



THE UNIVERSITY OF  
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# Families, Incomes and Jobs, Volume 4



A Statistical Report  
on Waves 1 to 6  
of the HILDA Survey



MELBOURNE INSTITUTE  
of Applied Economic and Social Research

The HILDA Survey is funded by the Australian Government Department  
of Families, Housing, Community Services and Indigenous Affairs



# **Families, Incomes and Jobs, Volume 4:**

## **A Statistical Report on Waves 1 to 6 of the HILDA Survey**



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*The HILDA Survey is funded by the Australian Government Department  
of Families, Housing, Community Services and Indigenous Affairs*

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# Introduction

This is the fourth volume of the Household, Income and Labour Dynamics in Australia (HILDA) Survey Annual Statistical Report, and examines the first six waves of the HILDA Survey, which were conducted between 2001 and 2006. Reflecting the transition from formative stages to a well-established and increasingly long-running household panel, this year we have moved to a new structure for the report.

The report now contains two parts. Part A, labelled ‘Annual Update’, contains short articles that are intended to be more or less repeated every year. As the title suggests, the articles provide an annual update of changes in key aspects of life in Australia that are measured by the HILDA Survey every year. As in previous volumes, 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. The second part of the report, Part B, is labelled ‘Feature Articles’, and contains (generally longer) articles on topics that are not intended to be canvassed every year. This part is heavily influenced by the wave-specific questions included in the survey. Topics covered may also be based on information that is regularly gathered by the survey, but is perhaps less core in nature. Articles may also be based on changes in the government policy environment—for example, the increase in the Baby Bonus—or changes in other ‘environmental’ factors, such as economic conditions. Contributions from various researchers may appear in this section.

The HILDA Survey seeks to provide nationally representative longitudinal data on Australian residents describing the ways in which people’s lives are changing. The Australian social statistics with which we are all familiar are cross-sectional. The statistics provide snapshots of the Australian community at a point in time, for example, the percentages of Australians who, at that point in time, are married or single, income rich or income poor, employed or unemployed, healthy or sick. Repeated cross-sections of the kind provided by the Australian Bureau of Statistics’ (ABS) regular household surveys inform us about aggregate economic and social trends, about whether and by how much the percentages who are married, poor, unemployed, disabled, and so on, are changing.

The HILDA Survey, by contrast, is a panel survey which follows people’s lives over time. The same households and individuals are interviewed every year, allowing us to see how their lives are changing over time. To understand economic and social behaviour and outcomes, longitudinal data provide a much more complete picture because we can see the life course a person takes. We can

examine how the respondents react 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*. The panel data also 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, so that we can see the paths that individuals’ lives take and the paths they take subsequent to these outcomes. Indeed, one of the valuable attributes of the HILDA panel is the wealth of information on a variety of life domains that it brings together in one dataset. This allows us to understand the many linkages between these life domains—to give but one example, the implications of health for risk of poor economic wellbeing.

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—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 these policies take. For example, it is important to distinguish between short-, medium- and long-term poverty, because the policy priority accorded to each will likely differ, as most likely will the policy remedy and who it targets.

This annual Statistical Report has been prepared by a small team at the Melbourne Institute of Applied Economic and Social Research at the University of Melbourne. The Report is not intended to be comprehensive. It focuses mainly on panel results rather than cross-sectional results of the kind well covered by ABS surveys, and it seeks just to give a flavour of what the HILDA Survey is finding. Much more detailed analysis of every topic covered by this volume could be,

should be (and in some cases, is being) undertaken. It is hoped that some readers will make their own analyses, and in this context, it should be mentioned that the HILDA Survey data are available at nominal cost to approved users.

### The HILDA Survey

The HILDA Survey is commissioned and funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs and is managed by the Melbourne Institute at the University of Melbourne. The Project Director is Professor Mark Wooden.

The HILDA Survey is a nation-wide household panel survey with a focus on issues relating to families, income, employment and wellbeing. It began in 2001 with a large national probability sample of Australian households occupying private dwellings. All members of these households form the basis of the panel to be interviewed in each subsequent wave. Note that, 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.<sup>1</sup>

Table 0.1 summarises key aspects of the HILDA sample: the number of households, respondents and children under 15 years of age in each wave, wave-on-wave sample retention and wave 1 sample retention.<sup>2</sup>

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%. Within the 7,682 households at which interviews were conducted, there were 19,917 people, 4,787 of whom were less than 15 years of age on 30 June of 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 and 10,085 in wave 6 in 2006.

The total number of respondents in each wave, however, is greater than this 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/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.

In fact, since 2005, additions to the HILDA sample have exceeded drop-outs, so the sample size has been rising for the last two years. The total number of respondents fell from 13,969 in 2001 to 12,408 in 2004, but rose to be 12,905 in 2006. It is likely that the sample size will continue to grow from this point on.

Despite a net increase in numbers in the last two years, *sample attrition*—that is, people dropping out due to refusal, death, or our inability to locate them—is a major issue in all panel surveys. Because of attrition, panels may slowly become less representative of the populations from which they are drawn, although due to the ‘split-off’ method, this does not necessarily occur.

To overcome the effects of survey non-response (including attrition), the HILDA Survey data managers analyse the sample each year and produce *weights* to adjust for differences between the characteristics of the panel sample and the characteristics of the Australian population.<sup>3</sup> That is, adjustment is made for non-randomness in the sample selection process that cause some groups

**Table 0.1: HILDA Survey sample sizes and retention**

	Sample sizes			Sample retention	
	Households	Persons interviewed	Children under 15	Previous-wave retention (%)	Number of wave 1 respondents
Wave 1	7,682	13,969	4,787	–	13,969
Wave 2	7,245	13,041	4,802	86.8	11,993
Wave 3	7,096	12,728	4,774	90.4	11,190
Wave 4	6,987	12,408	4,660	91.6	10,565
Wave 5	7,125	12,759	4,647	94.4	10,392
Wave 6	7,139	12,905	4,525	94.8	10,085

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

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 HILDA data allow us to make inferences about the Australian population from the 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  $(1,200/1,000) = 1.2$  times the weight of Household A. To estimate the mean (average) of income, for example, 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 it is meant that '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, persons resident in non-private dwellings in 2001 and non-resident visitors. The weights in 2006 sum to 20.1 million.

Increasingly complicating analysis as the length of the panel grows is that the variety of weights potentially required grows. For cross-sectional analysis, matters are straightforward. We simply use the supplied cross-sectional weights. More complicated is longitudinal analysis, where to retain representativeness, weights need to account for lack of representativeness in all of the waves being analysed. In principle, a set of weights will exist for every combination of waves that could be examined—waves 1 and 2, waves 2, 5 and 6, and so on. The longitudinal (multi-year) weights supplied with the Release 6 data allow population inferences for analysis using any two waves (i.e. any pair of waves) and analysis using all six waves. Weights for other combinations of waves can be supplied by the Melbourne Institute on request. 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.

The population weights allow inferences to be made from the HILDA Survey about the characteristics and outcomes of the population that was res-

ident in Australia in 2001 and is still resident in Australia. 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 inferred 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 for cross-sectional analysis and for longitudinal analysis of a balanced panel of all six waves are supplied with the unit record file available to the public. For other longitudinal analyses, the appropriate replicate weights can be obtained from the Melbourne Institute on request. 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 (2008).

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

### Overview of contents

Part A of the Report contains the Annual Update, consisting of between four and six articles in each of the four broad topics covered by the HILDA Survey:

1. Households and Family Life, which incorporates description of changes in individuals' family structures over time, changes in marital status and marital satisfaction, child care issues and major life events experienced by respondents in the year leading up to the interview.
2. Incomes and Economic Wellbeing, which includes examination of the income distribution and income mobility over time, description of the extent and nature of poverty, welfare reliance and financial stress, including their persistence and recurrence, and examination of the distribution of consumption expenditure.
3. Labour Market Outcomes, in which we examine labour force status mobility and job mobility, and

the evolution over time of wages, hours preferences, household joblessness and job satisfaction.

4. Life Satisfaction, Health and Wellbeing, which includes examination of respondent assessments of their psychological wellbeing, physical health and mental health, as well as examination of social capital and economic participation.

Part B contains sixteen articles, three of which have been contributed by other researchers.<sup>4</sup> Michael Kortt and Andrew Leigh examine the association between body size and socio-economic outcomes, making use of the collection of respondents' height and weight for the first time in wave 6. Helen Berry and Jennifer Welsh draw on a set of new questions in wave 6 that provide measures of social capital to examine the relationship between social capital and health. Mark Wooden and Markus Hahn investigate two potential adverse implications of long hours of work, examining effects on relationship quality, as measured by marital separation, and on unhealthy behaviours, as measured by smoking activity.

The wave 6 survey gathered detailed household wealth data, the second time such information has been gathered—the last time being in wave 2. This allows, for the first time in Australia, study of longitudinal changes in individuals' household wealth for a nationally representative sample of the Australian population. Correspondingly, six articles in Part B of this volume consider wealth and its components, and particularly how they have changed for individuals between 2002 and 2006. Part B also contains articles on housing stress, the frequency and nature of changes of residence, neighbourhood characteristics and individuals' perceptions of their neighbourhoods, the impact of major life events on health and life satisfaction, exposure to health risks associated with smoking, alcohol consumption and physical inactivity, the impact of the Baby Bonus on fertility and fertility intentions, and time spent commuting.

### Acknowledgements

The fourth volume of the Statistical Report has very much stood on the shoulders of the three volumes that preceded it and a debt of gratitude is owed to my predecessor, Bruce Headey. The Report has also benefited considerably from comments and advice received from staff at the Australian Government Department of Families, Housing,

Community Services and Indigenous Affairs. Finally, special thanks are due to Nicky Auster for carefully proof-reading the entire Report, and to Nellie Lentini for performing consistency checks and overseeing the typesetting of the Report.

### 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\\_hildamannual.htm](http://www.melbourneinstitute.com/hilda/doc/doc_hildamannual.htm)>.
- 3 Further details on how the weights are derived are provided in Watson and Fry (2002), Watson (2004) and the *HILDA User Manual*.
- 4 All other articles have been written by the editors.

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## ANNUAL UPDATE



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# Households and Family Life

Every year, the HILDA Survey collects information on a variety of aspects of family life. These aspects include 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 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 2006 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 addition, Part B of the Report contains three articles on households and family life: one on the frequency with which people move house, one on the characteristics of households' neighbourhoods, and one article on fertility and fertility intentions.

## 1. Family dynamics: Changes in household structure, 2001 to 2006

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 declined over the last century and is projected to continue declining. Further, 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 2006. Looking at household type on an individual level, the proportion of people living in couple only households rose only slightly—from 21% in 2001 to 22% in 2006. Approximately 51% of all Australians were living

in a couple with children household each year, while around 12% were in lone parent households and 10% lived alone. It seems that group households have become less popular, with only 1% of all individuals living in a group household in 2006, compared to 3% 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 six-year period, for many individuals, their household structure would have changed at least once during this time. 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

**Table 1.1: Household type of individuals, 2001–2006 (%)**

Household type	2001	2002	2003	2004	2005	2006
Couple family without children	21.3	21.5	21.4	21.3	22.0	22.0
Couple family with children	51.2	50.9	51.0	51.1	51.2	50.7
Couple family with children under 15	37.1	36.4	36.6	35.9	35.9	36.0
Couple family with children 15 or older	14.1	14.5	14.4	15.2	15.3	14.7
Lone parent household	11.6	12.0	12.1	12.4	12.4	12.0
Lone parent with children under 15	7.3	7.5	7.3	7.4	7.4	6.8
Lone parent with children 15 or older	4.3	4.5	4.8	5.0	5.0	5.2
Lone person	9.8	10.0	10.1	10.2	10.1	10.3
Group household	2.6	1.8	1.5	1.4	1.2	1.2
Other related family	1.2	1.4	1.4	1.3	1.1	1.1
Multi-family household	2.3	2.4	2.4	2.3	2.1	2.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

*Notes:* Population weighted results. Couple families/lone parent households with children under 15 may also have children aged 15 or older in the household, while couple families/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.

example, due to the birth of a baby, the adoption of a child, or a couple moving in together. The proportion of individuals whose 'household type' changed between 2005 and 2006 was 11%. Table 1.2 shows the changes in the household type of individuals, including children, between 2005 and 2006.

Table 1.2 shows that couple families are the most stable, with 91% individuals who were in a couple only household in 2005 remaining in that category in 2006, and 92% of individuals in couple with children households in 2005 still in that household type in 2006. Of those who were no longer in couple only households, the most common reason for the change was the addition of a child, with 6% of individuals who were in couple only households in 2005 changing to couple with children households in 2006. Only 3% of individuals who were in couple only households in 2005 were living alone in 2006. The most common reason for change in couple with children households was children leaving home, with 4% of individuals who were living in a couple with children household in 2005 living in a couple only household in 2006.

Lone parent households are also quite stable, with 85% of individuals who were living in lone parent households in 2005 still living in a lone parent household in 2006. For 5% of individuals who were living in lone parent households in 2005, their household structure had changed because the lone parent had re-partnered; and, for a further 7% the child (or children) were no longer living with that parent.

While 89% of people who were living alone in 2005 were still doing so in 2006, 9% had moved in with a partner; and of that 9%, 29% 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.

Almost 70% of individuals who were living in multi-family households in 2005 were still in a multi-family

household in 2006—15% of those who were in a multi-family household in 2005 were in a couple with children household by 2006 and a further 11% were living in couple only households.

Of all the household types, group households are the least static, with only 48% of individuals who were living in group households in 2005 remaining in a group household in 2006—31% were now living on their own and 14% had changed to couple only households.

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—of, say, five years? A reasonable proportion (32%) of individuals were living in a different household type in 2006 compared to 2001. Table 1.3 shows the household structures of individuals changed between 2001 and 2006.

After five years, 74% of individuals who were in couple only households in 2001 remained in the same household structure in 2006, while 16% were in couple with children households and 8.5% were living alone. Almost 70% of individuals who were part of a nuclear family (couple family with children) in 2001 were still living in a nuclear family in 2006—16% were living in a couple only household (either because all the children had left home or they had separated from their former partner and re-partnered); 7% were living alone; and 5% were living in lone parent households.

Of those who were living in lone parent households in 2001, almost 60% were in the same situation in 2006; while 19% were now living alone, 12% were living in a couple with children household and 7% were living in couple only households. Just over 80% of people who were living alone in 2001 were still living alone in 2006—10% had moved into a couple only household, 5% were in couple with children households and 3% were in lone parent households. One possible explanation for

**Table 1.2: Changes in household structure, 2005–2006 (%)**

<i>Household type in 2005</i>	<i>Household type in 2006</i>							<i>Total</i>
	<i>Couple family without children</i>	<i>Couple family with children</i>	<i>Lone parent household</i>	<i>Lone person</i>	<i>Group household</i>	<i>Other related family</i>	<i>Multi-family household</i>	
Couple family without children	91.0	5.6	*0.1	2.5	*0.6	*0.0	*0.2	100.0
Couple family with children	3.7	91.9	1.4	1.7	*0.1	*0.1	1.1	100.0
Lone parent household	2.3	5.4	84.7	6.5	*0.4	*0.3	*0.3	100.0
Lone person	6.2	2.5	0.8	88.9	0.9	*0.6	*0.1	100.0
Group household	13.9	2.9	2.5	30.9	47.8	1.9	*0.0	100.0
Other related family <sup>a</sup>	*13.4	*2.9	*8.8	*3.8	*4.9	66.2	*0.0	100.0
Multi-family household	11.0	14.6	*3.3	*0.8	*0.0	*0.6	69.6	100.0
<b>Total</b>	<b>30.5</b>	<b>38.8</b>	<b>9.0</b>	<b>18.1</b>	<b>1.1</b>	<b>0.9</b>	<b>1.5</b>	<b>100.0</b>

*Notes:* Population weighted results. \* Estimate not reliable. <sup>a</sup> 'Other related' families are households where there are relatives living in the same household, but no couple or parent–child relationships. This category most commonly includes adult siblings living in the same household without a parent. It should also be noted that in some cases, couple families and lone parent households may also include other unrelated adults (e.g. an adult boarder or housemate). Percentages may not add up to 100 due to rounding.

**Table 1.3: Changes in household structure, 2001–2006 (%)**

<i>Household type in 2001</i>	<i>Household type in 2006</i>							<i>Total</i>
	<i>Couple family without children</i>	<i>Couple family with children</i>	<i>Lone parent household</i>	<i>Lone person</i>	<i>Group household</i>	<i>Other related family</i>	<i>Multi-family household</i>	
Couple family without children	73.9	16.0	0.9	8.5	*0.4	*0.2	*0.2	100.0
Couple family with children	15.5	69.8	4.8	6.7	0.7	0.4	2.1	100.0
Lone parent household	6.7	12.3	59.1	18.9	*1.2	*1.2	*0.6	100.0
Lone person	10.3	5.3	2.5	80.1	*1.1	*0.3	*0.3	100.0
Group household	28.3	18.1	*4.7	34.2	13.3	*1.4	*0.0	100.0
Other related family	25.7	*8.5	*1.8	25.2	*6.4	32.4	*0.0	100.0
Multi-family household	35.0	17.9	18.9	*2.9	*0.0	*2.9	22.5	100.0
<b>Total</b>	<b>30.5</b>	<b>38.8</b>	<b>9.1</b>	<b>18.1</b>	<b>1.1</b>	<b>0.9</b>	<b>1.5</b>	<b>100.0</b>

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

lone person household being the most stable household structure is that this group consists of a high proportion of older people (45% were over the age of 55 in 2001), who had no desire to change their living situation.

For most people in group households it is 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. Only 13% of people who were living in a group household in 2001 were still in a group household in 2006. Multi-family households also seem to be a temporary situation, with only 23% of individuals who were living in a multi-family household in 2001 still in a multi-family household in 2006.

### 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, 11% of individuals were living in a different household structure in 2006 compared to 2005, and 32% had a different household arrangements in 2006 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. Separation, divorce and being widowed are also a common cause of changes in couple households, with 9% of individuals who were in a couple only household in 2001 and 12% of those who were living in a couple with children household in 2001, living in either a lone person or a lone parent household by 2006. On the other hand, compared to other household types, lone person households are very stable, with just over 80% of those who were in lone person households in 2001 still living alone in 2006.

There is some evidence that for most people who live in a group household, it is a temporary situation, with only 13% of individuals who were living in a group household in 2001 still in this type of household in 2006. It is also relatively uncommon for multi-family households to continue for several years, with only 23% of individuals who were living in a multi-family household in 2001 still in a multi-family household in 2006.

### References

- Australian Bureau of Statistics (2004) *Household and Family Projections, Australia, 2001 to 2026*, ABS Catalogue No. 3236.0, Canberra.
- de Vaus, D. (2004) 'Diversity and Change in Australian Families: Statistical Profiles', Australian Institute of Family Studies, Melbourne.

## 2. Changes in marital status and marriage satisfaction

The HILDA Survey data shows that in 2006 just over 60% of Australians aged 15 and over were legally or de facto married, around a quarter had never been married and were not living with a partner, 7% were separated or divorced and had not re-partnered and the remaining 6% were widows or widowers. Figure 2.1 shows that there has been very little change in these proportions over the six years from 2001 to 2006.

In 2006, there were 114,222 registered marriages—the highest number of marriages since 1999 and an increase of 4.5% from 2005 (Australian Bureau of Statistics (ABS), 2007a). The number of divorces in 2006 in Australia was 51,375—a decrease of 2% from 2005, and the fifth annual decrease since a high of 55,330 divorces in 2001 (ABS, 2007b). Table 2.1 summarises the changes in marital status among HILDA Survey respondents who were interviewed in both 2005 and 2006.

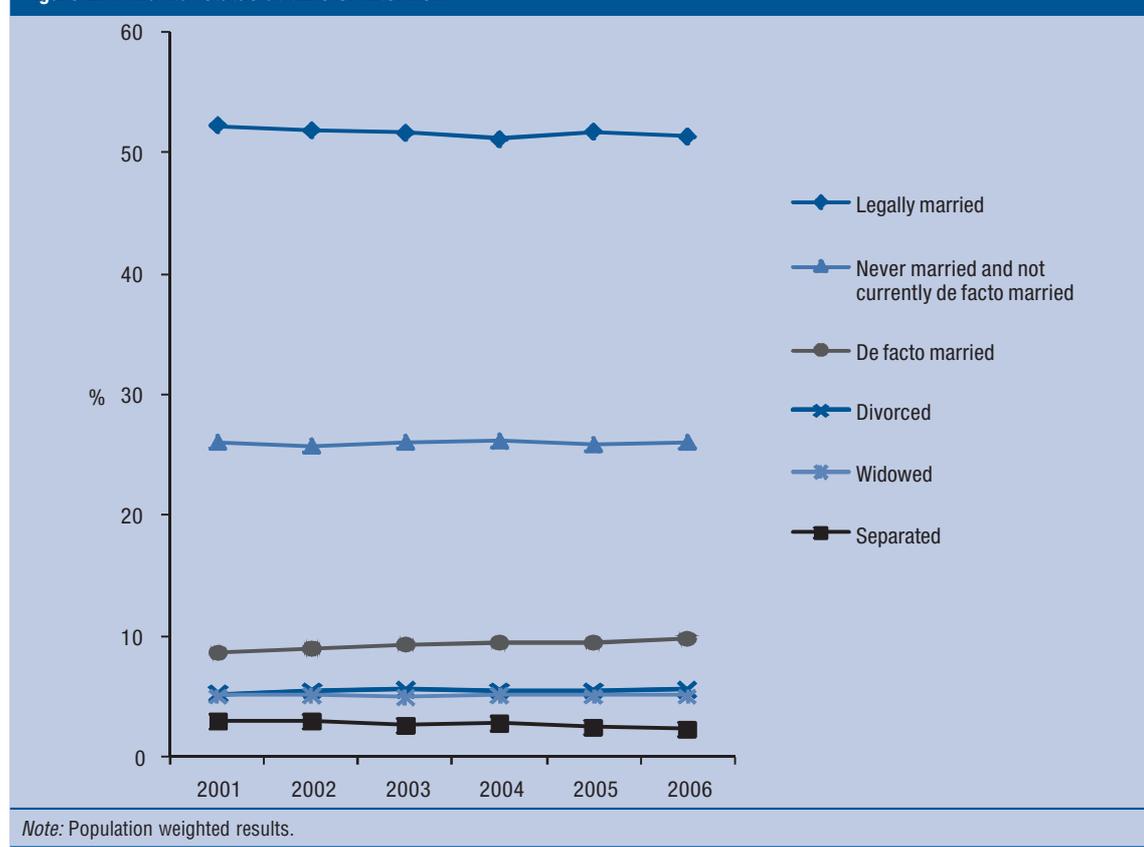
Most people (98%) who were married in 2005 were still married in 2006. Of those who were in a de facto relationship in 2005, 10% had married and 11% were no longer living with a partner by 2006. A small proportion, 5%, of people who were divorced in 2005 were now in a de facto relationship, as were 7% of those who had never married

and were not in a de facto relationship in 2005.<sup>1</sup> While things remained relatively stable during this 12 month period, a lot more happened over the five years from 2001 to 2006, as shown in Table 2.2.

In the six years from 2001 to 2006, the most stable group was the widowed, with 98% retaining that status in 2006. Of those who were married in 2001, 92% were married in 2006—to the same person in 99% of cases. Of those whose marital status in 2001 was divorced, 9% had re-married by 2006 and a further 8% were cohabiting with a partner. Just over one-quarter of people who were never married and not living with a partner in 2001 had a partner by 2006, 15% had moved into a de facto relationship and 12% 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 2001 had proceeded with a divorce; 32% of de factos who changed status after 2001 got married; 97% of them marrying the person they were living with in 2001. Furthermore, among those who were in de facto relationships in both 2001 and 2006, 85% were still living with the same partner.

Figure 2.1: Marital status at time of interview



### Relationship satisfaction

Each year, individuals living with a spouse or partner at the time of their interview are asked to rate 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 2.2. Compared to people in de facto relationships, relationship satisfaction was higher, on average, among married persons. In 2006, the average level of relationship satisfaction for married males was 8.6 out of 10, compared to 8.4 out of 10 for males in de facto relationships. For females, the average level of relationship satisfaction was only slightly higher for those married—8.3 out of 10 compared to 8.2 out of 10 for females in a de facto relationship.

Using the 2005 HILDA Survey data, Headey and Warren (2008) found that, on average, individuals married for less than two years report the highest levels of relationship satisfaction; for males, average relationship satisfaction dropped to 8.5 out of 10 after two years of marriage and for females, average relationship satisfaction also dropped to 8.5 out of 10 for those who had been married for between two and five years, and down to 8.1 out of 10 for females who had been married for five

years or longer. The question remains, however, how much does relationship satisfaction change in a year? Table 2.3 compares relationship satisfaction in 2005 and 2006 for individuals who were married or in a de facto relationship in 2005.

Most married people—90% in the case of men and 89% in the case of women—who reported high levels of relationship satisfaction in 2005, also reported high levels of satisfaction in 2006. Of those married persons who reported medium levels of relationship satisfaction—4 to 7 out of 10—40% of males and 38% of females reported high levels of satisfaction with their relationship in 2006. For a substantial proportion of married people, it seems that low levels of relationship satisfaction were temporary, with 69% of married men and 57% of married women who reported low levels of relationship satisfaction in 2005—3 out of 10 or lower—reporting an improvement in relationship satisfaction by 2006. For some this may have only been a slight improvement, but for almost 40% of married men who reported low levels of relationship satisfaction in 2005, it was an improvement to 8 or higher out of 10 by 2006.

Compared to married couples, de facto relationships were much less stable, with 58% of men and 48% of women who reported relationship satisfaction of 7

**Table 2.1: Changes in marital status, 2005–2006 (%)**

<i>Marital status in 2005</i>	<i>Marital status in 2006</i>						<i>Total</i>
	<i>Legally married</i>	<i>De facto</i>	<i>Separated</i>	<i>Divorced</i>	<i>Widowed</i>	<i>Never married and not de facto</i>	
Legally married	98.3	*0.1	1.0	*0.0	0.5	–	100.0
De facto	9.5	80.0	0.6	1.7	*0.1	8.1	100.0
Separated	*4.8	6.5	71.7	17.0	*0.0	–	100.0
Divorced	*1.2	5.2	2.2	89.1	2.3	–	100.0
Widowed	*0.3	*0.3	0.6	2.1	96.7	–	100.0
Never married and not de facto	1.8	7.3	*0.2	*0.0	*0.0	90.6	100.0
Total	55.5	9.4	2.9	6.5	6.3	19.4	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 2.2: Changes in marital status, 2001–2006 (%)**

<i>Marital status in 2001</i>	<i>Marital status in 2006</i>						<i>Total</i>
	<i>Legally married</i>	<i>De facto</i>	<i>Separated</i>	<i>Divorced</i>	<i>Widowed</i>	<i>Never married and not de facto</i>	
Legally married	92.0	0.9	2.3	1.5	3.2	–	100.0
De facto	32.4	49.5	2.3	4.4	*0.6	10.8	100.0
Separated	9.7	11.6	43.8	30.0	4.9	–	100.0
Divorced	8.6	8.0	*0.8	76.8	5.8	–	100.0
Widowed	*0.5	*0.1	*0.0	*1.7	97.6	–	100.0
Never married and not de facto	11.9	14.5	*0.7	*0.3	*0.1	72.5	100.0
Total	55.4	9.2	2.9	6.2	7.2	19.1	100.0

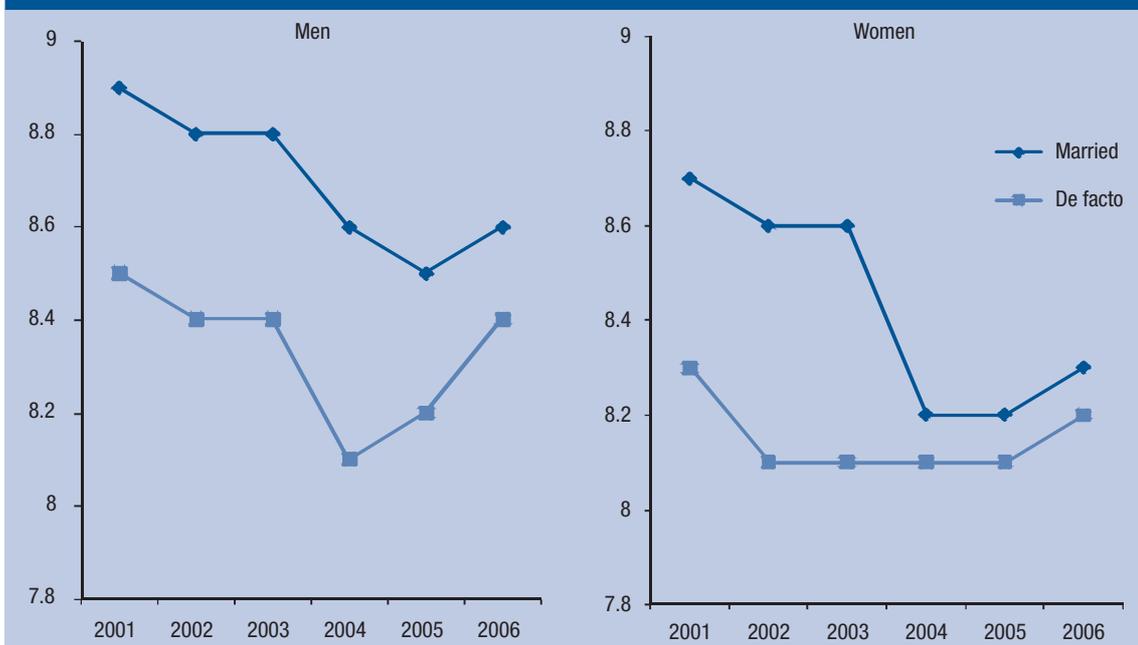
*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

or lower in 2005 no longer living with their partner in 2006. Still, 40% of males and 22% of females who reported medium levels of relationship satisfaction in 2005 rated their satisfaction with their relationship as 8 or higher out of 10 in 2006. 76% of males and 78% of females who had high levels of relationship

satisfaction in 2005—8 or higher out of 10—also reported high levels of satisfaction in 2006.

Table 2.3 suggests that people make more effort to save a marriage than to stay in a de facto relationship, with less than 2% of marriages ending compared to more than 10% of de facto relationships.

**Figure 2.2: Mean satisfaction with partner (0–10 scale)**



Note: Population weighted results.

**Table 2.3: Changes in relationship satisfaction of married persons, 2005–2006 (%)**

Relationship satisfaction in 2005	Relationship satisfaction in 2006				Total
	Low (0–3)	Medium (4–7)	High (8–10)	No longer in relationship <sup>a</sup>	
<b>Males—married</b>					
Low (0–3)	*27.7	31.0	38.3	*3.0	100.0
Medium (4–7)	5.8	51.6	40.2	*2.3	100.0
High (8–10)	*1.0	7.6	90.4	1.0	100.0
Total	2.6	15.5	80.6	1.3	100.0
<b>Females—married</b>					
Low (0–3)	37.2	38.7	*18.0	*6.1	100.0
Medium (4–7)	4.7	54.9	38.4	2.0	100.0
High (8–10)	*0.7	9.3	88.6	1.4	100.0
Total	2.9	20.3	75.0	1.7	100.0
<b>Males—de facto</b>					
Low (0–3)	*6.6	*19.5	*20.3	*53.6	100.0
Medium (4–7)	*3.4	40.5	39.5	*16.6	100.0
High (8–10)	*1.6	12.0	76.1	10.4	100.0
Total	*2.2	18.6	65.8	13.4	100.0
<b>Females—de facto</b>					
Low (0–3)	*22.2	*35.0	*11.4	*31.4	100.0
Medium (4–7)	*10.1	51.9	21.7	16.3	100.0
High (8–10)	*3.3	10.9	78.1	7.7	100.0
Total	5.7	22.8	60.6	10.8	100.0

Notes: Population weighted results. \* Estimate not reliable. <sup>a</sup> Includes all individuals who were not living with the same spouse or partner from the previous year. For most (85.8%) this was because the relationship had broken up. Percentages may not add up to 100 due to rounding.

**Table 2.4: Changes in relationship satisfaction of married persons, 2001–2006 (%)**

Relationship satisfaction in 2001	Relationship satisfaction in 2006				Total
	Low (0–3)	Medium (4–7)	High (8–10)	No longer in relationship <sup>a</sup>	
<b>Males—married</b>					
Low (0–3)	*14.6	*37.4	*21.5	*26.5	100.0
Medium (4–7)	*6.4	37.8	44.1	11.7	100.0
High (8–10)	1.4	11.4	81.6	5.6	100.0
Total	2.3	15.0	76.0	6.7	100.0
<b>Females—married</b>					
Low (0–3)	28.4	*21.6	*16.9	33.0	100.0
Medium (4–7)	8.4	41.1	36.1	14.3	100.0
High (8–10)	1.1	14.1	77.1	7.7	100.0
Total	3.0	18.6	68.9	9.5	100.0
<b>Males—de facto</b>					
Low (0–3)	*10.5	*0.0	*0.0	*89.5	100.0
Medium (4–7)	*1.3	35.5	33.9	29.3	100.0
High (8–10)	*1.2	12.3	69.0	17.6	100.0
Total	*1.4	16.2	61.4	21.1	100.0
<b>Females—de facto</b>					
Low (0–3)	*15.4	*0.0	*16.0	*68.6	100.0
Medium (4–7)	*8.6	34.5	26.2	30.7	100.0
High (8–10)	*2.7	17.4	59.6	20.3	100.0
Total	*4.3	20.1	51.2	24.3	100.0

*Notes:* Population weighted results. \* Estimate not reliable. <sup>a</sup> Includes all individuals who were not living with the same spouse or partner from 2001. For most (79.6%) this was because the relationship had broken up. Percentages may not add up to 100 due to rounding.

Table 2.4 compares levels of relationship satisfaction for married persons and those in de facto relationships between 2001 and 2006 and leads to the expected conclusion that happy relationships continue and unhappy ones usually do not.

While 82% of married men and 77% married of women who had reported high levels of relationship satisfaction in 2001 were still very happy with their relationship in 2006, 6% of men and 8% of women were no longer married. The proportion of people who were no longer living with their spouse or partner from 2001 was much higher for those who were less satisfied with their relationship in 2001; 12% of men and 14% of women who were married in 2001 and reported medium levels of relationship satisfaction were no longer married, and one-third of women and around one-quarter of men who reported levels of relationship satisfaction of 3 out of 10 or less were no longer married.

Only 69% of men and 60% of women who reported high levels of satisfaction with their de facto relationship were still highly satisfied with their relationship in 2006. The majority of the individuals who reported low levels of satisfaction

with their de facto relationship in 2001 were no longer living with that partner in 2006. Overall, around 30% of people who reported medium levels of satisfaction and 20% of people who reported high levels of satisfaction with their relationship with their de facto relationship in 2001 were no longer living with their partner by 2006.

### Endnote

- 1 This refers to all those whose marital status in 2005 was divorced, not people whose divorce was finalised in 2005.

### References

- Australian Bureau of Statistics (2007a) *Marriages, Australia, 2006*, ABS Catalogue No. 3306.0.55.001, Canberra.
- Australian Bureau of Statistics (2007b) *Divorces, Australia, 2006*, ABS Catalogue No. 3307.0.55.001, Canberra.
- Headey, B.W. and Warren, D. (2008) *Families, Incomes and Jobs, Volume 3: A Statistical Report on Waves 1 to 5 of the HILDA Survey*, Melbourne Institute of Applied Economic and Social Research, Melbourne.

### 3. Parenting stress and work–family stress

Most parents feel stressed from time to time. This stress may be a result of juggling work and family arrangements, finding adequate child care, taking care of ill or disabled children, parenting adolescents or teenagers, troubles getting along with stepchildren, or just the general 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 2006 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 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, the majority of parents fall into the category of ‘medium’ parenting stress—3 to 5 out of 7. Sole 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—6 or 7 out of 7—in the six years from 2001 to 2006.

The proportion of parents who reported high levels of parenting stress dropped by just over 4% since 2001, from 12% in 2001 to 7% in 2006. In 2006, 13% of lone mothers reported high levels of parenting stress, compared to 9% of partnered

**Table 3.1: Parenting stress, 2006 (%)**

	Stress level							Total	Mean stress level
	Strongly disagree 1	2	3	4	5	6	Strongly agree 7		
<b><i>Being a parent is harder than I thought it would be</i></b>									
Lone mothers	7.0	8.7	12.5	12.3	23.4	16.5	19.6	100.0	4.6
Partnered mothers	7.0	13.8	10.7	14.4	22.1	19.4	12.5	100.0	4.4
Lone fathers	*9.9	8.6	15.3	25.3	20.3	12.3	*8.3	100.0	4.1
Partnered fathers	8.5	15.6	16.3	22.1	19.8	12.5	5.3	100.0	3.9
Total	7.7	13.8	13.4	17.8	21.2	15.9	10.1	100.0	4.2
<b><i>I often feel tired, worn out or exhausted from meeting the needs of my children</i></b>									
Lone mothers	5.7	11.9	11.6	21.1	19.1	16.1	14.6	100.0	4.4
Partnered mothers	4.9	14.1	11.8	17.0	21.3	20.1	10.8	100.0	4.4
Lone fathers	*7.1	17.5	15.6	21.4	20.9	13.6	*3.9	100.0	3.9
Partnered fathers	7.6	20.6	17.4	22.4	18.1	10.3	3.6	100.0	3.7
Total	6.2	16.7	14.3	19.9	19.7	15.3	7.9	100.0	4.1
<b><i>I feel trapped by my responsibilities as a parent</i></b>									
Lone mothers	26.8	23.8	12.4	16.1	9.8	7.0	4.1	100.0	3.0
Partnered mothers	29.1	27.5	15.1	12.9	7.3	5.1	2.9	100.0	2.7
Lone fathers	18.5	32.7	16.2	*7.2	*11.9	*9.8	*3.7	100.0	3.1
Partnered fathers	26.9	32.3	15.0	12.7	7.5	4.0	1.6	100.0	2.6
Total	27.4	29.3	14.8	12.9	7.9	5.1	2.6	100.0	2.7
<b><i>I find that taking care of my children is much more work than pleasure</i></b>									
Lone mothers	24.8	19.4	14.2	19.4	12.6	2.7	6.8	100.0	3.1
Partnered mothers	26.7	27.8	15.2	13.4	8.9	5.3	2.7	100.0	2.8
Lone fathers	18.8	36.2	19.4	9.7	*7.3	*3.5	*5.0	100.0	2.8
Partnered fathers	21.4	31.9	19.1	14.6	6.7	4.2	2.1	100.0	2.7
Total	23.9	28.9	16.9	14.4	8.3	4.5	3.0	100.0	2.8

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

mothers and only 4% of partnered fathers who were living with a spouse or partner. In all six years, women reported substantially higher levels of parenting stress than men, lone mothers had higher stress levels than partnered mothers and, in all but one year, lone fathers reported higher levels of stress than partnered fathers.

### Is parenting stress higher for parents with young children?

How does the age of the children in the household affect parenting stress? Is parenting stress higher for people with young children, or are teenagers the most troublesome? Table 3.3 shows the proportion of parents with high levels of parenting stress (6 or 7 out of 7) in 2006, by the sex and marital status of the parent and the age of the youngest child in the household.

In general, parents whose youngest child was under the age of 13 had slightly higher levels of parenting stress, with just over 7% reporting stress levels of 6 or higher out of 7, compared to 6% of parents whose youngest child was aged between 13 and 17.<sup>1</sup> However, partnered fathers seemed to escape this stress, with only 4% reporting high levels of parenting stress, compared to 9% of part-

nered mothers, 11% of lone fathers and 13% of lone mothers. Compared to partnered mothers whose youngest child was not yet a teenager, partnered mothers whose youngest child was aged between 13 and 17 were less stressed, with 7% reporting high levels of parenting stress, compared to over 9% of partnered mothers whose youngest child was under the age of 13.

One would also expect that the level of stress that parents feel would be higher if they have more than one child. In 2006, the proportion of parents with high levels of parenting stress ranged from 7% for parents whose children were all aged six or older, to 10% for parents with three or more children all under the age of six. Only 5% of parents with one child under the age of 19 reported high levels of parenting stress, compared to 6% of parents with two children under the age of 18 and 11% of parents with three or more children under 18.<sup>2</sup> Table 3.4 shows the correlation between parenting stress and the age of the youngest child, as well as the correlations between parenting stress and the number of children aged five and under, and the number of children under 18.

A weak negative correlation between parenting stress and the age of the youngest child is evident

**Table 3.2: Proportion of parents with high levels of parenting stress by sex and marital status (%)**

	2001	2002	2003	2004	2005	2006
Lone mothers	16.9	17.0	15.7	14.1	16.9	12.9
Partnered mothers	13.7	11.6	9.6	9.0	9.0	9.1
Lone fathers	11.8	*5.1	*6.9	*8.2	9.9	*11.4
Partnered fathers	7.6	5.5	4.8	4.3	4.1	3.7
Total	11.5	9.4	8.2	7.7	8.0	7.4

Notes: Population weighted results. \* Estimate not reliable.

**Table 3.3: Proportion of parents with high levels of parenting stress by sex, marital status and age of youngest child, 2006 (%)**

	Age of youngest child				Total
	0–2	3–5	6–12	13–17	
Lone mothers	*13.8	*15.4	*10.6	*9.8	12.9
Partnered mothers	9.0	9.9	9.4	6.9	9.1
Lone fathers	*16.5	*2.6	*8.1	*15.0	11.4
Partnered fathers	3.8	*2.8	3.8	*2.2	3.7
Total	7.1	7.2	7.2	6.4	7.4

Notes: Population weighted results. \* Estimate not reliable.

**Table 3.4: Parenting stress by age of youngest child and number of children—Correlations by sex and marital status, 2006**

	Age of youngest child	Number of children under 6	Number of children under 18
Lone mothers	-0.086 <sup>^</sup>	0.088 <sup>^</sup>	0.189 <sup>#</sup>
Partnered mothers	-0.074	0.065 <sup>#</sup>	0.106 <sup>#</sup>
Lone fathers	-0.130 <sup>#</sup>	-0.053	0.102
Partnered fathers	-0.072 <sup>#</sup>	0.065 <sup>#</sup>	0.117 <sup>#</sup>
Total	-0.061 <sup>#</sup>	0.056 <sup>#</sup>	0.113 <sup>#</sup>

Note: # and ^ indicate correlation is significant at the 5% level and 10% level respectively.

in Table 3.4. In other words, as the age of the youngest child increases, parenting stress decreases slightly, particularly for lone fathers. On the other hand, there is a strong positive correlation between levels of parenting stress and the number of children under the age of 18, especially for lone mothers. Parenting stress also increases slightly with the number of children aged five or younger.

### Work–family stress

Parents in paid work are also asked how strongly they agree or disagree with statements relating to *work–family stress*. Table 3.5 compares the average responses to the questions about work–family stress in 2006 for lone parents and parents who

have a spouse or partner, according to whether they work full-time or part-time.

Apart from the small group of lone fathers who work full-time, lone mothers who are working either full-time or part-time have the highest levels of work–family stress. Partnered fathers on the other hand, have the lowest average work–family stress levels.<sup>3</sup> It is slightly more common for lone mothers, working either full-time or part-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 the time they spend at work is less enjoyable and more pressured because of family responsibilities, that they miss out

**Table 3.5: Work–family stress, 2006 (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 requirement of my job, my family time is less enjoyable and more pressured</i>	<i>Overall work–family stress</i>
<b>Employed full-time</b>					
Lone mothers	3.6	3.4	4.3	3.7	3.8
Partnered mothers	3.3	3.3	4.3	3.7	3.6
Lone fathers	3.3	3.5	4.2	3.6	3.5
Partnered fathers	3.2	3.2	4.4	3.5	3.4
<b>Employed part-time</b>					
Lone mothers	3.8	3.4	3.6	3.1	3.8
Partnered mothers	3.3	3.0	3.2	2.8	3.7
Lone fathers	*3.6	*3.0	*2.9	*2.2	*4.2
Partnered fathers	3.4	2.9	3.7	2.6	3.4
Total	3.3	3.2	4.1	3.3	3.5

*Notes:* Population weighted results. \* Estimate not reliable.

**Table 3.6: Proportion of parents with high levels of work–family stress by sex, marital status and working hours (%)**

	2001	2002	2003	2004	2005	2006
<b>Employed full-time</b>						
Lone mothers	*10.5	*13.1	*13.8	*10.4	*15.5	*10.6
Partnered mothers	9.5	11.1	9.9	7.1	8.5	10.2
Lone fathers	*7.9	*4.9	*8.2	*4.7	*15.1	*6.3
Partnered fathers	6.6	6.8	5.4	4.9	6.4	6.3
<b>Employed part-time</b>						
Lone mothers	*7.3	*9.6	*7.1	*5.9	*7.5	*8.2
Partnered mothers	4.9	5.8	4.8	5.2	3.2	4.8
Lone fathers	*10.8	*0.0	*0.0	*9.8	*10.0	*0.0
Partnered fathers	*10.2	*3.6	*5.6	*3.7	*7.2	*1.0
<b>All employed</b>						
Lone mothers	9.2	11.3	10.3	8.2	11.0	9.7
Partnered mothers	7.0	7.8	6.8	5.9	5.3	7.0
Lone fathers	*8.6	*4.5	*6.3	*5.2	*13.8	*5.3
Partnered fathers	7.2	6.6	5.4	4.9	6.4	6.1
Total	7.4	7.3	6.4	5.6	6.8	6.7

*Notes:* Population weighted results. \* Estimate not reliable.

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.

Looking at average levels of work–family stress does not reveal much variation between the stress levels of parents who work full-time or part-time, or differences between men and women. Table 3.6 shows the proportion of parents who reported high levels of work–family stress (6 or 7 out of 7) in the six years from 2001 to 2006.

Overall, levels of work–family stress have dropped slightly since 2001. The proportion of parents who were employed full-time and reported high levels of work–family stress dropped from 7% in 2001 to 6% in 2004 and then increased to 7% in 2006. In all six years, it was more common for parents who work full-time to report higher levels of stress than parents who work part-time. This is particularly the case for partnered mothers. In 2006, 10% of partnered mothers who worked full-time reported high levels of work–family stress, compared to 5% of partnered mothers who were working part-time. Compared to mothers with partners, it is more common for lone mothers to report high levels of work–family stress. In 2006, 10% of lone mothers (who were working either full-time

or part-time) reported high levels of work–family stress, compared to 7% of partnered mothers.

### Persistence of family-related stress, 2001 to 2006

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% of men and 32% of women who had high parenting stress in 2001 still had high levels in 2004, and only 15% of men and 3% of women had managed to reduce high levels of stress to low. Tables 3.7 and 3.8 compare the levels of parenting stress and work–family stress in 2005 and 2006 for persons who had parenting responsibilities in both years.

Of those parents who reported high levels of parenting stress in 2005, 29% of fathers and 53% of mothers also reported high parenting stress levels in 2006. This suggests that for mothers, parenting stress does persist for some time. Over 80% of parents who reported medium levels of parenting stress in 2005—3 to 5 out of 7—also reported medium levels in 2006, while over 40% of people who reported low levels of parenting stress in 2005 had medium levels of stress by 2006. Of

**Table 3.7: Persistence of parenting stress, 2005–2006 (%)**

Parenting stress in 2005	Parenting stress in 2006			Total
	Low (1–2)	Medium (3–5)	High (6–7)	
<b>Males</b>				
Low (1–2)	58.6	40.8	*0.5	100.0
Medium (3–5)	16.1	80.2	3.7	100.0
High (6–7)	*4.7	66.2	29.0	100.0
Total	24.6	71.3	4.1	100.0
<b>Females</b>				
Low (1–2)	56.8	43.2	*0.0	100.0
Medium (3–5)	11.3	82.9	5.9	100.0
High (6–7)	*2.0	44.6	53.4	100.0
Total	17.2	72.2	10.5	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 3.8: Persistence of work–family stress, 2005–2006 (%)**

Work–family stress in 2005	Work–family stress in 2006			Total
	Low (1–2)	Medium (3–5)	High (6–7)	
<b>Males</b>				
Low (1–2)	52.0	47.4	*0.6	100.0
Medium (3–5)	10.8	84.4	4.9	100.0
High (6–7)	*0.0	80.6	19.4	100.0
Total	18.1	76.8	5.1	100.0
<b>Females</b>				
Low (1–2)	53.2	45.7	*1.0	100.0
Medium (3–5)	14.5	78.8	6.7	100.0
High (6–7)	*0.0	51.7	48.3	100.0
Total	22.9	69.1	8.0	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

course, the household situation may have changed during this time. For example, parents may have separated or had a new baby, causing higher levels of stress for one or both parents. On the other hand, the stress may have eased for parents whose children are now school age and more able to look after themselves. Parents' working hours may also have changed—increased work hours of either parent may increase levels of work–family stress, while reducing work hours may have the opposite effect.

In terms of work–family stress, almost half the mothers who reported high levels of work–family stress in 2005 also had high levels of stress in 2006. However, of the fathers who reported high levels of work–family stress in 2005, only 19% were still highly stressed in 2006. Just under 80% of mothers and 84% of fathers who reported medium levels of work–family stress in 2005 still had medium levels of stress in 2006, while more than 45% of mother and fathers whose work–family stress was low in 2005 had medium levels of stress in 2006.

Tables 3.7 and 3.8 show that it is much more common for women than men to experience high levels of parenting stress and work–family stress that continues for at least one year, but Tables 3.9

and 3.10, which compare the levels of parenting stress and work–family stress in 2001 and 2006 for individuals with parenting responsibilities in both 2001 and 2006, show that most parents are able to reduce their stress in the longer-term.

While very few parents who reported high levels of parenting stress in 2001 had reduced their stress levels to low by 2006, 72% of men and 66% of women who reported high levels of parenting stress in 2001 had medium levels of parenting stress in 2006. Just over three-quarters of parents who said their parenting stress was medium in 2001 reported medium levels in 2006, while 20% of men and 17% of women had gone from having medium levels of parenting stress in 2001 to low levels in 2006. Around half the parents who reported low levels of parenting stress in 2001 reported medium levels of parenting stress in 2006, but very few had gone from low levels of parenting stress in 2001 to high parenting stress in 2006.

Similar to the pattern evident for parenting stress, Table 3.10 shows that, of those who reported high levels of work–family stress in 2001, few had been able to reduce their stress to low: 83% of men and 65% of women had lowered their level of work–family stress to medium, leaving 15% of

**Table 3.9: Persistence of parenting stress, 2001–2006 (%)**

Parenting stress in 2001	Parenting stress in 2006			Total
	Low (1–2)	Medium (3–5)	High (6–7)	
<b>Males</b>				
Low (1–2)	50.3	49.0	*0.7	100.0
Medium (3–5)	20.3	76.8	2.9	100.0
High (6–7)	*2.9	72.2	24.9	100.0
Total	25.5	70.7	3.8	100.0
<b>Females</b>				
Low (1–2)	46.5	52.6	*1.0	100.0
Medium (3–5)	16.5	76.7	6.8	100.0
High (6–7)	*4.5	65.5	30.0	100.0
Total	18.7	71.8	9.5	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 3.10: Persistence of work–family stress, 2001–2006 (%)**

Work–family stress in 2001	Work–family stress in 2006			Total
	Low (1–2)	Medium (3–5)	High (6–7)	
<b>Males</b>				
Low (1–2)	37.6	58.8	*3.6	100.0
Medium (3–5)	13.6	82.0	4.4	100.0
High (6–7)	*2.8	82.7	14.5	100.0
Total	17.7	77.2	5.0	100.0
<b>Females</b>				
Low (1–2)	45.0	52.8	*2.3	100.0
Medium (3–5)	13.2	78.4	8.3	100.0
High (6–7)	*3.9	65.2	31.0	100.0
Total	20.8	70.4	8.8	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

men and 31% of women who reported high levels of work–family stress in both 2001 and 2006. As with parenting stress, well over 50% of people with low levels of stress in 2001 reported medium levels of work–family stress in 2006, and approximately 80% of parents who reported medium levels of work–family stress in 2001 also reported medium stress levels in 2006.

These results suggest that while many are able to reduce their levels of parenting stress and work–family stress to some extent, ‘medium’ levels of stress seem to persist for several years, and high levels of parenting stress and work–family stress are more persistent for mothers than for fathers.

### Endnotes

- 1 It should be noted that we are not implying that stress is related only to the age of the youngest child. There could be a combination of factors causing the stress, for example, a parent of a 5 year old and a teenage child may be stressed because of the older child.
- 2 There are too few cases to break down these figures by sex and marital status, therefore correlations are shown.
- 3 There is no significant correlation between age of youngest child and work–family stress observed for men or women. There is only a slight positive correlation (0.063) between work–family stress and the number of children under 18 for coupled men, while all other groups have no significant correlation.

## 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—for example, a growing number of lone parent families—have created a growing need for child care that is both accessible and affordable. According to the Australian Institute of Health and Welfare (2005), 61,000 Australian children were prevented from attending child care in 2003 because of a lack of child care places; a further 30,000 children were not in child care because the cost was too high; and 22,000 could not access a place because there were none in the area.

Table 4.1 shows the proportion of households with children under 15, as well as the proportion of households who had used or had considered using child care in the 12 months prior to their interview for the five years from 2002 to 2006.<sup>1</sup> Work-related child care is more common than non-work-related child care; in 2006, 45% of households with children under 15 using work-related child care, and 23% using child care while the parents are doing non-work-related activities.

In all five years, approximately 28% of households had at least one child aged 14 or younger living in the household. In those households with children

aged 14 or less, approximately half had either used or considered using child care. The proportion of households with children aged 14 or younger who used some type of child care while the parents were at work increased from 40% of households in 2002 to 45% in 2006, while 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% of households in 2002 to 23% of households in 2006.

### Child care in 2006

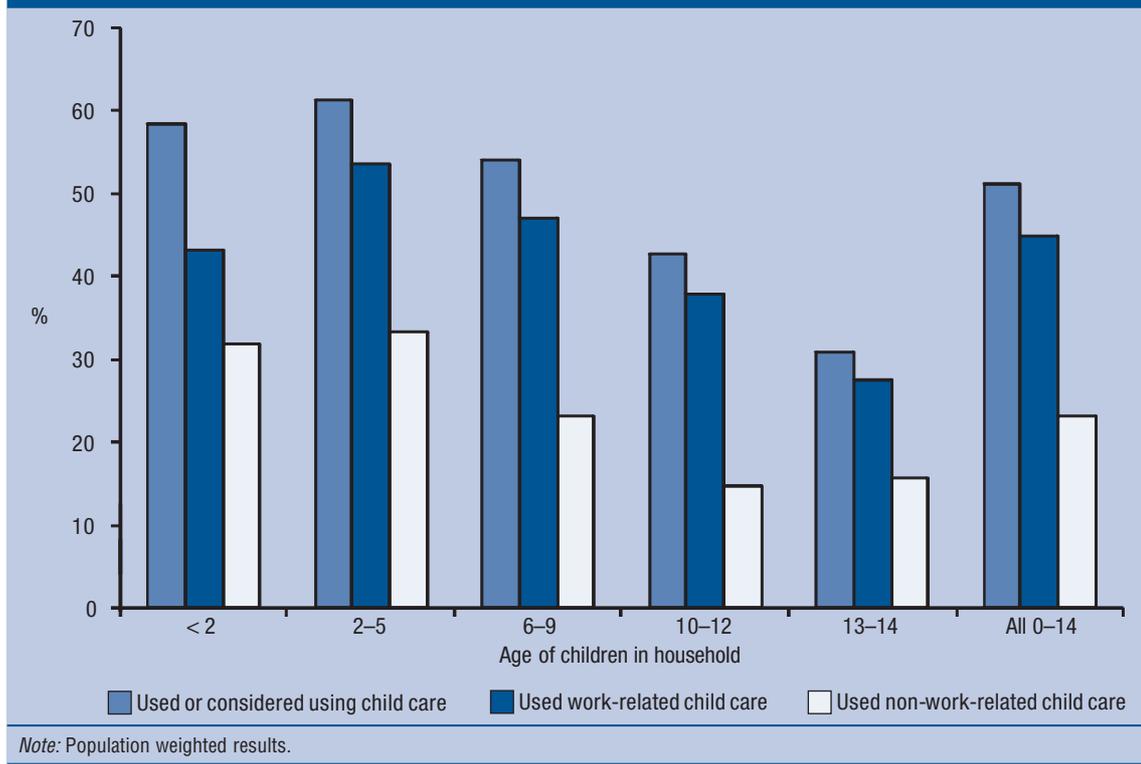
In previous HILDA Statistical Reports, it was found that the use of child care is most common in households with children aged between two and five years. Figure 4.1 shows the proportion of households with children aged 14 or younger who used child care in 2006, broken down by the age of the children in the household.

In 2006, use of work-related and non-work-related child care was most common in households with at least one child between the ages of two and five. While more than half of the parents in households where at least one child was under 10 years of age had used or considered using some form of child care, only 43% of households with children aged between 10 and 12 and 31% of households with

**Table 4.1: Child care use (%)**

	2002	2003	2004	2005	2006
Proportion of households with children aged 14 or less	28.6	28.5	28.3	28.0	27.6
<b>Of those with children aged 14 or less...</b>					
Proportion who used or considered using child care in the past 12 months	49.5	49.6	49.0	49.2	51.1
Proportion who used work-related child care in the past 12 months	40.3	40.8	42.2	41.3	44.8
Proportion who used non-work-related child care in the past 12 months	26.3	26.4	26.5	24.3	23.2
<i>Note: Population weighted results.</i>					

Figure 4.1: Child care use, by age of children, 2006



children aged between 13 and 14 had used or considered using child care.<sup>2</sup> Work-related child care is more commonly used than non-work-related child care, regardless of the age of the children, with 54% of households with children aged 2-5, 47% of households with children aged 6-9, 38% of households with children aged 10-12, and 28% of households with children aged 13-14, using child care while one or both of the parents were at work. It is also evident that, compared to school aged children, non-employment-related child care is a lot more common for children who are not yet old enough to go to school. Overall, only about 15% of households with children aged 10-14 reported using non-work-related child care in the last 12 months, compared to 23% of households with children aged 6-9, 33% of households with children aged 2-5 and 32% of households with children below the age of 2.

### Work-related child care

Tables 4.2 and 4.3 describe the types of child care used, and the average number of hours spent per week in each type of child care for school age children and pre-school age children in households where work-related child care was used.<sup>3</sup> Table 4.2 shows that, of those households where child care was used for school aged children while the parents were at work, 62% used informal child care only, 25% only used formal child care and 13% used a combination of formal and informal child care. Overall, just over 75% of households who used work-related child care for their school aged children used informal child care, while only 38% used some type of formal child care.

School aged children spent an average of 8.7 hours a week in child care while their parents were at work. The most common type of work-related child care used for school aged children is formal outside of school hours care, which was used by 32% of households where child care was used for school aged children. Other types of formal child care, such as family day care or a paid sitter or nanny, are quite uncommon. In terms of informal care, school age children look after themselves while their parents are at work in 17% of households, 18% are cared for by an older brother or sister, 25% are cared for by a non-resident grandparent, 12% are looked after by another non-resident relative and 14% go to a friend or neighbour's home.

Compared to school aged children, child care arrangements for children who are not yet old enough to attend school are quite different. It is much more common for pre-school age children to be in formal child care. Table 4.4 shows the types of work-related child care used for pre-school aged children. Of those households where work-related child care is used for children who are not old enough to go to school, 47% only used formal child care, 29% only used informal child care and 24% used a combination of formal and informal care.

Pre-schoolers who were in child care while their parents were working spent an average of 23.9 hours per week in child care in 2006. The likely explanation for the difference in hours of child care used for pre-school children and school aged

children is that pre-school aged children need extra child care for the hours when the school aged children are in school. For children who are not old enough to go to school, the most common type of informal child care arrangement is being cared for by a non-resident grandparent, with 33% of pre-schoolers being cared for by a grandparent while their parents are at work.<sup>4,5</sup> The most common form of formal child care for pre-school age children is a private or community long day care centre, with 33% attending this type of child care while their parents are at work.

### Non-employment-related child care

In 2006, non-employment-related child care (child care used while parents were not at work) was less common than work-related child care, particularly for school aged children. Table 4.4 shows the types of non-work-related child care used for school aged children, and the average number of hours per week school age children spent in non-employment-related child care. Of those households where non-employment-related child care was used for school aged children, 80% used informal care only, 15% only used formal child care, and 5% used a combination of formal and informal care. Like work-related child care, the majority of non-work-related child care used for school aged children was informal, and the most common type of informal child care was a non-resident grandparent. The average amount of non-

work-related child care for school aged children was 5.5 hours per week, compared to 8.4 hours per week for formal child care.

Table 4.5 shows the types of non-work-related child care used for pre-school aged children, as well as the average number of hours per week pre-school aged children spent in non-work-related child care. Overall, in 2006 almost 60% of households where child care was used for pre-school children while the parents were not at work used some type of informal child care, and more than 50% used some type of formal child care. The most common type of child care used for pre-school children while parents were undertaking non-work activities was a non-resident grandparent, with 38% of households who used non-work-related child care for their pre-school aged children using this option.

The number of hours pre-school aged children spent in non-work-related child care varies significantly between formal and informal child care types. The average time spent in informal child care was 5.9 hours per week, but pre-school age children who spent time in formal child care spent an average of 12.4 hours per week in non-work-related child care.

Overall, Tables 4.2 to 4.4 show that, for both work-related and non-work-related child care, it is more common for younger children to be in formal child care such as family day care or a private or

**Table 4.2: Work-related child care for school aged children, 2006—Households where child care is used for school aged children while parents are at work**

Type of child care	Proportion of households that used this type of child care (%) <sup>a</sup>	Average number of hours per child per week
<b>Informal child care</b>		
The child's brother or sister	18.3	5.0
Child looks after self <sup>b</sup>	17.2	4.6
Child comes to my (or my partner's) workplace	*2.4	*4.8
Child's grandparent who lives with us	*4.9	*12.3
Child's grandparent who lives elsewhere	24.6	6.7
Other relative who lives with us	*1.5	*8.3
Other relative who lives elsewhere	11.5	7.2
A friend or neighbour coming to our home	5.3	3.9
A friend or neighbour in their home	13.9	4.0
Child's other parent not living in household	*0.3	–
Total—informal child care	75.2	7.7
<b>Formal child care</b>		
Formal outside of school hours care	31.8	6.8
A paid sitter or nanny	3.4	5.6
Family day care	4.1	14.7
Total—formal child care	38.0	7.6
Total—formal and/or informal child care	100.0	8.7

Notes: Population weighted results. <sup>a</sup> Column does not add up to 100, since each household may use multiple types of child care. Hours not asked for care by child's other parent not living in household. \* Estimate not reliable. <sup>b</sup> Note that 99% of households in which the child looked after themselves had at least one child aged between 10 and 14.

community long day care centre, while informal care is more commonly used for school age children.

### Difficulties with child care

Each year, parents who had used or considered using child care are asked about the difficulties they have encountered. They are asked to rate the

level of difficulty they have with various 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'. Table 4.6 shows the proportion of couple and lone parent households in each year who reported difficulties (gave a rating of 8 or more) with each of these aspects of child care.

**Table 4.3: Work-related child care for pre-school aged children, 2006—Households where child care is used for pre-school aged children while parents are at work**

Type of child care	Proportion of households that used this type of child care (%) <sup>a</sup>	Average number of hours per child per week
<b>Informal child care</b>		
The child's brother or sister	*1.0	*13.7
Child's grandparent who lives with us	*4.0	*21.7
Child's grandparent who lives elsewhere	33.4	13.0
Other relative who lives with us	0.4	13.5
Other relative who lives elsewhere	13.1	18.7
A friend or neighbour coming to our home	*2.7	*6.1
A friend or neighbour in their home	6.4	8.0
Child's other parent not living in household	*0.0	—
Total—informal child care	52.7	16.0
<b>Formal child care</b>		
A paid sitter or nanny	5.6	14.9
Family day care	20.6	17.9
Long day care centre at workplace	7.7	26.1
Private or community long day care centre	33.1	22.3
Kindergarten or pre-school	12.2	14.0
Total—formal child care	71.2	22.0
Total—formal and/or informal child care	100.0	23.9

*Notes:* Population weighted results. Does not include hours of care by child's other parent not living in household. <sup>a</sup> Column does not add up to 100, since each household may use multiple types of child care. \* Estimate not reliable.

**Table 4.4: Non-work-related child care for school aged children, 2006—Households where child care is used for school aged children while parents were not at work**

Type of child care	Proportion of households that used this type of child care (%) <sup>a</sup>	Average number of hours per child per week
<b>Informal child care</b>		
The child's brother or sister	27.7	4.2
Child's grandparent who lives with us	*3.8	*5.0
Child's grandparent who lives elsewhere	25.6	4.5
Other relative who lives with us	*1.9	*5.5
Other relative who lives elsewhere	22.5	5.2
A friend or neighbour coming to our home	*5.5	*2.2
A friend or neighbour in their home	16.4	5.3
Total—informal child care	84.6	5.5
<b>Formal child care</b>		
A paid sitter or nanny	*6.9	*3.3
Family day care	*3.0	*6.7
Private or community long day care centre	*0.4	*16.0
Formal outside of school hours care	9.7	12.4
Total—formal child care	20.0	8.4
Total—formal and/or informal child care	100.0	6.3

*Notes:* Population weighted results. <sup>a</sup> Column does not add up to 100, since each household may use multiple types of child care. \* Estimate not reliable.

**Table 4.5: Non-work-related child care for pre-school aged children—Households where child care is used for school aged children while parents were not at work**

Type of child care	Proportion of households that used this type of child care (%) <sup>a</sup>	Average number of hours per child per week
<b>Informal child care</b>		
The child's brother or sister	*2.7	*5.1
Child's grandparent who lives with us	*2.0	*5.0
Child's grandparent who lives elsewhere	38.0	5.5
Other relative who lives with us	*0.2	*30.0
Other relative who lives elsewhere	17.1	5.4
A friend or neighbour coming to our home	*4.3	*2.5
A friend or neighbour in their home	*5.4	*1.9
Total—informal child care	57.8	5.9
<b>Formal child care</b>		
A paid sitter or nanny	*4.4	*4.5
Family day care	19.0	12.3
Private or community long day care centre	17.6	14.8
Kindergarten or pre-school	13.3	9.7
Total—formal child care	51.9	12.4
Total—formal and/or informal child care	100.0	10.0

Notes: Population weighted results. <sup>a</sup> Column does not add up to 100, since each household may use multiple types of child care.  
\* Estimate not reliable.

**Table 4.6: Difficulties with child care (%)**

	2001	2002	2003	2004	2005	2006
<b>Couple households</b>						
Finding good quality child care	14.1	14.0	15.6	15.9	16.0	10.3
Finding the right person to take care of your child	16.3	16.8	14.9	17.2	14.6	14.1
Getting care for the hours you need	16.1	15.3	16.9	16.8	16.8	11.7
Finding care for a sick child	28.7	28.8	27.6	28.6	23.7	23.9
Finding care during school holidays	11.7	13.8	12.4	12.4	8.9	9.2
The cost of child care	22.4	20.8	21.4	23.8	23.1	20.2
Juggling multiple child care arrangements	12.2	13.8	12.4	11.0	8.0	5.7
Finding care for a difficult or special needs child	5.6	*10.7	*10.7	*12.9	*2.0	*1.5
Finding a place at the child care centre of your choice	17.2	19.5	21.7	21.4	14.9	10.8
Finding a child care centre in the right location	14.0	15.9	18.4	19.1	11.2	8.9
Finding care your child/children are happy with	9.0	10.1	9.7	11.6	9.7	8.8
Any of the above	48.2	47.0	47.1	49.3	48.2	44.5
<b>Lone parent households</b>						
Finding good quality child care	18.8	14.3	14.9	*9.8	15.0	13.4
Finding the right person to take care of your child	19.3	19.4	19.3	19.8	20.7	17.7
Getting care for the hours you need	24.2	21.2	22.6	13.6	21.5	19.5
Finding care for a sick child	41.9	46.2	39.0	38.3	36.7	39.9
Finding care during school holidays	20.6	18.3	18.9	14.3	18.5	16.1
The cost of child care	23.3	14.7	18.6	16.9	25.6	21.5
Juggling multiple child care arrangements	19.7	15.7	16.4	*14.8	15.5	9.8
Finding care for a difficult or special needs child	20.3	*22.9	*32.7	*23.0	*6.4	*5.3
Finding a place at the child care centre of your choice	20.0	13.9	20.4	*15.5	14.7	18.3
Finding a child care centre in the right location	16.1	12.9	17.6	*12.0	11.8	13.4
Finding care your child/children are happy with	16.4	13.6	16.3	*10.9	13.4	17.7
Any of the above	60.4	54.9	54.3	50.4	61.6	54.3

Notes: Population weighted results. \* Estimate not reliable.

**Table 4.7: Persistence of child care difficulties, 2004–2006 (%)**

	Years where difficulty was 8+ (0–10 scale)				Total
	0	1	2	3	
Finding good quality child care	76.3	16.1	5.8	*1.8	100.0
Finding the right person to take care of your child	73.8	17.4	7.0	*1.9	100.0
Getting care for the hours you need	81.2	17.0	*1.8	*0.0	100.0
Finding care for a sick child	51.3	21.2	17.1	10.3	100.0
Finding care during school holidays	81.2	13.2	4.7	*1.0	100.0
The cost of child care	58.9	21.7	12.8	6.5	100.0
Juggling multiple child care arrangements	68.5	24.9	4.9	*1.7	100.0
Finding care for a difficult or special needs child	96.5	2.1	*0.8	*0.7	100.0
Finding a place at the child care centre of your choice	72.5	17.1	8.1	*2.3	100.0
Finding a child care centre in the right location	77.4	15.1	5.0	*2.5	100.0
Finding care your child/children are happy with	79.8	15.6	3.8	*0.7	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

The most common problem encountered is finding care for a sick child, with 24% of couple households and almost 40% of lone parent households reporting this difficulty in 2006. Apart from problems such as the lack of care available for sick children and the exclusion of sick children from child care, this type of child care would have to be arranged at very short notice, so, in that sense would be more difficult than other problems, which could be sorted out over a longer period of time. Finding care for a sick child at short notice is more of a problem for lone parent households than couple households, possibly because, compared to couple families, lone parent families are likely to have fewer family members available to take care of their children at short notice.

It is also quite common for parents to report difficulties with the cost of child care. Over 20% of couple households report this problem every year, and the proportion of lone parents who report problems with the cost of child care ranges from 15% in 2002 to 26% in 2005. For some households, finding the right person to take care of their children is also a problem, with 14% of couple households and 18% of lone parent households who used child care saying that this was a problem in 2006. Furthermore, compared to couple households, it is more common for lone parents to report difficulties with getting care for the hours they needed; finding care during school holidays; finding a place at the child care centre of their choice; and finding care that their children were happy with.

#### 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 4.7 shows the number

of years child care problems persisted for households who had used, or considered using, child care in each of the three years from 2004 to 2006.<sup>6</sup> Problems with child care availability, such as finding good quality child care, finding a place at the child care centre of your choice and getting care for the hours needed, generally only last for one or two years. Around 20% of households reported these problems in one of the three years, and fewer than 10% had problems with child care availability in two out of three years. However, it is possible that some households overcame problems of child care availability by reducing the mother's working hours.<sup>7</sup>

Finding care for a sick child was still the most persistent problem—49% of households reported difficulties finding care for a sick child in at least one of the three years, 21% had difficulties finding care for a sick child in only one of the three years, 17% reported problems in two of the three years and 10% had difficulties finding care for a sick child in all three years. This persistence likely reflects the intransigent nature of the problem: child sickness often arises with little or no notice and requires parents to find alternative care arrangements that, were they always readily available, would have likely rendered formal child care unnecessary in the first place. So, while finding care for sick children quite likely to be an infrequent problem, it is the one that proves to be the most difficult.

Problems with the cost of child care were also somewhat persistent—7% of households who used child care said this was a problem all three years, 13% had problems with the cost of child care in two of the three years and 22% reported problems with child care costs in one out of the three years.<sup>8</sup> Apart from difficulties with the cost of child care and problems finding care for a sick child, most other child care problems appear to persist for only one year, or at the most, two years.

## Endnotes

- 1 In 2001, the format of the child care questions was different to that from 2002 onwards.
- 2 Work-related child care is care provided only while the parent (and their partner) is at work and does not include time taken to do study or other training. Child care used while the parents are engaged in study or other training activities is considered non-work-related child care.
- 3 The person who answers the child care questions is asked whether there are any children in the household aged 14 or less who attend school. If yes, the respondent is then asked specific questions about child care for their school aged children. The respondent is then asked if there are any children who are not yet at school and if so, a separate set of questions is asked about these children.
- 4 Using the 'Growing Up in Australia' longitudinal study of Australian children, Gray and Sanson (2005) found that, in 2004, 18% of infants (defined as under three) were regularly cared for by grandparents, typically one or two days a week, averaging 12 hours a week.
- 5 Note that the categories described as 'other relative' do not include non-resident parents—non-resident parents are included as a separate category. However, no respondents in 2006 said a non-resident parent had cared for their pre-school age child while they were at work, so the category was excluded from the table.
- 6 Given that child care needs change as children grow from babies, to toddlers, pre-school age and then school age and high school age, it is not sensible to restrict the sample only to households where child care was used in all six years from 2001 to 2006. Therefore, for the purpose of looking at the persistence of child care difficulties, only those households where child care had been used in each of the three years from 2004 to 2006 have been included. Also note that there were too few cases to separate the

table into couple households and lone parent households and still obtain statistically reliable estimates.

- 7 Using the HILDA Survey data, McNamara et al. (2005) found that compared to mothers who did not have difficulties with child care in 2002, it was more common for mothers who had reported problems with child care in 2002 to have reduced their working hours by 2003 or moved their children to informal child care. The HILDA Survey data show that of those mothers who were not working at the time of interview, but said they would like to work, the main reason for not looking for work is that they prefer to look after their children themselves.
- 8 Possible reasons for relatively few households experiencing persistent difficulties with child care costs are that the cost of child care tends to decrease as children become older and they can look after themselves and/or their younger siblings.

## References

- Australian Institute of Health and Welfare (2005), 'Australia's Welfare 2005', Australian Institute of Health and Welfare Biennial Welfare Report No. 7, Canberra, <<http://www.aihw.gov.au/publications/index.cfm/title/10186>>.
- Gray, M. and Sanson, A. (2005) 'Growing Up in Australia: The Longitudinal Study of Australian Children', *Family Matters*, no. 72, pp. 4–9.
- McNamara, J., Cassells, R. and Lloyd, R. (2005), 'Persistence of Problems with Child Care: Evidence from the HILDA Survey', Paper presented at the HILDA Survey Research Conference, University of Melbourne, 29–30 September, <[http://www.melbourneinstitute.com/hilda/conf/conf2005/confpapers/Session4B\\_Families/McNamara,Justine.pdf](http://www.melbourneinstitute.com/hilda/conf/conf2005/confpapers/Session4B_Families/McNamara,Justine.pdf)>.

## 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 period 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 2006.

The most common life event experienced each year by between 16% and 18% of Australians over the age of 15, is serious injury or illness of a close relative or family member, while around 9% 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% of people each year, include death of a close relative or family member—not including their spouse or children; death of a close friend, being a victim of a property crime—although the proportion affected dropped below 5% in 2005 and 2006; and promotion at work.

### Age and sex

Of course certain life events are more likely to happen to people with specific characteristics, such as sex, age and the area they live in. For example, males are much more likely than females

to have been detained in a jail;<sup>1</sup> the likelihood of retiring from the workforce increases with age; and people living in major cities are more likely to be the victims of crime than people living in rural or remote areas. Figures 5.1 and 5.2 show the proportion of individuals who experienced specific life events in 2006, broken down by broad age groups.

As one would expect, marriage is more common among males in the 25–54 years age range than among males in the other two age groups. However, males under 25 are the most likely to experience separation from a spouse or partner—although typically they are not married to the partner from whom they separate. In 2006, 8% of males aged between 25 and 54 had experienced the pregnancy of a partner and 6% of males in this age group either had a partner who had given birth to a new baby or adopted a child. Moving house is most common for males under the age of 25, with 20% of males in this age group changing residence at least once in the twelve months prior to their 2006 interview, compared to 15% of males aged between 25 and 54, and only 6% of males aged 55 or older.

The proportion of males experiencing a serious personal injury or illness in the past twelve months increases with age, as does the proportion who experiencing the death of a close friend. Having been the victim of property crime or physical violence is most common among younger males, with 4% of males aged under 25 reporting having been the victim of physical violence in the

12 months prior to their 2006 interview and 7% reporting having been the victim of property crime. As expected, retirement is quite uncommon among males under the age of 55, but 8% of males aged 55 or older had retired in the 12 months prior to their 2006 interview. Changing jobs, being fired or being made redundant is more common for males under the age of 25 than for older males, while males in the 25 to 54 age group are the most likely to report being promoted at work.

As is the case for males, getting married is most common for females aged between 25 and 54, and separating from a spouse or partner is most common for females under the age of 25. In 2006, 5% of females under the age of 25 and 8% of females aged between 25 and 54 had been pregnant, and 3% of females under 25 and 5% of females between the ages of 25 and 54 had either given birth to a baby or adopted a child. The proportion of females who had moved house at least once in the twelve months prior to their 2006 HILDA Survey interview was highest for females under the age of 25—24% compared to 16% of females aged between 25 and 54 and only 6% of females who were 55 or older.

The proportion of females experiencing a serious illness or injury is lowest for females under the age of 25 and highest for females aged 55 or older, and the same pattern is evident for serious illness or injury of a close relative or family member. Having been the victim of property crime or physical violence is more common for younger females

**Table 5.1: Life events (%)**

	2002	2003	2004	2005	2006
Got married	2.6	2.4	2.8	3.3	2.6
Separated from spouse or long-term partner	4.4	4.2	3.9	3.9	3.6
Got back together with spouse or long-term partner after a separation	1.4	1.0	1.0	1.0	1.0
Pregnancy or pregnancy of partner	5.3	4.9	4.5	5.2	4.8
Birth or adoption of new child	3.4	3.6	3.1	3.2	3.4
Serious personal injury or illness to self	8.4	9.3	8.6	8.6	8.8
Serious injury or illness to a close relative or family member	17.3	18.0	16.3	16.6	16.1
Death of spouse or child	1.0	0.9	1.1	0.9	0.8
Death of other close relative or family member	11.6	10.8	11.5	12.3	10.5
Death of a close friend	11.3	11.2	11.3	10.4	11.1
Victim of physical violence	2.0	1.9	1.5	1.5	1.5
Victim of a property crime	6.9	6.2	5.3	4.3	4.9
Detained in jail	0.2	0.2	0.2	0.2	0.2
Close family member detained in jail	1.0	1.1	1.3	1.4	1.4
Retired from the workforce	2.8	2.9	2.4	2.0	2.5
Fired or made redundant by employer	3.6	3.1	2.7	2.6	2.7
Changed jobs	12.7	13.0	12.9	13.5	13.5
Promoted at work	5.9	6.1	6.1	6.3	6.2
Major improvement in financial situation (e.g. won lottery, received an inheritance)	3.2	3.1	3.1	2.8	2.8
Major worsening in finances (e.g. went bankrupt)	3.3	3.3	2.6	2.9	2.6
Changed residence	15.2	15.3	14.2	14.0	13.7

*Note:* Population weighted results.

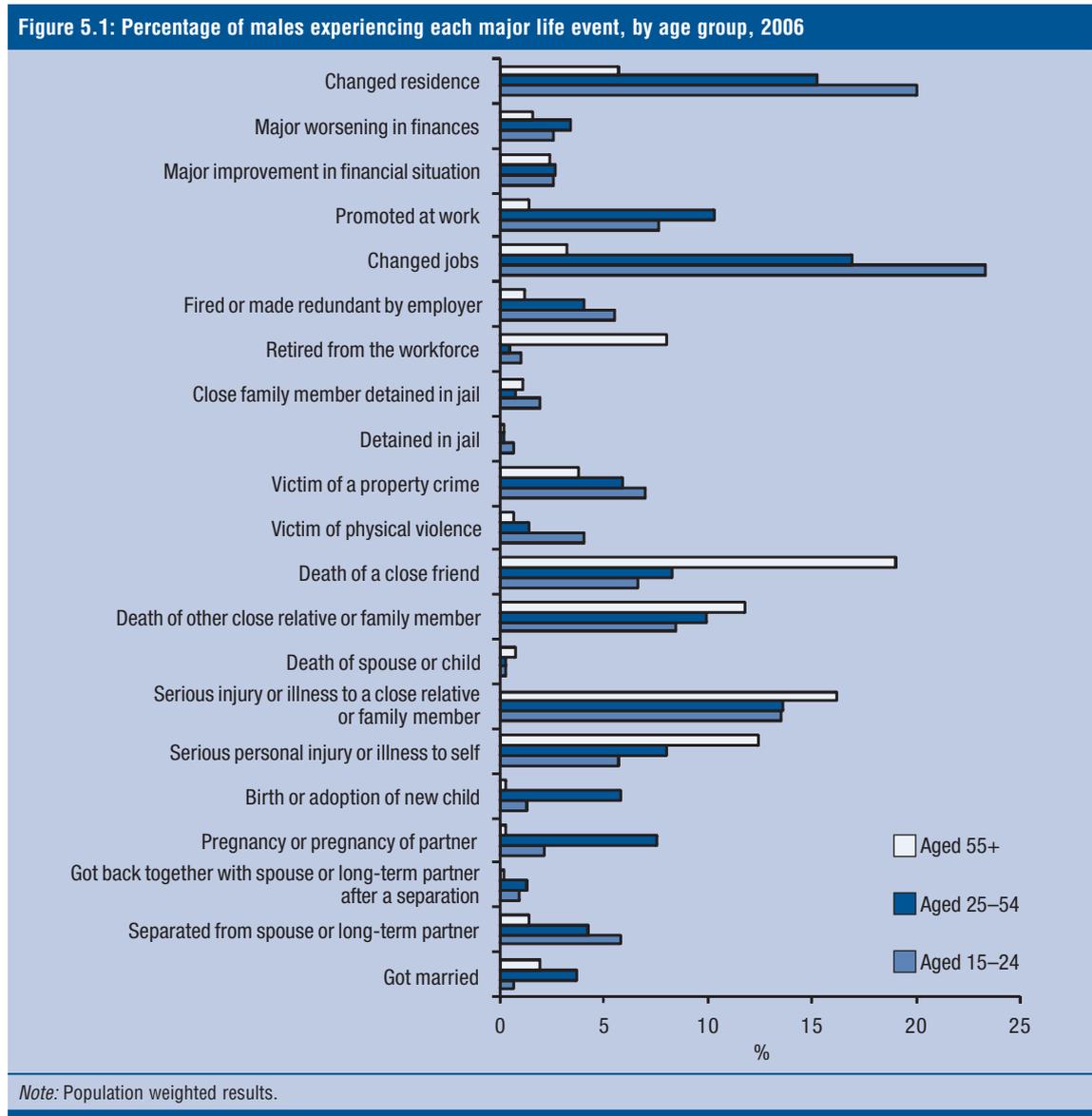
than for older females, with 3% of females aged under 25 saying that they had been the victim of physical violence in the past twelve months, and 5% of females in this age group saying they had been the victim of property crime.

Very few females under the age of 55 reported having retired from the workforce in the twelve months prior to their 2006 interview, while 5% of females aged 55 or over had recently retired. Having been fired or made redundant is most

common among younger females, but it is also more common for younger females to have changes jobs or to have been promoted at work.

**Region of residence**

Figure 5.3 considers differences in experiences of major life events by region of residence—specifically, according to whether individuals live in a major city, an inner regional area, or an outer regional or remote area.<sup>2</sup> Overall, the figures



indicate there is little difference in the proportion of people who experienced specific life events depending on whether they lived in the city, inner regional area or in an outer regional or remote area. The main patterns evident are that people living in the major cities are the least likely to move residence, but the most likely to change jobs, be dismissed by their employer or be promoted at work, while people living in outer regional or remote areas are the most likely to move and least

likely to change jobs, be dismissed or be promoted. Also notable is that people living in inner regional areas have higher rates of experience of death, serious injury or serious illness of a family member or other relative and are also more likely to report being victims of physical violence.

