 ⁺
Not employed	0.125	-0.013 ⁺	0.006 ⁺	0.002 ⁺	-0.104 ⁺	-0.008 ⁺	-0.018 ⁺	0.006 ⁺	0.004 ⁺
Number of observations	2,535								
<i>Notes:</i> Estimates are mean marginal effects from a multinomial logit model of the probability of being in each labour force state (full-time employed, part-time employed or not employed). ⁺ Indicates statistical significance at the 10 per cent level. Standard errors adjusted for clustering on Person ID. ^a Time in employment as a percentage of time since leaving full-time education. ^b Status of current or most recent occupation on a scale of 0 to 100. For more information about the occupational status scale, refer to McMillan et al. (2009). <i>PT</i> —Employed part-time; <i>FT</i> —Employed full-time; <i>NE</i> —Not employed; <i>MESB</i> —Born in one of the main English-speaking countries other than Australia; <i>NESB</i> —Born in a non-English-speaking country.									

Compared to lone mothers, mothers with a spouse or partner in full-time employment are more likely to have made a transition from part-time work to non-employment. The likelihood of moving from part-time work to non-employment decreases with labour market experience and the number of children under the age of 15.

As one would expect, the likelihood of being not employed for two consecutive years is considerably higher (18 percentage points higher) among mothers who report a work-limiting health condition or disability. Compared to mothers under the age of 25, those in the 35–44 age group are more likely to be not employed for two consecutive years. The likelihood of this outcome decreases with the age of the youngest child, and also with labour force experience and occupational status; and increases with other household income. Compared to mothers who have a degree qualification, the likelihood of two consecutive years of non-employment is 7 percentage points higher among mothers with a trade certificate or diploma, 9 percentage points higher among mothers who completed Year 12 but no post-school qualifications and 8 percentage points higher among mothers who did not complete Year 12. Furthermore,

women living in a major city were more likely than those living in regional or remote areas to have been not employed for two consecutive years.

Movements from non-employment to full-time work were relatively uncommon. However, Table 29.5 shows that, compared to mothers under the age of 25, the likelihood of this type of transition is lower among mothers aged 45 and over; and compared to mothers whose youngest child is under the age of 2, the likelihood of this outcome is 3 percentage points lower for mothers whose youngest child is aged between 2 and 7. Compared to mothers who were born in Australia, the likelihood moving from non-employment to full-time work is approximately 3 percentage points higher among mothers who were born in a non-English-speaking country.

It appears from Table 29.5 that the likelihood of making a transition from non-employment to part-time employment is not significantly associated with the mother's age, health, occupational status, work experience or country of birth. However, the likelihood of this outcome decreases with the age of the youngest child, and compared to women with a degree qualification, women with a certificate or diploma are less likely to make this type of transition.

Summary

These results suggest that for mothers of children born since 2001, health, occupational status, labour market experience, country of birth, region of residence, partner's labour force status and the age of the youngest child, are all significant factors in determining employment status. There is also some evidence of state dependence, or persistence in employment status, with the likelihood of being in any particular employment state increasing substantially if the woman was in that employment state in the previous year. A mother's labour force status in the year before her youngest child was born is also important. It appears that a large proportion of women eventually return to the work situation they had been in prior to the birth of their youngest child.

In terms of transitions between labour force states, several factors are associated with the likelihood of moving into, or out of any particular employment state. These factors include the age of the woman and the age of her youngest child, the number of

children under 15, whether or not she has a work-limiting health condition, education, occupational status, work experience, country of birth, region of residence, partner's labour force status and other household income.

Endnote

- 1 For example, in Victoria, children must have turned five before 30 April of the year they begin their preparatory year of primary school.

References

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30. Determinants of subjective wellbeing

Gary Marks[†]

This article examines the influences on life satisfaction of education, labour market status and earnings and income. The analysis is able to provide estimates of the effects of these variables taking into account the effects of unobserved but stable influences, for example, cognitive ability, physical appearance, personality and disability.