#### Endnotes

1 As of 30 June 2007, females accounted for 7% of the total Australian prisoner population (ABS, 2007).

**Figure 5.2: Percentage of females experiencing each major life event, by age group, 2006**

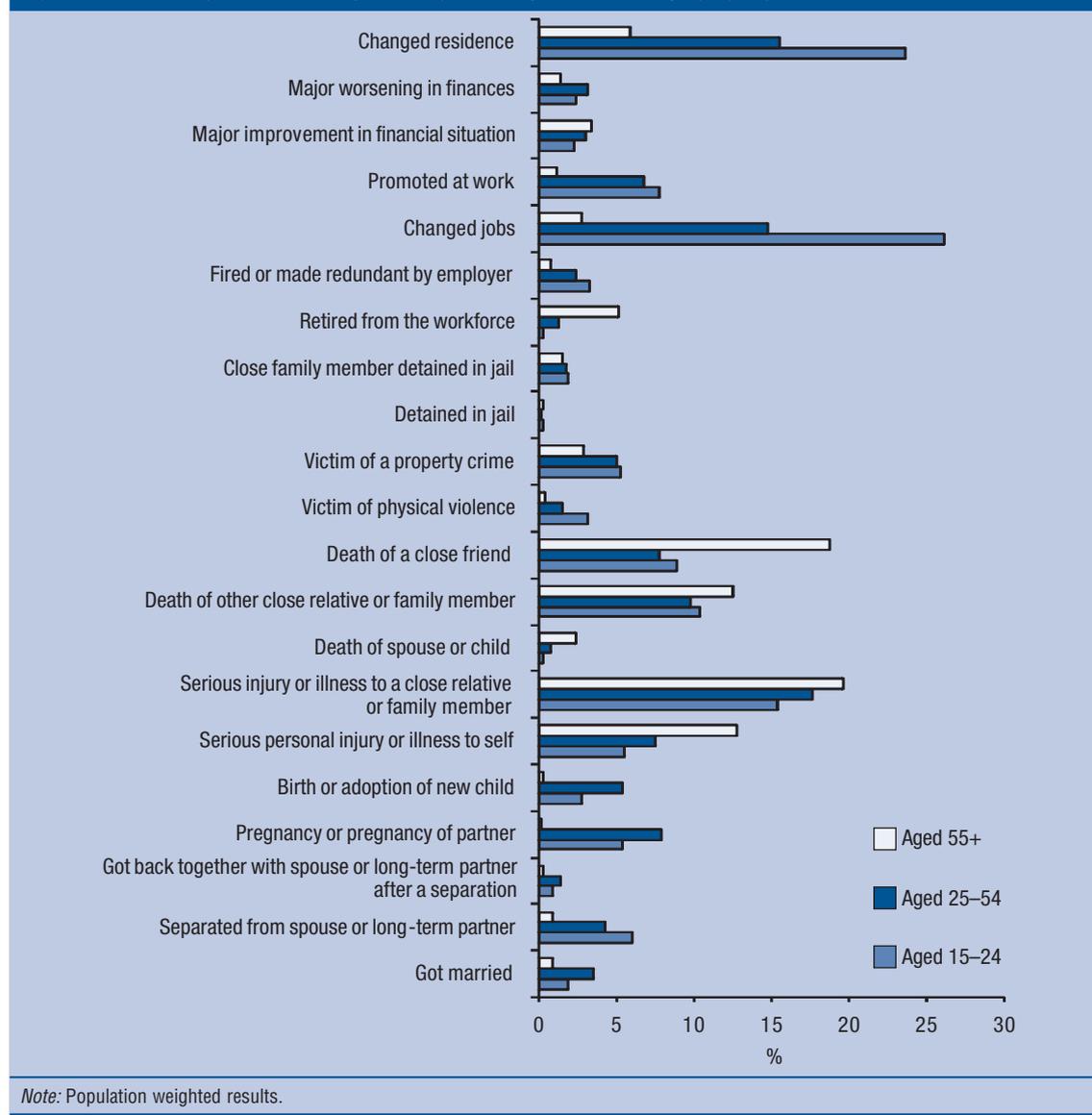
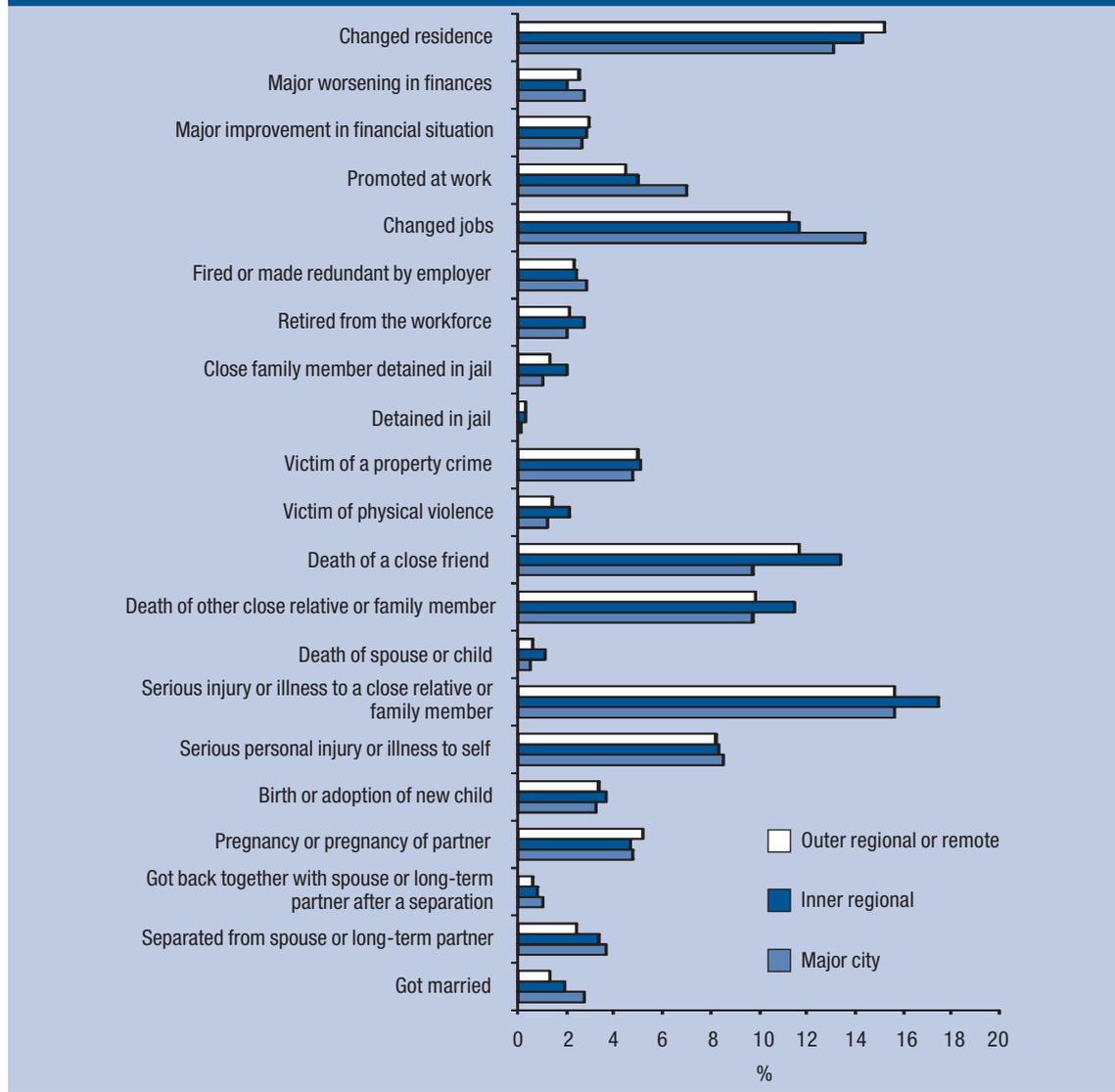


Figure 5.3: Percentage of persons experiencing each major life event, by region of residence, 2006



Note: Population weighted results.

2 Area of residence is categorised using Accessibility/Remoteness Index of Australia (ARIA) regions, which is conceived as a measure of accessibility to services, but which corresponds closely to population density of the region. Note that under this classification, Hobart is 'inner regional' and Darwin is 'outer regional'. The other capital cities are major cities. Note that, since approximately 15% of people had changed residence at least one during the period under consideration, some of these events may have happened while they were living in their previous

residence, which may not be in the same region category as their current residence. For example, some people may have moved from a major city to an outer regional area in the past twelve months, and vice versa.

**Reference**

Australian Bureau of Statistics (2007) *Prisoners in Australia, 2007*, ABS Catalogue No. 4517.0, 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. As has been detailed in previous volumes of the Statistical Report, the HILDA Survey has the capability to provide more information on this key dimension of economic life in Australia than any other data source. The survey attempts to gather detailed annual income information from each individual sample member, and attempts to do so every year, resulting in a comprehensive picture 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 Australian Bureau of Statistics (ABS) Survey of Income and Housing, in recent times conducted every two years, includes very detailed questions on individuals' and households' incomes and also has a very high response rate. As explained in the introduction to this Report, the HILDA Survey has a 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 ABS questions. The small biases in 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 household incomes, as measured in the HILDA Survey, are somewhat higher than in ABS surveys, although it is not clear that HILDA is less accurate.

In addition to detailed income data, the HILDA Survey regularly collects other information relevant to assessments of economic wellbeing. In particular, in every wave information on the experience of financial stress and on the ability to raise \$2,000 at short notice has been collected in the self-completion questionnaire, and since wave 5 (2005), household expenditure data has been collected, allowing estimates of household consumption to be produced. Also very important has been the collection in waves 2 and 6 of comprehensive data on household wealth, creating a complete set of household financial accounts in 2006. Readers are referred to Part B of this Report for a number of articles drawing on the wealth data.

## 6. Income levels and income mobility

### Income levels and living standards

#### Annual income

Mean and median household annual disposable incomes in each year of the HILDA Survey are presented in Table 6.1, adjusted for inflation using the Consumer Price Index to be expressed in September quarter 2006 prices. The household is the unit of observation, meaning that each household contributes one 'observation' to the calculation of the mean and the median.

Average household incomes have grown quite strongly for the in-scope population over the entire period spanned by the HILDA Survey, even after the effects of inflation are removed. Growth has been particularly strong since 2004, with

mean household annual disposable income expressed at September 2006 prices increasing by approximately \$6,000, or \$3,000 per year, and the median increasing by \$4,700. In the absence of substantial changes to household composition over the period—which the last two columns of Table 6.1 would indicate is the case—this translates to a significant increase in average material living standards.

The third column of Table 6.1 shows that the estimated number of households in wave 6 is just over eight million. Multiplying this by the mean household income implies total household disposable income of approximately \$505 billion in the 2005–06 financial year. ABS national accounts data for this period put household disposable income

#### 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 September 2006 prices, to give *real* income. Since prices tend to rise over time, the incomes statistics we present for waves 1–5 are higher than what would be obtained from using incomes actually reported by sample members.

**Table 6.1: Household annual disposable incomes, September 2006 prices**

	<i>Mean (\$)</i>	<i>Median (\$)</i>	<i>Number of households</i>	<i>Number of persons</i>
2001	55,503	47,672	7,448,826	18,959,803
2002	55,807	47,804	7,574,053	19,174,253
2003	55,708	47,757	7,667,829	19,391,620
2004	57,044	48,667	7,770,840	19,616,812
2005	59,295	50,835	7,887,173	19,862,316
2006	63,007	53,343	8,021,839	20,120,386

*Note:* Population weighted results.

at approximately \$558 billion, at September 2006 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 20.1 million persons, whereas the total Australian population was 20.7 million at the time wave 6 was conducted. The HILDA data give household disposable income per capita of \$25,120, while the

national accounts data imply household disposable income per capita of approximately \$26,900.<sup>1</sup>

Table 6.2 considers the distribution of household income, taking into account potential changes to household composition by examining equivalised household income. The income estimates are ‘per-person equivalent’ incomes, which only equal actual household income for lone person households. To obtain the corresponding household income for other household types, the estimate must be multiplied by the applicable value of the OECD equivalence scale that we use. For example, the estimate must be multiplied 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 household 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 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 persons that are poor. It is the latter quantity that is relevant, since our interest is in the wellbeing of people rather than households.

Average income levels are described by the mean and median, while inequality in the income distribution is described by the ratio of the 90th percentile to the median ( $p_{90}/p_{50}$ ), the ratio of the median to the 10th percentile ( $p_{50}/p_{10}$ ) and the Gini coefficient. The 90th percentile is the income of the individual who has 10% of individuals with higher incomes and 90% with lower incomes. The 10th percentile is the income of the individual who has 90% of individuals

#### **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 one 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’—for example, the rent on a two-bedroom flat is typically less than twice the rent on an otherwise comparable one-bedroom flat—and that children require less than adults. Each member of a household is assigned the same equivalised income, the implicit assumption being that all household income is pooled and then shared equally.

**Table 6.2: Distribution of individuals' equivalised household disposable income**

	Mean (\$)	Median (\$)	p90/p50	p50/p10	Gini
2001	33,194	28,983	1.95	2.18	0.313
2002	33,467	29,258	1.94	2.15	0.311
2003	33,434	29,855	1.88	2.15	0.305
2004	34,274	30,742	1.86	2.13	0.299
2005	35,663	31,778	1.91	2.18	0.310
2006	37,986	33,228	1.96	2.11	0.306

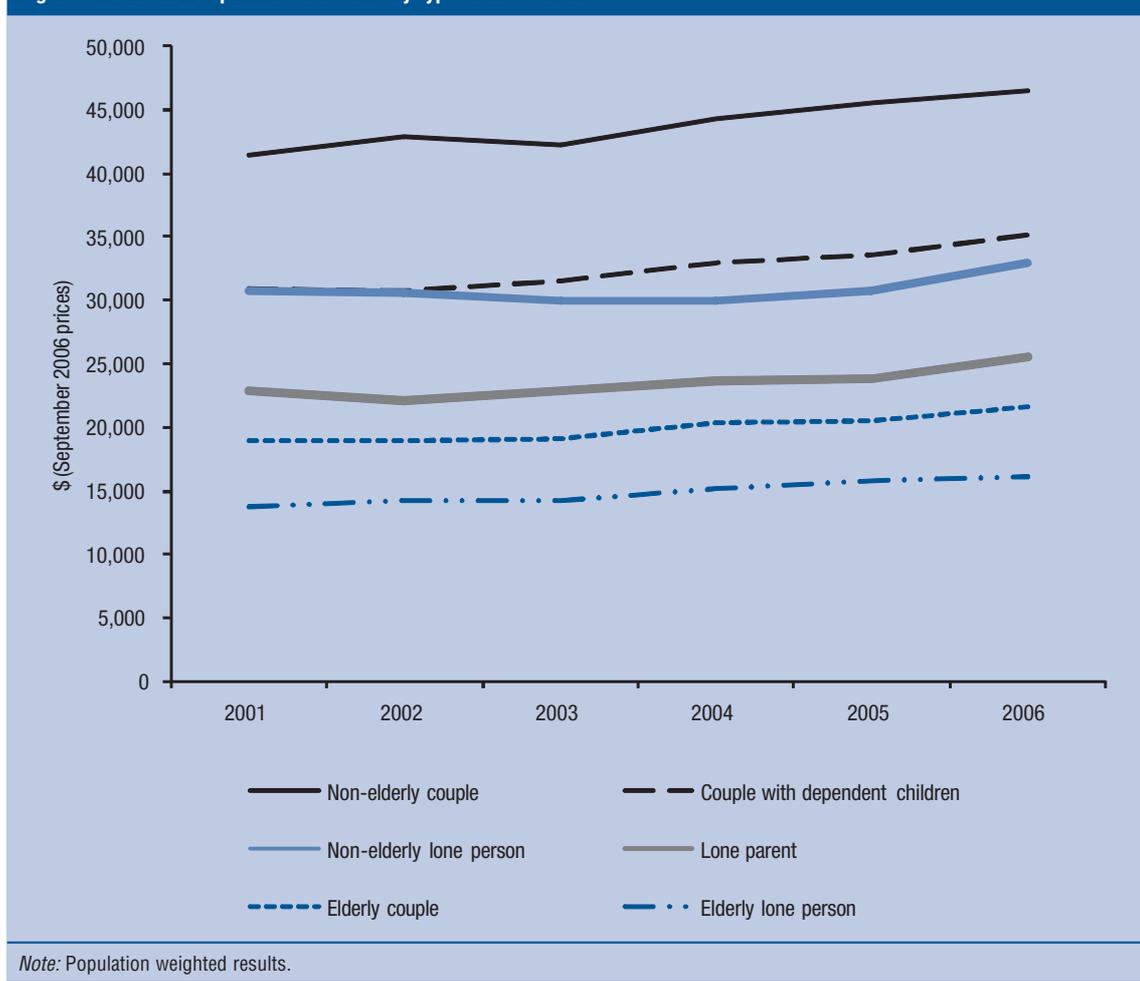
*Note:* Population weighted results.

with higher incomes and 10% 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 is robust to the move to equivalised incomes and the individual as the unit of analysis. It is also clear that income growth has 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. Throughout the survey

period, an individual at the 90th percentile had an income between 1.86 and 1.96 times the median income, which was in turn between 2.13 and 2.18 times the income of the person at the 10th percentile. The Gini coefficient has hovered between 0.30 and 0.31 with no trend apparent.

Figure 6.1 compares median incomes across six household types: a couple with at least one dependent or non-dependent child living with them; a non-elderly couple, defined as a couple without children and with at least one member of the couple under 60 years of age; an elderly couple, where both household members are over 60 years of age; a lone parent living with at least

**Figure 6.1: Median equivalised income by type of household**

one dependent or non-dependent child; a lone person aged under 60 years; and a lone person aged over 60 years. The couple with children and sole parent household types may also contain other family and non-family members. Persons in group or multiple-family households are excluded from the figure.

A consistent ordering of median incomes by type of household is evident across the six waves of the survey, ranging from single elderly persons at the bottom to non-elderly couples without dependent children at the top. All household types have experienced growth in median incomes over the full period, although the extent of growth varies. Most notable is the that the median income of non-elderly single people was similar to the median income of couples with dependent children in 2001, but a significant gap opened up between 2002 and 2004, when there was no growth the median income of single persons.

**Moving towards ‘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. Note, however, that even measuring income over six years does not give an especially good description of permanent income, because incomes change over the course of the lifecycle, and six years is still a relatively short segment of the lifecycle. For example, a person may complete university and within six years may still have much income growth to be achieved by virtue of career progression. Nonetheless, it remains the case that we can gain a much better picture of the distribution of access to economic resources from examining income over longer durations than one year, even with an upper bound of six years.

In Table 6.3, the distributions of two-, four- and six-year equivalised income 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. Income inequality is nonetheless important, and study of the characteristics of those with low income over the full six-year period would reveal important information about the identities of the long-term poor, which is discussed in Part B of this Report.

**Changes in income, 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,

<b>Table 6.3: Distribution of income measured over time frames longer than one year</b>					
	<i>Mean (\$)</i>	<i>Median (\$)</i>	<i>p90/p50</i>	<i>p50/p10</i>	<i>Gini</i>
<b>Two-year income</b>					
2001 and 2002	33,306	29,354	1.90	2.07	0.294
2003 and 2004	33,720	30,240	1.84	2.05	0.286
2005 and 2006	36,702	32,437	1.92	2.07	0.297
<b>Four-year income</b>					
2001–2004	33,635	30,163	1.82	2.02	0.279
2003–2006	35,239	31,627	1.84	2.05	0.285
<b>Six-year income</b>					
2001–2006	34,643	31,224	1.80	2.01	0.276
<i>Note: Population weighted results.</i>					

do not tell us what is happening to individuals over time. While some people must be experiencing good income increases, a number of people may 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—quintile—in the income distribution. That is, we divide individuals into equal 20% groupings 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, as has been documented previously, 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 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, when the change in income is calculated, 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. Many low income individuals will have apparently large increases in income and many high-income individuals will have apparently large decreases in income.

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 those at the extremities, particularly those with low initial

incomes. Table 6.4 nonetheless does ignore extremities of the income distribution to some extent, since the largest half of the changes in the top and bottom quintiles are excluded by our focus on the median change in each quintile.

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 5 and 6, and also combine waves 1, 2 and 3 and waves 4, 5 and 6. For the analysis that combines two waves, we have:

*Change in income = the average (mean) of equivalised incomes in 2005 and 2006, minus the average 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 2001–2002 exaggerate the changes in income which actually occurred by 2005–2006. But note, also, that we would expect *real* change to be smaller when we combine waves, because we are removing some effects of (real) 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 in mobility 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 income growth by household type. For individuals classified according

**Table 6.4: Median percentage change in income by initial quintile of the income distribution**

	Overall	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Wave 1 to wave 6	11.4	36.7	21.0	12.6	5.0	-7.4
Waves 1–2 to waves 5–6	8.7	19.0	13.5	11.8	5.4	-1.3
Waves 1–3 to waves 4–6	5.8	11.4	10.3	8.5	3.6	1.0

*Note:* Population weighted results.

**Table 6.5: Median change as a percentage of the median for each household type, 2001–2006**

	<i>Median 2001 (\$)</i>	<i>Median change (\$)</i>	<i>Median change (%)</i>	<i>Percentage in the same household type in 2006</i>
Non-elderly couple	41,428	868	2.1	50.7
Couple with children	31,056	4,598	14.8	74.3
Lone parent	23,266	3,947	17.0	58.9
Non-elderly lone person	31,687	4,048	12.8	57.8
Elderly couple	19,013	891	4.7	85.2
Elderly lone person	13,880	1,285	9.3	95.3

*Note: Population weighted results.*

to their type of household in 2001, it shows the median change in equivalised income, and the median change expressed as a percentage of the median income of the household type in 2001. Growth has been lowest for childless couples, whether elderly or not, and strongest for families with dependent children, whether couple or sole parent families, and for non-elderly single-person households. Although income is equivalised, these differences could in part reflect changes in household type between 2001 and 2006. For example, if a lone parent partners between waves 1 and 6, equivalised income can rise with no change in actual income of each household member.

### *Income mobility*

In this section of the Report, the focus is on household income mobility. By ‘mobility’ we mean the extent to which household incomes change *relative to each other*. So the question here is not whether individuals’ household incomes were rising or falling, but the extent of mobility up and down the distribution. Do most individuals scarcely change their relative position in the distribution, or is it 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?

To analyse income mobility, in Table 6.6 we first examine mobility over the full period covered by the HILDA Survey. Panel A1 presents summary measures of the extent of mobility, as measured by the change in each individual’s percentile rank between wave 1 and wave 6. An individual’s percentile rank gives their location in the income distribution. For example, someone at the first percentile has 99% of individuals with higher incomes, while a person at the 99th percentile has only 1% of individuals with higher incomes. In aggregate, the mean change in percentile rank across all individuals must be zero—if one person moves up the ranking, one other person must move down the ranking—so Panel A1 presents the mean *absolute* change in rank, as well as the proportions in each of four groups for change in percentile rank: up 20 or more percentiles, up between 0 and 20 percentiles, down between 0 and 20 percentiles, and down 20 or more percentiles.

On average, individuals travelled 18 percentiles, or slightly less than two deciles, between 2001 and 2006. One-fifth moved up more than 20 percentiles, and one-sixth moved down more than 20 percentiles. Thus, mobility is evident, but whether this is regarded as high mobility is a matter of subjective assessment. Our finding that, over five years, nearly two-thirds stay within 20 percentiles of where they were in the income distribution, might be regarded as indicative of low mobility; but equally, our finding that over one-third moves more than 20 percentiles might be regarded as indicative of high mobility.

In Panel A2, we consider mobility by initial location in the income distribution. As was done for Table 6.4, we divide equivalised incomes in wave 1 into quintiles and assign each individual to one of those quintiles (with, by construction, 20% of individuals in each quintile). We then similarly divide equivalised incomes in wave 6 into quintiles and, for each quintile in 2001, find the percentage of individuals ending up in each of the wave 6 quintiles. For example, in the first row of Panel A1, we see that 59% of those in the bottom quintile in wave 1 were also in the bottom quintile in wave 6, 22% were in the second quintile, 9% in the third quintile, 5% in the fourth quintile and 5% in the top quintile. The diagonal element highlighted in bold shows the percentage remaining in the same quintile. As might be expected based on the Panel A1 results, relatively few people move more than one quintile. Significantly, and consistent with this pattern, the proportions remaining in the top and bottom quintiles are relatively high—in excess of 55% in both cases.

In Panels B1 and B2 of Table 6.6, we consider two-year incomes, examining mobility between location in the distribution of waves 1 and 2 income and location in the distribution of waves 5 and 6 income. As might be expected, the extent of income mobility tends to be less for two-year income.

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 such a short time frame as six years. We do this in Table 6.7 by comparing mobility from one year to the next in three pairs of years: 2001 to

**Table 6.6: Income mobility between 2001 and 2006**

<b>A1. Percentile in 2001 and 2006</b>						
	<i>Mean absolute change</i>	<i>Proportion going up 20+ percentiles</i>	<i>Proportion going up 0–20 percentiles</i>	<i>Proportion going down 0–20 percentiles</i>	<i>Proportion going down 20+ percentiles</i>	
	18.2	20.2	30.4	32.3	16.8	
<b>A2. Quintile in 2001 and 2006</b>						
	<i>Q1 in 2006</i>	<i>Q2 in 2006</i>	<i>Q3 in 2006</i>	<i>Q4 in 2006</i>	<i>Q5 in 2006</i>	<i>Total</i>
Q1 in 2001	<b>59.0</b>	21.7	9.4	5.1	4.8	100.0
Q2 in 2001	26.2	<b>34.6</b>	21.7	11.9	5.6	100.0
Q3 in 2001	11.5	23.8	<b>33.0</b>	21.4	10.3	100.0
Q4 in 2001	6.9	13.0	21.6	<b>35.5</b>	23.1	100.0
Q5 in 2001	4.3	5.8	10.2	23.8	<b>55.9</b>	100.0
<b>B1. Percentile in 2001–2002 and 2005–2006</b>						
	<i>Mean absolute change</i>	<i>Proportion going up 20+ percentiles</i>	<i>Proportion going up 0–20 percentiles</i>	<i>Proportion going down 0–20 percentiles</i>	<i>Proportion going down 20+ percentiles</i>	
	14.7	16.7	35.1	34.6	12.9	
<b>B2. Quintile in 2001–2002 and 2005–2006</b>						
	<i>Q1 in 2005–2006</i>	<i>Q2 in 2005–2006</i>	<i>Q3 in 2005–2006</i>	<i>Q4 in 2005–2006</i>	<i>Q5 in 2005–2006</i>	<i>Total</i>
Q1 in 2001–2002	<b>68.5</b>	21.2	6.3	2.7	1.3	100.0
Q2 in 2001–2002	23.0	<b>40.5</b>	24.0	8.3	4.2	100.0
Q3 in 2001–2002	8.6	20.6	<b>36.9</b>	26.1	7.9	100.0
Q4 in 2001–2002	4.4	10.4	19.5	<b>43.1</b>	22.6	100.0
Q5 in 2001–2002	2.2	4.4	9.1	21.3	<b>63.0</b>	100.0

*Note:* Population weighted results.

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

	<i>Mean absolute change</i>	<i>Proportion going up 20+ percentiles</i>	<i>Proportion going up 0–20 percentiles</i>	<i>Proportion going down 0–20 percentiles</i>	<i>Proportion going down 20+ percentiles</i>
Wave 1 to wave 2	13.1	11.2	40.4	36.5	11.1
Wave 3 to wave 4	12.1	13.1	40.3	36.8	9.2
Wave 5 to wave 6	11.8	13.2	35.7	41.9	8.7

*Note:* Population weighted results.

**Table 6.8: Income mobility between waves 1 and 6, by household type in 2001**

	<i>Mean absolute change in percentile rank</i>	<i>Mean change in percentile rank</i>	<i>Proportion going up (%)</i>	<i>Proportion going up 20+ percentiles (%)</i>	<i>Proportion going down 20+ percentiles (%)</i>
Non-elderly couple	19.5	–6.7	39.7	15.1	23.5
Couple with children	18.2	–0.3	53.3	19.2	16.9
Lone parent	18.6	2.0	53.4	23.3	13.9
Non-elderly lone person	18.8	2.3	52.9	24.4	13.4
Elderly couple	15.3	–5.4	42.9	20.5	15.9
Elderly lone person	11.0	–3.0	44.9	20.9	9.0
Other	22.1	3.7	57.8	29.4	16.7

*Note:* Population weighted results.

2002, 2003 to 2004 and 2005 to 2006. Simply focusing on the mean absolute change in percentile rank suggests a slight decline in income mobility has occurred, but this appears to primarily reflect a decline in the proportion experiencing large drops in percentile rank.

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 within 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 household (the initial household type of the individual). Substantial differences in the extent and nature of mobility are evident across the household types distinguished in the table. Mobility is considerably lower for elderly persons than for non-elderly persons, and the mobility that does exist is more likely to be in a downward than upward direction. Among the non-elderly, the aggregate extent of mobility is similar across couples, couples with children, lone parents and single persons, but is much more likely to be in a downward direction

for childless couples. The less favourable outcomes for couples without children may in part be because some *became* couples with children between 2001 and 2006, which can lower gross income because of reduced labour force participation of one member—usually the mother—and can further lower *equivalent* income because of the extra mouth(s) to feed.

**Endnote**

- 1 National accounts data on household disposable income is obtained from ABS Catalogue No. 5206.0, Table 14. Household disposable income is equal to gross household disposable income less consumption of fixed capital. Population data is taken from ABS Catalogue No. 3101.0.

**References**

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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—and therefore how poverty should be defined—vary greatly. Consistent with many different interpretations, a wide variety of definitions or measures of poverty, or material deprivation, have been employed by economic and social researchers studying the issue. While recognising this diversity of potential measures, in this Report 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 adequacy 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 composition or need using an equivalence scale.

For many years, the OECD and other international bodies defined relative income poverty as having a household income below 50% of median income. More recently, the European Union and some member Governments moved to a poverty line set at 60% of median income. Survey evidence

tends to suggest that a threshold set at 50% 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% poverty 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 equivalent income is less than 50% of the median household equivalent 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, that is, living in poverty.<sup>1</sup>

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, which in our case, is 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 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.

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 con-

sumer 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—such as measures that incorporate wealth and consumption expenditure—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.<sup>2</sup>

#### Cross-sectional poverty rates

Table 7.1 presents poverty lines and rates for each wave of the HILDA Survey. The poverty line is set at half the median household income. As in Chapter 6, our income measure is annual disposable household income adjusted for household composition using the OECD equivalence scale. Thus, the poverty lines presented in Table 7.1 can be interpreted as the annual income after taxes and government benefits that a single-person household would require to avoid 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 2006 period, the poverty line has increased substantially. Despite this, the proportion of the population below the poverty line has declined over the full period. Note that an upward spike is evident in 2005, which appears to be at odds with the overall trend. While sampling variability may partly explain this, we should also note that many welfare recipients in Australia have incomes quite close to 50% of median income, so that relatively small movements in government benefits can bring about sizeable changes in the poverty rate. The bottom row of Table 7.1 shows the proportion in poverty if we hold the purchasing power of the poverty line constant at its level in 2001. Adopting this absolute poverty standard, the rate of poverty halves between 2001 and 2006, and drops an extraordinary 2.8 percentage points in the last year.

**Table 7.1: Poverty lines and poverty rates**

	2001	2002	2003	2004	2005	2006
Poverty line (current prices)	12,259	12,727	13,443	14,138	14,998	16,120
Poverty line (September 2006 prices)	14,537	14,635	15,005	15,415	15,939	16,666
% in relative poverty	13.4	12.9	12.8	12.5	13.6	11.9
% in absolute poverty	13.4	12.5	11.3	9.8	9.5	6.7

*Note:* Population weighted results.

**Table 7.2: Number of years in poverty, 2001–2006 (%)**

0 years	1 year	2 years	3 years	4 years	5 years	6 years	Total
69.1	12.9	5.7	4.5	2.8	2.5	2.6	100.0

*Notes:* Population weighted results. Percentages may not add up to 100 due to rounding.

### Poverty over the medium-term

Of course, the true value of the HILDA data for the study of income poverty in Australia comes from its longitudinal structure. In Table 7.2, we make use of all six years of the survey to examine the amount of time people spend in poverty over the medium-term. The table presents the proportion of the population never in each category of ‘number of years spent in poverty’, which can range from zero (never in poverty) to six (in poverty in every year). According to the HILDA Survey, 31% of the Australian population has been in poverty at some stage of the 2001 to 2006 period. However, more than half of these people were in poverty only one or two of these 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—nearly 8% of the population were in poverty for at least half the six years spanned by the survey, and 2.6% were in poverty for the entire period.

### Persistence and recurrence of poverty

Of perhaps as much interest as the extent of poverty in the community are the ‘dynamic properties’ of individual experiences of poverty—that is, how persistent poverty is and, for those who

exit poverty, how many return to poverty. Table 7.3 takes one 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 three-year pairs, the proportions who 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 5–6% of persons enter poverty in any given year, and a similar proportion exit poverty each year. A further 7% are in poverty in both years of any two-year period. Consistent with the overall decline in poverty found in Table 7.1, for each pair of years, the proportion exiting poverty is greater than the proportion entering poverty.

In terms of identifying changes over time in the extent of persistence in poverty, we see that transitions into poverty were lower in 2003–2004 than in 2001–2002, and stayed lower in 2005–2006. Transitions out of poverty also declined in 2003–2004, but then rebounded in 2005–2006. However, it must be acknowledged that the six-year time frame currently available is clearly not sufficient to decipher any time trends in persistence.

**Table 7.3: Two-year poverty status (%)**

	2001 and 2002	2003 and 2004	2005 and 2006
Not in poverty in either year	80.8	82.7	81.7
Out of poverty in first year and in poverty in second year	5.9	4.8	5.0
In poverty in first year and out of poverty in second year	6.1	5.4	6.3
In poverty in both years	7.2	7.1	7.0
Total	100.0	100.0	100.0

*Notes:* Population weighted results. Percentages may not add up to 100 due to rounding.

In Table 7.4, we consider persistence beyond one year. Each column presents the proportion of those in poverty in the base year (2001, 2003 or 2005) who were 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, 53% were in poverty in 2002, 50% in 2003, and even in 2006, 42% were still in poverty. There is some indication of an increase in poverty persistence over the survey period. Of those in poverty in 2003, 58% were still in poverty in 2004 and 55% were in poverty in 2005. This is a possible by-product of a declining overall poverty rate, since those who remain poor

**Table 7.4: Poverty persistence (%)**

	Persons in poverty in 2001	Persons in poverty in 2003	Persons in poverty in 2005
In poverty in 2002	53.3		
In poverty in 2003	49.7		
In poverty in 2004	44.1	58.1	
In poverty in 2005	46.7	55.1	
In poverty in 2006	41.6	49.3	56.9

*Note:* Population weighted results.

**Table 7.5: Poverty recurrence within two years of exit (%)**

	Proportion re-entering poverty
Exit in 2002	38.8
Exit in 2003	33.8
Exit in 2004	39.8

*Notes:* Population weighted results. ‘Exit in 2002’ applies if an individual was in poverty in 2001 and not in poverty in 2002. Poverty recurrence within two years occurs for an individual in the ‘exit in 2002’ group if the individual is in poverty in 2003 or 2004. Estimates for 2003 and 2004 exit are analogous.

in the context of a declining overall poverty rate may be the more 'difficult' people to extract from poverty. That is, the people most likely to exit poverty are those who may now have less likelihood of moving into poverty in the first place.

Table 7.5 explicitly focuses on poverty recurrence, reporting the percentage that re-enter poverty within two years of exiting poverty. For example, the first row shows that 39% of people who exited poverty in 2002 (i.e. were not in poverty in 2002 after having been in poverty in 2001) re-entered poverty within the next two years. This would seem to be a high rate of recurrence. The rate of recurrence appears to have declined for those who exited in 2003, but then rises again for those who exited in 2004.

### Poverty by household type

Table 7.6 shows that poverty rates vary substantially by household type, a pattern that has been identified in previous volumes of this Report and in other studies. Rates are consistently highest among the elderly, particularly single-person elderly households. 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 services provided by owner-occupied housing. The income poverty rates for the elderly are therefore likely to overstate the extent of relative deprivation experienced by the elderly. Poverty rates are also relatively high for lone parent and non-elderly single person households. Couples, both with and without children, have consistently low poverty rates.

Poverty over the medium-term broken down by household type (in 2001) is considered in Table 7.7. Particularly notable is the difference between lone parent and non-elderly lone person households. While poverty rates are similar for the two groups, only one-third of persons in single-person households experienced poverty in the 2001 to 2006 period, compared with 47% of lone parent households. Offsetting this lower incidence of any poverty is a greater incidence of highly persistent poverty: nearly 10% of single-person households were in poverty at least five of the six years, compared with under 6% of persons in lone parent households.

### Child poverty

Child poverty is a particular concern for policy makers, both because children in poverty are unambiguously 'innocent victims' who cannot be said to have in any way contributed to their predicament, and perhaps more importantly, because of the damage poverty may do to a child'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.

Child poverty rates presented in Table 7.8 suggest reasonable stability in the extent of poverty among children over the 2001 to 2006 period—notwithstanding the upward spike in 2005 that was also found for the aggregate poverty rate. Aside from

**Table 7.6: Poverty rates by type of household (%)**

	2001	2002	2003	2004	2005	2006
Non-elderly couple	9.6	8.6	7.2	6.5	8.1	7.0
Couple with children	6.9	6.3	6.9	6.7	7.1	5.2
Lone parent	19.0	21.3	20.1	16.9	21.7	19.4
Non-elderly lone person	21.7	19.8	21.5	21.5	22.5	19.5
Elderly couple	28.1	27.9	25.1	27.9	28.7	29.4
Elderly lone person	54.5	52.0	55.2	50.3	49.7	53.2
Other	13.3	11.9	8.7	11.6	11.8	6.8

*Note:* Population weighted results.

**Table 7.7: Years in poverty 2001–2006, by type of household in 2001 (%)**

	0 years	1 or 2 years	3 or 4 years	5 or 6 years	Total
Non-elderly couple	78.3	14.3	4.8	2.6	100.0
Couple with children	78.7	14.9	4.6	1.8	100.0
Lone parent	53.0	29.1	12.5	5.5	100.0
Non-elderly lone person	66.2	17.1	7.1	9.6	100.0
Elderly couple	38.8	32.1	15.8	13.3	100.0
Elderly lone person	25.2	23.0	16.7	35.1	100.0
Other	67.6	21.4	9.6	1.4	100.0

*Notes:* Population weighted results. Percentages may not add up to 100 due to rounding.

**Table 7.8: Rates of child poverty (%)**

	2001	2002	2003	2004	2005	2006
All children under 18	11.2	10.9	11.7	10.5	13.6	10.7
Live with both parents	7.5	6.9	7.9	7.5	8.8	6.1
Live with one parent	24.9	25.1	26.5	20.3	30.0	28.4

*Note:* Population weighted results.

**Table 7.9: Medium-term child poverty: Years in poverty, 2001–2006 (%)**

	0 years	1 or 2 years	3 or 4 years	5 or 6 years	Total
All children under 18 in 2001	68.8	20.2	8.0	3.1	100.0
Lived with both parents in 2001	75.4	16.6	5.6	2.4	100.0
Lived with one parent in 2001	43.3	34.5	15.8	6.4	100.0

*Notes:* Population weighted results. Percentages may not add up to 100 due to rounding.

2005, the child poverty rate is consistently lower—albeit only slightly—than the community-wide poverty rate. However, as the lower panel of Table 7.8 shows, there is still much room for improvement among sole parent families, with around 25 to 30% of children in such families below the poverty line.

The distribution of the number of years children were poor over the 2001–2006 period is provided in Table 7.9. The table shows that child poverty is less persistent than poverty in the wider community. Children living with both parents in 2001 are particularly unlikely to experience chronic poverty, with only 2.4% living in poverty for at least five years. Even among children living with one parent only, the poverty experienced is not usually chronic. Although 57% of children living with only one parent in 2001 experienced poverty

between 2001 and 2006, only about 6% were in poverty for at least five of the six years.

### Endnotes

- 1 Note that there is an important distinction between not being able to afford goods and services and choosing not to have them. It is the former criterion that determines poverty status.
- 2 Note, however, that no Australian Government has ever adopted an official poverty line.

### References

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## 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 the proportion of persons aged 15–64 receiving welfare at any one point in time rose from approximately 3% in 1970 to about 18% in 1999. Rising welfare dependence is widely regarded to have adverse consequences, for both the community and for welfare recipients themselves. 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 not only the individuals themselves, but also for their children. It is therefore unsurprising 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, as distinct from non-income support payments, which are benefits paid to Australian residents that are not 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 typically non-income support payments are included 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, Parenting Payment (Single and Partnered), Newstart Allowance, Youth Allowance and Department of Veterans' Affairs Service Pension. Non-income support payments include Family Tax Benefit (Parts A and B), the Baby Bonus (previously Maternity Payment) and Carer Allowance.

Gottschalk and Moffitt (1994), investigating welfare reliance in the US, identify three main classes of measure of welfare reliance: 1. benefit spell durations; 2. the proportion of time spent on benefits in a given interval of time; and 3. 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., 2008). Administrative data provides complete information on individuals’ welfare payments, but does not contain any information on individuals when they are not on payments. Thus, while time spent on payments can be described, income-based measures of reliance cannot be produced, because non-welfare income while 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 (ABS) income surveys allow cross-sectional snapshots of the proportion of income from welfare (Wilkins and Tseng, 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 deriving from welfare payments, we examine persistence and recurrence of welfare reliance.

#### 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% of household income came from income support and non-income support payments; or
2. The household received income support payments and more than 90% of household income came from income support and non-income support payments.

We adopt two alternative definitions of welfare reliant. 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% 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% threshold accords with the intuition that a person is welfare reliant if the majority of household income comes from welfare. The 90% threshold applies if welfare reliance is viewed as a situation in which almost all income comes from welfare.<sup>1</sup> We examine welfare reliance both at the time of the interview (‘current week’) and in the financial year preceding the interview.<sup>2</sup> 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, in the top panel for all persons, and in the bottom panel for 15–64 year olds (‘workforce age’). In all six waves, just over one-third of persons were living in a household in receipt of income support at the time of interview, and between 38% and 40% lived in households that had received income support payments at some stage in the preceding financial year. There is evidence of decline in both of these rates of receipt between wave 1 and wave 6. Rates of receipt are somewhat lower among workforce age persons, but the trend decline in welfare receipt is similar.

As would be expected, the proportion of the population classified as welfare reliant depends on whether the 50% or 90% threshold is employed, and on whether current income or annual income is examined. Reliance is lowest adopting the 90% threshold and examining annual income, and highest adopting the 50% threshold and examining current income. However, all four series exhibit similar patterns of change over the 2001–2006 period. Taking the 50% threshold and annual income as our core definition of welfare reliance, we see that welfare reliance peaked at 20.4% of the population in 2002 and declined to 17.9% of the population by 2006. Among 15–64 year olds, reliance peaked at 13.7% in 2002 and then declined to be 11.1% in 2006. The last row of each panel in Table 8.1 shows the extent of reliance of those who receive income support payments. Among all income support recipients, the mean proportion of annual income from welfare fluctuates between 51% and 55%; among workforce age income support recipients, it fluctuates between 43% and 47%.

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

**Table 8.1: Measures of welfare reliance (%)**

	2001	2002	2003	2004	2005	2006
<b>All persons</b>						
<b>Current weekly welfare receipt</b>						
Proportion on welfare	36.8	34.8	34.7	35.1	35.1	34.1
Proportion reliant (Definition (1))	22.1	22.4	21.9	21.9	21.5	20.8
Proportion reliant (Definition (2))	19.4	19.3	19.1	19.1	18.8	17.9
Among those on welfare, mean proportion of income from welfare	59.9	61.8	60.6	60.6	60.6	59.7
<b>Financial year welfare receipt</b>						
Proportion on welfare	40.8	40.6	39.3	38.1	39.1	37.9
Proportion reliant (Definition (1))	18.7	20.4	19.2	19.9	18.5	17.9
Proportion reliant (Definition (2))	10.8	11.4	11.1	11.6	10.3	9.5
Among those on welfare, mean proportion of income from welfare	50.8	53.7	53.5	55.5	51.8	51.5
<b>15–64 year olds</b>						
<b>Current weekly welfare receipt</b>						
Proportion on welfare	30.4	28.3	28.5	28.7	28.2	27.1
Proportion reliant (Definition (1))	14.5	14.7	14.3	14.0	13.6	12.7
Proportion reliant (Definition (2))	11.9	11.8	11.5	11.4	11.0	9.9
Among those on welfare, mean proportion of income from welfare	49.3	51.3	49.1	48.9	48.9	47.4
<b>Financial year welfare receipt</b>						
Proportion on welfare	34.5	34.1	33.0	31.9	32.5	31.1
Proportion reliant (Definition (1))	12.1	13.7	12.7	13.0	11.7	11.1
Proportion reliant (Definition (2))	7.0	7.8	7.3	7.5	6.6	5.8
Among those on welfare, mean proportion of income from welfare	42.5	45.6	45.1	46.7	42.9	42.8

Note: Population weighted results.

**Table 8.2: Number of years welfare reliant, 2001–2006 (%)**

	Received welfare	More than 50% of income from welfare	More than 90% of income from welfare
0 years	46.9	75.2	82.2
1 year	13.7	6.6	5.6
2 years	8.4	3.6	2.9
3 years	6.4	3.2	2.2
4 years	5.5	2.8	2.3
5 years	5.5	3.7	2.5
6 years	13.7	4.9	2.3

Notes: Population weighted results. Sample comprises persons aged 15–59 years in 2001.

the number of years a person is welfare reliant. This provides a better picture of the extent of individuals' welfare reliance by considering the totality of the period spanned by the HILDA Survey. The first column indicates that more people than not—53%—were at some stage of the 2001–2006 period, living in a household that received income support payments in the preceding financial year. About one-quarter of these individuals' households received income support payments in all six years and about one-quarter received income support payments in only one year. Adopting the 50% threshold for defining welfare reliance, 25% of individuals of workforce age were reliant at some stage between 2001 and 2006. Individuals are relatively more likely to be reliant in only one year

**Table 8.3: Proportion of those welfare reliant in base year who are reliant in subsequent years (%)**

	Persons welfare reliant in 2001	Persons welfare reliant in 2003	Persons welfare reliant in 2005
Welfare reliant in 2002	78.5	–	–
Welfare reliant in 2003	74.8	–	–
Welfare reliant in 2004	68.0	77.6	–
Welfare reliant in 2005	65.7	68.8	–
Welfare reliant in 2006	61.7	63.0	74.7

Notes: Population weighted results. Sample in column 1 comprises persons aged 15–59 years in 2001; sample in column 2 comprises persons aged 15–61 years in 2003; sample in column 3 comprises persons aged 15–63 years in 2005. A person is defined to be welfare reliant if more than 50% of household annual income came from welfare.

**Table 8.4: Recurrence of welfare reliance within two years of exit (%)**

<i>Proportion becoming welfare reliant again</i>	
Exit in 2002	44.3
Exit in 2003	34.4
Exit in 2004	33.3

*Notes:* Population weighted results. Sample comprises persons aged 16–62 years in the year of exit from welfare reliance. A person is defined to be welfare reliant if more than 50% of household annual income came from welfare.

or in all six years, but there are still significant numbers in all of the intermediate categories (between two and five 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 many 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, as well as how persistence from one year to the next has been changing over time. Each column presents the proportion of persons who were welfare reliant in the base year (2001, 2003 or 2005) who were also reliant in each subsequent year. For this table, a person is defined to be welfare reliant if more than 50% of household annual income came from welfare payments. Taking this approach, we see

that welfare reliance is highly persistent. Of those welfare reliant in 2001, 79% were still reliant in 2002, 75% were reliant in 2003, 68% were reliant in 2004, 66% were reliant in 2005 and 62% were reliant in 2006. Reliance persistence does appear to have declined over the HILDA Survey period, however. Of those reliant in 2003, 63% were reliant three years later (compared with 68% for those reliant in 2001). Of those reliant in 2005, 75% were reliant one year later (compared with 78% for those reliant in 2003 and 79% for those reliant in 2001).

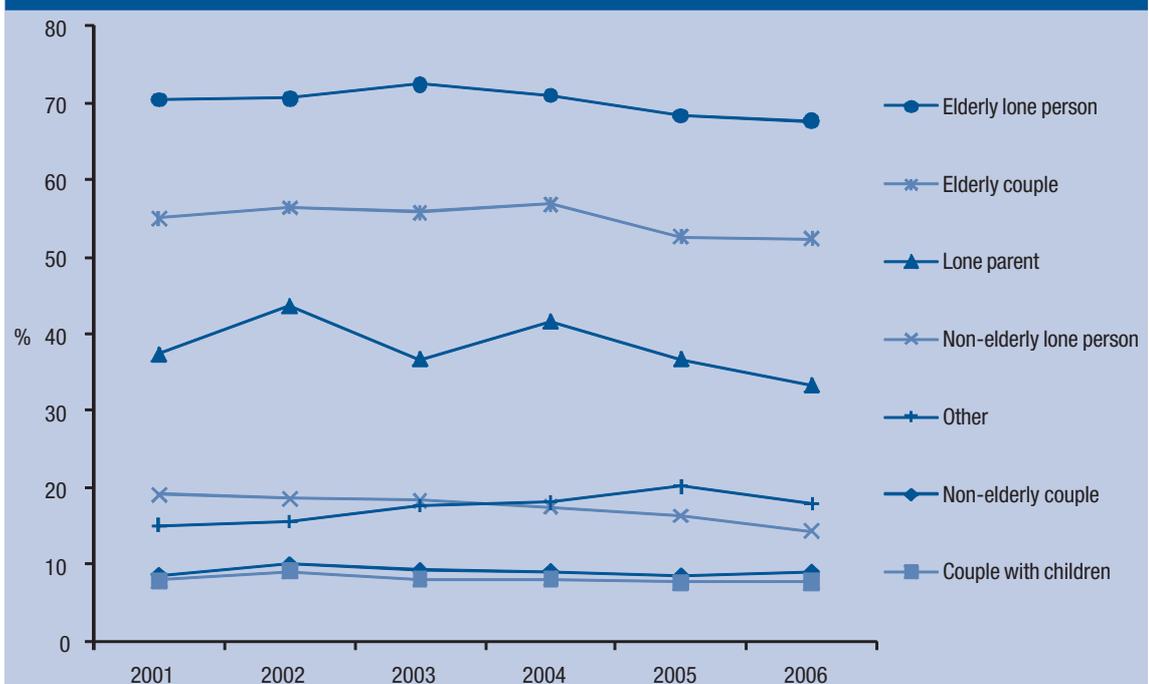
Consistent with this pattern of declining persistence, in Table 8.4 we see that recurrence of welfare reliance—defined as re-entry to welfare reliance within two years of exiting welfare reliance—has declined. Of those who ceased to be welfare reliant in 2002, 44% became welfare reliant again within two years. Of those who ceased being welfare reliant in 2004, one-third became welfare reliant again within two years.

**Welfare reliance by household type and state of residence**

The extent and nature of welfare reliance, and changes in reliance over time, are likely to differ substantially according to the socio-demographic characteristics of individuals. Here, we briefly consider differences by only two characteristics: household type and state of residence.

As Figure 8.1 shows, welfare reliance is very much a function of lifecycle stage and the type of household a person lives in. Over half of elderly persons

**Figure 8.1: Welfare reliance by household type (%)**



*Notes:* Population weighted results. A person is defined to be welfare reliant if more than 50% of household annual income came from welfare.

are welfare reliant, and over one-third of persons in lone parent households are welfare reliant. Non-elderly couples, with or without children, have comparatively low rates of welfare reliance—almost always less than 10%. Since 2002, rates of welfare reliance have declined for all household types other than group and multiple family ('other') households. The decline has been particularly pronounced for lone parent households, falling from 44% in 2002 to 33% in 2006.

Differences in the extent of welfare reliance by household type (in 2001) over the full 2001–2006 period are considered in Table 8.5. Reliance is highly persistent for the elderly, particularly those in lone-person households. Lone parents have a high rate of experience of any welfare reliance

over the six-year period, but—consistent with what was found in the article on income poverty (Chapter 7)—a relatively high proportion were welfare reliant for between one and four of the six years.

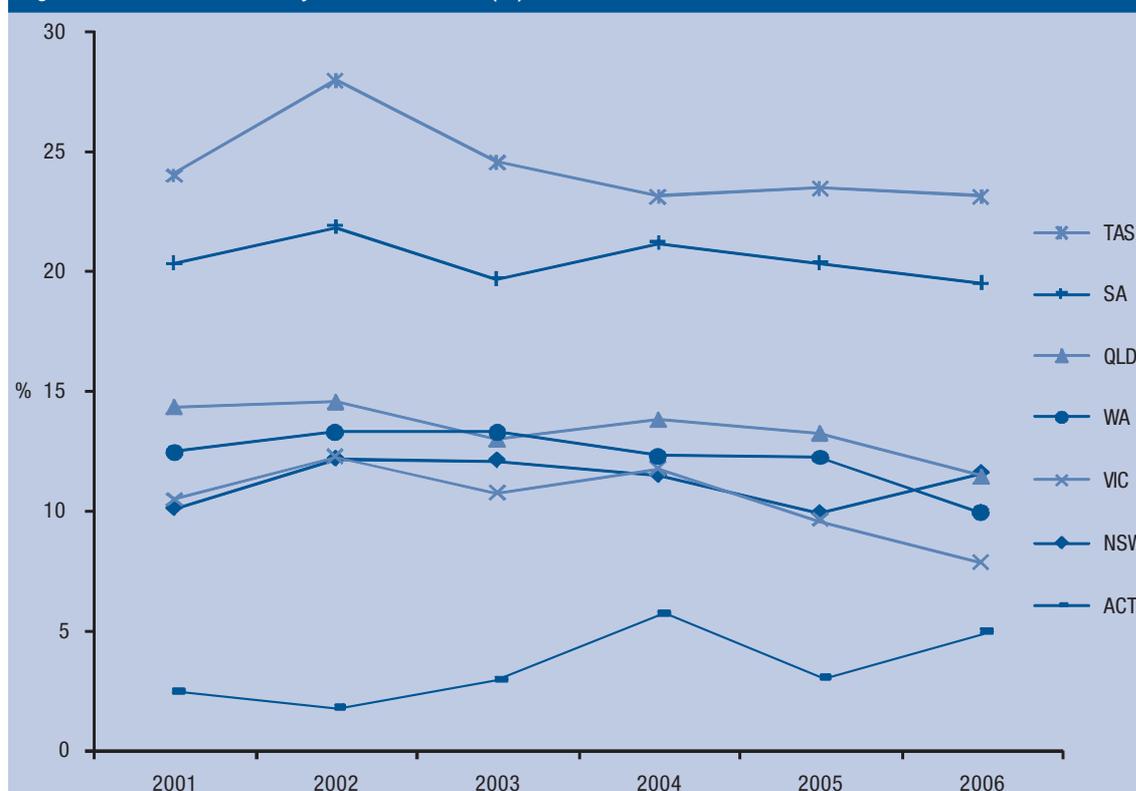
Figure 8.2 presents rates of welfare reliance broken down by state and territory of residence. Substantial differences across states and territories are evident. South Australia and Tasmania consistently have the highest rates of welfare reliance, while the Australian Capital Territory, Victoria and New South Wales have the lowest rates. The downward trend in rates of reliance since 2002 is evident across all states, except for the Australian Capital Territory, which nonetheless maintained the lowest rate in 2006.

**Table 8.5: Years welfare reliant by household type, 2001–2006 (%)**

	0 years	1 or 2 years	3 or 4 years	5 or 6 years
Non-elderly couple	76.4	7.7	6.6	9.2
Couple with children	79.9	9.5	4.5	6.1
Lone parent	41.9	17.1	16.8	24.3
Non-elderly lone person	67.2	10.8	5.9	16.1
Elderly couple	24.7	9.6	9.8	55.8
Elderly lone person	15.7	7.2	6.7	70.5
Other	63.5	12.4	10.6	13.5

Notes: Population weighted results. A person is defined to be welfare reliant if more than 50% of household annual income came from welfare.

**Figure 8.2: Welfare reliance by state of residence (%)**



Notes: Population weighted results. Estimates for Northern Territory were not statistically reliable and are therefore not plotted. Sample comprises persons aged 15–64 years. A person is defined to be welfare reliant if more than 50% of household annual income came from welfare.

## Endnotes

- 1 The 90% 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 and liquidity constraints

While the income poverty approach remains the most widely accepted one for defining and measuring inadequacy in material living standards, other measures also potentially provide useful information on individuals' economic wellbeing. Measures of 'financial stress' and 'liquidity constraints' provide two such pieces of supplementary 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, facilitating construction of measures of financial stress.

Liquidity (or credit) constraints refer to limits on the ability of an individual or household to borrow money. Liquidity constraints are potentially very important in the presence of volatility in income, for example, due to unemployment spells, or volatility in needs, for example due to unanticipated health expenses. The ability of an individual to borrow money when income is temporarily low or expenses are temporarily high can be critical to maintaining adequate living standards during these times. HILDA does not directly measure the ability to borrow money, but it does contain a measure of acute liquidity constraints in the short-term: the ability to raise \$2,000 in an emergency within one week. Thus, the question is concerned with immediate access to a reasonably modest amount of money.<sup>1</sup>

### Financial stress

In all of the six waves conducted to date, HILDA Survey respondents have been asked if, 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. *Paoned 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 or community organisation.*

In Table 9.1, we first directly report the incidence of these 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—in particular unforeseen adverse events such as injury—may result in financial problems for people who are not classified as income poor.

**Financial stress**

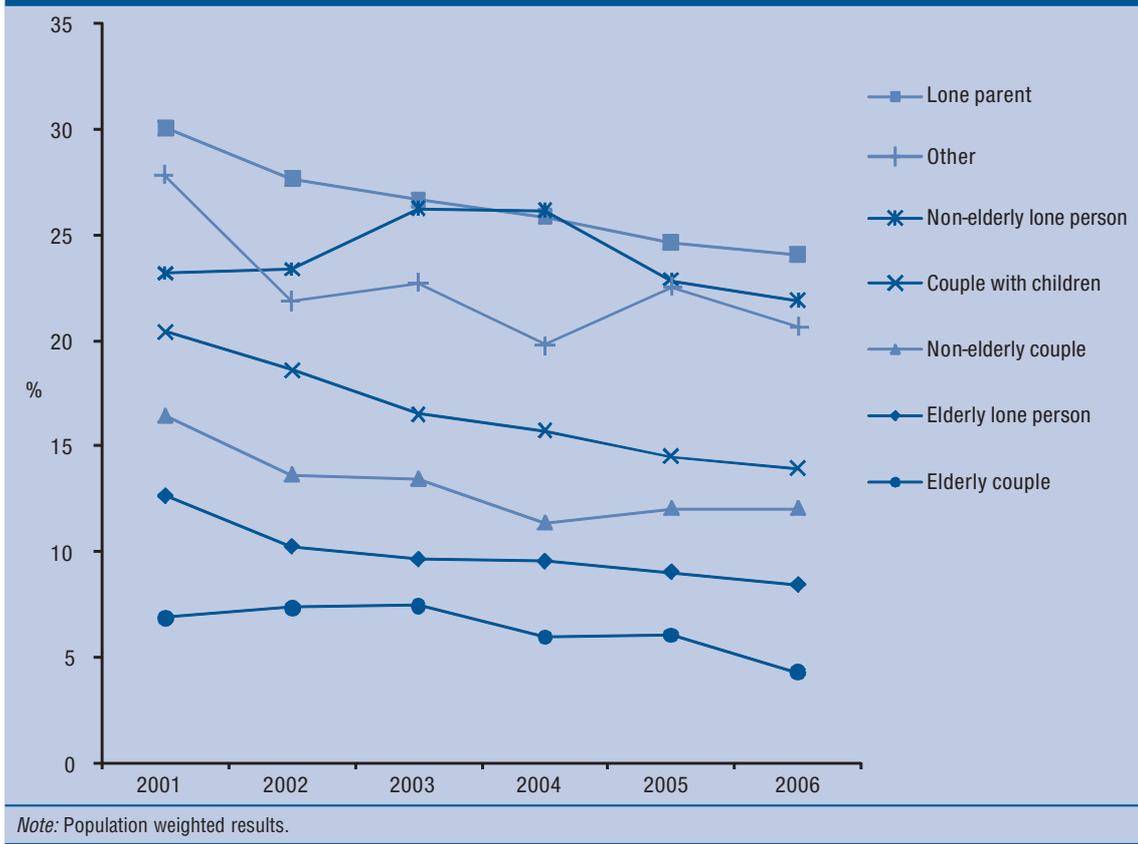
A person or household is considered to be under financial stress if, *due to a shortage of money*, it is not possible for them to meet basic financial commitments. The measure of financial stress used in this Report is based on questions about inability to pay utility bills on time, inability to pay 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.

Levels of financial stress appear to have fallen substantially between 2001 and 2006. For each indicator of financial stress, the proportion of individuals reporting having the financial problem indicated has steadily fallen. In 2001, 28% of respondents reported one or more of the financial problems listed in Table 9.1. By 2006, this had fallen to 19%. The proportion reporting three or more indicators of financial stress fell from 9% to 5%, a proportionately greater decline than in the proportion reporting any financial stress, suggesting the 2001–2006 period has seen a particularly large decline in the incidence of *severe* financial hardship. The sustained decline in symptoms of financial stress is consistent with the income growth documented earlier in this Report.

The most commonly reported financial problem was inability to pay utility bills on time, which was reported by 18% of respondents in 2001, 16% in 2002, 14% in 2003, 13% in 2004, 12% in 2005 and 12% in 2006. The second most commonly reported problem, which could alternatively be viewed as an attempt to deal with the issue, was asking for financial help from friends or family. The incidence of this fell from 16% in 2001 to 11% by 2006. The next most commonly reported problem was inability to pay the mortgage or rent on time, followed by pawning or selling a possession, asking for help from a welfare or community organisation, going without meals, and lastly being unable to heat the home. This ordering to a large extent reflects individuals’ prioritisation of expenses. For example, given the choice, individuals are likely to delay paying a utility bill rather than go without meals.

Figure 9.1 shows, for each wave, the percentage of individuals in each of six types of household who reported one or more symptoms of financial stress. All household types exhibit declines in financial stress since 2001, but differences in the incidence of financial stress across households 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 these are the two groups with 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 also likely to have more certainty in their income streams. For example, the Age Pension is more certain than labour market earnings, particularly when one considers the potential for unemployment, making budgeting

	2001	2002	2003	2004	2005	2006
Unable to pay utility bills on time	17.7	15.5	14.3	13.0	12.3	11.5
Asked family or friends for help	15.9	13.0	13.4	12.3	12.2	10.7
Unable to pay rent or mortgage on time	8.5	7.7	6.8	6.1	6.3	5.7
Had to pawn or sell something	6.2	4.8	4.7	3.9	3.7	3.4
Asked welfare agency for help	4.9	3.5	3.5	2.9	2.9	2.7
Went without meals	4.4	3.5	3.6	3.2	2.8	2.8
Unable to heat home	3.4	2.8	2.6	2.2	2.1	1.6
<b>Percentage of persons with...</b>						
One or two indicators of financial stress	19.4	17.5	16.7	15.6	14.8	14.1
Three or more indicators of financial stress	8.9	6.8	6.7	5.7	5.8	5.0
<i>Note:</i> Population weighted results.						

**Figure 9.1: Incidence of financial stress by household type (%)**

easier. However, it may also be that elderly persons tend to be better at budgeting.

How persistent is financial stress from one year to the next? Do the same individuals tend to report stress every year, or do most people apparently manage to solve their financial problems? And has the degree of persistence in financial stress changed since 2001? In Table 9.2, we present the percentage of those who reported financial stress in one year who also reported financial stress in the next year. (A person is defined to report financial stress if one or more of the seven indicators applies.) For all five year-pairs examined in Table 9.2, approximately half of those who reported financial stress in one year reported financial stress in the following year. This is a relatively high degree of persistence. There are indications of a slight decline in persistence since 2003–2004: 54% of those who reported financial stress in 2003 also reported financial stress in 2004, whereas 50% of those who reported financial stress in 2005 also reported financial stress in 2006.

As was alluded to at the start of this article, financial stress may reflect not only low income, but also experience of significant life events that can have financial implications for the household. Each year, the HILDA Survey asks respondents about whether a number of significant life events have occurred in the preceding twelve months. In Figure 9.2, we examine a subset of these events,

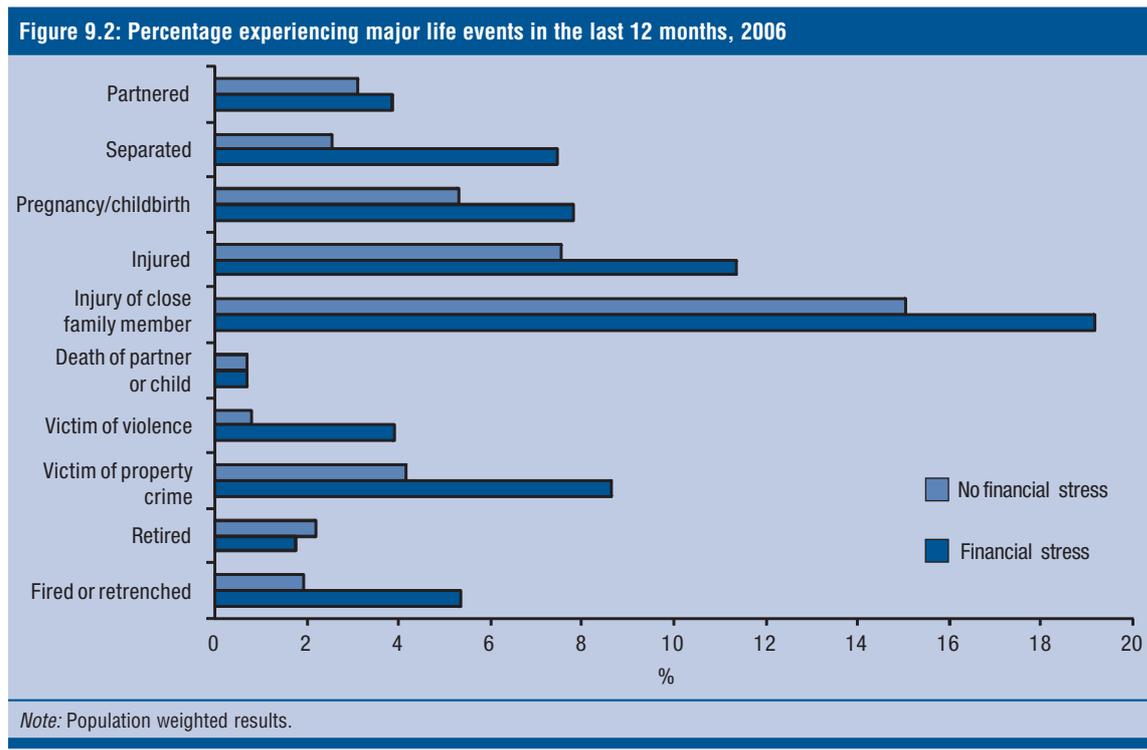
**Table 9.2: Year-on-year persistence of financial stress (%)**

	Proportion remaining in financial stress
2001–2002	51.6
2002–2003	53.0
2003–2004	53.5
2004–2005	51.6
2005–2006	49.9

Note: Population weighted results.

presenting the proportion of ‘financially stressed’ persons who experienced each event within the last 12 months alongside the proportion of other persons who experienced each event.

We indeed find that people reporting financial stress are more likely to have experienced significant life events with negative consequences for (equalised) household income. Particularly notable is that they are nearly three times as likely to have been fired or retrenched, over twice as likely to have been a victim of property crime, over four times as likely to have been a victim of violent crime and are three times as likely to have separated from a partner. Financially stressed people are also more likely to have been injured or had a close family member injured, got pregnant or given birth (or had partner get pregnant or give birth) and they are also more likely to have become partnered. It is interesting that both separating and partnering



are associated with financial stress—it seems that what matters in this regard is that there is a significant *change* in circumstances, which creates financial demands and difficulties.

**Liquidity constraints**

In every wave to date, the HILDA Survey has asked respondents to consider a hypothetical scenario in which they have only one week to raise \$2,000 for an emergency, and then asks how difficult it would be for them to get that money. They are given four options: 1. Could easily raise the money; 2. Could raise the money, but with some sacrifices, such as reduced spending or selling a possession; 3. Would have to do something drastic to raise the money, such as sell an important possession; or 4. Could not raise the money.

In Table 9.3, we present the proportion giving each of these four responses in each wave. The

clear trend apparent is a decline in the difficulty raising \$2,000. In 2001, 44% said they could easily raise the money; by 2006, this percentage had risen to 61%. In interpreting results obtained from this measure, however, it needs to be noted that the value of \$2,000 has declined over time. Raising \$2,000 is, in general, likely to pose fewer problems in 2006 than it did in 2001, not only because of the effects of inflation, but also because real (inflation-adjusted) incomes have grown.

In the same way that persistence in financial stress was examined in Table 9.2, in Table 9.4 persistence in liquidity constraints is described. For the purposes of this table, a person is defined to be liquidity constrained if that person could not raise \$2,000 or would have to do something drastic to raise \$2,000. Despite the sharp decline in the proportion of persons identifying as liquidity constrained evident in Table 9.3, persistence in

**Liquidity constraints**

Liquidity (or credit) constraints refer to limits on the ability of an individual or household to borrow money. A measure of short-term but acute liquidity constraints is available in the HILDA data, which is the ability of individuals to raise \$2,000 within one week.

**Table 9.3: Difficulty in raising \$2,000 in one week (%)**

	2001	2002	2003	2004	2005	2006
Could easily raise \$2,000	44.2	53.4	55.4	57.7	59.3	61.4
It would involve some sacrifices	27.2	22.3	21.9	21.2	20.2	19.8
Would have to do something drastic	12.1	10.7	9.4	8.4	8.6	7.9
Couldn't raise \$2,000	16.5	13.6	13.3	12.7	11.9	10.9

*Note:* Population weighted results.

**Table 9.4: Persistence of liquidity constraints: Percentage of those liquidity constrained in one year who are liquidity constrained in the next year**

<i>Proportion remaining liquidity constrained</i>	
2001–2002	53.0
2002–2003	60.3
2003–2004	59.6
2004–2005	58.8
2005–2006	56.5

*Note:* Population weighted results.

liquidity constraints from one year to the next is relatively high, and is higher than the degree of persistence in financial stress. This may reflect the fact that financial stress is more susceptible to the ‘one-off’ types of events listed in Figure 9.2 than is a respondent’s assessment of her ability to raise

\$2,000. As was found for persistence in financial stress, there is some decline in persistence evident since 2002.

#### Endnote

- 1 Other measures of liquidity constraints might examine the ability to raise larger amounts of money, allowing for longer time frames over which the money could be produced. However, a respondent’s ability to meaningfully respond to questions aimed at producing such measures is doubtful. For example, an individual may not know if they can borrow \$20,000 if they have not applied for such a loan.

#### Reference

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## 10. Household consumption expenditure

The HILDA Survey has moved towards a full set of household financial accounts, collecting information on income, wealth and expenditure of the household. Wave 5 was the first wave to collect detailed household expenditure information, while wave 6 was the first in which all three of income, wealth and expenditure were collected for each household.

Still to be regarded as at an experimental stage, the household expenditure data collected in wave 6 has some differences from the data collected in wave 5. First, and most importantly, the expenditure components obtained from respondents changed. Details are evident in Table 10.1, which shows that in wave 6 there were several new items, one item removed, and changes to some of the existing items that were retained. Second, in wave 5, household expenditure on groceries and meals eaten out was obtained in the household questionnaire from one household member and in the self-completion questionnaire from all respondent household members. In wave 6, this information was collected only in the self-completion questionnaire, and only from members who claimed to have some responsibility for paying household bills. The third change is that in wave 5, respondents were asked for monthly expenditure on meals eaten out in the self-completion questionnaire, whereas in wave 6 this was changed to weekly. The final change is that, for items measured in terms of annual expenditure, respondents were asked for expenditure in a *typical* year in wave 5, whereas in wave 6 respondents were asked for actual expenditure in the last 12 months.

As should be clear from Table 10.1, the HILDA Survey does not attempt to measure all components of household expenditure (even with the

additional items collected in 2006), and therefore does not provide a comprehensive picture of household expenditure decisions. Notable exclusions in wave 6 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), gifts and donations, council rates, water and sewage, personal and household services (such as cleaners, hairdressers, massage therapists and beauticians), health and beauty products, ornaments, art and jewellery, and bank fees and other financial service charges.

Despite these exclusions, it is useful to examine the distribution of household expenditure for those items measured to provide insights into economic wellbeing beyond those obtainable from looking at income or wealth. A number of studies have advocated the value of examining the distribution of household consumption expenditure (e.g. Crossley and Pendakur, 2002; Barrett et al., 1999). Key to this argument 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 (2002) 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*

In principle, to measure economic wellbeing, what is sought is the household’s consumption 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 (such as housing, cars, household appliances and furniture). Following the approach of Crossley and Pendakur (2002) (as much as is possible), we approximate economic wellbeing as equal to the sum of expenditures on groceries, alcohol, tobacco, taxis and public transport, child care, meals eaten out, motor fuel, clothing, telephone and internet services, holidays, health care, health insurance and other insurance, utilities, motor vehicle repairs and maintenance, rent and 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% and 6% (e.g. Smeeding et al., 1993; Frick and Grabka, 2002). We impute rent as equal to five per cent of the value of the home.<sup>1</sup> As per Crossley and Pendakur, no attempt is made to estimate consumption of durables other than housing, since all that we know about the durables for which expenditure data is gathered is the value of those purchased in the last year, which will in general be a poor guide to consumption of services of durables.

**Table 10.1: Expenditure items collected in waves 5 and 6**

	Wave 5	Wave 6
<b>Weekly expenditure</b>		
Groceries	x	x
Alcohol	x	x
Tobacco products	x	x
Public transport and taxis	x	x
Child care	x	x
Meals eaten out	x <sup>a</sup>	x
<b>Monthly expenditure</b>		
Motor vehicle fuel	x	x
Clothing	x	
Men's clothing		x
Women's clothing		x
Children's clothing		x
<b>Annual expenditure (typical year in 2005; actual in 2006)</b>		
Telephone	x	
Telephone and internet		x
Holidays	x	x
Private health insurance	x	x
Other insurance		x
Health care	x	
Health care practitioners		x
Medications		x
Electricity, gas and other household fuel		x
Electricity	x	
Gas	x	
Other household fuel	x	
Home repairs and renovations	x	x
Motor vehicle repairs and maintenance	x	x
Education fees	x	x
Hobbies, sport, gambling and recreation	x	
New cars		x
Used cars		x
Computers and related devices		x
Home audiovisual equipment		x
Household appliances		x
Household furniture		x
<b>Time period nominated by respondent</b>		
Rent	x	x
Mortgage repayments	x	x
<i>Note:</i> <sup>a</sup> In wave 5, the self-completion questionnaire obtained monthly expenditure on meals eaten out, but weekly expenditure was obtained in the household questionnaire.		

#### 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.

To utilise the full set of expenditure information provided by the HILDA Survey data, we also present estimates on the distribution of expenditure on all items for which data are collected. This adds home repairs and renovations, education fees, new cars, used cars, computers and related devices, home audiovisual equipment, household appliances, household furniture and mortgage repayments to the items examined. All of these are predominantly consumer durables or investments. For this analysis, we exclude imputed rent, since this is not an item (directly) collected by the survey, and it would in any case result in some double-counting, because of the inclusion of 'mortgage repayments'. As the inclusion of mortgage repayments should make clear, we cannot interpret total expenditure on all items as providing a measure of *consumption*.

For much 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.

### Consumption expenditure in 2006

Mean values for each expenditure item collected in wave 6, converted to annual amounts, are presented in Table 10.2. Averaged over all households, total expenditure on all items (including mortgage repayments) was just under \$45,000 per household. The largest single item is groceries, followed by mortgage repayments, rent, holidays, home repairs and renovations, holidays, motor vehicle fuel, new cars and meals eaten out, all of which average over \$2,000 per household per year. Our measure of non-durable consumption expenditure, which excludes nine of the items listed in Table 10.2 and adds imputed rent, averages \$45,072 across all households.

In Table 10.3, expenditure distributions are described. Here, 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 top panel presents statistics for actual expenditure, while the lower panel presents statistics for equivalised expenditure. Mean household consumption expenditure captured by the HILDA Survey is \$50,000. Applying the modified OECD equivalence scale gives mean equivalised household expenditure of \$26,589, and median expenditure of \$23,749. Interestingly, equivalising only slightly decreases the degree of dispersion in the expenditure distribution. The effect is entirely in the lower part of the distribution, with the ratio of the median to the 10th percentile decreasing as a result of the adjustment for household size.

If we limit attention to measures of non-durable consumption expenditure, we see that inequality in expenditure is less than is inequality in income. For the equivalised consumption expenditure distribution, the ratio of the 90th percentile to the 50th percentile and the ratio of the 50th percentile to the 10th percentile are both 1.77, while the Gini coefficient is 0.26. These compare with respective estimates for equivalent income in 2006 of 1.96, 2.11 and 0.306.

Differences in equivalised expenditure levels by type of household are compared in Table 10.4. Expenditure is lowest for lone parent households and highest for non-elderly couples and singles

without dependent children. Notably, elderly persons have relatively high levels of non-durable consumption, but relatively low levels of total direct expenditure on all of the items explicitly measured by the HILDA Survey (second column of Table 10.4). This reflects high rates of home ownership and low levels of mortgage debt for elderly persons. One suspects that the relative

**Table 10.2: Mean annualised values of expenditure items collected in wave 6 (\$)**

	<i>Wave 6</i>
Groceries	8,191
Alcohol	1,302
Tobacco products	687
Public transport and taxis	356
Meals eaten out	2,186
Motor vehicle fuel	2,349
Men's clothing	501
Women's clothing	799
Children's clothing	395
Telephone and internet	1,715
Holidays	2,482
Private health insurance	828
Other insurance	1,155
Health care practitioners	797
Medications	401
Electricity, gas and other household fuel	1,192
Home repairs and renovations	2,392
Motor vehicle repairs and maintenance	878
Education fees	826
New cars	2,296
Used cars	1,451
Computers and related devices	534
Home audiovisual equipment	417
Household appliances	496
Household furniture	644
Child care	396
Rent	2,892
Mortgage repayments	5,878
Imputed rent of owner-occupiers	15,570
<b>Total (excluding imputed rent)</b>	<b>44,437</b>
<b>Total non-durable consumption expenditure</b>	<b>45,072</b>
<i>Note: Population weighted results.</i>	

**Table 10.3: Aggregate measures of individuals' household expenditure, 2006**

	<i>Mean</i>	<i>Median</i>	<i>p90/p50</i>	<i>p50/p10</i>	<i>Gini</i>
<b>Total expenditure</b>					
Non-durable consumption expenditure	50,164	45,059	1.75	1.85	0.266
All items excluding imputed rent	50,394	43,536	2.01	2.29	0.322
<b>Equivalised total expenditure</b>					
Non-durable consumption expenditure	26,589	23,749	1.77	1.77	0.260
All items excluding imputed rent	26,477	22,578	2.03	2.04	0.312
<i>Note: Population weighted results.</i>					

**Table 10.4: Median consumption expenditure by household type, 2006 (\$)**

	<i>Non-durable</i>	<i>All (excluding imputed rent)</i>
Non-elderly couple	29,668	29,356
Couple with children	22,934	22,829
Lone parent	19,648	18,911
Non-elderly lone person	28,950	29,006
Elderly couple	25,950	15,975
Elderly lone person	24,770	14,652
Other	17,997	16,805

*Note:* Population weighted results.

**Table 10.5: Median equivalised consumption expenditure by level of household income, 2006 (\$)**

<i>Equivalised household income category</i>	<i>Non-durable consumption</i>	<i>All (excluding imputed rent)</i>
\$0–\$9,999	21,552	19,283
\$10,000–\$19,999	17,315	15,048
\$20,000–\$29,999	19,429	18,412
\$30,000–\$39,999	23,119	22,820
\$40,000–\$49,999	26,318	27,161
\$50,000+	33,309	33,753

*Note:* Population weighted results.

position of the elderly in consumption levels would further improve with the inclusion of other durables-services consumption.

How does expenditure correlate with income? Table 10.5 shows the association is not as strong as might be expected. While it is true that median consumption expenditure is increasing in income once equivalised income exceeds \$10,000, the rate of increase is lower than the increase in income. For example, median consumption expenditure of persons with income between \$10,000 and \$20,000 is \$17,315, which is only \$2,100 less than median expenditure of persons with income between \$20,000 and \$30,000, \$5,700 less than that of persons in the \$30,000 to \$40,000 category, \$9,000 less than those in the \$40,000 to \$50,000 category, and \$16,000 less than those with incomes above \$50,000. Thus, each \$10,000 increase in equivalent household income is associated with a much smaller increase in equivalent household consumption expenditure.

Perhaps more significant is that those with incomes below \$10,000 actually have higher median consumption expenditure than those with incomes between \$10,000 and \$30,000. This implies that household income is not a good indicator of access to economic resources for many of

**Table 10.6: Mean annual household expenditure on expenditure items common to waves 5 and 6 (September 2006 prices)**

	<i>Wave 5</i>	<i>Wave 6</i>	<i>% change</i>
Groceries	7,719	8,191	6.1
Alcohol	1,185	1,302	9.9
Tobacco products	698	687	-1.6
Public transport and taxis	392	356	-9.2
Motor vehicle fuel	1,874	2,349	25.3
Child care	353	396	12.2
Rent	2,677	2,892	8.0
Mortgage repayments	5,157	5,878	14.0
Imputed rent of owner-occupiers	14,308	15,570	8.8

*Notes:* Population weighted results. All expenditure is at September quarter 2006 prices.

**Table 10.7: Equivalised non-durable consumption expenditure (components common to waves 5 and 6 only)**

	<i>2005 (\$)</i>	<i>2006 (\$)</i>	<i>% change</i>
Mean	18,041	18,846	4.5
Median	16,084	16,634	3.4
p90/p50	1.75	1.75	0.4
p50/p10	1.73	1.73	0.2
Gini coefficient	0.261	0.263	0.8
<b><i>Median expenditure by household type</i></b>			
Non-elderly couple	19,593	19,677	0.4
Couple with children	15,441	16,148	4.6
Lone parent	13,733	14,258	3.8
Non-elderly lone person	18,554	19,714	6.3
Elderly couple	17,955	18,969	5.6
Elderly lone person	17,590	18,300	4.0
Other	12,528	13,511	7.8

*Notes:* Population weighted results. All expenditure is at September quarter 2006 prices.

those with low measured household incomes. This may be because of dissaving—and possibly even debt accumulation—but it might also be because measured income does not capture all elements of actual income, such as income from inter-household transfers.

### Changes between waves 5 and 6

The refinements to the expenditure data collection that were introduced in wave 6 make comparisons of expenditure in waves 5 and 6 difficult. However, it is possible to identify a subset of comparable expenditure items. Means across all households for each of these items in 2005 and 2006 are presented in Table 10.6, expressed in September quarter 2006 prices to remove the effects of inflation. Mean expenditure on all but two of the items—tobacco products and public transport and taxis—increased. The decline in tobacco expenditure reflects the decline in smoking rates in Australia, but it is not clear why expenditure on taxis and public transport decreased. The greatest percentage increase in mean expenditure was for motor vehicle fuel, which increased by one-quarter, reflecting growth in petrol prices over this period. Expenditure also grew strongly for child care and mortgage repayments, the latter of which had the largest absolute increase in mean value of the expenditure items presented in Table 10.6. The child care expenditure increase may in part have been due to increased usage of child care, but the increase in mortgage repayments is likely to be primarily due to interest rate increases rather than increased mortgage debt.

Table 10.7 compares the distribution of total (equivalised) expenditure on comparable non-durable consumption items in waves 5 and 6. Significant growth in mean and median consumption expenditure of approximately 4% is evident. Measures of the degree of dispersion, or inequality, in consumption expenditure also increased slightly. The lower panel of Table 10.7 compares changes in median consumption expenditure across seven different household types. Growth was proportionately strongest for ‘other’ households (such as group households) and non-elderly lone person households, and weakest for non-elderly couples without dependent children.

### Longitudinal analysis of waves 5 and 6

In Table 10.8, we examine changes in individuals’ household consumption expenditure from wave 5 to wave 6. As before, we focus on equivalised non-durable consumption expenditure and restrict to the subset of components that were measured in both waves. Across persons of all ages, the median increase in measured household consumption expenditure per adult equivalent was \$514 (at September 2006 prices)—that is, half of the population had an increase in equivalent

expenditure less than \$514, and half had an increase greater than \$514. Persons who in 2005 were living in couple households with dependent children or non-elderly single-person household had the highest median growth, while elderly couples and persons living in ‘other’ households had the lowest growth. The low growth for those in ‘other’ households is seemingly at odds with the high growth in the median for this household type shown in Table 10.7. It suggests that the high growth evident in Table 10.7 is mostly due to a change in composition of this group—that is, changes in the people who are in the group—rather than an increase in expenditure of those who were in the group in 2005.

How did growth in expenditure between 2005 and 2006 differ by initial income level? Was expenditure growth greater for high-income people? The second panel of Table 10.8 shows growth in expenditure was indeed generally increasing in initial income level. It shows median growth by quintile in the (equivalent) income distribution in 2005. Persons in the top quintile had the biggest median increase in expenditure, and the median change in expenditure is increasing in income quintile from the second through to the top quintile. However, persons in the bottom quintile had slightly higher median growth in expenditure than persons in the second quintile. This is further indication that income is not such a good measure of economic wellbeing for those with low measured incomes.

**Table 10.8: Median changes in equivalised non-durable consumption expenditure, 2005–2006 (\$)**

Median change	514
<b>Median change by household type in 2005</b>	
Non-elderly couple	316
Couple with children	610
Lone parent	635
Non-elderly lone person	599
Elderly couple	140
Elderly lone person	445
Other	235
<b>Median change by income quintile in 2005</b>	
Quintile 1	446
Quintile 2	438
Quintile 3	481
Quintile 4	554
Quintile 5	783
<b>Median change by quintile of change in income 2005–2006</b>	
Quintile 1	527
Quintile 2	346
Quintile 3	405
Quintile 4	947
Quintile 5	603

*Notes:* Population weighted results. Expenditure expressed at September quarter 2006 prices.

The last panel of Table 10.8 considers the issue of the correlation between income changes and consumption changes. It shows the median change in consumption expenditure for each quintile of the distribution of *changes* in income. There is no clear correspondence between income changes and consumption changes. A summary measure of the correlation between income change and consumption change, the correlation coefficient, correspondingly shows only a very weak positive association between income change and consumption change (the coefficient is 0.04). This may reflect the tendency for saving and dissaving to occur as income fluctuates, or that income is not completely well measured. Either way, it suggests the income approach overstates changes in individuals' economic wellbeing from one period to the next.

#### Endnote

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

#### References

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# Labour Market Outcomes

A primary focus of the HILDA Survey is on 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 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 and attitudes to work.

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 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 their associations with subsequent labour market behaviour. Part B of this Report additionally contains two articles on labour market-related topics, the first by Mark Wooden and Markus Hahn on long working hours and their consequences, and the second on time spent travelling to and from work and how this has changed between 2002 and 2006.

## 11. Mobility in labour force status: 2001 to 2006

Standard statistical summaries divide the working-aged population 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 particularly 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 the other labour market states.

Table 11.1 shows the labour force status of individuals in 2006, distinguishing full-time and part-time employment and disaggregating by age group. Overall, 70% of males and 56% of females were employed at the time of their 2006 interview, 27% of males and 41% of females were not in the labour force, and the remaining 3% of males and females were unemployed. It is much more common for females than males to be working part-time, with 48% of females who were employed working part-time, compared to only 18% of males.

The proportion of males who were in paid work in 2006 increases from 68% of males aged

### Labour force status

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

- A person is classified as employed if that person had a job, business or farm in the week leading up to the interview, and had either worked in the last four weeks or had not worked but: had been paid for any part of the last four weeks; or had been on workers' 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.
- 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.

between 15 and 24, to 90% of males in the 25 to 34 age group, and then decreases with age—from 89% of males aged between 35 and 44 to 61% of males in the 55 to 64 age group and 13% of males aged 65 or older. Conversely, from the 25–34 age group onwards, the proportion of males who were not in the labour force increases with age—from 6% of males aged between 25 and 34, to 37% of males aged between 55 and 64 and 87% of males aged 65 or older. The proportion of males who were unemployed generally decreases with age, ranging from 8% of males aged between 15 and 24, to 2% of males in the 55 to 64 age group.

The proportion of females who were employed in 2006 ranged from 65% of females aged between 15 and 24, to 74% of females in the 45 to 54 age group, then drops substantially to only 46% of females aged between 55 and 64 and 4% of females aged 65 or older. As is the case with

males, the proportion of females who were unemployed generally decreases with age—from 7% of females aged between 15 and 24, to 2% of females in the 35 to 54 age group. The proportion of females who were not in the labour force rises substantially from the age of 55—from 24% of females between the age of 45 and 54 to 53% of females aged between 55 and 64, and 96% of females aged 65 or older.

Table 11.2 shows that, over the six years from 2001 to 2006, there was very little change in the proportion of people in each labour force state. The proportion of males who were employed each year was approximately 70%, and for females the proportion in paid work ranged from 53% in 2001 to 56% in 2006. Overall, the proportion of people working full-time did not change much in the six-year period from 2001 to 2006. The proportion of males employed full-time ranged from

**Table 11.1: Labour force status by sex and age group, 2006 (%)**

	Age group						All
	15–24	25–34	35–44	45–54	55–64	65+	
<b>Males</b>							
Employed	67.9	90.3	89.4	86.8	60.7	12.8	70.2
Employed full-time	39.4	81.6	82.7	78.7	44.8	5.3	57.6
Employed part-time	28.5	8.7	6.7	8.1	15.9	7.5	12.6
Unemployed	8.0	3.7	2.4	*1.2	2.3	*0.3	3.1
Not in the labour force	24.1	6.0	8.3	11.9	37.1	86.9	26.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Females</b>							
Employed	65.3	71.5	72.4	74.2	45.5	4.3	56.4
Employed full-time	27.6	45.0	34.5	43.6	23.1	1.4	29.6
Employed part-time	37.7	26.5	37.9	30.6	22.4	2.9	26.8
Unemployed	6.9	3.1	2.3	2.4	*1.0	*0.0	2.7
Not in the labour force	27.9	25.4	25.4	23.5	53.4	95.7	40.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 11.2: Labour force status of the population aged 15 years and over (%)**

	2001	2002	2003	2004	2005	2006
<b>Males</b>						
Employed	67.8	68.5	69.0	69.9	69.6	70.2
Employed full-time	56.5	56.6	57.1	57.8	58.3	57.6
Employed part-time	11.3	11.9	11.9	12.1	11.3	12.6
Unemployed	5.3	4.5	4.1	3.4	3.5	3.1
Not in the labour force	26.9	27.1	26.9	26.6	26.9	26.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Females</b>						
Employed	53.4	53.7	53.8	54.2	55.7	56.4
Employed full-time	27.9	27.1	27.1	27.3	27.8	29.6
Employed part-time	25.5	26.6	26.7	26.9	27.9	26.8
Unemployed	3.5	3.4	3.0	3.2	2.9	2.7
Not in the labour force	43.2	43.0	43.3	42.6	41.4	40.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes: Population weighted results. Percentages may not add up to 100 due to rounding.

57% in 2001 to 58% in 2005, and for females from 27% in 2002 to 30% in 2006. In all six years, around 11–12% of males and 25–28% of females were employed part-time. Unemployment dropped from 5.3% of males and 3.5% of females in 2001 to 3.1% of males and 2.7% of females in 2006. In all six years, around 27% 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% from 2001 to 2004, but subsequently dropped to 41% in 2005 and 2006.

### Changes in labour force status, 2001 to 2006

Table 11.3 provides an overview of movements between labour force states by showing what had happened in the six years to 2006 to people who started out in each labour force state in 2001.<sup>1</sup> Almost 80% of those who were employed full-time in 2001 were working full-time five years later, 11% had reduced their working hours to part-time, 9% were no longer in the labour force and the remaining 1% were unemployed. Of those who were working part-time in 2001, only 44% were still in part-time work five years later, 37% had moved to full-time work, 17% were out of the labour force and 2% were unemployed.

Around three-quarters of the people who were not in the labour force in 2001 remained in that category in 2006, while 22% were working in 2006 and 3% were unemployed. By contrast, among those

who were classified as unemployed in 2001, only 12% were still unemployed in 2006. More than 60% had found a job (62% of whom were working full-time), and 27% were no longer looking for work.

### Mobility in labour force status of the prime-age population

Having provided an overview of the labour force status mobility of the entire adult population, it is useful to confine the remaining analysis to persons of prime working age (25 to 54). Table 11.4 shows the changes in labour force status for prime-age males and females between 2005 and 2006. Most (95%) of the males who were working full-time in 2005 were still in full-time work in 2006. Only 3% had moved to part-time work and 1% had left the labour force. Of those males who were working part-time in 2005, 57% were still working part-time in 2006 and 32% were in full-time work. A good proportion (55%) of males who were unemployed in 2005 had jobs in 2006, with most working full-time, while relatively few (15%) males who were not in the labour force in 2005 had re-entered the labour force in 2006.

As was the case for males, most females (85%) who were in full-time work in 2005 were still working full-time in 2006—10% had changed from full-time to part-time work and 4% had left the labour force. Females were, however, more likely to remain in part-time employment than males,

**Table 11.3: Labour force status mobility, by initial labour force status—Persons aged 15 and over in 2001 (%)**

	2002	2003	2004	2005	2006
<b>Employed full-time in 2001</b>					
Employed full-time	88.4	84.9	83.0	80.6	78.7
Employed part-time	6.4	8.7	8.9	10.4	11.2
Unemployed	1.7	1.2	1.1	1.2	1.3
Not in the labour force	3.5	5.2	6.9	7.8	8.8
Total	100.0	100.0	100.0	100.0	100.0
<b>Employed part-time in 2001</b>					
Employed full-time	18.3	24.7	29.4	34.5	37.0
Employed part-time	66.8	58.3	52.5	48.1	44.2
Unemployed	3.0	2.4	3.0	2.2	2.1
Not in the labour force	11.9	14.7	15.1	15.2	16.7
Total	100.0	100.0	100.0	100.0	100.0
<b>Unemployed in 2001</b>					
Employed full-time	23.2	31.7	32.3	37.5	38.0
Employed part-time	21.6	24.3	27.4	24.1	23.3
Unemployed	30.0	20.1	14.0	16.4	11.5
Not in the labour force	25.2	23.9	26.3	22.0	27.3
Total	100.0	100.0	100.0	100.0	100.0
<b>Not in the labour force in 2001</b>					
Employed full-time	3.2	4.9	6.2	8.0	9.0
Employed part-time	7.6	10.0	11.7	13.0	13.4
Unemployed	3.6	3.3	3.4	2.2	2.5
Not in the labour force	85.7	81.8	78.8	76.8	75.1
Total	100.0	100.0	100.0	100.0	100.0

Notes: Population weighted results. Percentages may not add up to 100 due to rounding.

**Table 11.4: Labour force status in 2006, by labour force status in 2005—Prime-age persons (%)**

<i>Labour force status in 2005</i>	<i>Labour force status in 2006</i>				<i>Total</i>
	<i>Employed full-time</i>	<i>Employed part-time</i>	<i>Unemployed</i>	<i>Not in the labour force</i>	
<b>Males</b>					
Employed full-time	95.0	2.9	*0.7	1.3	100.0
Employed part-time	32.0	56.6	*4.4	*7.0	100.0
Unemployed	45.2	*9.4	*21.4	*24.0	100.0
Not in the labour force	*6.6	*8.7	*13.1	71.7	100.0
Total	82.6	7.7	2.3	7.4	100.0
<b>Females</b>					
Employed full-time	84.8	10.3	*0.9	4.0	100.0
Employed part-time	15.7	74.1	*1.3	9.0	100.0
Unemployed	33.4	31.3	19.5	15.8	100.0
Not in the labour force	4.5	16.1	6.1	73.4	100.0
Total	40.5	34.0	2.9	22.6	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

with 74% of females who were working part-time in 2005 still in part-time work in 2006, and only 16% moving from part-time to full-time work. Only 20% of females who were unemployed in 2005 were still unemployed in 2006, with 33% in full-time work and 31% working part-time. More than one-quarter of the females who were not in the labour force in 2005 had re-entered the labour force by 2006—16% were working part-time, 5% were employed full-time and 6% were looking for work.

Release 6 of the HILDA Survey allows us to examine labour market mobility over a period of six years. Table 11.5 shows the changes in labour force status of prime-age males and females between 2001 and 2006. Among prime-age males, 96% of those who had jobs in 2001 were employed in 2006, and for females, the comparable figure is 88%. While 91% of males who were working full-time in 2001 were still in full-time work in 2006, only 24% of males who were working part-time in 2001 were still in part-time work. It is much more

common for females to remain in part-time work, with 56% of females who were working part-time in 2001 still in part-time work in 2006, and 21% of females who were working full-time in 2001 moving to part-time work by 2006.

Of the prime-age males who had been unemployed in 2001, 63% were employed in 2006, and of those males who had moved from unemployment to employment, 74% were in full-time work. Similarly, 62% of prime-age females who were unemployed in 2001 were working in 2006. However, 63% of the females who had moved from unemployment in 2001 to employment in 2006 were working part-time, possibly because of a preference for part-time work. The relatively high percentage—almost one-quarter—of prime-age individuals who moved from unemployed in 2001 to not in the labour force in 2006 may be an indicator that there are some ‘discouraged workers’, although personal factors such as child-rearing could also be responsible for the exit from the labour force. The

**Table 11.5: Labour force status in 2006, by labour force status in 2001—Prime-age persons (%)**

<i>Labour force status in 2001</i>	<i>Labour force status in 2006</i>				<i>Total</i>
	<i>Employed full-time</i>	<i>Employed part-time</i>	<i>Unemployed</i>	<i>Not in the labour force</i>	
<b>Males</b>					
Employed full-time	91.3	4.9	*1.2	2.6	100.0
Employed part-time	63.6	24.2	*3.4	*8.8	100.0
Unemployed	46.4	16.6	*11.5	25.5	100.0
Not in the labour force	23.1	*9.2	10.0	57.7	100.0
Total	82.7	7.1	2.4	7.9	100.0
<b>Females</b>					
Employed full-time	68.9	21.4	*1.1	8.6	100.0
Employed part-time	29.5	55.9	*1.4	13.3	100.0
Unemployed	22.8	39.1	*14.7	23.4	100.0
Not in the labour force	11.4	30.5	5.5	52.5	100.0
Total	39.5	35.0	2.8	22.7	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

rate of movement from being unemployed to being out of the labour force was slightly higher among males (26%) than females (23%).

Approximately 42% of prime-age males and 48% of prime-age females who were not in the labour force in 2001 had re-entered the work force by 2006. Of the prime-age males who were not working or looking for work in 2001, 32% were employed in 2006 and a further 10% were looking for work. Compared to prime-age males, a higher proportion of prime-age females had moved from being out of the labour force in 2001 to being employed in 2006—31% were working part-time, 11% were working full-time and 6% were looking for work. It is likely that many of these females had returned to the labour force after taking time out to have children—53% of females who were not in the labour force in 2001 and working in 2006 were aged between 35 and 44 in 2006, and for 48% of these females, their youngest child was aged between five and ten years.

### Discussion

As one would expect, the likelihood of being in paid work increases as people move from full-time education into employment, and then decreases with age as people approach retirement, with relatively few people remaining in paid

work after the age of 65. Overall, the proportion of the population who are working full-time, working part-time, and looking for work does not change much from one year to the next. However, at an individual level there is quite a lot of movement between labour force states. For example, 32% of prime-age males who were working part-time in 2005 had moved into full-time employment by 2006, and 55% of prime-age males and 65% of prime-age females who were unemployed in 2005 were working either full-time or part-time in 2006. Looking at labour force states five years apart indicates even greater mobility over the medium-term, with only 69% of prime-age females who were working full-time in 2001 still in full-time work in 2006, compared to 91% of males; and over 40% of prime-age persons who were not in the labour force in 2001 either employed or looking for work in 2006.

### Endnote

- 1 This is the labour force status at the time of interview and does not capture mobility in-between interviews. The best source for accurate measurement of labour force transitions is the ABS Labour Force Survey (ABS, 2006).

### Reference

Australian Bureau of Statistics (2006) *Labour Force, Australia*, ABS Catalogue No. 6202.0, 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. 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 wage levels at the aggregate level, 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 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 in job'. One concern that arises in hourly wage rate analysis is that additional measurement error is introduced by dividing reported weekly earnings by reported

hourly earnings. This provides one rationale for examining weekly earnings, at least as an addition to the study of hourly earnings. A further rationale 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 September quarter 2006 prices to remove the effects of inflation.

We begin by describing the earnings distribution in each year—that is, 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 each year, for all employees and for full-time and part-time employees separately. Real earnings have grown reasonably steadily over the 2001 to 2006 period. Mean earnings at September 2006 prices grew from \$770 in 2001 to \$832 in 2006, an 8% increase. The growth was shared by part-time workers and full-time workers, with mean weekly earnings of part-time employees increasing by 10% to \$364 and mean weekly earnings of full-time employees increasing by 9% to \$1,048. (The increase is greater for part-time workers and full-time workers than for all workers because the proportion of workers that were employed part-time increased over the period.)

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. For example, in 2006 a full-time worker at the bottom end of the distribution—with 90% of workers having higher earnings—earned 8% more than a worker in the same position in 2001; while a full-time worker at the top end of the distribution in 2006—with 90% of workers having lower earnings—earned 9% more than a worker in the same position in 2001.

As a consequence of this ‘rising tide’ of wages, there has been no discernible change in the degree of inequality in earnings. The Gini coefficient,

which provides a summary measure of inequality, has remained essentially unchanged over the six-year period. There is thus no 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. The aggregate wage distribution can furthermore be affected by change in the ratio of part-time employment to full-time employment. Labour economists studying earnings—as opposed to incomes—have primarily been interested in the ‘rate’ at which labour is rewarded in the labour market—that is, its ‘price’—and correspondingly have generally focused on hourly earnings. (Workers themselves may perhaps be more concerned with their weekly rate of pay than their hourly rate, although one suspects that fewer hours for a given weekly wage would be preferred by most people.)

According to the HILDA data (Table 12.2), mean hourly earnings of all employees were \$23 in 2006, while median earnings were \$20 per hour. 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. This demonstrates that we obtain a measure of wage rates that is more comparable between part-time and full-time workers when we examine hourly earnings. We can see that full-time workers on average earn more per hour than part-time workers, even with the greater potential for full-time

**Table 12.1: Distribution of weekly earnings (\$)**

	2001	2002	2003	2004	2005	2006
<b>All employees</b>						
Mean	770	757	773	786	817	832
Median	690	670	685	691	724	736
10th percentile	167	154	167	170	181	180
90th percentile	1,380	1,367	1,371	1,419	1,487	1,534
Gini coefficient	0.362	0.363	0.362	0.360	0.366	0.365
<b>Full-time employees</b>						
Mean	964	959	979	991	1,031	1,048
Median	846	837	872	857	892	918
10th percentile	499	502	502	519	517	540
90th percentile	1,573	1,541	1,568	1,594	1,654	1,716
Gini coefficient	0.267	0.262	0.266	0.264	0.272	0.269
<b>Part-time employees</b>						
Mean	332	326	335	351	356	364
Median	287	279	294	319	310	307
10th percentile	69	73	71	66	77	80
90th percentile	635	625	636	648	662	700
Gini coefficient	0.397	0.397	0.381	0.393	0.386	0.395
<i>Note: Population weighted results.</i>						

employees, who are more often salaried than are part-time workers, to work additional hours without additional remuneration. Mean hourly earnings in 2006 were \$24 for full-time workers and \$21 for part-time workers.

Changes between 2001 and 2006 are of a very similar nature to the changes evident for weekly earnings. The growth in weekly earnings is therefore not attributable to increases in hours worked; similarly, the stability in earnings inequality is robust to controlling for the effects of changes in hours worked.

### Longitudinal changes in wages

We now turn to the relative strength of HILDA, the ability to examine wage *progression* of individual employees. Because we are interested in changes in individuals' wage *rates* (not their income), and

individuals' hours of work are highly susceptible to change from year to year, we consider only hourly wages here. This also allows us to consider full-time and part-time employees collectively, in so doing also avoiding problems caused by employees switching between part-time and full-time employment from one year to the next.

The top panel of Table 12.3 presents information on the wage changes experienced by employees. Only persons who were employees in both of the waves over which changes are measured are included in producing the estimates. Most striking is that there is a great deal of diversity in wage changes at the individual level. When changes from one wave to the next are ordered from lowest to highest, the worker with the change at the 10th percentile (who has 90% of workers with higher wage changes) is found to experience a

**Table 12.2: Distribution of hourly earnings (\$)**

	2001	2002	2003	2004	2005	2006
<b>All employees</b>						
Mean	21.45	21.29	21.64	22.17	22.99	23.13
Median	18.58	18.60	19.04	19.23	19.82	20.00
10th percentile	10.59	10.75	10.90	11.11	11.24	11.46
90th percentile	33.72	32.79	34.07	34.44	35.84	36.88
Gini coefficient	0.274	0.267	0.263	0.271	0.281	0.276
<b>Full-time employees</b>						
Mean	22.17	21.93	22.53	23.02	23.79	24.08
Median	19.85	19.90	20.09	20.53	21.02	21.60
10th percentile	12.02	12.35	12.54	13.00	13.06	13.10
90th percentile	34.50	33.54	34.84	35.43	36.83	37.78
Gini coefficient	0.244	0.233	0.241	0.242	0.246	0.245
<b>Part-time employees</b>						
Mean	19.82	19.91	19.72	20.35	21.27	21.07
Median	16.17	16.37	16.72	17.00	17.23	17.16
10th percentile	8.62	8.77	8.94	8.77	8.96	9.00
90th percentile	30.66	29.48	31.29	30.82	32.00	32.61
Gini coefficient	0.333	0.329	0.300	0.322	0.344	0.333

*Note:* Population weighted results.

**Table 12.3: Individuals' wage changes (percentage changes)**

	Wave 1 to Wave 6	Wave 1 to Wave 2	Wave 2 to Wave 3	Wave 3 to Wave 4	Wave 4 to Wave 5	Wave 5 to Wave 6
<b>All employees employed in both waves</b>						
Mean	61.3	16.9	14.9	15.9	16.3	18.4
Median	31.1	4.5	5.5	6.2	5.3	7.2
10th percentile	-11.1	-25.5	-23.8	-22.0	-23.1	-22.4
90th percentile	127.6	53.5	54.2	51.9	50.0	53.5
<b>Employees who remained in the same job</b>						
Proportion of employees	-	73.6	72.4	71.5	71.1	71.7
Median percentage change	-	4.5	5.1	5.7	4.9	6.8
<b>Employees who changed jobs</b>						
Proportion of employees	-	26.4	27.6	28.5	28.9	28.3
Median percentage change	-	5.2	10.7	8.6	9.0	10.4

*Notes:* Population weighted results. Proportions are of employees who were employed in both waves.

reduction in real hourly earnings of approximately 22–25%. The worker at the 90th percentile experiences an increase in excess of 50%. Also striking is the large mean wave-on-wave growth of 15% or more. Median growth is substantially lower, at around 5%, indicating that the high mean growth in part derives from a relatively small number of workers experiencing very high growth. Nonetheless, the average person who is an employee in two successive years has experienced very good real hourly wage growth from the first year to the second of approximately 5%. At first glance, this is surprisingly high, especially in the context of the growth in the aggregate median hourly wage (Table 12.2), which averages 1.5% between 2001 and 2006.

How do we reconcile these estimates with the much-smaller cross-sectional changes? Cross-sectional changes are influenced by exits from and entries to employment. For example, young people will be entering the labour market, typically at relatively low wages, while older people will be exiting the labour market, often having been earning relatively high earnings. Such entries and exits tend to dampen earnings growth compared with longitudinal analysis that restricts attention to individuals employed in all the periods under study. The longitudinal analysis captures the increases associated with both movement through the lifecycle and the overall increase in average wages.

In the bottom two panels of Table 12.3, the distinction is drawn between employees who remained in the same job and employees who changed jobs. As Dickens et al. (2007) note, the processes determining wage changes for those who change jobs are quite different from those who remain in the same job. For those who stay in the same job, we observe how wages evolve over time in that job as the worker’s career progresses (or fails to progress). For those who change jobs, by contrast, wage changes will reflect effects of potentially a multitude of factors, including changed employer, occupation, location, tasks, responsibilities and hours of work. Furthermore, job changes will in many situations reflect an attempt by the worker and/or the original employer to find a better firm-worker match, and is therefore perhaps expected to be associated with a greater increase in wages than occurs for those who remain with the same employer.

We see in Table 12.3 that approximately 72% of persons who were employees in two successive years remained in the same job, while the remaining 28% changed jobs. Of those who stayed in the same job, the median percentage change in hourly earnings from one year to the next fluctuated between 4.5% and 6.8% between 2001 and 2006. For those who changed jobs, the median change was mostly around 9%–10%, which is consistent with job changes resulting in improved employer–

employee matches. Job changes can therefore be characterised as typically being positive in their implications for earnings progression.

**Have wage changes been greater for high wage earners?**

Who has experienced the largest wage gains? Have high wage earners experienced greater gains or lower gains than low wage earners? We can consider this issue by first dividing up employees based on their initial position in the wage distribution, and then comparing changes in wages for each of these groups. This is undertaken in Table 12.4, which presents median changes in wages for each quintile (20%) of the initial wage distribution.

As noted in Chapter 6 in respect of the analysis of income mobility, measurement error will exist and poses the particular problem of ‘regression-to-the mean’ for this type of longitudinal analysis. We adopt the same partial remedy as for the analysis of income mobility, calculating changes in wages after first combining years. In Table 12.4, we combine waves 1 and 2, waves 3 and 4, and waves 5 and 6.

Evident is that the percentage wage change is decreasing in the initial wage rate. Employees in the bottom 20% of the waves 1–2 wage distribution had median wage growth to waves 5–6 of 42%, compared with 12% for the next lowest 20%, 9% for the middle 20%, 6% for the second-highest 20% and 5% for the top 20%. It is likely this pattern is not particular to the 2001 to 2006 period in Australia, but rather is, at least to some extent, an ever-present phenomenon that is a function of the lifecycle stages of the lowest and highest wage earners. Many low wage employees are young and/or relatively new entrants to the labour market who tend to experience quite rapid wage growth as they acquire work experience. Conversely, many high wage employees are older, more established labour market participants who have already achieved, or nearly achieved, their peak earning capacity.

**Wage changes for different groups of employees**

We can directly consider the identities of the employees who have experienced the greatest and smallest wage increases by examining wage

**Table 12.4: Median percentage change in real hourly wage by initial quintile of the wage distribution**

	<i>Waves 1–2 to waves 5–6</i>	<i>Waves 1–2 to waves 3–4</i>	<i>Waves 3–4 to waves 5–6</i>
Bottom quintile	42.4	23.2	22.9
Quintile 2	12.1	7.8	7.4
Quintile 3	8.9	5.3	4.2
Quintile 4	5.6	2.3	3.3
Top quintile	5.3	1.0	0.9

*Note:* Population weighted results.

**Table 12.5: Median percentage change in real hourly wages by sex and age, educational attainment and initial occupation**

	2001 to 2002		2003 to 2004		2005 to 2006	
	Median initial wage (\$)	Percentage change	Median initial wage (\$)	Percentage change	Median initial wage (\$)	Percentage change
<b>Males</b>						
Aged 15–24 years	13.22	3.1	13.73	13.9	15.32	8.8
Aged 25–44 years	21.08	1.5	21.81	2.8	22.56	4.4
Aged over 45 years	22.98	0.8	23.17	1.9	24.44	0.0
<b>Females</b>						
Aged 15–24 years	14.13	6.9	13.96	7.7	14.86	7.5
Aged 25–44 years	19.06	1.1	19.35	2.2	20.68	2.7
Aged over 45 years	19.16	0.7	19.37	1.5	20.32	2.3
<b>Educational attainment</b>						
Degree or higher	25.61	1.8	25.87	2.6	26.36	5.0
Diploma or Certificate III/IV	19.55	1.5	19.93	3.1	20.76	2.8
High school	17.61	1.7	17.45	4.2	17.72	3.5
Certificate I/II	16.70	0.5	16.36	11.3	17.63	0.5
No qualifications	17.45	0.7	17.17	2.3	17.72	2.9
<b>Initial occupation</b>						
Managers	28.61	2.2	29.19	4.4	31.33	3.7
Professionals	25.18	1.5	25.90	1.9	26.61	3.4
Associate Professionals	20.76	1.3	21.81	2.6	21.97	4.8
Tradespersons	18.26	2.0	18.15	7.1	18.87	8.9
Advanced and intermediate clerks	17.68	1.5	17.91	2.6	18.44	3.0
Intermediate production workers	16.73	0.4	17.49	6.3	18.53	1.3
Elementary clerks	15.18	2.1	14.72	6.9	15.80	2.8
Labourers	15.41	0.6	15.92	1.1	16.36	0.5

Note: Population weighted results.

changes for employees with different characteristics. In Table 12.5, differences in median wage changes by sex, age, educational attainment and occupation are considered. Consistent with the explanation for the strong relationship between rate of wage growth and initial wage rate provided above, the rate of wage growth is consistently ordered by age for both males and females—that is, older employees experience lower proportionate growth. There is no clear pattern to the relationship between wage growth and educational attainment. Disaggregation by occupation shows that tradespersons have had particularly strong wage growth, which is perhaps unsurprising in the context of recent public discourse on skills shortages, which has identified many trades as experiencing shortage.

### Discussion

Aggregate earnings growth is evident across the entire period spanned by the first six waves of the HILDA Survey. Earnings inequality has also remained remarkably stable over this period, implying the growth in earnings has been shared by most employees. This is all the more remarkable in the

context of the significant employment growth that has occurred over the survey period, since the new entrants to employment are likely to be on average less skilled than the incumbent employees.

Study of individual-level wage changes shows that the aggregate-level stability belies the substantial dynamism of wage changes from year to year experienced by individual employees. Many employees have experienced large increases in their rate of pay from one year to the next, and a number have experienced significant decreases. Some of this can be thought of as essentially random fluctuation, and indeed will partly be due to measurement error, but a significant share of the disparity in wage changes is systematic, and in particular, is due to differences in employees' lifecycle stages.

### Reference

Dickens, W., Goette, L., Groshen, E., Holden, S., Messina, J., Schweitzer, M., Turunen, J. and Ward, M. (2007) 'How Wages Change: Micro Evidence from the International Wage Flexibility Project', *Journal of Economic Perspectives*, vol. 21, no. 2, pp. 195–214.

## 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, which people change jobs, what sort of jobs they leave, what sort of jobs they go to, and why they 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), arising.

For the purposes of this section, we define a job change to occur if the employer in the respondent’s current main job changes from one wave to the next. Individuals may of course change jobs more than once in a 12-month period. However, it is only for jobs held at the time of interview that we have information such as occupation, hours, wage and industry, and it is only for these jobs that we have contemporaneous information about other aspects of the respondent’s life, such as family situation, health and income. We therefore focus only on job changes identified by examining jobs held by respondents at the time of interview, and so do not identify some (within-wave) job transitions.<sup>1</sup>

When examining intervals longer than two years, in addition to the job changes identified as above, we also assume that if a person was employed in one wave, not employed in the next wave, and then is 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 13.1 shows the prevalence of job changing. The first row of each panel gives the proportion of

persons aged over 15 years who were employed at the time of interview in both of the waves indicated by the column heading. For example, the upper left cell indicates that 62.7% of males over the age of 15 were employed at the time of interview in both wave 1 and 2. The next row displays the percentage of all persons over 15 years of age who were observed to change jobs, and the next row the percentage of all persons over 15 who remained employed in the same job.

Approximately 10% of males are observed to change jobs each year, which translates to just over one-in-six employed males changing jobs. Females have a lower rate of job changing at approximately 8%, but this reflects a lower rate of employment rather than a lower propensity to change jobs, with the proportion of employed females changing jobs each year being on average the same as for males.

An alternative way of interpreting the figures presented in Table 13.1 is that, on average, employed persons change jobs every six years. Of course, some workers will change jobs more frequently than others, so we cannot infer how many workers will actually change jobs within a six-year time frame. 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 wave-on-wave transitions.

In Table 13.2, the prevalence of medium-term job mobility is described. In this case, a job change occurs whenever a person reports being in a different job to that when they were 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 heading ‘Employed in both waves’ gives the proportion of persons who were employed in at least two of the waves indicated in the column heading. For example, 71.8% of males were employed in at least two of the four waves from 2001 to 2004. This can be thought of as the proportion of males potentially observed to change jobs.

Over one-quarter of males, and over one-fifth of females, change jobs over a three-year period. For both males and females, this corresponds to approximately 38% of employed persons. Over the entire sample period, over half of employed persons changed jobs. The remainder were employed in only one job, although 8% of males and 10% of females were employed for only a subset (between two and five) of the waves. 30% of males and 20% of females were employed in the same job in all six years.

**Table 13.1: Prevalence of job changing among persons aged over 15 years (%)**

	2001 and 2002	2002 and 2003	2003 and 2004	2004 and 2005	2005 and 2006
<b>Males</b>					
Employed in both waves	62.7	61.6	62.2	63.3	63.6
Changed jobs	10.9	9.9	11.4	10.7	10.9
Did not change jobs	51.9	51.8	50.9	52.6	52.7
<b>Females</b>					
Employed in both waves	46.9	46.3	46.6	47.0	47.6
Changed jobs	8.1	7.4	7.9	9.1	8.0
Did not change jobs	38.8	38.9	38.7	37.9	39.6
<i>Note:</i> Population weighted results.					

**Table 13.2: Prevalence of job changing over the medium-term (%)**

	2001–2004	2003–2006	2001–2006
<b>Males</b>			
Employed in at least two waves	71.8	70.4	74.7
Changed jobs	26.7	25.8	36.9
Did not change jobs	45.2	44.6	37.8
Employed in all waves and didn't change job	38.1	38.8	29.9
<b>Females</b>			
Employed in at least two waves	56.7	57.6	61.7
Changed jobs	21.8	21.6	31.7
Did not change jobs	35.0	36.0	30.0
Employed in all waves and didn't change job	26.6	27.4	20.2
<i>Note:</i> Population weighted results.			

### Who changes jobs?

What types of people are more likely to change jobs? We briefly consider this question in Tables 13.3 to 13.5 by comparing the prevalence of job changing among persons of different characteristics.

Table 13.3 first considers the question of whether job transitions are more common for part-time workers or full-time workers. It shows the proportion of workers observed to change jobs within the time-frame indicated by the column heading, disaggregated by whether employed full-time or part-time in the initial year. The results presented in the table indicate transitions are more common among male part-time workers than among male full-time workers, but that transitions are similarly common among female part-time and full-time workers. A number of factors may underpin these patterns. Part-time employees are more frequently employed on a casual basis than their full-time counterparts, and we might therefore expect a higher rate of job changes among part-timers. The evidence for females is, however, somewhat at odds with this explanation. Perhaps of more relevance is that part-time work for males is primarily associated with youth—for example, while studying full-time—or inability to secure full-time employment. In either case, part-time employment is not a long-term desired labour market outcome, and we would therefore expect males in part-time employment to change jobs more frequently. By

contrast, many females, in particular those with dependent children, work part-time on a long-term basis, and will therefore be less predisposed towards changing jobs.

Consistent with the above hypothesised association between youth and job mobility, Table 13.4 shows a strong inverse relationship between age and mobility. Nearly three-quarters of 15–24 year olds who were employed in at least two of the six years spanned by HILDA changed their (main) job. In the same period, approximately half of employed prime-aged persons (aged 25–44 years) changed jobs, and just under one-third of employed persons aged 45–64 years changed jobs. These relativities in job mobility by age group are essentially preserved whether the interval examined is six years, four years or two years.

Does job mobility differ by skill level? On the one hand, we might expect skilled workers to have more employment options and therefore more mobility. On the other hand, employers may make greater efforts to retain skilled workers, tending to reduce mobility. There is furthermore no obvious reason why the rate at which mismatches arise would differ by skill level, so it is not clear job mobility will differ by skill level. Nonetheless, skilled workers are usually thought of as more mobile than unskilled workers, although this perception may relate more to the *ability* to move rather than the actual frequency of job moves.

Using educational attainment as a measure of skill level, Table 13.5 reveals no clear relationship between skill and job mobility. Those who have completed high school but hold no post-school qualifications (other than a Certificate I or II) tend to have the highest mobility, but differences from persons with other levels of educational attainment are not large. The unskilled would therefore seem to be as mobile as the skilled, although one suspects the *nature* of mobility is likely to differ by skill level.

### What changes about the job when a worker changes job?

In Tables 13.6 and 13.7 we examine the nature of job changes, focusing on the relatively immediate

transitions that are observed from one wave to the next. Table 13.6 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. The heading 'Reported changing occupations' is the proportion of persons who said that they had changed occupations since the date of last interview. 'Classified as changing occupations' is the proportion classified as employed in a different ASCO two-digit level occupation based on the respondent's job title and main duties in his or her current main job. Over 60% of job changers reported that their occupation had changed, which matches the percentage classified as working in a

**Table 13.3: Prevalence of job changing by initial full-time/part-time employment status (%)**

	2001 and 2002	2003 and 2004	2005 and 2006	2001 and 2004	2003 and 2006	2001 and 2006
<b>Males</b>						
Initially employed full-time	14.2	14.7	14.2	32.4	32.1	43.9
Initially employed part-time	25.3	25.4	22.4	46.1	46.4	58.5
<b>Females</b>						
Initially employed full-time	15.3	14.4	12.9	33.8	32.6	46.3
Initially employed part-time	15.0	14.9	16.2	35.9	37.4	48.5
<i>Note: Population weighted results.</i>						

**Table 13.4: Prevalence of job changing among employed persons, by age group (%)**

	2005–2006 (2-year time frame)	2003–2006 (4-year time frame)	2001–2006 (6-year time frame)
<b>Males</b>			
Aged 15–24 years	32.5	59.5	72.7
Aged 25–44 years	18.4	36.9	49.6
Aged over 45 years	7.8	24.2	32.2
<b>Females</b>			
Aged 15–24 years	30.9	59.5	72.6
Aged 25–44 years	15.5	37.5	51.3
Aged over 45 years	10.5	25.5	32.0
<i>Notes: Population weighted results. Each cell is the percentage of persons who were employed in at least two waves who changed jobs.</i>			

**Table 13.5: Prevalence of job changing among employed persons, by educational attainment (%)**

	2005–2006	2003–2006	2001–2006
<b>Males</b>			
Degree or higher	15.2	35.7	46.8
Diploma/Certificate III/IV	14.0	33.6	45.1
High school	23.9	40.7	50.7
Certificate I/II	11.1	38.6	43.6
No qualifications	15.0	33.7	44.2
<b>Females</b>			
Degree or higher	13.9	34.3	45.4
Diploma/Certificate III/IV	17.7	35.8	51.3
High school	18.6	40.0	57.4
Certificate I/II	18.0	38.4	45.6
No qualifications	12.5	31.4	43.2
<i>Notes: Population weighted results. Each cell is the percentage of persons who were employed in at least two waves who changed jobs.</i>			

different two-digit occupation. As expected, those who didn't change jobs had low rates (approximately 8%) of reporting a change in occupation. However, over 30% 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.

About 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. The proportion of job changers moving from part-time employment to full-time employment is approximately 50% higher than the proportion moving from full-time employment to part-time employment. Job changing is thus more often facilitating a transition from part-time employment to full-time employment than the reverse. By contrast, persons who remain in the same job are about equally likely to move from part-time to full-time employment as from full-time to part-time employment. 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 change their hours of work significantly, compared with less than 30% of those who remain in the same job.

The last panel of Table 13.6 considers changes in real (inflation-adjusted) weekly earnings. Workers who change jobs are just as likely to experience a decline in earnings as those who do not change jobs, but they are considerably more likely to have

a substantial—greater than 10%—increase in earnings. The proportions of both job stayers and job changers experiencing substantial pay increases has grown over the 2001 to 2006 period, but are consistently higher for job changers. For example, between 2005 and 2006, 53% of workers who changed jobs had pay increases in excess of 10%, compared with 41% of other workers.

Table 13.7 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. Nearly two-thirds of job changes involve a change in industry (at the ANZSIC two-digit level, at which there are 54 industries distinguished). For most job changes the worker was an employee before and after the job change, although 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 has increased over the HILDA Survey period. Job changes resulting from dismissal or retrenchment declined from 21% in 2001–02 to 13% in 2005–06, most likely reflecting the strength of the Australian economy and labour market over this period. Consistent with the 'improved firm-worker match' hypothesis, respondents most commonly report that the reason for leaving the last job was to move to a better job. A small proportion—up to 7%—stop work because of sickness, pregnancy or caring

**Table 13.6: Changes in employment outcomes from one year to the next—Job changers compared with job stayers (%)**

	2001–2002		2003–2004		2005–2006	
	No job change	Job change	No job change	Job change	No job change	Job change
<b>Occupation</b>						
Reported changing occupations	8.4	61.2	7.3	58.7	8.1	63.5
Classified as changing occupations	32.3	60.7	29.5	61.2	26.3	58.9
<b>Part-time/full-time status</b>						
Remained employed part-time	22.6	21.0	23.5	20.8	23.1	21.6
Moved from part-time to full-time employment	4.4	14.6	4.2	15.6	4.1	15.2
Remained employed full-time	69.3	54.6	68.7	55.4	69.0	53.6
Moved from full-time to part-time employment	3.7	9.9	3.6	8.2	3.8	9.6
<b>Weekly working hours</b>						
Increased by more than 5 hours	15.3	31.0	14.4	32.1	14.1	31.2
Decreased by more than 5 hours	14.0	24.6	13.2	21.1	13.0	22.1
Did not change by more than 5 hours	70.7	44.4	72.4	46.9	72.9	46.7
<b>Earnings</b>						
Pay went up more than 10%	37.5	47.2	39.9	51.3	41.2	53.0
Pay went up 0–10%	19.6	9.4	20.9	10.2	19.1	7.8
Pay went down	42.9	43.4	39.2	38.6	39.7	39.2
<i>Notes:</i> Population weighted results. 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.						

responsibilities, or to retire or study.<sup>2</sup> A larger, although shrinking, proportion quit for other reasons, including closure of own business and spouse or partner being transferred to another work location by their employer.

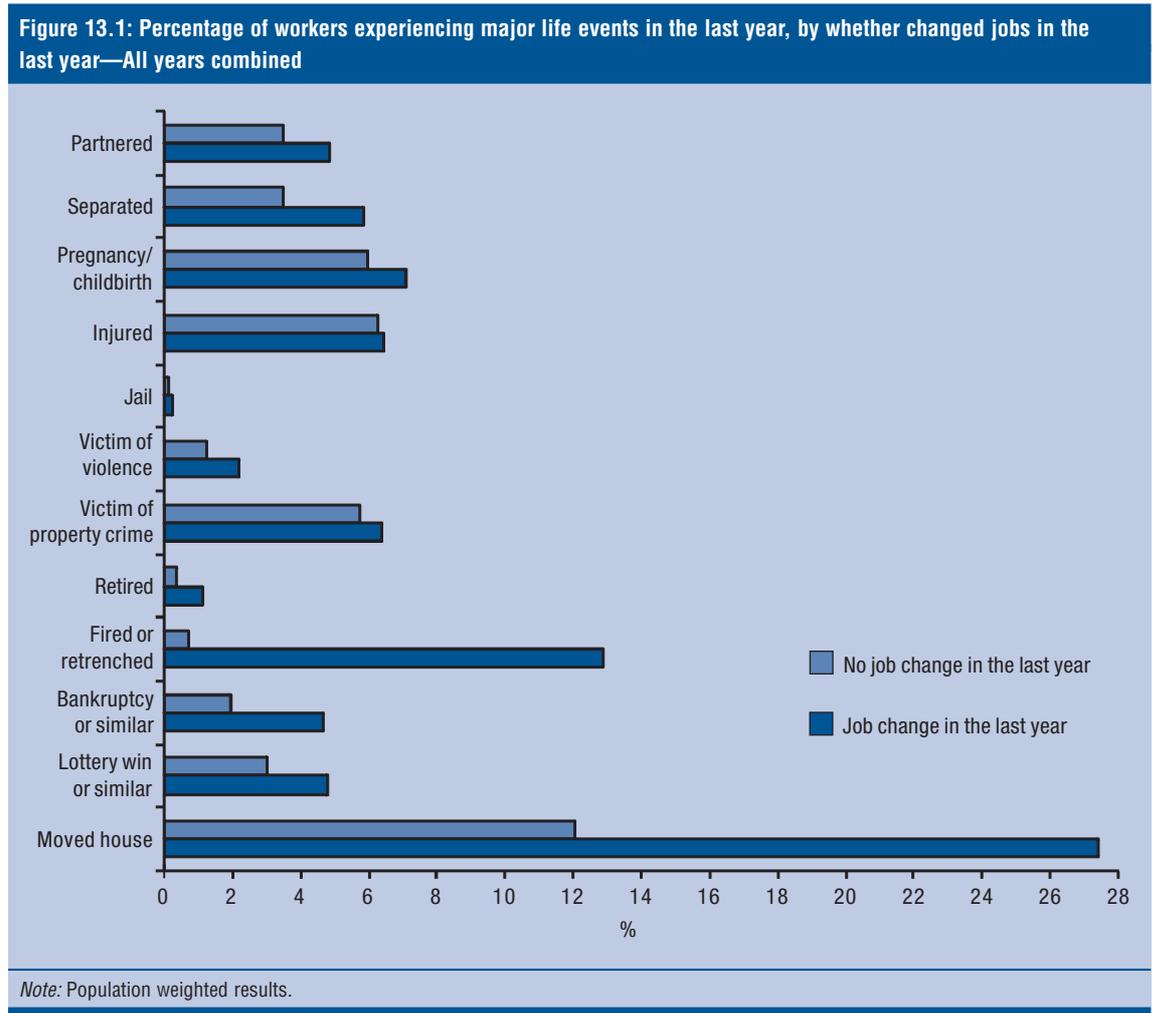
The self-completion questionnaire asks respondents to report whether each of a number of significant life events has occurred in the preceding twelve months. In Figure 13.1, we present the proportion of employed persons who experienced each of 12 major life events, distinguishing those who changed jobs from those who did not. Because many major life events are not frequently

Figure 13.1 looks further at the ‘supply-side’ factors that may have contributed to a change of jobs.

**Table 13.7: Nature of job changes (%)**

	2001–2002	2003–2004	2005–2006
Changed industry	62.0	62.3	66.2
<b>Employee/employer status</b>			
Remained employee	81.3	79.8	86.6
Moved from employee to employer/self-employed	7.9	9.6	6.3
Remained employer/self-employed	4.6	4.0	2.1
Moved from employer/self-employed to employee	5.3	5.5	4.3
<b>Reason left last job</b>			
Dismissed by employer	21.3	16.1	12.7
Quit to get better job	56.5	64.7	68.1
Quit to stop work	5.1	5.0	6.9
Quit for other reasons	17.1	14.2	12.3

*Notes:* Population weighted results. Figures represent the proportion of job changes for which the change indicated by the row heading is applicable.



occurring, to increase precision of the estimates we combine all waves of data available.

Job changers do indeed have higher rates of major life events that could conceivably precipitate job changes. They are somewhat more likely to have partnered, separated, become pregnant or given birth, or have been a victim of a violent crime or a property crime. They are *substantially* more likely to have experienced a significant adverse change to their financial situation (such as bankruptcy) or a significant positive change to their financial situation (such as a lottery win). And they are, naturally, much more likely to have been fired or retrenched.<sup>3</sup> Those who changed jobs are also much more likely to have moved house, but this could be either the cause of, or caused by, the job change.

### Discussion

While job mobility clearly has its costs 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. Job mobility is most heavily concentrated among young workers, who tend to be more recent entrants to the labour

market and who would therefore be expected to have a higher rate of ‘mismatch’. The findings that movements between jobs more frequently represent a move from part-time to full-time employment than the reverse, and that substantial earnings increases are more prevalent for workers who change jobs than workers who do not, support the contention that job mobility leads to better labour market outcomes for the workers concerned.

### Endnotes

- 1 The job calendar can be used to identify multiple job changes between waves. However, since little or nothing is known about the nature of, and circumstances surrounding, movements into and out of short-duration jobs that commenced after one interview and finished prior to the next interview, we do not examine these job changes.
- 2 Of course, leaving a job for these reasons is considerably more common for persons who do not take up another job (and so are not employed at the time of the next wave).
- 3 That some respondents who have not changed jobs report being fired or retrenched may be because they were fired or retrenched from a job other than their main job, or because they had been given notice by the employer but were still working for the employer at the time of interview.

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

Each wave, 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 by males dropped from 42.7 hours in 2001 to 41.7 hours in 2006, while for females, average weekly hours work remained relatively stable, at around 31 hours per week. Similarly, for males who were working full-time, average working hours dropped from 47.7 hours per week in 2001 to 46.7 hours per week in 2006, and for females working full-time, average weekly work hours were around 43 in all six years. For males who were working part-time (less than 35 hours per week), average weekly working hours increased slightly, from 17.8 hours per week in 2001 to 18.7 hours per week in 2006, while for females who worked part-time, average weekly working hours ranged from 18.1 hours per week in 2002 to 18.8 hours per week in 2006.

Males aged between 35 and 54 work the longest hours—45 to 46 hours per week on average. Employed males aged 15–19 years, many of whom will still be in full-time education, average 32 hours per week, and employed males aged over 65 years, many of whom will be in partial retirement, average 34 hours per week. Females aged between 25 and 34 and females between the ages of 45 and 54 work around 34 hours per week, on average, compared to around 26 hours per week for females aged between 15 and 19, 31 hours per week for females in the 35 to 44 age group, 30 hours per week for females aged between 55 and 64 and around 20 hours per week for females aged 65 and over.

An individual’s contract of employment—that is, whether they are a casual employee, employed on a permanent basis, employed on a fixed term contract or self-employed—is associated with the number of hours worked per week, as shown in Table 14.2. Compared to male employees, self-employed males have slightly higher average working hours. On the other hand, females who are permanent employees or employed on fixed-term contracts work longer hours, on average, than females who are self-employed. Given that many casual workers are also part-time workers, it

is not surprising that the average weekly working hours for casual employees are much lower than those of permanent employees, employees on fixed-term contracts and the self-employed. Table 14.2 also shows that some unpaid family workers work quite long hours. In 2006, male unpaid family workers worked an average of 39 hours per week and female unpaid family workers averaged 31 hours per week.

### Individual changes in working hours

Table 14.3 shows the changes in working hours from 2005 to 2006 for people who were employed in both years. The single most common outcome in 2006 was for individuals to be in the same hours category as they were in 2005. However, large proportions do change hours categories—albeit often by increasing or decreasing hours worked only enough to move one category up or

<b>Table 14.1: Mean usual weekly hours of work in all jobs, by sex, age and employment status</b>						
	2001	2002	2003	2004	2005	2006
<b>Males</b>						
All males	42.7	42.6	42.2	42.1	42.0	41.7
<b>Age group</b>						
15–24	31.5	30.9	31.8	31.8	32.6	32.1
25–34	44.5	45.0	43.8	44.0	43.9	43.7
35–44	46.1	46.0	45.7	46.1	46.0	45.7
45–54	46.5	46.3	46.1	45.4	44.7	45.4
55–64	42.5	43.2	42.4	41.7	41.6	40.0
65+	32.8	34.3	33.4	32.1	30.9	29.0
<b>Employment status</b>						
Employed full-time	47.7	47.8	47.2	46.9	46.7	46.7
Employed part-time	17.8	18.2	18.1	18.9	18.0	18.7
<b>Females</b>						
All females	31.4	30.9	30.8	30.8	30.9	31.3
<b>Age group</b>						
15–24	26.4	25.3	24.8	25.2	26.3	26.6
25–34	33.5	34.4	33.9	33.0	33.6	34.2
35–44	31.5	30.8	31.7	31.6	31.1	31.3
45–54	34.4	33.2	33.6	33.6	33.4	33.6
55–64	30.4	30.2	30.0	30.0	30.2	30.9
65+	22.6	18.5	18.4	20.5	20.9	21.5
<b>Employment status</b>						
Employed full-time	43.2	43.3	43.2	42.8	43.1	42.7
Employed part-time	18.6	18.1	18.3	18.6	18.7	18.8

Note: Population weighted results.

<b>Table 14.2: Mean usual weekly hours of work in all jobs, by sex and contract of employment</b>						
Contract of employment	2001	2002	2003	2004	2005	2006
<b>Males</b>						
Self-employed	49.3	49.5	48.2	47.3	47.1	45.5
Permanent employee	45.0	45.1	44.2	44.4	44.1	44.2
Fixed term contract	44.5	44.0	43.6	43.9	44.0	43.7
Casual employee	27.4	26.1	27.1	25.8	25.9	26.6
Unpaid family worker	33.3	34.3	31.5	27.1	42.1	39.0
Total	42.7	42.6	42.2	42.1	42.0	41.7
<b>Females</b>						
Self-employed	33.1	30.4	31.2	32.8	30.5	30.7
Permanent employee	36.1	36.2	35.8	35.6	35.7	36.0
Fixed term contract	35.6	36.6	36.2	35.5	35.1	36.4
Casual employee	19.5	19.8	19.2	19.3	19.4	19.7
Unpaid family worker	26.0	22.2	23.3	17.4	27.4	31.4
Total	31.4	30.9	30.8	30.8	30.9	31.3

Note: Population weighted results.

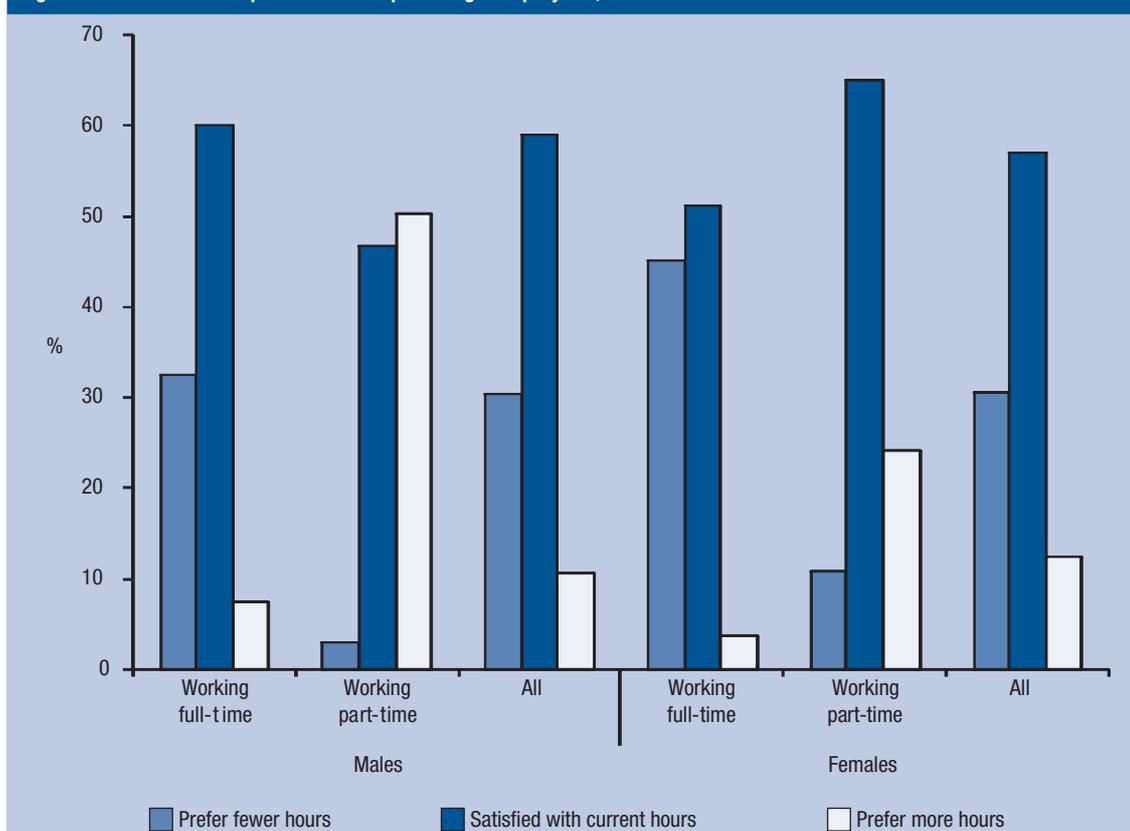
**Preferred hours of work**

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*.

**Table 14.3: Changes in usual weekly working hours in all jobs, 2005–2006—Persons employed in both 2005 and 2006 (%)**

Work hours in 2005	Work hours in 2006							Total
	1–9	10–19	20–34	35–44	45–54	55–64	65+	
<b>Males</b>								
1–9	<b>46.8</b>	25.9	*16.3	*9.1	*0.0	*1.9	*0.0	100.0
10–19	20.4	<b>42.5</b>	22.6	*8.9	*4.6	*0.9	*0.0	100.0
20–34	*3.5	8.3	<b>52.6</b>	26.7	*6.2	*1.4	*1.4	100.0
35–44	*0.4	*0.5	*4.7	<b>76.1</b>	15.5	2.5	0.3	100.0
45–54	*0.2	*0.3	*0.9	23.9	<b>54.2</b>	17.1	3.4	100.0
55–64	*0.0	*1.0	*1.4	8.0	34.4	<b>44.9</b>	10.3	100.0
65+	*0.0	*0.9	*1.6	9.7	14.7	21.9	<b>51.1</b>	100.0
Total	2.0	3.2	8.0	41.8	26.9	12.8	5.3	100.0
<b>Females</b>								
1–9	<b>54.0</b>	22.9	12.1	*7.8	*3.2	*0.0	*0.0	100.0
10–19	11.2	<b>61.9</b>	22.7	*3.5	*0.8	*0.0	*0.0	100.0
20–34	3.0	12.9	<b>67.2</b>	14.5	*1.7	*0.5	*0.4	100.0
35–44	*1.8	2.9	13.5	<b>69.7</b>	11.1	0.5	0.5	100.0
45–54	*1.3	1.0	5.7	31.5	<b>47.8</b>	11.3	*1.4	100.0
55–64	*0.9	*0.5	3.2	20.3	30.0	<b>28.8</b>	*16.4	100.0
65+	*0.0	*4.4	*8.4	4.3	33.0	*14.2	<b>35.7</b>	100.0
Total	5.9	13.2	26.9	36.5	12.8	3.1	1.6	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Figure 14.1: Work hours preferences of prime-age employees, 2006**

Note: Population weighted results.

down. Males working part-time, and full-time employed males and females working long (over 45) hours, are particularly likely to change work hours categories. Most usually, the change is an increase in hours for persons employed part-time in 2005, and a decrease in hours for persons working long hours in 2005. For example, more than half of the males who were working fewer than 10 hours per week in 2005 had increased their working hours by 2006. Of those working 55–64 hours in 2005, 45% of males and 55% of females were in lower working-hours categories in 2006.

### Preferred working hours

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 2006.<sup>1</sup> Overall, just under 60% of prime-age employees were content with their working hours in 2006. 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, 45% of female full-time employees prefer fewer hours, compared with 33% of male full-time employees, whereas 50% of male part-time employees prefer greater hours, compared with only 24% of female part-time employees.

Do people who are not working their preferred hours eventually get what 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% 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 14.4 shows, for each combination of labour force status and hours preference in 2005, the proportions of prime-age males and females in each combination in 2006. This allows examination of the proportions of those with mismatches between preferred and actual working-time in 2005 who

**Table 14.4: Changes in actual and preferred working hours of prime-age persons, 2005 to 2006 (%)**

Work hours and preferences in 2005	Work hours and preferences in 2006								
	Working full-time			Working part-time			Not in paid work		Total
	Prefer fewer hours	Prefer current hours	Prefer more hours	Prefer fewer hours	Prefer current hours	Prefer more hours	Unemployed	Not in the labour force	
<b>Males</b>									
<b>Working full-time</b>									
Prefer fewer hours	63.9	30.1	*0.9	*0.3	*1.0	*1.4	*1.4	*0.9	100.0
Prefer current hours	18.2	71.7	5.0	*0.2	1.5	*1.2	*0.3	1.8	100.0
Prefer more hours	9.3	56.6	30.3	*0.4	1.6	1.9	*0.0	*0.0	100.0
<b>Working part-time</b>									
Prefer fewer hours	*0.0	8.4	*0.0	36.8	34.2	20.6	*0.0	*0.0	100.0
Prefer current hours	13.4	18.2	*1.8	2.2	42.0	11.1	*1.6	9.8	100.0
Prefer more hours	10.5	18.6	*3.9	*1.8	16.7	36.0	7.4	5.1	100.0
<b>Not in paid work</b>									
Unemployed	18.3	26.9	*0.0	*1.0	*0.8	7.6	21.4	24.0	100.0
Not in the labour force	3.9	*2.7	*0.0	*0.0	*2.4	6.3	13.1	71.7	100.0
Total	29.3	48.6	4.7	0.5	3.5	3.6	2.3	7.4	100.0
<b>Females</b>									
<b>Working full-time</b>									
Prefer fewer hours	62.7	23.3	*0.3	2.0	6.9	*0.5	*1.3	*2.9	100.0
Prefer current hours	24.0	57.5	*2.1	*0.3	7.1	3.5	*0.7	4.8	100.0
Prefer more hours	22.0	49.9	11.9	*0.0	4.4	6.5	*0.0	5.4	100.0
<b>Working part-time</b>									
Prefer fewer hours	16.1	4.0	*0.0	25.9	36.7	5.0	*0.0	12.3	100.0
Prefer current hours	5.7	6.9	*0.5	6.5	62.3	9.6	*0.9	7.7	100.0
Prefer more hours	7.3	10.5	*1.6	3.8	28.1	35.1	2.9	10.7	100.0
<b>Not in paid work</b>									
Unemployed	9.0	14.7	9.7	*1.8	7.0	22.6	19.5	15.8	100.0
Not in the labour force	*1.7	2.5	*0.2	*1.1	11.0	4.0	6.1	73.4	100.0
Total	19.1	20.1	1.3	3.4	22.7	8.0	2.9	22.7	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

had resolved their mismatches by 2006—be this by changing hours worked and/or changing their preferred hours. The table also shows the proportions of those without mismatches in 2005 for whom mismatches arose in 2006.

As Table 14.3 indicated, the two main types of mismatch for employed persons are preferences for fewer hours by full-time workers and preferences for more hours among part-time workers. Another important case of mismatch, considered in Table 14.4, is that of unemployment (a situation in which more hours are preferred). In general, the table indicates that the most difficult working-time preference problem to resolve is a preference for fewer hours by full-time workers. Of full-time employed males who preferred fewer hours in 2005, 64% were in the same situation in 2006; the corresponding figure for females is 63%.

More readily resolved is the problem of unemployment or underemployment, whether this be by increasing actual hours or decreasing preferred hours. Among part-time workers preferring more hours in 2005, only 36% of males and 35% of females were still in that situation in 2006, with over 50% either working full-time or still working part-time but no longer preferring more hours. Of those unemployed in 2005, only 21% of males and

20% of females were still unemployed in 2006. However, it should be noted that 24% of males and 16% of females who were unemployed in 2005 were no longer in the labour force in 2006. For these people, the mismatch between actual and preferred hours was ‘resolved’ by reducing preferred hours to zero rather than by obtaining employment. This result may in part represent a ‘discouraged worker’ effect rather than a genuine change in preferences.

### Endnote

- 1 People who were self-employed were excluded from the work 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 gradually reducing their working hours before they retire.

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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 six years of data now available, the HILDA Survey provides unique evidence for Australia about medium-term persistence and recurrence of household joblessness. Nearly all previous evidence has been 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, 2007).

In this article, a jobless household is defined as a household in which no one was in paid work at the time of interview. Clearly, other definitions are also possible, but this is perhaps the clearest and most straightforward. The main weakness of this definition 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. To some extent countering

#### Jobless household

In this Report, a jobless household is defined as a household in which no one was in paid employment (or on paid leave from employment) at the time of interview.

#### 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 job-poor if total usual hours of paid employment of all household members combined are less than 35 hours per week.

these weaknesses, we also identify households that are ‘job-poor’, 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 each household should have, at a minimum, the equivalent of one full-time employed person.<sup>1</sup>

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 many households will optimally—both from an individual and a societal perspective—be ‘job-poor’. For example, an elderly person may be transitioning to retirement by working part-time, or a lone parent may combine caring for children with part-time employment.

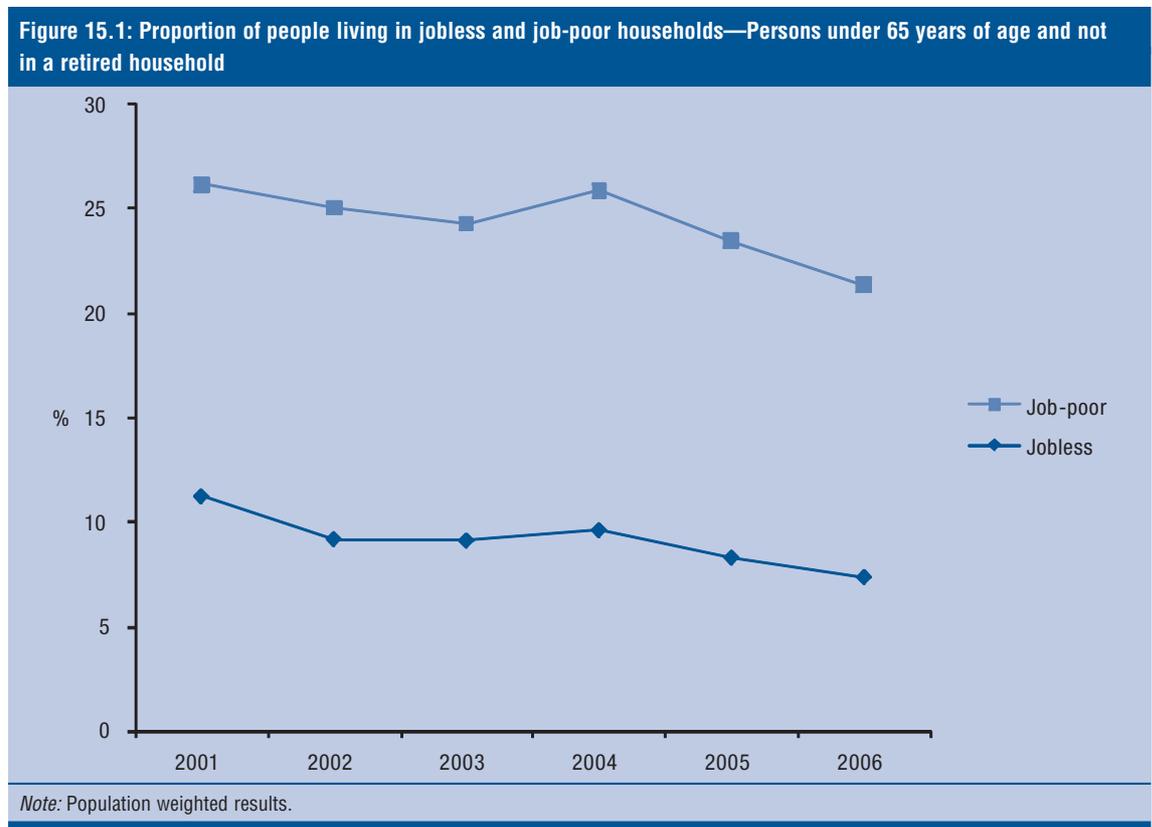
**Trends in household joblessness, 2001 to 2006**

Figure 15.1 presents cross-sectional estimates of the percentage of persons living in jobless households. Only persons under 65 years of age and living in a non-retired household are included. A person is deemed to be in a retired household if all persons in the household other than dependent children are retired. For example, a person who is retired but whose partner is not retired is regarded as living in a non-retired household (and is included

in the analysis if aged under 65). Retired households are excluded because household joblessness is primarily an issue for households in which the societal expectation is that someone in the household works.<sup>2</sup>

In 2001, 11% of people in non-retired households lived in jobless households. Over the course of the HILDA Survey period, this fraction has—with the exception of an upward spike in 2004—steadily declined, to be 7% in 2006. Clearly, very good progress has been made in reducing household joblessness over this period. Significantly more households are classified as job-poor, but there has been a sustained decline in job-poor households, from 26% of all persons in non-retired households in 2001, to 21% in 2006.

Figure 15.2 disaggregates jobless and job-poor rates by type of household. Societal expectations about (non-retired) childless households and couple households are unambiguous: at least one member of the household should be in paid employment. Expectations about lone parents are more mixed, but are probably moving towards the expectation that they undertake part-time employment, at least once the youngest child has reached school age. 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

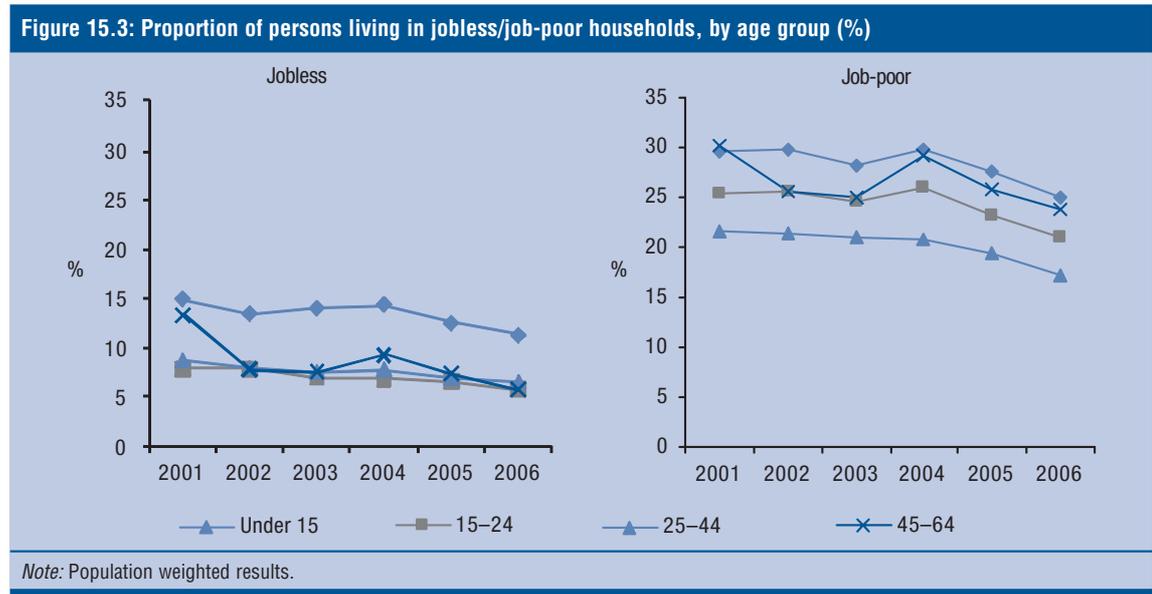
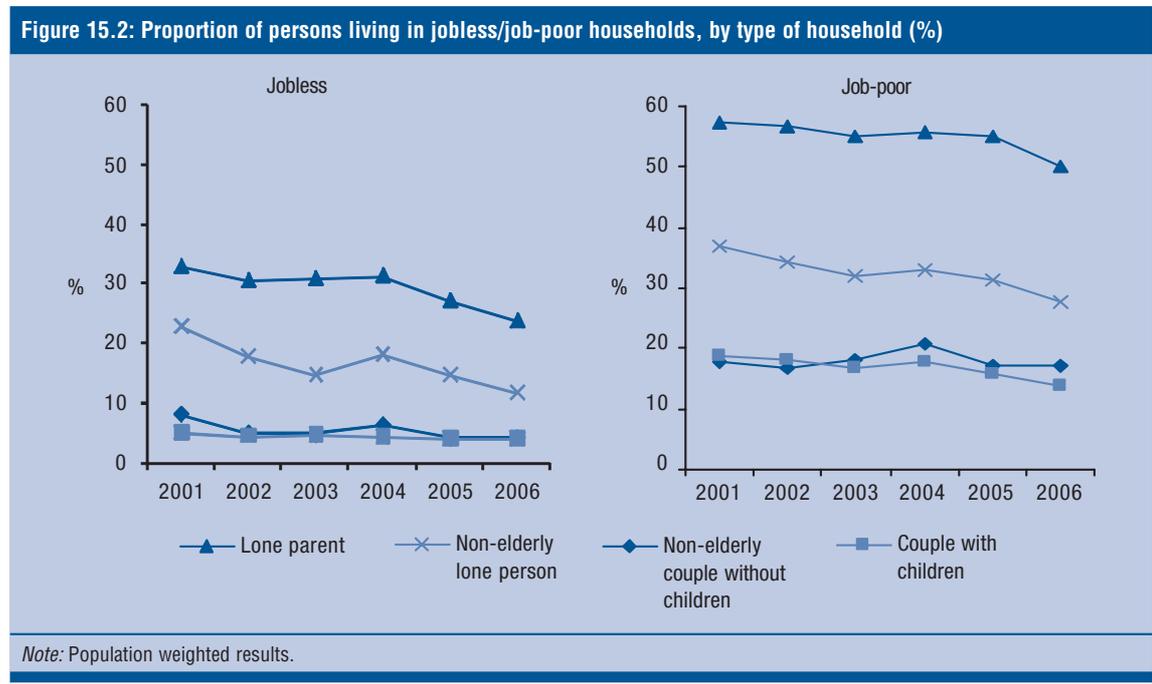


have the highest jobless rate, it has fallen sharply over the 2001 to 2006 period, from 33% in 2001 to 24% in 2006. The proportion of persons in lone parent households that are job-poor has not declined to the same extent, implying at least some of the decline in joblessness has involved movements to part-time work.

Lone person households also have high rates of joblessness. Like sole parents, the jobless rate has declined sharply over the 2001 to 2006 period, from 23% in 2001 to 12% in 2006. Also in common with lone parent households is that the job-poor rate has not declined to the same extent. 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 working-age people in each of

these households. For example, if non-employment and part-time employment were randomly distributed throughout the population, jobless and job-poor rates would be lower for couple households because there are two household members with a chance of being employed, and either one can lift the household out of joblessness or job-poverty. Lone parent and single person households have only one person who can do this.<sup>3</sup>

How does household joblessness differ by age? In Figure 15.3, four age groups are distinguished: children under 15 years of age; youth aged 15 to 24 years; prime-age adults aged 25 to 44 years; and older working-age persons aged 45 to 64 years. All age groups exhibit sizeable decline in joblessness and job-poor rates between 2001 and 2006. The jobless-household rate is consistently



highest for children under 15 and was still quite high, at 11%, in 2006. The evidence in Figure 15.2 is that to a significant extent this reflects outcomes for lone parent households. The job-poor rate also tends to be slightly higher for children under 15 than for the other age groups, but the differences with other age groups here are relatively small.

### Persistence of 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 and living in non-retired households, 84% have not been in a jobless household at the time of interview in any of the six years, and 9% were in a jobless household in just one or two years. The remaining 7% were in a jobless household at the time of interview in three or more years, and are fairly evenly distributed over the 3–6 years range (ranging from 1.5% to 1.9%). 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 40% of

people to experience at least one year in a job-poor household, over half were in a job-poor household at the time of interview for three or more years. A sizeable 7.5% were in a job-poor household in all six years.

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 2001). Household joblessness for children is very much associated with residing in a lone parent household: 89% of children with both parents present were not in a jobless household at the time of interview in any of the six waves, compared with 37% of children with only one parent present in the household. More importantly, 38% of children in lone parent households were in a jobless household at the time of interview for three or more years, and 21% were in jobless households for five or six years. These figures will, furthermore, tend to understate the association between household joblessness and the presence of both parents, because some children in couple households in 2001 will subsequently live in lone parent households, and some children in lone parent households in 2001 will subsequently live in couple households.

Table 15.1 does not directly consider *persistence* in joblessness. In Table 15.2, persistence of joblessness is examined by presenting, for those initially

**Table 15.1: Protracted (medium-term) household joblessness—Years in jobless/job-poor household 2001–2006 (%)**

Number of years	All persons		Children			
	Jobless	Job-poor	Jobless		Job-poor	
			Couple	Lone parent	Couple	Lone parent
0	84.3	60.4	88.9	37.1	67.1	9.2
1	6.2	11.5	4.9	16.1	10.7	9.5
2	2.8	6.4	1.5	9.1	4.8	12.6
3	1.8	5.4	1.6	8.8	4.5	10.0
4	1.5	4.4	1.3	8.4	4.0	11.1
5	1.9	4.4	0.7	13.2	3.9	13.3
6	1.5	7.5	1.1	7.4	5.1	34.4

Note: Population weighted results.

**Table 15.2: Persistence of joblessness and job poverty—Proportion of those initially in jobless/job-poor households that are jobless/job-poor in each subsequent year (%)**

Jobless in...	Proportion jobless...				
	1 year later	2 years later	3 years later	4 years later	5 years later
2001	65.9	59.7	49.5	44.4	35.4
2003	67.2	54.6	42.9	–	–
2005	57.9	–	–	–	–
Job-poor in...	Proportion job-poor...				
	1 year later	2 years later	3 years later	4 years later	5 years later
2001	71.0	63.7	61.3	52.0	47.3
2003	77.1	66.2	59.0	–	–
2005	72.4	–	–	–	–

Note: Population weighted results.

jobless, the proportion jobless in each subsequent year. This is presented for three initial periods: 2001, 2003 and 2005, 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 when interviewed in 2001, 66% were in jobless households one year later, 50% were in jobless households three years later, and 35% were in jobless households five years later. As expected based on the Table 15.1 results, persistence in job-poverty is greater, with fully 47% of people in jobless households in 2001 also in jobless households in 2006.

Tracking down the two panels of Table 15.2 allows us to consider in a limited fashion changes over time in the degree of persistence in joblessness and job poverty. As the length of the HILDA Survey grows in the future, it will be possible to consider more fully trends in persistence. With regard to joblessness, there is evidence of some decline in persistence, although this is only after an upward spike in one-year persistence for those found to be in jobless households in 2003. The strongest indication of a decline in persistence is that the proportion of those in jobless households in 2003 who were in jobless households three years later was 43%, compared with 50% for three-year persistence of those initially jobless in 2001. With regards to job poor households, there is no clear evidence that persistence has declined.

### Discussion

Household joblessness has declined dramatically as an economic and social issue for Australia over the 2001 to 2006 period. However, job-poor households continue to account for a large 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, remains a significant feature of Australian society. The issue of inter-generational transmission of joblessness is therefore still a potentially important policy issue for Australia. One caveat to the contention that should however be noted is that most children living in jobless households are in lone parent households. The lone parent household jobless rate 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 underutilisation of household labour more generally. We therefore retain the simple and intuitive 35-hour threshold for defining job-poor.
- 2 Of course, some other household types, such as a household consisting of severely disabled persons only, would not be expected by most people to have someone in employment. We do not attempt to identify and exclude these households.
- 3 This is a point well made by Gregg et al. (2005).

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## 16. Job satisfaction

In every year of the HILDA Survey, people 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 the average levels of these different aspects of job satisfaction in each year from 2001 to 2006.

Overall, most people are quite satisfied with their jobs, with the average job satisfaction in all six years being around 7.5 out of 10 for males and slightly higher for females at 7.7 out of 10. The aspect of their job with which respondents are, on average, most satisfied is job security. For females, average levels of satisfaction with job security are 8 out of 10 in all five years from 2002 to 2006, and for males, average job security satisfaction rose from 7.5 out of 10 in 2001 to 7.9 out of 10 in 2006.<sup>1</sup> Aspects of the job with which people are least satisfied are their pay and the hours they work, although scores still average close to 7 out of 10. 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.

### Persistence and recurrence of low job satisfaction

In the first HILDA Statistical Report (Headey et al., 2005), it was found that while 11% 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 a 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 every year from 2001 to 2006, the proportion expressing dissatisfaction with the various aspects of job satisfaction once in the six-year period, twice in the period, three times in the period and four or more times in the period.

While around 20% of employees experience low overall job satisfaction in at least one of the six years, it is very unusual for their dissatisfaction to persist for more than one year. Only around 7% of males and 6% of females report low overall job satisfaction in two or more of the six years. On the other hand, dissatisfaction with total pay is an ongoing problem for some people, with 5% of males and 6% of females expressing dissatisfaction with their total pay in at least four years and a further 5% expressing dissatisfaction in three of the six years.

It is slightly more common for males than females to experience ongoing dissatisfaction with their working hours—10% of males were dissatisfied with their working hours in three or more of the

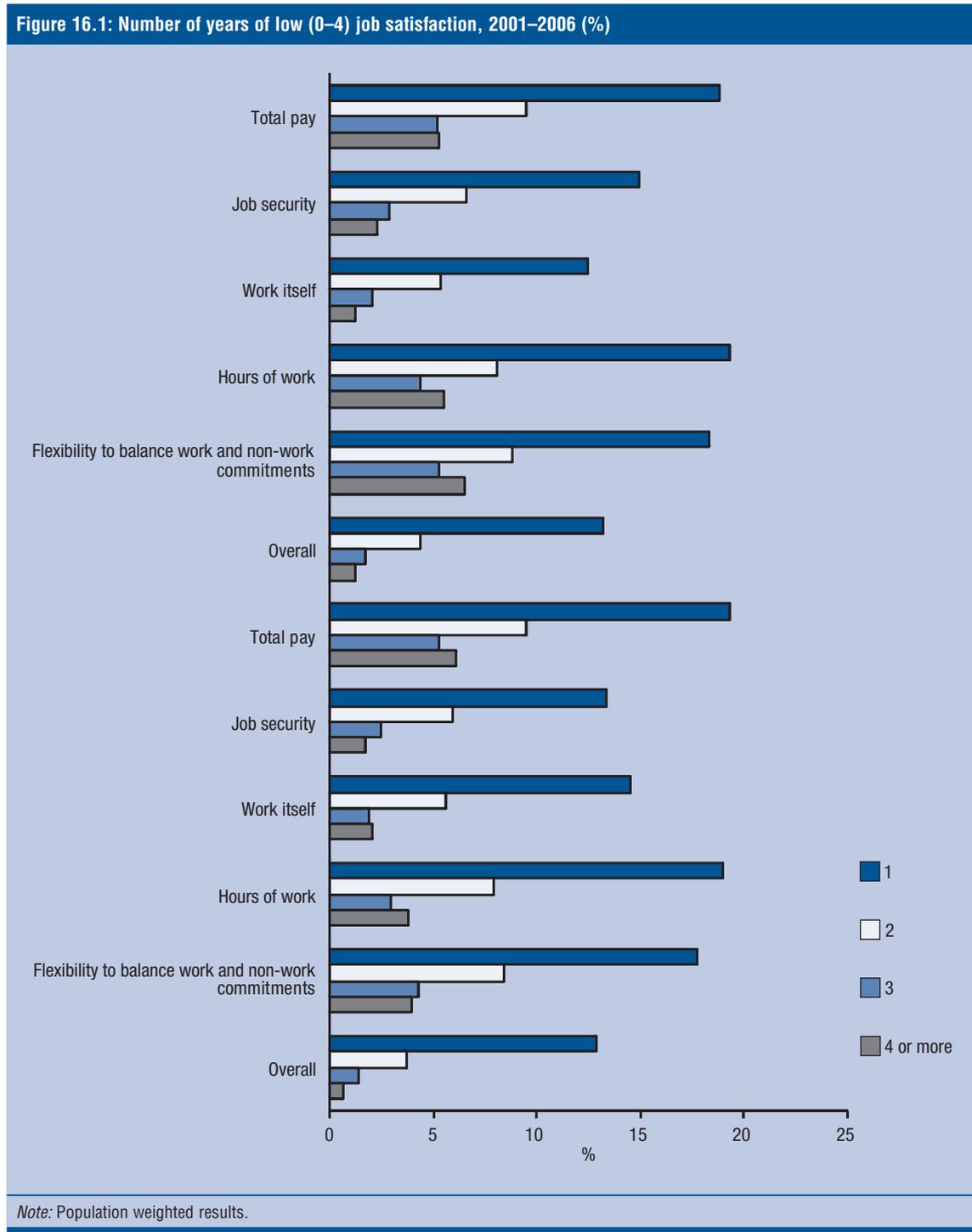
**Table 16.1: Job satisfaction (means)**

	2001	2002	2003	2004	2005	2006
<b>Males</b>						
Satisfaction with total pay	6.7	6.7	6.8	6.8	6.8	6.8
Satisfaction with job security	7.5	7.7	7.8	7.8	7.8	7.9
Satisfaction with the work itself	7.6	7.6	7.6	7.6	7.5	7.5
Satisfaction with hours of work	7.0	7.0	7.0	7.0	7.1	7.0
Satisfaction with flexibility to balance work and non-work commitments	7.2	7.3	7.3	7.3	7.4	7.3
Overall job satisfaction	7.5	7.6	7.6	7.5	7.5	7.5
<b>Females</b>						
Satisfaction with total pay	6.7	6.7	6.7	6.8	6.9	6.9
Satisfaction with job security	7.9	8.0	8.0	8.0	8.0	8.0
Satisfaction with the work itself	7.7	7.6	7.6	7.5	7.6	7.6
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	7.5	7.6	7.6	7.5	7.5
Overall job satisfaction	7.8	7.7	7.8	7.7	7.7	7.7
<i>Note: Population weighted results.</i>						

six years, compared to 7% of females. It is also more common for males to experience continuing dissatisfaction with flexibility to balance work and non-work commitments, with 12% reporting low levels of satisfaction in at least three of the six years, compared with 8% of females. On the other hand, it is slightly more common for females to express continued dissatisfaction with the work itself—10% of females and 9% of males report satisfaction levels of 4 out of 10 or lower in three or more of the six years.

**What do people with low job satisfaction do about it?**

While people with low job satisfaction may be willing to stay in the job because of offsetting factors, such as convenient working hours, proximity to home and opportunities for promotion, in general one would expect them to be more likely than others to be looking for a new job. With comparatively low rates of unemployment over the HILDA Survey period, it is likely that a substantial proportion of employees, particularly those who



**Table 16.2: Employees looking for a new job, by level of job satisfaction (%)**

<i>Satisfaction with current job</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>
<b>Males</b>						
Low (0–4)	48.0	53.0	50.1	57.7	48.4	52.0
Medium (5–7)	21.9	23.2	22.1	24.7	25.5	24.4
High (8–10)	9.1	8.2	7.6	6.9	7.8	7.7
Total	16.6	16.7	15.4	16.5	16.3	16.5
<b>Females</b>						
Low (0–4)	47.5	48.0	54.3	46.4	47.2	51.1
Medium (5–7)	25.9	24.5	24.6	24.8	24.7	23.6
High (8–10)	7.7	8.8	9.6	8.8	8.9	8.7
Total	15.7	16.2	16.5	15.8	15.9	15.6
<i>Note: Population weighted results.</i>						

are dissatisfied with their current job, are looking for new job opportunities.<sup>2</sup>

Table 16.2 shows the proportion of employees who said they had looked for another job in the four weeks prior to their interview. In all six years, approximately 16% of employed persons said that they had looked for another job in the four weeks prior to their interview. Individuals with low levels of satisfaction with their current job are much more likely to have looked for another job. At the time of the 2006 interviews, more than half of those reporting low levels of job satisfaction were searching for a new job, compared to less than a quarter of people with medium levels of job satisfaction and only 8% of males and 9% of females with high levels of job satisfaction.

People who were dissatisfied with their jobs were more likely to be looking for another job, but did they in fact leave their jobs? Table 16.3 shows the employment status in 2006 of people who were employees in 2005, grouped by their level of job satisfaction in 2005. Almost half of the females who reported low levels of job satisfaction in 2005 were no longer working for the same employer in

2006, compared to 30% of male employees. Compared to employees who reported medium or high levels of job satisfaction in 2005, it was more common for individuals reporting low levels of job satisfaction to be unemployed or no longer in the labour force by 2006. Around 12% of people who reported high levels of job satisfaction in 2005 had changed employers by 2006, compared to 18% of males and 31% of females who reported low levels of job satisfaction in 2005.