The constructed measure of life satisfaction is based on items about specific aspects of people's lives:

- A *The home in which you live*
- B *Your employment opportunities*
- C *Your financial situation*
- D *How safe you feel*
- E *Feeling part of your local community*
- F *Your health*
- G *The neighbourhood in which you live*
- H *The amount of free time you have*

For each items respondents were asked to pick a number from 0 to 10 reflecting their level of satisfaction with each of these aspects of their lives. A higher number indicated greater satisfaction. This was followed by an item about satisfaction with life in general:

- K7 *How satisfied are you with your life?*

This same battery was used in the first nine waves (2001 to 2009) of the HILDA Survey. A scale was constructed by simply adding together all valid (non-missing) responses to the items.

According the 10 point scale, the level of life satisfaction of Australians is high with a mean score across Waves 1 to 9 at 7.3 with a small standard deviation of 1.2, meaning that about two-thirds of respondents had scores between 6.1 and 8.5, a fairly narrow range. There was no trend over time. Because the measure was so (negatively) skewed, the measure was transformed to make its distribution more like the normal distribution. This was achieved by subtracting the measure from 11 and taking the logarithm to base 10. Note that, with this transformation, the coefficients can be interpreted as percentage effects—that is, the percentage change in the life satisfaction measure per one-unit increase in the explanatory variable.

The fixed-effects models using nine waves of data produce 'causal' estimates. Put simply, fixed-effects models rely on changes in explanatory variables actually experienced by individuals over the nine-year period. Five models are estimated for men and for women aged 15 years and over, with each model sequentially adding 'groups' of variables: demographics; qualifications in education and training; labour force situation; and finally occupational status.

Table 30.1 shows the considerable effects of partnering on life satisfaction among men. Being married increases life satisfaction by about 7 per cent and being in a de facto relationship 3.6 per cent. Recall that these effects of partnering on life satisfaction are

net of all unobserved (but stable) influences on life satisfaction. The positive effects of being married cannot be attributed to the relationship between marital status and education or labour force status. (Married men are more likely to be more highly educated and in full-time employment.) The higher job earnings and higher household incomes of married men partially accounts for their higher levels of life satisfaction. However, even taking into account educational qualifications, labour market status, earnings and income, marriage increases life satisfaction among men by about 5 per cent. The weaker effect of being in a de facto relationship is no longer statistically significant when controlling for education, labour market status and job earnings. Among men, 'separation' has strong negative effects on life satisfaction. The effect increases when controlling for education, labour market status and earnings. Therefore the negative effects of separation of among men have nothing to do with their associations with the other factors modelled here. In contrast to separation, divorce had no significant effects on life satisfaction among men. Children are negatively associated with life satisfaction and this negative effect (for each child) becomes larger after controlling for earnings and household income.

Educational qualifications had no effects on life satisfaction among men. There were very strong negative effects of being unemployed and to a lesser extent, not in the labour force. These negative effects on life satisfaction cannot be wholly attributed to reductions in earnings or household income. Earnings and income have moderate effects on life satisfaction. A \$10,000 increase in earnings or household income increased life satisfaction by about 0.5 per cent.

For women, the effects of marital status tend to be weaker than that for men (Table 30.2). Even so, partnering increases life satisfaction by 4 or 5 per cent. There is a slightly stronger effect for being in a de facto relationship than married. Some of the positive effects of partnering on life satisfaction among women can be attributed to education, higher earnings and household incomes, but cannot be attributed to differences in labour market status between partnered and non-partnered women. Net of the factors in the final model and stable unobserved influences, the life satisfaction levels of married women are about 2 per cent higher than that for 'never married' women and about 3 per cent higher for women in de facto relationships. Although, separation is negatively associated with life satisfaction, its effect among women is much weaker than for men. The negative effect of separation could not be attributed to the education, labour market status or earnings and income. As was the case for men, there was no significant effect for divorce. There was a slight positive effect among women for being widowed. As for men, children are negatively associated with life satisfaction and this negative effect (for each child) becomes larger when taking into account earnings and household income.