Table 16.4 considers whether changing jobs is associated with an increase in job satisfaction. It presents, for employees in each of three categories for level of job satisfaction in 2005, the mean job satisfaction in 2006 of those who changed jobs compared with those who did not. For males who reported low levels of overall job satisfaction in 2005 and had changed employers by 2006, average levels of job satisfaction had improved, but were still lower than those of males who had medium or high levels of job satisfaction in 2005. On the other hand, average job satisfaction for males who reported low levels of job satisfaction in 2005 and remained in

**Table 16.3: Employment status in 2006, by level of job satisfaction in 2005 (%)**

<i>Job satisfaction in 2005</i>	<i>Employment status in 2006</i>					<i>Total</i>
	<i>Still working for same employer as in 2005</i>	<i>Employee, but changed jobs since 2005</i>	<i>Self-employed</i>	<i>Unemployed</i>	<i>Not in the labour force</i>	
<b>Males</b>						
Low (0–4)	70.3	17.5	*4.0	*2.7	*5.5	100.0
Medium (5–7)	75.2	17.1	2.6	1.7	3.3	100.0
High (8–10)	80.0	12.2	3.0	1.2	3.7	100.0
Total	77.7	14.3	2.9	1.5	3.6	100.0
<b>Females</b>						
Low (0–4)	53.0	31.4	*0.9	*1.9	*12.9	100.0
Medium (5–7)	72.0	15.9	3.0	2.0	7.0	100.0
High (8–10)	79.1	11.8	1.2	1.3	6.5	100.0
Total	75.8	13.9	1.8	1.6	6.9	100.0
<i>Notes: Population weighted results. * Estimate not reliable. Percentages may not add up to 100 due to rounding.</i>						

that job was quite low—4.6 out of 10. For males who had job satisfaction between 5 and 7 out of 10 in 2005, becoming self-employed increased job satisfaction slightly, while for males who had high levels of job satisfaction in 2005, those who remained with the same employer had slightly higher average satisfaction than those who had changed employers.

For many females, it seems that low levels of job satisfaction are temporary. The average level of job satisfaction in 2006 of females who reported low levels of job satisfaction in 2005 was 6.5, and even for those who remained with the same employer, average levels of satisfaction had increased to 6.1. Interestingly, average job satisfaction for females who reported medium levels of job satisfaction in 2005 and had since become self-employed was only 5.9 out of 10, compared to 6.9 for those who remained with the same employer and 7.2 for those who changed employers. As is the case for males, average job satisfac-

tion for females who reported high levels of job satisfaction in 2005 and had since changed employers was 8 out of 10, compared to 8.3 out of 10 for those who had remained with the same employer.

While the proportion of male employees who reported low levels of job satisfaction in 2005, but remained in the same job until 2006 was quite high (70%), it may be that it takes some time for males to make the decision to change employers or to find a job that they think will give them a higher level of satisfaction. Table 16.5 shows the employment status in 2006 of males and females who were employees in 2001, grouped by their level of job satisfaction in 2001. By 2006, only 27% of males and 26% of females who had reported low levels of overall job satisfaction in 2001 were still working for the same employer. Half of the males who had low levels of job satisfaction in 2001 had changed employers, 9% had become self-employed and the

**Table 16.4: Mean job satisfaction in 2006, by level of job satisfaction in 2005**

Job satisfaction in 2005	Employment status in 2006			Total
	Still working for same employer as in 2001	Employee, but different employer since last interview	Self-employed	
<b>Males</b>				
Low (0–4)	4.6	6.5	*6.8	5.8
Medium (5–7)	6.8	6.9	7.5	6.9
High (8–10)	8.3	8.0	8.2	8.2
Total	7.6	7.5	7.9	7.6
<b>Females</b>				
Low (0–4)	6.1	6.7	*5.0	6.5
Medium (5–7)	6.9	7.2	5.9	7.0
High (8–10)	8.3	8.0	8.4	8.2
Total	7.8	7.7	6.9	7.7

*Notes:* Population weighted results. \* Estimate not reliable.

**Table 16.5: Employment status in 2006, by level of job satisfaction in 2001 (%)**

Job satisfaction in 2001	Employment status in 2006					Total
	Still working for same employer as in 2001	Employee, but changed jobs since 2001	Self-employed	Unemployed	Not in the labour force	
<b>Males</b>						
Low (0–4)	26.5	50.0	8.9	*3.3	*11.3	100.0
Medium (5–7)	40.4	45.8	6.6	*1.9	5.3	100.0
High (8–10)	47.9	35.8	6.0	1.5	8.8	100.0
Total	43.5	40.6	6.4	1.8	7.7	100.0
<b>Females</b>						
Low (0–4)	25.7	45.9	*6.8	*3.6	18.1	100.0
Medium (5–7)	35.9	45.7	4.4	*2.1	11.9	100.0
High (8–10)	45.8	35.2	4.1	1.0	13.8	100.0
Total	41.5	39.0	4.4	1.5	13.6	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 16.6: Mean job satisfaction in 2006, by level of job satisfaction in 2001**

Job satisfaction in 2001	Employment status in 2006			Total
	Still working for same employer as in 2001	Employee, but different employer since last interview	Self-employed	
<b>Males</b>				
Low (0–4)	6.3	7.0	*6.5	6.7
Medium (5–7)	7.0	7.2	7.1	7.1
High (8–10)	8.0	7.8	8.0	7.9
Total	7.6	7.5	7.5	7.5
<b>Females</b>				
Low (0–4)	6.1	7.1	*7.9	6.9
Medium (5–7)	7.3	7.5	6.8	7.4
High (8–10)	8.1	7.8	8.3	8.0
Total	7.8	7.6	7.8	7.7

Notes: Population weighted results. \* Estimate not reliable.

remaining 15% were either unemployed or no longer in the labour force. Of those females who reported low levels of job satisfaction in 2001, 46% had moved on to another job and 18% were no longer in the labour force.

Looking at average levels of job satisfaction for those who were still employed in 2006, Table 16.6 shows that individuals who reported low levels of job satisfaction in 2001 and had since changed employers generally did have higher levels of job satisfaction in 2006 than those who remained with the same employer. However, the average level of job satisfaction for those who changed jobs was still lower than the average for those who reported medium or high levels of job satisfaction in 2001.

### Endnotes

- 1 The latest Morgan Job Security Poll (Roy Morgan Research, 2007) found that 80% of Australian workers believed their current job was safe, down 1% from the previous year.
- 2 Seasonally adjusted unemployment rates (in October of each year) were 7.1% in 2001, 6.0% in 2002, 5.6% in 2003, 5.3% in 2004, 5.2% in 2005 and 4.6% in 2006 (ABS, 2002–2007).

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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 and social activity 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’, physical and mental health, ‘social capital’ and economic participation of the Australian community.

A number of feature articles in Part B also address issues related to health and/or subjective wellbeing. In particular, Andrew Leigh and Michael Kortt examine the socio-economic correlates of body size, while Helen Berry and Jennifer Welsh draw on the additional measures of ‘social capital’ included in the wave 6 self-completion questionnaire to examine patterns of community participation and investigate the relationship between social capital and health. In addition, Part B contains articles on neighbourhood characteristics and perceptions of neighbourhood; the impact of major life events on health and life satisfaction; and on smoking, drinking and physical activity.

## 17. Life satisfaction and satisfaction with specific aspects of life: 2001 to 2006

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 and 2006.<sup>1</sup>

It is clear that, for the population as a whole, average life satisfaction has remained more or less unchanged over the six-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 to 44 years age group had the lowest average life satisfaction, at around 7.5 out of 10 each year. For females in the 35 to 44 age group, life satisfaction was also lower than average, but this was also the case for

females aged between 25 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.<sup>2</sup>

### 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 six-year period from 2001 to 2006. The largest change in fact was in satisfaction with employment opportunities, which increased from 6.6 to 7.0 for females and from 6.7 to 7.2 for

**Table 17.1: Mean life satisfaction by age**

Age group	2001		2003		2005		2006	
	Males	Females	Males	Females	Males	Females	Males	Females
15–19	8.2	8.1	8.3	8.1	8.3	8.1	8.3	8.1
20–24	7.8	7.8	7.8	7.8	7.7	8.0	7.8	7.8
25–34	7.6	7.8	7.8	7.8	7.7	7.7	7.6	7.7
35–44	7.5	7.8	7.6	7.7	7.5	7.7	7.4	7.7
45–54	7.8	8.0	7.7	7.9	7.7	7.7	7.7	7.7
55–64	8.0	8.1	7.9	8.1	8.0	8.0	8.0	8.1
65+	8.4	8.5	8.4	8.6	8.3	8.4	8.3	8.3
All ages	7.9	8.0	7.9	8.0	7.8	7.9	7.8	7.9

*Note:* Population weighted results.

**Table 17.2: Aspects of life satisfaction (means)**

Satisfaction with...	2001		2003		2005		2006	
	Males	Females	Males	Females	Males	Females	Males	Females
The home in which you live	8.0	8.1	8.0	8.0	7.9	7.9	7.9	8.0
Employment opportunities	6.7	6.6	7.0	6.8	7.1	6.9	7.2	7.0
Your financial situation	6.1	6.2	6.3	6.4	6.4	6.4	6.4	6.4
How safe you feel	8.0	7.7	8.1	8.0	8.1	8.0	8.1	8.0
Feeling part of local community	6.6	6.7	6.6	6.8	6.6	6.8	6.7	6.8
Your health	7.4	7.4	7.5	7.4	7.3	7.2	7.3	7.3
Your neighbourhood	8.0	8.0	7.9	8.0	7.9	7.9	7.8	7.9
Amount of free time you have	6.8	6.7	6.7	6.6	6.8	6.7	6.7	6.6

*Note:* Population weighted results.

males, which is entirely consistent with the decline in the unemployment rate and growth in real wages over the period. 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, to 6.4 for both males and females.

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 are 'your financial situation' and 'the amount of free time you have', although average scores for these aspects were still over 6.

### Associations between life satisfaction and personal characteristics

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 Table 17.1 differences in average overall life satisfaction by sex and age group were presented. In Table 17.3 we provide a cursory examination of the associations between overall life satisfaction in 2006 and some other key characteristics, namely, region of residence, quintile of the household (equivalised) income distribution, employment status and family type.

Differences in average levels of overall satisfaction by characteristics are in general not large, but clear patterns are evident nonetheless. Average life satisfaction is decreasing with the population density of the region of residence, rising from 7.8 for persons living in major cities to 8.1 for persons living in remote areas. With regards to income, while one would expect income to be important to life satisfaction, only a weak ordering of average life satisfaction by position in the income distribution is apparent. Mean life satisfaction is 7.8 in each of the bottom three income quintiles, and then increases to 7.9 in the fourth quintile and 8 in the top quintile. Among employed persons, for both males and females, average life satisfaction is lower the greater the number of hours worked, while unemployed people clearly have lower average life satisfaction than employed persons and persons not in the labour force. Comparing across family types, partnered individuals with no resident children have the highest mean level of life satisfaction, while those in lone parent families have the lowest mean level.

**Table 17.3: Mean life satisfaction, by selected characteristics, 2006**

	All persons	
<b>Region<sup>a</sup></b>		
Major city	7.8	
Inner regional	8.0	
Outer regional	8.0	
Remote	8.1	
<b>Income quintile<sup>b</sup></b>		
Bottom quintile	7.8	
2nd quintile	7.8	
3rd quintile	7.8	
4th quintile	7.9	
Top quintile	8.0	
	Males	Females
<b>Employment status</b>		
<15 hours per week	8.2	8.0
15–34 hours per week	8.0	8.0
35–44 hours per week	7.8	7.7
45–54 hours per week	7.8	7.8
55+ hours per week	7.6	7.6
Unemployed	7.3	7.3
Not in the labour force	7.9	8.0
<b>Family type</b>		
Single, no resident children	7.7	8.0
Single, with resident children	7.0	7.7
Partnered, no resident children	8.0	8.1
Partnered, with resident children	7.7	7.9

*Notes:* Population weighted results. <sup>a</sup> Area of residence is categorised using Accessibility/Remoteness Index of Australia (ARIA) regions. Note that under this classification, Hobart is 'inner regional' and Darwin is 'outer regional'. The other capital cities are major cities. <sup>b</sup> Income is household equivalised disposable income in the 2005–06 financial year.

### Changes in life satisfaction over time

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 (as shown in Tables 17.1 and 17.2). However, as previous HILDA Statistical Reports have indicated, this does not preclude substantial change from year-to-year at the individual level (Headey and Warren, 2008).

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 17.4 shows the number of years that people reported low levels of satisfaction with life in general and with other specific aspects of life, for the period from 2001 to 2006.

The aspect of life with which dissatisfaction persists for the longest time is the amount of free time available. Almost 40% reported low levels of satisfaction with this aspect of life in at least one of the six years from 2001 to 2006; 10% reported low satisfaction in three or four of the six years, and 4% reported low levels of satisfaction in five or six years. Dissatisfaction with one's financial situation is also quite persistent, with 34% reporting low levels of satisfaction with this aspect of life in at

least one of the six years, and 4% reporting low levels of satisfaction for five or six years. Low levels of satisfaction with the home, the neighbourhood and personal safety appear to be much less persistent, with only 3–4% of people reporting low levels of satisfaction with these aspects in two or more of the six years. It seems that is also very uncommon for dissatisfaction with life in general to persist for several years, with less than 2% reporting low levels of life satisfaction in two or more of the six years from 2001 to 2006.

### Can high satisfaction be maintained?

It may be that some individuals are naturally more optimistic, seeing life as 'glass half full' rather than 'glass half empty'. Table 17.5 shows the number of years that individuals reported high levels of satisfaction—8 or higher out of 10—with various aspects of life, during the six years from 2001 to 2006. The aspects of life for which many people have persistent high levels of satisfaction are their neighbourhood and how safe they feel, with around one-quarter of people reporting satisfaction levels of 8 or higher for these aspects of life in at least five of the six years. High levels of satisfaction with financial situation and the amount of free time available are less persistent. While 67% of people reported high levels of satisfaction with

**Table 17.4: Years of low satisfaction with aspects of life and with life in general, 2001–2006 (%)**

Satisfaction with...	Number of years of low satisfaction					Total
	0	1	2	3 or 4	5 or 6	
The home in which you live	86.7	9.2	2.9	1.2	*0.0	100.0
Employment opportunities	74.1	13.6	5.7	4.8	1.8	100.0
Your financial situation	65.8	14.6	7.9	8.1	3.6	100.0
How safe you feel	90.0	6.7	2.0	1.1	*0.2	100.0
Feeling part of local community	72.5	14.1	6.5	5.1	1.8	100.0
Your health	83.8	8.1	3.0	3.2	1.8	100.0
Your neighbourhood	89.3	7.1	2.3	1.1	*0.3	100.0
Amount of free time you have	60.2	17.4	9.2	9.7	3.5	100.0
Overall life satisfaction	94.2	3.9	1.2	0.4	*0.2	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 17.5: Years of high satisfaction with aspects of life and with life in general, 2001–2006 (%)**

Satisfaction with...	Number of years of high satisfaction					Total
	0	1	2	3 or 4	5 or 6	
The home in which you live	15.0	16.6	18.0	32.0	18.4	100.0
Employment opportunities	19.3	18.9	17.8	30.2	13.7	100.0
Your financial situation	36.1	20.5	15.4	19.2	8.8	100.0
How safe you feel	10.5	14.2	16.6	34.7	24.0	100.0
Feeling part of local community	28.5	21.3	16.8	23.7	9.7	100.0
Your health	20.3	15.2	14.6	28.5	21.4	100.0
Your neighbourhood	11.3	13.8	15.7	33.9	25.2	100.0
Amount of free time you have	32.9	24.7	17.0	19.7	5.7	100.0
Overall life satisfaction	12.0	12.7	13.2	32.2	30.0	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

the amount of free time they had in at least one of the six years, only 6% reported high levels of satisfaction in five or six years. Similarly, while over 60% reported high levels of satisfaction with their financial situation in at least one of the six years, only 9% were highly satisfied with their financial situation in five or more of the six years.

**Endnotes**

- 1 2002 and 2004 are not included in Table 17.1, as there was little change in average satisfaction levels during this period.
- 2 This result appears to be at odds with previous research (e.g. Backman, O'Malley and Johnston, 1978) indicating that young people's satisfaction tends to improve rather than decline once they leave school.

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## 18. Physical and mental health: How persistent are health problems?

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.<sup>1</sup>

The Australian Bureau of Statistics (ABS) 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 Wellbeing of Adults conducted in 1997 and the National Health Survey of 2001 (ABS, 1997, 2001). The former survey included a short version of the mental health scale in the SF-36, called the SF-12. 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).<sup>2</sup> However, the HILDA Survey mental health scale scores have a higher standard deviation than the American scores.

**General health, 2001 to 2006**

General health scores on a scale 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 the six years from 2001 to 2006.

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

Age group	2001		2002		2003		2004		2005		2006	
	Males	Females										
15-24	76.0	71.1	75.8	71.5	76.5	70.0	75.9	70.6	75.8	70.2	75.2	71.6
25-34	73.8	74.7	73.4	74.0	73.0	73.9	72.3	72.8	72.1	71.9	73.2	72.9
35-44	71.3	72.1	70.2	72.7	70.6	72.0	70.5	70.7	69.3	70.9	69.3	71.5
45-54	68.1	69.0	67.2	67.3	66.4	67.3	66.3	67.5	67.0	67.5	67.5	67.0
55-64	63.1	65.1	60.8	66.2	62.2	64.4	63.4	64.5	62.2	64.3	63.1	65.1
65+	58.6	61.2	58.9	60.8	59.6	61.3	59.5	61.9	59.9	60.1	60.1	59.5
Total	69.3	69.5	68.4	69.2	68.7	68.6	68.5	68.3	68.1	67.8	68.4	68.1

*Note:* Population weighted results.

General health scores of males decline in a straightforward linear way with age.<sup>3</sup> In 2006, scores decreased from 75.2 (on the 0–100 scale) for males aged between 15 and 24 to 60.1 for males aged 65 and over. For females over the age of 25, general health scores also decline with age, but young females aged between 15 and 24 have lower scores than those aged 25 to 34. In the years from 2001 to 2004, females aged between 15 and 24 were the only group where females had lower average general health scores than males of the same age. However, in 2005 and 2006, average general health scores for females aged between 25 and 34 were also lower than the average for males in that age group, but only by a very small amount.

### Mental health, 2001 to 2006

The SF-36 mental health score also ranges from 0 to 100 and is based on responses to five questions. Respondents are 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, and that males in all age groups have higher mental health scores than females, with females under the age of 35 having the lowest average mental health scores.

In 2006, the average levels of mental health for females aged between 15 and 34 were just over 71 out of 100, compared to 74.8 for females aged 65 and over. For males, average mental health scores ranged from 73.7 out of 100 for males aged between 35 and 44, to 77 for males aged 65 or older. Unlike general health, the correlation between mental health and age is positive for both males and females.<sup>4</sup> 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.<sup>5</sup>

### Persistence of health problems

Do the same people tend to have health problems year after year, or are health issues usually transient? Table 18.3 shows the number of years between 2001 and 2006 that people had general health scores lower than 50 out of 100.

Around 65% of people had general health scores of 50 or above in all six years and only 6% had low levels of general health in all of the six years from 2001 to 2006. As might be expected, the persistence of general health problems depends strongly on age. Persistent health problems are much more common for older people, with around 40% of persons aged between 55 and 64 and 45% of persons aged 65 or older experiencing low levels of general health in at least one of the six years. More than 10% of persons over 65 experienced low levels of general health in all six years.

In previous HILDA Statistical Reports, it was 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. Table 18.4 shows the number of years between 2001 and 2006 that people had mental health scores lower than 50 out of 100. It is clear that, compared to physical health problems, mental health problems are much less persistent. While 12% of males and 13% of females had mental health scores of less than 50 in one of the six years from 2001 to 2006, only 1% of individuals had low levels of mental health in all six years.

Unlike general health, the persistence of mental health problems is not related in a linear way to age. Overall, females have higher rates of medium-term persistence of low mental health than males, but levels of long-term persistence are similar for males and females. Among both males and females, 35–44 year olds have the most persistent mental health problems. In this age group, 7% of males and 10% of females had mental health scores of less

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

Age group	2001		2002		2003		2004		2005		2006	
	Males	Females										
15–24	73.9	69.5	75.1	70.8	74.9	69.2	74.7	70.6	74.5	70.8	74.6	71.3
25–34	74.0	71.9	74.4	71.5	75.3	73.0	74.6	71.4	73.6	70.9	74.7	71.2
35–44	73.2	71.4	74.1	72.2	74.3	72.3	74.8	71.7	73.5	72.2	73.7	72.7
45–54	75.5	73.4	75.1	71.9	74.6	72.8	74.8	72.5	75.2	72.9	75.1	72.8
55–64	75.1	73.4	75.1	74.7	75.4	74.6	75.3	74.2	76.7	73.9	76.2	73.9
65+	76.8	75.4	77.4	74.8	77.8	75.1	77.6	75.4	77.2	75.0	77.0	74.8
Total	74.6	72.3	75.1	72.5	75.3	72.7	75.2	72.5	75.0	72.5	75.1	72.8

Note: Population weighted results.

than 50 in three or more of the six years from 2001 to 2006. For younger people, persistent mental health problems are more common for females than for males, with 5% of males and 9% of females aged between 15 and 24 having low levels of mental health in three or more of the six years.

**Endnotes**

1 It should be understood that, because answers are provided by the public and not by medical 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 The Pearson correlation between age and general health for men: -0.27 (2001), -0.27 (2002), -0.28 (2003), -0.26 (2004), -0.26 (2005), -0.25 (2006). For women: -0.19 (2001), -0.20 (2002), -0.18 (2003), -0.17 (2004), -0.18 (2005), -0.21 (2006).
- 4 Pearson correlation between age and mental health for men: 0.05 (2001), 0.04 (2002), 0.04 (2003), 0.04 (2004), 0.07 (2005), 0.05 (2006). For women: 0.10 (2001), 0.08 (2002), 0.09 (2003), 0.09 (2004), 0.09 (2005), 0.07 (2006).

**Table 18.3: Persistence of low general health scores by sex and age, 2001–2006 (%)**

Age group in 2001	Number of years with general health lower than 50 out of 100							Total
	0	1	2	3	4	5	6	
<b>Males</b>								
15–24	75.5	11.2	*8.1	*1.8	*1.1	*1.5	*0.8	100.0
25–34	74.9	9.5	*4.2	*5.2	*2.6	*2.3	*1.4	100.0
35–44	70.3	10.8	4.9	*3.0	4.1	*3.1	3.9	100.0
45–54	65.6	10.0	6.3	4.7	5.3	3.7	4.4	100.0
55–64	59.0	10.6	5.6	6.2	*2.0	4.6	12.1	100.0
65+	55.1	10.4	8.1	4.8	4.0	6.6	11.0	100.0
Total	65.9	10.4	6.0	4.4	3.5	3.8	5.9	100.0
<b>Females</b>								
15–24	65.2	11.8	*9.2	*4.0	*3.9	*5.2	*0.7	100.0
25–34	68.7	11.1	8.6	*2.4	*3.7	*2.3	*3.2	100.0
35–44	69.4	12.0	5.6	4.0	4.1	*1.3	3.6	100.0
45–54	69.0	11.5	4.2	3.9	*2.1	3.7	5.6	100.0
55–64	61.6	10.5	5.9	5.4	3.7	5.2	7.7	100.0
65+	55.0	13.1	5.8	5.1	4.4	4.8	11.8	100.0
Total	65.0	11.7	6.1	4.2	3.6	3.5	5.9	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 18.4: Persistence of low mental health scores by sex and age, 2001–2006 (%)**

Age group	Number of years with mental health lower than 50 out of 100							Total
	0	1	2	3	4	5	6	
<b>Males</b>								
15–24	71.8	16.0	*7.3	*2.2	*2.4	*0.2	*0.0	100.0
25–34	76.1	11.5	6.1	*2.2	*2.2	*0.7	*1.2	100.0
35–44	72.6	13.2	7.0	*2.3	*2.6	*0.6	*1.8	100.0
45–54	75.3	11.7	5.9	3.0	*1.9	*1.3	*0.8	100.0
55–64	77.2	12.2	3.6	3.4	*1.2	*1.4	*1.1	100.0
65+	83.1	7.7	3.1	1.9	*2.1	*0.7	*1.3	100.0
Total	76.4	11.7	5.4	2.5	2.1	0.9	1.1	100.0
<b>Females</b>								
15–24	63.0	19.4	8.6	*4.5	*1.5	*2.5	*0.4	100.0
25–34	65.9	15.1	10.5	*3.1	*3.3	*0.3	*1.9	100.0
35–44	69.7	12.9	7.5	5.0	2.8	*1.2	*0.9	100.0
45–54	70.1	13.9	7.2	4.0	*2.5	*1.3	*1.0	100.0
55–64	75.4	11.2	6.1	*2.8	*2.7	*0.8	*1.0	100.0
65+	80.6	9.2	3.9	*2.7	*2.0	*1.1	*0.5	100.0
Total	71.8	12.9	7.0	3.6	2.5	1.1	1.0	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

5 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.

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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 article, 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', provide 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.<sup>1</sup>

### Availability of 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 the question, 'How satisfied are you with your

relationship with your partner?' This question is asked of all married and partnered respondents and is answered on a 0 to 10 scale, where 0 means 'completely dissatisfied' and 10 means 'completely satisfied'. In this article, respondents who answered 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 relationship 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'.

Table 19.1 gives 2006 results for the population and for various groups potentially 'at risk' of lacking adequate close relationships.<sup>2</sup> In 2006, 10.9% of persons over 15 years of age were living alone and not partnered, while a further 10.7% 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 Survey measures are just indicators and that it is certainly possible that some of the apparently 'at risk' individuals, if directly asked, would 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 nonetheless report that they do not have a close relationship.

The remainder of Table 19.1 considers differences by sex and various potentially ‘at risk’ groups. Females had a higher proportion than males reporting dissatisfaction with their partner, but were slightly less 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 by definition do not live with a partner and also 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.

Persons with disabilities<sup>3</sup> have a somewhat higher rate of living alone than the general population, and dissatisfaction with relationships is also

marginally higher. Non-English speaking background (NESB) immigrants—that is, immigrants from countries other than the main English-speaking countries of the UK, USA, 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, they have lower rates of living alone and dissatisfaction with other relationships, although they do have relatively high rates of dissatisfaction their partners, which is somewhat unexpected. People living outside the major cities may face barriers created by geographic isolation. They are indeed slightly more likely to live alone (12.2% compared with 10.9% for the population), but they are less likely to be dissatisfied with relationships.

Nearly one-quarter of persons in the bottom 20% of the household (equivalent) income distribution live alone and without a partner, yet still the proportion of all people in this income bracket dissatisfied with their partner is 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 twice as likely to be dissatisfied with their partners.

### Social support networks

The HILDA social networks index comprises ten 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 ten 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. These transformed 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 ten items is greater than 4.

More males than females—25.3% compared to 21.5%—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, with the exception of the elderly and those living outside the major cities. People living outside the major cities in fact have a lower proportion with a poor social network than do people living in the major cities. NESB

**Table 19.1: Availability of close, intimate and live-in relationships, 2006 (%)**

	<i>Lives alone (and no partner)</i>	<i>Not satisfied with partner</i>	<i>Not satisfied with other relatives</i>
All persons	10.9	10.7	8.1
Females	11.0	12.0	7.4
Males	10.9	9.4	8.8
Elderly (aged 65+)	25.2	5.2	3.6
Lone parent	–	–	14.7
Divorced or separated <sup>a</sup>	38.5	25.3	11.2
Disabled	16.3	12.8	9.6
NESB immigrant	7.6	14.3	5.2
Regional or remote area	12.2	8.1	7.4
Low income (bottom quintile)	23.0	11.6	8.5
Unemployed, aged 18–64	10.7	21.5	11.8

*Notes:* Population weighted results. Population is persons aged 15 years and over. <sup>a</sup> Divorced or separated persons may be currently partnered, hence, they can be dissatisfied with their current partner.

**Table 19.2: Social network, 2006 (%)**

	<i>Poor social network</i>
All persons	23.3
Females	21.5
Males	25.3
Elderly (aged 65+)	24.6
Lone parent	29.2
Divorced or separated	29.8
Disabled	28.0
NESB immigrant	34.4
Regional or remote area	21.9
Low income (bottom quintile)	30.7
Unemployed, aged 18–64	33.2

*Notes:* Population weighted results. Population is persons aged 15 years and over.

immigrants and the unemployed are particularly prone to having inadequate social networks.

### The persistence and recurrence of low levels of social capital

The results in Tables 19.1 and 19.2 relate just to 2006. 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 six years of the HILDA data, showing how many respondents reported particular deficits never, in only one or two years, and in three or more of the years. Persons who reported deficits in only one or two of the six years are likely to have experienced only temporary deficits that they have been able to remedy. Persons with deficits for at least half the survey period, 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 58% of the population classified as having poor social networks in at least one year. For about 60% of these people, however, this is a temporary phenomenon, arising in only one or two of the six years. For the remaining 40%—or 24% of the population as a whole—poor social networks are present for at least half the period. Fewer people experience the other three social capital deficits: 21.1% lived alone at some stage of the survey period, 21.7% expressed dissatisfaction

with their partner at some stage, and 24.9% 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 (21.1% of all persons), over 60% lived alone for three 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 the ending of the relationship in many cases.

Consistent with the 2006 cross-sectional results, the proportions of 'at risk' groups ever experiencing each deficit are higher than for the community at large for all groups other than those living outside the major cities. It is notable that, although the elderly were not much more likely than the population as a whole to report poor social networks in 2006, they were much more likely to experience poor social networks in three or more of the six years up to and including 2006. Although inadequate social networks are important for all groups, the relative importance of the other social capital deficit components does vary across these groups somewhat. 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 the disabled, living alone is a key source of deficit; while for NESB

**Table 19.3: Years experiencing social capital deficits, 2001–2006 (%)**

	<i>All persons</i>	<i>Elderly</i>	<i>Lone parent</i>	<i>Divorced or separated</i>	<i>Disabled</i>	<i>NESB immigrant</i>	<i>Regional or remote area</i>
<b><i>Lives alone (and no partner)</i></b>							
Never	78.9	62.3	80.6	36.9	73.4	86.8	77.2
1 or 2 years	8.1	6.3	11.0	11.8	7.4	5.0	8.5
3 or more years	13.0	31.4	8.4	51.3	19.2	8.2	14.3
<b><i>Not satisfied with partner</i></b>							
Never	78.3	89.8	75.3	80.3	80.0	76.3	79.7
1 or 2 years	17.0	8.0	20.6	15.5	14.6	17.8	16.1
3 or more years	4.7	2.1	4.1	4.2	5.4	5.9	4.2
<b><i>Not satisfied with other relatives</i></b>							
Never	75.1	86.5	57.2	64.6	72.7	79.1	75.9
1 or 2 years	18.3	11.1	29.1	24.4	18.8	16.0	17.6
3 or more years	6.7	2.4	13.7	11.0	8.5	4.9	6.5
<b><i>Poor social network</i></b>							
Never	41.9	31.4	31.3	31.2	31.4	30.1	47.0
1 or 2 years	34.3	33.5	38.3	32.7	34.7	30.6	35.2
3 or more years	23.8	35.0	30.5	36.0	33.9	39.3	17.8
<i>Notes:</i> Population weighted results. Population is persons aged 15 years and over. 'Elderly', 'lone parent', 'divorced or separated' and 'remote or regional area' status are evaluated in 2001. Note, therefore, that persons in the 'lone parent' group can be 'not satisfied with partner' if they are partnered subsequent to 2001. Only lone parents who were at some stage partnered between 2002 and 2006 are included in the calculation of the number of years not satisfied with partner, and among these lone parents, they are treated as <i>not</i> dissatisfied with their partner in waves in which they were not partnered.							

immigrants, it is only inadequate social networks that are more prevalent than they are in the community as a whole.

### Discussion

Many people's experience of social capital deficits is only transient—especially inadequate social networks—suggesting that 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, the disabled and NESB immigrants—are 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 Defined as people with a long-term health condition which has lasted or is likely to last for 6 months or more.

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## 20. Labour force and education participation, 2001 to 2006

At each annual interview, HILDA Survey respondents fill in a calendar for the months between the current interview and the previous 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 an education course.

We can use this information to derive a breakdown of the percentage of time spent in paid work, unemployed and not in the labour force, and also time spent in education. A person must always be in one of the three above-mentioned labour force states, so the total 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 six years covered by the HILDA Survey. We confine attention to a group of main interest—males and females aged 25 to 54, who are prime working age and, in many cases, face real choices between working, not working and undertaking further education.

### Trends in activity of prime-age persons, 2001 to 2006

Table 20.1 reports the mean proportion of time spent in each labour force state, as well as the

mean proportion of time enrolled in education, for each year from 2001 to 2006. During this period of economic growth and employment growth, there has been a sustained (albeit slightly uneven in the case of males) increase in the proportion of the year in the employed labour force state for both males and females. The proportion of time spent in the employed state by men aged 25 to 54 rose from 86.5% in 2001 to 89.4% in 2006. Women's time in the employed labour force state rose steadily from 68.4% in 2001 to 73.5% in 2006. The proportion of time unemployed has not followed quite such a clear path. For males, it dropped from a peak of 5.3% in 2002 down to 3.1% in 2005, and in 2006 increased very slightly (and insignificantly) to 3.3%. For females, the proportion of time unemployed likewise peaked in 2002, at 4.3%, and has since declined slightly every year, to be 3.3% in 2006. The net product of the changes to employment and unemployment is that the total proportion of time spent by 25 to 54 olds participating in the labour force has risen from 91.5% to 92.7% for males, and from 71.5% to 76.8% for females.

Participation in education does not appear to have changed substantially over the period, with the proportion of time enrolled in full-time education hovering around 2–3% and the proportion of time enrolled in part-time education fluctuating between 5.4% and 7.7%. There were indications of a trend increase in education participation between 2001 and 2005, but 2006 saw participation, particularly in part-time education, drop back somewhat.

**Table 20.1: Labour force and education activity—Mean proportion of time spent in each activity (%)**

	<i>Employed</i>	<i>Unemployed</i>	<i>Not in the labour force</i>	<i>Full-time education</i>	<i>Part-time education</i>
<b>Males</b>					
2001	86.5	5.0	8.5	2.2	5.4
2002	86.2	5.3	8.5	2.4	5.8
2003	86.5	4.1	9.3	2.5	5.6
2004	87.8	3.3	8.9	2.8	6.8
2005	89.4	3.1	7.5	2.6	7.7
2006	89.4	3.3	7.3	2.2	5.6
<b>Females</b>					
2001	68.4	3.1	28.6	2.8	5.4
2002	68.7	4.3	27.1	2.9	6.3
2003	69.2	3.9	27.0	3.1	6.6
2004	70.0	3.6	26.4	2.9	6.6
2005	71.4	3.5	25.1	2.6	7.7
2006	73.5	3.3	23.2	2.4	6.1

*Note:* Population weighted results.

### Total employment and education activity over the life of the HILDA Survey

The upper panel of Table 20.2 shows the total proportion of time spent in each labour force and education participation state over the entire six years from 2001 to 2006. We restrict here to persons aged 25–54 years for the *entire* period. In total, 89% of men's time was in the employed labour force state, 3.8% was spent unemployed and 7.2% was spent not participating in the labour force. Some of the time spent out of the labour force is potentially accounted for by the 1.9% of time they were enrolled in full-time education, although of course many full-time students are employed. Males were also on average enrolled in part-time education for 5.9% of the six years. For females, 71.2% of time was spent in the employed labour force state, 3.6% was spent unemployed and 25.2% was spent out of the labour force. Education participation is higher for females than males, with females enrolled in full-time education for 2.4% of the period and enrolled in part-time education for 6.7% of the period.

The lower panel of Table 20.2 shows that it would be a mistake to imagine that the same people do the same things every year. Among males, 96% were in work at some stage during the six years, 25% were at some stage unemployed, and 27% spent some time 'not in the labour force'. The fraction of prime-age males at some stage experiencing unemployment or withdrawing from the labour force is considerably higher than many people might have expected. Prime-age females have a much higher proportion at some stage not

**Table 20.2: Education and employment participation over the full six years of the survey (%)**

	<i>Males</i>	<i>Females</i>
<b>Proportion of time spent in each activity</b>		
Employed	89.0	71.2
Unemployed	3.8	3.6
Not in the labour force	7.2	25.2
Full-time education	1.9	2.4
Part-time education	5.9	6.7
<b>Proportion of population that ever participated in each activity</b>		
Employed	96.4	89.3
Unemployed	24.5	26.8
Not in the labour force	27.3	57.1
Full-time education	11.1	13.2
Part-time education	29.3	34.0

*Notes:* Population weighted results. Population is persons aged 25–54 for the entire 2001 to 2006 period.

in the labour force, partly because of the demands of child-rearing, but the high proportion that was at some stage unemployed (27%) is likely to be similarly surprising to many people.

A further interesting and perhaps surprising finding is that 40% of prime-age males and 47% of prime-age females at some stage were enrolled in an education course in the six-year period. Note that this is education participation that occurs when in the 25–54 years age range. 'Adult education', broadly defined, is thus clearly an extremely important activity of prime working age persons.



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# Household Wealth

In wave 6 of the HILDA Survey, detailed information about household assets and debts was collected. This was the second time such data had been gathered, creating, for the first time in Australia, nationally representative longitudinal data on individuals' household wealth. This is an exceptionally valuable resource for understanding wealth accumulation in Australia. Indeed, such data are extremely rare internationally.

Why is it useful to collect wealth data in a household survey? Wealth is a potentially important input into economic wellbeing. It delivers income, which may be in the form of a financial return or in-kind services, such as the housing provided by the family home. Wealth can also be depleted to fund household consumption, which is extremely important to an individual's living standard in retirement or in the event of an unexpected decline in household income, for example due to job loss. The economic security provided by wealth means that it can have beneficial implications for individuals' wellbeing, including their happiness and health, beyond those apparent from their observed material living standards.

Knowledge of an individual's household wealth is also very valuable to understanding the economic and social behaviour of individuals, including saving and investment decisions, labour force participation and even family formation. For example, wealthier individuals are likely to require higher wages in order to be induced into paid employment. Detailed wealth data also allow investigation of holdings of individual components of wealth, such as shares and housing. This includes examining both the factors that affect such holdings, and the effects these holdings have on outcomes for individuals, for example in terms of health, life satisfaction and family stability.

There are numerous potential ways of using the wealth data for empirical analysis of Australian households. In this Report, we focus on describing wealth outcomes, and in particular investigating changes in individuals' household wealth, and in components of individuals' household wealth, between 2002 and 2006. In all of the subsequent analysis, all monetary values are expressed at September quarter 2006 prices (based on the Australian Bureau of Statistics (ABS) Consumer Price Index) to remove the effects of inflation. In practical terms, this involves increasing the wealth figures reported in 2002 by 12.4%, which is the increase in the Consumer Price Index between September 2002 and September 2006.

## Household wealth

The HILDA Survey obtains a measure of household wealth by asking a detailed set of questions on all main financial assets, non-financial assets and debts. Total wealth—or net worth—is equal to total (financial and non-financial) assets minus total debts of all members of the household. Financial assets comprise bank accounts, superannuation, cash investments, equity investments (shares), trust funds and the cash-in value of life insurance policies. Non-financial assets comprise the home, other property, business assets, collectibles and motor vehicles. Debts comprise unpaid credit card debt, HECS debt, other personal debt (including car loans, investment loans, hire purchase agreements and loans from friends or relatives not living in the household), business debt, home debt, other property debt and overdue household bills.<sup>1</sup>

## 21. Levels and changes in household wealth: 2002 to 2006

### Aggregate wealth in 2002 and 2006

Table 21.1 summarises the distributions of net worth in 2002 and 2006. The data indicate that the 2002 to 2006 period was one of very strong growth in household wealth. The mean household net worth of sample members increased from \$494,279 to \$664,867 (at September 2006 prices), a 35% increase. The increase does not simply reflect growth in wealth at the top end of the wealth distribution. The household net worth of the median individual was \$280,131 in 2002 and \$380,202 in 2006, a 36% increase, and similar rates of growth are evident throughout the wealth

distribution. Indeed, the percentage changes in the net worth of the 10th and 25th percentiles slightly exceed those of the 75th, 90th, 95th and even 99th percentiles.

The third panel of Table 21.1 summarises the extent of inequality in the distribution of household wealth. Wealth is clearly more unequally distributed than income. For example, the Gini coefficient for wealth is 0.62 in 2006, compared with the figure presented in Part A of this Report of 0.31 for income.<sup>2</sup> That wealth growth was slightly stronger at the 10th percentile of the wealth distribution than at the median (50th percentile), and

**Table 21.1: Net worth in 2002 and 2006**

	2002	2006
<b>Average net worth (\$)</b>		
Mean	494,279	664,867
Median	280,131	380,202
<b>Net worth at different points of the distribution (\$)</b>		
10th percentile	7,082	10,030
25th percentile	77,086	111,045
75th percentile	612,343	767,599
90th percentile	1,108,028	1,464,167
95th percentile	1,596,646	2,124,542
99th percentile	3,841,181	5,399,531
<b>Net worth inequality</b>		
90th percentile/median	3.96	3.85
Median/10th percentile	39.55	37.91
Gini coefficient	0.61	0.62
<b>Percentage in each net worth category</b>		
<\$0	4.0	3.8
\$0–\$99,999	23.9	20.0
\$100,000–\$199,999	12.8	9.1
\$200,000–\$399,999	20.5	19.0
\$400,000–\$599,999	13.1	14.8
\$600,000–\$999,999	14.0	16.1
\$1,000,000+	11.8	17.3
Total	100.0	100.0
<i>Notes: Population weighted results. All monetary values expressed at September quarter 2006 prices. Percentages may not add up to 100 due to rounding.</i>		

growth in the median was in turn slightly greater than growth at the 90th percentile, has meant that inequality in the distribution of wealth as measured by the ratio of the median to the 10th percentile and the ratio of the 90th percentile to the median has decreased. The household wealth of the person at the 90th percentile was 3.96 times the household wealth of the person at the median in 2002; this had reduced to 3.85 in 2006. Similarly, household wealth of the person at the median was 39.6 times the household wealth of the person at the 10th percentile in 2002, a ratio which had reduced to 37.9 in 2006. The Gini coefficient, an overall measure of inequality that tends to give most weight to people around the middle of the distribution, shows essentially no change.<sup>3</sup>

In the bottom panel of Table 21.1, a perhaps more intuitive approach to describing the distribution of wealth in each year is presented. It shows the percentage of people in each of seven wealth categories. 4% of people had negative net worth in 2002, which had declined to 3.8% in 2006. The proportions with net worth in the categories between zero and \$400,000 also decreased. Correspondingly, there were increases in the proportions in the '\$400,000 to \$600,000', '\$600,000 to \$999,999' and '\$1,000,000 plus' categories. The growth in millionaires (at September 2006 prices)

is particularly large, rising from 12% of the population in 2002 to 17.3% in 2006.<sup>4</sup> It is perhaps surprising that in 2006 over one in six people in Australia was a millionaire (if our definition of millionaire is 'household net worth in excess of one million dollars').

In light of the very unequal distribution of wealth, we might expect to see very different wealth levels for different demographic groups in the community. Table 21.2 shows this is indeed the case. It presents mean and median wealth in each year by age group, educational attainment and location of residence. Wealth is strongly related to age, rising over the 25–64 years age range before declining for those in the retirement life stage (aged 65 years and over), when people tend to run down their assets (e.g. retirement savings). Persons under 25 years of age have higher average levels of household wealth than persons aged 25–34 years because many more of those under 25 years of age live with their parents.

Average wealth levels are also ordered by educational attainment, although it is notable that those holding Certificate I or II level qualifications who have not completed high school have lower median net worth than those who have not completed high school and do not hold any post-school qualifications. This is perhaps attributable to the differences in age composition of the two groups. For example, 25–34 year olds represent approximately 12% of Certificate I and II holders (without high school completion), but only 4% of those who have not completed Year 10. Controlling for age differences, we do in fact find a very strong ordering of wealth by educational attainment across all levels of attainment. This is consistent with the higher earnings capacity of more educated persons, as well as a likely greater preference for saving and investment (as evidenced by their investment in education).

How has wealth changed for these groups between 2002 and 2006? Large real increases in average wealth levels are evident for all groups, although sizeable differences in growth across the groups are apparent. The increase in the mean wealth of the 45–54 age group was comparatively low. Growth was also comparatively low for residents of New South Wales, the ACT and Victoria, and was very strong for residents of Western Australia, Tasmania and Queensland. Western Australian residents had especially high growth, overtaking New South Wales to have the highest average levels of net wealth in 2006. Curiously, persons living outside the major cities had approximately twice the rate of growth in wealth of persons living in the major cities, although the mean and median wealth of those living outside the major centres was still considerably lower in 2006. It is likely that the primary driver of the location-based differences is differences in house price growth over the 2002 to 2006 period.

**Table 21.2: Average net worth by age group, educational attainment and location of residence (\$)**

	Mean net worth			Median net worth		
	2002	2006	% change	2002	2006	% change
<b>Age group</b>						
0–24	438,953	597,266	36.1	224,650	312,700	39.2
25–34	285,204	362,156	27.0	136,589	170,576	24.9
35–44	459,332	592,477	29.0	280,766	364,720	29.9
45–54	660,191	821,500	24.4	465,246	541,022	16.3
55–64	788,313	1,029,598	30.6	494,337	655,844	32.7
65+	522,332	772,014	47.8	326,014	426,000	30.7
<b>Educational attainment</b>						
Degree or higher	678,058	902,710	33.1	406,666	526,100	29.4
Diploma or Certificate III/IV	521,306	682,436	30.9	309,939	421,000	35.8
High school	472,796	684,357	44.7	266,995	365,000	36.7
Certificate I/II	389,646	497,845	27.8	197,356	242,941	23.1
Year 10/11	480,901	662,041	37.7	268,814	387,000	44.0
Less than Year 10	340,291	451,141	32.6	217,870	289,510	32.9
<b>State of residence</b>						
New South Wales	592,291	711,924	20.2	353,501	413,170	16.9
Victoria	527,459	673,732	27.7	327,588	386,740	18.1
Queensland	354,883	557,213	57.0	225,484	334,669	48.4
South Australia	370,340	479,721	29.5	179,870	255,143	41.8
Western Australia	471,806	861,646	82.6	234,580	495,000	111.0
Tasmania	239,186	588,213	145.9	116,695	204,624	75.3
Northern Territory	462,635	545,951	18.0	295,285	510,521	72.9
Australian Capital Territory	659,586	697,198	5.7	415,500	484,967	16.7
<b>Region of residence</b>						
Major city	534,956	681,113	27.3	322,642	407,100	26.2
Other region	411,022	632,223	53.8	219,217	330,311	50.7

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices. Estimates by level of educational attainment are for persons aged over 15 years only.

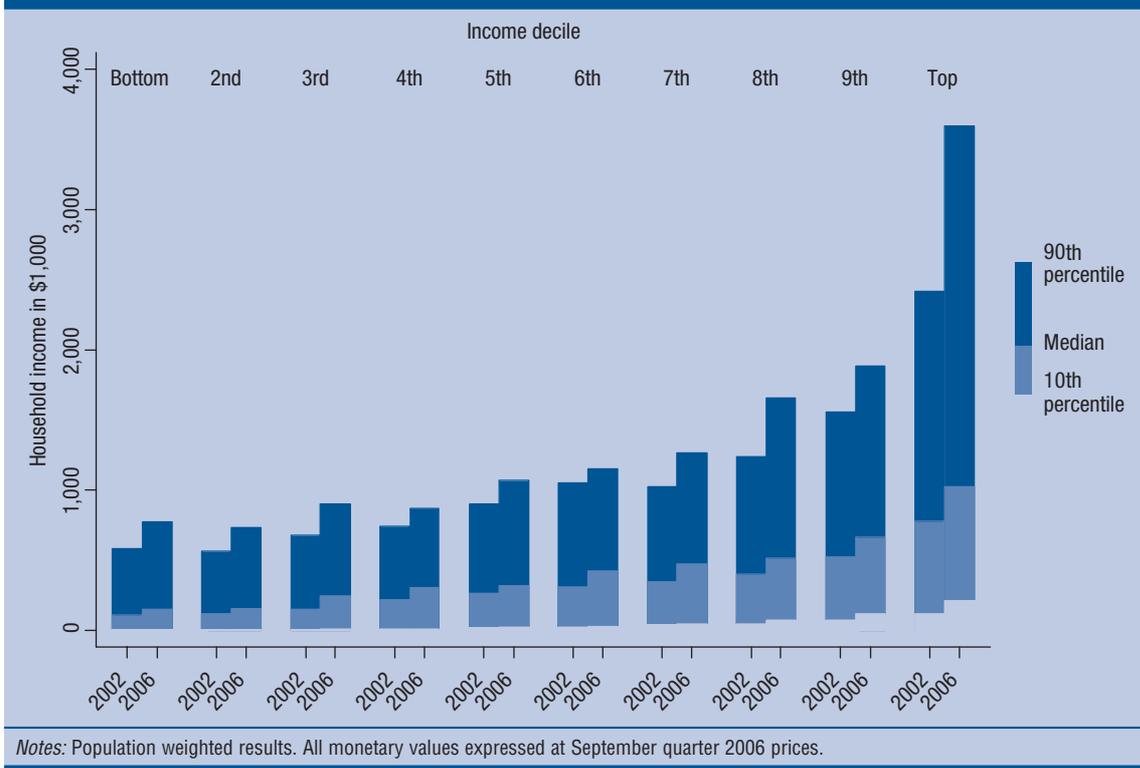
**Figure 21.1: Distribution of wealth in 2002 and 2006, by initial decile of the income distribution**

Figure 21.1 considers the association between income and wealth. It presents the 10th percentile, 50th percentile (median) and 90th percentile of the wealth distribution within each decile of the equivalent income distribution. Each bar relates to a decile of the income distribution. The lower extremity is the value of the 10th percentile, the upper extremity is the 90th percentile and the point at which the bar changes from a light shade to a dark shade is the value of the median. The dark-shaded section of each bar provides a measure of the degree of inequality in the upper part of the wealth distribution, while the light-shaded section provides a measure of inequality in the lower part of the wealth distribution.

Wealth levels are broadly ordered by income level, although the association appears to be quite weak across the bottom four to five income deciles. The 10th percentile in particular does not discernibly increase over this range of the income distribution, in either 2002 or 2006. Wealth inequality also appears to be ordered by income level, with the length of the bars increasing in income.<sup>5</sup> In terms of changes between 2002 and 2006, growth in wealth levels and dispersion at all income levels is evident. Growth appears to be greater for the high income deciles, but *proportionately* changes are not as different as they appear in the figure.

### The composition of household wealth

The HILDA data allow us to examine the individual components that together make up a household's net worth. In Table 21.3 we distinguish eleven components, six of them types of asset, the remaining five types of debt. The proportion of individuals in households holding each asset or debt type is reported, along with the mean value of each component across all members of the population.

Owner-occupied housing is clearly the most important contributor to household net worth, even though it is the largest source of household debt. In 2002, mean home wealth across all members of the population, net of home debt, was \$204,684, accounting for 41% of mean total net worth in 2002. In 2006, mean home wealth was \$264,873, or 40% of mean total net worth. Next most important is superannuation, averaging \$98,287 in 2002 and \$127,140 in 2006 and forming a part of household wealth for 82% of the population in 2002 and 85% of the population in 2006.

Comparing 2002 and 2006, it is clear that the most important source of the large growth in average wealth is house price growth. The mean value of owner-occupied housing across all persons (including those in non-home-owner households) increased from \$256,911 to \$343,547, while the mean household holding of other property, which is mostly housing, increased even more dramatically from \$64,279 to \$145,023, a 126% increase. These increases are only partially offset by the increase in mean home and other property debt, which in total increased from \$67,794 to \$110,980.

While house-price growth is the most important source of increased household wealth between 2002 and 2006, growth in holdings of other asset classes has also been an important contributor. Averaged across all people, household superannuation balances increased by 29%, the value of equity investments (shares) increased by 28% to \$45,062, net household-owned business wealth ('Value of own business' less 'Business debts') increased by 6% to \$50,713, and holdings of 'other assets' increased by 15% to \$83,671. Mean credit card and other personal debt increased by \$6,313 to \$19,308, a substantial 49% increase, but still low relative to mean total household wealth.

	2002		2006	
	Percentage>0	Mean value (\$)	Percentage>0	Mean value (\$)
<b>Assets</b>				
Value of own home	71.4	256,911	71.6	343,547
Superannuation	82.3	98,287	85.3	127,140
Value of other property	18.0	64,279	22.6	145,023
Equity investments	41.3	35,114	38.4	45,062
Value of own business	15.0	57,475	16.0	62,512
Other assets	99.7	72,758	99.8	83,671
<b>Debts</b>				
Home debt	40.1	52,227	42.9	78,674
Other property debt	8.6	15,567	10.9	32,306
Credit card debt	33.7	1,315	31.4	1,750
Other personal debt	43.2	11,682	49.0	17,558
Business debts	6.3	9,754	5.9	11,799

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices.

### Changes in individuals' household wealth 2002 to 2006

Up to this point, we have examined cross-sectional snapshots of the distribution of wealth, but a key benefit of the HILDA wealth data is the ability to track *individuals'* changes in household wealth. The cross-sectional snapshots in 2002 and 2006 suggested a very stable wealth distribution—wealth inequality in particular is found to be very similar in 2002 and 2006—with strong growth in wealth occurring for most members of the community. Even the cross-sectional comparisons across demographic groups and income deciles suggested wealth gains were widely shared.

Tracing individual-level changes in wealth reveals this impression of stability to be very misleading. Table 21.4 shows that, while the mean change in real wealth was an increase of \$170,069, there was a very high degree of variation in individual changes around that mean. The 10th percentile of changes was a decrease of \$198,151, implying that 10% of the population had their real household wealth decrease by at least that amount. Even the 25th percentile of changes is negative, which means over one-quarter of the population experienced a real decline in their wealth. At the other end of the spectrum, 10% of the population experienced a real increase in wealth in excess of \$564,888.

**Table 21.4: Distribution of changes in individuals' household wealth, 2002–2006 (\$)**

Mean change	170,069
Median change	76,228
10th percentile of changes	–198,151
25th percentile of changes	–9,243
75th percentile of changes	253,294
90th percentile of changes	564,888

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices.

The diversity in changes in net worth raises the question of whether there have been systematic differences in wealth changes across groups with different characteristics. Perhaps most obviously of concern is whether wealth growth has been 'pro-poor' or 'pro-rich'. Popular perception would seem to favour the latter hypothesis, a somewhat common refrain being that 'the rich are getting richer' and the 'poor are getting left further behind'. This perception is certainly not consistent with the evidence presented in Table 21.1, which showed wealth inequality to be quite stable over the 2002 to 2006 period.

Table 21.5 provides more direct evidence on this front, examining changes in individuals' household wealth by initial location in both the wealth and the income distributions. The top panel presents the median change in wealth, as well as the 10th and 90th percentiles of changes, by quintile of the distribution of wealth in 2002. That is, each person is assigned to a quintile of the wealth distribution in 2002 (with 20% of people in each quintile), and then the median, 10th percentile and 90th percentile of wealth changes are calculated for each quintile. The lower panel presents the same information by quintile of the distribution of income in 2002.

Median changes in the dollar value of wealth are increasing in quintile of the 2002 wealth distribution up to the fourth quintile. The median change of the fifth quintile is lower than the median change of the fourth quintile, but it is greater than the median change of the third quintile. In terms of the monetary value of the changes in wealth, the results suggest that wealth growth has been broadly 'pro-rich'. However, the middle column of Table 21.5 shows that, in percentage terms, the median change is monotonically decreasing in initial wealth. From this perspective, which seems more appropriate, wealth growth has been 'pro-poor'. Note, however, that to some extent this pattern may reflect the 'mean reversion' phenomenon

**Table 21.5: Changes in individuals' household wealth by initial location in the wealth and income distributions, 2002–2006**

	<i>Median wealth in 2002 (\$)</i>	<i>Median change (\$)</i>	<i>Median change as a % of median in 2002</i>	<i>10th percentile of changes (\$)</i>	<i>90th percentile of changes (\$)</i>
<b><i>Quintile of the 2002 wealth distribution</i></b>					
Bottom quintile	6,809	11,498	168.9	–9,341	255,991
Quintile 2	115,121	87,045	75.6	–62,816	366,609
Quintile 3	280,141	98,626	35.2	–129,324	431,513
Quintile 4	524,668	122,679	23.4	–280,016	642,733
Top quintile	1,104,834	109,615	9.9	–947,564	1,400,024
<b><i>Quintile of the 2002 income distribution</i></b>					
Bottom quintile	100,000	13,845	13.8	–97,656	284,616
Quintile 2	159,941	51,916	32.5	–97,885	360,347
Quintile 3	252,501	87,524	34.7	–258,342	549,482
Quintile 4	333,300	103,862	31.2	–325,425	574,123
Top quintile	553,796	175,085	31.6	–390,706	1,141,855

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices.

discussed in Part A of this Report in reference to income mobility. Some of those initially in the bottom quintile may be there because of measurement error rather than truly low wealth, and some of those in the top quintile may likewise be there because of measurement error rather than because of truly high wealth. If measurement error is not correlated over time, on average these individuals will move towards the middle of the wealth distribution in 2006. If this phenomenon is of significant magnitude, it could mask a true underlying pattern of 'pro-rich' wealth growth.

In considering changes in wealth by quintile of the 2002 distribution of income, the problem of mean reversion is considerably diminished. This analysis is not as readily interpreted as one of whether wealth growth is pro-poor or pro-rich, although it is notable that median wealth in 2002 is increasing in quintile of the income distribution in 2002. The median change in the monetary value of wealth is increasing in location in the 2002

income distribution. In percentage change terms, those in the bottom income quintile in 2002 had considerably lower median wealth growth than the other quintiles, but the median changes for the top four quintiles were quite similar. This implies that, beyond the first quintile, location in the initial (2002) income distribution was not informative about the individual's proportionate growth in wealth between 2002 and 2006.

Table 21.6 shows how individual changes in household wealth differ by demographic characteristics, which are all evaluated in 2002. Of the four household types shown in the table, growth was highest, and most variable, for persons who in 2002 were living in couple households with dependent children. Persons in lone parent households had the lowest median growth, followed by persons in 'other'—mainly single-person—households. It again bears emphasising the enormous variation in wealth changes evident, even with these household groupings. For example, 10% of

**Table 21.6: Distribution of changes in individuals' household net worth by household type, age, educational attainment and location of residence, 2002–2006 (\$)**

	<i>Median change</i>	<i>10th percentile</i>	<i>90th percentile</i>
<b><i>Type of household</i></b>			
Couple, no children	90,451	-146,022	599,980
Couple with children	99,801	-244,961	650,968
Lone parent	14,679	-175,117	284,616
Other	33,527	-181,046	355,962
<b><i>Age group</i></b>			
0–24	52,073	-289,138	541,935
25–34	66,646	-177,378	468,615
35–44	101,919	-115,360	621,000
45–54	116,261	-187,322	709,419
55–64	89,357	-200,247	691,917
65+	45,543	-156,507	320,884
<b><i>Educational attainment</i></b>			
Degree or higher	136,487	-263,526	844,416
Diploma or Certificate III/IV	86,680	-200,247	533,846
High school	55,051	-277,816	580,346
Certificate I/II	23,132	-141,740	511,838
Year 10/11	65,827	-192,301	507,819
Less than Year 10	33,342	-115,320	318,286
<b><i>State of residence</i></b>			
New South Wales	46,947	-318,862	554,921
Victoria	57,013	-195,449	569,836
Queensland	101,186	-141,424	463,702
South Australia	64,337	-151,675	381,353
Western Australia	228,237	-60,628	980,156
Tasmania	64,379	-76,396	407,868
Northern Territory	83,012	-372,763	598,145
Australian Capital Territory	161,388	-345,038	871,950
<b><i>Region</i></b>			
Major city	70,688	-222,290	563,004
Other region	83,012	-155,747	568,912

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices. Characteristics are evaluated in 2002.

persons in couple households with children in 2002 had household wealth grow by more than \$650,968, and a further 10% had wealth fall by more than \$244,961.

Of course, an important mechanism by which an individual's household wealth can change is via changes to household composition—most notably, partnering, separating and dependent children leaving the parental home. This is an issue taken up in greater detail later in this Report, but it is useful to consider the potential nature of these household composition changes and their likely effects for each household type. For a couple with no children, the most likely compositional change that could affect wealth is the couple separating. In general terms, this would lower each member's household wealth, implying that average wealth gains of those who remain partnered are greater than the gains indicated by the median change reported in Table 21.6. For couples with children, wealth could change due to separation or children leaving home, the latter usually resulting in a decrease in household wealth for the child. Again, both above-mentioned changes in household composition would tend to decrease household wealth, implying that households who do not change composition will have higher median growth than indicated in the table.

For lone parent households, partnering or children leaving home could occur, the former tending to increase household wealth, the latter unlikely to have large effects because of the low wealth of lone parent households to begin with. Median growth for lone parent households reported in Table 21.6 is thus likely to overstate the growth that occurs for those that remain lone parent households. Finally, the main potential change to household composition of 'other' households is partnering, tending to increase household wealth and thus implying the reported median change in wealth overstates the median change for those who remain single. In summary, the differences by household type are in fact not accentuated, but rather *attenuated* by the household compositional changes likely to have occurred for some households between 2002 and 2006. That is, differences in changes in wealth by household type are very likely to be *larger* than reported in Table 21.6 if we consider only those people who remained in the same household type between 2002 and 2006.

Median individual changes in wealth by age group reveal a similar, but not identical, age profile to that evident from cross-sectional comparisons of 2002 and 2006. The median wealth change is increasing in age (in 2002) up to the 45–54 years age group, and thereafter decreasing in age. The smaller increase for persons under 25 years of age is because the longitudinal analysis captures wealth declines resulting from leaving the parental home, which cannot be captured by a cross-sectional analysis, which will have approximately the

same number not living with their parents in each of the years. The 10th and 90th percentiles of changes in wealth by age group suggest that the *variability* in individual-level changes is increasing in age over the 25 to 54 years age range (and thereafter decreasing). The difference between the 90th percentile and the 10th percentiles for persons aged 25–34 years is \$645,732, increasing to \$896,741 for persons aged 45–54 years.

Median changes by educational attainment also follow a somewhat similar pattern to that evident in Table 21.2. The median change is particularly high for holders of bachelor's degrees or higher, although the variation in changes among people in this education category is very large. 10% had net worth decrease by more than \$263,526, and 10% had net worth increase by more than \$844,416. As the cross-sectional analysis indicated, persons living in Western Australia, the ACT and, to a lesser extent, Queensland had very large median growth in wealth. Those living outside the major cities also had higher median growth than those living in the major cities. They also had less variability in wealth changes, the change at the 10th percentile being  $-\$155,747$ , compared with  $-\$222,290$  for those living in the major cities, and the change at the 90th percentile being similar for the two regions.

Individual-level changes in each of the eleven major components of net worth are summarised in Table 21.7. The upper panel presents changes evaluated over all persons, while the lower panel examines changes only for those who had assets/debts for the component in 2002. Evaluated over all members of the population, median changes are zero in all components other than owner-occupied housing, superannuation and 'other assets' because of the large number of households that do not possess these components in either year.

The mean increase in the value of owner-occupied housing was \$83,741; restricting to the 71% of individuals whose household owned their home in 2002, the mean increase is slightly lower, at \$79,180. The latter figure is lower because it includes people who sold their home and did not buy another one, but excludes people who did not own a home in 2002 and acquired one between 2002 and 2006. Reflecting this, the mean change in home debt over the entire population was an increase of \$20,191, whereas the mean change in home debt among only those persons who were home owners in 2002 was a *decrease* of \$3,674.

The mean change in the value of other property is, at \$80,546, almost as high as the mean change in the value of owner-occupied homes. The mean increase in other property debt is, furthermore, less than the mean increase in home debt, implying the net contribution to individual changes in wealth is on average higher for investment properties than owner-occupied housing. However, these positive effects are less widely felt than the

increases in value of owner-occupied housing, indicated by the fact that only 18% of individuals were in households that owned other property in 2002, and the mean increase in the value of other property for these individuals was \$145,194. Additionally, only 9% of individuals had household 'other property' debt, which decreased among these individuals by an average of \$45,542.

Mean growth in superannuation was \$29,618, or \$33,299 among the 83% who lived in a household with superannuation in 2002. Superannuation has therefore also been an important contributor to growth in net worth. Household-owned businesses, by contrast, appear to have been a negative influence on individual-level wealth changes, decreasing on average across all persons by \$2,297. Among those who owned businesses in 2002, the mean change was -\$126,183, largely driven by individuals selling the business.

Credit card debt has increased, but this debt component is small relative to other debt components. Significantly, of the one-third of individuals whose household held a credit card in 2002, more than half had their credit card debt fall in 2006, indi-

cated by a median change in credit card debt of -\$562. However, some individuals experienced quite substantial increases in credit card debt, such that the mean change for those with credit card debt in 2002 was a \$205 increase.

### Concluding comments

Wealth growth has been strong and widely distributed amongst the community. Nonetheless, the aggregate cross-sectional pictures mask the substantial dynamism in wealth changes that have been taking place at the individual level. Many individuals have experienced substantial declines in real wealth, and others have experienced much larger increases in wealth than the cross-sectional snapshots would suggest.

House price growth between 2002 and 2006 was clearly very strong, as evidenced by Australian Bureau of Statistics (ABS) house price indices (ABS, 2009), and the single-most important factor underpinning the aggregate growth. However, superannuation, and even share-holdings, have also played an important part in the wealth accumulation that took place between 2002 and 2006.

**Table 21.7: Distribution of changes in each component of individuals' household net worth, 2002–2006 (\$)**

<i>Changes among all persons</i>					
	<i>Mean</i>	<i>Median</i>	<i>10th percentile</i>	<i>90th percentile</i>	
<b>Assets</b>					
Value of own home	83,741	55,093	-93,170	306,521	
Superannuation	29,618	7,901	-57,889	136,003	
Value of other property	80,546	0	0	280,000	
Equity investments	11,032	0	-16,863	20,634	
Value of own business	-2,297	0	-3,727	8,758	
Other assets	7,965	730	-68,257	75,715	
<b>Debts</b>					
Home debt	20,191	0	-67,268	160,062	
Other property debt	16,433	0	0	0	
Credit card debt	511	0	-1,907	3,595	
Other personal debt	4,544	0	-16,863	20,000	
Business debt	-1,123	0	0	0	
<i>Changes among persons with positive values of the component in 2002</i>					
	<i>Percentage &gt;0 in 2002 (%)</i>	<i>Mean</i>	<i>Median</i>	<i>10th percentile</i>	<i>90th percentile</i>
<b>Assets</b>					
Value of own home	70.6	79,180	80,124	-166,959	276,397
Superannuation	82.9	33,299	15,249	-79,820	158,452
Value of other property	18.0	145,194	-3,541	-361,340	550,308
Equity investments	41.2	13,122	-1,573	-76,691	82,546
Value of own business	15.1	-126,183	-22,485	-674,536	387,577
Other assets	99.7	7,933	730	-68,257	75,715
<b>Debts</b>					
Home debt	40.5	-3,674	-12,075	-146,150	157,639
Other property debt	8.6	-45,542	-58,634	-297,920	125,464
Credit card debt	33.8	205	-562	-5,621	6,814
Other personal debt	43.9	-4,109	-4,112	-36,938	26,019
Business debt	6.5	-85,832	-28,106	-292,299	37,752

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices.

### Endnotes

- 1 The questions on wealth in the wave 6 survey were very similar to the wealth questions in the wave 2 survey, ensuring a high degree of comparability of wealth measures across the two waves. There are two minor differences in the questions. First, in 2006, separate information for each of six 'other personal debt' components was obtained, whereas in 2002 only the total of these components was obtained. Second, in 2006 the value of unpaid household bills was obtained separately.
- 2 In part, the difference reflects the fact that wealth is not adjusted for household size (equalised) as is done for income.
- 3 Note that the Gini coefficient excludes persons with negative net worth, which may explain the fact that the Gini coefficient did not decline as did the percentile ratios.

- 4 The growth in millionaires would be even greater if wealth in 2002 had not been scaled up to September 2006 prices.
- 5 In part, the apparent weakness of the association between income and wealth at low levels of income can be attributed to given dollar-value changes in wealth at low wealth levels representing bigger proportionate changes than they do at high wealth levels. The apparent ordering of wealth inequality by income level may also be at least partially an artefact of given dollar values translating to smaller percentage changes at higher wealth levels.

### Reference

Australian Bureau of Statistics (2009) *House Price Indexes: Eight Capital Cities*, ABS Catalogue No. 6416.0, Canberra.

## 22. Experiences of people with the smallest and largest increases in wealth between 2002 and 2006

What happened to the people with the largest increases in wealth, and to the people whose wealth increased the least—or indeed fell? Are there systematic differences in experiences and outcomes of those with the biggest gains and those with the smallest gains? Or do differences in wealth accumulation simply reflect differences in characteristics, preferences (e.g. propensity to save) and various random factors (such as luck in winning a lottery)? We can use the information collected by the HILDA Survey in all of the years between 2002 and 2006 to describe the characteristics and experiences of people with the smallest wealth gains, and people with the largest wealth gains, in order to shed light on these questions.

We define the 'smallest gains' and 'largest gains' groups as follows. The median of each decile of the 2002 net worth distribution is identified, and then each individual's change in household wealth is expressed as a proportion of the median of the decile of the 2002 distribution to which the individual belonged. This produces a measure of each individual's proportionate change in net worth that reduces the occurrence of extreme values caused by very low initial wealth. For example, any change in net worth is of infinite magnitude in percentage terms if an individual has zero initial net worth. Note also that expressing changes simply in terms of 'dollar changes' is not a desirable alternative to a 'proportionate change' measure, because it will over-represent the wealthy in both the smallest-increase and biggest-increase groups, since they tend to have the largest dollar changes in wealth, in both upward and downward directions.

Given the above measure of wealth change, we then assign each individual to a quintile of the distribution of changes. Those allocated to the bottom quintile—the 20% of the population with the lowest percentage increases in net worth—constitute the 'lowest-increase' group. Those allocated to the top quintile—the 20% of the population with the largest percentage increases in net worth—constitute the 'biggest-increase' group.

For all of the analysis, we exclude persons under 25 years of age in 2002. The primary motivation is that many children will move out of the parental home between 2002 and 2006 and are then likely to dominate the low-growth group because of the precipitous decline in household (but not personal) wealth that accompanies the move. Such sources of wealth changes are of little interest from a research or policy perspective.<sup>1</sup> Our analysis is therefore of individuals who, in 2002, were

#### 'Smallest wealth-gain' and 'largest wealth-gain' groups

For the purposes of identifying the two 'wealth-gain' groups, an individual's 'wealth-gain' is defined to be the change in household net worth of that individual between 2002 and 2006 relative to the median (mid-point) of the 2002 wealth decile to which the individual belonged. Individuals are then sorted by wealth-gain from lowest to highest, with the bottom 20% comprising the 'smallest wealth-gain' group (some or all of whom may have experienced *declines* in wealth) and the top 20% of people comprising the 'largest wealth-gain' group.

**Table 22.1: Wealth of those with the least growth in wealth and those with the greatest growth in wealth**

	<i>Least growth in wealth</i>	<i>Greatest growth in wealth</i>	<i>All persons</i>
Median wealth in 2002 (\$)	406,127	76,470	316,613
Median wealth in 2006 (\$)	186,000	372,500	427,891
Median growth in wealth (%)	-52.2	325.5	35.2

*Note:* Population weighted results. Population is persons over 25 years of age in 2002.

over the age of 25 years, which is in any case the age at which the issue of wealth accumulation takes on significance. Furthermore, it is when individuals are over 25 years of age that their experiences and outcomes are likely to be relevant to wealth accumulation.

Table 22.1 provides details on the wealth levels and growth of the two groups. Median wealth in 2002 was \$406,127 for the low-growth group and \$76,470 for the high-growth group. Thus, the low-growth group tends to be those who initially held considerable wealth, and the high-growth group tends to be those with relatively little to begin with. The median proportionate growth was -52.2% for the low-growth group and 325.5% for the high-growth group.

### Characteristics of the wealth-gain 'winners' and 'losers'

Table 22.2 compares demographic characteristics of individuals with the lowest growth in wealth and individuals with the greatest growth in wealth. The distribution of these individuals across the basic four household types is not greatly different. Those in the low-growth group are less likely to be in couple households with or without children than those in the high-growth group, and somewhat more likely to be in single-person households. Both groups are less likely to be in couple households without children in 2002 than the general population, and both are more likely to be in lone parent households in 2002. The two groups do, however, have differences in the number of

**Table 22.2: Demographic characteristics in wave 2 of those with the least growth in wealth and those with the greatest growth in wealth**

	<i>Least growth in wealth</i>	<i>Greatest growth in wealth</i>	<i>All persons</i>
<b>Type of household (%)</b>			
Couple, no children	24.3	26.5	29.9
Couple with children	39.8	43.4	42.8
Lone parent	11.6	11.0	8.7
Other	24.2	19.1	18.6
Total	100.0	100.0	100.0
Mean number of children aged under 15 years	0.6	0.8	0.6
<b>Age group (%)</b>			
25-34 years	24.7	38.3	22.3
35-44 years	21.6	29.7	24.5
45-54 years	20.6	16.2	22.0
55-64 years	15.8	9.8	15.3
Over 65 years	17.2	6.0	15.9
Total	100.0	100.0	100.0
<b>Educational attainment (%)</b>			
Degree or higher	15.7	20.8	18.9
Diploma or Certificate III/IV	30.1	27.1	29.0
High school	13.3	13.1	12.2
Certificate I/II	1.6	2.6	2.0
Year 10/11	22.0	23.3	23.3
Less than Year 10	17.3	13.2	14.5
Total	100.0	100.0	100.0
Full-time student (%)	17.2	10.3	9.5
Mean general health (SF-36)	66.6	70.0	68.5
Disabled (%)	28.9	20.0	23.7
Disability in household (%)	43.5	31.2	36.7
Home owner (%)	67.3	52.6	75.3

*Notes:* Population weighted results. Population is persons over 25 years of age in 2002. Percentages may not add up to 100 due to rounding.

dependent children, people in the low-growth group averaging 0.6 children per household and people in the high-growth group averaging 0.8 children per household.

The age profiles of the low- and high-growth groups differ considerably. Consistent with the prime-age years being the main wealth accumulation years, the high-growth group is predominately between 25 and 45 years of age. The low-growth group, by contrast has relatively high proportions in the young and older age groups—25–34 year olds and over 55s, respectively. While the prevalence of low-growth among the older age groups is unsurprising, it is at first glance surprising that younger individuals are over-represented in both the highest and lowest groups. In particular, it is perhaps not immediately obvious why younger age groups are over-represented in the low-growth group. One likely explanation is that this over-representation is driven by persons in this age range moving out of the parental home.

Educational attainment is not greatly different for the two groups compared with the general population, although the low-growth group has a relatively low proportion with bachelor degree qualifications and a relatively high proportion that has not completed Year 10. Full-time enrolment in education was considerably higher for the low-growth group in 2002 than for the high-growth group, which in turn had a slightly higher rate of enrolment than the general population.

Mean health as measured by the SF-36 general health measure was somewhat lower in 2002 for the low-growth group and higher for the high-growth group than mean health in the general population. More pronounced are differences in the rates of personal and household disability: 29% of those in the low-growth group were disabled in 2002, compared with 20% in the high-growth group and 24% in the general population;

and 44% of those in the low-growth group lived in a household containing a disabled person, compared with 31% of the high-growth group and 37% of the population. Disability within the household can provide an indication not only of lower ability to work of the person with the disability, but also lower ability to work of other household members who may need to provide care for the disabled person.

Both the low-growth and high-growth groups had lower rates of home ownership in 2002 than the population at large. Surprisingly, the high-growth group had the lowest rate of home ownership of all—53%. One explanation for the low initial rate of home ownership among the high growth group is that the purchase of a dwelling is itself a significant driver of wealth increases (something we directly consider later in this chapter).

Table 22.3 indicates that the lowest-growth group is disproportionately comprised of persons who in 2002 were resident in New South Wales. These residents accounted for 43% of the low-growth group, but only 28% of the high-growth group. Residents of Western Australia and Queensland, by contrast, are significantly over-represented in the high-growth group and under-represented in the low-growth group. House price growth over the 2002 to 2006 period is an important contributor to this pattern. More generally, Western Australia and Queensland have been the primary beneficiaries of the resources boom, which has had direct effects on employment and incomes, and in all probability also had indirect effects on property prices.

People living outside the major cities were relatively less likely to have low wealth growth and also relatively more likely to have high wealth growth, making up 31% of the low-growth group, 35% of the high growth group, and 32% of the population aged over 25.

**Table 22.3: Location of residence of those with the least growth in wealth and those with the greatest growth in wealth (%)**

	<i>Least growth in wealth</i>	<i>Greatest growth in wealth</i>	<i>All persons</i>
<b><i>State of residence</i></b>			
New South Wales	42.5	27.8	34.5
Victoria	25.4	21.1	24.9
Queensland	14.5	20.7	18.1
South Australia	7.1	8.6	7.8
Western Australia	6.0	16.1	10.1
Tasmania	1.9	3.4	2.3
Northern Territory	0.8	0.8	0.7
Australian Capital Territory	1.7	1.6	1.6
Total	100.0	100.0	100.0
<b><i>Remoteness of region of residence</i></b>			
Major city	69.1	65.2	67.6
Other region	30.9	34.8	32.4
Total	100.0	100.0	100.0

*Notes:* Population weighted results. Population is persons over 25 years of age in 2002. Percentages may not add up to 100 due to rounding.

Initial labour force status and income of the least-growth and greatest-growth wealth groups is considered in Table 22.4. Consistent with (substantial) employment being key to wealth accumulation, the initial rate of full-time employment was 40% for the low-growth group, 51% for the high-growth group and 45% for the population aged 25 and over. However, these differences are perhaps not as large as expected. Also significant is that the low-growth group had an initial level of unemployment of 3.3% of persons, whereas the high-growth group had 3.9% unemployed (although their higher rate of labour force participation meant that the unemployment *rate*, which measures unemployment relative to those in the labour force, was slightly lower).

Household full-time employment rates in 2002 follow the same pattern as the personal rates, being lower than the general population for the low-growth group and higher for the high-growth. Finally, mean equivalent income in 2002 displays the expected ordering across the groups, given that it is a primary determinant of ability to accumulate wealth. That is, mean income was highest for the high-growth group and lowest for the low-growth group. However, differences were not large—the mean income of the high-growth group being less than 10% higher than the mean income of the low-growth group.

### Outcomes and experiences of wealth-gain ‘winners’ and ‘losers’

The above discussion suggests that differences in initial characteristics play some role in influencing whether an individual had very low (bottom 20%) growth, very high (top 20%) growth, or medium-level (middle 60%) growth. This does not, how-

ever, rule out an important role for outcomes and experiences in the period between 2002 and 2006 in affecting wealth growth.

In Table 22.5, we look at changes between 2002 and 2006 in characteristics of individuals in the low- and high-growth groups. The characteristics examined essentially correspond to those considered in Table 22.2. A number of differences between the two groups are apparent. Those in the high-growth group are more likely to be partnered, more likely to partner and less likely to separate than those in the low-growth group. The high-growth group is more likely to have had dependent children, with the low-growth group actually experiencing a slight decline in the mean number of dependent children. A small proportion, 3.5%, of the low-growth group are young people who moved out of the parental home between 2002 and 2006, and therefore did not necessarily have adverse changes in their personal wealth.

Mean health remains lower for the low-growth group over the 2002 to 2006 period, although it declines less over the period than it does for the high-growth group. The rates of personal and household disability also remain higher for the low-growth group, and in fact increase slightly relative to the high-growth group between 2002 and 2006. The low-growth group starts out with a 15 percentage point higher rate of home ownership than the high-growth group, but ends up with a 15 percentage point *lower* rate of home ownership in 2006. This arises via 16% of the low-growth group moving from home ownership to non-ownership, and via 19% of the high-growth group moving from non-ownership to ownership.

Table 22.6 examines labour market activity and household income between 2002 and 2006. The

**Table 22.4: Labour force status and income in 2002 of those with the least growth in wealth and those with the greatest growth in wealth**

	<i>Least growth in wealth</i>	<i>Greatest growth in wealth</i>	<i>All persons</i>
<b>Labour force status (%)</b>			
Employed full-time	39.7	50.6	44.5
Employed part-time	14.9	19.2	16.6
Unemployed	3.3	3.9	2.7
Not in the labour force	42.0	26.3	36.2
Total	100.0	100.0	100.0
<b>Household employment status (%)</b>			
Someone employed full-time	58.6	72.3	65.7
Someone employed part-time; no one full-time	9.7	10.8	9.0
No one employed	31.7	16.9	25.3
Total	100.0	100.0	100.0
<b>Household income (\$)</b>			
Mean annual labour income	56,211	58,561	59,047
Mean equivalised annual income	33,705	36,909	35,447
<i>Notes: Population weighted results. Population is persons over 25 years of age in 2002. All monetary values expressed at September quarter 2006 prices. Percentages may not add up to 100 due to rounding.</i>			

low-growth group had lower participation in employment, and in full-time employment in particular, but it is essentially a case of the differences evident in 2002 persisting through to 2006. Between 2002 and 2006, there was only a slight net transition out of employment for the low-growth

group (i.e. slightly more people went from employment in 2002 to non-employment in 2006 than in the reverse direction) and only a slight net transition *into* employment for the high-growth group. Differences in transitions into and out of employment at the household level, especially full-time

**Table 22.5: Changes in individuals' characteristics, 2002–2006**

	<i>Least growth in wealth</i>	<i>Greatest growth in wealth</i>	<i>All persons</i>
<b>Partner status (%)</b>			
Partnered in both 2002 and 2006	49.9	64.8	67.0
Partnered in 2002 only	11.2	4.5	5.4
Partnered in 2006 only	5.6	9.2	4.4
Not partnered in 2002 or 2006	33.3	21.5	23.3
Total	100.0	100.0	100.0
<b>Dependent children (%)</b>			
Neither 2002 or 2006	66.2	47.4	62.3
Both 2002 and 2006	23.0	36.0	25.5
2002 only	7.7	7.4	7.0
2006 only	3.1	9.2	5.2
Total	100.0	100.0	100.0
Mean change in number of dependent children	-0.1	0.0	0.0
<b>Living in parental home (%)</b>			
Neither 2002 or 2006	94.7	98.7	97.6
Both 2002 and 2006	1.8	1.2	1.6
2002 only	3.5	0.1	0.8
Total	100.0	100.0	100.0
<b>Full-time student (%)</b>			
Neither 2002 or 2006	96.9	96.3	97.8
Both 2002 and 2006	0.2	0.2	0.2
2002 only	2.3	2.5	1.5
2006 only	0.6	1.0	0.6
Total	100.0	100.0	100.0
<b>Health (SF-36)</b>			
Mean change in general health	-1.8	-2.1	-1.8
Mean general health 2002–2006	65.7	69.7	68.2
<b>Disability (%)</b>			
Neither 2002 or 2006	54.4	67.6	61.4
Both 2002 and 2006	22.9	14.4	18.1
2002 only	6.2	5.7	5.6
2006 only	16.5	12.3	14.9
Total	100.0	100.0	100.0
<b>Household disability (%)</b>			
Neither 2002 or 2006	38.3	52.9	45.4
Both 2002 and 2006	33.0	22.9	27.9
2002 only	11.3	7.6	8.5
2006 only	17.4	16.6	18.1
Total	100.0	100.0	100.0
<b>Home owner (%)</b>			
Neither 2002 or 2006	30.2	28.4	18.3
Both 2002 and 2006	51.5	49.7	70.1
2002 only	15.8	2.9	5.2
2006 only	2.5	19.0	6.3
Total	100.0	100.0	100.0
<i>Notes: Population weighted results. Population is persons over 25 years of age in 2002. Percentages may not add up to 100 due to rounding.</i>			

employment, are somewhat greater, however. The outflow from household full-time employment between 2002 and 2006 was 12% for the least-growth group and 6% for the greatest-growth group, while the inflow was 5% for the least-growth group and 9% for the greatest-growth group.

The most striking results presented in Table 22.6 are the differences in household income over the 2002 to 2006 period. The high-growth group had mean equivalent income of \$40,610 per year over

the period, compared with \$31,452 for the low growth group—a 29% difference. At September 2006 prices, the mean change in annual equivalent income from 2002 to 2006 was an increase of \$6,863 for the high-growth group, and a *decrease* of \$564 for the low-growth group.

Figure 22.1 shows the proportions experiencing each major life event at any stage of the four years between wealth measurement—that is, between 2002 and 2006. These extreme groups in terms of

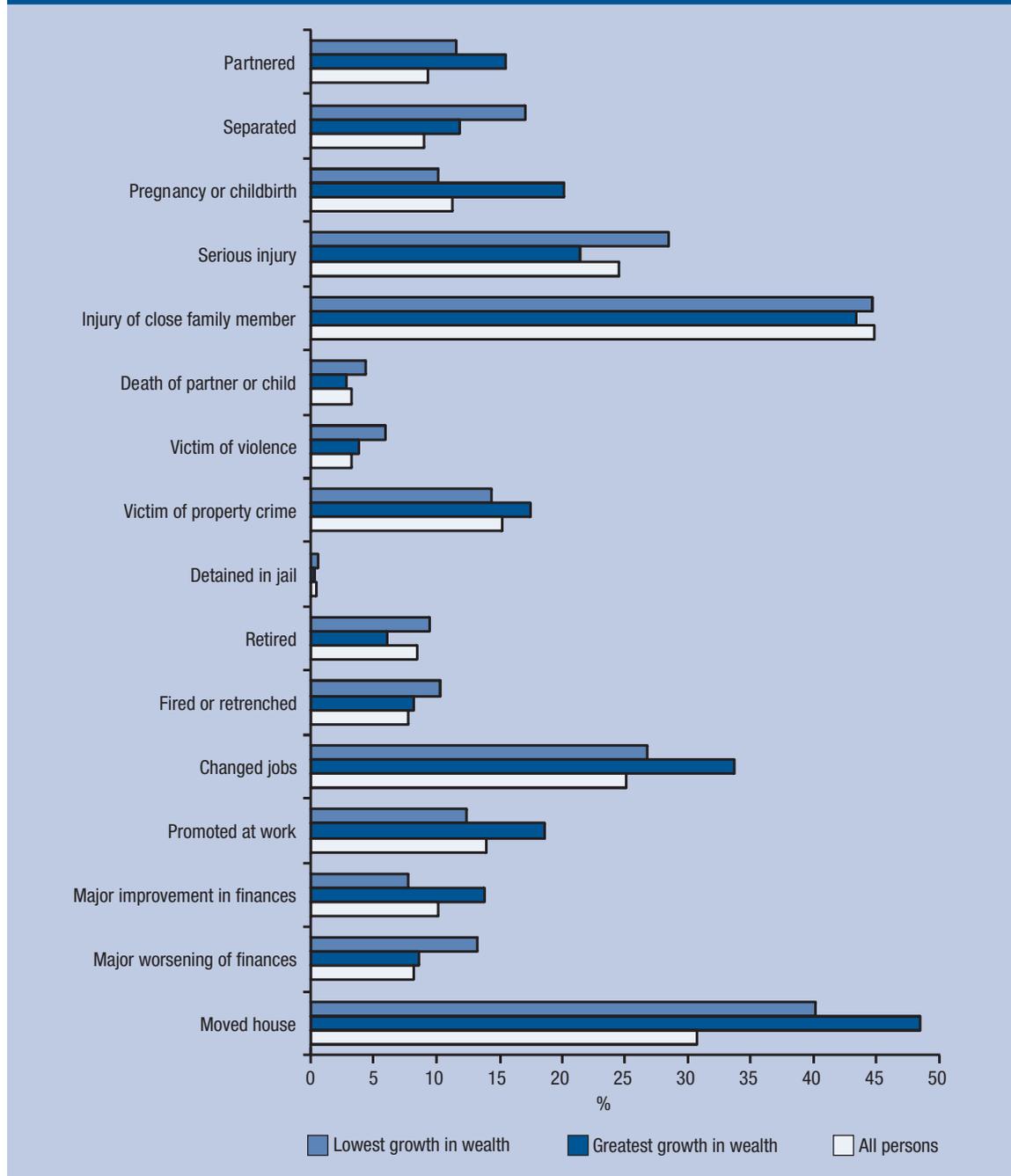
**Table 22.6: Changes in individuals' personal and household labour force status and household income, 2002 and 2006**

	<i>Least growth in wealth</i>	<i>Greatest growth in wealth</i>	<i>All persons</i>
<b>Employed (%)</b>			
Both 2002 and 2006	46.7	62.0	53.8
2002 only	7.8	7.8	7.3
2006 only	7.8	8.6	6.6
Neither 2002 or 2006	37.7	21.6	32.3
Total	100.0	100.0	100.0
<b>Full-time employed (%)</b>			
Both 2002 and 2006	30.5	41.9	36.0
2002 only	8.9	8.5	8.4
2006 only	7.7	10.1	7.0
Neither 2002 or 2006	52.9	39.5	48.6
Total	100.0	100.0	100.0
<b>Unemployed (%)</b>			
Both 2002 and 2006	0.4	0.3	0.4
2002 only	3.0	3.6	2.4
2006 only	3.8	1.2	1.6
Neither 2002 or 2006	92.8	94.8	95.7
Total	100.0	100.0	100.0
<b>Employment in household—mean over the 2002–2006 period (%)</b>			
At least 1 member employed full-time	53.6	74.7	62.8
At least 1 member employed part-time, none full-time	10.4	9.8	9.4
No one employed	36.0	15.5	27.8
Total	100.0	100.0	100.0
<b>Any household member employed (%)</b>			
Both 2002 and 2006	57.7	78.3	67.7
2002 only	9.1	4.7	6.6
2006 only	4.1	5.7	3.7
Neither 2002 or 2006	29.0	11.3	22.1
Total	100.0	100.0	100.0
<b>Any household member employed full-time (%)</b>			
Both 2002 and 2006	45.1	66.0	56.1
2002 only	12.4	5.8	9.0
2006 only	5.4	9.0	5.3
Neither 2002 or 2006	37.0	19.2	29.6
Total	100.0	100.0	100.0
<b>Household annual income (\$)</b>			
Mean household income 2003–2006	54,888	73,167	65,221
Mean equivalised household income 2003–2006	31,452	40,610	36,382
Mean change in equivalised household income	–564	6,863	3,272
<i>Notes: Population weighted results. Population is persons over 25 years of age in 2002. Percentages may not add up to 100 due to rounding.</i>			

wealth changes are in general more likely to have major life events occur than are other people. It seems that major life events, including events of the same type—namely, moving house, partnering, separating, changing jobs and even being fired or retrenched—can be either detrimental or beneficial to wealth changes. Differences between the two wealth-change groups in the incidence of most life events are, nonetheless, evident. They are generally consistent with expectations. High-growth individuals are more likely to have partnered and are less likely to have separated than the low-growth indi-

viduals. They are less likely to have suffered a serious injury, had a partner or child die, have been a victim of violent crime, have retired from the work force, have been fired or retrenched from their job, and—of course—had a major worsening of their finances. They are more likely to have had a close family member get seriously injured, have been a victim of a property crime, changed jobs, been promoted at work, had a major improvement in finances, and have moved house. The (slightly) higher rate of family injury may simply reflect the high-growth group having a larger average family

**Figure 22.1: Percentage experiencing major life events in the four years between wave 2 and wave 6**



Notes: Population weighted results. Population is persons over 25 years of age in 2002.

size, since a higher proportion of the high-growth group have partners and dependent children. The higher rate of property crime for the high-growth group could possibly be because they tend to be at home less—for example, because they are more likely to be employed full-time—and therefore are more vulnerable to burglary.

The proportion experiencing pregnancy or childbirth is also higher among high-growth people, which is perhaps not expected, since one would not, at first glance, think children are beneficial to wealth accumulation. However, it may be that plans to give birth alter behaviour, including the decision to purchase a home and to save money for an anticipated income drop and increased needs when the mother stops work and gives birth. It is also possible that wealth growth impacts on fertility: persons with improving financial security may feel better able to cope with the financial demands of (additional) children. It should furthermore be noted that the association between income growth and childbirth may reflect other differences in characteristics associated with wealth changes that also happen to be correlated with childbirth, such as their age profile and extent of partnering.

## 23. Housing wealth

As our analysis of the components of wealth earlier in this Report demonstrates, by far the single-most important component of household wealth is housing wealth. In this section, we consider in more detail what has happened to individuals' housing wealth between 2002 and 2006. This includes examining levels and changes in home ownership, housing values, housing debt and housing net worth.

We examine holdings of both owner-occupied housing and 'other property', which mostly consists of investment properties and holiday homes. All of the analysis is restricted to persons aged 18 years and over, and we also assume all persons aged 18 years and over living with their parents own no property. That is, we assume the home and other property owned by the household is actually solely owned by their parents.<sup>1</sup>

### Housing wealth

A household's housing wealth is equal to the value of housing owned by household members, whether residing in that housing or not, minus mortgage debt owed on that housing.

### Property ownership in 2002 and 2006

According to the HILDA data (Table 23.1), in both 2002 and 2006, approximately 63% of individuals

### Conclusion

Those with the biggest wealth gains between 2002 and 2006 were largely prime-age persons and a key factor in their observed wealth growth was ownership or purchase of a home. Residing in Western Australia or Queensland was also very helpful to wealth growth over this period, not only because of the house price growth in those states, but also because employment and income growth was strong and therefore conducive to maintaining the household income needed to service mortgage debt on the home. However, given the unevenness of house price growth over time, and the significant differences in the timing of 'surges' in house prices across regions of Australia, it seems unlikely that the very high representation of residents of these states in the highest-growth quintile could persist over the longer-term, even if the resources boom continues unabated.

### Endnote

- 1 It would be possible to exclude only those who move out of the parental home, but the results obtained for the remaining individuals under 25 years of age would be difficult to interpret, because they would not be representative of all individuals in this age range.

were owner-occupiers. Between 2002 and 2006, the proportion owning their primary residence as well as other property increased from 13% to 16%, and the proportion not owning their primary residence but owning other property increased from 2.7% to 3.5%. At September 2006 prices, the mean value of owner-occupied homes (based on owners' estimates) was \$326,252 in 2002 and \$423,519 in 2006, a real (inflation-adjusted) increase of 30% in just four years. The median estimated value was \$269,805 in 2002 and \$350,000 in 2006, also a 30% increase. Interestingly, the percentage change in estimated home value is lower the higher up the distribution of home values we look. The value of the home at the 10th percentile was 73.5% higher in 2006 than in 2002, whereas the value of the home at the 90th percentile was only 24.5% higher in 2006 than in 2002. This would imply inequality in the distribution of home values really has decreased markedly in the four-year period, which is quite possible if lower-priced regions of Australia had faster house price growth than higher-priced regions.

A household's net home wealth depends on not only the value of the home, but also the debt held against it. Table 23.2 presents information on the distribution of home debt. Just under one-third of the (adult) population held any home debt in 2002, implying (in conjunction with Table 23.1) that 31% owned their homes outright. The proportion

carrying home debt increased slightly in 2006, to 34%. Among those with home debt, the mean debt increased by 39% to \$181,509 in 2006; median debt increased 41% to \$149,500. Average debt has therefore grown at a faster rate than average home values. Further accentuating the increase in debt per home (over all owner-occupied homes) is the increase in the proportion of owner-occupied home carrying debt, from 51% (32 divided by 63.2) to 54% (33.9 divided by 62.7). Note that this change in home values and home debt has not translated into a decrease in net housing wealth, because the dollar value of the average increase in home values far exceeds the dollar value of the average increase (over all homes) in home debt.

In Table 23.3 we turn to net housing wealth, inclusive of property other than owner-occupied housing. In 2002, less than 1% of adults had negative net housing wealth, meaning they owed more money for property they owned than that property was worth. In 2006, just over 1% of adults had negative net housing worth. Somewhat remarkably, the mean net housing worth among individuals with negative net housing worth was -\$89,424 in 2002, and -\$112,364 in 2006. 'Negative

equity' of this magnitude has the potential to create very precarious financial circumstances for the individuals concerned.

Most property owners of course have positive net housing wealth. Among these individuals, average housing wealth was \$288,393 in 2002 and had increased to \$379,759 in 2006, a 32% increase. Consistent with the changes in home values by location in the distribution, the percentage increase in housing wealth is lower the higher is initial housing wealth: the 10th percentile increased by 46%, compared with a 25% increase in the 90th percentile.

ABS house price data (ABS, 2009) show that there can be substantial differences in house price growth across the states and territories over the medium-term. There is also the potential for rates of home ownership and levels of home debt to vary considerably across regions. In the top panel of Table 23.4, regional differences in levels and changes in home ownership rates, average home values and average net home worth are examined. The data indicate that there was some diversity in rates of home ownership in 2002, with the Northern Territory and the ACT in particular having high

**Table 23.1: Home ownership**

	2002	2006	Change
<b>Proportion owning property (%)</b>			
Primary residence only	50.2	46.5	-3.7
Primary residence and other property	13.0	16.2	3.2
Other property only	2.7	3.5	0.8
Own no property	34.1	33.7	-0.4
Total	100.0	100.0	
<b>Home owners: Value of primary residence (\$)</b>			
Mean	326,252	423,519	29.8%
10th percentile	112,419	195,000	73.5%
25th percentile	168,628	260,000	54.2%
Median	269,805	350,000	29.7%
75th percentile	393,466	500,000	27.1%
90th percentile	562,114	700,000	24.5%

Notes: Population weighted results. All monetary values expressed at September quarter 2006 prices. Percentages may not add up to 100 due to rounding.

**Table 23.2: Home debt**

	2002	2006	Change
Proportion with home debt (%)	32.0	33.9	1.9
<b>Persons with home debt: Value of debt (\$)</b>			
Mean	130,804	181,509	38.8%
10th percentile	24,733	30,000	21.3%
25th percentile	56,211	70,000	24.5%
Median	105,790	149,500	41.3%
75th percentile	168,634	255,000	51.2%
90th percentile	276,560	369,000	33.4%

Notes: Population weighted results. All monetary values expressed at September quarter 2006 prices.

rates of ownership, but that there has been some convergence in home ownership rates by 2006.

Differences in mean home values across the states were very large in 2002, ranging from \$149,510 in Tasmania to \$461,556 in New South Wales. Differential rates of growth between 2002 and 2006 have meant that the differences are generally (proportionately) smaller in 2006, with lower-value areas tending to grow faster than the higher-value areas. Growth was especially strong in Western Australia, which saw the real mean home value *double* in only four years. Queensland and the Northern Territory also had very strong growth.<sup>2</sup>

Differences in home ownership, home values and home debt by age are presented in the lower panel of Table 23.5. It shows home ownership is increasing in age up to the 55–64 year age range. This age profile is in part simply reflecting ‘age effects’—that as we age, we are more likely to own

our home—but it is also capturing ‘cohort differences’ in home ownership: people of different age cohorts (in essence, different generations) will have different rates of home ownership when at the same age. We see that the rate of home ownership is lower in 2006 than in 2002 for every age group other than the 65 and over group, a pattern which would be consistent with lower rates of home ownership at each age for more recent birth cohorts. That is, in 2006, the members of each age group will on average have been born more recently than the members of the age group in 2002 (e.g. a 24 year old in 2002 was born in 1978, while a 24 year old in 2006 was born in 1982). Thus, lower rates of home ownership for more recent birth cohorts would produce the observed time trend in home ownership rates by age.

In common with rates of ownership, average home value also increases with age, although in this case only up to the 45–54 years age range,

	2002	2006	Change
<b>Persons with negative net housing wealth</b>			
Proportion of all persons (%)	0.9	1.2	0.3
Mean net housing wealth (\$)	-89,424	-112,364	-25.7%
<b>Persons with positive net housing wealth</b>			
Proportion of all persons (%)	62.2	61.5	-0.7
Mean net housing wealth (\$)	288,393	379,759	31.7%
10th percentile of net housing wealth (\$)	65,203	95,000	45.7%
25th percentile of net housing wealth (\$)	123,661	180,000	45.6%
Median of net housing wealth (\$)	224,838	300,000	33.4%
75th percentile of net housing wealth (\$)	359,740	455,000	26.5%
90th percentile of net housing wealth (\$)	562,114	700,000	24.5%

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices.

	<i>Home owners (%)</i>		<i>Mean home value (\$)</i>		<i>Mean net home worth (\$)</i>	
	2002	2006	2002	2006	2002	2006
<b>State of residence</b>						
New South Wales	60.4	60.2	461,556	555,790	379,881	442,426
Victoria	66.0	64.7	344,258	413,456	287,506	331,773
Queensland	61.9	63.0	263,056	409,527	198,308	310,413
South Australia	64.3	62.9	223,896	322,315	184,577	259,304
Western Australia	65.3	65.4	291,055	583,434	225,969	474,044
Tasmania	63.8	66.8	149,510	301,014	116,346	231,982
Northern Territory	74.3	63.2	275,826	413,796	187,025	317,045
Australian Capital Territory	70.0	62.0	376,743	484,031	283,054	318,320
<b>Age group (years)</b>						
18–24	12.0	10.3	283,724	342,497	169,839	202,260
25–34	44.1	42.6	300,556	393,897	166,615	195,797
35–44	69.0	68.8	357,709	460,594	252,505	302,737
45–54	80.5	77.7	383,314	512,503	318,299	404,627
55–64	83.3	83.0	370,655	507,929	343,274	458,692
65+	82.4	82.8	321,223	445,416	313,909	437,122

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices.

after which some decline is evident. Average *net* home wealth, however, does not peak until the 55–64 years age group, reflecting outstanding mortgage debt of the younger age group. Curiously, home owners in the 18–24 years age group have higher mean net worth than home owners in the 25–34 years age group. This is likely to be due to the nature of the (rather select) group of 18–24 year olds that own homes. For example, they may more-commonly have been bequeathed the home than owners in the other age groups. Beyond the 18–24 years age group, average net housing worth rises more steeply than average home value, a function of home debt decreasing in age as the mortgage principal is paid off.

### Individual changes in home ownership and housing wealth

The analysis presented so far does not provide any indication of the changes at the individual level in home ownership, home values and home debts. For example, we do not know what proportion of home owners in 2002 were still home owners in 2006. In this section, we consider this longitudinal dimension of what has happened to individuals. We first consider, in Table 23.5, the degree of ‘fluidity’ in property ownership, examining changes in both home ownership status and other property ownership status. The table shows that nearly 5% of persons were owner-occupiers in 2002 but were not in 2006, while 8% of persons were not owner-occupiers in 2002 but were in 2006. While we cannot determine whether a person has previously been an owner-occupier for all respondents, it is likely that a significant proportion of the 8% who became owner-occu-

**Table 23.5: Individuals’ housing ownership in 2002 and 2006 (%)**

	<i>Home</i>	<i>Other property</i>
In 2002 only	4.8	5.5
In 2006 only	8.0	10.6
In 2002 and 2006	60.2	11.3
Neither in 2002 nor 2006	27.0	72.6
Total	100.0	100.0

*Notes:* Population weighted results for persons aged 18 years and over in 2002. Percentages may not add up to 100 due to rounding.

piers were first-home buyers. 60% of adults were in owner-occupied housing in both years. There is considerably more fluidity in ownership of other property, at least among those who owned other property in 2002 and/or 2006. Of the 27% of people in this category, 20% (5.5% of all people) owned non-home property only in 2002, and 39% (10.6% of all people) owned non-home property only in 2006.

Table 23.6 presents statistics on individual-level changes in home value and in net home wealth for persons who were home owners in 2002 and/or 2006. Four groups are distinguished. The first column applies to persons who owned a home in 2002 but not 2006. Growth in home value is necessarily negative for these individuals, while net housing wealth will also decline unless housing debt had exceeded home value. The second column covers persons who did not own a home in 2002. The growth in home value for these individuals is simply the value of the home in 2006. However, the change in net home wealth is a

**Table 23.6: Changes in home-owner housing wealth**

	<i>Home owner in 2002 only</i>	<i>Home owner in 2006 only</i>	<i>Home owner in both 2002 and 2006</i>	
			<i>Living in the same house</i>	<i>Living in a different house</i>
Proportion (%)	4.4	7.8	30.9	29.4
<b>Home value in 2002 (\$)</b>				
Mean	290,687	n.a.	361,466	338,871
Median	224,845	n.a.	303,541	275,436
<b>Home value in 2006 (\$)</b>				
Mean	n.a.	375,738	484,352	479,488
Median	n.a.	345,000	400,000	400,000
<b>Changes in home value</b>				
Mean (\$)	–290,687	375,738	122,885	140,617
Median (\$)	–224,845	345,000	87,886	100,714
Mean (%)	n.a.	n.a.	50.0	63.4
Median (%)	n.a.	n.a.	33.4	44.2
<b>Changes in net home wealth</b>				
Mean	–197,056	187,593	116,151	113,925
Median	–122,541	145,000	87,577	90,247
Mean (%)	n.a.	n.a.	92.2	77.6
Median (%)	n.a.	n.a.	38.4	42.4

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices.

function of both the property value and the mortgage debt on the property.

The third and fourth columns relate to persons who were home owners in both waves 2 and 6. The third column applies to persons who remained in the same house in the four years between 2002 and 2006. For these individuals, changes in home values reflect property price increases and improvements made by owners to their homes. Column 4 applies to persons who moved to a different house between 2002 and 2006.<sup>3</sup> Changes in home value therefore reflect changes in houses occupied, as well as the property price and home improvement effects applicable to those who did not buy or sell housing.

Individuals who were home owners only in 2002 had a median decline in home value of \$224,845 and a median decline in home net worth (net of the change in home debt) of \$122,541, implying the median debt on the home in 2002 was \$102,304. The median home value in 2006 of individuals who acquired owner-occupied housing between 2002 and 2006 (and did not own their home in 2002) was \$345,000. Net home wealth for these individuals had a median increase of \$145,000, implying median home debt was \$200,000.

Among individuals who were home owners in both 2002 and 2006, just under half moved house between 2002 and 2006. Movers on average owned lower-value homes in 2002 than non-movers (“stayers”), but in 2006 on average had very similar home values. Movers thus had greater median growth in home value, implying the moves on average involved ‘upgrading’ to higher quality homes, whether that be in terms of house size, location or other amenity. That is, movers on average moved to better homes than their 2002 homes. The bottom panel of Table 23.6 shows that

the upgrading was largely facilitated by increased debt, since the dollar value of the median increase in net home wealth of movers was only slightly greater than that experienced by stayers, and the mean increase was actually slightly lower.

### Conclusion

The strong house prices growth over the 2002 to 2006 period has resulted in similarly strong growth in housing wealth, although it has also led to reasonably strong growth in housing debt. Some evidence of a decline in home ownership is apparent over the four-year period, particularly among persons under 55 years of age, which may in part be attributable to the strong growth in house prices. Whether this simply represents a short-term dip in home ownership rates or is part of a longer-term trend remains to be seen.

### Endnotes

- 1 While in principle we can identify whether people living with their parents own other property, we cannot identify the value of this property as distinct from property owned by their parents, nor how much debt is held on the property.
- 2 Note that people residing in remote areas are under-represented in the HILDA Survey sample.
- 3 Respondents were asked in wave 6 if they had sold their home in the last four years. While some of these individuals remained in the same house, most moved houses. To account for persons who had moved but had not sold their home (e.g. because they kept the first house as an investment property), changes in the reported purchase date of the home between Wave 2 and Wave 6 are interpreted as signalling a change in home.

### Reference

Australian Bureau of Statistics (2009) *House Price Indexes: Eight Capital Cities*, ABS Catalogue No. 6416.0, Canberra.

## 24. Credit card debt

A recurring theme in the news media is that household debt is increasing to unsustainable levels, and key to the growth in debt is high levels of, and growth in, credit card debt.<sup>1</sup> Such commentary is generally based on aggregate-level data on credit card use and debt produced by the Reserve Bank of Australia.<sup>2</sup> While this data shows total credit card debt at \$22 billion in September 2002 and \$37 billion in September 2006, it is not clear that this translates into a significant issue at the individual or household level for many people. For example, the distribution of credit card debt—the extent to which it is borne by relatively few people, and which people are carrying the debt—is clearly critical to understanding whether credit card debt is a significant and widespread problem and, if so, who it affects. The HILDA wealth data allow us to investigate this issue, examining credit card ownership and credit card debt at the individual level, including the extent to which these aspects have changed between 2002 and 2006.

In the following, we present information on how widespread credit card ownership is, who owns credit cards and how credit card debt is related to

income, wealth, age, education, health and other characteristics. We also examine whether credit card ownership has been increasing, and who ‘gets into trouble’ with credit cards by mounting up high debt relative to income. Our analysis is of *personal* credit card use by persons aged 18 years and over. Balances and credit limits of joint accounts are split equally between all holders, except when one of the account holders is a dependent child, in which case the assumed share of the child is zero. For example, a credit card jointly held by two parents and one child is deemed to be 50% held by each parent, and each parent is assigned 50% of both the debt and the credit limit on the credit card.

### Credit card debt in 2002 and 2006

According to the HILDA data, in both 2002 and 2006, approximately 60% of adults in Australia held a personal credit card (Table 24.1). The median credit limit on all cards held by the individual was \$4,497 in 2002 (\$4,000 at the prices prevailing in 2002) and \$5,000 in 2006. 10% of credit card holders had credit limits in excess of \$20,000 in 2006.

Credit card debt of credit card holders is summarised in the bottom panel of Table 24.1. Note that credit card debt is not simply the outstanding balance on the credit card. Rather, an individual’s credit card debt is the amount outstanding that was not paid by the statement due date. Mean credit card debt across all credit card holders was \$977 in 2002 and increased to \$1,198 in 2006. However, most holders had no credit card debt in either year, so that mean debt among those with any debt is considerably higher, at \$2,655 in 2002 and \$3,699 in 2006.

Table 24.2 shows that, consistent with most credit card holders carrying no credit card debt, more people than not usually pay off the entire balance owing on their credit cards each month. There has, furthermore, been a noticeable increase in the proportion of individuals reporting that they always or almost always pay off the entire balance, rising from 55% in 2002 to 60% in 2006. But also consistent with Table 24.1 is that a significant minority—17% in 2002 and 16% in 2006—rarely if ever pays off the entire balance. This proportion has only decreased by one percentage point. The bigger decrease has been in the proportion reporting that they do not pay off the entire balance very often, falling from 11% to 9%.

### Characteristics of owners of credit cards

The preceding has shown that credit card debt tends to be concentrated in relatively few people—approximately one-third of the 60% of adults who own a credit card, or 20% of the adult population.

**Table 24.1: Credit card possession and credit card debt**

	2002	2006
Possess a credit card (%)	59.6	60.5
<b>Value of credit card limit (credit card holders only)</b>		
Mean	7,338	9,091
10th percentile	1,124	1,500
Median	4,497	5,000
90th percentile	16,863	20,000
<b>Value of unpaid credit card debt (credit card holders only)</b>		
Mean (\$)	977	1,198
Median (\$)	0	0
90th percentile (\$)	3,092	3,700
Have credit card debt (%)	36.8	32.4
Mean of those with debt (\$)	2,655	3,699
<i>Notes: Population weighted results. All monetary values expressed at September quarter 2006 prices.</i>		

**Table 24.2: Credit card holders—How often individuals pay off the entire balance owing on credit cards (%)**

	2002	2006
Hardly ever or never	17.0	16.0
Not very often	11.0	8.7
About half the time	6.6	6.5
Most months	10.0	8.6
Always or almost always	55.3	60.2
Total	100.0	100.0
<i>Notes: Population weighted results. Percentages may not add up to 100 due to rounding.</i>		

**Table 24.3: Credit card debt by level of income and by level of wealth**

	2002				2006			
	Have a credit card (%)	Debt>0 (%)	Mean debt (\$)	Seldom pay off (%)	Have a credit card (%)	Debt>0 (%)	Mean debt (\$)	Seldom pay off (%)
<b>Credit card debt by household equivalent income quintile</b>								
1st quintile group	35.4	13.2	312	10.6	37.8	11.8	344	10.0
2nd quintile group	51.4	20.7	472	17.8	51.8	19.5	631	15.3
3rd quintile group	62.4	26.7	674	21.1	62.2	23.9	795	19.0
4th quintile group	68.8	24.2	566	17.7	71.0	22.4	935	16.2
5th quintile group	79.3	24.9	881	17.0	79.0	20.5	912	14.5
Total	59.6	21.9	582	16.9	60.5	19.6	725	14.9
<b>Credit card debt by household wealth quintile</b>								
1st quintile group	39.4	24.4	705	21.1	40.6	21.8	869	18.7
2nd quintile group	58.6	31.0	802	24.4	58.2	26.6	1,007	21.4
3rd quintile group	58.0	21.2	495	16.0	61.3	21.1	668	15.6
4th quintile group	69.0	19.2	484	14.4	68.8	17.5	671	12.0
5th quintile group	73.6	13.7	422	8.1	73.6	10.9	408	7.2
Total	59.6	21.9	582	16.9	60.5	19.6	725	14.9

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices. 'Debt>0' is the proportion of all persons in the quintile group (not just those with credit cards) with unpaid credit card debt. 'Mean debt' is the mean debt evaluated over all persons in the quintile group, irrespective of whether they hold a credit card.

**Table 24.4: Credit card debt for different demographic groups**

	2002			2006		
	Have a credit card (%)	Debt>0 (%)	Mean debt (\$)	Have a credit card (%)	Debt>0 (%)	Mean debt (\$)
<b>Type of household</b>						
Couple, no children	64.4	19.1	506	66.4	16.4	629
Couple with children	62.3	23.4	571	62.7	21.5	706
Lone parent	46.8	23.5	659	47.6	21.6	953
Other	53.3	22.2	681	53.2	19.3	798
<b>Age group (years)</b>						
18–24	32.8	13.6	215	31.6	12.0	320
25–34	64.6	29.3	731	63.0	24.0	895
35–44	69.2	30.1	809	69.0	27.3	1,101
45–54	70.7	26.0	838	71.5	25.0	950
55–64	61.6	18.1	548	68.1	18.4	738
65+	47.6	7.3	128	50.3	6.2	122
<b>Region of residence</b>						
Major city	61.4	22.0	606	62.0	19.1	793
Other region	55.9	21.7	531	57.4	20.7	582
<b>Educational attainment</b>						
Degree or higher	81.0	23.8	741	80.9	20.4	933
Diploma or Certificate III/IV	65.9	24.5	660	66.8	23.2	810
High school	52.2	21.4	581	49.5	18.5	699
Certificate I/II	57.4	26.6	601	47.3	16.6	595
Year 10/11	54.9	22.2	513	55.2	19.5	641
Less than Year 10	36.7	14.4	349	37.1	11.7	359
<b>Home ownership status</b>						
Home owner	68.0	21.5	533	69.2	19.4	687
Not a home owner	45.5	22.7	665	45.8	19.8	788

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices. 'Debt>0' is the proportion of all persons in the group (not just those with credit cards) with unpaid credit card debt. 'Mean debt' is the mean debt evaluated over all persons in the group, irrespective of whether they hold a credit card.

Who holds this debt? We first consider, in Table 24.3, credit card debt by level of income and by level of wealth. The top panel of Table 24.3 shows, for each quintile of the income distribution, the proportion that owns a credit card, the proportion with an outstanding credit card debt, the mean credit card debt, and the proportion who indicates the entire balance owing on credit cards is paid off 'not very often' or 'hardly ever or never'. For example, the top left row indicates that in 2002, 35% of persons in the bottom income quintile owned a credit card, 13% had debt outstanding on credit cards (corresponding to 37% of those who owned a credit card), the mean credit card debt evaluated over all adults in the income quintile was \$312, and 11% of people in this quintile seldom paid off their credit cards. The lower panel of Table 24.3 presents the same information for each quintile of the wealth distribution.

Credit card debt is of more concern the more it is held by low income and low wealth individuals. The table shows that those in the bottom income quintile in fact have the lowest rate of credit card ownership, at 35% in 2002 and 38% in 2006. Indeed, credit card ownership is increasing in income quintile, with 79% of those in the top quintile owning a credit card. Furthermore, the proportion of persons carrying debt is lower for those in the bottom quintile than for any other quintile. The bottom line on the relationship between credit card debt and household income is given in the mean debt column, which shows average debt is lowest for those in the bottom income quintile, averaging \$312 in 2002 and \$344 in 2006. Aside from the low mean debt of the fourth quintile in 2002, the clear pattern is that those in higher income quintiles tend to have higher mean credit card debt.

It would thus seem from the associations between income and credit card debt that it is individuals who can most afford to repay credit card debt that have the greatest debt. That said, it is also clear

that lower-income persons do carry significant amounts of debt, and such people are likely to be particularly vulnerable to hardship because of their low capacity to repay debt. Also significant is the evidence in the lower panel of Table 24.3 on differences in credit card debt by wealth. The proportion of persons with outstanding credit card debt tends to be higher for the lower-wealth quintiles, as does the proportion that seldom pays off the entire credit card balance. In addition, and most importantly, mean debt is highest for the bottom two wealth quintiles. This is likely to be connected to the different lifecycle stages of the lower and upper wealth quintiles, given the strong association between wealth and age (as described earlier in this Report). Nonetheless, it would seem that credit card debt cannot be said to be *only* held by those best placed to service the debt.

Table 24.4 presents information on credit card ownership and debt for groups in the community defined by demographic characteristics. As indicated by Table 24.3, it appears that those best able to service credit card debt have the greatest access to credit card debt. Rates of credit card ownership are highest for persons in couple households, persons aged 35–54 years, the most educated and those that own their home. Conversely, rates of ownership are lowest for persons in lone parent households, aged 18–24, and to a lesser extent aged over 65, with educational attainment of less than Year 10, and who do not own their home. Use of credit, as measured by mean debt levels, is not so clearly greater for those best able to service credit card debt. While differences by age and educational attainment are consistent with greater debt holdings by those better able to repay the debt, mean debt is relatively high for lone parents and persons living in 'other' (mostly single-person) households, and also for non-home owners, who are mostly renters in the private rental market.

As might be expected, the employed, and particularly the full-time employed, have the highest rates

**Table 24.5: Credit card debt, by labour force status and welfare recipient status**

	2002			2006		
	Have a credit card (%)	Debt>0 (%)	Mean debt (\$)	Have a credit card (%)	Debt>0 (%)	Mean debt (\$)
<b>Labour force status</b>						
Employed full-time	72.2	28.2	889	72.1	26.5	1,135
Employed part-time	60.5	24.8	529	60.7	20.7	608
Unemployed	34.3	16.8	367	31.2	16.2	710
Not in the labour force	45.9	13.0	244	46.6	9.7	226
<b>Income support status</b>						
On income support	39.9	14.0	300	41.4	12.4	345
Not on income support	68.1	25.3	704	68.0	22.4	875

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices. 'Debt>0' is the proportion of all persons in the group (not just those with credit cards) with unpaid credit card debt. 'Mean debt' is the mean debt evaluated over all persons in the group, irrespective of whether they hold a credit card.

of credit card ownership (Table 24.5). The full-time employed also have, by a quite large margin, the highest average levels of credit card debt. The unemployed have a comparatively low rate of credit card ownership, at 34% in 2002 and 31% in 2006. However, while only 17% of the unemployed had unpaid credit card debt in 2002 and only 16% had unpaid debt in 2006, average debt levels of the unemployed are still quite high. In 2006, the mean debt over all unemployed persons was \$710, or \$4,383 per unemployed person with any unpaid credit debt.<sup>3</sup> Unemployed persons with credit card debt at those levels are likely to be in a great deal of financial difficulty if they do not secure substantial employment reasonably quickly.

Like the unemployed, income support recipients (some of whom are of course unemployed) also have comparatively low rates of credit card ownership. In contrast to the unemployed, the mean value of unpaid credit card debt among income support recipients is relatively low. This is likely to be driven by long-term income support recipients,

especially recipients of the Age Pension, who know their capacity to repay credit card debt in future is low—which credit providers are also no doubt aware of.

### Who gets into ‘difficulties’ with credit cards?

It is likely that few people experience severe financial difficulties, such as bankruptcy, that can be attributed to excessive credit card debt. However, unpaid credit card debt that is high relative to income could conceivably create substantial financial discomfort for many people. While there is some degree of arbitrariness in determining the threshold at which credit card debt becomes a problem for an individual, a reasonable candidate threshold—which we adopt—is outstanding debt in excess of ten per cent of household annual equivalised income. That is, a person is defined to be in credit card difficulty if credit card debt exceeds ten per cent of equivalent income. We furthermore impose the additional requirement that the person reports that it is ‘not often’ that he or she pays off the entire credit card balance, to eliminate persons for whom credit card debt is only temporarily high. As noted, the ten per cent threshold is an arbitrary criterion, but one that seems reasonable given that, for a single person, credit card debt would exceed *total* monthly income.

Table 24.6 indicates that few people get into difficulty with credit cards. In 2002, 4% of the population was in credit card difficulty, increasing to 4.5% for males and 4.2% for females in 2006. The table indicates that prime-age people (aged 25–54 years), persons born in Australia, non-home owners and persons with disabilities are more likely to get into credit card difficulty, but differences in likelihood of difficulty by characteristics are generally not large. Furthermore, there are no clear patterns evident in the proportion in credit card difficulty by location of residence or educational attainment. Other than the fact that demographic characteristics are not strong predictors of experience of credit card difficulties, the most notable finding in Table 24.6 is the aggregate rise in the proportion in difficulty, although the increase is not large.

How do the economic circumstances of individuals in credit card difficulty compare with the general population? Table 24.7 indicates that they have lower average wealth and income than the general population, but most do not have extremely low wealth or income. This is not unexpected. *Very* poor individuals are unlikely to be attractive customers to credit card providers, and so will generally have less access to credit, and correspondingly less ability to get into credit card difficulties. This can also help explain the absence of large differences across demographic groups in the likelihood of getting into credit card difficulty. Demographic groups that we might think are more susceptible to financial difficulties are also groups that credit card providers are likely to be less willing to advance credit to.

**Table 24.6: Proportion of persons in credit card ‘difficulty’, by demographic characteristics (%)**

	2002	2006
Males	4.0	4.5
Females	4.0	4.2
<b>Age group</b>		
18–24	0.9	2.7
25–34	4.9	4.9
35–44	5.6	5.7
45–54	5.2	5.5
55–64	4.2	4.6
65+	1.5	1.8
<b>Region of residence</b>		
Major city	3.9	4.8
Other region	4.2	3.4
<b>Educational attainment</b>		
Degree or higher	3.4	3.9
Diploma or Certificate III/IV	4.5	5.1
High school	4.2	4.8
Certificate I/II	6.1	3.7
Year 10/11	3.7	4.0
Less than Year 10	3.5	3.6
<b>Place of birth and Indigenous status</b>		
Born in Australia	4.1	4.6
Born outside of Australia	3.7	3.7
<b>Home ownership status</b>		
Owner	3.4	3.8
Not an owner	4.9	5.3
<b>Long-term health condition</b>		
No long-term health condition	3.8	4.2
Condition that does not limit work	4.2	5.3
Condition that does limit work	4.5	4.7
Can't work	8.1	3.4
<i>Note:</i> Population weighted results.		

**Table 24.7: Wealth and income of those in credit card trouble (\$)**

	2002		2006	
	Persons in credit card difficulty	General population	Persons in credit card difficulty	General population
Mean net worth	264,697	494,279	329,893	664,867
Mean household equivalent income	30,266	33,467	32,679	37,986

*Notes:* Population weighted results. All monetary values expressed at September quarter 2006 prices.

### Recent outcomes and experiences of persons with credit card difficulties in 2006

While characteristics of individuals, including their financial circumstances, do not seem to be good predictors of credit card difficulty, it is possible that recent events in individuals' lives could help explain credit card trouble. For example, unanticipated expenses (e.g. due to injury) or *drops* in income (as distinct from low income per se) may lead to credit card difficulties. In Table 24.8 we describe, for individuals who had difficulty with

credit cards in 2006, various aspects of experiences in the immediate period leading up to the wave 6 interviews. Specifically, recent experiences of those in credit card difficulties in 2006 are compared with recent experiences of those not in credit card difficulty in 2006. Here we restrict attention to persons aged 18–64 years in 2006.

Panel A considers recent experience of unemployment, which is likely to be associated with a negative income shock, and one that was in many cases not anticipated. The proportion of the last

**Table 24.8: Experiences in the period leading up to wave 6, persons with credit card difficulties in wave 6 compared to persons without credit card difficulties**

	In credit card difficulty	Not in credit card difficulty
<b>A. Recent experience of unemployment</b>		
Proportion of last year unemployed (mean %)	3.3	3.7
Proportion of last 3 years unemployed (mean %)	3.9	3.8
<b>B. Changes from wave 5 to wave 6</b>		
<b>Experience of change in labour force status (% experiencing the indicated change)</b>		
Full-time employed → Part-time employed	2.1	3.4
Part-time employed → Full-time employed	7.2	4.0
Full-time employed → Unemployed	*0.7	0.6
Part-time employed → Unemployed	*1.0	0.6
Unemployed → Part-time employed	*0.0	1.2
Unemployed → Part-time employed	*1.5	1.0
<b>Experience of a change in health (% experiencing the indicated change)</b>		
Health improved	10.2	9.5
Health worsened	8.7	8.2
<b>Change in equivalised income (\$)</b>		
Mean	-1,208	2,275
25th percentile	-3,745	-3,169
Median	310	1,534
75th percentile	3,877	6,842
<b>C. Life events in the year leading up to wave 6 (% experiencing the indicated event)</b>		
Partnered	1.8	3.0
Separated	5.6	4.0
Pregnancy/childbirth	4.2	7.3
Injured	10.8	7.6
Injury of partner or child	15.3	15.9
Death of partner or child	*0.1	0.6
Victim of violence	1.6	1.5
Victim of property crime	4.6	5.3
Retired	*0.9	1.8
Fired or retrenched	3.9	3.1
<b>D. History of credit card difficulty</b>		
Had credit card difficulties in 2002 (%)	28.6	2.9

*Notes:* Population weighted results. \* Estimate not reliable. All monetary values expressed at September quarter 2006 prices.

year unemployed is, on average, actually slightly lower for those in credit card difficulties—at 3% compared with 4% for other 18–64 year olds. The proportion of the last three years unemployed is almost exactly the same for the two groups.

Panel B looks directly at *changes* in labour force status from wave 5 to wave 6, as well as changes in health and in equivalent income over the same period. Moves from full-time employment to part-time employment or unemployment and from part-time employment to unemployment, would be expected to be more prevalent among those in credit card difficulty, since they are likely to correspond to adverse income shocks. However, again there is no (statistically robust) evidence of this. Health changes between wave 5 and wave 6 likewise are not substantially different for those in credit card difficulty.

For income changes we do find the expected differences between those in credit card difficulty and those not in difficulty. The mean income change for those in difficulty is a decline in (real) income of \$1,208, compared with an increase of \$2,275 for other persons. Similarly, the median increase for those in difficulty was \$310, compared with \$1,534 for those not in difficulty. Recent adverse changes in income are therefore strong predictors of high levels of unpaid credit card debt.

Panel C of Table 24.8 looks at the incidence of major life events in the year leading up to the wave 6 interview. Those in credit card difficulties have comparatively high rates of marital separation, injury, and dismissal from employment, all of which are often associated with a fall in income relative to living costs. They also have comparatively low rates of marital partnering and pregnancy or childbirth. While pregnancy generates additional expenses and, in many cases, a reduction in income, a key distinguishing feature is that it is usually planned. Many people will lower their expenditure in anticipation of the increase in living costs and decrease in income, which would then in turn make high credit card debt less prevalent among this group.

The last row of Table 24.8 indicates that the characteristic that most distinguishes those in credit card trouble is a *history* of credit card trouble—29% of those in difficulty in 2006 were also in difficulty in 2002, compared with 3% of other people. This perhaps suggests that, rather than particular adverse circumstances or experiences leading to credit card difficulty, it is more often an innate

predisposition towards mismanaging personal finances that is responsible for people getting into credit card difficulty.

### Concluding comments

The HILDA data suggest that credit card debt does not represent a significant problem for most members of the Australian community. Mean credit card debt across all adults was \$725 in 2006, and less than 4.5% of the population can be regarded as experiencing credit card difficulty. Nonetheless, 4.5% of the population does represent a significant segment of the community, implying financial hardship associated with excessive credit card debt relative to income could be an important community issue.

There is no clear systematic relationship between characteristics of individuals and likelihood of getting into credit card difficulty. In part, this state of affairs is likely to be a product of supply decisions of credit card providers, who do not wish to make more credit available to people than they are in a position to repay. It is notable, however, that some increase in the proportion of the population getting into credit card difficulties is evident over the 2002 to 2006 period. One possible explanation for this trend is that financial institutions' criteria for supplying credit have been relaxed slightly over the period, perhaps due to competitive pressures. Another hypothesis is that behaviour of individuals has changed, such that they are more predisposed to acquiring credit card debt. However, it is not clear why this would have occurred, especially given the strong employment and income growth between 2002 and 2006.

### Endnotes

- 1 To give but a few examples: 'Debt levels soar to record high', *Lateline*, 22 July 2003; 'Put away the plastic, consumer experts warn', *The Age*, 24 October 2004; 'Australia's credit card love affair makes for massive debt', *The World Today*, ABC Radio, 16 May 2005; 'Life in the red', *Sydney Morning Herald*, 21 June 2006; 'Credit card debt surges to record high', *Sydney Morning Herald*, 19 July 2007; 'Credit card debt soars to record \$41b', *The Australian*, 21 September 2007; 'Credit card debt hits record \$44 bn', *News.com.au*, 17 August 2008.
- 2 Reserve Bank data on credit card debt is accessible at <<http://www.rba.gov.au/Statistics/Bulletin/C01hist.xls>> .
- 3 Of course, the mean debt of \$4,383 among those holding debt could be driven by a small number of individuals with extremely high credit card debt. However, median debt among unemployed persons with outstanding credit card debt was still quite high at \$2,500.

## 25. Who are the persistently poor?

In Part A of this Report we presented estimates of income poverty, including its persistence over time. However, as noted, measures of inadequacy of living standards based on reported income have a number of shortcomings. One important deficiency is the failure to consider the benefits to material living standards provided by wealth. Wealth is an important potential economic resource at an individual's disposal, delivering in-kind services (e.g. of housing) and also providing an avenue for consumption via selling or borrowing against assets. Furthermore, while both realised and unrealised capital gains can in principle be measured and included as income of individuals, in practice unrealised capital gains (such as on property that is not sold in the period under review) are rarely measured, and even realised gains are usually only measured for some financial assets (such as bank deposits).

The collection of wealth data in waves 2 and 6 of the HILDA Survey provides us with a unique opportunity to examine the persistence of low living standards using information on both income and wealth. This is much more likely to produce a satisfactory measure of persistence of being 'poor' than one based on income alone. Using such a measure, in this section we examine the prevalence of, and the characteristics associated with, persistently low living standards.

For the purposes of this analysis, we define a person as 'poor' if that person is both in the bottom quintile of the household income distribution and in the bottom quintile of the household wealth distribution. One alternative for the income criterion would be to adopt the half-median definition of poverty employed in Part A. However, this poverty standard is premised on the absence of additional criteria—in our case, low wealth—and it does not retain the same meaning when additional criteria for defining poor are employed. In particular, the half-median standard is likely to

represent too-austere a standard in the presence of the wealth criterion.

A potential criticism of the 'bottom quintile' approach to defining low wealth and low income is that, no matter what policy action is taken, 20% of the population is destined to be low income and 20% is destined to be low wealth. However, for a study of the *intersection* of low income and low wealth, and more particularly persistence in this intersection, these concerns are not so relevant. It is theoretically possible for the proportion of people that is both low income and low wealth to be anywhere between 0 and 20%—likewise, the proportion persistently low income and low wealth could lie anywhere between 0 and 20%.

Consistent with our focus on the persistence of low living standards, in defining low income at a point in time, we examine income over a two-year period to minimise measurement error problems and to reduce the potential for short-term fluctuations in income to impact on the analysis. Specifically, we construct measures of income over waves 1 and 2, over waves 3 and 4, and over waves 5 and 6. For convenience, these are referred to as 2001–02, 2003–04 and 2005–06 income. This is done by first calculating equivalent income in each year (at September 2006 prices) and then taking the average for 2001 and 2002, 2003 and 2004, and 2005 and 2006, producing an 'average equivalent annual income' measure. As in earlier analysis in this Report, the income variable is the annual disposable income of the individual's household, adjusted for household composition using the OECD equivalence scale.<sup>1</sup>

### Prevalence of persistently low living standards

Table 25.1 presents information on the number of people with low income and low wealth. Recall that, by construction, 20% of individuals are 'wealth poor' in 2002, 20% are 'wealth poor' in 2006, and 20% are 'income poor' in each of

#### Persistently poor

In this article, a person is defined to be *persistently poor* if that person is in the bottom quintile of:

- the distribution of household equivalised income for 2001 and 2002 combined;
- the distribution of household equivalised income for 2003 and 2004 combined;
- the distribution of household equivalised income for 2005 and 2006 combined;
- the distribution of household wealth in 2002; and
- the distribution of household wealth in 2006.

**Table 25.1: Number of persistently poor persons (%)**

	% poor
'Wealth poor' in both wave 2 and wave 6	12.9
'Income poor' in both waves 1–2 and waves 5–6	13.1
'Income poor' in waves 1–2, waves 3–4 and waves 5–6	11.4
Poor in waves 1–2	7.5
Poor in waves 5–6	8.3
Poor in both waves 1–2 and waves 5–6	4.7
Poor in waves 1–2, waves 3–4 (income only) and waves 5–6	4.2
Poor in waves 1–2 but not poor in waves 5–6	2.8
Not poor in waves 1–2 but poor in waves 5–6	3.6

*Notes:* Population weighted results. 'Poor' means both income poor and wealth poor.

**Table 25.2: Net worth and household income of the persistently poor (\$)**

	2001–02	2003–04	2005–06
<b>Thresholds that define 'poor'</b>			
'Wealth poor' threshold (quintile 1)	43,957	–	63,550
'Income poor' threshold (quintile 1)	17,847	18,446	19,741
<b>Median household income</b>			
Non-poor	30,516	31,237	33,479
Poor	13,683	13,841	14,741
All persons	29,596	30,249	32,446
<b>Median net worth</b>			
Non-poor	312,198	–	418,965
Poor	3,035	–	4,650
All persons	293,463	–	392,500
<i>Notes: Population weighted results. All monetary values expressed at September quarter 2006 prices.</i>			

2001–02, 2003–04 and 2005–06. Out of a maximum of 20%, 12.9% of the population was wealth poor in both 2002 and 2006, 13.1% was income poor in both 2001–02 and 2005–06, and 11.4% was income poor in all three wave-pair periods (2001–02, 2003–04 and 2005–06).

Combining the income and wealth criteria, 7.5% of the population was poor in 2001–02 and 8.3% was poor in 2005–06, a 0.8 percentage point increase. In terms of persistence, 4.7% of persons were poor in both 2001–02 and 2005–06, while the group that we define to be persistently poor—low income and low wealth in all waves of the HILDA Survey—constitute 4.2% of the population. From the preceding figures, we can also infer that 2.8% were poor in 2001–02 and not poor in 2005–06, that is, 'escaped' poverty, and 3.6% were not poor in 2001–02 but poor in 2005–06. Thus, more people became poor over this period than became non-poor.

The 4.2% of the population who are persistently poor over a six-year period is considerably lower than the 11–14% of the population typically found by recent Australian studies to be income poor at any one point in time, based on a half-median income definition of poverty (e.g. Saunders and Bradbury, 2006; Rodgers, 2007; Wilkins, 2007). The group of persistently poor based on both their income and wealth, would seem to be of greater policy concern than the 11–14% found to be income poor at a point in time.

Table 25.2 provides information on what it means to be poor in terms of income and wealth (expressed at September 2006 prices) when using the bottom-quintile definitions of low income and low wealth. The table presents the income and wealth thresholds that define low income and low wealth, as well as median income and net worth of the persistently poor, defined as individuals who are low income in 2001–02, 2003–04 and 2005–06, and low wealth in 2002 and 2006. Equivalent income is below \$17,847 in 2001–02, \$18,446 in 2003–04 and \$19,741 in 2005–06 for

an individual to be classified as low income in each of those year pairs. Low wealth in 2002 is net worth below \$43,957 and in 2005–06 is net worth below \$63,550. The average persistently-poor person, however, has considerably lower income and wealth than these thresholds. Median income of the persistently poor was \$13,683 in 2001–02, \$13,841 in 2003–04 and \$14,741 in 2005–06. Median wealth was only \$3,035 in 2002 and \$4,650 in 2006.

#### Characteristics of the persistently poor

In describing their characteristics, we define the persistently poor to be low income in 2001–02, 2003–04 and 2005–06, and low wealth in 2002 and 2006. Note that a condition of entry into our population is that the individual be alive and living in Australia for the entire six-year period—that is, born before 2001 and if a migrant, arrived before 2001; and still alive and living in Australia in 2006. Table 25.3 examines the household type, age, educational attainment, place of birth, Indigenous status, English proficiency and housing situation of the persistently poor in both 2002 and 2006. Compared with the non-poor, the persistently poor are much less likely to be in couple households, with much higher proportions living in lone parent or other (mostly single-person) households. Despite a low proportion living in couple with children households, the mean number of dependent children in the household is actually higher among the persistently poor than among the non-poor. This reflects the relatively high proportion of the persistently poor living in lone parent households.

One might have expected that the addition of the wealth criterion would decrease the number of elderly classified as persistently poor, since many older persons own their home and have no mortgage debt. This is not the case: 20% of the persistently poor were over 65 years of age in 2002, compared with 11% of the non-poor. Persons aged 55–64 years in 2002 were also at slightly greater risk of being persistently poor, as were persons

aged under 24 years in 2002. The relatively high incidence of persistent poverty among persons under 24 years of age primarily derives from children living in lone parent households. The corollary of the relative high rates of persistent low living standards of the young and the old is that prime-age persons, in the 25–54 years range, have comparatively low rates of persistently low living standards. They account for 45% of the non-poor population, but only 33% of the persistently poor.

As might be expected, the persistently poor tend to have low educational attainment—29% had not completed Year 10 in 2002, and 28% had still not

done so in 2006. A further 32% had in 2002 completed only Year 10 or 11, compared with 24% of the non-poor. This did fall to 27% in 2006, but the proportion of the non-poor with only Year 10 or 11 also fell—to 21%.

Indigenous people and immigrants from non-English speaking countries are also substantially over-represented among the persistently poor. The HILDA data show 5.4% of the poor are Indigenous, compared with only 1.3% of the non-poor, and 26% are non-English speaking background immigrants, compared with 15% of the non-poor.<sup>2</sup> Consistent with the latter result, the

**Table 25.3: Demographic characteristics of the persistently poor**

	2002		2006	
	Persistently poor	Not persistently poor	Persistently poor	Not persistently poor
<b>Type of household (%)</b>				
Couple, no children	14.9	23.0	14.3	24.5
Couple with children	27.6	51.5	25.5	47.0
Lone parent	26.7	10.6	26.8	10.4
Other	30.8	15.0	33.4	18.1
Total	100.0	100.0	100.0	100.0
Mean number of children aged under 15 years	1.2	0.9	1.0	0.8
<b>Age group (%)</b>				
0–24	35.5	33.5	–	–
25–34	10.2	14.7	–	–
35–44	12.8	15.9	–	–
45–54	10.2	14.6	–	–
55–64	11.4	10.2	–	–
65+	19.9	11.0	–	–
Total	100.0	100.0	–	–
<b>Educational attainment (%)</b>				
Degree or higher	8.0	17.1	9.0	19.6
Diploma or Certificate III/IV	14.2	27.6	18.5	30.7
High school	12.6	17.2	13.0	15.2
Certificate I/II	*4.2	1.9	*4.1	2.2
Year 10/11	31.8	24.2	27.1	20.9
Less than Year 10	29.2	11.9	28.3	11.3
Total	100.0	100.0	100.0	100.0
<b>Place of birth and Indigenous status (%)</b>				
Born in Australia	58.8	72.9	–	–
Indigenous	5.9	1.3	–	–
Born in English-speaking country	9.4	10.6	–	–
Born in Non English-speaking country	26.0	15.2	–	–
Total	100.0	100.0	–	–
Poor English proficiency (%)	*7.2	2.3	*5.4	1.9
<b>Housing situation (%)</b>				
Home owner	*1.4	76.5	*2.9	75.8
Private renter	40.5	18.9	39.0	19.7
Public housing tenant	53.7	2.5	52.1	2.3
Other	4.4	2.0	6.0	2.3
Total	100.0	100.0	100.0	100.0

Notes: Population weighted results. Educational attainment, place of birth and Indigenous status, and poor English proficiency apply only to persons over 15 years of age. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

point estimates show poor English proficiency is much more prevalent among the persistently poor than among the non-poor (although estimates are not statistically reliable).

Nearly all of the persistently poor rent their housing, more often than not from a government housing authority. Home owners account for approximately 76% of the non-poor population, but a negligible proportion of the poor, which is unsurprising because of the implications of home ownership for wealth. Private renters make up approximately 40% of the persistently poor, compared with 19% of the non-poor, while public housing tenants account for approximately 53% of the persistently poor, compared with only 2% of the non-poor. In part, the high measured incidence of persistent poverty among public housing tenants may reflect the failure of our income and wealth measures to take into account in-kind income provided by the housing subsidy afforded to public housing tenants.

In Table 25.4 we consider the health status and behaviours of the persistently poor. Mean general health, as measured by the SF-36 general health measure, is considerably lower among the poor. Consistent with this, the rate of disability among the persistently poor is more than double that of the non-poor. The proportion of the poor residing in a household in which someone has a disability is likewise higher, although in 2006 the difference in household disability between the poor and non-poor is not as large as the difference in own disability. In 2006, additional information was collected on whether the individual was a carer for a

person with a disability.<sup>3</sup> Being a carer adversely impacts on ability to undertake paid work, and consistent with this, we see that 8.4% of the persistently poor were carers for another household member with a disability, compared with 4.7% of the non-poor.<sup>4</sup>

The wave 6 survey also collected information on respondents' height and weight, which can be used to construct the 'body mass index' or BMI, a measure of healthiness of weight, equal to weight (in kilograms) divided height (in metres) squared. According to the Australian Medical Association, a BMI under 18.5 is considered 'underweight', between 18.5 and 25 is considered 'normal', between 25 and 30 is considered 'overweight' and over 30 is considered 'obese'.<sup>5</sup> Table 25.4 reports the proportion of poor and non-poor in each of these categories. The persistently poor are over-represented in both the underweight and obese categories. Interestingly, the proportions of the poor and non-poor in the 'normal' range are similar; it is in the 'overweight' category that the poor are under-represented.

Alcoholic drinking and smoking behaviour are examined in the bottom panels of Table 25.4. The persistently poor are much less likely to drink alcohol than the non-poor, which most likely to a large extent reflects their low income. However, their low income is not such a barrier to smoking. In 2002, 37% of the persistently poor were smokers, compared with 23% of the non-poor. In 2006, the proportion of the poor who were smokers had declined to 36% for the poor, but smoking had declined by even more for the non-poor, to 20%.

**Table 25.4: Health-related characteristics and behaviours of the persistently poor**

	2002		2006	
	Persistently poor	Not persistently poor	Persistently poor	Not persistently poor
<b>Health and disability</b>				
Mean general health (SF-36)	54.6	69.7	53.5	68.1
Disabled (%)	47.3	20.7	61.3	28.8
Disability in household (%)	60.2	31.7	65.9	40.7
Carer for person with disability (%)			8.4	4.7
<b>Body Mass Index (%)</b>				
Underweight	–	–	*3.9	2.1
Normal	–	–	36.7	38.9
Overweight	–	–	30.2	36.1
Obese	–	–	29.2	22.9
Total	–	–	100.0	100.0
<b>Alcoholic drinking behaviour (%)</b>				
Not at all	39.4	16.4	32.9	16.3
1–4 days per week	50.7	67.1	57.8	66.2
5 or more days per week	9.8	16.5	9.3	17.4
Total	100.0	100.0	100.0	100.0
Smoker (%)	37.4	22.5	35.8	19.7
<i>Notes: Population weighted results. Population comprises only persons over 15 years of age at the time of interview. * Estimate not reliable. Percentages may not add up to 100 due to rounding.</i>				

Is persistent poverty distributed throughout Australia, or is it more heavily concentrated in certain regions? Table 25.5 briefly examines the location of residence of the persistently poor. The persistently poor are as equally likely as the non-poor to reside outside the major cities, but striking differences by state of residence are evident. In 2002, New South Wales accounted for 42% of the persistently poor, yet only 33% of the remaining pop-

ulation. South Australia and Tasmania also have comparatively high rates of persistent poverty. Residents of Western Australia and Queensland, by contrast, have much lower shares of the persistently-poor population than they do of the population as a whole. A notable pattern when comparing 2002 with 2006 is that some of the persistently poor appear to move from the states with relatively high rates of persistent poverty to states

**Table 25.5: Location of residence of the persistently poor (%)**

	2002		2006	
	<i>Persistently poor</i>	<i>Not persistently poor</i>	<i>Persistently poor</i>	<i>Not persistently poor</i>
<b>State of residence</b>				
New South Wales	41.8	33.4	41.2	32.7
Victoria	24.2	25.4	24.0	25.3
Queensland	12.6	18.8	13.2	19.5
South Australia	11.1	7.6	10.9	7.6
Western Australia	5.4	9.8	6.0	9.7
Tasmania	4.1	2.5	4.0	2.6
Northern Territory	*0.0	0.8	*0.0	0.8
Australian Capital Territory	*0.7	1.7	*0.7	1.8
Total	100.0	100.0	100.0	100.0
<b>Remoteness of region of residence</b>				
Major city	33.3	33.0	34.7	33.9
Other region	66.7	67.0	65.3	66.1
Total	100.0	100.0	100.0	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 25.6: Labour force and welfare recipient status of the persistently poor (%)**

	2002		2006	
	<i>Persistently poor</i>	<i>Not persistently poor</i>	<i>Persistently poor</i>	<i>Not persistently poor</i>
<b>Labour force status</b>				
Employed full-time	*2.9	45.0	*3.4	47.3
Employed part-time	8.5	19.8	14.3	18.8
Unemployed	11.3	3.5	7.0	2.0
Not in the labour force	77.3	31.7	75.3	31.9
Total	100.0	100.0	100.0	100.0
<b>Household employment status</b>				
Someone employed full-time	8.0	70.9	12.2	69.7
Someone employed part-time; no one full-time	12.5	9.8	20.6	10.0
No one employed	79.5	19.2	67.2	20.2
Total	100.0	100.0	100.0	100.0
<b>Welfare recipient status</b>				
Not on income support	10.0	73.6	13.7	72.7
On income support	90.0	26.4	86.3	27.3
Total	100.0	100.0	100.0	100.0
<b>Household welfare recipient status</b>				
Not on income support	9.0	68.2	9.7	67.7
On income support	91.0	31.8	90.3	32.3
Total	100.0	100.0	100.0	100.0

*Notes:* Population weighted results. Labour force status and (personal) welfare recipient status apply only to persons over 15 years of age at the time of interview. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

with relatively low rates. This is indicated by the proportion of the poor living in New South Wales, South Australia and Tasmania being lower in 2006 than in 2002, while the proportion of the poor living in Queensland and Western Australia is higher in 2006 than in 2002. (Recall that the same group of people is being examined in 2002 and 2006.) It may well be that individuals with poor economic outcomes attempt to relocate to areas of greater economic opportunities, which Western Australia and Queensland would seem to have been in this period.

Labour market activity is likely to be very limited for the persistently poor, and rates of welfare receipt are likely to be high. Table 25.6 confirms this to be the case. Very few of the persistently poor are employed full-time and indeed very few have anyone in the household employed full-time. It is relatively common for the household to have one or more members in part-time employment with no-one in full-time employment, but the most common situation is for no-one to be employed, applying to 80% of people in poor households in 2002, compared with only 19% of non-poor households. Correspondingly, 90% of the poor were in receipt of income support in 2002.

The employment situation of the persistently poor did improve between 2002 and 2006, with household full-time employment increasing from 8% to 12% and household part-time employment (with no-one employed full-time) increasing from 13% to 21%. This may to some extent be driven by children from poor households entering employment, but not yet earning enough, and not yet having acquired enough wealth, to have made the transition out of the bottom 20% of the household income and wealth distributions. One would be optimistic that these individuals would make that transition.

### Conclusion

Persistent poverty, as defined here, affects a small but significant segment of the community. It particularly afflicts elderly renters, lone parent households, Indigenous persons, immigrants from non-English speaking countries and persons with disabilities. Almost all the persistently poor are long-

term income support recipients. Of course, most people with these characteristics are not persistently poor, which makes appropriate targeting of policy to alleviate such persistent economic disadvantage difficult to achieve. Nonetheless, it is clearly useful information to have in hand when formulating social and other policies.

### Endnotes

- 1 See the glossary for an explanation of the OECD equivalence scale.
- 2 Recall that persons living in remote areas are under-represented in the HILDA sample, which will lead to under-representation of Indigenous persons. This is also likely to lead to underestimation of the extent of disadvantage among Indigenous persons.
- 3 The information was first collected in wave 5.
- 4 It should also perhaps be noted that we are likely to underestimate the number of disabled persons who have inadequate living standards. Costs of equipment, aids, medical services and the like can mean that the income required to achieve an adequate living standard is higher for people with disabilities, yet we assume the income requirements are the same for people irrespective of disability. Saunders (2007) produces estimates of the additional income requirements of the disabled to avoid a situation of poverty.
- 5 AMA Position Statement on Nutrition, 2005, <<http://www.ama.com.au/node/2237>>.

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## 26. Superannuation in 2002 and 2006

Today, almost all workers are entitled to superannuation—a form of compulsory saving for retirement.<sup>1</sup> As part of the ‘Superannuation Guarantee’, employers are required to contribute at least 9% of an employee’s earnings to a superannuation account, funds that are not accessible by the employee until they reach the superannuation ‘preservation age’.<sup>2</sup> However, this was not always the case. Prior to the Superannuation Guarantee’s introduction in 1992, superannuation coverage in Australia was low, and mainly limited to white collar workers.<sup>3</sup>

In the 1970s, superannuation became more widely available through negotiation for its inclusion in industrial awards, but by 1974, only 32% of wage and salary earners—41% of males and 17% of females—were covered by superannuation (Treasury, 2001). The 1986 National Wage Case provided for a minimum level of superannuation for employees covered by awards, when half of the negotiated 6% wage rise was to be paid in the form of a 3% employer superannuation contribution, which produced an immediate jump in superannuation coverage in the public sector to over 90% (Australian Bureau of Statistics (ABS), 1993). In the private sector, superannuation coverage increased progressively over the next four years, and after the introduction of compulsory award-based superannuation in 1991, superannuation coverage increased to 79% of employees (Bateman and Piggott, 2001). The introduction of the Superannuation Guarantee in 1992 further increased coverage. Initially, employer contributions were 4% of earnings, with progressive increases until the target of 9% was reached in July 2002. By June 2004, 90% of employees had some form of superannuation coverage in a superannuation system that included 10 million employees and 1.1 million employers (Australian Taxation Office, 2005).

In July 2003, the superannuation co-contribution scheme—an initiative to assist eligible individuals to save for their retirement—was introduced. Under this scheme, the government would match personal superannuation contributions, dollar for dollar, up to a maximum of \$1,000 for people whose annual income was less than \$28,000. The scheme was extended in 2004 to cover those with incomes of up to \$58,000, and the maximum co-contribution available was increased to \$1,500. In order to encourage older people to make additional contributions to superannuation, the work test on who can contribute to superannuation was removed for those under the age of 65 in July 2004. From 1 July 2005, the work test for males and females aged 65 to 74 was changed from a weekly to an annual test in order to allow people in this age group doing irregular part-time or short term contract work to make additional superannu-

ation contributions if they choose to. Also from 1 July 2005, those who have reached their superannuation preservation age are able to access their superannuation as a non-commutable income stream, allowing those who want to remain in the workforce but reduce their working hours, to supplement their income with superannuation (Treasury, 2004). Another recent change to superannuation rules is the Superannuation Legislation Amendment (Choice of Superannuation Funds) Act 2004, also known as the Choice of Fund Act, which took effect from 1 July 2005. This legislation gave employees the right to choose which superannuation fund their compulsory superannuation contributions are paid into—increasing the popularity of self-managed superannuation funds and raising awareness about superannuation in general (Treasury, 2004).<sup>4</sup>

### How much superannuation do Australians have?

In 2002, questions about personal and household wealth, including superannuation, were asked in the HILDA Survey for the first time, and these wealth-related questions were included again in 2006. Using the HILDA Survey superannuation data from 2002 and 2006, we are able to compare superannuation holdings, personal contributions to superannuation, and general awareness of superannuation before and after the introduction of the superannuation co-contribution scheme, the Choice of Fund Act and changes to the work test rules. Table 26.1 compares the superannuation coverage and superannuation holdings of males and females who were not yet retired, in 2002 and 2006.<sup>5</sup>

In 2002, most prime-age males and females had at least some superannuation and by 2006, the proportion reporting holding some superannuation savings had increased in all age groups.<sup>6</sup> Compared to prime age men and women, superannuation coverage was quite low among workers aged 65 and older. However, the proportion of men and women in this age group who had some superannuation increased substantially between 2002 and 2006, possibly because of the relaxation of the work test affecting those aged 65 and over.

Average superannuation balances in 2002 ranged from \$1,353 for males and \$4,871 for females in the 15 to 19 age group to \$154,371 for males, and \$68,064 for females aged between 55 and 64. On average, superannuation balances rose substantially between 2002 and 2006, with the average superannuation balance for males increasing from \$60,992 in 2002 to \$96,303 in 2006 and for females, average superannuation balances increased from \$33,209 in 2002 to \$50,946 in 2006. The increase in an individual’s superannuation

balance depends on several factors, such as their income, the amount of individual and employer contributions and the proportion of time employed as well as returns on superannuation. Still, as an investment, superannuation has performed quite well in recent years—while returns were low, and even negative between 2001 and 2003, in the period from 2004 to 2006, most superannuation funds provided average returns of more than ten per cent per annum (Australian Prudential Regulation Authority, 2007).

One thing that is quite clear from Table 26.1 is the difference in male and female superannuation savings. In 2002, the median level of superannuation for males was twice that of females, and in 2006 the median superannuation balance for males was 1.9 times that of females. The reasons for this gender difference in superannuation savings have been identified in several studies, including Clare (2004), Olsberg (2004) and Warren (2006). Firstly, prior to the introduction of compulsory superannuation, females were more likely to be in jobs where their employer did not contribute to a superannuation fund on their behalf. Even with the introduction of compulsory superannuation, females receive less because contributions are usually based on a percentage of total salary and, on average, male earnings are higher than female earnings and more women than men work in low-paying occupations.<sup>7</sup> Furthermore, females are more likely to work part-time and to experience periods of career interruption because of caring responsibilities (caring for young children, elderly relatives, etc.).

### What type of superannuation fund?

Individuals who reported having some superannuation were asked whether their superannuation fund was a defined benefit fund or an accumulation fund.<sup>8</sup> Table 26.2 shows the proportion of males and females whose superannuation was in a defined benefit fund or an accumulation fund, as well as the proportion who said they did not know what type of fund their superannuation was invested in.

The most common type of superannuation fund is an accumulation fund, with 70% of men and 66% of women saying their superannuation was in an accumulation fund in 2002, and 64% of men and 57% of women saying their superannuation was in an accumulation fund in 2006. One would expect that with the publicity that accompanied recent changes to superannuation rules, particularly regarding the choice of superannuation funds legislation, that people would be more aware of what type of superannuation fund they had, but this does not appear to be the case. In 2006, 25% of males and 31% of females reported they did not know what type of fund their superannuation was invested in, compared to 17% of males and 22% of females in 2002. In both 2002 and 2006, it was much more common for younger people than for older people to say they did not know what type of superannuation fund they had. For example, in 2006, 50% of males and 49% of females aged between 15 and 19 said they did not know what type of fund their superannuation was in, compared to 18% of males and 23% of females aged between 55 and 64.

**Table 26.1: Superannuation coverage and superannuation holdings of persons who were not yet retired**

Age group	2002			2006		
	% with superannuation	Superannuation balance of those with super (\$)		% with superannuation	Superannuation balance of those with super (\$)	
		Mean	Median		Mean	Median
<b>Males</b>						
15–19	33.8	1,353	623	37.3	3,911	1,000
20–24	83.0	7,761	2,669	83.6	8,060	4,900
25–34	90.6	23,788	13,343	92.7	35,007	20,000
35–44	91.4	54,805	22,238	92.6	76,329	42,000
45–54	91.2	105,322	57,818	94.5	149,205	80,000
55–64	81.2	154,371	75,608	82.8	262,453	120,000
65+	41.6	134,410	88,950	48.4	274,010	153,000
Total	81.7	60,922	17,790	83.6	96,303	32,000
<b>Females</b>						
15–19	29.6	4,871	445	38.0	1,391	525
20–24	74.7	4,067	2,224	77.2	5,841	3,000
25–34	82.3	18,920	8,895	84.3	23,913	15,000
35–44	79.7	32,316	12,008	87.0	46,780	23,000
45–54	86.3	59,017	20,459	88.0	87,922	33,000
55–64	78.7	68,064	31,133	84.2	111,338	55,000
65+	40.7	63,607	10,674	47.1	150,032	50,000
Total	74.7	33,209	8,895	79.2	50,946	17,000

Notes: Population weighted results. \* Estimate not reliable. All monetary values expressed at September quarter 2006 prices.

**Table 26.2: Type of superannuation fund, by sex and age group (%)**

Age group	2002			2006		
	Defined benefit fund	Accumulation fund	Don't know	Defined benefit fund	Accumulation fund	Don't know
<b>Males</b>						
15–19	*5.8	65.7	28.5	9.2	40.6	50.2
20–24	10.9	63.0	26.0	10.6	54.0	35.3
25–34	12.4	70.1	17.4	8.7	62.0	29.3
35–44	10.8	73.5	15.7	9.7	71.4	18.9
45–54	15.3	70.4	14.3	14.6	66.6	18.8
55–64	14.5	74.4	11.1	14.4	67.3	18.3
65+	*16.5	64.4	*19.1	*16.8	67.6	*15.6
Total	12.4	70.4	17.2	11.3	64.0	24.7
<b>Females</b>						
15–19	10.8	46.0	43.2	10.6	40.1	49.2
20–24	13.3	61.1	25.6	12.6	38.9	48.5
25–34	13.2	66.1	20.7	12.5	54.4	33.1
35–44	11.2	68.6	20.2	11.7	64.2	24.1
45–54	13.4	66.0	20.5	11.3	62.0	26.7
55–64	10.6	73.9	15.5	9.9	67.0	23.1
65+	*16.6	*57.2	*26.2	*13.3	64.6	*22.0
Total	12.4	65.7	21.9	11.7	57.3	31.0

Notes: Population weighted results. \* Estimate not reliable.

### Employer contributions

All HILDA respondents who were employees at the time of interview were asked whether their employer currently made contributions to a superannuation fund on their behalf. While the answer to this question should be 'yes' for almost all employees, there are still some employees for whom superannuation contributions are not compulsory, for example, employees who earn less than \$450 per month before tax, employees aged 70 or over, and employees under 18 years of age who work less than 30 hours a week. Table 26.3 shows the proportion of employees who said their employer made superannuation contributions on their behalf, the proportion who said their employer did not make superannuation contributions, and the proportion who did not know whether their employer made any superannuation contributions on their behalf.

Overall, the proportion of employees who said their employer made superannuation contributions on their behalf rose slightly—from 87% of males and 86% of females in 2002, to 89% of males and 90% of females in 2006—and the proportion who said that their employer did not make any superannuation contributions dropped from 11% of males and 12% of females in 2002 to 10% of males and 9% of females in 2006.<sup>9</sup> For females, the proportion who said they did not know whether their employer made any superannuation contributions on their behalf also dropped slightly, from 3% in 2002 to 2% in 2006.

Table 26.3 shows that, while over 90% of prime-age persons reported that their employer made contributions to a superannuation fund on their behalf,

the proportion of those aged between 15 and 19 who said their employer made superannuation contributions on their behalf was substantially lower. The main reason for this is that people in this age group are more commonly working in jobs where employer superannuation contributions are not compulsory because they are earning less than \$450 per month, or are under 18 and working fewer than 30 hours per week. Individuals in their late teens are also much less aware of whether their employer makes superannuation contributions on their behalf. 8% of males and 13% of females aged 15 to 19 in 2002, and 6% of males and 9% of females aged between 15 and 19 in 2006, said they did not know whether their employer made superannuation contributions on their behalf. The proportion of males and females aged 65 and over who received employer superannuation contributions was also relatively low—many people in this age group would be working part-time—possibly only a few hours per week, so earning less than \$450 per month, and for those aged 70 and over, employer superannuation contributions are not compulsory.

Compared to those who are employed on a permanent basis or a fixed-term contract, casual employees are likely work fewer hours, and to be in an age group where employer superannuation is not compulsory. Table 26.4 compares the proportion of employees who reported their employer makes superannuation contributions on their behalf, according to their contract of employment.

While over 95% of people employed on a permanent or ongoing basis and more than 90% of those employed on a fixed-term contract said that their

**Table 26.3: Employer currently makes contributions into a superannuation scheme—Employees, by sex and age group (%)**

Age group	2002			2006		
	Yes	No	Don't know	Yes	No	Don't know
<b>Males</b>						
15–19	52.2	39.7	8.1	58.4	35.9	5.7
20–24	87.3	12.0	*0.7	88.5	9.5	*1.9
25–34	93.1	6.0	*0.9	95.1	4.2	*0.6
35–44	92.7	7.1	*0.2	92.9	6.3	*0.7
45–54	92.3	7.6	*0.1	94.2	5.8	*0.0
55–64	85.8	12.8	*1.5	85.8	13.7	*0.5
65+	49.6	46.5	*3.9	57.3	41.6	*1.2
Total	87.4	11.3	1.3	89.0	9.9	1.1
<b>Females</b>						
15–19	42.8	44.7	12.5	59.6	31.4	9.1
20–24	89.0	9.7	*1.3	89.6	7.8	*2.7
25–34	90.7	8.1	*1.2	92.3	6.4	*1.3
35–44	92.2	6.3	*1.5	93.3	6.3	*0.5
45–54	91.6	6.5	*1.9	95.3	4.4	*0.3
55–64	90.1	9.6	*0.3	91.5	8.1	*0.4
65+	66.7	23.2	*10.1	64.1	35.9	*0.0
Total	85.7	11.7	2.6	89.6	8.8	1.6

Notes: Population weighted results. \* Estimate not reliable.

employer made superannuation contributions on their behalf, the proportion of casual employees who said that their employer made superannuation contributions on their behalf was only around 66% in 2002. By 2006, the proportion of casual employees who received superannuation contributions from their employer had increased to 70% of males and 77% of females, but this is quite low compared to permanent and fixed-term employees.

Table 26.5 shows that, when asked about the amount of employer superannuation contributions they

receive, most said that they received the standard 9% employer contribution. However, a relatively large proportion revealed that either they did not know the amount their employer contributed to their superannuation, or that their employer's contribution was less than 9% of their gross wage or salary.

For men, the proportion who said they received the standard 9% employer contribution increased from 54% in 2002 to 62% in 2006, while the proportion who stated that they received less than 9% decreased from 20% in 2002 to 9% in 2006.

**Table 26.4: Employer currently makes contributions into a superannuation scheme—Employees, by sex and contract of employment (%)**

Contract of employment	2002			2006		
	Yes	No	Don't know	Yes	No	Don't know
<b>Males</b>						
Employed on a fixed term contract	92.6	6.3	*1.1	91.8	7.2	*1.0
Employed on a casual basis	65.5	30.5	4.0	70.1	26.3	3.6
Employed on a permanent or ongoing basis	96.7	2.9	*0.4	96.7	2.9	*0.4
Other	*30.6	*63.6	*5.7	*85.0	*15.0	*0.0
Total	87.4	11.3	1.3	89.0	9.9	1.1
<b>Females</b>						
Employed on a fixed term contract	92.2	6.8	*1.0	97.1	2.9	*0.0
Employed on a casual basis	65.9	28.4	5.7	76.9	18.9	4.2
Employed on a permanent or ongoing basis	96.6	2.4	*1.0	97.0	2.3	*0.7
Other	*76.0	*24.0	*0.0	*91.9	*8.1	*0.0
Total	85.7	11.7	2.6	89.6	8.8	1.6

Notes: Population weighted results. \* Estimate not reliable.

Similarly, for women, the proportion who reported that they received 9% employer contributions increased from 57% in 2002 to 62% in 2006 and the proportion who said that they received less than 9% was only 8% in 2006, compared to 18% in 2002. These figures suggest that many people were more aware of superannuation and the amount their employer was contributing in 2006 than they were in 2002. Still, a relatively high proportion in 2006 said they did not know

how much their employer's contributions were. For example, over 20% of people aged between 20 and 24 said they did not know how much their employer contributed to their superannuation.

Looking at employer contributions according to contract of employment, Table 26.6 shows that casual employees are the least likely to know how much their employer contributed to their superannuation, while permanent and fixed-term contract

**Table 26.5: Employer contributions as a proportion of gross wage—Employees, by age group (%)**

Age group	2002					2006				
	<9%	9%	>9%	Don't know	Mean	<9%	9%	>9%	Don't know	Mean
<b>Males</b>										
15–19	20.8	46.2	*4.3	28.7	11.4	10.4	56.2	*8.6	24.8	9.0
20–24	16.3	53.8	7.1	22.8	8.7	11.4	54.7	12.9	21.0	9.1
25–34	22.4	54.0	9.6	13.9	8.7	7.9	65.0	13.8	13.4	9.2
35–44	23.1	54.8	11.5	10.6	9.1	10.7	62.4	15.0	11.9	9.3
45–54	15.8	56.5	17.8	9.9	10.4	7.8	64.1	19.7	8.5	9.8
55–64	14.2	54.3	20.8	10.6	11.7	8.0	63.8	18.6	9.6	11.6
65+	*10.5	65.3	*17.4	*6.8	9.2	*0.0	*63.8	*27.2	*9.0	*23.7
Total	19.7	54.4	12.3	13.6	9.0	9.0	62.4	15.7	13.0	9.3
<b>Females</b>										
15–19	14.1	53.0	*6.7	26.3	10.1	*6.2	48.4	7.2	38.2	9.0
20–24	17.0	50.0	*7.6	25.4	8.8	6.8	57.4	11.3	24.5	9.1
25–34	20.7	56.5	8.2	14.7	8.9	8.5	60.2	11.1	20.2	9.2
35–44	17.3	57.6	9.3	15.8	9.2	7.5	67.9	10.2	14.4	9.2
45–54	17.4	60.7	9.4	12.5	8.9	10.3	63.0	12.0	14.7	9.3
55–64	11.0	62.0	11.1	16.0	10.3	7.9	64.8	12.0	15.3	12.8
65+	*21.9	*69.2	*8.9	*0.0	9.0	*2.9	*68.5	*17.1	*11.5	*9.4
Total	17.5	57.3	8.8	16.4	8.9	8.3	62.2	11.0	18.5	9.5

Notes: Population weighted results. \* Estimate not reliable.

**Table 26.6: Employer contributions as a proportion of gross wage—Employees, by contract of employment (%)**

Contract of employment	2002					2006				
	<9%	9%	>9%	Don't know	Mean	<9%	9%	>9%	Don't know	Mean
<b>Males</b>										
Employed on a fixed term contract	18.9	57.3	13.8	9.9	9.4	9.3	56.6	20.6	13.6	9.7
Employed on a casual basis	18.6	52.6	4.5	24.2	9.8	11.4	59.5	9.2	20.0	8.9
Employed on a permanent or ongoing basis	20.7	55.3	12.5	11.6	8.8	8.9	64.5	15.6	11.0	9.3
Other	*7.8	*63.7	*17.2	*11.3	9.3	*0.0	*31.0	*17.6	*51.5	15.5
Total	19.7	54.4	12.3	13.6	9.0	9.0	62.4	15.7	13.0	9.3
<b>Females</b>										
Employed on a fixed term contract	17.3	56.1	9.3	17.4	9.4	9.8	61.5	11.9	16.8	9.2
Employed on a casual basis	15.6	54.8	3.9	25.7	9.1	10.0	56.4	6.0	27.6	8.9
Employed on a permanent or ongoing basis	18.6	58.8	9.8	12.8	8.8	7.9	64.4	12.3	15.4	9.7
Other	*10.8	*54.3	*13.1	*21.8	9.0	*0.0	*78.0	*0.0	*22.0	9.0
Total	17.5	57.3	8.8	16.4	8.9	8.3	62.2	11.0	18.5	9.5

Notes: Population weighted results. \* Estimate not reliable.

employees are most likely to report receiving employer contributions of more than 9% of their wage or salary.

In 2002, around one-quarter of persons employed on a casual basis said that they did not know how much their employer contributed to their superannuation. By 2006, the proportion of casual employees who did not know the amount their employer contributed to their superannuation had dropped to 20% for males but increased to 28% for females.

Across all types of employment, the proportion of workers who reported receiving more than 9% of their salary as a superannuation contribution from their employer increased from 12% to 16% for males and from 9% to 11% for females. For persons employed on fixed term contracts, the proportion who reported receiving more than 9% of their salary increased from 14% in 2002 to 21% in 2006 for males, and from 9% to 12% for females.

#### Have voluntary superannuation contributions increased since the introduction of the superannuation co-contribution scheme?

Table 26.7 compares the proportion of males and females who made additional superannuation contributions in 2002 and 2006. In 2002, 24% of males and 19% of females reported making additional superannuation contributions, and most of those who made additional superannuation contributions made regular additional contributions rather than lump sum contributions. The proportion of males and females who made additional contribu-

tions increased with age—from less than 3% of people under the age of 20 to 44% of men and 31% of women aged between 55 and 64. By 2006, the proportion of males who made additional superannuation contributions had changed very little, but the proportion who made lump sum contributions had increased to 3% of male employees and the proportion who made regular contributions had fallen slightly—from 23% of male employees in 2002 to 22% of male employees in 2006.

Among female employees, the proportion making additional superannuation contributions increased from 19% in 2002 to 25% in 2006. The increase was most pronounced among females aged 35 and over, rising from 19% to 27% among females aged between 35 and 44, from 31% to 37% among females aged between 45 and 54, and from 31% to 49% among females aged between 55 and 64. This may be a result of many females being eligible for, and taking advantage of, the superannuation co-contribution scheme. As was the case for men, the proportion of women making additional lump sum superannuation contributions increased between 2002 and 2006—less than 1% of female employees made lump sum contributions to superannuation in 2002, compared to nearly 5% in 2006. One possible explanation for this increase in lump sum contributions is that many of those who were making regular superannuation contributions in 2002 would have been doing so through salary sacrifice arrangements. Salary sacrifice contributions would not have counted towards the superannuation co-contribution scheme, so some

**Table 26.7: Make additional superannuation contributions—Employees, by sex and age group (%)**

Age group	2002			2006		
	Yes, make regular additional contributions	Yes, occasional lump sum contributions	No, only receive employer contributions	Yes, make regular additional contributions	Yes, occasional lump sum contributions	No, only receive employer contributions
<b>Males</b>						
15–19	*2.4	*0.0	97.6	*2.5	*0.0	97.5
20–24	7.3	*0.5	92.1	5.4	*1.8	92.8
25–34	15.7	*0.9	83.4	12.7	*1.4	85.9
35–44	24.4	*1.8	73.9	23.8	2.4	73.8
45–54	36.0	*1.6	62.3	35.4	4.5	60.2
55–64	39.2	*5.2	55.6	34.1	8.2	57.7
65+	*35.5	*3.3	*61.1	*32.1	*14.9	53.0
Total	22.7	1.6	75.7	21.5	3.1	75.4
<b>Females</b>						
15–19	*2.6	*0.0	97.4	*0.9	*0.2	98.9
20–24	8.0	*0.0	92.0	7.1	*1.5	91.3
25–34	14.1	*0.0	85.9	12.1	*2.2	85.7
35–44	18.1	0.8	81.1	22.3	4.1	73.5
45–54	29.1	2.2	68.7	29.5	7.9	62.6
55–64	29.2	1.8	69.0	40.3	8.2	51.5
65+	3.0	*0.0	97.0	*14.4	*8.9	76.7
Total	18.4	0.9	80.7	20.5	4.5	75.0

Notes: Population weighted results. \* Estimate not reliable.

of those who would be eligible for a co-contribution may have changed from regular (salary sacrificed) contributions to lump sum contributions.