In contrast to men, there are some substantial effects for education, especially a postgraduate qualification (about 15 per cent). This large effect cannot be attributed to superior labour market outcomes or higher earnings and incomes. There was also a positive effect of holding a bachelor degree increasing life satisfaction by about 5 per cent which could partially be attributed the association between degrees and earnings. A diploma was also associated with

Table 30.1: Fixed-effects model for life satisfaction—Men, 2001 to 2009

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Marital status (Reference category: Never married)</i>					
Married	7.06	6.80	6.63	5.47	4.95
De facto	3.59	3.41	3.36	2.52 ⁺	1.94 ⁺
Divorced	-0.81 ⁺	-0.92 ⁺	-1.08 ⁺	-3.59 ⁺	-3.09 ⁺
Separated	-10.96	-11.18	-11.23	-16.65	-16.04
Widowed	2.26 ⁺	2.07 ⁺	2.40 ⁺	-8.13 ⁺	-7.87 ⁺
Number of children	-1.47	-1.52	-1.54	-2.68	-2.68
<i>Educational attainment (Reference category: Year 12)</i>					
Postgraduate	-	7.80 ⁺	6.91 ⁺	6.24 ⁺	6.55 ⁺
Bachelor	-	3.75 ⁺	2.77 ⁺	2.67 ⁺	3.10 ⁺
Diploma	-	-1.63 ⁺	-2.66 ⁺	-5.74 ⁺	-5.26 ⁺
Advanced certificate	-	1.70 ⁺	1.61 ⁺	0.18 ⁺	0.43 ⁺
Certificate	-	7.22 ⁺	6.97 ⁺	2.23 ⁺	2.43 ⁺
Not Year 12	-	4.19 ⁺	4.55 ⁺	1.34 ⁺	1.83 ⁺
<i>Labour force status (Reference category: Employed full-time)</i>					
Employed part-time	-	-	2.83	2.78	2.45 ⁺
Unemployed	-	-	-15.80	-14.12	-14.25
Not in the labour force	-	-	-7.60	-5.39	-5.73
Job earnings (\$)	-	-	-	0.50	0.07 ⁺
Household income (\$)	-	-	-	-	0.45
<i>Notes: Estimates are percentage effects on life satisfaction of a one-unit increase in the explanatory variable. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.</i>					

Table 30.2: Fixed-effects model for life satisfaction—Women, 2001 to 2009

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Marital status (Reference category: Never married)</i>					
Married	3.84	3.33	3.40	2.81	2.19
De facto	5.26	4.96	4.96	4.37	3.83
Divorced	-0.54 ⁺	-0.79 ⁺	-0.82 ⁺	-0.64 ⁺	-0.50 ⁺
Separated	-2.56	-2.96	-2.94	-2.56	-2.38
Widowed	3.12	2.71	2.85	2.48 ⁺	2.60 ⁺
Number of children	-1.86	-1.93	-1.85	-2.84	-2.96
<i>Educational attainment (Reference category: Year 12)</i>					
Postgraduate	–	14.57	14.33	12.11	12.16
Bachelor	–	5.65	5.34	3.62	3.76
Diploma	–	6.39	6.04	3.28 ⁺	3.46 ⁺
Advanced certificate	–	0.29 ⁺	0.08 ⁺	-2.79 ⁺	-2.66 ⁺
Certificate	–	4.18 ⁺	4.09 ⁺	1.86 ⁺	2.25 ⁺
Not Year 12	–	0.01 ⁺	0.22 ⁺	-2.16 ⁺	-1.98 ⁺
<i>Labour force status (Reference category: Employed full-time)</i>					
Employed part-time	–	–	0.26 ⁺	0.94	0.86
Unemployed	–	–	-5.71	-5.45	-5.54
Not in the labour force	–	–	-2.11	0.12 ⁺	0.02 ⁺
Job earnings (\$)	–	–	–	0.62	0.45
Household income (\$)	–	–	–	–	0.18
<i>Notes: Estimates are percentage effects on life satisfaction of a one-unit increase in the explanatory variable. ⁺ indicates the estimate is not significantly different from zero at the 10 per cent level.</i>					

high levels of life satisfaction and this effect could be attributed to the relationship between diplomas and earnings. In contrast to men, there was no or only weak negative effect on life satisfaction for part-time work among women. Unemployment had a strong negative effect of life satisfaction, but not to the same extent as among men. Being not in the labour force was negatively associated with life satisfaction and

this effect could be attributed to reduced earnings. The effects of earnings and household income on life satisfaction among women were moderate, although a little stronger than for men.