Has there been a substantial increase in voluntary superannuation contributions among those who would be eligible for a superannuation co-contribution? Table 26.8 compares the proportion of male and female employees who made additional superannuation contributions in 2002 and 2006 according to their gross wage and salary income.

Among males earning less than \$28,000 per year, the proportion making additional superannuation contributions increased from 7% in 2002 to 11% in 2006. However, for males earning between \$28,000 and \$58,000, the proportion making additional superannuation contributions decreased from 26% to 22%. For males with earnings between \$58,000 and \$80,000, the proportion making additional superannuation contributions decreased from 37% in 2002 to 33% in 2006, and for males earning \$80,000 or more, the proportion making additional superannuation contributions also dropped slightly, from 40% to 38%.

Among females who were earning less than \$28,000 per year, the proportion making voluntary superannuation payments increased from 10% in 2002 to 17% in 2006, with 12% of females in this income bracket making regular additional contributions and 5% making lump sum contributions. For females earning between \$28,000 and \$58,000 per year, the proportion making additional superannuation payments was around 27% in both 2002 and 2006, but in 2006, the proportion making regular contributions dropped slightly, while the proportion making lump sum payments rose from less than 1% in 2002 to 4% in 2006. Similarly, among females earning between \$58,000 and \$80,000 per

year, the proportion making additional superannuation payments was just under 40% in both years, but the proportion that made lump sum payments rose from less than 2% in 2002 to 4% in 2006, while the proportion that made regular superannuation contributions dropped slightly.

Table 26.9 compares the average annual additional superannuation contributions of males and females in 2002 and 2006, according to their wage and salary income. It appears that, while the proportion of persons making additional lump sum superannuation contributions increased between 2002 and 2006, the median amount of lump sum contributions decreased. For men who made additional superannuation contributions, average annual additional (regular) contributions increased from \$3,759 in 2002 to \$5,050 in 2006, while annual lump sum contributions decreased from \$9,915 in 2002 to \$6,460 in 2006.

Among women who made additional superannuation contributions, average annual lump sum contributions were \$6,577 in 2002 and \$6,698 in 2006, while average annual regular contributions rose from \$2,590 per year in 2002 to \$3,490 in 2006. While the proportion of people making additional lump sum superannuation contributions increased between 2002 and 2006, the average amounts of those contributions probably decreased, as those who were eligible for the superannuation co-contribution would not be likely to contribute more than was required in order to receive the maximum possible amount of government co-contribution.

### Concluding points

In 2002, most prime-age people had at least some superannuation and, by 2006, the proportion who

**Table 26.8: Make additional superannuation contributions—Employees, by sex and annual gross wage and salary income (%)**

Annual wage and salary income (\$'000)	2002			2006		
	Yes, make regular additional contributions	Yes, occasional lump sum contributions	No, only receive employer contributions	Yes, make regular additional contributions	Yes, occasional lump sum contributions	No, only receive employer contributions
<b>Males</b>						
<28	6.3	*0.6	93.1	6.8	*3.7	89.4
28–<58	24.1	*1.5	74.4	18.3	3.2	78.5
58–<80	33.9	*2.9	63.2	30.1	*2.4	67.4
80+	38.4	*1.4	60.2	34.6	3.3	62.1
Total	22.7	1.6	75.7	21.5	3.1	75.4
<b>Females</b>						
<28	8.7	*0.8	90.5	11.5	5.2	83.2
28–<58	25.9	*0.8	73.4	22.8	4.1	73.1
58–<80	36.3	*1.7	61.9	34.8	4.2	61.0
80+	*29.5	*0.0	70.5	34.0	*3.0	63.0
Total	18.4	0.9	80.7	20.5	4.5	75.0

Notes: Population weighted results. \* Estimate not reliable.

said they had some superannuation savings had increased in all age groups. On average, superannuation balances rose substantially between 2002 and 2006, with the average superannuation balance increasing from \$68,490 to \$96,303 for males and from \$37,335 to \$50,946 for females.

Overall, it appears that awareness of superannuation did not change much in the four-year period from 2002 to 2006. The proportion of people who said they did not know whether their superannuation fund was an accumulation fund or a defined benefit fund was higher in 2006 than in 2002. However, the proportion who did not know the amount that their employer contributed to their superannuation dropped slightly for men; and the proportion of people who did not know if their employer made contributions to superannuation on their behalf also dropped slightly, most notably among younger people and casual workers.

Between 2002 and 2006, the proportion of persons making additional contributions to superannuation increased slightly—most likely in response to the introduction of the superannuation co-contribution scheme—with lump sum superannuation contributions becoming more common by 2006. This change in the proportion of people making additional superannuation contributions was most evident among females aged between 25 and 64, and among persons eligible for the full co-contribution amount—that is, those earning less than \$28,000 per year. While the number of people making additional superannuation contributions increased between 2002 and 2006, the average amount of lump sum contributions decreased slightly. The average was likely brought down by the increase in people contributing just enough to be entitled to the full government co-contribution.

## Endnotes

- 1 There are some exceptions to superannuation entitlement. For example, employees who earn less than \$450 per month before tax, employees aged 70 or over, and employees under 18 years of age who work less than 30 hours a week may not be entitled to superannuation (Australian Securities and Investments Commission (ASIC), 2007).
- 2 Superannuation benefits may be accessed in the form of a lump sum or income stream upon reaching the preservation age, which is currently 55, but is being gradually increased so that it will be 60 by 2025.
- 3 For a more detailed account of the evolution of Australia's retirement income system, see Warren (2008).
- 4 As part of the 'Simpler Super' reforms, from 1 July 2007, the 15% benefits tax on superannuation payouts was removed for those who remain in the workforce until at least age 60. This created a strong incentive for high-wealth individuals to transfer large amounts of assets currently held outside superannuation into the concessional tax superannuation system, particularly during the transitional period between 10 May 2006 and 30 June 2007, during which individuals were able to make post-tax contributions of up to \$1 million into their super fund. Also, from 1 July 2007, it is no longer compulsory to withdraw superannuation holdings upon reaching the age of 65 and to be out of the labour force. Previously, men and women aged 65 and over who were no longer working were required to cash out their superannuation or start a pension, but now, individuals can retain their money in superannuation indefinitely. The effects of these changes will not be able to be observed until the wealth module is included in the HILDA Survey in wave 10.
- 5 This question is based on a self-reported definition of 'not yet retired'. Some respondents who consider themselves not retired were not in paid employment at the time of interview.
- 6 Prime-age men and women are defined as those aged between 25 and 54. A large proportion of men and

**Table 26.9: Additional contributions—Employees, by wage and salary income (means and medians)**

Annual gross wage and salary income (\$'000)	2002				2006			
	Regular additional contributions		Occasional lump sum contributions		Regular additional contributions		Occasional lump sum contributions	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
<b>Males</b>								
<28	1,880	905	*6,266	*8,006	4,175	2,347	*820	*1,000
28–<58	2,583	2,087	*4,284	*89	3,146	1,955	3,593	1,000
58–<80	4,303	3,297	*12,779	*4,448	4,616	3,077	*10,022	*5,000
80+	7,614	5,333	*36,432	*8,895	8,313	4,849	16,297	10,000
Total	3,759	2,476	9,915	1,779	5,050	2,844	6,460	1,000
<b>Females</b>								
<28	1,645	1,002	*6,777	*4,448	1,753	1,043	6,508	1,000
28–<58	2,476	1,913	*8,055	*8,895	3,304	1,564	5,391	1,000
58–<80	4,873	3,456	*2,274	*1,779	4,329	3,377	*5,224	*2,000
80+	5,437	4,374	n.a.	n.a.	8,156	5,216	*4,617	*3,000
Total	2,590	1,797	6,577	4,448	3,490	1,721	6,698	1,000

Notes: Population weighted results. \* Estimate not reliable. All monetary values expressed at September quarter 2006 prices.

women aged between 15 and 19 would be still in full-time education and so have little or no superannuation savings. Men and women over the age of 55 have reached their superannuation preservation age, and so are able to cash out their superannuation. Therefore the proportion of people in this age group who report having some superannuation is lower than for those aged between 25 and 54.

- 7 Olsberg (2004) found that even when working full-time, women's average earnings amount to only 89% of male average full-time earnings.
- 8 Those with more than one superannuation fund were asked about their largest superannuation fund. Respondents were shown the definitions of the two types of superannuation funds, which were described as follows: "A defined benefit fund – This type of fund pays you an amount agreed upon in advance" and "An accumulation (or growth) fund – This type of fund pays you according to how successfully the funds have been invested".
- 9 This small increase in the proportion of people reporting having received superannuation contributions from their employer may be partly a result of a change in the superannuation guarantee legislation in 2002. In the 2002 Federal Budget it was announced that, in order to encourage compliance with superannuation guarantee obligations, as from 1 July 2003, employers would be required to make Superannuation Guarantee contributions on a quarterly basis rather than an annual basis.

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## Other Topics

### 27. Home ownership, renting and housing stress

For most Australian households, the cost of housing, regardless of whether they are paying off a mortgage or renting their home, is one of their largest regular expenses. Over the decade to 2006, the 'Australian dream' of owning a home has become more difficult to achieve: housing affordability worsened as house price appreciation outstripped growth in disposable income. During the five year period from 2001 to 2006, house prices increased by a compound annual growth rate of 8.9%, while disposable income rose by a compound annual growth rate of only 2.9% (Morgan and Fujitsu, 2007). Official interest rates also increased over the 2001 to 2006 period, from 4.5% in September 2001 to 6.0% in September 2006 (Reserve Bank of Australia (RBA), 2008).

In 2006, the average home cost seven times the average annual wage, and the size of the average first home owner mortgage has increased from \$104,000 in 1997 to \$231,000 in 2007 (Commonwealth Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), 2008). According to the Housing Industry Association of Australia, home buyers in 2006 spent on average nearly one-third of their income on mortgage repayments, compared with 17.9% in 1996 (Treasury, 2008). Figures from the Australian Bureau of Statistics (ABS) (2007) indicate that owners with a mortgage experienced an \$82 (or 32%) increase in average weekly housing costs, after adjustment for inflation, between 1995 and 2006, while the average real increase in weekly housing costs for private renters was \$36 (or 19%).

Table 27.1 shows the proportion of Australian households who owned their homes outright, were paying off a mortgage, rented their home or had other housing arrangements in the six years from 2001 to 2006.

The proportion of households who were renting the home they lived in stayed quite steady over the six-year period, ranging from 29% of house-

holds in 2003 to 30% of households in 2006. The proportion of households who were paying off a mortgage increased slightly, from 32% in 2001 to 35% in 2006 and at the same time, the proportion of households who owned their home outright decreased by around 4%, from 36% in 2001 to 32% in 2006. One possible explanation for this small decline in the number of households living in a home that was completely paid off is that many people took on extra debt to either renovate their existing home or move to a more expensive home in the years when interest rates were low.

In each year of the HILDA Survey, respondents who are home owners (either own their home outright or are paying off a mortgage) are asked to give an estimate of what they think the home they are currently living in would be worth if it were sold. Table 27.2 shows the increase in average home values between 2001 and 2006 in different areas of Australia.<sup>1</sup>

During the five-year period from 2001 to 2006, the average value of private dwellings increased by around \$200,000—from \$262,000 in 2001 to \$463,000 in 2006—with the largest increases in values occurring in 2002 and 2003. By 2006 the rate of growth in property values had slowed in most areas of Australia, but particularly in Sydney. With this increase in the value of private dwellings came an increase in mortgage debt, particularly in the years when interest rates were low, as shown in Table 27.3.

The median value of housing debt in Australia rose by 67% in the five-year period from 2001 to 2006—from \$90,000 to \$150,000. In Sydney, the average mortgage rose from \$158,000 in 2001 to \$260,000 in 2006 and in Brisbane, the average mortgage value almost doubled—rising from \$99,000 to \$181,000 in five years. As the value of mortgages increased, so did average mortgage repayments. Then, when interest began to rise, the average mortgage payments increased even further. According to JP Morgan and Fujitsu consulting

**Table 27.1: Housing situation (%)**

	2001	2002	2003	2004	2005	2006
Own outright	36.1	34.2	33.1	33.7	32.3	31.9
Paying off mortgage	32.1	33.3	34.7	33.9	34.8	35.2
Rent/pay board/rent-buy scheme	29.3	29.7	29.2	29.5	29.6	29.8
Live rent free or life tenure	2.5	2.9	3.0	2.8	3.1	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

*Notes:* Population weighted results. Percentages may not add up to 100 due to rounding.

(2007), the increases in interest rates between 2002 and 2007 have added an extra \$536 per month to mortgage payments for a \$300,000 loan. Table 27.4 shows the mean and median monthly mortgage payments for households in different areas of Australia between 2001 and 2006.

Across Australia, average monthly mortgage payments rose from \$978 in 2001 to \$1,462 in 2006, an increase of almost 50%. During this five-year period, Sydney and Perth experienced the largest

increases in monthly mortgage payments, with increases of \$627 (45%) and \$653 (76%) per month respectively, compared to \$461 (43%) in Melbourne, \$489 (55%) in Brisbane and \$365 (50%) in Adelaide. For recent home buyers, the amount of housing debt was generally higher—ranging from \$151,000 in 2001 to \$241,000 in 2006, so mortgage payments were also higher than the average. Average monthly mortgage repayments for recent home buyers increased from \$1,106 in 2001 to \$1,695 in 2006.<sup>2</sup>

**Table 27.2: Mean (and median) home values, 2001–2006 (\$'000)**

	2001	2002	2003	2004	2005	2006	Total change
Sydney	433 (350)	505 (420)	582 (500)	622 (550)	633 (520)	644 (520)	211 (170)
Balance of New South Wales	217 (180)	266 (200)	327 (276)	378 (330)	393 (330)	424 (350)	207 (170)
Melbourne	284 (240)	327 (280)	367 (310)	404 (350)	419 (350)	446 (370)	162 (130)
Balance of Victoria	202 (150)	237 (170)	275 (200)	308 (250)	319 (250)	322 (269)	120 (119)
Brisbane	197 (180)	250 (225)	308 (300)	365 (340)	406 (375)	404 (370)	207 (190)
Balance of Queensland	187 (155)	214 (175)	270 (230)	320 (290)	367 (320)	401 (350)	214 (195)
Adelaide	180 (150)	213 (180)	259 (221)	297 (260)	315 (280)	334 (285)	154 (135)
Balance of South Australia	128 (100)	144 (120)	199 (150)	232 (200)	243 (205)	258 (220)	130 (120)
Perth	240 (200)	267 (240)	312 (280)	348 (300)	401 (350)	574 (500)	334 (300)
Balance of Western Australia	237 (130)	214 (135)	264 (150)	299 (190)	364 (240)	627 (350)	390 (220)
Tasmania	116 (90)	162 (100)	177 (130)	225 (200)	257 (200)	285 (236)	169 (146)
Northern Territory	208 (180)	247 (220)	265 (270)	302 (250)	329 (300)	403 (400)	195 (220)
Australian Capital Territory	279 (250)	329 (280)	425 (360)	456 (400)	452 (400)	474 (400)	195 (150)
Total	262 (200)	305 (250)	360 (300)	402 (340)	426 (350)	463 (380)	201 (180)

*Note:* Population weighted results.

**Table 27.3: Mean (and median) mortgage debt of all households with a mortgage, 2001–2006 (\$'000)**

	2001	2002	2003	2004	2005	2006	Total change
Sydney	158 (145)	169 (150)	208 (200)	219 (200)	233 (200)	260 (250)	102 (105)
Balance of New South Wales	96 (80)	110 (91)	114 (90)	140 (100)	150 (118)	162 (127)	66 (47)
Melbourne	111 (90)	122 (100)	135 (108)	158 (130)	171 (140)	176 (155)	65 (65)
Balance of Victoria	74 (60)	81 (70)	100 (75)	100 (86)	104 (100)	132 (100)	58 (40)
Brisbane	99 (94)	111 (98)	126 (110)	153 (130)	168 (150)	181 (165)	82 (71)
Balance of Queensland	107 (85)	102 (86)	113 (95)	132 (100)	149 (130)	163 (136)	56 (51)
Adelaide	80 (70)	82 (76)	90 (80)	110 (100)	124 (105)	132 (108)	52 (38)
Balance of South Australia	63 (46)	59 (52)	70 (62)	73 (60)	94 (74)	99 (80)	36 (34)
Perth	97 (90)	104 (90)	126 (109)	149 (120)	159 (130)	187 (142)	90 (52)
Balance of Western Australia	79 (70)	94 (68)	107 (92)	128 (95)	136 (110)	144 (120)	65 (50)
Tasmania	70 (55)	66 (58)	71 (60)	81 (60)	95 (80)	121 (90)	51 (35)
Northern Territory	*143 (145)	*166 (140)	*172 (140)	*182 (130)	146 (140)	*157 (145)	*14 (0)
Australian Capital Territory	124 (101)	134 (100)	166 (130)	181 (120)	201 (170)	237 (252)	113 (151)
Total	108 (90)	117 (97)	135 (100)	152 (119)	165 (130)	182 (150)	74 (60)

*Note:* Population weighted results.

Even though there has been a substantial increase in average monthly mortgage payments over the five years between 2001 and 2006, most households seem to have been able to keep up with their mortgage repayments. Only 3.5% of people with a housing or property loan said they had been unable to make a repayment on their loan by the due date in the 12 months prior to their 2006 interview. As one would expect, the proportion that were not able to pay their mortgage repayments on time was higher for those in low income households, with 6.2% of individuals in the lowest quintile of equivalised household income in 2006 saying they had not been able to pay their mortgage on time, compared to only 1.5% in the highest income quintile. There is also some evidence of people selling their homes because of financial difficulties—5.4% of those who had sold a home during the four years prior to their 2006 interview said they had done so because of financial difficulties.

### What about households who rent?

For households who rent, the cost of housing has also increased in recent years. The average rent for a three bedroom home has risen by 82% between 1996 and 2006 (FaHCSIA, 2008). Table 27.5 shows the change in average monthly rent payments, by region, between 2001 and 2006.

The HILDA Survey data indicate that, across Australia, the average monthly rent payment increased from \$682 in 2001 to \$816 in 2006, an

overall increase of 20% over five years. Between 2001 and 2002, average monthly rent increased by less than 2%, and by around 3% each year from 2002 to 2005, but between 2005 and 2006, average monthly rent payments increased by 7%. While average rental payments in 2006 were highest in Sydney, closely followed by the Australian Capital Territory, the areas in which the proportionate increase in average rent was highest over the five-year period from 2001 to 2006 were Western Australia (excluding Perth), where average rent increased by almost 40% over five years, Adelaide, where the increase in average rent between 2001 and 2006 was 35% and Victoria (excluding Melbourne), where the average monthly rent payment increased by 32%.

### Housing stress

With higher levels of housing debt, rising rents and increases in interest rates and home loan repayments, 'housing stress' is also increasing. Households are often defined as being in housing stress if they have relatively high mortgage or rental costs, for instance, above 30% of gross non-equivalised household income, and their household income is ranked in the bottom 40% of the income distribution. The reason for excluding higher income households is that, compared to low income households, they often have more discretion to reduce their housing costs by lowering their mortgage repayments or moving to a cheaper dwelling (ABS, 2007). However, this definition of housing stress excludes the majority of home purchasers,

**Table 27.4: Mean (and median) monthly mortgage payments, 2001–2006 (\$)**

	2001	2002	2003	2004	2005	2006	Total change
Sydney	1,402 (1,200)	1,347 (1,200)	1,502 (1,300)	1,546 (1,399)	1,837 (1,738)	2,029 (1,900)	627 (700)
Balance of New South Wales	845 (752)	908 (799)	905 (782)	1,035 (912)	1,200 (1,084)	1,312 (1,134)	467 (382)
Melbourne	1,061 (900)	1,086 (873)	1,136 (1,000)	1,215 (1,086)	1,333 (1,200)	1,487 (1,300)	426 (400)
Balance of Victoria	745 (652)	764 (652)	871 (739)	984 (820)	963 (869)	1,120 (880)	375 (228)
Brisbane	882 (850)	956 (891)	1,025 (999)	1,169 (1,100)	1,278 (1,125)	1,371 (1,304)	489 (454)
Balance of Queensland	886 (799)	847 (780)	890 (760)	1,000 (869)	1,149 (1,086)	1,269 (1,130)	383 (331)
Adelaide	734 (673)	855 (713)	855 (760)	887 (869)	1,024 (900)	1,099 (1,000)	365 (327)
Balance of South Australia	599 (565)	653 (521)	664 (652)	676 (639)	763 (652)	817 (687)	218 (122)
Perth	855 (800)	929 (782)	1,026 (930)	1,130 (978)	1,237 (1,086)	1,508 (1,200)	653 (400)
Balance of Western Australia	773 (652)	752 (652)	976 (760)	1,004 (800)	1,066 (978)	1,098 (1,020)	325 (368)
Tasmania	647 (543)	776 (608)	665 (600)	785 (652)	913 (732)	1,119 (800)	472 (257)
Northern Territory	*1,188 (1,304)	*1,295 (1,295)	*1,272 (1,321)	*1,475 (1,108)	1,450 (1,130)	*1,240 (1,260)	*52 (–44)
Australian Capital Territory	1,183 (1,086)	1,208 (1,020)	1,235 (1,100)	1,392 (1,304)	1,526 (1,300)	1,692 (1,600)	509 (514)
Total	978 (850)	1,007 (869)	1,075 (921)	1,163 (1,000)	1,309 (1,100)	1,462 (1,217)	484 (367)

Notes: Population weighted results. \* Estimate not reliable.

**Table 27.5: Mean and (median) monthly rent payments, 2001–2006 (\$)**

	2001	2002	2003	2004	2005	2006	Total change
Sydney	931 (869)	947 (893)	933 (869)	957 (869)	966 (869)	1,048 (982)	117 (113)
Balance of New South Wales	545 (543)	575 (587)	624 (608)	634 (630)	641 (630)	665 (652)	120 (109)
Melbourne	691 (670)	730 (693)	760 (700)	743 (700)	765 (739)	810 (760)	119 (90)
Balance of Victoria	471 (500)	454 (435)	521 (543)	584 (565)	584 (543)	623 (587)	152 (87)
Brisbane	684 (695)	710 (695)	692 (695)	743 (760)	814 (826)	839 (891)	155 (196)
Balance of Queensland	635 (587)	603 (565)	659 (608)	701 (652)	758 (695)	809 (739)	174 (152)
Adelaide	482 (478)	522 (478)	547 (491)	590 (587)	612 (608)	651 (639)	169 (161)
Balance of South Australia	436 (478)	449 (478)	475 (478)	471 (478)	554 (500)	561 (543)	125 (65)
Perth	589 (565)	564 (543)	608 (587)	619 (608)	626 (608)	736 (695)	147 (130)
Balance of Western Australia	485 (500)	521 (521)	524 (565)	482 (521)	559 (521)	669 (543)	184 (43)
Tasmania	437 (456)	448 (435)	440 (435)	522 (521)	555 (543)	549 (543)	112 (87)
Northern Territory	*888 (782)	*670 (695)	*625 (500)	*650 (521)	*753 (630)	*722 (782)	*-166 (0)
Australian Capital Territory	882 (847)	846 (869)	925 (999)	926 (1,086)	917 (1,043)	1,045 (1,130)	163 (283)
Total	682 (630)	693 (630)	714 (652)	739 (673)	763 (695)	816 (760)	134 (130)

*Notes:* Population weighted results. \* Estimate not reliable.

as only a small proportion of home purchasers fall into the bottom 40% of the income distribution (Harding et al., 2004). Therefore, in this Report, a household is defined as being in housing stress simply if housing costs were greater than 30% of gross household income.

Table 27.6 shows the proportion of households with outstanding mortgage debt that were in mortgage stress in each year from 2001 to 2006, by region. During the five-year period from 2001 to 2006, the proportion of (mortgage paying) households in mortgage stress across Australia increased from 12.5% in 2001 to 17.5% in 2006. The largest increase in mortgage stress was between 2005 and 2006, when the proportion of households in mortgage stress rose from 14.8% to 17.5%. This increase coincided with a 0.5% increase in official interest rates, from 5.5% in September 2005 to 6.0% in September 2006 (RBA, 2008).

In all six years, households paying off a mortgage in Sydney had the highest rate of mortgage stress, with the proportion of households experiencing mortgage stress remaining relatively steady at around 20% between 2001 and 2004, before rising

to 26% in 2005 and 32% in 2006. In Perth, the proportion of households experiencing mortgage stress doubled during this five-year period, from 10% of mortgage-paying households in 2001 to 20% in 2006.

Table 27.7 shows that, among households that rent, rental stress has remained relatively stable over the five-year period from 2001 to 2006. However, compared to the proportion of households in mortgage stress, the proportion of renting households in rental stress was much higher in 2001.

Across Australia, the proportion of renting households who were in rental stress ranged from 23% in 2001 to 24% in 2004 and 22% in 2006. In some areas, such as Sydney, Brisbane and Perth, the proportion of renting households in rental stress decreased between 2001 and 2006. In Melbourne, the proportion of households in rental stress increased from 20% in 2001 to 25% in 2006, and in Adelaide, the proportion in rental stress increased from 18% to 26%.

Of course, housing stress is much more of a problem for low income households than for high income households. The National Centre for Social and Economic Modelling (Tanton et al., 2008) has estimated that across Australia in 2006, there were over one million low- and middle-income households in housing stress, and 685,000 low- and middle-income households who were renting were in rental stress. Tables 27.8 and 27.9 show the proportions of mortgage-paying households who were in mortgage stress and the proportion of rent-paying households who were in

#### **Housing stress**

Housing stress refers to a situation in which a household's housing costs, which consist of rental payments or mortgage repayments on the primary residence, are regarded as 'excessively' burdensome. In this Report, a household is defined to be in housing stress if housing costs are greater than 30% of gross household income.

**Table 27.6: Proportion of mortgage-holding households in 'mortgage stress' (%)**

	2001	2002	2003	2004	2005	2006
Sydney	19.3	20.6	20.4	17.8	26.0	31.8
Balance of New South Wales	9.3	9.4	10.6	12.6	14.4	13.1
Melbourne	14.1	10.9	13.5	13.5	12.4	14.5
Balance of Victoria	*11.4	17.6	*14.1	*13.1	*8.4	*11.2
Brisbane	*7.1	*9.8	*5.9	*10.4	13.2	14.6
Balance of Queensland	13.4	12.6	12.6	14.8	13.4	19.2
Adelaide	*6.8	*10.9	*11.9	*14.0	*12.9	*7.0
Balance of South Australia	*18.2	*5.3	*8.1	*1.0	*0.0	*2.3
Perth	10.1	11.6	10.0	14.9	13.1	20.0
Balance of Western Australia	*7.2	*6.6	*10.8	*1.9	*8.8	*7.5
Tasmania	*10.2	*9.4	*9.1	*15.0	*15.3	*16.3
Northern Territory	*10.1	*6.4	*14.9	*0.0	*9.2	*3.4
Australian Capital Territory	*14.8	*13.0	*8.8	*14.5	*6.2	*9.5
Total	12.5	12.7	12.9	13.7	14.8	17.5

*Notes:* Population weighted results. \* Estimate not reliable.

**Table 27.7: Proportion of renting households in 'rental stress' (%)**

	2001	2002	2003	2004	2005	2006
Sydney	21.7	22.0	25.1	22.5	22.0	18.9
Balance of New South Wales	27.0	28.2	26.2	24.1	24.7	25.7
Melbourne	20.3	26.7	22.2	24.6	21.6	24.7
Balance of Victoria	22.1	24.7	28.0	22.4	25.5	25.8
Brisbane	20.4	19.4	21.6	25.1	21.5	17.3
Balance of Queensland	24.9	25.1	24.1	25.0	25.7	20.6
Adelaide	18.4	23.9	23.6	20.6	23.5	25.5
Balance of South Australia	*18.3	*20.5	*18.3	*10.8	*11.4	*13.1
Perth	31.9	25.1	31.2	26.8	21.6	24.9
Balance of Western Australia	*15.1	*10.9	*12.9	*27.5	*29.6	*14.3
Tasmania	*26.1	*15.0	28.7	*25.9	*22.8	*21.0
Northern Territory	*20.7	*12.7	*3.7	*24.0	*5.0	*19.6
Australian Capital Territory	*21.3	*13.6	*15.5	*18.3	*22.7	*31.6
Total	22.8	23.3	24.1	23.6	22.7	22.0

*Notes:* Population weighted results. \* Estimate not reliable.

rental stress, by quintile of equivalised household income, in each year from 2001 to 2006.

While mortgage stress was most common in low-income households and least common in high-income households, the proportion of households in the lowest quintile of equivalised income who were in mortgage stress decreased substantially between 2001 and 2006—from almost 60% in 2001 to just over 40% in 2006. One possible explanation for this is that low-income households may have been less likely to take on extra housing debt during this period, and more likely to have sold their home and moved to a rental property, or had their home repossessed because they were behind in mortgage repayments. More likely, however, is that there has been a change in the composition of mortgage-holders in the bottom income quintile. For example, fewer young people with large mortgages, and relatively more elderly people with low mortgages, driven

by a decline in access to first home ownership for low-income households, could explain the decline in mortgage stress among low-income mortgage-holders.

Among households in the second quintile, the proportion who were in mortgage stress increased from 25% in 2001 to 34% in 2006, and in the middle quintile the proportion who were in mortgage stress increased from 11% in 2001 to 19% in 2006. In 2001, only around 5% of mortgage-paying households in the top two quintiles of equivalised household income were in mortgage stress, but by 2006, 13% of households in the fourth quintile and 9% of households in the top quintile were in mortgage stress.

Table 27.9 shows that the proportion of households in the lowest quintile of equivalised income who experienced rental stress was just over 50% each year, while in the second income quintile,

the proportion that were in rental stress decreased from 32% in 2004 to 27% in 2006. In the middle quintile of equivalised income, the proportion that were in rental stress ranged from 16% in 2003 to 9% in 2005 and 11% in 2006.

Finally, looking at housing stress across all households, that is, those who rent, those paying off a mortgage, those who own their home outright and those who have other housing arrangements, Table 27.10 shows the proportion of all households in Australia who were experiencing housing stress, by quintile of equivalised household income.

Overall, the proportion of Australian households experiencing housing stress (either rental stress or mortgage stress) increased from 10% in 2001 to 12% in 2006. In the lowest quintile of equivalised household income, the proportion of households in housing stress remained quite stable at around 25%, while among households in the second quintile, the proportion that experienced housing stress increased from 16% in 2001 to 17% in 2006.

The proportion of the middle quintile experiencing housing stress increased from 7% in 2001 to 11% in 2006. In the top two quintiles, housing stress was relatively uncommon, with approximately 3% of each quintile experiencing housing stress in 2001 and 6% of households in the fourth quintile and 4% of households in the top quintile experiencing housing stress in 2006.

### Concluding points

During the five-year period from 2001 to 2006, the average value of private dwellings across Australia increased by around \$200,000, and average housing debt rose from \$108,000 in 2001 to \$182,000 in 2006. With the increase in house values as well as increases in interest rates, mortgage payments also increased, from an average of \$978 per month in 2001 to \$1,462 per month in 2006. Those who were renting did not escape this increase in the cost of housing either, with average monthly rent increasing by almost 20%—from \$682 in 2001 to \$816 in 2006.

**Table 27.8: Proportion of mortgage-paying households in mortgage stress, by income quintile (%)**

Quintile of equivalised household disposable income	2001	2002	2003	2004	2005	2006
1 (Lowest)	59.9	53.8	61.0	51.3	46.3	41.2
2	24.5	28.4	23.2	25.4	24.7	34.1
3	10.9	11.2	12.2	14.6	15.4	19.3
4	5.2	5.7	6.1	8.6	13.6	12.6
5 (Highest)	5.3	5.6	6.7	6.7	6.3	9.4
Total	12.5	12.7	12.9	13.7	14.8	17.5

Note: Population weighted results.

**Table 27.9: Proportion of rent-paying households in rental stress, by income quintile (%)**

Quintile of equivalised household disposable income	2001	2002	2003	2004	2005	2006
1 (Lowest)	52.9	53.2	53.5	52.6	55.4	53.9
2	31.6	31.7	30.0	32.2	26.8	26.7
3	11.6	11.0	16.1	12.9	9.2	11.0
4	*4.2	6.1	*3.2	*2.1	*3.4	*2.6
5 (Highest)	*1.5	*2.5	*2.6	*1.0	*2.0	*1.8
Total	22.8	23.3	24.1	23.6	22.7	22.0

Notes: Population weighted results. \* Estimate not reliable.

**Table 27.10: Housing stress: Proportion of all households experiencing either mortgage or rental stress, by income quintile (%)**

Quintile of equivalised household disposable income	2001	2002	2003	2004	2005	2006
1 (Lowest)	23.6	24.1	25.8	24.9	25.8	24.4
2	15.5	17.4	15.0	16.5	14.3	17.1
3	7.1	6.7	9.2	9.0	8.3	10.6
4	3.2	4.0	3.3	4.3	6.8	6.4
5 (Highest)	2.5	2.9	3.5	3.0	3.2	4.4
Total	10.4	10.8	11.2	11.3	11.5	12.3

Note: Population weighted results.

With this increase in the cost of housing, the proportion of Australian households experiencing housing stress also increased—from 10% of all households in 2001 to 12% in 2006. While the proportion of households who experienced mortgage stress increased—from 13% of households paying a mortgage in 2001 to 18% in 2006—the proportion experiencing rental stress remained quite steady at around 23% between 2001 and 2006. Among households who were renting, more than half in the lowest quintile of equivalised household income experienced rental stress in each year from 2001 to 2006. Among households who were paying off a mortgage, in all but the lowest quintile of household income, the proportion of experiencing mortgage stress increased. There are a number of potential explanations for the decline in mortgage stress among low-income households with mortgage debt, but the most likely explanation is that there was a compositional change to the group driven by reduced home ownership among young low-income persons.

### Endnotes

- 1 All types of private dwellings are included, that is, free-standing homes, townhouses, flats, apartments, etc.
- 2 The year the current home was bought was not asked in all years of the HILDA Survey, so households with 20 years or more until they pay off their mortgage are classified as recent home buyers.

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## 28. How often do people move house?

Moving house is widely regarded as one of the most stressful life events.<sup>1</sup> For some, this stress may be a result of the search for a new residence, the preparation for moving (e.g. packing and cleaning), and the move itself; while for others, changing residence may involve not only a change in location but also a major financial commitment, (e.g. a large mortgage), or a change in household structure, such as moving out of the family home, or moving in with a new partner. Be this as it may, the HILDA Survey data shows that each year, approximately 13% of people aged 15 and over move house, and 39% of those who were interviewed in all six years of the HILDA Survey, moved at least once after their first interview in 2001.<sup>2</sup>

In the first year of the HILDA Survey, each respondent was asked when they began living at their current address. In subsequent years they were asked whether they had moved since they were last interviewed and, if so, their reasons for moving.<sup>3</sup> Table 28.1 shows the average time respondents had been living at their current address. Overall, the average time people have been living at their current address is about ten years, but people under the age of 44 tend to have been in the same place for a shorter period than have older people. For example, in 2006, the average length of time for a 25 to 34 year old had lived in their current home was 4 years, compared to approximately 21 years for those over the age of 65.<sup>4</sup> Overall, there is very little difference in average housing tenure between men and women. The one exception is in the 20–24 age group. Women in this age group have shorter average ongoing tenures than men—approximately 4.5

years for women compared to around 6.5 years for men. One possible explanation for this is that when couples begin to cohabit, women more commonly move in to the place where their partner was already living.

Table 28.2 shows the average time living at current residence by household type, revealing which types of households move the most.<sup>5</sup> With the exception of group households, which are often temporary arrangements, people with children under the age of 15 move the most frequently. Lone parents with children under 15 are the most frequent movers of all, perhaps reflecting the severe financial pressures often faced by these families.<sup>6</sup>

In 2006, the average time in the current residence for a couple with children under 15 was 6.8 years, compared to 14.5 years for a couple with children aged 15 or older, but no children under 15, and 12.3 years for individuals in couple households with no children. Lone parents with children under 15 had lived in their current residence for an average of 6.1 years, compared to 13.1 years for lone parents whose children were 15 and over. The average time spent living in their current residence for people who live alone was 10.4 years, compared to 5.5 years for those who were living in a group household in 2006, and 7.9 years for people who were living in a multi-family household. It is also interesting to note that the average amount of time spent living in a group household increased from 2.6 years in 2001 to 5.5 years in 2006—possibly a result of the increase in the cost of housing during this period.

**Table 28.1: Mean number of years living in current residence, by sex and age**

Age group	2001	2002	2003	2004	2005	2006
<b>Males</b>						
15–19	8.3	7.9	8.2	8.3	8.6	8.6
20–24	6.5	6.3	6.5	6.2	6.4	6.9
25–34	4.4	4.3	4.4	4.3	4.4	4.1
35–44	6.1	6.2	6.2	6.7	6.8	7.0
45–54	10.7	10.5	10.6	10.3	10.2	10.6
55–64	15.5	15.4	15.2	15.4	15.1	15.4
65+	20.1	19.9	20.6	21.2	20.9	21.2
Total	9.9	9.8	10.0	10.2	10.3	10.4
<b>Females</b>						
15–19	7.4	8.2	8.0	8.2	8.4	8.7
20–24	4.7	4.9	4.6	4.7	4.4	4.7
25–34	4.0	4.2	4.3	4.6	4.2	3.9
35–44	6.4	6.4	6.4	6.4	6.7	7.1
45–54	11.6	11.1	11.2	11.1	11.2	10.7
55–64	15.1	15.6	16.1	16.0	15.8	16.2
65+	20.4	20.7	20.8	21.3	21.5	21.5
Total	10.0	10.3	10.4	10.6	10.7	10.8

*Note:* Population weighted results.

Table 28.3 confirms that the age of the children in the household appears to be related to how long people stay in one place. Compared to people in households with no resident children under 15 and those whose youngest child is aged 5–14, parents with young children move house most often. Approximately one in five parents whose youngest child is under the age of five move house each year, compared to around one in ten parents whose youngest child is aged between 10 and 14. There are many reasons why parents with young children may choose to move house. For example, they may need to increase their housing space and the number of bedrooms as the children mature; they may also want to move closer to preferred schools or child care centres. Other factors that may impact on the housing tenure of parents with young children include the financial impact of home purchase and child bearing.

Another factor that affects how often people move is whether they own or rent their home. Table 28.4 shows that, as one would expect, people who own

their own home or are paying off a mortgage have resided in the same place for longer than those who are renting. In 2006, the average number of years in the one residence for those who owned their home outright was 14.5 years, up from 13 years in 2001. For those paying off a mortgage, the average time in their current home was around 12.5 years in all six years from 2001 to 2006. The average time spent in the current residence for those who were living in government housing increased from 7.9 years in 2001 to 11.1 years in 2006, while the average time in the current residence for those who were renting was the shortest of all, increasing from 2.4 years in 2001 to 3.3 years in 2006.

In Table 28.5 we consider how, if at all, the frequency of moving house related to income. It shows average time living at current residence, grouped by sex, age group and quintile of equivalised household disposable income in 2006. Overall, the average time spent in the current home is slightly lower for people in higher income households than for

**Table 28.2: Mean number of years living in current residence, by current household type**

Household type	2001	2002	2003	2004	2005	2006
Couple family without children	12.2	12.0	12.2	12.4	12.5	12.3
Couple family with children under 15	6.7	6.7	6.8	6.8	6.8	6.8
Couple family with children 15 or older	13.3	13.4	13.7	13.9	13.8	14.5
Lone parent with children under 15	4.8	5.1	5.1	5.0	5.4	6.1
Lone parent with children 15 or older	11.3	12.0	12.5	12.2	12.4	13.1
Other related family	8.8	8.2	8.0	11.4	12.2	11.8
Lone person	10.9	10.3	10.1	10.3	10.4	10.4
Group household	2.6	3.9	4.9	5.0	5.2	5.5
Multi-family household	8.6	8.8	9.2	9.1	8.7	7.9
Total	10.0	10.0	10.2	10.4	10.5	10.6

*Note:* Population weighted results.

**Table 28.3: Proportion who moved house at least once in the previous year, by age of youngest resident child (%)**

Age of youngest resident child	2002	2003	2004	2005	2006
Youngest child aged 0–4	20.8	25.2	19.1	23.4	18.1
Youngest child aged 5–9	15.7	13.3	14.5	12.9	12.7
Youngest child aged 10–14	9.9	9.9	9.6	11.0	9.6
No children under 15 in the household	13.5	14.2	12.7	12.8	12.3
Total	13.7	14.3	12.9	13.3	12.4

*Note:* Population weighted results.

**Table 28.4: Mean number of years living in current residence, by type of housing tenure**

Housing tenure	2001	2002	2003	2004	2005	2006
Own home outright	13.0	13.0	13.2	13.9	14.0	14.5
Currently paying off mortgage	12.3	12.2	12.3	12.4	12.5	12.4
Rent or pay board—private rental	2.4	2.8	3.1	3.1	3.2	3.3
Rent or pay board—government housing	7.9	8.4	9.1	9.6	10.0	11.1
Live rent free or life tenure	8.2	8.2	7.5	8.4	7.7	8.5
Involved in a rent–buy scheme <sup>a</sup>	n.a.	*5.6	*6.3	*3.8	*5.3	*7.4
Total	10.0	10.0	10.2	10.4	10.5	10.6

*Notes:* Population weighted results. \* Estimate not reliable. <sup>a</sup> In 2001 this group was included in the 'rent or pay board' category.

**Table 28.5: Mean number of years living in current residence, by sex, age group and income quintile, 2006 (%)**

Age group	Quintile of equivalised household disposable income					Total
	1	2	3	4	5	
<b>Males</b>						
15–19	5.3	8.8	8.8	8.5	9.9	8.6
20–24	2.8	4.2	7.1	7.6	10.8	6.9
25–34	3.0	3.5	4.7	3.1	5.6	4.1
35–44	5.5	7.8	7.1	7.0	6.9	7.0
45–54	8.5	11.3	9.8	11.0	11.4	10.6
55–64	16.3	14.9	15.0	15.4	15.2	15.4
65+	20.4	21.5	21.2	25.6	22.0	21.2
Total	12.7	10.6	9.2	9.1	10.3	10.4
<b>Females</b>						
15–19	5.6	6.9	8.8	8.9	10.6	8.7
20–24	1.9	4.4	3.5	5.7	7.5	4.7
25–34	3.0	3.5	3.7	4.3	4.9	3.9
35–44	5.9	6.9	6.9	7.3	7.6	7.1
45–54	10.0	9.4	10.9	10.6	11.9	10.7
55–64	15.3	15.5	14.6	18.5	18.3	16.2
65+	21.4	23.3	16.9	27.2	18.0	21.5
Total	14.1	10.6	8.5	9.4	10.3	10.8

Note: Population weighted results.

those in the lowest quintile of household income. Men and women in the lowest income quintile have been in the same place for an average of 12.7 years and 14.1 years respectively, compared to 9.2 years for men and 8.5 years for women in the middle quintile and 10.3 years for men and women in the highest quintile of household income. However, these averages vary substantially by age. For younger people (under 25), those in the highest income households stay in one place for the longest—possibly remaining in the family home longer than those in lower income households.

### Why do people move?

The most common reason for moving reported in the 2006 HILDA Survey by people who had moved since their last interview was ‘personal or family reasons’, followed by housing-related reasons, and then work and education. ‘Personal and family reasons’ include young people moving out of home, moving in with a new spouse or partner, moving out because of a relationship breakdown, moving to be closer to friends or family, or to follow a spouse or parent who wanted to move. The next most common reason for moving was specifically for housing reasons—moving to a larger or better place, moving to a smaller or less expensive place or, for renters, moving because the property in which they had previously been living was no longer available. Other reasons for moving were work or study reasons—people moving because of work transfers, or wanting to be closer to their place of work or study—and finally, moving to a better neighbourhood.

Table 28.6 examines the reasons why people move and how these vary by age. Personal or family reasons are the most common reasons for

moving house, with more than half of those who moved in the 12 months prior to their 2006 interview giving these reasons for moving. A very high proportion of people under the age of 20—62% of men and 60% of women—said they had moved for personal or family reasons, perhaps giving this reason either because they left the family home or moved house along with their parents.

Almost 40% of people who had recently moved said they had done so because of housing reasons—that is, moving to a better or more suitable place or moving because their rental property was no longer available. The proportion of people who said they had moved for housing reasons increased with age—from 15% of men and 27% of women in their late teens to 49% of men and 47% of women aged between 55 and 64.

Moving for work or study reasons was most common for people under the age of 25—24% of men and 17% of women aged between 15 and 19 and 18% of men and 24% of women in their early twenties said they had moved for work or education reasons, compared to 16% of men and 9% of women aged between 25 and 34 and less than 10% of persons aged 55 or older.

### How far do people move?

Every year, many people move house. However, most do not move very far, with 59% moving less than 10 kilometres from their previous residence. Table 28.7 shows that for those people who had moved house in the 12 months prior to their 2006 interview, the distance moved depends, at least to some extent, on the reason for moving.<sup>7</sup> Approximately 60% of people who had moved in

**Table 28.6: Reasons for moving—Persons who had moved house in the 12 months prior to their 2006 interview (%)**

Age group	Reason for moving			
	Personal or family	Housing	Work or education	Better neighbourhood
<b>Males</b>				
15–19	61.7	15.3	24.2	*4.2
20–24	52.7	35.1	18.3	*4.7
25–34	51.2	38.6	15.9	*4.4
35–44	49.6	40.0	14.8	*5.3
45–54	57.1	38.3	*12.1	*11.0
55–64	38.4	49.0	*9.2	*16.8
65+	64.7	*38.4	*0.0	*16.4
Total	52.6	36.7	15.3	6.7
<b>Females</b>				
15–19	60.2	26.5	16.8	*5.3
20–24	59.3	23.1	24.3	*7.6
25–34	51.3	44.1	8.5	6.9
35–44	48.5	45.8	*7.5	*11.3
45–54	54.9	45.2	*7.1	*12.7
55–64	52.2	46.7	*5.5	*14.3
65+	64.1	32.4	*2.3	*11.1
Total	54.3	38.8	11.1	9.1

Notes: Population weighted results. \* Estimate not reliable. Multiple response question; rows do not add to 100.

**Table 28.7: Distance moved, by sex and reason for moving—Persons who had moved house in the 12 months prior to their 2006 interview (%)**

Distance moved (km)	Reason for moving				Total
	Personal or family	Housing	Work or education	Better neighbourhood	
<b>Males</b>					
0–9	55.3	76.9	24.1	53.5	60.4
10–19	14.2	13.8	*11.9	*9.3	13.3
20–49	9.1	5.1	*10.2	*13.8	8.0
50–99	4.0	*1.4	*6.1	*3.2	2.7
100–499	7.4	*2.2	20.0	*13.3	6.8
500+	10.0	*0.6	27.7	*7.0	8.9
Total	100.0	100.0	100.0	100.0	100.0
<b>Females</b>					
0–9	52.0	76.4	21.5	55.1	59.9
10–19	10.8	12.3	*11.1	*7.9	10.9
20–49	8.6	5.4	*11.9	*10.2	7.0
50–99	*3.2	*1.9	*5.4	*7.0	2.8
100–499	8.5	*2.8	25.4	*16.2	8.3
500+	16.8	*1.1	24.8	*3.6	11.1
Total	100.0	100.0	100.0	100.0	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

the 12 months prior to their 2006 interview had moved less than 10 kilometres from their previous residence. Those who moved for housing reasons were particularly likely to move only a small distance. In this group, more than three-quarters moved less than 10 kilometres, compared to just over half of those who moved for personal or family reasons or to move to a better neighbourhood; and only 24% of males and 20% of females who had moved for work or study reasons. Compared to

those who had moved for personal, family or housing reasons and those who moved to a better neighbourhood, it was more much more common for people who had moved for work or education reasons to have moved long distances, with 28% of men and 25% of women who moved because of work or study moving 500 kilometres or more from their previous home. A further 20% of men and 25% of women moved more than 100 kilometres but less than 500 kilometres from their previous address.

**Table 28.8: Number of moves, by sex and age group, 2001–2006 (%)**

Age group in 2006	Number of moves				Total
	0	1	2	3 or more	
<b>Males</b>					
20–24	49.5	20.1	15.6	14.9	100.0
25–34	26.0	35.1	21.9	17.0	100.0
35–44	51.2	25.6	14.7	8.5	100.0
45–54	69.4	20.1	7.4	3.0	100.0
55–64	74.0	17.0	6.4	2.6	100.0
65+	83.3	12.7	3.4	*0.6	100.0
Total	59.6	22.0	11.3	7.2	100.0
<b>Females</b>					
20–24	34.7	24.2	17.0	24.0	100.0
25–34	28.5	32.1	22.2	17.2	100.0
35–44	57.4	24.5	11.9	6.1	100.0
45–54	69.8	19.2	8.0	3.0	100.0
55–64	76.4	16.7	4.4	2.5	100.0
65+	84.0	12.6	2.8	*0.6	100.0
Total	61.8	21.0	10.2	7.1	100.0

Notes: Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

### Who moves the most?

Focusing just on people who responded in all six years of the HILDA Survey, 39% of people aged 15 and over moved house at least once between 2001 and 2006. The proportion of this group who were repeat movers, moving house at least twice after their first interview in 2001, was 18%—almost 40% of whom moved three times or more. Table 28.8 shows the proportion of men and women who did not change address at all during the period from 2001 to 2006, those who moved once, and those who moved several times.<sup>8</sup>

Men and women aged between 25 and 34 move most frequently—more than 70% of people in this age group moved at least once between 2001 and 2005, 39% moved at least twice, and 17% moved three times or more. It is much less common for older people to be repeat movers, with less than 10% of people over the age of 45 moving twice and less than 5% moving three times or more. For those who moved several times, the main reason for their last move is most commonly family or personal reasons, with this applying to more than half of those who moved twice and more than 40% of those who moved three times or more. A particularly common reason is moving in to a place of one's own or moving in with a new partner.

### Endnotes

- 1 For example, Maciejewski et al. (2001) identify an association between moving house and elevated risk of depression; and McKee et al. (2003) find that a change of residence is associated with an increased occurrence of smoking relapse.
- 2 The proportion of people who moved house was 13.7% between 2001 and 2002, 14.3% between 2002 and 2003, 12.9% between 2003 and 2004, 13.3% between 2004 and 2005 and 12.4% between 2005 and 2006.
- 3 As households change over time (people join and leave)

all figures in this article refer to moves by individuals, not 'household moves'.

- 4 As home ownership is related to age (i.e. older people more commonly own their home or are paying off a mortgage) it follows that young people are more likely to pay rent or board rather than owning, and people who pay rent or board generally live in one place for shorter periods than those who own their home or have a mortgage.
- 5 Note that this is the household type at the time of interview. Household types inevitably change as individuals join and leave the household.
- 6 For example, in 2006, 32% of lone parents with children under 15 said they would not be able to raise \$2,000 in an emergency compared to only 11% of people in couple households with children under 15; and 31% of lone parents said that they had been unable to pay their gas or electricity bills on time, compared to 15% of those in couple households with children under 15.
- 7 Calculation of distance moved is by the 'great circle' formula applied to latitude and longitude of centroids of postcode of previous and current address. The great circle formula calculates the distance between two locations using their latitude and longitude.
- 8 The HILDA Survey asks continuing respondents whether they have changed address since their previous interview as well as the date that they moved to their current address, but not whether they had changed address several times between one interview and the next. The number of address changes will therefore be underestimated for some individuals.

### References

- Maciejewski, P.K., Prigerson, H.G. and Mazure, C.M. (2001) 'Sex Differences in Event-Related Risk for Major Depression', *Psychological Medicine*, vol. 31, no. 4, pp. 593–604.
- McKee, S., Maciejewski, P., Falba, T. and Mazure, C. (2003) 'Sex Differences in the Effects of Stressful Life Events on Changes in Smoking Status', *Addiction*, vol. 98, no. 6, pp. 847–55.

## 29. Neighbourhood characteristics and individuals' perceptions of their neighbourhood

The negative aspects of particular neighbourhoods, such as high incidence of crime and vandalism attract a good deal of media publicity. In five out of the six waves of the HILDA Survey conducted between 2001 and 2006, respondents have been asked to rate, on a five-point scale, how common various positive and negative events are in their own neighbourhood.<sup>1</sup> Table 29.1 gives aggregate results for 2006. The first two attributes are positive, while the remaining eight attributes would generally be negatively perceived by the community.<sup>2</sup>

Most people have moderately positive assessments of the ten attributes of their neighbourhoods they are asked to consider. Over half indicate that 'neighbours helping each other out' is 'very common' or 'fairly common'. On the other hand, just over 60% say that 'neighbours doing things together' either 'never happens', is 'very rare', or is 'not common'.<sup>3</sup> No explicitly negative features are identified as present in their own neighbourhood by a majority of respondents. The most frequently reported negative attribute is loud traffic noise, with 31% saying this is very common

or fairly common in their neighbourhood. Two other negative features mentioned by over 20% of respondents are noise from airplanes, trains or industry (22%) and teenagers hanging around on the streets (21%), although it is possible not all people will regard these as negative attributes of a neighbourhood. Problems mentioned by 10–15% of respondents are burglary and theft; rubbish and litter lying around; vandalism and deliberate damage to property; and homes and gardens in bad condition. The one problem mentioned by fewer than 10% is people being hostile and aggressive, with more than a quarter saying it never happens and a further 64% saying that it is either very rare or not common.

A small proportion of people are not very aware of things that go on in their neighbourhood—9% do not know how common it is for neighbours to do things together, 8% do not know how common it is for neighbours to help each other out and 7% do not know how common burglary and theft are in their neighbourhood. One would assume that these were people who do not spend a lot of time at home, have not met their neighbours, or prefer

**Table 29.1: Neighbourhood characteristics, 2006 (%)**

	<i>Never happens</i>	<i>Very rare</i>	<i>Not common</i>	<i>Fairly common</i>	<i>Very common</i>	<i>Don't know</i>	<i>Total</i>
Neighbours helping each other out	5.3	12.9	20.9	36.6	16.5	7.7	100.0
Neighbours doing things together	12.6	16.9	31.7	23.6	6.2	9.1	100.0
Loud traffic noises	7.8	30.1	30.4	19.1	12.1	0.5	100.0
Noises from airplanes, trains or industry	20.0	33.0	24.0	14.9	7.5	0.6	100.0
Homes and gardens in bad condition	6.6	35.4	43.3	10.0	2.5	2.1	100.0
Rubbish and litter lying around	13.5	40.7	34.3	8.5	2.3	0.8	100.0
Teenagers hanging around on the streets	15.3	31.8	30.0	15.5	5.9	1.4	100.0
People being hostile and aggressive	25.7	38.8	25.6	5.2	1.9	2.7	100.0
Vandalism and deliberate damage to property	16.9	39.0	28.6	10.0	2.9	2.7	100.0
Burglary and theft	10.6	37.2	31.7	10.6	2.6	7.4	100.0

*Notes:* Population weighted results. Percentages may not add up to 100 due to rounding.

**Table 29.2: Neighbourhood characteristics—Proportion reporting that each event is common (%)**

	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2006</i>
Neighbours helping each other out	54.0	54.2	54.1	53.4	53.1
Neighbours doing things together	28.2	28.3	29.1	28.4	29.7
Loud traffic noises	31.7	32.5	31.6	30.4	31.2
Noises from airplanes, trains or industry	21.9	21.8	22.4	22.1	22.4
Homes and gardens in bad condition	11.9	12.1	12.8	12.5	12.5
Rubbish and litter lying around	10.8	10.9	11.4	11.6	10.8
Teenagers hanging around on the streets	23.6	22.6	21.4	20.9	21.5
People being hostile and aggressive	6.8	6.8	6.6	6.2	7.2
Vandalism and deliberate damage to property	16.4	15.1	13.6	13.1	12.9
Burglary and theft	21.5	18.9	16.3	14.4	13.1

*Note:* Population weighted results.

to keep to themselves. A 2007 survey run by NRMA found that young male renters were most likely to keep to themselves, with 38% saying they didn't know the name of anyone living nearby (NRMA, 2007).

Table 29.2 shows the proportion of people who said each attribute is either common or very common for each year the questions about neighbourhood characteristics were asked.<sup>4</sup> For most neighbourhood characteristics, the proportion of people perceiving them to be common is quite stable over the six-year period. The exceptions are teenagers hanging around on streets, vandalism, and burglary and theft, all of which had declines in the proportion reporting them to be common. The proportion of people saying that teenagers hanging around in the streets was common in their neighbourhood dropped from 24% in 2001 to 21% in 2004 and 22% in 2006; neighbourhood vandalism and damage to property was common for 13% of people in 2006, compared to 16% in 2001; and reports of burglary and theft being common dropped substantially, from 22% in 2001 to 13% in 2006. Figures from the Australian Government Institute of Criminology (AIC, 2008) support this finding, showing that, after rising between 1996 and 2001, the rate of property crime in Australia has since been declining.

### Are there fewer problems in country neighbourhoods?

Several of these neighbourhood characteristics, particularly traffic noises and noises from planes, trains and industry, depend more on the location of the neighbourhood—for example, in the city or the country—than the people who live in the neighbourhood. Table 29.3 compares responses to the questions about neighbourhood characteristics in 2006 across people living in major cities, regional areas and remote areas, showing the proportion who reported that each characteristic was either common or very common in their neighbourhood.

The HILDA Survey data suggest that people living in regional or remote areas are much more friendly

and helpful to their neighbours. Only 48% of people living in major cities said it was common for neighbours to help each other out, compared to 62% of people who live in inner regional areas, 65% of people who live in outer regional areas and 69% of people who live in remote areas. Just over 25% of people who live in a major city said it was common for neighbours to do things together, compared to around 40% in regional areas and 50% in remote areas.

Not surprisingly, loud traffic noises, noises from airplanes, trains and industry, and rubbish and litter lying around are more common in major cities, as is vandalism, burglary and theft. Compared to people living in major cities and regional areas, the proportion of people who said that it was common to have teenagers hanging around in the streets in their neighbourhood is substantially higher in remote areas. This may reflect a lack of recreational facilities for teenagers in these regions.

### Neighbourhood benefits and problems: How closely are they related to socio-economic disadvantage?

Table 29.4 shows the proportion of people reporting whether an event was common or very common, by decile of the socio-economic disadvantage of the area in which they were living in 2006.<sup>5</sup> Neighbourhood features are related in a more or less linear fashion to socio-economic status—the lower the status of the neighbourhood, the more frequently respondents reported as common adverse events, such as vandalism, burglary and theft and people being hostile and aggressive, and the less frequently they reported desirable events as common.

### What do people think of their neighbours?

In 2006, some new questions about people's perceptions of others who live in their neighbourhood were included in the HILDA Survey. Respondents were asked to rate on a scale of 1 to 7 how strongly they agreed with statements such as 'people in this

**Table 29.3: Neighbourhood characteristics by regional area—Proportion reporting that each event is common, 2006 (%)**

	<i>Major city</i>	<i>Inner regional</i>	<i>Outer regional</i>	<i>Remote</i>	<i>Total</i>
Neighbours helping each other out	48.1	61.8	65.1	69.0	53.1
Neighbours doing things together	25.3	37.1	40.2	49.7	29.7
Loud traffic noises	33.6	26.0	28.5	*16.0	31.2
Noises from airplanes, trains or industry	25.0	17.6	17.9	*11.3	22.4
Homes and gardens in bad condition	13.0	10.2	12.8	*20.8	12.5
Rubbish and litter lying around	11.8	8.5	7.8	*16.8	10.8
Teenagers hanging around on the streets	21.6	20.9	20.0	35.6	21.5
People being hostile and aggressive	7.2	6.4	7.2	*20.0	7.2
Vandalism and deliberate damage to property	14.0	10.1	10.3	*21.9	12.9
Burglary and theft	14.3	10.3	10.3	*21.8	13.1

*Notes:* Population weighted results. \* Estimate not reliable.

neighbourhood are willing to help their neighbours' and 'people in this neighbourhood can be trusted'. The distribution of responses to these statements is shown in Table 29.5.

Overall, most people are quite neutral about their perceptions of their neighbours, answering somewhere around the middle of the 1 to 7 scale. Only 4% of people strongly agreed that their neighbourhood is close knit—32% gave a positive response to this question (5 or higher out of 7) and 38% were in disagreement (3 or lower out of 7). When asked whether people in their neighbourhood are willing to help each other out, almost half gave a rating of 5 or more out of 7, while over one-quarter gave a rating of 3 or less. Most people think they can trust their neighbours—8% strongly agreed and 56% gave a rating of 5 or higher out of 7 for this statement. When asked how well the people in their neighbourhood get along with each other, 19% strongly agreed that neighbours gener-

ally get along and only 12% gave a rating of 3 or lower. Almost 60% of people agreed with the statement 'people in this neighbourhood generally share the same values', and only 17% gave a rating of 3 or lower for this statement.

Do men and women have different opinions about their neighbours and the neighbourhood they live in? Do their opinions change with age? A recent survey by the NRMA (2007) found that in New South Wales, young renters were likely to be the least sociable neighbours; that, across all age groups, male renters were almost twice as likely as females to keep to themselves; that home ownership made a significant difference to the likelihood of being on a first name basis with neighbours; and that country home owners were more likely to know their neighbours than were their city counterparts. Table 29.6 examines how perceptions of neighbours differ by age and sex—showing for each statement the proportion who gave a rating of

**Table 29.4: Neighbourhood events in 2006, by decile of socio-economic disadvantage—Proportion reporting that each event is common (%)**

	<i>SEIFA decile of index of relative socio-economic disadvantage</i>										<i>Total</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	
Neighbours helping each other out	44.7	50.7	50.9	56.3	55.6	50.5	53.0	59.4	55.9	53.7	53.1
Neighbours doing things together	24.4	27.1	27.3	32.2	30.8	27.0	29.6	34.2	32.9	31.3	29.7
Loud traffic noises	45.7	39.3	36.9	32.3	30.3	32.3	28.3	23.7	24.0	23.2	31.2
Noises from airplanes, trains or industry	33.1	25.0	23.9	27.3	20.4	21.4	21.1	16.3	21.5	17.6	22.4
Homes and gardens in bad condition	28.2	20.5	16.8	15.1	9.6	12.6	7.9	6.8	7.2	4.7	12.5
Rubbish and litter lying around	25.2	15.5	12.1	13.7	9.4	10.4	7.9	5.9	6.1	5.3	10.7
Teenagers hanging around on the streets	39.1	32.2	25.0	25.5	20.8	20.7	18.0	14.0	13.6	11.5	21.4
People being hostile and aggressive	18.8	12.2	9.8	8.1	7.1	6.4	4.1	3.7	2.2	2.5	7.2
Vandalism and deliberate damage to property	28.0	19.6	14.5	14.9	12.4	12.9	10.7	6.5	7.3	6.2	12.9
Burglary and theft	25.0	19.0	14.8	13.3	11.0	15.4	9.2	7.0	10.2	9.4	13.1

*Note:* Population weighted results.

**Table 29.5: Perceptions of neighbours, 2006 (%)**

	<i>Strongly disagree</i>							<i>Strongly agree</i>	<i>Total</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>		
This is a close knit neighbourhood	6.4	11.9	20.1	29.8	18.4	9.1	4.4	100.0	
People around here are willing to help their neighbours	3.7	8.4	14.7	25.0	25.6	15.7	6.8	100.0	
People in this neighbourhood can be trusted	3.0	4.8	11.3	24.8	27.1	21.1	8.0	100.0	
People in this neighbourhood generally get along with each other	1.7	4.4	6.1	15.0	17.5	36.4	18.9	100.0	
People in this neighbourhood generally share the same values	2.5	4.6	9.4	26.6	20.3	26.3	10.4	100.0	

*Notes:* Population weighted results. Percentages may not add up to 100 due to rounding.

6 or 7 out of 7. Table 29.7 compares perceptions by home ownership status and Table 29.8 shows the differences in perceptions of neighbours between those who live in a major city, those who live in regional areas and those who live in remote areas.

While it is more common for people under the age of 20 than those in their early twenties to say that

their neighbourhood is a close knit one, beyond 20 years of age the proportion agreeing with this statement increases with age. The proportion of people in their twenties and early thirties who agree with the statements 'People around here are willing to help their neighbours' and 'People in this neighbourhood can be trusted' is lower than that of people in other age groups. However, it is slightly

**Table 29.6: Perceptions of neighbours, by sex and age group—Proportion agreeing with each statement, 2006 (%)**

	Age group							Total
	15–19	20–24	25–34	35–44	45–54	55–64	65+	
<b>Males</b>								
This is a close knit neighbourhood	11.9	8.2	8.7	10.4	14.0	13.9	21.1	12.8
People around here are willing to help their neighbours	19.9	11.0	15.2	17.4	22.8	24.6	30.1	20.6
People in this neighbourhood can be trusted	25.2	13.6	18.1	23.6	31.2	37.2	44.7	28.5
People in this neighbourhood generally get along with each other	93.0	97.0	94.5	93.2	93.9	93.5	89.3	93.3
People in this neighbourhood generally share the same values	93.5	97.2	92.3	93.5	93.3	93.8	88.9	93.0
<b>Females</b>								
This is a close knit neighbourhood	12.1	7.2	9.7	15.6	12.2	13.5	23.7	14.0
People around here are willing to help their neighbours	26.5	13.4	15.8	25.5	22.9	27.0	36.0	24.4
People in this neighbourhood can be trusted	26.9	14.8	17.4	27.4	31.0	37.6	45.2	29.6
People in this neighbourhood generally get along with each other	95.0	94.6	94.9	95.5	95.8	93.4	92.0	94.5
People in this neighbourhood generally share the same values	94.1	95.9	93.9	94.8	92.5	92.2	88.5	92.9

Note: Population weighted results.

**Table 29.7: Perceptions of neighbours and neighbourhood, by type of housing tenure—Proportion agreeing with each statement, 2006 (%)**

	Type of housing tenure				Total
	Own or currently paying off mortgage	Rent or pay board	Involved in a rent buy scheme	Live here rent free or life tenure	
<b>Males</b>					
This is a close knit neighbourhood	13.9	8.7	*15.0	19.7	12.8
People around here are willing to help their neighbours	23.2	12.4	*10.6	25.3	20.6
People in this neighbourhood can be trusted	32.5	15.9	*0.0	30.8	28.5
People in this neighbourhood generally get along with each other	93.6	93.2	*82.8	*86.8	93.3
People in this neighbourhood generally share the same values	93.8	90.3	*100.0	*94.2	93.0
<b>Females</b>					
This is a close knit neighbourhood	15.0	10.4	*0.0	22.3	14.0
People around here are willing to help their neighbours	26.9	15.8	*0.0	36.7	24.4
People in this neighbourhood can be trusted	33.6	16.5	*34.8	39.0	29.6
People in this neighbourhood generally get along with each other	95.1	92.6	*100.0	*92.7	94.5
People in this neighbourhood generally share the same values	94.3	89.0	*100.0	*88.0	92.9

Notes: Population weighted results. \* Estimate not reliable.

less common for older people to agree with the statements 'People in this neighbourhood generally get along with each other' and 'People in this neighbourhood generally share the same values'.

Table 29.7 shows substantial differences in perceptions of neighbours between those who own their home outright or have a mortgage and those who are renting. Of those who own their home or are paying off a mortgage, 14% of males and 15% of females agreed that they live in a close knit neighbourhood, 23% of males and 27% of females thought that their neighbours would be willing to help each other out, and 33% of males and 34% of females said that their neighbours could be trusted. By contrast, among renters, only 9% of males and 10% of females said they live in a close knit neighbourhood, 12% of males and 16% of females thought their neighbours would be likely to help each other out, and 16% of males and 17% of females who were renting thought their neighbours could be trusted. Renters are also slightly less likely to agree with the statements 'People in this neighbourhood generally get along with each other' and 'People in this neighbourhood generally share the same values'. One possible reason for these differences is that those who own their home or are paying off a mortgage are more likely to have lived, or intend to live in that neighbourhood for a reasonable amount of time, and so make more effort to get to know the people in their neighbourhood.

Table 29.8 shows that perceptions about whether the neighbourhood is close-knit, people are willing to help their neighbours, and people in the

neighbourhood can be trusted, tend to be more favourable the lower the population density. However, when asked about whether people in the neighbourhood get along with each other and whether people in the neighbourhood share the same values, perceptions are slightly more favourable in major cities and inner regional areas than in outer regional and more particularly remote areas. These patterns may simply reflect the fact that the lower the population density, the more likely are people to know their neighbours.

### Concluding points

Most people are moderately positive about the neighbourhood they live in. Over half opine that neighbours helping each other out is either very common or fairly common. The most frequently reported negative neighbourhood attribute is loud traffic noise, with 27% saying this is very common or fairly common in their neighbourhood. Two other negative features mentioned by over 20% of respondents are noise from airplanes, trains or industry and teenagers hanging around on the streets. The one problem mentioned by fewer than 10% is people being hostile and aggressive, with more than a quarter saying it never happens and a further 64% saying that it is either very rare or not common.

Negative neighbourhood features are related in a more or less linear fashion to socio-economic status—the lower the status of the neighbourhood, the more respondents report adverse events such as vandalism, burglary and theft, and people being hostile and aggressive and negative neighbourhood

**Table 29.8: Perceptions of neighbours and neighbourhood, by regional area—Proportion agreeing with each statement, 2006 (%)**

	Area of residence				Total
	Major city	Inner regional	Outer regional	Remote	
<b>Males</b>					
This is a close knit neighbourhood	10.2	16.5	19.9	25.4	12.8
People around here are willing to help their neighbours	17.0	26.6	29.0	37.4	20.6
People in this neighbourhood can be trusted	23.9	35.5	41.3	42.8	28.5
People in this neighbourhood generally get along with each other	93.8	92.7	92.6	85.2	93.3
People in this neighbourhood generally share the same values	93.2	93.5	91.1	87.6	93.0
<b>Females</b>					
This is a close knit neighbourhood	11.4	18.4	21.2	22.6	14.0
People around here are willing to help their neighbours	20.4	31.7	33.2	40.9	24.4
People in this neighbourhood can be trusted	25.9	36.7	38.0	35.9	29.6
People in this neighbourhood generally get along with each other	94.7	94.2	93.7	94.1	94.5
People in this neighbourhood generally share the same values	92.9	93.8	91.9	86.4	92.9

Notes: Population weighted results. \* Estimate not reliable.

attributes such as loud traffic noise, homes and gardens in bad condition and rubbish and litter lying around. Furthermore, it seems that, compared to those who live in major cities, people who live in regional or remote areas are much more friendly and helpful to their neighbours. Not surprisingly, loud traffic noises, noises from air-planes, trains and industry, and rubbish and litter lying around are more common in major cities, as are vandalism, burglary and theft. Furthermore, compared to people living in major cities, people living in regional or remote areas are also more likely to agree that their neighbourhood is a close knit one, that people in their neighbourhood are willing to help each other out, and that people in their neighbourhood can be trusted.

There are also substantial differences in people's perceptions of neighbours depending on whether they own their home or are renting. Compared to renters, it is much more common for owner-occupiers to agree with statements such as 'This is a close knit neighbourhood', 'People around here are willing to help their neighbours' and 'People in this neighbourhood can be trusted'. It may be that home owners are more likely to have lived, or intend to live, in that neighbourhood for a reasonable amount of time, and so make more effort to get to know the people in their neighbourhood.

### Endnotes

- 1 The neighbourhood questions were not asked in wave 5 of HILDA.

- 2 There are of course many other important attributes of neighbourhoods not measured by the ten items listed in Table 29.1. For example, these items provide no information on community services and facilities.
- 3 No follow-up question is asked, so it is not possible to say how many regard this lack of joint activities as undesirable. While for some people interaction with their neighbours is highly desirable, others may prefer to keep to themselves.
- 4 From Table 29.2 onwards, an event is assumed to be not common if an individual responded 'don't know'.
- 5 The Socio-Economic Indexes for Areas (SEIFA) deciles of index of relative socio-economic disadvantage were determined by the Australian Bureau of Statistics. The index ranks geographic areas across Australia in terms of their relative socio-economic disadvantage, as measured by characteristics such as low income and low education of residents in the area. The first (lowest) decile corresponds to the 10% of the population living in the most disadvantaged regions, while the tenth (highest) decile corresponds to the 10% of the population living in the least disadvantaged regions.

### References

- Australian Government Institute of Criminology (2008) *Property Crime Statistics*, <<http://www.aic.gov.au/topics/property/stats/>>.
- National Roads and Motorists' Association Limited (2007) *G'day Neighbour, Do You Rent or Own?*, NRMA Insurance Media Release No. 6, December, <<http://www.nrma.com.au/about-us/media-releases/20071206-a.shtml>>.

## 30. The impact of specific life events on health and subjective wellbeing

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 may increase a person's overall life satisfaction for a reasonable amount of time, while negative events, such as being the victim of physical violence are likely to have a negative effect not only on life satisfaction but also on physical and mental wellbeing.

Several studies have examined the impact of life events on wellbeing. Headey and Wearing (1989) found that while personality traits such as extroversion and neuroticism predispose people to experience moderately stable levels of subjective wellbeing (i.e. extroverts are more likely to report higher levels of life satisfaction), unusually favourable or adverse life events influence subjective wellbeing over and above the effects of personality. On the other hand, Suh, Diener and Fujita (1996) found that, compared to personality, life events had very little effect on subjective wellbeing, and that while changes in life events altered subjective wellbeing temporarily, typical life events lost their effect after

three to six months. Using the British Household Panel Survey, Ballas and Dorling (2007) found that, in contrast to 'living states' such as being married, actual events such as starting a new relationship had a stronger effect on happiness. They also found that women who became pregnant reported higher than average levels of subjective happiness and that the event that had the highest negative impact on happiness was the end of a relationship, closely followed by the death of a parent.

A series of questions about life events was introduced in wave 2 of the HILDA Survey. Respondents are asked whether, in the 12 months prior to their interview, they 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. Those who have experienced any of these events are also asked how long ago the event occurred.<sup>1</sup> Each year, HILDA Survey respondents are also asked to rate their current level of overall life satisfaction on a scale of 0 (completely dissatisfied) to 10 (completely satisfied). Table 30.1 shows the

**Table 30.1a: Mean life satisfaction, by life events in the last 12 months, 2002–2006—Males**

Life event	No	Yes	How long ago			
			0–3 months	4–6 months	7–9 months	10–12 months
Got married	7.9	^7.9	8.1	8.1	8.0	7.7
Separated from spouse or long-term partner	7.9	^7.0	7.1	6.8	6.9	7.1
Got back together with spouse or long-term partner after a separation	7.9	^7.0	6.9	7.1	7.4	7.1
Pregnancy of partner	7.9	7.9	8.1	7.8	7.8	7.9
Birth or adoption of new child	7.9	^8.0	7.9	8.1	7.9	7.8
Serious personal injury or illness to self	7.9	^7.4	7.5	7.6	7.5	7.2
Serious injury or illness to a close relative or family member	7.9	^7.7	7.8	7.7	7.8	7.7
Death of spouse or child	7.9	7.8	7.6	7.5	7.9	7.8
Death of other close relative or family member	7.9	7.8	7.7	7.9	7.8	7.8
Death of a close friend	7.9	7.9	7.9	8.0	7.7	7.7
Victim of physical violence	7.9	^7.2	7.3	7.0	7.2	6.7
Victim of a property crime	7.9	^7.5	7.4	7.5	7.6	7.4
Detained in jail	7.9	^7.2	7.6	7.1	*7.6	6.9
Close family member detained in jail	7.9	7.5	7.6	7.9	7.6	7.0
Retired from the workforce	7.9	7.9	8.3	7.9	8.1	7.7
Fired or made redundant by employer	7.9	^7.4	7.5	7.4	7.2	7.4
Changed jobs	7.9	^7.7	7.6	7.7	7.8	7.7
Promoted at work	7.9	^7.8	7.8	7.8	7.9	8.0
Major improvement in financial situation (e.g. won lottery, received an inheritance)	7.9	^8.0	8.0	8.0	8.2	8.0
Major worsening in finances (e.g. went bankrupt)	7.9	^6.6	6.6	6.6	6.4	6.4
Changed residence	7.9	^7.7	7.6	7.7	7.6	7.8

Notes: Population weighted results. \* Estimate not reliable. ^ Indicates that the difference between means for the 'Yes' and 'No' categories is significant at the 5% level.

average levels of life satisfaction for males and females, according to whether or not they had experienced specific life events in the past 12 months and how long ago those events occurred. In this table, and in all subsequent tables in this article, all five waves in which life events information has been collected are pooled together to increase statistical precision, since most of the life events do not occur very frequently for most people.

For men, it seems that very few life events cause a major improvement in life satisfaction. Getting married increases average life satisfaction from 7.9 to 8.1, but it appears that this increase in satisfaction only lasts for around six months. Among men whose partner had been pregnant in the previous three months or who had a new baby in the last four to six months, average life satisfaction was 8.1. Among men who had retired in the past three months, average life satisfaction was 8.3, and for those men who had experienced a major financial improvement, average life satisfaction was 8.0, and 8.2 if it occurred four to six months ago.

The life event with the strongest negative impact on life satisfaction is a major worsening in finances. Among men who experienced a major worsening in finances in the past six months, average life satisfaction was only 6.6, and for those who experienced this event between seven and twelve months ago, average life satisfaction was 6.4. Both separating from a long-term partner and reconciling with a partner are associated with low average life satisfaction of 7. Male victims of physical violence in the last 12 months or who had been detained in jail in the last 12 months had average levels of life satisfaction of 7.2. Men who have been dismissed by an employer also have a lower average level of life satisfaction of 7.4.

Looking only at averages, it may appear that events such as separating from a spouse or being fired by an employer have a stronger negative effect on life satisfaction than the death of a spouse, child, family member or close friend. However it must be noted that, without controlling for age and other factors that might impact upon life satisfaction, we cannot say that this is in fact the case. For example, older people tend to report higher levels of overall life satisfaction, and, compared to young people, older people more commonly experience the death of a spouse, family member or friend.

Using a fixed effects regression,<sup>2</sup> and controlling for other characteristics likely to impact upon life satisfaction, such as age, household income, employment status and whether or not the person has a partner, we find that having been married in the last 12 months has the strongest positive impact upon life satisfaction for men, followed by changing jobs. Experiencing a major worsening in financial circumstances has the strongest negative impact on men's life satisfaction, closely followed

by separating from a spouse or partner.<sup>3</sup> Having a serious injury or illness, being the victim of physical violence and being the victim of property crime also have significant negative impacts on life satisfaction of males.<sup>4</sup>

In further analysis identifying how effects depend on how long ago each life event occurred (not presented in this Report), we found that having been married in the last three months has the strongest positive effect on life satisfaction, followed by a major financial improvement between seven and nine months ago, and the birth of a child four to six months ago. Having been detained in jail four to six months ago has the strongest negative impact on life satisfaction, followed by a major financial worsening at any time over the last twelve months, and then a recent separation from a spouse or partner. Other life events with significant negative impacts are reconciling with a spouse or partner in the past four to nine months, having been the victim of physical violence in the past four to nine months, a serious injury or illness at any time in the past twelve months, and the recent death of a relative or family member.

For women, Table 30.1b shows that having gotten married within the past nine months is associated with higher levels of life satisfaction—women in this situation average 8.3 out of 10 compared with 8.0 for women who have not recently gotten married. Women who have become pregnant in the past twelve months also have higher levels of life satisfaction, with an average level of life satisfaction of 8.2, and a new baby is also associated with increased life satisfaction. Among women who have retired within the last three months, average levels of life satisfaction are 8.2, and for women who have experienced a major financial improvement in the last 12 months, average life satisfaction is 8.1.<sup>5</sup>

Average levels of life satisfaction are lower among women who have separated from a long-term spouse or partner and also for those who have reconciled with a spouse or partner in the last twelve months, and particularly among those who have separated or reconciled recently. The low levels of satisfaction among those who have reconciled could possibly be a result of the initial separation, or possibly the stress of deciding to try to save the relationship.

Women who have experienced a major worsening in finances report average levels of life satisfaction of only 6.8, and for those who have experienced this event in the past three months, average life satisfaction is 6.5. Among women who have been victims of physical violence in the past twelve months, average life satisfaction is 6.9, and for those who experienced this event in the past three months, average life satisfaction is 6.6. For women who have been dismissed by an employer in the past twelve months and also for those who have

experienced a serious injury or illness, average life satisfaction is 7.4. Women who have had a close family member detained in jail recently also report lower than average levels of life satisfaction.

After controlling for age and other factors that are known to have an impact upon life satisfaction, we find that for women, pregnancy has the strongest positive impact on overall life satisfaction, followed by a major financial improvement, moving house, the birth or adoption of a child and retiring. The life event that has the strongest negative impact on life satisfaction for women is a major worsening in financial circumstances, followed by separating from a spouse or partner, the death of a spouse or child and having been the victim of physical violence.<sup>6</sup>

Including indicators of how recently these life events occurred showed that for women, having been detained in jail 10 to 12 months ago has the strongest negative effect on life satisfaction, followed by the death of a spouse or child between four and nine months ago, then a major financial worsening at any time in the past twelve months. Having been the victim of physical violence, a recent separation from a spouse or partner, and

having experienced a serious injury or illness also have significant negative impacts on life satisfaction if they happened at any stage in the last 12 months. Having retired between seven and nine months ago has the strongest positive impact on women's life satisfaction, followed by a major financial improvement in the past three months, and having gotten married in the last three months. The birth of a child either in the last three months or between seven and nine months ago also has a significant positive impact on women's life satisfaction, as does having become pregnant between seven and nine months ago.

### Life events and general health

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). Based on the SF-36, scores for general health and mental health, on a scale of 0 to 100 can be calculated.<sup>7</sup> In Table 30.2 we use these scores to examine the associations between life events and health. It shows the average levels of general health for men and women according to whether or not they

**Table 30.1b: Mean life satisfaction, by life events in the last 12 months, 2002–2006—Females**

Life event	No	Yes	How long ago			
			0–3 months	4–6 months	7–9 months	10–12 months
Got married	8.0	^8.2	8.3	8.3	8.3	8.1
Separated from spouse or long-term partner	8.0	^7.2	7.0	7.4	7.0	7.1
Got back together with spouse or long-term partner after a separation	8.0	^7.3	6.9	7.6	7.3	7.5
Pregnancy or pregnancy of partner	8.0	^8.2	8.2	8.1	8.2	8.1
Birth or adoption of new child	8.0	^8.1	8.2	8.2	8.3	7.9
Serious personal injury or illness to self	8.0	^7.4	7.5	7.5	7.5	7.3
Serious injury or illness to a close relative or family member	8.0	^7.9	7.9	7.8	7.9	7.9
Death of spouse or child	8.0	^7.7	7.7	7.5	7.6	7.8
Death of other close relative or family member	8.0	^7.9	7.9	8.0	7.9	7.9
Death of a close friend	8.0	^8.1	8.1	8.0	7.9	8.0
Victim of physical violence	8.0	^6.9	6.6	7.3	7.0	7.0
Victim of a property crime	8.0	^7.7	7.7	7.6	7.7	7.6
Detained in jail	8.0	8.0	*8.6	*8.5	*7.0	*5.1
Close family member detained in jail	8.0	^7.7	7.7	7.8	7.9	7.5
Retired from the workforce	8.0	^8.2	8.2	7.9	8.1	8.0
Fired or made redundant by employer	7.9	^7.4	7.3	7.4	7.8	7.2
Changed jobs	8.0	^7.7	7.7	7.7	7.8	7.6
Promoted at work	8.0	^7.9	7.8	7.8	7.9	7.9
Major improvement in financial situation (e.g. won lottery, received an inheritance)	8.0	^8.1	8.0	8.1	8.2	8.1
Major worsening in finances (e.g. went bankrupt)	8.0	^6.8	6.5	6.8	6.8	6.7
Changed residence	8.0	^7.8	7.8	7.8	7.9	7.8

Notes: Population weighted results. \* Estimate not reliable. ^ Indicates that the difference between means for the 'Yes' and 'No' categories is significant at the 5% level.

had experienced specific life events in the past 12 months, and how long ago those events occurred.

On average, men who got married in the last nine months, whose partner had been pregnant or given birth to a child, and men who had changed jobs, been promoted or had a major improvement in their financial situation had higher than average general health scores. Also as one would expect, general health scores were substantially lower, on average, among those who had experienced a serious injury or illness in the past twelve months. Men who had recently experienced the death of a spouse or child or a major worsening in their financial situation also had low average general health scores. The average general health score among men who had retired from the workforce in the past twelve months was also quite low—56.9 out of 100, but one must be careful not to attribute causality to this event: those who retire are likely to be older and therefore have poorer health on average; furthermore, some may have left the workforce because of a health problem.

After controlling for age and other factors that may affect health, we find that for men, a serious injury or illness has the strongest effect on general health,

followed by a major financial worsening and the death of a spouse or child.<sup>8</sup> Having been the victim of physical violence or property crime also has a significant negative effect on general health. The life events with the strongest positive impacts on male general health are the pregnancy of a partner and the birth of a child—it might be the case that the healthy habits of the mother during and after her pregnancy have an impact on her partner's health as well.

When indicators for the timing of these life events are included in the model specification, we find that having gotten married in the last three months has a significant positive impact on general health, as does the recent birth of a child and having changed jobs in the last three months. The negative effects on general health of a worsening in financial circumstances are stronger if that event had happened in the last six months, and the effects of the death of a spouse or child are strongest if that event had occurred seven to nine months ago. On the other hand, the timing of a serious injury or illness does not seem to matter much, the negative effects being similar regardless of whether it happened three months ago or ten months ago.

**Table 30.2a: Mean general health, by life events in the last 12 months, 2002–2006—Males**

Life event	No	Yes	How long ago			
			0–3 months	4–6 months	7–9 months	10–12 months
Got married	68.5	69.3	77.1	72.6	76.4	66.9
Separated from spouse or long-term partner	68.5	68.4	71.1	68.8	68.7	67.5
Got back together with spouse or long-term partner after a separation	68.5	66.0	65.9	68.4	66.9	64.5
Pregnancy or pregnancy of partner	68.3	^73.5	73.6	73.0	74.7	72.8
Birth or adoption of new child	68.4	^73.1	73.6	73.7	73.1	72.5
Serious personal injury or illness to self	70.1	^53.3	56.1	56.4	53.9	49.8
Serious injury or illness to a close relative or family member	69.0	^66.0	66.7	65.3	67.0	66.0
Death of spouse or child	68.5	^64.3	55.5	67.8	66.5	68.3
Death of other close relative or family member	68.7	66.9	66.9	68.2	68.0	66.7
Death of a close friend	69.2	^63.2	63.2	62.7	64.7	62.5
Victim of physical violence	68.6	^63.9	63.9	65.5	65.3	58.9
Victim of a property crime	68.6	^67.0	67.5	67.4	67.3	65.4
Detained in jail	68.5	63.8	68.6	68.3	*54.9	62.9
Close family member detained in jail	68.6	^63.5	62.7	66.4	60.5	62.2
Retired from the workforce	68.8	^56.9	67.3	62.3	63.4	55.6
Fired or made redundant by employer	68.6	^67.3	70.2	68.7	66.4	65.6
Changed jobs	68.0	^72.0	71.9	71.4	73.3	71.8
Promoted at work	68.1	^73.8	73.8	73.7	73.6	72.6
Major improvement in financial situation (e.g. won lottery, received an inheritance)	68.4	^70.7	70.8	69.1	72.3	70.4
Major worsening in finances (e.g. went bankrupt)	68.8	^58.2	60.2	58.1	57.4	59.5
Changed residence	68.2	^70.4	69.3	70.0	71.2	70.8

Notes: Population weighted results. \* Estimate not reliable. ^ Indicates that the difference between means for the 'Yes' and 'No' categories is significant at the 5% level.

Looking only at average general health according to whether or not a specific life event occurred, Table 30.2b shows that the results are quite similar for males and females. Marriage in the previous nine months, pregnancy, birth of a child, changing jobs, promotion at work and major improvements in financial situations are all associated with higher than average general health scores. Serious injury or illness, death of a spouse or child, a major worsening in financial situation and retirement in the last twelve months are associated with lower than average general health scores. When other factors such as age and household income are controlled for, we find that for women, pregnancy, the birth of a child, a major financial improvement, and changing jobs all have a significant positive effect on general health, while serious injury or illness, a major worsening in finances and being fired by an employer have a significant negative impact on general health.<sup>9</sup>

In terms of the timing of life events and their effect of general health, the birth of a child has the strongest positive impact for those who had a baby in the last three months, and similarly the effect of a major financial improvement on general

health is strongest for those who experienced the improvement most recently. The negative effect on general health of having been the victim of physical violence is also strongest for those who had experienced that event most recently, while the impact of a worsening in financial situation is stronger for those who experienced that event seven to twelve months before. As is the case with men, the impact of a serious injury or illness on general health is significant whether it occurred very recently or a year ago.

### Life events and mental health

One would expect that events such as the death of a spouse or child, separation from a partner and being the victim of physical violence might have a significant impact on a person's mental health, particularly in the short-term. Table 30.3 compares the average levels of mental health for men and women who have experienced specific life events in the past 12 months with those who have not experienced those events.

On average, males who have separated from their spouse or long-term partner, reconciled with a partner, or experienced the death of a spouse or child

**Table 30.2b: Mean general health, by life events in the last 12 months, 2002–2006—Females**

Life event	No	Yes	How long ago			
			0–3 months	4–6 months	7–9 months	10–12 months
Got married	68.5	69.0	72.1	74.7	75.1	67.4
Separated from spouse or long-term partner	68.6	^66.7	67.5	67.8	69.1	64.0
Got back together with spouse or long-term partner after a separation	68.6	^65.3	62.9	68.7	64.6	67.1
Pregnancy or pregnancy of partner	68.1	^75.3	75.7	74.8	74.8	75.3
Birth or adoption of new child	68.3	^75.6	78.2	76.5	75.6	71.7
Serious personal injury or illness to self	70.3	^49.6	51.0	49.6	50.6	47.6
Serious injury or illness to a close relative or family member	69.1	^66.2	67.3	65.8	65.7	66.5
Death of spouse or child	68.6	^60.6	61.6	64.6	70.0	56.5
Death of other close relative or family member	68.8	^66.5	66.2	68.6	66.3	66.1
Death of a close friend	69.2	^63.4	64.1	62.4	62.8	64.3
Victim of physical violence	68.7	^58.3	59.7	60.2	56.9	55.6
Victim of a property crime	68.6	^67.4	68.2	67.9	66.8	65.0
Detained in jail	68.5	65.4	*73.6	*71.4	*58.7	*65.2
Close family member detained in jail	68.6	^63.1	65.5	61.4	66.4	59.2
Retired from the workforce	68.7	^60.6	69.3	63.9	64.1	60.1
Fired or made redundant by employer	68.6	^65.1	67.1	64.1	64.6	65.5
Changed jobs	68.1	^71.3	70.3	71.4	72.4	71.9
Promoted at work	68.3	^72.7	72.2	73.8	70.9	74.0
Major improvement in financial situation (e.g. won lottery, received an inheritance)	68.4	^71.7	71.5	73.0	71.6	71.5
Major worsening in finances (e.g. went bankrupt)	68.9	^56.4	57.1	54.2	58.7	54.0
Changed residence	68.3	^69.9	70.6	69.6	70.3	69.2

Notes: Population weighted results. \* Estimate not reliable. ^ Indicates that the difference between means for the 'Yes' and 'No' categories is significant at the 5% level.

in the past twelve months report lower than average levels of mental health, as do males who have experienced serious injury or illness, been a victim of physical violence or have had a major worsening in their financial circumstances. Men who have either been in jail themselves or who have had a family member detained in jail also have lower levels of mental health, on average, than those who have not experienced these events recently. On the other hand, men who have experienced the birth of a new baby or been promoted at work report slightly higher levels of mental health.

When other factors such as age, income and partnership status are controlled for, we find that having a partner who was pregnant or who gave birth to a new baby, and changing jobs have significant positive effects on mental health; and experiencing a worsening in financial situation has the strongest negative impact on men's mental health, followed by the death of a spouse or child and separating from a spouse or partner.<sup>10</sup> Having had a serious illness or injury, having been the victim of physical violence and having a family member with a serious illness or injury also has a significant negative effect on mental health.

When indicators of the timing of these life events are included in the regression, we find that, for men, the negative effects on mental health from separating with a spouse or partner and also from the death of a spouse or child are strongest when these events occurred in the last three months. This is also the case for those who had been the victim of physical violence in the last three months, those who had a serious injury or illness in the last three months and those who recently had a major worsening in their financial circumstances. Using this specification, having been detained in jail and the death of a relative or family member are events which, if they occurred in the last three months, have a significant negative impact on mental health. Furthermore, the positive effects on mental health from the pregnancy of a partner and also from changing jobs are strongest if they occurred in the past three months.

Comparing the average mental health scores of women who have and have not experienced specific life events in the past twelve months, Table 30.3b shows that women who got married in the past nine months have higher mental health scores, on average, than those who have not; and

**Table 30.3a: Mean mental health, by life events in the last 12 months, 2002–2006—Males**

Life event	No	Yes	How long ago			
			0–3 months	4–6 months	7–9 months	10–12 months
Got married	75.2	73.4	79.2	77.4	75.6	71.2
Separated from spouse or long-term partner	75.5	^66.9	63.9	66.8	66.7	69.4
Got back together with spouse or long-term partner after a separation	75.3	^65.2	62.8	64.4	68.8	69.2
Pregnancy or pregnancy of partner	75.1	76.0	77.0	74.5	76.1	76.8
Birth or adoption of new child	75.1	^76.7	77.2	78.2	76.5	74.8
Serious personal injury or illness to self	76.0	^67.3	67.5	68.4	69.2	65.9
Serious injury or illness to a close relative or family member	75.6	^72.9	73.2	72.7	73.8	72.4
Death of spouse or child	75.2	^69.0	60.9	68.4	68.6	74.8
Death of other close relative or family member	75.3	^73.8	73.4	75.3	73.8	74.0
Death of a close friend	75.4	^73.5	73.5	74.0	73.4	72.8
Victim of physical violence	75.3	^66.4	66.0	66.8	68.9	61.9
Victim of a property crime	75.3	^72.5	71.1	72.3	74.0	73.1
Detained in jail	75.2	^61.5	54.7	63.2	*60.7	60.7
Close family member detained in jail	75.2	^69.2	67.8	74.1	64.3	68.1
Retired from the workforce	75.2	^72.3	80.1	73.3	75.4	70.0
Fired or made redundant by employer	75.4	^70.5	70.6	71.3	70.4	70.6
Changed jobs	75.3	^74.3	74.3	73.6	76.4	73.5
Promoted at work	75.1	76.1	75.9	76.2	76.2	77.0
Major improvement in financial situation (e.g. won lottery, received an inheritance)	75.1	76.1	76.7	74.2	76.1	77.5
Major worsening in finances (e.g. went bankrupt)	75.6	^60.5	61.7	56.1	59.8	65.0
Changed residence	75.4	^73.6	72.6	73.3	74.5	74.3

Notes: Population weighted results. \* Estimate not reliable. ^ Indicates that the difference between means for the 'Yes' and 'No' categories is significant at the 5% level.

women who have become pregnant in the past twelve months also have higher average mental health scores. Negative events such as the death of a spouse, child, family member or close friend, separating from a spouse or partner, being the victim of physical violence or having a serious injury or illness are all associated with substantially lower mental health scores.

When other factors affecting mental health are controlled for, the life event with the strongest positive impact on mental health for women is pregnancy, and the event with the strongest negative impact is the death of a spouse or child, followed by a major financial worsening, then having been the victim of physical violence and separating with a spouse or long-term partner. Other events that have a significant negative impact on women's mental health include the death of a close friend or family member, having a family member detained in jail and the serious illness or injury of a family member.<sup>11</sup>

When indicators of the timing of these life events are included in the estimates, we find that the positive effects of pregnancy on women's mental health are strongest for those who had become

pregnant within the last six months, and that having been promoted at work in the past three months also has a significant positive effect on mental health. The effects of negative life events—such as the death of a spouse or child, separating from a partner, serious illness or injury and having been the victim of physical violence—are strongest for those who have experienced those events within the last three months. Having been detained in jail in the past three months also has a strong negative effect on female mental health.

### Concluding points

In terms of overall life satisfaction, experiencing a major worsening in finances and separating from a spouse or partner have negative impacts for both men and women. For women, the death of a spouse or child and having been the victim of physical violence also have significant negative effects on life satisfaction. Having gotten married within the last twelve months increases male life satisfaction, as does changing jobs, while for women, the life events with significant positive influences on life satisfaction are pregnancy, the birth of a child, major financial improvements, retiring and moving house.

**Table 30.3b: Mean mental health, by life events in the last 12 months, 2002–2006—Females**

Life event	No	Yes	How long ago			
			0–3 months	4–6 months	7–9 months	10–12 months
Got married	72.7	71.5	74.3	76.1	75.0	69.7
Separated from spouse or long-term partner	73.1	^62.6	60.1	63.6	62.4	63.8
Got back together with spouse or long-term partner after a separation	72.8	^62.7	57.1	68.0	63.8	65.0
Pregnancy or pregnancy of partner	72.6	^74.5	75.0	75.1	74.4	74.3
Birth or adoption of new child	72.6	74.4	75.9	75.8	74.0	72.6
Serious personal injury or illness to self	73.4	^64.5	63.8	65.0	66.8	62.7
Serious injury or illness to a close relative or family member	73.2	^70.2	69.7	70.9	71.3	70.5
Death of spouse or child	72.8	^63.9	59.1	65.6	68.1	63.0
Death of other close relative or family member	73.0	^70.5	69.3	73.0	70.5	70.8
Death of a close friend	72.7	^72.0	72.7	71.5	71.3	70.5
Victim of physical violence	72.9	^57.1	56.3	58.0	61.0	54.3
Victim of a property crime	72.8	^69.9	69.8	69.2	70.2	69.4
Detained in jail	72.7	^65.6	*70.3	*70.4	*68.6	*43.8
Close family member detained in jail	72.8	^66.9	68.4	65.0	69.2	63.8
Retired from the workforce	72.7	^71.2	75.7	72.7	72.5	68.7
Fired or made redundant by employer	72.8	^67.6	64.7	67.8	70.1	69.7
Changed jobs	72.8	^71.4	70.1	71.7	72.2	71.8
Promoted at work	72.6	73.7	73.1	72.9	74.2	74.8
Major improvement in financial situation (e.g. won lottery, received an inheritance)	72.6	73.4	70.5	74.9	74.3	73.9
Major worsening in finances (e.g. went bankrupt)	73.0	^59.7	55.7	60.2	62.2	59.7
Changed residence	73.0	^70.8	69.8	70.5	71.7	71.3

Notes: Population weighted results. \* Estimate not reliable. ^ Indicates that the difference between means for the 'Yes' and 'No' categories is significant at the 5% level.

Not surprisingly, the event that has the strongest effect on general health is a serious illness or injury. Having been the victim of physical violence also has a negative effect on the general health of men and women, as does a major worsening in financial circumstances. For men, the death of a spouse or child also has a negative effect on general health; for women, being fired negatively affects their health. Events that have a positive impact on general health for both men and women are (partner's) pregnancy and the birth of a child. For men, having recently gotten married has a positive effect on health, while for women, experiencing a recent financial improvement and changing jobs have positive impacts on general health.

Recent events—that is, events that had occurred in the last three months—have the strongest impacts on mental health. The death of a spouse or child, separating from a partner, having been the victim of physical violence, experiencing a serious illness or injury and having been detained in jail are all events with negative impacts on mental health, particularly in the short-term. For women, having become pregnant in the past six months and getting promoted at work are events that have positive impacts on mental health; while for men, the events with significant positive effects on mental health are the birth of a child, pregnancy of a partner and changing jobs.

### Endnotes

- 1 Chapter 5 in Part A of this Report shows the proportion of men and women who experienced each life event in each year from 2002 to 2006.
- 2 The fixed effects specification helps to ensure that the estimated parameters will be net of likely strong correlations with unobservable personal characteristics such as personality.
- 3 See Table 30.A1 in the Appendix.
- 4 Age, equivalised household disposable income and being partnered also have a significant positive effect on life satisfaction, while being unemployed has a significant negative effect.

- 5 Women who have experienced the death of a close friend also have slightly higher levels of average life satisfaction, but as mentioned previously, this is likely to be an age effect rather than the impact of the event itself.
- 6 See Appendix Table 30.A1. Equivalised household disposable income and being partnered also have a significant positive effect on life satisfaction, while being unemployed has a significant negative effect.
- 7 For more information on the SF-36 general health and mental health variables see Chapter 18 in Part A of this Report.
- 8 See Appendix Table 30.A2. Equivalised household income also has a significant positive effect on general health for men.
- 9 See Appendix Table 30.A2. Equivalised household income and the number of children under the age of 15 that a woman has also have significant positive effects on general health for women, while age and living with a partner or spouse have significant negative effects.
- 10 See Appendix Table 30.A3. Having a partner also has a significant positive effect on mental health for men, while being unemployed or out of the labour force has a significant negative effect.
- 11 See Appendix Table 30.A3. Equivalised household income and the number of children under the age of 15 also have significant positive effects on mental health for women.

### References

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## Appendix: Regression Estimates

Table 30.A1: Fixed effects regression estimates—Life satisfaction				
	Men		Women	
	Coefficient	Std. Error	Coefficient	Std. Error
Age	-0.186	0.147	-0.178	0.123
Age squared	0.001##	0.000	0.000	0.000
Number of children under 15	0.028	0.020	0.004	0.020
Log of equivalised household income	0.043#	0.020	0.061##	0.020
Partnered	0.301##	0.043	0.224##	0.041
Unemployed	-0.226##	0.048	-0.151	0.048
Not in the labour force	-0.053	0.036	-0.023	0.029
<b>Life events</b>				
Got married	0.115#	0.048	0.092	0.049
Separated from spouse or partner	-0.322##	0.044	-0.265##	0.042
Got back together with spouse	-0.030	0.078	0.005	0.072
Pregnancy or pregnancy of partner	0.067	0.043	0.164##	0.042
Birth or adoption of new child	0.131##	0.048	0.097#	0.047
Serious injury or illness to self	-0.157##	0.027	-0.172##	0.028
Serious injury or illness to a close relative or family member	-0.025	0.022	-0.042#	0.020
Death of spouse or child	-0.147	0.093	-0.263##	0.080
Death of relative or family member	-0.035	0.024	-0.006	0.023
Death of a close friend	-0.027	0.025	-0.017	0.025
Victim of physical violence	-0.121#	0.061	-0.241##	0.063
Victim of a property crime	-0.099##	0.032	-0.125##	0.034
Detained in jail	-0.079	0.151	0.217	0.250
Close family member in jail	0.013	0.085	-0.001	0.066
Retired from the workforce	-0.073	0.052	0.090	0.053
Fired or made redundant	0.017	0.042	0.016	0.051
Changed jobs	0.054##	0.024	0.009	0.024
Promoted at work	0.001	0.031	0.047	0.034
Major improvement in finances	0.067	0.041	0.159##	0.042
Major worsening in finances	-0.376##	0.047	-0.453	0.047
Changed residence	0.024	0.022	0.130##	0.021
Wave dummies:				
wave 3	0.129	0.146	0.266#	0.122
wave 4	0.215	0.291	0.380	0.242
wave 5	0.268	0.436	0.456	0.362
wave 6	0.370	0.581	0.575	0.483
Constant	13.640#	6.064	14.109##	5.059
R-squared:				
within		0.025		0.024
between		0.000		0.006
overall		0.002		0.007
Rho (fraction of variance due to $\mu_i$ )		0.882		0.915
Model F		14.48##		16.14##
F test that all $\mu_i = 0$		5.01##		4.68##
Observations		25,811		29,114
Individuals		7,508		8,247

Note: # and ## denote statistical significance at the 5% and 1% levels, respectively.

**Table 30.A2: Fixed effects regression estimates—General health**

	<i>Men</i>		<i>Women</i>	
	<i>Coefficient</i>	<i>Std. Error</i>	<i>Coefficient</i>	<i>Std. Error</i>
Age	0.826	1.794	1.008	1.346
Age squared	0.001	0.001	-0.008##	0.001
Number of children under 15	-0.244	0.209	0.483#	0.210
Log of equivalised household income	0.641##	0.211	0.522#	0.214
Partnered	-0.167	0.453	-1.379##	0.438
Unemployed	-0.163	0.505	0.110	0.511
Not in the labour force	-0.557	0.378	-0.150	0.305
<b><i>Life events</i></b>				
Got married	0.384	0.507	0.024	0.516
Separated from spouse or partner	0.204	0.464	-0.051	0.440
Got back together with spouse	-0.936	0.833	0.674	0.769
Pregnancy or pregnancy of partner	0.769	0.455	1.915##	0.446
Birth or adoption of new child	0.994#	0.505	0.879	0.502
Serious injury or illness to self	-3.828##	0.290	-5.821##	0.301
Serious injury or illness to a close relative or family member	-0.169	0.231	0.025	0.208
Death of spouse or child	-1.652	0.993	0.190	0.844
Death of relative or family member	-0.375	0.259	-0.053	0.248
Death of a close friend	0.033	0.268	-0.363	0.262
Victim of physical violence	-1.164	0.644	-0.423	0.675
Victim of a property crime	-0.607	0.338	-0.302	0.358
Detained in jail	1.423	1.617	3.914	2.767
Close family member in jail	-0.322	0.899	0.221	0.706
Retired from the workforce	-1.254#	0.561	0.698	0.563
Fired or made redundant	0.156	0.446	-1.482##	0.539
Changed jobs	0.257	0.255	0.625#	0.258
Promoted at work	-0.050	0.326	0.067	0.362
Major improvement in finances	0.697	0.438	0.762	0.444
Major worsening in finances	-1.993##	0.504	-2.311##	0.496
Changed residence	-0.226	0.231	-0.309	0.226
Wave dummies:				
wave 3	-1.837	1.783	-1.098	1.339
wave 4	-3.425	3.548	-2.024	2.656
wave 5	-5.145	5.319	-2.547	3.976
wave 6	-6.265	7.090	-2.868	5.300
Constant	28.143	73.663	40.213	55.228
R-squared:				
within		0.023		0.029
between		0.073		0.000
overall		0.047		0.000
Rho (fraction of variance due to $\mu_i$ )		0.894		0.796
Model F		13.07##		18.95##
F test that all $\mu_i = 0$		9.93##		9.68##
Observations		25,505		28,647
Individuals		7,483		8,215

Note: # and ## denote statistical significance at the 5% and 1% levels, respectively.

Table 30.A3: Fixed effects regression estimates—Mental health

	Men		Women	
	Coefficient	Std. Error	Coefficient	Std. Error
Age	-1.870	1.564	-3.572#	1.321
Age squared	0.001	0.001	-0.003	0.001
Number of children under 15	-0.013	0.210	0.360	0.214
Log of equivalised household income	0.261	0.212	0.398	0.217
Partnered	1.376##	0.454	-0.170	0.446
Unemployed	-2.113##	0.507	-0.771	0.520
Not in the labour force	-1.042##	0.380	-0.686#	0.310
<b>Life events</b>				
Got married	0.269	0.507	0.485	0.525
Separated from spouse or partner	-3.518##	0.465	-3.068	0.448
Got back together with spouse	-1.491	0.834	0.154	0.780
Pregnancy or pregnancy of partner	0.943#	0.457	2.252##	0.456
Birth or adoption of new child	1.124#	0.508	-0.589	0.512
Serious injury or illness to self	-2.674##	0.290	-2.413##	0.304
Serious injury or illness to a close relative or family member	-0.682##	0.232	-1.460##	0.211
Death of spouse or child	-4.092##	0.992	-5.705##	0.862
Death of relative or family member	-0.788##	0.259	-0.688##	0.253
Death of a close friend	-0.353	0.268	-0.622#	0.265
Victim of physical violence	-1.880##	0.645	-3.434##	0.684
Victim of a property crime	0.177	0.339	-0.234	0.364
Detained in jail	-0.684	1.608	-1.901	2.704
Close family member in jail	-0.077	0.903	-1.698#	0.715
Retired from the workforce	0.235	0.560	0.917	0.567
Fired or made redundant	0.138	0.449	0.004	0.546
Changed jobs	0.476	0.256	0.406	0.263
Promoted at work	0.528	0.327	0.600	0.369
Major improvement in finances	0.381	0.439	0.175	0.452
Major worsening in finances	-4.197##	0.505	-4.103##	0.503
Changed residence	0.059	0.231	0.104	0.230
Wave dummies:				
wave 3	1.209	1.553	4.067##	1.314
wave 4	2.823	3.085	7.671##	2.606
wave 5	4.689	4.624	11.642##	3.901
wave 6	6.444	6.161	15.329##	5.200
Constant	149.421#	64.306	224.439##	54.432
R-squared:				
within		0.023		0.021
between		0.001		0.008
overall		0.002		0.008
Rho (fraction of variance due to $\mu_i$ )		0.928		0.980
Model F		13.31##		13.93##
F test that all $\mu_i = 0$		5.87##		5.69##
Observations		25,712		29,011
Individuals		7,500		8,238

Note: # and ## denote statistical significance at the 5% and 1% levels, respectively.

## 31. Health risk factors: Smoking, drinking and physical inactivity, 2001 to 2006

A wide variety of factors contribute to the health of a given individual or population. These include socio-economic, biomedical and environmental factors which contribute to illness and injury as well as specific lifestyle behaviours, such as smoking, exercise, dietary habits and alcohol consumption. These health risk factors have been found to contribute substantially to disease and disability, and thus to reduced length and quality of life (Mathers et al., 1999). For example, in 2003, tobacco use was responsible for 7.8% of the total burden of disease and injury in Australia (Australian Institute of Health and Welfare (AIHW), 2007). While some health risk factors, such as biomedical factors, are extremely difficult to address, several of these health risk factors can be reduced by lifestyle changes, such as quitting smoking, reducing alcohol consumption or getting more exercise. This article focuses on three health risk factors: smoking, alcohol consumption and physical inactivity, and examines the impact of these factors on health.

### Cigarette smoking

Cigarette smoking has serious health consequences, not only for the smokers themselves, but for others who may be exposed to passive smoke, and contributes to many chronic diseases, including coronary heart disease, lung cancer, oral cancers and diseases, asthma, stroke and osteoporosis (AIHW, 2007). The World Health Organisation (WHO) esti-

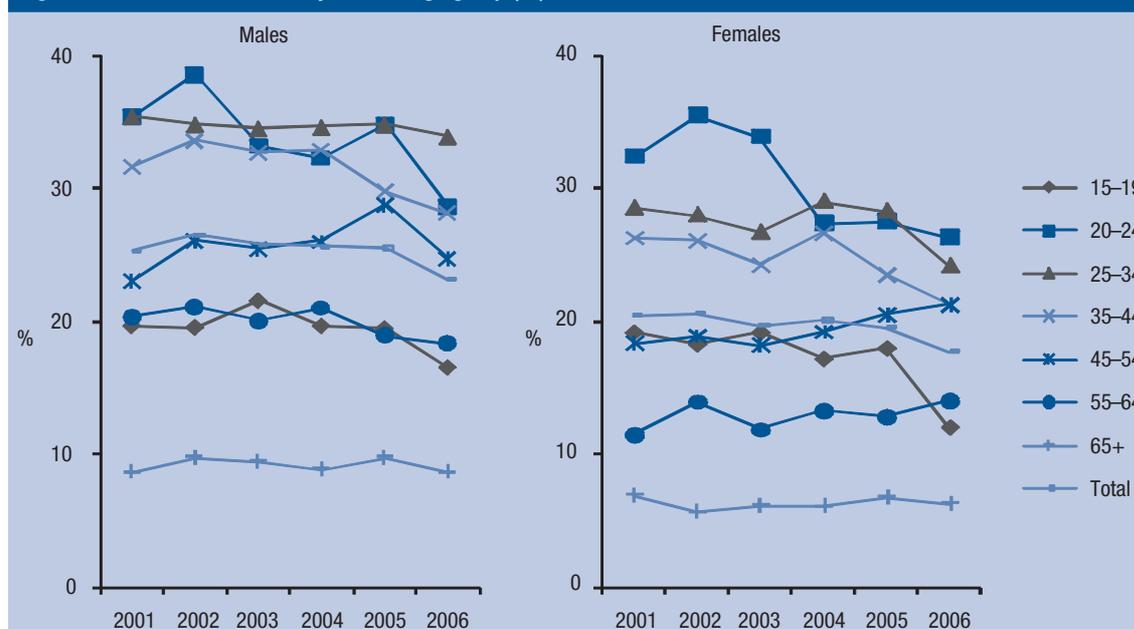
mates that every year, smoking causes almost five million premature deaths worldwide (WHO, 2002).

Smoking is a widespread behaviour in Australia. Results from the 2007 National Drug Strategy Household Survey show that 17% of Australians aged 14 years and over smoked daily. Data from the Australian Bureau of Statistics (ABS) indicates that, in 2004, males were more likely to smoke than females (ABS, 2006),<sup>1</sup> and that the prevalence of smoking was highest among younger Australians, with 34% of men and 26% of women aged between 18 and 34 smoking daily.<sup>2</sup>

Each year, HILDA Survey respondents are asked how often they smoke, and smokers are asked how many cigarettes they smoke each week. The proportion of people who said that they are currently smokers is shown in Figure 31.1.<sup>3</sup>

In all age groups, smoking is more common among males than among females.<sup>4</sup> In each year from 2001 to 2005, around 20% of teenage boys and 18% to 19% of teenage girls were smokers. However, in 2006, the proportion who smoked dropped to 17% for boys and 12% for girls. The proportion of people aged between 20 and 24 who smoked was also lower in 2006 than in previous years, with the proportion of males in this age group who smoked dropping from 39% in 2002 to 29% in 2006; for females, the proportion of smokers in the 20 to 24 age group dropped from 36% in 2002 to 26% in 2006.

Figure 31.1: Current smokers, by sex and age group (%)



Note: Population weighted results.

While the proportion of males aged between 25 and 34 who smoked remained relatively stable, at around 35% in all six years, the proportion of female smokers aged between 25 and 34 dropped from 29% in 2001 to 24% in 2006. For people aged 45 and over, smoking rates did not change much during this period. In fact, smoking prevalence increased slightly among people aged between 45 and 54 and females aged between 55 and 64. The Cancer Council (2006) has similarly found that the proportion of 12–17 year olds who smoke was significantly lower in 2005 than in 2002 and in 1999. Could it be that, in overall terms, the anti-smoking message is actually getting through, at least to young people?<sup>5</sup>

### Changes in smoking behaviour, 2001 to 2006

How many people quit smoking each year, and how many take up smoking for the first time? Do those who quit smoking quit for the long-term, or do many take up smoking again after a relatively short period of time? It seems from Table 31.1 that a reasonable proportion of people who were smokers in 2005 were no longer smokers in 2006. Table 31.1 shows the changes in smoking behaviour for males and females between 2005 and 2006.<sup>6</sup>

Less than 1% of people who had never smoked in 2005 were smokers in 2006. The proportion of

people who had previously given up smoking but then started smoking again since 2005 was also relatively small—6% of females and 5% of males. Furthermore, 15% of males and 18% of females who were smokers in 2005 had quit smoking in 2006.

The small proportion taking up or re-commencing smoking in 2006, and the relative large proportion quitting smoking between 2005 and 2006, are very encouraging findings, but how much has smoking behaviour changed over the five-year period? Do those who quit eventually take up smoking again? Table 31.2 shows the changes in smoking behaviour between 2001 and 2006. Of those who had never smoked at the time of their 2001 interview, only 4% of males and 2% of females were smokers in 2006—7% of men and 4% of females had started smoking and subsequently stopped, and 94% of females and 89% of males still remained in the ‘never smoked’ category in 2006. The proportion who said that they no longer smoked in 2001, but were smokers again in 2006 was around 11%, whereas 25% of males and 30% of females who were smokers in 2001 had quit by 2006. So, overall, the HILDA Survey data show that, in the short-term and also in the medium-term, quitting smoking is on the increase, while take-up and re-commencement of smoking is relatively uncommon.

**Table 31.1: Changes in smoking behaviour, 2005–2006 (%)**

Smoking behaviour in 2005	Smoking behaviour in 2006			Total
	Smoker	No longer smoke	Never smoked	
<b>Males</b>				
Smoker	84.7	15.3	n.a.	100.0
No longer smoke	5.0	95.0	n.a.	100.0
Never smoked	0.4	4.1	95.6	100.0
Total	22.5	33.5	44.1	100.0
<b>Females</b>				
Smoker	82.4	17.6	n.a.	100.0
No longer smoke	6.1	93.9	n.a.	100.0
Never smoked	*0.2	2.4	97.4	100.0
Total	16.7	26.4	56.9	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 31.2: Changes in smoking behaviour, 2001–2006 (%)**

Smoking behaviour in 2001	Smoking behaviour in 2006			Total
	Smoker	No longer smoke	Never smoked	
<b>Males</b>				
Smoker	75.3	24.7	n.a.	100.0
No longer smoke	10.6	89.4	n.a.	100.0
Never smoked	3.8	7.4	88.9	100.0
Total	23.0	33.0	44.0	100.0
<b>Females</b>				
Smoker	70.0	30.0	n.a.	100.0
No longer smoke	11.7	88.3	n.a.	100.0
Never smoked	1.6	4.4	94.0	100.0
Total	16.9	26.2	56.9	100.0

*Notes:* Population weighted results. Percentages may not add up to 100 due to rounding.

### Alcohol consumption

After tobacco, alcohol is the second-largest cause of drug-related deaths and hospitalisations in Australia (AIHW, 2005). In 1998, Australia was ranked 19th for per capita alcohol consumption—9th for beer, 18th for wine and 35th for spirits (ABS, 2004). For many Australians, alcohol consumption is part of an enjoyable and generally healthy lifestyle that also includes good diet and exercise. Recent evidence has suggested that, at low levels, drinking alcohol has health benefits for some people, particularly in contributing to reducing the risk of high blood pressure, heart disease and stroke from middle-age onwards (National Health and Medical Research Council (NHMRC), 2005). However, alcohol consumption at higher levels is associated with increased risk of stroke and coronary heart disease through its contribution to high blood pressure and can be directly associated with some cancers, liver disease, pancreatitis, diabetes, epilepsy and depression (AIHW, 2005). High alcohol intake is also indirectly linked to injuries caused by motor vehicle accidents (ABS, 2004).

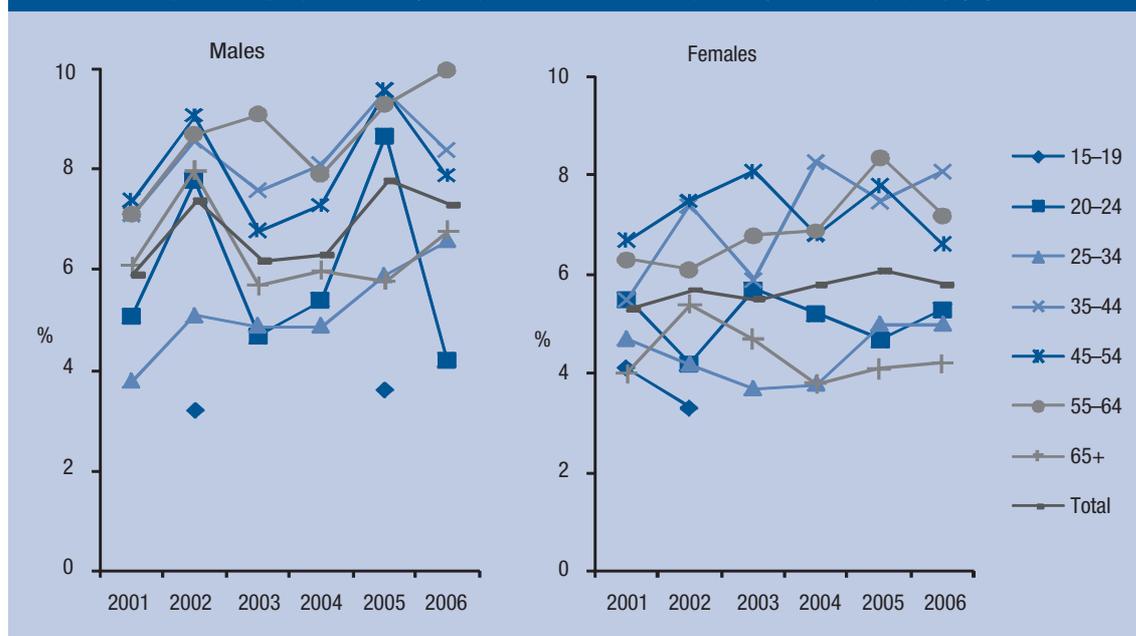
According to Australian alcohol guidelines, the amount of alcohol consumption that is considered a low risk to health in the long-term is up to 28 standard drinks per week for males and up to 14 standard drinks per week for females (NHMRC, 2005). For males, 29 to 42 alcoholic drinks per week is considered risky and 43 or more drinks per week is classified as ‘high risk’ of long-term alcohol-related health problems. For females, 15 to 28 drinks per week is considered risky, and 29 or more ‘high risk’.<sup>7</sup> In 2001, 1.5 million Australian

adults consumed alcohol in risky or high risk amounts (ABS, 2004), and results from the 2004 National Drug Strategy Household Survey show that 10% of Australians aged 14 years and over drank alcohol at levels considered to be harmful for long-term health—7% at ‘risky’ levels and 3% at ‘high risk’ levels (AIHW, 2005).

Each year, HILDA survey respondents are asked how often they drink alcohol. Those who said that they drink alcohol were asked how many drinks they would usually have on a day when they drink alcohol. Figure 31.2 shows the proportions of males and females whose alcohol consumption fell into either the (long-term) risky or high risk alcohol consumption categories in each year from 2001 to 2006.<sup>8</sup>

For both males and females, long-term risky or high risk alcohol consumption is relatively more common among those aged over 35 years. In 2006, 8% of males aged between 35 and 54 were in the risky or high risk category of alcohol consumption, and 10% of 55 to 64 year old males were in this category, an increase from 7% in 2001. Compared to males, it is less common for females to consume alcohol at risky or high risk levels. Still, in 2006, 8% of females aged between 35 and 44 and 7% of females in the 45 to 64 years age range were in the risky or high risk category. For females in general, the proportion who consume alcohol at risky or high risk levels remained fairly stable over the six year period from 2001 to 2006. However, for females in the 35 to 44 age group, the proportion who consumed alcohol at a level that was considered risky or high risk increased from 5.5% in 2001 to 8% in 2006.

Figure 31.2: Proportion of people with risky or high-risk alcohol consumption, by sex and age group (%)



Note: Population weighted results. Estimate is not plotted if statistically unreliable.

### Changes in individuals' alcohol consumption, 2001 to 2006

Table 31.3 shows the proportions of males and females who changed their levels of alcohol consumption between 2005 and 2006. More than 90% of those in the low risk category for alcohol consumption in 2005 remained in that category in 2006, and 78% of males and 82% of females who were non-drinkers in 2005 still did not drink alcohol in 2006. Of those who were in the high risk alcohol consumption group in 2005, 66% of males and 68% of females remained in that category in 2006, while 33% of males and 31% of females changed to low risk levels of alcohol consumption by 2006. Changes from 'no risk' to risky or high risk consumption levels, and vice versa, are very uncommon, with less than 1% of non-drinkers in 2005 moving to the risky or high risk category by 2006, and around 1% of heavy drinkers in 2005 giving up alcohol by 2006.

In Table 31.4 we examine how many people remain in the risky or high risk category of alcohol

consumption in the medium-term. It shows the changes in alcohol consumption levels for males and females over the five-year period from 2001 to 2006. While more than 90% of those in the low risk category of alcohol consumption in 2001 remained in that category in 2006, only 62% of males and 65% of females who said in 2001 that they did not drink alcohol at all were still non-drinkers in 2006—37% of males and 33% of females who were non-drinkers in 2001 were in the low risk category for alcohol consumption in 2006. Of those who were in the category of risky or high risk alcohol consumption in 2001, more than half had decreased their alcohol consumption to a low risk level by 2006. As was the case for the one year period from 2005 to 2006, very few people moved from no risk to risky or high risk and vice versa during the five years from 2001 to 2006—less than 2% of males and females who were non-drinkers in 2001 were in the risky or high risk category by 2006, and less than 1% of males and females who reported high levels of alcohol consumption in 2001 had given up drinking alcohol by 2006.

**Table 31.3: Changes in alcohol consumption, 2005–2006 (%)**

Alcohol consumption in 2005	Alcohol consumption in 2006			Total
	Does not drink alcohol	Low risk	Risky or high risk	
<b>Males</b>				
Does not drink alcohol	77.7	21.7	*0.6	100.0
Low risk	3.6	93.0	3.5	100.0
Risky or high risk	1.2	32.5	66.4	100.0
Total	12.7	79.3	8.0	100.0
<b>Females</b>				
Does not drink alcohol	81.5	17.7	*0.8	100.0
Low risk	4.5	92.6	2.9	100.0
Risky or high risk	*0.8	31.2	67.9	100.0
Total	20.4	73.0	6.6	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 31.4: Changes in alcohol consumption, 2001–2006 (%)**

Alcohol consumption in 2001	Alcohol consumption in 2006			Total
	Does not drink alcohol	Low risk	Risky or high risk	
<b>Males</b>				
Does not drink alcohol	62.2	36.8	*1.0	100.0
Low risk	5.2	91.6	3.2	100.0
Risky or high risk	*0.5	54.3	45.2	100.0
Total	12.0	81.8	6.2	100.0
<b>Females</b>				
Does not drink alcohol	64.8	33.3	1.8	100.0
Low risk	5.9	91.4	2.7	100.0
Risky or high risk	1.1	46.5	52.4	100.0
Total	17.9	76.5	5.7	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

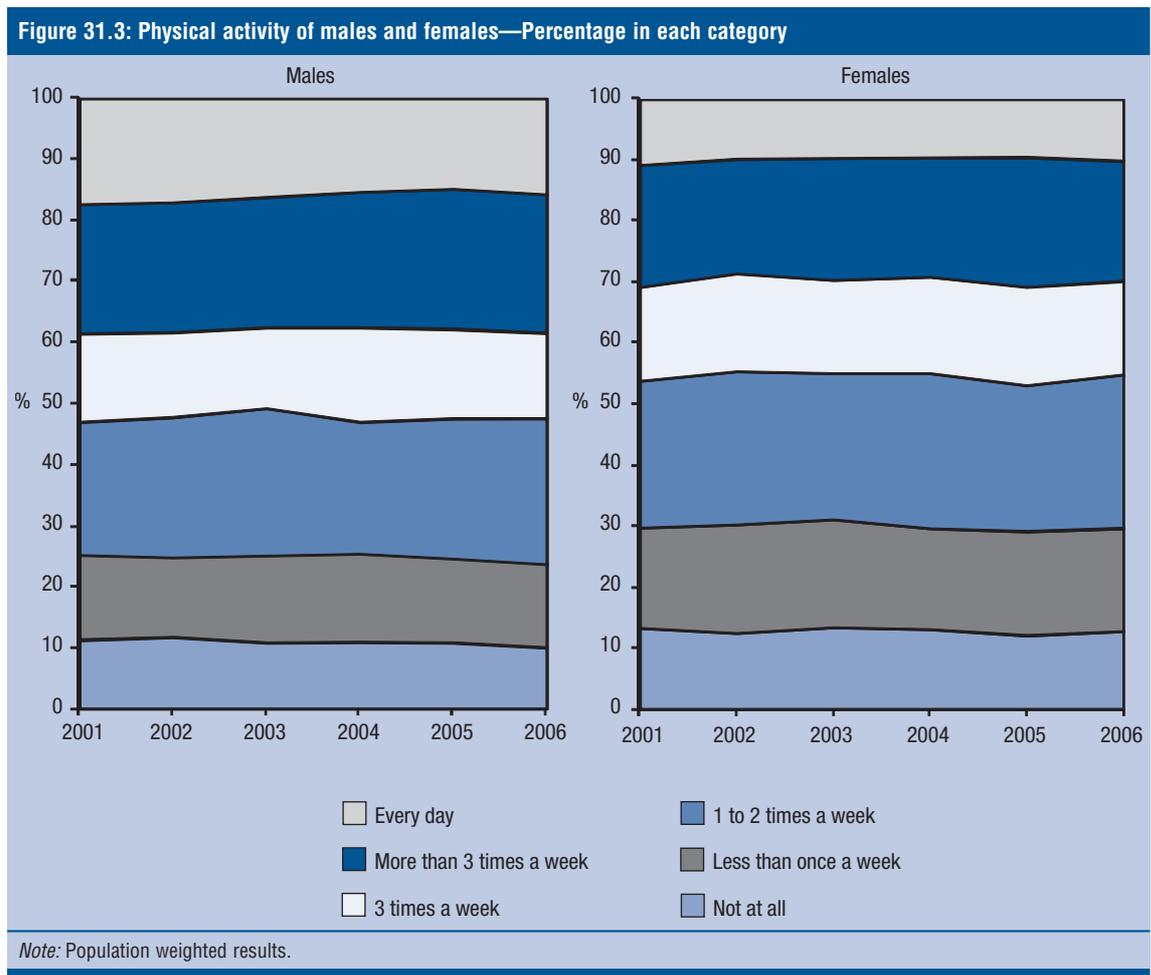
**Physical inactivity**

Over the last 50 years, there has been a worldwide decrease in the amount of physical activity in people’s everyday lives (WHO, 2002). For most of us, physical activity is no longer a natural part of our daily schedule. We rely more on motorised transport and labour-saving devices in the home than we did in the past; and the increased prevalence of office work and use of computers mean that fewer people now work in physically demanding jobs. It is also less common these days for people to participate in leisure activities that involve physical activity. According to the Australian Bureau of Statistics, in 2006 audiovisual media activities accounted for more than half of the time spent on recreation and leisure activities for both men and women (ABS, 2008). In 2001, 32% of the adult population was classified as ‘physically inactive’ and, partly as a consequence, more than 6.5 million Australian adults were overweight or obese (ABS, 2004).<sup>9</sup>

The benefits of engaging in regular physical activity include offering protection against some cancers, a reduction in the risk of diabetes and cardiovascular disease and also improvements in mental health.<sup>10</sup> Based on the national physical activity survey conducted with Australian adults in

November 1999, Armstrong et al. (2000) found that, despite a large and growing proportion of Australians recognising the health benefits of physical activity, participation is declining and the proportion of physically inactive people is increasing.<sup>11</sup> Data from the ABS (2004) indicate that in 2001, compared to those who exercised at moderate or high levels, physically inactive adults were 1.3 times more likely to have coronary heart disease, 1.6 times more likely to be obese and 1.7 times more likely to have a high or very high level of psychological distress.<sup>12</sup> Each year, HILDA Survey respondents are asked how many times a week they participate in moderate or intensive physical activity for at least 30 minutes.<sup>13</sup> Figure 31.3 shows the amount of physical activity reported by males and females in the six years from 2001 to 2006.

The National Physical Activity Guidelines recommend at least 30 minutes of moderate-intensity physical activity on most, if not all, days of the week (Department of Health and Aged Care, 2005). The HILDA Survey data indicate that only a relatively small proportion of the adult population is actually this active. In 2006, 10% of males and 13% of females said they did not engage in any physical activity at all, and a further 14% of



males and 17% of females said they participated in physical activity less than once a week. 53% of males and 45% of females said they did some physical activity three times a week or more. However, the proportion who engaged in physical activity daily fell slightly over the six-year period, from 17% to 16% for males and from 11% to 10% for females.

Of course, the amount of physical activity changes with age, and one would expect that younger people engage in physical activity more frequently than older people. Table 31.5 shows the amount of physical activity of males and females in 2006, by age group. For both males and females, physical inactivity increases with age, but the most striking result from Table 31.5 is the difference between males and females under the age of 25: 27% of males aged 15–19 and 18% of males aged 20–24 said they did some physical activity every day, compared with only 10% and 8% for their respective female counterparts. However, the percentage of females participating in physical activity every day remains more or less constant across the age groups, whereas the percentage of males doing some physical activity every day falls considerably across the age groups. It is also interesting to note that males in the 15–19 age group who do not do any physical activity at all have higher average levels of general health than males in the same age group who participate in some sort of physical activity up to three times per week. One possible explanation for this is that young males could be more likely to participate in contact sports, or other activities that are likely to result in an injury, and hence report lower levels of general health.

### Changes in physical activity

Table 31.6 shows the proportion of males and females who changed their physical activity habits between 2005 and 2006. Around half of those who said that they did not do any physical activity at all in 2005 reported undertaking at least some physical activity in 2006. However, of those who reported in 2005 doing some physical activity, but less often than weekly, 17% of males and 16% of females said in 2006 that they now did no physical activity at all. More than 40% of people who participated in physical activity once or twice a week in 2005 were still doing so in 2006, and around 30% of those who said they did some physical activity three times a week in 2005 had kept this up in 2006, while around 27% of people in the latter group had increased the amount of physical activity they did. Just over half of the males and females who, in 2005, said that they did some physical activity every day were still doing so in 2006 and of those who were no longer doing so, 79% of males and 84% of females were still participating in physical activity three or more times a week in 2006.

Table 31.6 has shown that the amount of physical activity of individuals can change quite dramatically over a period of one year. Table 31.7 shows the frequency of physical activity changed for males and females over the longer time-frame of five years. Around 40% of people who reported not doing any physical activity at all in 2001 were still in the same situation in 2006, while 24% of inactive males and 20% of inactive females in 2001 reported doing some physical activity three or more times a week in 2006. Of those who were

**Table 31.5: Physical activity of males and females, by age group, 2006 (%)**

	Age group							Total
	15–19	20–24	25–34	35–44	45–54	55–64	65+	
<b>Males</b>								
Not at all	4.3	4.2	4.8	9.1	8.4	12.1	22.9	10.0
Less than once a week	6.5	9.1	15.0	15.0	18.4	17.7	9.3	13.8
1 to 2 times a week	23.2	24.7	30.0	25.5	24.3	20.0	18.2	23.8
3 times a week	13.7	18.8	15.5	14.1	14.3	12.5	11.3	14.1
More than 3 times a week	25.3	25.4	19.2	24.7	20.9	23.1	22.9	22.8
Every day	27.0	17.8	15.4	11.6	13.7	14.6	15.4	15.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Females</b>								
Not at all	4.4	6.6	7.6	12.4	12.7	12.3	25.8	12.9
Less than once a week	15.2	22.1	17.1	19.3	18.4	17.0	11.2	16.9
1 to 2 times a week	29.7	30.7	28.7	24.2	21.7	23.5	22.3	25.0
3 times a week	19.5	14.3	17.2	15.4	16.0	15.5	12.1	15.5
More than 3 times a week	21.4	18.1	19.3	18.7	21.6	20.6	18.7	19.7
Every day	9.8	8.3	10.1	10.0	9.6	11.2	10.0	10.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: Population weighted results. Percentages may not add up to 100 due to rounding.

physically active less than once a week in 2001, only 14% had reduced their amount of physical activity to none at all in 2006, and 60% of males and 57% of females in this group were participating in some sort of physical activity at least once a week in 2006.

Of those who said they engaged in physical activity daily in 2001, 38% of males and 35% of females were still doing so in 2006, while 27% of males and 26% of females had reduced their amount of

physical activity to more than three times a week. In addition, 13% of males and 14% of females who were participating daily in physical activity in 2001 were doing so less than once a week in 2006.

### Associations between risk factors and health

A key issue concerns the implications of risk factors for health. It is, however, difficult to identify these effects, because the behaviour in question can be as much a consequence of health as a

**Table 31.6: Changes in physical activity of males and females, 2005–2006 (%)**

Physical activity in 2005	Physical activity in 2006						Total
	Not at all	Less than once a week	1 to 2 times a week	3 times a week	More than 3 times a week	Every day	
<b>Males</b>							
Not at all	48.8	21.2	11.3	6.6	6.3	5.8	100.0
Less than once a week	16.5	33.2	26.9	9.6	9.3	4.5	100.0
1 to 2 times a week	6.0	15.6	42.4	16.6	15.1	4.3	100.0
3 times a week	3.7	11.4	27.5	29.0	20.8	7.6	100.0
More than 3 times a week	3.1	6.8	14.4	14.5	46.2	15.0	100.0
Every day	5.2	5.0	7.0	7.5	23.5	51.9	100.0
Total	11.2	14.7	23.0	14.6	22.5	14.1	100.0
<b>Females</b>							
Not at all	53.3	21.3	11.6	5.1	5.2	3.5	100.0
Less than once a week	16.1	38.3	27.3	9.5	6.8	1.9	100.0
1 to 2 times a week	6.1	17.8	41.4	17.3	14.8	2.7	100.0
3 times a week	3.8	11.6	27.3	30.5	21.5	5.3	100.0
More than 3 times a week	3.6	4.6	17.2	19.4	41.0	14.2	100.0
Every day	*4.1	*3.7	10.4	7.6	21.7	52.5	100.0
Total	12.4	16.7	25.2	16.2	19.5	10.0	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

**Table 31.7: Changes in physical activity of males and females, 2001–2006 (%)**

Physical activity in 2001	Physical activity in 2006						Total
	Not at all	Less than once a week	1 to 2 times a week	3 times a week	More than 3 times a week	Every day	
<b>Males</b>							
Not at all	42.2	21.5	12.1	7.9	9.7	6.8	100.0
Less than once a week	13.9	25.9	25.9	11.9	15.6	6.7	100.0
1 to 2 times a week	9.4	19.2	32.9	17.3	15.2	6.0	100.0
3 times a week	5.6	8.9	28.0	21.8	25.2	10.5	100.0
More than 3 times a week	4.1	9.3	20.6	17.1	32.7	16.2	100.0
Every day	6.5	6.8	12.8	9.3	27.0	37.5	100.0
Total	10.8	14.4	23.0	15.0	22.3	14.5	100.0
<b>Females</b>							
Not at all	39.3	23.7	16.6	8.0	7.4	5.0	100.0
Less than once a week	14.2	29.2	30.3	12.2	10.2	3.9	100.0
1 to 2 times a week	9.0	18.0	34.3	18.3	16.2	4.2	100.0
3 times a week	9.8	13.0	25.6	24.0	19.8	7.8	100.0
More than 3 times a week	5.0	9.9	21.0	17.9	34.0	12.2	100.0
Every day	7.5	6.4	14.5	11.7	25.5	34.5	100.0
Total	12.4	16.7	25.3	16.3	19.6	9.7	100.0

*Notes:* Population weighted results. Percentages may not add up to 100 due to rounding.

cause of health. For example, healthier people may drink alcohol and exercise more frequently, while people with poorer mental health may be more likely to smoke. Nonetheless, it is valuable to explore the associations between health risk factors and health. In Tables 31.8 to 31.10 we examine how general health, as measured by the SF-36 health instrument (which measures health on a 0–100 scale), varies with smoking, drinking and exercise behaviour.

One would expect that the effects of smoking on health would not be immediately evident for younger people, but rather become evident later in life. However, Table 31.8 shows clear differences between smokers and non-smokers in average general health across all age groups. Particularly notable is that differences are most pronounced for young people.<sup>14</sup> The average general health score for male smokers aged between 15 and 19 was 65 out of 100, compared to 77 out of 100 for males in the same age group who had never smoked. For females aged between 15 and 19, the difference between smokers and those who have never smoked is even larger—female smokers aged 15–19 had average general health of 58, versus 75 for females in the same age group who had never smoked.

Table 31.9 considers the association between alcohol consumption and health. Overall, average general health scores are highest for people who consume moderate amounts of alcohol. For males, average general health is considerably higher for those who consume alcohol at a low risk level, compared to those whose alcohol consumption is risky or high risk. For example, the average general health score for males in their early twenties whose alcohol consumption is considered low risk was 76, compared to 62 for males in the same age group who have risky levels of alcohol consumption. This is also the case for females under the age of 45. However, for females in the 45 to 54 and 65 and older age groups, those who consume high levels of alcohol have the highest average levels of general health. Average levels of general health for people over the age of 20 are lowest for those who consume no alcohol at all. However, it is much more likely that poor health is causing abstinence rather than the reverse.

In Table 31.10 we look at the relationship between general health and physical activity. Across all age groups, average general health scores are higher for people who participate in physical activity at least once a week. The differences are particularly large for persons aged 45 and over. For example, among males aged 55–64, the average general health score for those who did no physical activity at all is 42 out of 100, compared to 74 for those who are physically active every day. For females, the greatest difference in general health scores is in the 45–54 age group, where those who do no physical activity at all have an average general health

score of 46, compared to 77 for those people who are active more than three times a week and 75 for those who are active every day. Of course, these differences cannot be interpreted as the effects of physical activity on health, since poor health can be as much a cause as an outcome of inactivity.

**Table 31.8: Mean general health, by sex, age group and smoking status, 2006 (0–100 scale)**

Age group	Smoking behaviour in 2006			All persons
	Smoker	No longer smoke	Never smoked	
<b>Males</b>				
15–19	65.0	73.5	77.3	75.0
20–24	70.7	70.0	78.2	75.0
25–34	67.1	76.4	75.8	72.9
35–44	65.3	69.3	71.1	69.0
45–54	65.2	69.9	68.3	68.1
55–64	58.6	60.7	65.7	62.1
65+	54.3	57.3	65.2	60.2
All age groups	64.9	65.2	71.9	68.3
<b>Females</b>				
15–19	58.4	66.6	74.8	72.5
20–24	68.0	73.4	73.0	71.6
25–34	66.1	73.5	75.0	72.7
35–44	67.7	72.0	72.9	71.4
45–54	57.8	70.2	69.5	67.1
55–64	60.5	66.6	65.0	64.8
65+	55.9	59.1	60.2	59.8
All age groups	63.3	68.3	69.5	68.1

*Note:* Population weighted results.

**Table 31.9: Mean general health, by sex, age group and alcohol consumption, 2006 (0–100 scale)**

Age group	Alcohol consumption in 2006			Total
	No risk	Low risk	Risky or high risk	
<b>Males</b>				
15–19	78.8	74.0	*68.3	75.0
20–24	70.9	76.2	61.5	75.0
25–34	72.0	74.1	60.4	72.9
35–44	62.6	70.5	63.7	69.0
45–54	59.0	69.9	62.0	68.1
55–64	50.1	64.6	62.9	62.1
65+	55.1	61.7	57.5	60.2
Total	63.3	69.8	62.0	68.3
<b>Females</b>				
15–19	77.3	70.3	*58.3	72.5
20–24	68.8	72.6	67.7	71.6
25–34	71.8	73.4	64.5	72.7
35–44	66.8	72.9	68.2	71.4
45–54	61.3	68.3	71.5	67.1
55–64	55.0	68.3	63.6	64.8
65+	53.7	62.7	65.1	59.8
Total	63.2	69.8	66.8	68.1

*Notes:* Population weighted results. \* Estimate not reliable.

### Multiple risk factors

The association between health and exposure to more than one health risk factor is considered in Table 31.11. It compares the average general health scores for males and females with no risk factors present (non-smokers with non-risky levels of alcohol consumption who exercise at least once a week) with those with one risk factor present and those with two or three risk factors present.<sup>15</sup> In all age groups, and for both males and females, average general health scores were much higher for persons without any of the three health risk factors. With the exception of females aged 65 or older, those with only one of the three risk factors also had substantially higher scores for general health than those with two or three of the health risk factors.

The greatest differences in general health scores by exposure to risk factors arise for teenage females over 15 years of age. For females in this age group, average general health for those with none of the risk factors present was 76, compared to 67 for those with one health risk factor, and 52 for those with two or three of the risk factors. For females in their early twenties, by contrast, differences by level of exposure are quite small, ranging only from 74 for those with none of the health risk factors to 67 for those with two or more of the risk factors. Differences for males aged between 35 and 44 are also relatively small, ranging from 74 to 61. However, for males aged 65 and over, there is a very large range in average general health scores—66 for those with none of the three health risk factors, 52 for those who had one health risk factor and 44 for those with two or more of the risk factors.

### Conclusion

Overall, the smoking rate dropped slightly between 2001 and 2006, and it is particularly encouraging that the decline has been greatest among young people. Less positive is the finding that the rate of risky levels of alcohol consumption increased slightly between 2001 and 2006, while levels of physical activity remained fairly stable.

Differences in average health levels by smoking status are consistent with substantial adverse health effects of smoking, even for teenagers. Physical activity is likewise positively associated with general health, although clearly health is an important determinant of activity level and so the implications of exercise for health cannot be distilled from the analysis presented here. With regards to alcohol consumption, we find that moderate consumption is associated with good health, while both drinking at risky levels and not drinking at all are associated with poor health. Only the former of these two associations is likely to correspond to a causal effect of alcohol consumption on health, although causation cannot be inferred from these data.

Looking at the effects of multiple health risk factors on general health, we find that average general health scores are highest for those whose smoking, drinking and exercise behaviours mean they are not exposed to any of the three health risk factors that we consider in this article; and average health scores are lowest, by a considerable margin, for those who were exposed to two or three of the health risk factors.

**Table 31.10: Mean general health, by sex, age group and level of physical activity, 2006 (0–100 scale)**

Age group	Level of physical activity in 2006						All
	Not at all	Less than once a week	1 to 2 times a week	3 times a week	More than 3 times a week	Every day	
<b>Males</b>							
15–19	73.7	62.2	70.5	73.4	75.3	82.2	75.0
20–24	54.4	60.1	73.5	75.8	81.0	79.9	75.0
25–34	56.7	67.1	73.5	75.5	73.6	78.7	72.9
35–44	60.4	62.2	68.2	73.2	71.7	75.2	69.0
45–54	51.1	59.6	68.4	71.5	73.6	77.2	68.1
55–64	42.4	52.9	60.5	70.3	69.2	74.2	62.1
65+	44.3	55.3	61.1	62.8	66.8	71.9	60.2
All age groups	50.4	59.9	68.2	72.0	72.4	77.0	68.3
<b>Females</b>							
15–19	67.1	64.4	70.8	74.0	78.3	76.2	72.5
20–24	67.4	71.1	69.5	74.0	74.4	76.5	71.6
25–34	59.1	65.6	73.8	73.7	77.0	79.2	72.7
35–44	58.0	68.4	70.7	75.4	77.8	78.5	71.4
45–54	46.0	59.7	69.9	71.5	76.7	75.2	67.1
55–64	45.6	57.4	66.7	67.8	74.9	69.5	64.8
65+	49.7	53.2	60.6	69.0	64.3	68.1	59.8
All age groups	52.3	63.0	69.0	72.2	74.6	74.6	68.1

Note: Population weighted results.

**Table 31.11: Mean general health, by sex, age group and number of health risk factors, 2006 (0–100 scale)**

Age group	Number of health risk factors			Total
	0	1	2 or 3	
<b>Males</b>				
15–19	77.8	69.0	61.1	75.0
20–24	79.6	68.8	62.3	75.0
25–34	78.3	68.9	60.6	72.9
35–44	73.6	65.1	61.0	69.0
45–54	72.8	65.2	54.6	68.2
55–64	68.0	56.5	48.9	62.2
65+	66.1	52.2	44.4	60.2
Total	73.3	63.1	56.5	68.3
<b>Females</b>				
15–19	75.8	66.5	52.0	72.5
20–24	73.7	70.6	66.7	71.8
25–34	77.5	67.7	60.8	72.7
35–44	75.7	68.4	62.3	71.4
45–54	74.5	60.5	52.9	67.1
55–64	70.5	57.4	54.0	64.8
65+	64.9	52.5	54.2	59.7
Total	73.2	62.6	58.3	68.2

Note: Population weighted results.

### Endnotes

- 1 This was the case in all age groups except for the 14–19 years age group, where females were more likely to be daily smokers than males (AIHW, 2008).
- 2 In part, this is because smoking is associated with higher premature death rates, and smokers are less likely to live to the older age groups.
- 3 Current smokers include all who said they were smokers, even if they said they smoked rarely, for example, less often than weekly.
- 4 While ABS data also indicates that smoking is more common among men for all age groups, results from the 2007 National Drug Strategy Household Survey indicated that among teenagers, girls are more likely to be daily smokers than boys (AIHW, 2008).
- 5 Another possibility is that recent smoking bans in public venues such as cafes and restaurants have had an impact on smoking behaviour. While in most states of Australia, smoking was banned in enclosed areas of hotels, clubs, and nightclubs from 2 July 2007, bans on smoking in other public areas such as cafes and restaurants came into effect earlier. The evidence on this is not definitive. A Massachusetts study (Siegel et al., 2008) conducted between 2001 and 2006 suggests that restaurant smoking bans may play a big role in persuading teens not to become smokers. Using the first three waves of the HILDA Survey data, Buddelmeyer and Wilkins (2005) found that smoking bans in public venues such as restaurants had little effect on those aged 15 to 18 years who were already smokers, but found that those who have never smoked were less likely to start if these regulations were in place.
- 6 Those who said that they were smokers or no longer smoked, and in a subsequent interview said that they had never smoked were re-grouped into the 'no longer smoke' category.

- 7 Note that people who drink rarely, but drink high amounts of alcohol when they do drink fall into the 'binge drinker' category, which is risky in the short-term, but if done only rarely, is generally not thought to be risky in the long-term (NHRMC, 2005).
- 8 Compared to NHRMC (2005) figures, reported levels of risky and high risk alcohol consumption in the HILDA Survey data are approximately 3% lower. It may be the case that HILDA Survey respondents are under-reporting their levels of alcohol consumption.
- 9 'Physically inactive' was defined as either not undertaking deliberate exercise, or doing so only at a very low level.
- 10 Physical activity has been associated with better indices of mental health in a number of large population studies, as well as being a recognised and evidence-based treatment for clinical anxiety and depression (Commonwealth Department of Health and Family Services, 1998).
- 11 This increase in the prevalence of physically inactive individuals may, in part, be a result of the structural ageing of the population.
- 12 Note that causation could run both ways: some adults may be physically inactive because of sickness or obesity.
- 13 This question was asked in the self-completion questionnaire and moderate physical activity was defined as an activity that would cause a slight increase in breathing and heart rate, such as brisk walking.
- 14 Differences in mean health between smokers, those who have never smoked and those who no longer smoke are significant at the 5% level for both men and women. It should be noted that the health risks from smoking increase with the number of cigarettes smoked and with the number of years smoking, especially when tobacco smoking is started at an early age (AIHW, 2002). In Australia, the average number of cigarettes smoked per week increases substantially with age, from around 50 per week for teenage smokers to over 100 for men in their 50's, and around 90 for women in their 50's (Headey and Warren, 2007). It is also interesting, and somewhat alarming, to note that the average number of cigarettes smoked by teenage women in Australia increased from 39 per week in 2002 to 50 per week in 2004 (Headey and Warren, 2007).
- 15 Persons exposed to two or three of the three risk factors are combined into one group because there are insufficient cases of exposure to all three risk factors for reliable estimates to be obtained for this group in isolation.

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## 32. Social capital and health in Australia

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The Council of Australian Governments *National Action Plan on Mental Health 2006–2011* commits Australian governments to trying to increase levels of community participation for people who have mental health problems. In addition to a number of practical initiatives (such as trying to address stable housing needs and employment possibilities), Australian governments realise that it will also be important to build social capital. This is because people living in communities that are rich in capital tend to have better social, economic and health outcomes, including for mental health, than those who live with less social capital.

Social capital is made up of two components—participation in the community and feelings of connectedness that arise from participation. Participation is often called the “structural” side of social capital, while feelings of connectedness are often termed the ‘cognitive’ component. The more people participate, the higher will be their feelings of connectedness. It is the connectedness, or ‘cognitive’ part of social capital that is thought to be strongly and directly related to mental health (Berry and Shipley, 2007). Participation includes many different activities, such as socialising with friends and family, volunteering and joining community groups, and getting involved in local activism and other political activities. There is a strikingly strong relationship between mental health and *breadth* of participation across multiple types of participation (Berry et al., 2007): for every extra type of participation in which a person engages, their mental health improves. What people think and feel about the ways in which they participate (e.g. whether they enjoy it, or think they participate enough) may be as strongly, or even more strongly linked to mental health than is breadth of participation (Berry, 2008b).

In this article we examine (i) gender differences and patterns in frequency and enjoyment of community participation, and in social cohesion, and (ii) the relationship (if any) between components of structural and cognitive social capital and three SF-36 subscales—mental health, general health and physical functioning.

### Measures of social capital and health

#### *Social capital*

Data for this article are taken from the self-completion questionnaire for Wave 6 of the HILDA Survey. All waves of the HILDA Survey have included items

tapping aspects of social capital (contact with family and friends, membership of clubs, volunteering activity, trust) and closely related constructs, such as social support and neighbourhood cohesion. Additional items included in the Wave 6 self-complete questionnaire built on this base with the purpose of more thoroughly examining social capital in Australia. Selection of items was based on a theory of social capital in which higher levels of community participation are associated with greater social cohesion which is, in turn, related to advantageous outcomes in health, psychosocial and socio-economic functioning—and, particularly, in mental health (Berry and Shipley, 2007).

Items measuring community participation are derived from the *Australian Community Participation Questionnaire (ACPQ)*, which measures fourteen distinct types of community participation (Berry et al., 2007). A 12-item short-form of the ACPQ was developed to take account of items already included in every wave of the HILDA Survey (contact with family and friends, participation in community groups and questions about volunteering activity). For a full list of items, see Box 32.1. Due to space constraints, it was not possible to include in the HILDA Wave 6 self-completion questionnaire items tapping perceptions about participation. However, one of the items in the social support measure included in each wave of the HILDA Survey is about enjoying participation, and we use this item (also shown in Box 32.1).

The personal social cohesion items are also listed in Box 32.1 and include measures of trust, reciprocity, sense of belonging and tangible support. They are all taken from widely-used instruments, with details available from the HILDA Survey website <<http://www.melbourneinstitute.com/hilda/>>.

#### *Health*

Mental health is measured using the transformed mental health sub-scale of the SF-36, a widely used and extensively validated health screening instrument (Ware et al., 1993). Scores on the mental health sub-scale range from 0 to 100, with higher scores representing better mental health. Cut-points for various diagnoses vary, but a commonly used criterion is that scores of less than 50 indicate poor mental health.

Physical health is measured using two further subscales of the SF-36, as described above (Ware et al.,

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**Box 32.1: Questionnaire items****Community participation items***ACPCQ items*

1. Have telephone, email, or mail contact with friends or relatives not living with you
2. Chat with your neighbours
3. Attend events that bring people together such as fetes, shows, festivals or other community events
4. Get involved in activities for a union, political party or group that is for or against something
5. Make time to attend services at a place of worship
6. Encourage other to get involved with a group that's trying to make a difference in the community
7. Talk about current affairs with friends, family or neighbours
8. Make time to keep in touch with friends
9. Volunteer your spare time to work on boards or organising committees of clubs, community groups or other non-profit organisations
10. See members of my extended family (or relatives not living with me) in person
11. Get in touch with a local politician or councillor about issues that concern you
12. Give money to a charity if asked

*HILDA participation items*

13. How often get together with friends and relatives
14. How many groups are you currently an active member of?

**Social support items***Sense of belonging Items*

1. People don't come to visit me as often as I would like
2. I seem to have a lot of friends
3. I don't have anyone that I can confide in
4. I have no one to lean on in times of trouble
5. There is someone who can always cheer me up when I'm down
6. I often feel very lonely
7. When something's on my mind, just talking with the people I know can make me feel better

*Tangible support items*

8. I often need help from other people I can't get
9. When I need someone to help me out, I can usually find someone

*Enjoyment item*

10. I enjoy the time I spend with people who are important to me

**Trust items**

1. People take advantage of others
2. People keep their word
3. People succeed by stepping on others
4. People are honest
5. People can be trusted

**Reciprocity items**

1. People are helpful
2. People look out for themselves

1993): the general health sub-scale and the transformed physical functioning sub-scale. Like the mental health sub-scale, scores on the general health sub-scale and on the physical functioning sub-scale range from 0 to 100, with higher scores representing better general health. Cut-points for various diagnoses vary, but a commonly used criterion is that scores of less than 60 on the latter sub-scale indicate poor physical functioning. Approximately 28% of HILDA respondents reported poor general health and 12% reported poor physical functioning. Roughly 22% scored less than 50 on the mental health subscale, reflecting poor mental health.

**Social capital**

Table 32.1 shows mean scores for the types of participation for women and for men separately, and for the whole sample. One-way analyses of variance indicate that, except for community activism and getting in touch with a politician, women reported engaging in all forms of community participation significantly more frequently than did men. Keeping in touch with family and friends are the most common forms of participation, while religious observance and political types of participation are the least common.

Mean scores for the social support and social cohesion scales are presented in Table 32.1. Women reported a stronger sense of belonging and more tangible support than did men, greater trust in others and a stronger belief in generalised reciprocity. Women reported greater enjoyment of the time spent with important others than did men. Women reported having more friends than did men, yet also reported greater feelings of loneliness. Men were more likely to report that they had no one to lean on or confide in, compared to women.

We find that all participation items are significantly positively correlated (Table 32.2), such that those who engaged in any one type of participation were slightly more likely to report engaging in all other types of participation. All correlations are small to moderate, indicating relatively little shared variance (overlap) between types of participation.

With the exception of two items, all items tapping types of community participation are significantly and positively associated with sense of belonging and tangible social support, such that those who participated more frequently in their community reported greater sense of belonging and more tangible support (Table 32.3). Correlations are small to modest. Community activism and getting in touch with a politician are not significantly associated with sense of belonging and tangible social support, or the associations are trivial. With no exceptions, all participation items are positively and significantly associated with all trust and reciprocity items such that those who participated more frequently in their community reported greater trust in others and a stronger sense of reciprocity (Table 32.4). All correlations are small to modest in magnitude.

**Table 32.1: Means and standard deviations for the participation, volunteer and social support items**

	<i>Males</i>		<i>Females</i>		<i>Total</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
<b>AC PQ participation items<sup>a</sup></b>						
Contact with friends or relatives	4.44	1.24	4.99 <sup>+</sup>	1.06	4.73	1.18
Chat with neighbours	3.44	1.32	3.55 <sup>+</sup>	1.37	3.50	1.35
Attend events	3.08	1.20	3.29 <sup>+</sup>	1.23	3.19	1.23
Get involved in activities	1.66	1.01	1.62	0.99	1.64	1.00
Attend place a of worship	2.02	1.52	2.26 <sup>+</sup>	1.68	2.15	1.61
Encourage others to get involved in activities	2.00	1.23	2.11 <sup>+</sup>	1.29	2.06	1.27
Talk about current affairs	3.55	1.35	3.72 <sup>+</sup>	1.37	3.64	1.36
Keep in touch with friends	4.09	1.16	4.53 <sup>+</sup>	1.09	4.33	1.15
Volunteer time	2.16	1.49	2.28 <sup>+</sup>	1.55	2.23	1.53
See member of extended family	3.53	1.30	4.01 <sup>+</sup>	1.30	3.79	1.33
Get in touch with politician	1.49	0.87	1.47	0.84	1.48	0.85
Give money to charity	3.35	1.32	3.71 <sup>+</sup>	1.28	3.54	1.31
<b>Participation items</b>						
Get together with friends or relatives <sup>b</sup>	4.50	1.48	4.62 <sup>+</sup>	1.48	4.57	1.48
Membership to clubs <sup>c</sup>	0.75 <sup>+</sup>	2.14	0.64	1.93	0.69	2.03
<b>Volunteering item</b>						
Time spent volunteering/ charity work <sup>d</sup>	0.85	3.19	1.04 <sup>+</sup>	3.29	0.95	3.24
<b>Social support scales<sup>#</sup></b>						
Sense of belonging	4.90	0.76	5.18 <sup>+</sup>	0.75	5.05	0.77
Tangible support	5.46	1.11	5.80 <sup>+</sup>	1.10	5.64	1.12
Enjoyment <sup>e</sup>	6.12	1.15	6.41 <sup>+</sup>	1.02	6.28	1.09
<b>Social cohesion scales<sup>#</sup></b>						
Trust	4.73	1.07	4.92 <sup>+</sup>	1.11	4.83	1.10
Reciprocity	4.24	1.00	4.47 <sup>+</sup>	1.09	4.36	1.06

*Notes:* <sup>+</sup> Mean score is significantly different than male mean score (at the 1% level). <sup>#</sup> Scales created to be the average of constituent items. <sup>a</sup> Single items obtained by asking 'in general, how often do you do the following things'. Higher numbers indicate more often. <sup>b</sup> Single item where participants responded on a 7 point scale from *Everyday* to *less often than once every 3 months*. Higher numbers indicate more often. <sup>c</sup> Variable created to be the number of groups the respondent is currently a member of. <sup>d</sup> Response is in hours per week. <sup>e</sup> Single item where participants were asked 'I enjoy the time I spend with people' and responded on a 7 point scale the extent to which they agree or disagree, higher numbers indicate agreement.

**Table 32.2: Correlations between ACPQ participation items**

	<i>Chat with neighbours</i>	<i>Attend community events</i>	<i>Community activism</i>	<i>Attend a place of worship</i>	<i>Encourage community activism</i>	<i>Talk about current affairs</i>	<i>Keep in touch with friends</i>	<i>Volunteer work</i>	<i>See extended family</i>	<i>Get in touch with politician</i>	<i>Give money to charity</i>
Contact with friends or relatives	0.23 <sup>+</sup>	0.26 <sup>+</sup>	0.08 <sup>+</sup>	0.06 <sup>+</sup>	0.12 <sup>+</sup>	0.29 <sup>+</sup>	0.52 <sup>+</sup>	0.12 <sup>+</sup>	0.34 <sup>+</sup>	0.05 <sup>+</sup>	0.18 <sup>+</sup>
Chat with neighbours		0.35 <sup>+</sup>	0.15 <sup>+</sup>	0.11 <sup>+</sup>	0.20 <sup>+</sup>	0.22 <sup>+</sup>	0.22 <sup>+</sup>	0.20 <sup>+</sup>	0.23 <sup>+</sup>	0.17 <sup>+</sup>	0.21 <sup>+</sup>
Attend community events			0.32 <sup>+</sup>	0.21 <sup>+</sup>	0.39 <sup>+</sup>	0.30 <sup>+</sup>	0.32 <sup>+</sup>	0.38 <sup>+</sup>	0.21 <sup>+</sup>	0.23 <sup>+</sup>	0.22 <sup>+</sup>
Community activism				0.17 <sup>+</sup>	0.48 <sup>+</sup>	0.23 <sup>+</sup>	0.11 <sup>+</sup>	0.34 <sup>+</sup>	0.07 <sup>+</sup>	0.43 <sup>+</sup>	0.15 <sup>+</sup>
Attend a place of worship					0.41 <sup>+</sup>	0.14 <sup>+</sup>	0.12 <sup>+</sup>	0.29 <sup>+</sup>	0.15 <sup>+</sup>	0.18 <sup>+</sup>	0.23 <sup>+</sup>
Encourage community activism						0.30 <sup>+</sup>	0.20 <sup>+</sup>	0.54 <sup>+</sup>	0.14 <sup>+</sup>	0.42 <sup>+</sup>	0.25 <sup>+</sup>
Talk about current affairs							0.35 <sup>+</sup>	0.21 <sup>+</sup>	0.23 <sup>+</sup>	0.21 <sup>+</sup>	0.27 <sup>+</sup>
Keep in touch with friends								0.18 <sup>+</sup>	0.36 <sup>+</sup>	0.08 <sup>+</sup>	0.19 <sup>+</sup>
Volunteer work									0.18 <sup>+</sup>	0.36 <sup>+</sup>	0.23 <sup>+</sup>
See extended family										0.12 <sup>+</sup>	0.24 <sup>+</sup>
Get in touch with politician											0.19 <sup>+</sup>

*Note:* <sup>+</sup> Significantly different from zero (at the 1% level).

**Table 32.3: Correlations between community participation and social support items**

	<i>Sense of belonging</i>						<i>Tangible support</i>			
	<i>People don't visit me</i>	<i>Lots of friends</i>	<i>No one to confide in</i>	<i>No one to lean on</i>	<i>Some-one can always cheer me up</i>	<i>I feel lonely</i>	<i>I enjoy time with people</i>	<i>Talking makes me feel better</i>	<i>Can't get help from people</i>	<i>I can find some-one to help</i>
Contact with friends or relatives	-0.14 <sup>+</sup>	0.28 <sup>+</sup>	-0.23 <sup>+</sup>	-0.24 <sup>+</sup>	0.20 <sup>+</sup>	-0.16 <sup>+</sup>	0.24 <sup>+</sup>	0.24 <sup>+</sup>	-0.19 <sup>+</sup>	0.27 <sup>+</sup>
Chat with neighbours	-0.10 <sup>+</sup>	0.18 <sup>+</sup>	-0.10 <sup>+</sup>	-0.09 <sup>+</sup>	0.11 <sup>+</sup>	-0.14 <sup>+</sup>	0.10 <sup>+</sup>	0.16 <sup>+</sup>	-0.10 <sup>+</sup>	0.18 <sup>+</sup>
Attend community events	-0.13 <sup>+</sup>	0.28 <sup>+</sup>	-0.13 <sup>+</sup>	-0.13 <sup>+</sup>	0.15 <sup>+</sup>	-0.15 <sup>+</sup>	0.13 <sup>+</sup>	0.17 <sup>+</sup>	-0.11 <sup>+</sup>	0.18 <sup>+</sup>
Community activism	-0.05 <sup>+</sup>	0.11 <sup>+</sup>	-0.02 <sup>+</sup>	-0.01	0.01	-0.04 <sup>+</sup>	-0.02	0.02	0.00	0.02
Attend a place of worship	-0.05 <sup>+</sup>	0.13 <sup>+</sup>	-0.03 <sup>+</sup>	-0.04 <sup>+</sup>	0.04 <sup>+</sup>	-0.05 <sup>+</sup>	0.05 <sup>+</sup>	0.07 <sup>+</sup>	-0.02	0.06 <sup>+</sup>
Encourage community activism	-0.05 <sup>+</sup>	0.18 <sup>+</sup>	-0.04 <sup>+</sup>	-0.04 <sup>+</sup>	0.06 <sup>+</sup>	-0.06 <sup>+</sup>	0.04 <sup>+</sup>	0.08 <sup>+</sup>	-0.02 <sup>+</sup>	0.08 <sup>+</sup>
Talk about current affairs	-0.11 <sup>+</sup>	0.16 <sup>+</sup>	-0.16 <sup>+</sup>	-0.18 <sup>+</sup>	0.12 <sup>+</sup>	-0.13 <sup>+</sup>	0.15 <sup>+</sup>	0.17 <sup>+</sup>	-0.12 <sup>+</sup>	0.19 <sup>+</sup>
Keep in touch with friends	-0.19 <sup>+</sup>	0.46 <sup>+</sup>	-0.28 <sup>+</sup>	-0.27 <sup>+</sup>	-0.27 <sup>+</sup>	-0.21 <sup>+</sup>	0.27 <sup>+</sup>	0.28 <sup>+</sup>	-0.20 <sup>+</sup>	0.33 <sup>+</sup>
Volunteer work	-0.06 <sup>+</sup>	0.16 <sup>+</sup>	-0.06 <sup>+</sup>	-0.04 <sup>+</sup>	0.06 <sup>+</sup>	-0.09 <sup>+</sup>	0.05 <sup>+</sup>	0.08 <sup>+</sup>	-0.05 <sup>+</sup>	0.08 <sup>+</sup>
See extended family	-0.12 <sup>+</sup>	0.22 <sup>+</sup>	-0.17 <sup>+</sup>	-0.19 <sup>+</sup>	0.19 <sup>+</sup>	-0.16 <sup>+</sup>	0.20 <sup>+</sup>	0.21 <sup>+</sup>	-0.17 <sup>+</sup>	0.25 <sup>+</sup>
Get in touch with politician	-0.03 <sup>+</sup>	0.06 <sup>+</sup>	-0.01	0.01	-0.02	-0.04 <sup>+</sup>	-0.03	0.03 <sup>+</sup>	0.02 <sup>+</sup>	0.02
Give money to charity	-0.08 <sup>+</sup>	0.12 <sup>+</sup>	-0.09 <sup>+</sup>	-0.10 <sup>+</sup>	0.07 <sup>+</sup>	-0.09 <sup>+</sup>	0.01 <sup>+</sup>	0.13 <sup>+</sup>	-0.10	0.12 <sup>+</sup>

*Note:* <sup>+</sup> Significantly different from zero (at the 1% level).

**Table 32.4: Correlations between community participation and social cohesion items**

	<i>Trust</i>				<i>Reciprocity</i>		
	<i>People take advantage of others</i>	<i>People keep their word</i>	<i>People step on others</i>	<i>People are honest</i>	<i>People can be trusted</i>	<i>People are helpful</i>	<i>People look out for themselves</i>
Contact with friends or relatives	-0.16 <sup>+</sup>	0.14 <sup>+</sup>	-0.16 <sup>+</sup>	0.17 <sup>+</sup>	0.14 <sup>+</sup>	0.18 <sup>+</sup>	-0.10 <sup>+</sup>
Chat with neighbours	-0.12 <sup>+</sup>	0.19 <sup>+</sup>	-0.14 <sup>+</sup>	0.18 <sup>+</sup>	0.21 <sup>+</sup>	0.21 <sup>+</sup>	-0.12 <sup>+</sup>
Attend community events	-0.14 <sup>+</sup>	0.16 <sup>+</sup>	-0.12 <sup>+</sup>	0.17 <sup>+</sup>	0.17 <sup>+</sup>	0.18 <sup>+</sup>	-0.12 <sup>+</sup>
Community activism	-0.06 <sup>+</sup>	0.06 <sup>+</sup>	-0.01	0.04 <sup>+</sup>	0.06 <sup>+</sup>	0.03 <sup>+</sup>	-0.06 <sup>+</sup>
Attend a place of worship	-0.05 <sup>+</sup>	0.10 <sup>+</sup>	-0.07 <sup>+</sup>	0.10 <sup>+</sup>	0.07 <sup>+</sup>	0.08 <sup>+</sup>	-0.06 <sup>+</sup>
Encourage community activism	-0.07 <sup>+</sup>	0.11 <sup>+</sup>	-0.05 <sup>+</sup>	0.10 <sup>+</sup>	0.11 <sup>+</sup>	0.12 <sup>+</sup>	-0.09 <sup>+</sup>
Talk about current affairs	-0.14 <sup>+</sup>	0.14 <sup>+</sup>	-0.11 <sup>+</sup>	0.17 <sup>+</sup>	0.15 <sup>+</sup>	0.17 <sup>+</sup>	-0.09 <sup>+</sup>
Keep in touch with friends	-0.18 <sup>+</sup>	0.19 <sup>+</sup>	-0.19 <sup>+</sup>	0.21 <sup>+</sup>	0.19 <sup>+</sup>	0.24 <sup>+</sup>	-0.14 <sup>+</sup>
Volunteer work	-0.10 <sup>+</sup>	0.13 <sup>+</sup>	-0.09 <sup>+</sup>	0.13 <sup>+</sup>	0.14 <sup>+</sup>	0.13 <sup>+</sup>	-0.10 <sup>+</sup>
See extended family	-0.16 <sup>+</sup>	0.18 <sup>+</sup>	-0.16 <sup>+</sup>	0.18 <sup>+</sup>	0.20 <sup>+</sup>	0.20 <sup>+</sup>	-0.12 <sup>+</sup>
Get in touch with politician	-0.05 <sup>+</sup>	0.08 <sup>+</sup>	-0.02 <sup>+</sup>	0.07 <sup>+</sup>	0.09 <sup>+</sup>	0.06 <sup>+</sup>	-0.05 <sup>+</sup>
Give money to charity	-0.12 <sup>+</sup>	0.16 <sup>+</sup>	-0.13 <sup>+</sup>	0.17 <sup>+</sup>	0.17 <sup>+</sup>	0.18 <sup>+</sup>	-0.11 <sup>+</sup>

*Note:* <sup>+</sup> Significantly different from zero (at the 1% level).