Endnote

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GLOSSARY

ANZSIC

ANZSIC is the Australia and New Zealand Standard Industry Classification. Adopted by the 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 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.

Body Mass Index

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, $BMI = \frac{\text{weight}}{\text{height}^2}$. A person is classified as 'under weight' 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 under-estimates 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), as well as the absence of employee entitlement 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).

Correlation coefficient

A correlation coefficient, often referred to as a Pearson correlation coefficient, is a number between -1 and +1 that measures the degree of (linear) association between two variables (call them X and Y). A positive value for the correlation implies a positive association (large values of X tend to be associated with large values of Y and small values of X tend to be associated with small values of Y). A negative value for the correlation implies a negative or inverse association (large values of X tend to be associated with small values of Y and vice versa).

Deciles and quintiles

A decile is any of the nine values that divide data that have been sorted from lowest to highest into 10 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.

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

There are a number of potential measures of the severity of disability. In this report, we define

severity in terms of the extent to which a long-term health condition or disability restricts employment and the ‘core activities’ of self-care, mobility and communication. Four levels of severity are distinguished:

1. Severe: *Always* need help or supervision with self-care (e.g. bathing/showering, dressing/undressing, eating/feeding, going to toilet, bladder/bowel control), mobility (e.g. moving around away from home, moving around at home, getting in or out of a bed or chair) and/or communication in one’s own language (e.g. understanding/being understood by strangers, friends or family, including use of sign language or lip reading).
2. Moderate: Need help or supervision with self-care, mobility and/or communication in one’s own language, but do not *always* need help or supervision with any of these tasks.
3. Employment restriction: Do not need any help or supervision with self-care, mobility or communication tasks, but the condition limits the type or amount of work one can do.
4. No employment restriction: The condition does not cause difficulties with self-care, mobility or communication that require help or supervision, and does not limit the type or amount of work one can do. Note that it is possible (although rare) for people in this category to experience difficulties with self-care, mobility or communication, as long as they do not require help or supervision and the condition does not restrict employment.

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.

Financial stress

A person or household is considered to be under financial stress if, *due to shortage of money*, it is not possible for them to meet basic financial commitments. The measure of financial stress used in this report is based on questions about inability to

pay utility bills on time, inability to pay the mortgage on time, having to pawn or sell possessions, going without meals, being unable to heat the home, asking for financial help from friends or family, or asking for help from a welfare or community organisation.

Fixed-effects regression model

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. 0 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 2009 prices, to give *real* income. Since prices tend to rise over time, the incomes statistics we present for Waves 1 to 8 are higher than what would be obtained from using incomes actually reported by sample members.

Household expenditure and consumption

Households spend money on both non-durable and durable goods and services. Non-durables—

goods and services consumed fairly soon after purchase—include such items as groceries, fuel and holiday expenditures. Durables, by contrast, are typically consumed over long periods of time, and include such items as housing, cars, household appliances and furniture. To measure non-durable consumption of a household during a particular period, it is generally sufficient to measure expenditure on non-durables in that period. However, measuring durables consumption is more difficult. First, the full stock of durables held by the household needs to be known; some durables may have been purchased in the period being examined, but most will have been purchased previously. Second, we need to estimate the value of the consumption services delivered by those durables in the period—for example, impute a rental value for owner-occupied housing—something that is inherently difficult to do.

Income mobility

In this report, income mobility refers to the extent to which individuals' household incomes change *relative to each other*. It is measured by sorting incomes in each period (e.g. year) from lowest to highest and then examining changes in each individual's *rank* in the distribution. The greater the changes in individuals' ranks—that is, the more individuals change ranks and the bigger the change in each individual's rank—the greater is income mobility.

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 below or 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.

Jobless households and job-poor households

In this report, two alternative definitions of a jobless household are employed. The first definition,

'current' joblessness, relates to the household's employment status at the time of the HILDA Survey interview, whereby a household is jobless if no household member was in paid employment (or on paid leave from employment) at the time of interview. The second definition, 'financial year' joblessness, relates to the household's employment status over the course of the financial year immediately preceding the HILDA Survey interview, whereby a household is jobless if no household member was in paid employment (or on paid leave from employment) at any time in that year.

There is no accepted standard for determining whether a household is 'job-poor'. In this report, a household is defined to be currently job-poor if total usual hours of paid employment of all household members combined are less than 35 hours per week. A financial-year measure is also employed, whereby a household is job-poor if the sum across all members of the household of the proportion of the year in employment is less than 100 per cent.

Kessler Psychological Distress scale (K10)

The Kessler Psychological Distress scale is a measure of psychological distress based on responses to 10 questions about anxiety and depressive symptoms that a person has experienced in the most recent 4 week period. For each of the 10 items, the response options are: 'none of the time', 'a little of the time', 'some of the time', 'most of the time', 'and all of the time'. Each item is scored from 1 for 'none of the time' to 5 for 'all of the time'. An individual's K10 score is given by the sum of the scores for the 10 items. Higher scores correspond to greater psychological stress, with a score in excess of 21 considered to be high, and a score in excess of 29 considered to be very high.

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 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 model can be used when there is a natural ordering of the qualitative dependent variable. For example, in this report, ordered probit models are estimated of child health, which could be reported as excellent, very good, good, fair or poor. These categories have a natural ordering, but are not numerical values.

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 absolute deviation

The mean absolute deviation is a measure of variability or ‘dispersion’ of a variable. It is equal to ‘the mean of the absolute difference of a variable from its mean value’. Expressed formally, the mean absolute deviation of a variable x is

$$\frac{1}{N} \sum_{i=1}^N |x_i - \bar{x}|$$

where there are N values of the variable and \bar{x} is the mean value of the variable—that is, $\bar{x} = \frac{1}{N} \sum_{i=1}^N x_i$. The vertical lines in the equation denote

an ‘absolute’ value, meaning the ‘sign’ of the number—that is, whether it is positive or negative—is ignored. For example, the absolute value of -2 is simply 2.

Mean marginal effects

Qualitative dependent variable models, such as logit and 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 logit models of the probability of experiencing financial stress presented in Chapter 9, the effect of income will depend on the level of income 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 variable is the mean effect on the probability of experiencing financial stress, evaluated over all members of the sample, of a one-dollar increase in income.

Multinomial logit model

—see logit and probit models

NESB and MESB immigrants

NESB immigrants are ‘Non-English-speaking background’ immigrants, defined as people born in a country other than the main English-speaking countries of Australia, the United Kingdom, United States, New Zealand and South Africa. Conversely, MESB immigrants are from the ‘main English-speaking countries’.

Ordered 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 model—see logit and probit models

Quintiles—see deciles**Random-effects regression model**

An econometric technique often applied to panel data such as HILDA, 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). In some analyses, region is classified according to the Accessibility/Remoteness Index of Australia (ARIA) scores derived from the 2001 Census. ARIA is based on the distance from a set of predefined services and not the size of the population, with a score assigned to each Census Collection District (CD). In this report, four types of region are distinguished: major cities; inner regional Australia; outer regional Australia; and remote and very remote Australia. Approximately two-thirds of the in-scope Australian population resides in a major city. Note that, based on accessibility to services, Darwin is classified as outer regional and Hobart is classified as inner regional.

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 the 'purpose' of the regression model. Various types of models are estimated in this report, and are explained in separate entries in the glossary. (See the entries for Ordinary Least Squares (OLS)

regression, logit and probit models, tobit model, fixed-effects regression model and random-effects regression model.)

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

Socio-Economic Index for Areas, constructed by the Australian Bureau of Statistics 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 general health measure

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. Note that a statistically significant difference does not mean the difference is necessarily large or significant in the common meaning of the word.

Tobit model

A tobit model is a method for applying linear regression models to situations where the dependent variable is ‘censored’ (cut off) above a certain

value and/or below a certain value. For example, a tobit model can be used to examine the determinants of earnings when earnings are ‘top-coded’, meaning that earnings are not known for people with earnings above a certain threshold (although it is of course known that their earnings are above that threshold).

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 conceived 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.