**Social capital and health**

Table 32.5 presents correlations between participation and the three health sub-scales. Some types of participation are more strongly related to health than are others and some types are related to better health, while others are related to worse health. Most of the associations are statistically significant, indicating that engagement in some, but not all, types of participation is related to health (though not necessarily for the better).

For mental health, all correlations are statistically significant and positively related to mental health, indicating that engagement in all types of participation is associated with better mental health (though some of the correlations are very small).

The pattern is not quite the same for the relationship between participation and physical health. Some of the correlations are negative, indicating that higher levels of engagement in some types of participation are linked to worse, not better, physical health. However, most of the correlations are so small as to be of negligible importance.

In all cases, a greater sense of belonging and higher levels of tangible support are related to better health, especially to better mental health and general health (Table 32.5). Associations between these scales and physical functioning are weak. We find a similar pattern for the other elements of cohesion—trust and reciprocity. Greater trust in others and a stronger sense of reciprocity are moderately significantly associated with better

**Table 32.5: Correlation between community participation items and subscales of SF-36**

	<i>Mental health</i>		<i>General health</i>		<i>Physical functioning</i>	
	<i>Zero order</i>	<i>Partial<sup>^</sup></i>	<i>Zero order</i>	<i>Partial<sup>^</sup></i>	<i>Zero order</i>	<i>Partial<sup>^</sup></i>
<b>ACPO community participation items</b>						
Contact with friends or relatives	0.17 <sup>+</sup>	0.20 <sup>+</sup>	0.16 <sup>+</sup>	0.15 <sup>+</sup>	0.11 <sup>+</sup>	0.08 <sup>+</sup>
Chat with neighbours	0.17 <sup>+</sup>	0.16 <sup>+</sup>	0.05 <sup>+</sup>	0.11 <sup>+</sup>	-0.05 <sup>+</sup>	0.06 <sup>+</sup>
Attend community events	0.20 <sup>+</sup>	0.19 <sup>+</sup>	0.14 <sup>+</sup>	0.14 <sup>+</sup>	0.10 <sup>+</sup>	0.10 <sup>+</sup>
Community activism	0.04 <sup>+</sup>	0.02 <sup>+</sup>	0.04 <sup>+</sup>	0.01	0.03 <sup>+</sup>	0.00
Attend a place of worship	0.06 <sup>+</sup>	0.06 <sup>+</sup>	0.01	0.05 <sup>+</sup>	-0.07 <sup>+</sup>	0.02
Encourage community activism	0.09 <sup>+</sup>	0.08 <sup>+</sup>	0.04 <sup>+</sup>	0.04 <sup>+</sup>	-0.03 <sup>+</sup>	0.00
Talk about current affairs	0.13 <sup>+</sup>	0.10 <sup>+</sup>	0.10 <sup>+</sup>	0.08 <sup>+</sup>	0.07 <sup>+</sup>	0.06 <sup>+</sup>
Keep in touch with friends	0.23 <sup>+</sup>	0.26 <sup>+</sup>	0.20 <sup>+</sup>	0.19 <sup>+</sup>	0.12 <sup>+</sup>	0.08 <sup>+</sup>
Volunteer work	0.13 <sup>+</sup>	0.11 <sup>+</sup>	0.07 <sup>+</sup>	0.09 <sup>+</sup>	0.02	0.06 <sup>+</sup>
See extended family	0.19 <sup>+</sup>	0.18 <sup>+</sup>	0.10 <sup>+</sup>	0.12 <sup>+</sup>	0.02	0.06 <sup>+</sup>
Get in touch with politician	0.05 <sup>+</sup>	0.02 <sup>+</sup>	-0.04 <sup>+</sup>	0.00	-0.09 <sup>+</sup>	-0.02
Give money to charity	0.11 <sup>+</sup>	0.08 <sup>+</sup>	0.04 <sup>+</sup>	0.06 <sup>+</sup>	-0.02 <sup>+</sup>	0.06 <sup>+</sup>
<b>Participation</b>						
Get together with friends or relatives	0.15 <sup>++</sup>	0.19 <sup>+</sup>	0.13 <sup>+</sup>	0.13 <sup>+</sup>	0.10 <sup>+</sup>	0.04 <sup>+</sup>
Membership to club <sup>a</sup>	0.06 <sup>+</sup>	0.06 <sup>+</sup>	0.04 <sup>+</sup>	0.06 <sup>+</sup>	0.00	0.02
<b>Volunteering</b>						
Volunteer/charity work <sup>b</sup>	0.06 <sup>+</sup>	0.06 <sup>+</sup>	0.02	0.06 <sup>+</sup>	-0.02	0.04 <sup>+</sup>
<b>Social support</b>						
Sense of belonging <sup>#</sup>	0.32 <sup>+</sup>	0.47 <sup>+</sup>	0.26 <sup>+</sup>	0.32 <sup>+</sup>	0.14 <sup>+</sup>	0.14 <sup>+</sup>
Tangible support <sup>#</sup>	0.37 <sup>++</sup>	0.42 <sup>+</sup>	0.30 <sup>+</sup>	0.32 <sup>+</sup>	0.15 <sup>+</sup>	0.17 <sup>+</sup>
Enjoyment <sup>c</sup>	0.20 <sup>+</sup>	0.21 <sup>+</sup>	0.17 <sup>+</sup>	0.17 <sup>+</sup>	0.09 <sup>+</sup>	0.09 <sup>+</sup>
<b>Social cohesion</b>						
Trust <sup>#</sup>	0.36 <sup>+</sup>	0.35 <sup>+</sup>	0.26 <sup>+</sup>	0.29 <sup>+</sup>	0.06 <sup>+</sup>	0.13 <sup>+</sup>
Reciprocity <sup>#</sup>	0.28 <sup>+</sup>	0.27 <sup>+</sup>	0.19 <sup>+</sup>	0.22 <sup>+</sup>	0.03 <sup>+</sup>	0.09 <sup>+</sup>

*Notes:* <sup>+</sup> Significantly different from zero (at the 1% level). <sup>^</sup> Controlling for sex, age, Indigenous status, education level, responsibility for dependents, being in paid work, living alone, and receipt of a government pension, benefit of allowance. <sup>#</sup> Scales created to be the average of constituent items. <sup>a</sup> Number of clubs that respondents are an active member of. <sup>b</sup> Based on hours per week. <sup>c</sup> Single item where participants were asked 'I enjoy the time I spend with people'.

mental health and better general health—and, to a very small extent, with better physical functioning (Table 32.5).

Because many of the types of participation, social cohesion and health overlap with each other and with other factors (such as socio-demographic characteristics), it is possible to over-estimate the size of a correlation by inadvertently double-counting. This inflates the correlation, so that it seems larger than it really is. We therefore calculated partial correlations (in which the overlap is counted out) between the measures of community participation and social support and each of the health subscales. The relationship between the community participation and all three health subscales, and between social support and the three health subscales, remained significant.

The results demonstrate that there are statistically significant relationships between social capital and both physical and mental health. The significant partial correlations indicate that these relationships cannot be accounted for by sex, age, Indigenous status, education level, responsibility for dependents, being in paid work, living alone, and relying on government support.

Results for physical functioning are mixed, as only roughly one-half of the community participation items are linked to the physical functioning subscale. The results for general health indicated that all but two participation items (community activism and getting in touch with a politician) are significantly related to general health, such that those who reported more frequent participation reported better general health. Time spent volunteering and levels of social cohesion are also significantly related to general health—more time spent volunteering and higher reports of trust and reciprocity are associated with better general health. The relationships are stronger for mental health than they are for general health or physical functioning: greater engagement in all types of community participation is significantly related to better mental health, as is greater time spent volunteering. The same extends to social support and social cohesion. That is, those who reported more community participation and time volunteering, and those with greater trust and reciprocity, had better mental health than did those who reported less community participation, volunteering and social cohesion. These results together suggest, as has previous research, that social capital has a

closer direct link to mental health than it does to physical health.

There is evidence to suggest that some forms of community participation are related to higher levels of psychological distress. Berry et al. (2007) have previously found that two forms of political participation are related to *worse* mental health. We find no evidence of this in the HILDA Survey. All the participation items that are significantly related to mental health are associated such that higher levels of participation are found among those with better, not worse, mental health and with better physical functioning and general health. However, consistent with another study (Berry, 2009), we find that higher levels of political types of participation are linked to worse mental health *for Indigenous respondents only*. This is a significant matter and is currently under further investigation in the HILDA Survey.

Our findings show a relationship between the structural and cognitive measures of social capital and health. This is consistent with previous research which suggests that both participation in the community and perceptions about community, as well as self-reported social cohesion, are linked to health (Berry, 2008a; Kawachi et al., 2008). In addition, and also consistent with previous research, the relationship between measures of social capital—community participation and social cohesion—suggest that people who reported high levels of participation were also more likely to have a greater sense of belonging and tangible support, were more likely to enjoy spending time with others, and reported greater social trust and generalised reciprocity. This finding suggests that the social capital measures used in the HILDA study are valid.

### Social capital and gender

Sex differences in measures of social capital are notable. Women reported higher levels of community participation, social support and social cohesion. This finding is consistent with previous research (Berry, 2008a), and suggests that women have overall higher levels of social capital. Although social capital is protective against mental health problems, women also reported more psychological distress than did men. While this is consistent with Australian norms, it suggests that the relationship between social capital and health may be complex for some women. Previous Australian research has reported that women may vary 'considerably and systematically' (Berry, 2008a) in their reported levels of social capital, and that socio-economic disadvantage may underpin this variability (Caughy et al., 2003; Kawachi and Berkman, 2001). We do not have the opportunity in this article to examine this matter but other studies have shown that socio-economic factors help determine who has access to high levels of social capital and, so, to the benefits that accompany it.

Separately, social capital can place unwanted obligations and strains on women (Ferlander, 2007). This may be particularly true for disadvantaged women (Kawachi and Berkman, 2001), who have fewer resources to accommodate the strain (Berry, 2008a).

### Limitations of the analysis

Although cross-sectional analyses, such as this, do not allow us to comment on whether social capital causes better health, or vice versa, this is not the goal of our study. Instead, we have explored how components of social capital are related to health in a large, nationally representative study. In doing this, we are not able to make adjustments for using individual-level, self-reported data which have not been validated against more objective measures. However, perceptions of health are highly consistent with objective measures (Berry et al., 2007) and it is unlikely that our findings are spurious—particularly as they are consistent with the findings of many other studies. Further research also needs to examine relationships between social capital measured at a community (or similar) level, as well as at an individual level, in terms of health outcomes.

Few research papers have attempted the difficult task of examining the mechanisms by which social capital may affect mental health, and only a handful have begun to explore the role that other factors, such as socio-economic status, may play in this relationship. Advanced modelling techniques, such as structural equations modelling, should be employed in this area, as they are able to examine the plausibility of putative causal pathways.

Despite certain limitations, our findings may have useful applications in policy development and in the design of service and delivery approaches. Interventions aimed at increasing community participation as a way of targeting mental health will be inexpensive relative to other interventions (e.g. individual psychiatric services). This makes them attractive from a social policy standpoint. In addition, the gender differences we have reported might provide insights to tailor interventions based on an understanding the needs of different groups of people. Such tailoring is crucial in effective public policy and intervention design (Lee et al., 2001).

### Conclusion

Our examination of the relationship between the structural and cognitive components of social capital and the relationships between social capital and three forms of health has demonstrated that both structural and cognitive aspects of social capital are linked to each other and can be linked to all three forms of health: people who report higher levels of social capital also report fewer mental health problems and better general health and physical functioning. The relationship

between social capital and mental health is the strongest, with higher scores on all community participation measures and social cohesion items correlated with better mental health. However, there are notable gender differences in this relationship—women reported higher overall levels of social capital as well as more mental health problems—despite the overall finding that higher levels of social capital are associated with better health. Understanding how this relationship works, and the factors at play, needs to be further explored in future research, so that we can develop and improve effective interventions that improve mental health.

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## 33. Socio-economic correlates of body size among Australian adults

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### Introduction

The sixth wave of the HILDA Survey contains, for the first time, information on the height and weight of each respondent. Although HILDA is not the first Australian survey to ask these questions, it contains considerably more information about respondents' socio-economic characteristics than the past health surveys which have included these questions.

In this article, we describe the socio-economic correlates of height and weight in Australia. Our primary focus is on factors that are likely to affect body size. In a companion paper (Kortt and Leigh, 2008), we look at the relationship between body size and wages. We discuss the findings of that paper in our conclusion.

### Measuring body size

As measures of body size, we use respondents' self-reported height (in centimetres) and the body mass index or BMI (which is defined as weight in kilograms divided by height in meters squared).<sup>1</sup> To account for the possibility that the relationship between BMI and other socio-economic characteristics may be nonlinear, we look at BMI both as a continuous variable, and as a categorical variable. For the categorical measure of BMI, the commonly-used variables are underweight (BMI<18.5), normal-range BMI score (18.5≤BMI<25), overweight (25≤BMI<30), and obese (BMI≥30). We restrict our sample to respondents aged 21 or over, an age at which most people have stopped growing taller.

### Associations with body size

According to the HILDA data, the average height of Australian adults is 163cm (5 feet 4 inches) for women and 177cm (5 feet 10 inches) for men. The average BMI of women is 26 and the average BMI of men is 27. 29% of women are overweight, and 23% are obese. These proportions are even higher for men—42% of men are overweight, and 23% of men are obese. Our estimates are close to those from the most recent National Health Survey (NHS), conducted by the Australian Bureau of Statistics (2006). The 2004–05 NHS (based on self-reported data from adults 18 and over), found that the average height for women was 164cm and the average height of men was 178cm (ABS, 2006). The average BMI for women was 25, while the average BMI for men was 27. Statistics on overweight and obesity in the NHS also closely match our figures from HILDA, giving us some reassurance in the precision of our results.

We then focus on seven characteristics—region of residence, birth year, education, father's occupational status (when the respondent was aged about 14), marital status, whether the respondent was born overseas, and Indigenous status.<sup>2</sup> We chose these characteristics because we believe they are more likely to be determinants of body size than to be a function of body size. However, this may not be universally true. For example, while marital status may affect obesity, it might also be that obesity affects marital status—or, indeed, a third factor may affect both. In all cases, we present our results separately for women and men.

### Body size by state and territory

We first compare height and BMI patterns across states and territories. For the six states, our sample size ranges from 1,316 men and 1,532 women in New South Wales, to 153 men and 169 women in Tasmania. However, the territory sample sizes are smaller, with just 89 men and 99 women in the Australian Capital Territory, and 30 men and 36 women in the Northern Territory. To take account of this issue, we run formal statistical tests for each state and territory, to evaluate whether their statistic is significantly different from the average for all other states and territories. We denote instances where the difference is significant at the 5% level by '#', and at the 1% level by '##'. Since we are testing so many hypotheses simultaneously, we do not report differences that are only significant at the 10% level. Although we only report the raw difference in the tables, we observe much the same patterns if we control for respondent age when estimating these tests.

Table 33.1 shows our results for women. On average, women in New South Wales are significantly shorter (162.6cm) than in other states, while women in South Australia (164.1cm) and Western Australia (164.1cm) are significantly taller than those in other states. In terms of BMI, women from South Australia have a significantly higher BMI (26.9) than women in other states, while women from the Northern Territory have a significantly lower average BMI (23.9). In terms of BMI categories, women from the Northern Territory are more likely to be underweight (9%) and less likely to be overweight (15%) than in other states and territories. Women from Victoria have a lower rate of obesity (20%) than other states, while women in Tasmania have a higher rate of obesity than other states (30%).

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Turning to men in Table 33.2, we observe fewer statistically significant differences in body size across states. Victorian men are significantly shorter (176.9cm) than men in other states, while Queensland men are significantly taller (177.8cm). In terms of men's average BMI and underweight, overweight and obesity percentages, we do not observe any statistically significant differences across Australian states and territories.

### Body size by birth year

In Tables 33.3 and 33.4, we show height by birth cohort for men and women. We also present four scatter plots, illustrating the relationship between birth year and height/BMI for both men and women. These charts help to show not only the general pattern—as illustrated by the fitted line—but also the high degree of dispersion. While there is a discernable relationship between birth year and body size, this only explains a small portion of the overall variation in body size.

These data allow us to ask the question—are today's Australians taller than their predecessors?<sup>3</sup> Since our data are drawn from a single cross-section, we are unable to separate lifecycle effects (in which people's height falls over time) from cohort effects (in which health improvements lead to increases in average height). However, we can draw upon Sorokin et al. (1999), who use longitudinal data for a large sample of men and women

in Baltimore over the period 1958–1993 to devise formulas for height loss over the lifecycle.<sup>4</sup> For example, their formulas suggest that from age 40 to age 60, women shrink in height by 3cm, while men shrink by 2cm. Assuming this finding applies to all Australians today, we can adjust the observed heights in the HILDA dataset, and give all respondents an 'age-adjusted' height. Even taking this into account, there appears to be a secular increase in heights. For both men and women, the heights of those born in 1976–85 (aged 21–30 at the time of the survey) are 3cm higher than those born in 1946–55 (aged 51–60 at the time of the survey). When we adjust each individual's height to take account of changes over the lifecycle, the birth year difference falls to 2cm for men (statistically significant at the 1% level), and 1cm for women (statistically significant at the 5% level).

We can also observe patterns of BMI by birth cohort. This suggests that for both women and men, there is an inverse-U relationship between birth year and BMI. BMI is lowest among the oldest and youngest cohorts in our data (born before 1935, or in 1976–85), and highest among those born in 1946–55. However, we should again be careful in interpreting this as a cohort effect, since we are drawing on a single cross-section. Unlike in the case of height, we are unable to make adjustment assumptions about the relationship between age and BMI, since this may differ across countries and time periods.

**Table 33.1: Body size by state and territory—Women**

State	Height (cm)	BMI	Underweight (%)	Overweight (%)	Obese (%)
New South Wales	162.6 <sup>##</sup>	26.3	3	28	23
Victoria	162.9	26.1	3	31	20 <sup>##</sup>
Queensland	163.5	26.4	4	27	24
South Australia	164.1 <sup>#</sup>	26.9 <sup>#</sup>	5	32	26
Western Australia	164.1 <sup>##</sup>	26.4	3	32	22
Tasmania	163.0	27.3		23	30 <sup>#</sup>
Northern Territory	164.4	23.9 <sup>##</sup>	9 <sup>#</sup>	15 <sup>#</sup>	11
Australian Capital Territory	163.4	25.7	0	26	17
Total	163.2	26.3	3	29	23

Population weighted results. <sup>##</sup> and <sup>#</sup> denote statistical significance from a test of the hypothesis that the state or territory's figure is statistically different from the average in other states and territories (<sup>##</sup> = 1% level, <sup>#</sup> = 5% level).

**Table 33.2: Body size by state and territory—Men**

State	Height (cm)	BMI	Underweight (%)	Overweight (%)	Obese (%)
New South Wales	177.2	27.1	1	41	24
Victoria	176.9 <sup>#</sup>	26.8	1	41	21
Queensland	177.8 <sup>#</sup>	27.1	1	43	23
South Australia	177.9	26.8	2	45	21
Western Australia	177.4	27.2	1	41	24
Tasmania	177.0	27.8	2	42	25
Northern Territory	179.3	27.5	0	52	25
Australian Capital Territory	177.8	27.2	0	40	26
Total	177.4	27.0	1	42	23

Notes: Population weighted results. <sup>#</sup> denotes statistical significance from a test of the hypothesis that the state or territory's figure is statistically different from the average in other states and territories (<sup>#</sup> = 5% level).

**Table 33.3: Body size by birth year—Women**

Birth year	Height (cm)	BMI	Underweight (%)	Overweight (%)	Obese (%)
1935 or earlier	160.3	26.3	4	38	20
1936–45	162.3	27.0	3	37	25
1946–55	162.3	27.7	2	31	31
1956–65	163.5	26.5	3	26	25
1966–75	164.1	26.2	2	25	21
1976–85	165.1	24.5	8	24	13
Total	163.2	26.3	3	29	23

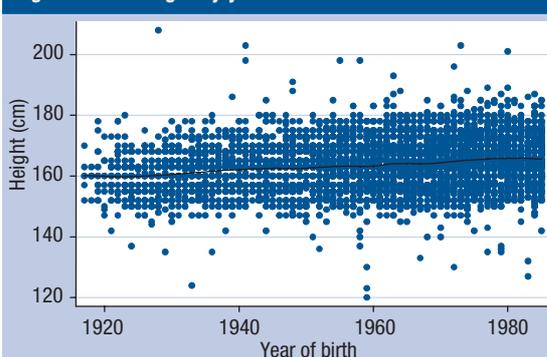
Note: Population weighted results.

**Table 33.4: Body size by birth year—Men**

Birth year	Height (cm)	BMI	Underweight (%)	Overweight (%)	Obese (%)
1935 or earlier	174.6	26.3	2	40	19
1936–45	175.3	27.6	1	46	26
1946–55	176.6	28.1	0	47	29
1956–65	177.4	27.6	1	44	27
1966–75	178.6	26.9	0	43	21
1976–85	179.8	25.4	1	32	14
Total	177.4	27.0	1	42	23

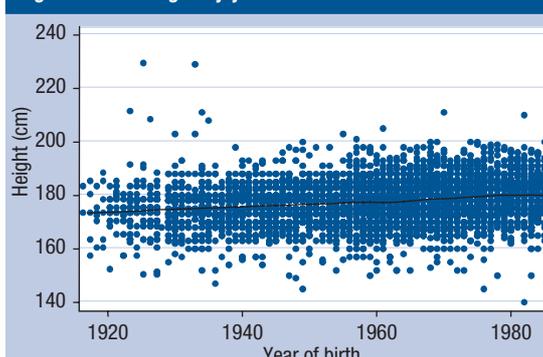
Note: Population weighted results.

**Figure 33.1: Height by year of birth—Women**



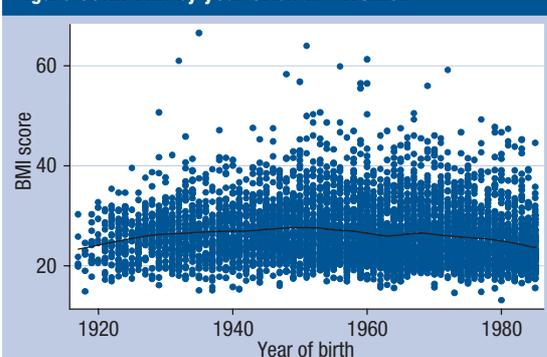
Note: Each dot denotes a respondent. Line is based on a locally weighted regression.

**Figure 33.3: Height by year of birth—Men**



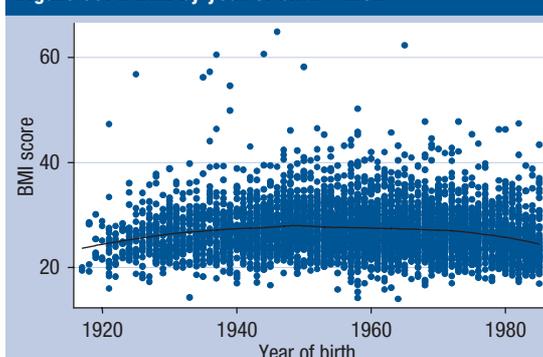
Note: Each dot denotes a respondent. Line is based on a locally weighted regression.

**Figure 33.2: BMI by year of birth—Women**



Note: Each dot denotes a respondent. Line is based on a locally weighted regression.

**Figure 33.4: BMI by year of birth—Men**



Note: Each dot denotes a respondent. Line is based on a locally weighted regression.

### Body size by highest level of education

For women, there is a strong relationship between body size and highest level of education as shown in Table 33.5. University-educated women are 3 centimetres taller than women whose highest level of education is Year 11 or below. A similar relationship is also observed for average BMI. Only 13% of women with bachelor degrees are obese, followed by 17% of women with postgraduate qualifications. On the other hand, 28% of women who have only completed Year 11 or below are obese—these differences are statistically significant. This could potentially reflect the causal effect of education on health, but it is also possible that poor health makes it more difficult to gain further education, or that both health and education are affected by some third factor, such as an individual's rate of time preference (i.e. the value they place on wellbeing in the future as compared with wellbeing in the present).

The strong association between body size and highest level of education is also observed for men as shown in Table 33.6. The tallest men, on average, are those who have a bachelor's degree (178.4cm) or some type of postgraduate qualification (178.1cm). The shortest men (176.2cm) have only completed Year 11 and below. This relationship is also mirrored for average BMI. For instance, men with bachelor degrees, on average, have the lowest BMI (26.0)—approximately one unit lower than the national BMI average of 27.0. Moreover, only 15% of men with bachelor degrees are obese, closely followed by 16% of men with postgraduate qualifications. On the other hand, 30% of men who have only completed Year 11

and below are obese. Again, while the relationships are statistically significant, we caution readers not to necessarily draw causal conclusions from these associations, since the causal pathway could run in either direction, and possibly in neither direction.

### Body size by respondent's father's occupational status

We also examined the correlation between body size and the respondent's father's occupational status. This occupational status indicator, which was developed by researchers at the Australian National University, rates the prestige of the father's occupation when the respondent was about age 14, ranging from 0 to 100, with a higher score corresponding to a more prestigious occupation. On average, women with a father in the top occupational status decile were 1cm taller than women with a father in the bottom occupational status decile. This positive relationship—which plateaus out at higher scores—is illustrated in Figure 33.5 below with height on the vertical axis and father's occupational status on the horizontal axis.

For men, a similar relationship is also observed in Figure 33.6, with sons of men in the top occupational decile being 1cm higher than sons of men in the bottom occupational decile. As with women, this positive relationship also plateaus out at higher occupational status scores. Turning to BMI, a negative relationship is observed for BMI and the respondent's father's occupational status for both women (Figure 33.7) and men (Figure 33.8). On average, sons and daughters of

**Table 33.5: Body size by highest level of education—Women**

Education	Height (cm)	BMI	Underweight (%)	Overweight (%)	Obese (%)
Postgraduate	164.3	25.3	3	24	17
Bachelor	165.0	24.9	5	26	13
Diploma	163.8	26.2	4	26	22
Certificate	163.4	26.9	3	28	26
Year 12	163.6	26.0	3	30	20
Year 11 and below	161.8	27.2	3	32	28
Total	163.2	26.3	3	29	23

Note: Population weighted results.

**Table 33.6: Body size by highest level of education—Men**

Education	Height (cm)	BMI	Underweight (%)	Overweight (%)	Obese (%)
Postgraduate	178.1	26.3	0	46	16
Bachelor	178.4	26.0	1	41	15
Diploma	177.2	26.7	1	41	20
Certificate	177.3	27.3	1	44	24
Year 12	178.3	26.6	1	39	21
Year 11 and below	176.2	27.8	1	41	30
Total	177.4	27.0	1	42	23

Note: Population weighted results.

men in the top occupational status decile have a BMI score that is 2 points lower than sons and daughters of men in the bottom occupational status decile.

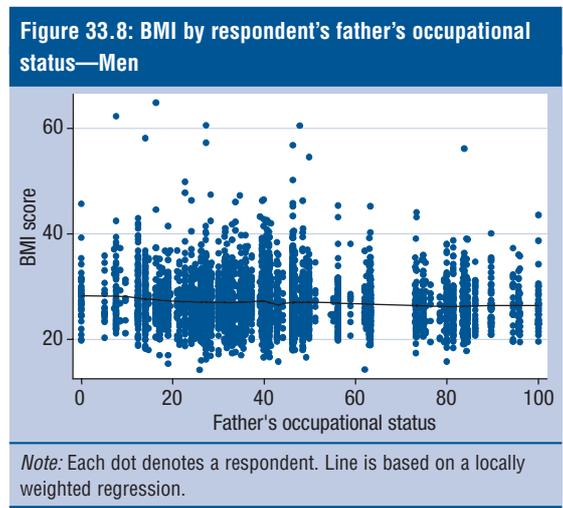
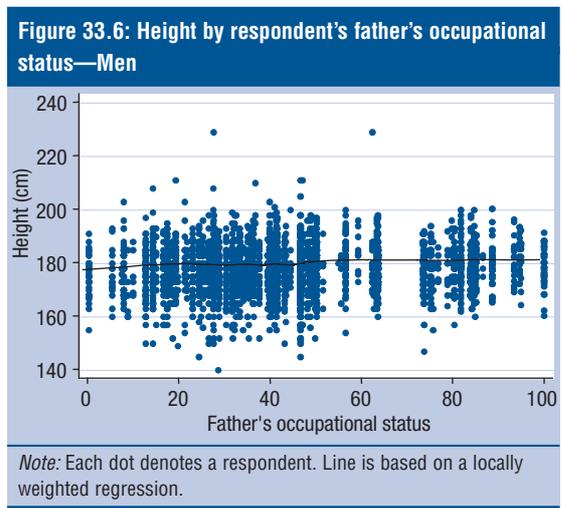
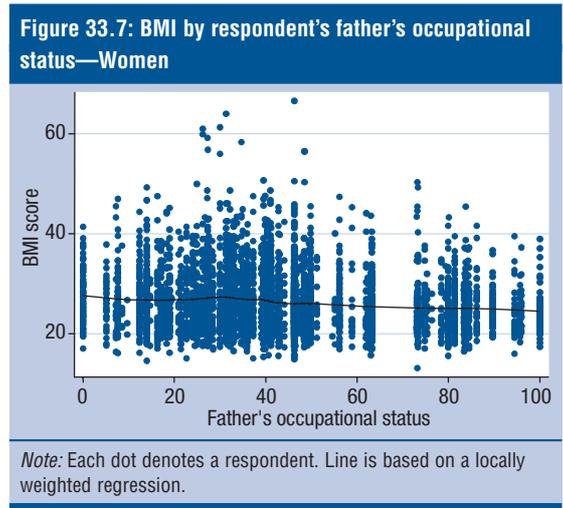
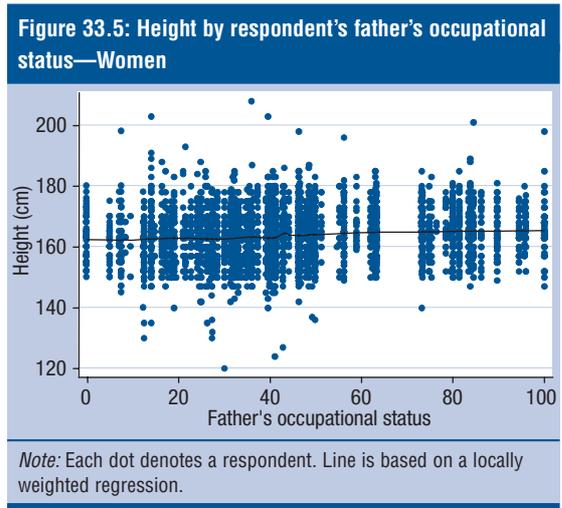
Together, these results demonstrate that respondents who grew up in more affluent households—as proxied by the father’s occupational status—tend to be taller, and less likely to be overweight or obese. Since the father’s occupational status is measured at an early age, it is likely that this either reflects a causal impact of family background on height and weight, or that both family background and body size are affected by some other variable, such as genetic characteristics or neighbourhood features.

**Body size by marital status**

In Tables 33.7 and 33.8, we present the relationship between body size and marital status for women and men. The tallest women, on average, are those women (at the time of the survey) who have never married (164.7cm). The shortest women, on average, are widowed (160.6cm). This result is perhaps not surprising as widowed women are likely to be older and their stature

would have declined over the life cycle. In terms of BMI, widowed women had the highest average BMI (26.8) followed by women who were separated or divorced (26.7). Women who never married had, on average, the lowest BMI (25.0). Approximately 1 in 2 women who were either in a de facto relationship, legally married, or separated or divorced were classified as overweight or obese. For widowed women, approximately 6 in 10 women were either overweight or obese. At the other end of the spectrum, around 4 in 10 women who never married were either overweight or obese.

Interestingly, as with women, the tallest men, on average, are those who never married (178.6cm), followed by men in a de facto relationship (178.4cm). The height of married men, on average, was 177.0cm. The shortest men, on average, were widowed (175.6cm). In terms of body size, nearly 7 in 10 men who were married, separated or divorced, or widowed were classified as overweight or obese. Around 6 in 10 men in a de facto relationship were classified as either overweight or obese. For men who had never married, 1 in 2 were classified as overweight or obese.



*Body size by country of birth*

Next, we compare native born Australians with first-generation migrants. Table 33.9 shows the results for women. Women who are born in Australia are, on average, 3cm taller than women born overseas. However, the average BMI of women born in Australia is higher than women born overseas (26.5 versus 25.8). In terms of body size, the proportion of overweight women is very similar for women born in Australia or overseas (29% compared to 28%). There is, however, a difference in the proportion of obese women by country of birth. 19% of women born overseas were classified as obese compared to 24% of women born in Australia. The height and BMI differences between Australian born and overseas born women are statistically significant. Breaking down the foreign born population by region of birth, the tallest female migrants are those born in New Zealand and Oceania, while the shortest are those born in Asia. The highest BMI scores are found among female migrants from

Continental Europe and the former USSR, while the lowest are among migrants from Asia.

For men a similar story emerges in Table 33.10. Men born in Australia are, on average 3cm taller than their overseas born counterparts (178.0cm versus 175.5cm). The proportion of overweight men is very similar for men born in Australia or overseas (42% compared to 43%). There is, however, a difference in the proportion of obese men by country of birth. One in 5 overseas born men are classified as obese compared to 1 in 4 Australian born men. Among men, the height and obesity differences by country of birth are statistically significant. Breaking down the foreign born population by region of birth, the tallest male migrants are those in the 'Other foreign-born' category (predominantly Africa and the Americas), while the shortest are those born in Asia. The highest average BMI scores are found among male migrants from 'Other foreign-born countries', while the lowest are among migrants from Asia.

**Table 33.7: Body size by marital status—Women**

<i>Marital status</i>	<i>Height (cm)</i>	<i>BMI</i>	<i>Underweight (%)</i>	<i>Overweight (%)</i>	<i>Obese (%)</i>
Legally married	163.0	26.6	2	30	23
De facto	164.5	26.2	3	24	23
Separated/Divorced	163.4	26.7	5	29	24
Widowed	160.6	26.8	4	39	22
Never married	164.7	25.0	8	22	18
Total	163.2	26.3	3	29	23

*Note:* Population weighted results.

**Table 33.8: Body size by marital status—Men**

<i>Marital status</i>	<i>Height (cm)</i>	<i>BMI</i>	<i>Underweight (%)</i>	<i>Overweight (%)</i>	<i>Obese (%)</i>
Legally married	177.0	27.4	1	45	24
De facto	178.4	26.8	1	44	20
Separated/Divorced	176.6	27.6	2	41	25
Widowed	175.6	26.5	2	43	23
Never married	178.6	25.9	2	31	19
Total	177.4	27.0	1	42	23

*Note:* Population weighted results.

**Table 33.9: Body size by country of birth—Women**

<i>Country of birth</i>	<i>Height (cm)</i>	<i>BMI</i>	<i>Underweight (%)</i>	<i>Overweight (%)</i>	<i>Obese (%)</i>
Born in Australia	163.9	26.5	3	29	24
Born in...					
New Zealand and Oceania	165.6	25.8	8	27	20
UK and Ireland	161.7	26.1	3	29	22
Continental Europe and former USSR	162.5	27.2	1	36	25
Asia	158.1	23.9	8	21	8
Other foreign born	161.7	26.9	3	26	24
All born overseas	161.3	25.8	5	28	19
Total	163.2	26.3	3	29	23

*Note:* Population weighted results.

**Table 33.10: Body size by country of birth—Men**

Country of birth	Height (cm)	BMI	Underweight (%)	Overweight (%)	Obese (%)
Born in Australia	178.0	27.1	1	42	24
Born in...					
New Zealand and Oceania	177.2	27.6	0	40	28
UK and Ireland	176.5	26.9	2	44	21
Continental Europe and former USSR	175.4	27.4	0	50	22
Asia	171.3	24.8	1	34	11
Other foreign born	178.1	27.8	0	46	24
All born overseas	175.5	26.8	1	43	20
Total	177.4	27.0	1	42	23

*Note:* Population weighted results.

### Body size by Indigenous status

Finally, we look at the correlation between body size and Indigenous status.<sup>5</sup> Table 33.11 shows the results for Indigenous and non-Indigenous women. On average, Indigenous women are about the same height as non-Indigenous women (163.6cm versus 163.2cm). However, the average BMI of Indigenous women is considerably higher than non-Indigenous women (28.6 versus 26.3). In terms of body size, nearly 7 in 10 Indigenous women are classified as either being overweight or obese compared to 5 in 10 non-Indigenous women. At the other end of the scale, Indigenous women are also more likely to be underweight than non-Indigenous women. Although there are only 70 Indigenous women in our sample, the BMI and obesity differences between Indigenous and non-Indigenous women are both statistically significant at the 1% level.

Table 33.12 shows the results for Indigenous and non-Indigenous men. On average, Indigenous men are about the same height as non-Indigenous men (176.6cm compared to 177.4cm). The average BMI of Indigenous men is 28.6 compared to 26.3 for their non-Indigenous counterparts. Approximately 65% of non-Indigenous men are classified as being either overweight or obese compared to 57% of Indigenous men. With 88 Indigenous men in our

sample, formal statistical tests cannot reject the hypothesis that there is no height or BMI difference between Indigenous and non-Indigenous men.

### Conclusion

In this article, we have sought to estimate the relationship between body size and seven characteristics that might conceivably affect it: state or territory of residence, birth year, education, father's occupational status, marital status, whether the respondent was born overseas, and Indigenous status. Across States and Territories, we find minimal differences. Across birth cohorts, we observe that today's young Australians are taller than their elders. Adjusting for the fact that individuals tend to shrink slightly as they age, we find that men born in 1976–85 are 2cm taller than those born in 1946–55, while women born in 1976–85 are 1cm taller than those born in 1946–55.

By education and parental status, the differences are larger still. University-educated respondents are 2–3cm taller than those with a Year 11 education or less, and 10–15 percentage points less likely to be obese. Those whose fathers worked in high-status jobs tend to be taller and weigh less than those whose fathers worked in low-status jobs.

**Table 33.11: Body size by Indigenous status—Women**

Indigenous status	Height (cm)	BMI	Underweight (%)	Overweight (%)	Obese (%)
Non-Indigenous	163.2	26.3	3	29	22
Indigenous	163.7	28.6	6	35	34
Total	163.2	26.3	3	29	23

*Note:* Population weighted results.

**Table 33.12: Body size by Indigenous status—Men**

Indigenous status	Height (cm)	BMI	Underweight (%)	Overweight (%)	Obese (%)
Non-Indigenous	177.4	27.0	1	42	23
Indigenous	176.6	26.5	1	37	20
Total	177.4	27.0	1	42	23

*Note:* Population weighted results.

Across racial and ethnic groups, we observe that men and women who were born in Australia tend to be taller than those born overseas; and also more likely to be obese. Comparing Indigenous and non-Indigenous respondents, we find that Indigenous women are 12 percentage points more likely to be obese than non-Indigenous women. This pattern does not hold up among men, with Indigenous and non-Indigenous men reporting similar levels of overweight and obesity.

In a companion paper (Kortt and Leigh, 2009), we look at the relationship between body size and hourly wages. Consistent with findings from other countries, we find that taller workers tend to earn higher wages. However, we do not find any evidence that—controlling for characteristics such as age, race, education and experience—there is a systematic wage penalty to having a higher BMI. This finding differs from studies in countries such as Germany and the United States, which have tended to find that overweight and obese workers in those countries earn lower hourly wages.

### Acknowledgements

We are grateful to Susanne Schmidt and Roger Wilkins for comments on an earlier draft.

### Endnotes

- 1 For a detailed discussion of the quality of the self-reported height and weight data in HILDA, see Wooden et al. (2008).
- 2 Since Australians living in remote and sparsely populated areas were not in the initial sampling frame (Watson and Wooden, 2002), HILDA under-samples remote Indigenous people.
- 3 Previous studies have addressed this question by looking at data from school children (Loesch et al., 2000; Olds and Harten, 2001), war recruits (Whitwell et al., 1997; Nicholas et al., 1998; Shlomowitz, 2007), and data on Indigenous heights collected by early anthropological expeditions (Nicholas et al., 1998). Data from war recruits suggests a decline in heights during the late-nineteenth century (though cf. Shlomowitz 2007), and an increase in the early-twentieth century. Studies of school children suggest that today's Australian children are taller than their predecessors.
- 4 The Sorkin et al. (1999) formulas for cumulative height loss at a given age are for women:  $0.0714\text{Age} - 0.00075\text{Age}^2 - 0.000016\text{Age}^3$  and for men:  $0.0435\text{Age} - 0.00009\text{Age}^2 - 0.000015\text{Age}^3$ . On the general topic of height decline over the lifecycle, see also Cline et al. (1989).
- 5 For evidence on the difference between the body sizes of Indigenous and non-Indigenous Australians in the early-twentieth century, see Nicholas et al. (1998).

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## 34. Fertility and fertility intentions, 2001 to 2006

As in most other Western nations, women in Australia are having fewer children, on average, than they were twenty or thirty years ago. Until recently, Australia had been experiencing a long period of fertility decline. Figure 34.1 shows that after a drop in the total fertility rate in the mid 1930's and a subsequent increase to a peak of 3.5 children per woman in 1961, the average number of children that Australian women have in their lifetime fell to 2.8 in 1967, 1.8 in 1984 and 1.7 in 2001. Since 2001, the fertility rate has increased very slightly, apparently arresting the gradual decline over the preceding two decades (Australian Bureau of Statistics (ABS), 2007).

Since the introduction of Maternity Allowance in February 1996, the Australian Government has provided various forms of financial assistance for families upon the birth, or adoption of, a new baby. Maternity Allowance was a lump-sum payment paid for each newborn child to families who qualified for Family Tax Benefit within 13 weeks of the baby's birth (Department of Families, Community Services and Indigenous Affairs (FaCSIA), 2006).<sup>1</sup> In 2002, the Baby Bonus was introduced with the aim of providing further tax relief to families upon the birth of a child. The Baby Bonus took effect on 1 July 2002 and applied to children born on or after 1 July 2001. Under this scheme, a parent was able to claim up to \$2,500 of the tax payable on their income earned in the year prior to the birth of their child every year for up to five years, as well as Maternity Allowance (Treasury, 2002).<sup>2</sup> In other words, under the Baby Bonus scheme that was

introduced in 2002, parents who had a substantial drop in income as a result of reducing their working hours after the birth of a baby would be able to claim a total of up to \$12,500 in addition to Maternity Allowance.

The current Baby Bonus—a lump sum payment to the parents on the birth of each child—was announced on 11 May 2004, with Treasurer Peter Costello encouraging Australian couples to have 'one (baby) for your husband, one for your wife and one for the country'. Initially known as Maternity Payment, this payment replaced the previous Baby Bonus and Maternity Allowance. It has risen from \$3,000 on commencement on 1 July 2004, to \$4,000 in July 2006 and \$5,000 in July 2008 (Costello, 2004). Until 1 January 2009, no means test was applied to this payment (Swan, 2008).

Public reaction to the announcement of the current Baby Bonus was mixed. While expectant parents and others planning to have children were undoubtedly happy to receive the extra money, there was much concern about whether this policy would have its intended effect of increasing the birth rate. Concerns were also raised about its potential to increase the attractiveness of motherhood for teenage women. Even though the policy was never positioned as providing additional resources to children, some also argued that parents would choose to spend the bonus in ways they regarded as inappropriate, for example, on luxury items such as plasma TVs, rather than on things that would benefit the child (Guest, 2007).

Figure 34.1: Total fertility rate, Australia, 1921–2006



Sources: ABS (2006, 2007).

It is too early to tell whether the Baby Bonus has been responsible for any long-term increase in fertility rates—and indeed it is likely that its precise effects will never be known—but demographers have suggested that the Baby Bonus, combined with low interest rates and low unemployment, may be driving this recent increase in fertility (McKinnon and Pirani, 2006).<sup>3</sup> There is also some evidence (Gans and Leigh, 2006) that over 1,000 births were delayed, by rescheduling of induction and caesarean procedures, to ensure that the birth occurred after 1 July 2004 so that the parents were entitled to the Baby Bonus that came into effect at that time.

### Has there been an increase in fertility rates?

Figures from the Australian Bureau of Statistics (ABS, 2007) indicate that the number of children born in Australia has been rising in recent years. In 2006, there were 265,900 births registered in Australia, an increase of 2.4% from 2005 and the second-highest number of births ever registered in Australia (ABS, 2007).<sup>4</sup> In 2006, Australia's Total Fertility Rate (TFR) was 1.81 babies per woman, the highest since 1985 (ABS, 2007).<sup>5</sup> According to the ABS (2007), the increase in the total fertility rate between 2005 and 2006 was largely due to births to women aged between 30 and 39 years, with women aged between 30 and 34 experiencing the highest fertility of all age groups in 2006. The ABS (2007) figures indicate that in 2006, the total fertility rate for women aged between 30 and 34 was 120.1 babies per 1,000 women—the highest rate recorded for women in this age group since 1963. For women aged between 35 and 39, fertility increased to 63.3 babies per 1,000 women, the highest rate since 1961, and fertility of women aged between 40 and 44 was the highest since 1971. However, teenage fertility continued to decline, and, while women aged between 25 and 29 continued to record the second highest fertility of all age groups, fertility of women in this age group decreased slightly between 2005 and 2006—from 101.8 babies per 1,000 women to 100.8 babies per 1,000 women. Furthermore, the median age of all mothers who gave birth in 2006 was 30.8 years, the highest on record, and the

median age of fathers in 2006 was 33.1 years, also the highest on record (ABS, 2007).

This slight increase in fertility is also evident in the HILDA Survey data. Table 34.1 shows age-specific fertility rates (number of births per 1,000 women) and total fertility rates, based on the HILDA Survey data, for each year from 2001 to 2006. The HILDA Survey data indicates that for women aged between 20 and 24, fertility rates dropped from 43.3 births per 1,000 women in 2001 to 34.9 in 2003 before increasing to 61.2 in 2005, then falling again to 43.9 in 2006. For women aged between 25 and 29, fertility rates dropped from 100.5 births per 1,000 women in 2001 to 79.6 in 2004, then increased substantially to 94.2 in 2005 and 92.4 in 2006. There was a similar drop and subsequent increase for women in the 30 to 34 age group—from 98.3 births per 1,000 women in 2001 to 71.9 in 2004 and 102.5 in 2005. However, among women aged between 35 and 39, fertility rates showed the opposite pattern, increasing between 2001 and 2004 and then dropping in 2005. Although total fertility rates calculated using the HILDA data are slightly lower than the ABS (2007) figures, they also show an increase since 2004—from 1.33 babies per woman in 2004 to 1.60 in 2005 and 1.49 in 2006.<sup>6</sup>

It is possible that the effects of the current Baby Bonus on decisions to have children will be greater for young women with low incomes and low levels of education. However, the descriptive evidence below suggests that this is not the case. Tables 34.2 to 34.4 compare fertility rates according to the mother's highest level of education, the mother's wage and salary income in previous financial year, and quintile of the equivalised household disposable income distribution.

Table 34.2 shows that between 2001 and 2006, fertility rates of women with a post-school qualification, particularly those with a postgraduate degree, increased, while among those whose highest educational qualification was Year 12 or below, fertility rates declined. For women with postgraduate degrees, fertility rates rose from 59.9 births per 1,000 women in 2002 to 70.4 births per 1,000

**Table 34.1: Age-specific fertility rates—Births per 1,000 women (%)**

Age group	2001	2002	2003	2004	2005	2006
15–19	*9.9	*1.4	*10.6	*11.0	*7.4	*15.3
20–24	43.3	49.3	34.9	*24.5	61.2	43.9
25–29	100.5	88.1	87.6	79.6	94.2	92.4
30–34	98.3	96.1	121.8	71.9	102.5	89.3
35–39	41.9	53.8	49.0	68.7	47.5	48.4
40–44	*11.6	*6.1	*3.6	*12.1	*9.8	*3.4
45–49	*1.2	*1.4	*0.0	*0.0	*0.0	*0.0
Total	43.9	42.5	43.5	38.2	45.5	41.0
Total fertility rate (TFR)	1.55	1.46	1.53	1.33	1.60	1.49

*Notes:* Population weighted results. \* Estimate not reliable.

women in 2005 and 68.7 births per 1,000 women in 2006. Among women whose highest level of education was Year 12, fertility rates dropped from 52.4 births per 1,000 women in 2001 to 33.2 births per 1,000 women in 2004, then increased to 51.3 births per 1,000 women in 2006. Women who had not completed Year 12 were the only group for whom a clear drop in fertility rates can be seen, with a decrease from 40.2 births per 1,000 women in 2001 to 21.8 births per 1,000 women in 2006.

In all six years, fertility rates were highest among women who earned no wage or salary income in the previous financial year, ranging from 63.8 births per 1,000 women in 2001 to 56.0 births per 1,000 women in 2006. It may be the case that many of these women were already stay-at-home mothers for an older child in the year before their youngest child was born. Among women who earned less than \$12,500 in the previous financial year, fertility rates remained quite stable at around 40 births per 1,000 women. For women who earned more than \$25,000 in the previous finan-

cial year, fertility rates varied substantially from one year to another. For example, among women who earned between \$25,000 and \$40,000, fertility rates dropped from 38.7 births per 1,000 women in 2001 to 25.2 births per 1,000 women in 2003, then increased to 53.2 births per 1,000 women in 2006. Among women who earned \$55,000 or more, fertility rates increased from 30.1 births per 1,000 women in 2001 to 57.5 births per 1,000 women in 2005 before dropping back to 23.1 births per 1,000 women in 2006.

Table 34.4 shows that the largest increase in fertility was among women in the middle quintile of the distribution of equivalised household income—from 37.1 births per 1,000 women in 2002 to 60.7 births per 1,000 women in 2005 and 52.0 births per 1,000 women in 2006. For women in the lower two quintiles of equivalised household income and also for women in the second highest quintile, fertility rates dropped slightly, while for women in the top two quintiles, fertility rates remained quite stable.

**Table 34.2: Fertility rates—Births per 1,000 women, by mother's highest level of education (%)**

Highest level of education	2001	2002	2003	2004	2005	2006
Postgraduate degree	*42.7	59.9	58.0	62.3	70.4	68.7
Undergraduate degree	40.9	43.6	59.5	53.2	69.2	42.2
Certificate or Diploma	44.2	50.6	43.1	44.6	39.3	46.2
Year 12	52.4	41.4	48.0	33.2	44.7	51.3
Year 11 or below	40.2	30.6	31.3	24.9	33.2	21.8
Total	43.9	42.5	43.5	38.2	45.5	41.0

Notes: Population weighted results. \* Estimate not reliable.

**Table 34.3: Fertility rates—Births per 1,000 women, by mother's wage and salary income in previous financial year (%)**

Mother's wage and salary income in last financial year	2001	2002	2003	2004	2005	2006
\$0 (did not work)	63.8	60.2	60.9	44.4	57.8	56.0
\$1–\$12,499	39.9	42.1	38.9	36.4	40.1	41.5
\$12,500–\$24,999	35.5	33.2	46.2	32.9	56.5	26.0
\$25,000–\$39,999	38.7	25.7	25.2	30.9	26.2	53.2
\$40,000–\$54,999	20.0	46.8	37.4	36.4	34.6	25.9
\$55,000+	30.3	26.1	37.2	51.6	57.5	23.1
Total	43.9	42.5	43.5	38.2	45.5	41.0

Note: Population weighted results.

**Table 34.4: Fertility rates—Births per 1,000 women, by income quintile (%)**

Quintile of the equivalised household income distribution	2001	2002	2003	2004	2005	2006
1 (Lowest)	49.0	35.3	31.2	34.6	*32.4	36.8
2	61.1	70.8	70.1	40.7	59.8	52.4
3	43.3	37.1	45.8	43.7	60.7	52.0
4	41.0	37.2	43.4	39.3	43.9	34.9
5 (Highest)	30.7	36.1	29.1	32.5	31.2	30.9
Total	43.9	42.5	43.5	38.2	45.5	41.0

Note: Population weighted results.

### Has the number of children people intend to have changed?

The HILDA Survey data allows us to look at not only changes in the number of babies born each year, but also changes in the number of children people *intend* to have. Each year, HILDA Survey respondents aged between 18 and 44 are asked about their fertility intentions—that is, about having a child, or more children, in the future.<sup>7</sup> Men and women in this age group are specifically asked: ‘How likely are you to have a child/more children in the future?’ This question is answered on a 0 to 10 scale where 0 means ‘very unlikely’ and 10 means ‘very likely’. For those who gave an answer of 6 or higher to this question—indicating that they think they are reasonably likely to have a child in the future—a final question asks how many (more) children the respondent intends to have. Based on responses to these questions, and the number of children each respondent already

has, the total number of actual and intended children can be calculated.

We can use this information to investigate whether the number of children that Australian men and women intend to have has actually changed since the introduction of the Baby Bonus. Table 34.5 shows the average number of actual and intended children for men and women aged between 18 and 44 in each year from 2001 to 2006. It appears that, so far, the Baby Bonus has had very little effect on total intended fertility of the overall population. On average, for both men and women, the total number of intended children was the same in 2006 as it was in 2001.

There has been very little overall change in total intended fertility between 2001 and 2006, but it is possible that individual intentions about having a child, or more children, changed over this period. It might be the case that those who reported an

**Table 34.5: Total expected children (actual and intended), by sex and age group (means)**

Age group	2001	2002	2003	2004	2006
<b>Men</b>					
18–24	1.8	1.7	1.8	1.7	1.8
25–29	1.9	1.7	1.8	2.0	2.1
30–34	1.8	1.9	1.9	1.8	1.9
35–39	1.8	1.9	1.9	1.8	1.9
40–44	2.0	2.0	2.0	1.9	1.9
Total	1.9	1.8	1.9	1.8	1.9
<b>Women</b>					
18–24	2.0	2.0	2.1	2.0	2.1
25–29	2.0	2.1	2.0	2.1	2.1
30–34	2.0	2.0	2.1	2.0	2.1
35–39	2.1	2.1	2.0	2.1	2.1
40–44	2.2	2.2	2.2	2.2	2.1
Total	2.1	2.1	2.1	2.1	2.1

*Notes:* Population weighted results. Figures for 2005 are excluded as the population asked the questions about fertility expectations was different in that year (see endnote 7 for details).

**Table 34.6: Changes in individual fertility intentions (total children expect to have) between 2001 and 2006—Men and women aged 18–39 in 2001 (%)**

Age group in 2001	Change in total number of children expect to have					Total
	–2 or more	–1	0	+1	+2 or more	
<b>Men</b>						
18–24	12.3	14.7	50.4	9.1	13.5	100.0
25–29	11.7	15.2	49.5	13.3	10.3	100.0
30–34	6.8	8.7	60.9	14.4	9.2	100.0
35–39	4.4	*3.6	78.4	9.3	4.3	100.0
Total (18–39)	9.2	11.0	58.5	11.5	9.8	100.0
<b>Women</b>						
18–24	13.3	12.3	51.4	13.5	9.5	100.0
25–29	7.0	14.5	53.3	15.0	10.3	100.0
30–34	4.7	9.1	69.1	12.3	4.7	100.0
35–39	*2.3	4.4	87.5	5.1	*0.7	100.0
Total (18–39)	7.1	10.2	64.4	11.7	6.5	100.0

*Notes:* Population weighted results. \* Estimate not reliable. Percentages may not add up to 100 due to rounding.

increase in the number of children they expected to have were counterbalanced by people who reported a decrease in the number of children they intended having.

Looking at changes in total intended fertility between 2001 and 2006, Table 34.6 shows that around 40% of men and 35% women who were between the ages of 18 and 39 in 2001 reported a different number of total expected children in 2006 compared to 2001, and, for both men and women, the proportion who reported a higher number of expected children in 2006 was slightly larger than the proportion who reported a lower number.

The proportion of men and women who changed their fertility intentions between 2001 and 2006 decreased with age—50% of men and 51% of women who were aged between 18 and 24 in 2001 reported the same number of expected children in 2001 and 2006, compared to 78% of men and 88% of women aged between 35 and 39 in 2001. Overall, 21% of men and 18% of women reported a higher number of total expected children in 2006 compared to 2001, and 20% of men and 17% of women reported a lower number.

Among men who were aged between 18 and 29 in 2001, the proportion who reported a lower number of expected children in 2006 compared to 2001 was higher than the proportion that had increased their total expected children. On the other hand, among men who were aged between 30 and 34 in 2001, the proportion who reported a higher number of expected children in 2006 compared to 2001 was 24%, and only 16% of men in this age group reported a lower number of expected children in 2006. For men who were aged between 35 and 39 in 2001, the proportion who reported an increase in the total number of children they expected to have was 14% and only 8% reported a decrease.

Among women who were aged between 18 and 24 in 2001, the proportion who reported a higher

number of expected children in 2006 was 23%, compared to 26% who reported a lower number of expected children. However, women who were in the 25 to 29 and 30 to 34 age groups in 2001 more commonly reported an increase in their total expected children than a decrease, with 25% of women who were aged between 25 and 29 and 17% of women aged between 30 and 34 saying they expected to have more children in 2006 than they did in 2001, compared to 22% of women aged between 25 and 29 and 14% of women aged between 30 and 34 who reported a lower number of total expected children in 2006 compared to 2001.

### Characteristics of people who changed their fertility intentions

There are many other factors that could have an impact on the decision about whether to have a child, or another child. Table 34.6 has shown that it was more common for younger people than older people to have changed their total fertility intentions over time. The main reason for this is that, compared to younger men and women, it is more likely that men and women in their late thirties and forties have completed their fertility. That is, most have already had as many children as they intend to have.

Table 34.7 compares the changes in total expected fertility between 2001 and 2006 for men and women, according to the number of children they already had in 2001. Compared to those who did not have any children and those who had one child, it was less common for men and women who already had at least two children in 2001 to have changed their expectations about the total number of children they expected to have. For men and women who had no children in 2001, the proportion who reported an increase in the number of children they expected to have was slightly lower than the proportion who reported a decrease, with 21% of men and 20% of women

**Table 34.7: Changes in individual fertility intentions (total children expect to have) between 2001 and 2006, by number of children already had—Men and women aged 18–44 (%)**

Number of children already had in 2001	Change in total number of children expect to have					Total
	-2 or more	-1	0	+1	+2 or more	
<b>Men</b>						
0	11.8	12.8	54.3	9.3	11.9	100.0
1	5.4	13.1	54.1	21.3	6.2	100.0
2	2.8	4.3	73.2	15.0	4.7	100.0
3 or more	3.1	4.8	76.4	10.1	5.7	100.0
Total	9.2	11.0	58.5	11.5	9.8	100.0
<b>Women</b>						
0	13.1	13.3	53.2	11.1	9.3	100.0
1	1.8	14.1	60.5	19.3	4.3	100.0
2	0.8	5.1	78.9	11.7	3.5	100.0
3 or more	1.1	2.7	86.9	5.7	3.7	100.0
Total	7.1	10.2	64.4	11.7	6.5	100.0

Notes: Population weighted results. Percentages may not add up to 100 due to rounding.

who did not have any children in 2001 reporting an increase in total expected children and 25% of men and 26% of women reporting a decrease.

Among those who already had at least one child in 2001, the proportion of men and women who reported an increase in total expected children by 2006 was substantially larger than the proportion who reported a decrease. For example, 20% of men and 15% of women who already had two children in 2001 reported an increase in total expected fertility by 2006, while only 7% of men and 6% of women in this group reported a decrease in total expected fertility.

Are there any other characteristics that make it more likely that an individual would change their

fertility expectations in response to a lump sum payment like the Baby Bonus, which is relatively small compared to the total cost of raising a child? One possibility is that the Baby Bonus might encourage teenage motherhood, and be an attractive option for those with little education or low incomes. While it is impossible to tell whether these changes in fertility expectations are in response to the Baby Bonus or a result of other changes, Tables 34.8 and 34.9 compare the changes in total expected fertility between 2001 and 2006 for men and women according to their highest level of education, and their equivalised household income in 2006.

It appears that those whose highest level of education was Year 11 or below were the least likely to

**Table 34.8: Changes in individual fertility intentions (total children expect to have) between 2001 and 2006, by highest level of education—Men and women aged 18–44 (%)**

Highest level of education in 2006	Change in total number of children expect to have					Total
	-2 or more	-1	0	+1	+2 or more	
<b>Men</b>						
Postgraduate degree	8.5	15.2	60.3	9.0	6.9	100.0
Undergraduate degree	5.5	13.1	58.7	14.3	8.3	100.0
Certificate or Diploma	9.1	11.4	58.5	12.6	8.4	100.0
Year 12	15.2	8.4	52.7	9.9	13.9	100.0
Year 11 or below	7.4	8.8	62.6	9.3	11.8	100.0
Total	9.2	11.0	58.5	11.5	9.8	100.0
<b>Women</b>						
Postgraduate degree	7.8	13.3	60.2	8.8	10.0	100.0
Undergraduate degree	6.0	12.2	61.6	10.2	9.9	100.0
Certificate or Diploma	8.5	8.4	66.2	12.1	4.9	100.0
Year 12	8.2	11.8	58.0	14.9	7.2	100.0
Year 11 or below	5.1	8.2	71.7	11.2	3.7	100.0
Total	7.1	10.2	64.4	11.7	6.5	100.0

Notes: Population weighted results. Percentages may not add up to 100 due to rounding.

**Table 34.9: Changes in individual fertility intentions (total children expect to have) between 2001 and 2006, by income quintile—Men and women aged 18–44 (%)**

Quintile of equivalised household income in 2006	Change in total number of children expect to have					Total
	-2 or more	-1	0	+1	+2 or more	
<b>Men</b>						
1 (Lowest)	11.1	12.1	60.7	6.0	10.2	100.0
2	9.0	15.0	52.5	14.6	8.8	100.0
3	7.9	8.4	59.3	13.9	10.4	100.0
4	10.3	9.9	56.5	13.2	10.1	100.0
5 (Highest)	8.6	11.8	62.7	7.7	9.3	100.0
Total	9.2	11.0	58.5	11.5	9.8	100.0
<b>Women</b>						
1 (Lowest)	3.9	7.6	64.0	15.7	8.9	100.0
2	6.8	8.0	65.6	14.5	5.1	100.0
3	5.8	12.9	63.8	10.9	6.6	100.0
4	9.2	9.2	65.9	11.1	4.7	100.0
5 (Highest)	7.9	12.2	62.8	8.7	8.3	100.0
Total	7.1	10.2	64.4	11.7	6.5	100.0

Notes: Population weighted results. Percentages may not add up to 100 due to rounding.

**Table 34.10: Change in individual fertility intentions (total children expect to have) between 2001 and 2006, by change in relationship status—Men and women aged 18–39 in 2001 (%)**

Relationship status	Change in total number of children expect to have					Total
	-2 or more	-1	0	+1	+2 or more	
<b>Men</b>						
Partnered in both years	4.0	10.5	63.8	16.1	5.6	100.0
Single in both years	17.0	7.6	59.3	3.8	12.2	100.0
Partnered in 2001, single in 2006	14.4	10.2	53.8	11.2	10.5	100.0
Single in 2001, partnered in 2006	4.2	19.3	45.7	16.3	14.5	100.0
Total	9.2	11.0	58.5	11.5	9.8	100.0
<b>Women</b>						
Partnered in both years	3.5	10.3	69.4	12.5	4.2	100.0
Single in both years	12.0	7.8	62.2	8.9	9.1	100.0
Partnered in 2001, single in 2006	18.2	6.9	60.3	10.3	4.3	100.0
Single in 2001, partnered in 2006	7.5	15.0	52.3	13.9	11.3	100.0
Total	7.1	10.2	64.4	11.7	6.5	100.0

Notes: Population weighted results. Percentages may not add up to 100 due to rounding.

change their fertility intentions, while men and women with a Year 12 education were the most likely to have changed their fertility intentions during this five-year period. Among holders of post-graduate qualifications, 16% of men and 19% of women reported a higher number of total expected children in 2006 compared to 2001, while over 20% reported a decrease in the total number of children they expected to have. Over 20% of undergraduate degree-holders (who did not hold post-graduate qualifications) reported an increase in total expected children, while around 18% of men and women in this group reported a decrease in total expected children. Less than 30% of women who had not completed high school changed their fertility expectations between 2001 and 2006, with 15% reporting an increase in the total number of children they expected to have and 13% reporting a decrease.

For men, changes in fertility intentions between 2001 and 2006 are not strongly ordered by location in the 2006 income distribution (Table 34.9). The main patterns evident are that those in the middle quintiles were more likely to increase the number of children intended, and those in the bottom two quintiles were more likely to decrease the number of children intended. For women, however, changes in fertility intentions were generally ordered by income, with lower-income women more likely to increase the intended number of children and less likely to decrease the intended number of children. For example, the proportion increasing the intended number of children was 25% for women in the lowest income quintile, 16% for women in the fourth quintile and 17% for women in the highest quintile.

Another factor that may affect the decision about whether to have a child, or another child, is one's marital status, or a change in marital status. Changes in household income might also bring about a change in fertility intentions—a substantial increase or decrease in household income, for example, as a

result of one member of a couple losing their job, could be a major factor in the decision about whether to have a child, or another child.

Table 34.10 compares changes in total expected fertility between 2001 and 2006 according to whether or not a person had a partner in one or both years. Compared to people who were living with a spouse or partner in both 2001 and 2006, it was more common for those who changed their partnership status—that is, went from being single to partnered, or vice versa—to have also changed their fertility intentions. Of those who were partnered in 2001 and 2006, 22% of men and 17% of women reported a higher number of total expected children in 2006 than in 2001, and 15% of men and 14% of women reported a lower number. Among those who were single in both years, 16% of men and 18% of women reported an increase in the total number of children they expected to have and 25% of men and 20% of women reported a decrease.

Interestingly, more than 20% of men and almost 15% of women who were partnered in 2001 but single in 2006 reported a higher number of expected children in 2006 than in 2001. One possible explanation for this is that, in their previous relationship, they had wanted to have more children but their partner did not. Among those who were single in 2001 and partnered in 2006, 31% of men and 25% of women reported a higher number of total expected children in 2006 than they had in 2001, while 24% of men and 23% of women in this group reported a lower number of total expected children.

### Concluding points

Over the five-year period from 2001 to 2006 there has been a slight increase in fertility rates of Australian women. This increase in fertility coincides with the introduction of the Baby Bonus—a

payment given to parents on the birth of a new baby. When the Baby Bonus was first introduced in 2002, it was paid to parents as a series of payments (ranging from \$500 per year to \$2,500 per year) over a five-year period. In 2004, the Baby Bonus was changed to a one-off lump-sum payment, with the same amount paid to all parents upon the birth of a new baby.

A potential concern about the Baby Bonus is that it might have the effect of encouraging young women, with low levels of income and education to become mothers, or have more children. However, there is no evidence from the HILDA Survey data that this is the case. In fact, while fertility rates among women with university degrees have risen since the introduction of the Baby Bonus, fertility rates among women who have not completed high school, and also among women in the lowest quintile of equivalised household income, have decreased slightly.

While it is too soon to be able to tell whether the Baby Bonus has increased fertility rates in the long-term, the HILDA Survey data allow us to examine changes in fertility intentions. Overall, there has been hardly any change in the total number of children people expect to have. In terms of changes in total fertility expectations before and after the introduction of the Baby Bonus, around 22% of men and women aged between 18 and 24 almost a quarter of men and women aged between 25 and 29 reported a higher expected number of children in 2006 compared to 2001, while around 26% of men and more than 20% of women aged between 18 and 29 reported a decrease in total expected fertility.

Compared to parents who already had two or more children before the introduction of the Baby Bonus, it was more common for those who were not yet parents, and those with only one child, to have increased their fertility expectations by 2006. In terms of education, women who had not completed high school were least likely to have increased their fertility expectations between 2001 and 2006; but the proportion of women who reported an increase in the total number of children they expected to have was highest among those in the lowest quintile of equivalised household income. It was also more common for men and women whose relationship status had changed—particularly those who were single in 2001 and living with a spouse or partner in 2006—to have reported an increase in the expected total number of children.

### Endnotes

- 1 In June 2004, the amount of Maternity Allowance paid per child was \$842.64.
- 2 A minimum annual benefit of \$500 was available to parents with (individual) annual incomes of \$25,000 or less. When the parent returned to work, the entitlement was reduced in proportion to the income earned. The benefit was also transferable between spouses.

- 3 It should also be noted that payments to families with dependent children in the form of Family Tax Benefit Parts A and B have increased substantially in real terms since 1996. This could also contribute to increases in the fertility rate.
- 4 276,400 births were registered in 1971.
- 5 The Total Fertility Rate (TFR) represents the average number of babies that a woman could expect to bear during her reproductive lifetime, assuming current age-specific fertility rates apply. In 1985, the TFR was 1.82 (ABS, 2007).
- 6 One possible explanation for this under-estimate is the small number of teenage mothers in the HILDA Survey, which makes estimates for this age group unreliable.
- 7 In waves 1 to 4 these questions were asked of men and women aged between 18 and 55. In wave 5 the question was restricted to women aged 18 to 44 (or younger if they had already moved out of home), partnered men whose female partner was under the age of 45 and single men under the age of 55. In wave 5, people were also excluded from the questions on fertility intentions if they had reported a medical reason for not being able to have any (more) children. In wave 6, the questions were asked of women aged between 18 and 44 and men aged between 18 and 55. For consistency across waves, the analysis in this article is restricted to men and women aged between 18 and 44.

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## 35. Long hours of work and its consequences

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It is increasingly recognised that the notion of a standard work week in Australia is gradually fading. According to Labour Force Survey data collected by the Australian Bureau of Statistics (ABS), only round 42% of employed Australians in 2006 reported usual weekly work hours of between 35 and 40, with the majority of Australians working hours either less than (30% of all employed persons) or greater than this (28%). As we would expect, and as demonstrated below, this great diversity in working hours arrangements is also reflected in the HILDA Survey data. Indeed, the HILDA Survey data suggest considerably larger fractions of employed people are regularly working long hours than do the ABS data.

The relatively large fraction of workers that report working quite long work weeks—that is, 50 hours or more—is of large significance given the seemingly widespread consensus that long hours of work, at least when worked over a sustained period of time, are harmful for both the workers concerned and their families. In particular, it is frequently claimed that extended work schedules, by increasing fatigue levels, reducing the time available for recovery, and inducing unhealthy behaviours (such smoking, alcohol consumption,

poor diet and inadequate exercise), are harmful for worker health and increase the risk of work-related injury. Additionally, it is also widely believed that long hours of work both damage relationships within the home, and especially marital relationships, and inhibit child development.

Here we will use the HILDA Survey data to throw light on two of the claimed links: (i) that long hours of work are associated with a higher risk of smoking; and (ii) that long hours of work are damaging for marital relationships.

### Distribution of weekly work hours

Table 35.1 reports figures on the distribution of employed persons by usual hours worked (in all jobs) for both men and women for each of the first six waves of the HILDA Survey.

According to this table, around 31% of employed persons reported usually working part-time hours (less than 35 per week) in 2006, only slightly higher than the comparable figure collected in the Labour Force Survey. In contrast, the proportion that report usual hours in excess of 40 each week is much higher in the HILDA Survey than in the Labour Force Survey (35% compared with 28%).

**Table 35.1: Distribution of employed persons by usual weekly hours worked (% of employed persons)**

<i>Usual weekly work hours</i>	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 3</i>	<i>Wave 4</i>	<i>Wave 5</i>	<i>Wave 6</i>
<b>Men</b>						
<20	10.7	10.6	10.8	10.1	10.3	10.9
21–34	5.9	6.8	6.3	7.2	5.9	7.1
35–40	33.6	32.6	34.4	35.2	35.8	34.4
41–49	18.3	18.7	18.8	17.6	19.0	18.7
50–59	17.0	16.6	16.3	17.6	17.0	17.0
60+	14.6	14.7	13.4	12.3	12.0	12.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Women</b>						
<20	28.8	30.4	30.0	29.4	29.7	27.3
21–34	18.9	19.1	19.6	20.2	20.3	20.1
35–40	32.0	30.3	30.1	31.3	30.4	32.9
41–49	10.9	10.3	10.4	10.2	9.4	10.1
50–59	6.0	6.3	6.7	5.7	6.8	6.5
60+	3.4	3.6	3.3	3.2	3.3	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Total</b>						
<20	18.8	19.4	19.3	18.6	19.0	18.3
21–34	11.7	12.3	12.2	12.9	12.4	13.0
35–40	32.9	31.6	32.5	33.5	33.3	33.8
41–49	15.0	14.9	15.1	14.4	14.7	14.8
50–59	12.1	12.0	12.0	12.3	12.4	12.3
60+	9.6	9.7	8.9	8.3	8.1	8.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

*Notes:* Population weighted estimates. Percentages may not add up to 100 due to rounding.

Taken at face value, the magnitude of this difference might suggest that the HILDA Survey gives rise to biased estimates, either because long-hours workers are over-sampled or because respondents to the HILDA Survey are more inclined to overstate the number of hours they work.<sup>1</sup> Other research (Wooden et al., 2007), however, suggests that much of the explanation for the difference in estimates may lie in differences in survey methods. In particular, the Labour Force Survey is typically administered to only one person per household and hence hours of work data will often be provided on a proxy basis. In contrast, in the HILDA Survey all hours of work data come from a question administered to the individual working those hours. We believe it plausible that proxy interviews might be associated with a bias towards the traditional work week length and hence it may well be the Labour Force Survey estimates that are the more inaccurate.

Regardless of these measurement issues, it is clear that a significant fraction of the Australian workforce regularly works in excess of 40 hours each week. Moreover, it is not simply a matter of the odd hour of overtime being worked each day. Just over one in every five workers reports working 50 hours or more per week, with 8% reporting 60 hours or more.

Table 35.1 also shows that the distribution of hours differs markedly between men and women. Part-time work is still predominantly a female domain whereas long work weeks remain very much a male trait. Indeed, these data suggest that nearly three in every ten Australian men in employment usually worked 50 hours or more per week in 2006.

Finally, it can also be seen that the distribution of employment by working hours categories has changed very little over the first six waves of the HILDA Survey, though the proportion of persons reporting very long weeks (60 or more) does appear to have fallen.

### Long hours of work and smoking

As noted above, one of the mechanisms by which long working hours has been argued to harm worker health is through encouraging unhealthy behaviours, such as poor diet, not making sufficient time for regular exercise, excessive alcohol consumption, or smoking. The causal mechanism by which long worker hours affects health via diet and exercise is very clear—long hours impinge on the time available for other activities. With respect to smoking (and drinking) the principal conduit is job-related stress. That is, jobs that impose intense psychological demands on workers will lead some of those workers to look for external mechanisms to cope with these demands, and smoking is one such mechanism. On the other hand, it is also increasingly the case that work inhibits the ability to smoke—virtually all Australian workplaces are

now smoke free—which could conceivably lead smokers to avoid employment in jobs where long hours of work is the expectation.

In a recent Australian study, Radi et al. (2007) reported evidence that suggests that among men (but not women) long work weeks (50 hours or more) is a significant risk factor for smoking. This study, however, employed a sample that was relatively small, drawn from only one state (Victoria) and, more importantly, almost certainly suffered from severe forms of respondent and selection bias.<sup>2</sup> The aim here then is to examine whether the findings from this study can be replicated in data drawn from a much larger and more representative population sample.

In Table 35.2, therefore, we report, for the sub-population of employed persons, smoking status cross-classified by hours usually worked using wave 6 data.<sup>3</sup> This table reveals that smokers represent about 23% of the total employed workforce, and that smoking behaviour is more prevalent among male (25.2%) than among female workers (20.3%). A similar pattern is found in the wider population.<sup>4</sup> Of most significance, we can also see little evidence in this table to suggest that long hours of work are associated with a higher incidence of smoking.

Rates of smoking are noticeably lower among those working relatively short hours jobs (less than 20 hours per week), but this almost certainly reflects other characteristics of this group rather than any causal relationship between short hours and not smoking. Most obviously, the incidence of smoking is relatively low among teenagers<sup>5</sup> and teenagers account for about one-quarter of all persons working less than 20 hours per week (and almost 58% of all teenagers in employment work less than 20 hours per week).

If we compare long-hours workers (persons working 50 hours or more per week) with those working standard work weeks (35 to 40 hours), we can see that the incidence of smoking is actually lowest among the former group. Moreover, among men these differences are statistically significant, albeit only weakly. (That is, there is better than a 90% probability, but less than a 95% probability, that there is a difference.)

We next checked for differences in smoking intensity (measured by the usual number of cigarettes smoked per week) among the smoking sub-group. As shown in Table 35.3, when data on the number of cigarettes usually smoked each week was first collected (in wave 2), long-hours workers do show up as being heavier smokers than smokers working the standard work week.<sup>6</sup> By wave 6, however, this difference had all but disappeared.

To this point all of the figures presented have simply cross-tabulated a measure of smoking against a measure of the number of hours worked,

and thus do not take account of other confounding influences that might hide the true association between smoking and hours of work. With cross-sectional datasets, a researcher would typically estimate a regression model explaining variations in smoking across worker that hold constant a range of worker and job characteristics. Such analyses, however, are always imperfect given it is impossible to identify and measure all of the factors that might impact on smoking behaviour (or indeed any outcome variable). With longitudinal data, however, we can do better. Specifically, we can make use of the panel nature of the data to estimate regression models that explain the within-person variation in smoking behaviour, while holding constant all differences between persons (both observed and unobserved) that do not vary over time. In these fixed effects models, the effect of hours of work is identified by the changes in smoking behaviour of those workers whose hours of work change from one year to the next.

We thus pooled observations from waves 2 to 6 and estimated fixed effects regression models explaining both smoking incidence and smoking intensity (with values for all non-smokers set to

zero).<sup>7</sup> Apart from hours of work, these models also included a number of other time varying regressors identifying relationship status (partnered or single), the presence of dependent children, equivalised household income, and the occurrence of significant life events during the past year (such as pregnancy, death of a family member, major illness or injury, and getting fired). In addition, we include a set of wave dummies, which will capture both the effects of sample ageing and any changes in the underlying smoking trend, and interactions between time and the younger age groups (to allow for the expected rise in smoking activity among the young). A summary of the estimated coefficients on the hours of work categories is presented in Table 35.4.

Smoking incidence is a binary outcome and hence a logit model was used.<sup>8</sup> The results are presented as odds ratios—specifically, the ratio of the odds of smoking given the hours worked indicated by the row heading to the odds of smoking given working hours are 35–40 (the reference category). The results show that, in contrast, to the conclusion suggested by the simple cross-tabulated data presented in Table 35.2, smoking incidence

**Table 35.2: Smoking status by usual weekly hours worked, wave 6 (% of employed persons)**

Smoking status	Usual hours worked per week					Total
	<20	21–34	35–40	41–49	50+	
<b>Men</b>						
Never smoked	57.6	47.1	47.7	48.5	47.2	48.8
Former smoker	24.1	25.7	24.3	26.7	28.6	26.0
Current smoker	18.3	27.2	28.0	24.8	24.2	25.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Women</b>						
Never smoked	65.0	53.0	52.6	57	57.3	57.0
Former smoker	19.0	25.9	24.3	21.9	22.4	22.7
Current smoker	16.1	21.1	23.1	21.1	20.3	20.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Total</b>						
Never smoked	62.6	51.3	49.9	51.1	49.4	52.6
Former smoker	20.6	25.9	24.3	25.2	27.2	24.5
Current smoker	16.8	22.8	25.8	23.7	23.3	22.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

*Notes:* Population weighted estimates. Percentages may not add up to 100 due to rounding.

**Table 35.3: Average number of cigarettes smoked per week by usual weekly work hours, wave 2 and wave 6 (employed smokers)**

Usual weekly work hours	Wave 2 (2002)			Wave 6 (2006)		
	Men	Women	Total	Men	Women	Total
<20	54.2	72.5	65.8	65.6	71.0	69.4
20–34	78.8	80.1	79.7	88.2	73.6	78.3
35–40	85.6	60.9	76.1	83.1	68.4	77.1
41–49	85.7	66.1	79.3	81.4	59.0	75.2
50+	99.9	96.4	99.3	85.8	71.1	82.9
Total	88.9	70.2	81.2	80.7	71.0	76.8

*Note:* Population weighted estimates.

among men does indeed rise with hours worked. For men who regularly work between 50 and 69 hours per week we find that the odds of being a smoker are almost 40% higher (i.e. 1.4 times) than for a man who works a 35 to 40 hour week (the reference category). And for men working even longer hours (70 hours or more), the relative odds of being a smoker are higher again. Nevertheless, the statistical significance of these results is quite weak and thus we cannot be confident that these findings are not simply the result of sampling error.

Also consistent with the conclusions drawn by Radi et al. (2007), we do not observe a similar result for women. With the exception of women working in very short hours jobs (a result we believe reflects the lack of adequate controls for time-varying characteristics associated with female part-time employment), the relative risk of being a smoker does not vary significantly with the number of hours of paid employment.

The results for smoking intensity, which are estimated using a conventional linear regression for panel data with fixed effects, reveal a slightly different picture. For men, and similar to the findings for smoking incidence, smoking intensity rises with hours worked. The differences between long hours workers and standard hours workers, however, are statistically significant. Nevertheless, it would be difficult to conclude that the magnitude of the estimated effects is large—the variation across hours categories is only in the vicinity of six cigarettes per week. For women, on the other hand, we actually find evidence that among the admittedly small group who work very long hours (70 or more per week), smoking incidence is significantly lower.

In summary, the evidence is consistent with the idea that long hours of work promotes smoking and thus acts as a barrier to quitting. Nonetheless, such effects, are only found among men, and are both weak and arguably not large.

### Long hours of work and marital separation

In recent times, the debate about working hours has focused much less on health and safety issues

*per se*, and much more on the broader notion that a healthy and fulfilling work life is one that strikes a balance with life outside the work sphere. But behind this very reasonable idea lies the much more contentious proposition that long working hours are inherently damaging for personal relationships, especially within the family. In this line of argument, long working hours reduce both the amount of time workers spend with their families and the quality of that time, leading to strained personal relationships, poor parenting behaviours, and ultimately to family breakdown.

Objective evidence for such causal connections, however, is lacking. While surveys have consistently found that people believe that long working hours are detrimental for personal relationships, there are few, if any studies, providing evidence of clear causal links between long work weeks, especially when worked by the husband, and subsequent marital separation or divorce. Indeed, recent studies conducted in both the USA and the Netherlands suggest that, if anything, the probability of divorce falls with the number of hours worked by the husband (Johnson 2004; Poortman 2005).

What then does the HILDA Survey have to say about this? In Table 35.5 we report data on the rate of separation among heterosexual couples cross-tabulated by the usual weekly hours of the males. This table provides little evidence of any strong association between hours worked and the probability of separation during the following year. Yes it is true that, on average, the risk of separation seems to be higher among couples where the male works long hours than among couples where the male works a more traditional work week. The size of this difference, however, is both extremely small and inconsistent over time.

Again, however, it may be important to take account of the many other influences that are thought to impact on rates of separation. Since separation is a relatively rare event we cannot use the panel nature of the data to estimate panel data models, as was done for the preceding analysis of smoking. Instead, we pooled the data across the five waves for which data are available, and estimated conventional logit models predicting the likelihood that the couple had

**Table 35.4: Estimated effects of long hours on smoking controlling for individual fixed effects (employed persons)**

Usual weekly work hours	Smoking incidence (odds ratios)		Smoking intensity (variation in cigarettes per week)	
	Men	Women	Men	Women
<20	0.87	0.44##	-1.1	-0.7
21-34	1.04	1.12	2.1	0.6
35-40	1.00	1.00	0.0	0.0
41-49	1.22	0.81	1.0	-1.1
50-69	1.38#	0.86	2.3#	0.6
70+	1.74	0.89	5.1##	-4.8#

Note: ###, ## and # indicate differences with the reference category (35-40 hours) that are statistically significant at the 1%, 5% and 10% levels, respectively.

**Table 35.5: Separation rates (% of couples that had separated by next survey wave)**

<i>Usual weekly work hours of the male</i>	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 3</i>	<i>Wave 4</i>	<i>Wave 5</i>	<i>5-wave average</i>
<b>All couple relationships</b>						
Zero (not working)	3.7	4.2	*1.9	*2.2	*2.4	2.9
<35	*4.6	*2.2	*2.5	*4.0	*3.4	3.3
35–49	3.6	2.3	2.7	2.1	1.7	2.5
50+	2.7	3.4	2.0	2.8	3.6	2.9
<b>Married couples</b>						
Zero (not working)	*1.4	*2.4	*1.1	*0.9	*2.3	1.6
<35	*2.0	*2.3	*2.8	*2.2	*0.3	1.9
35–49	1.8	1.6	1.8	1.4	1.3	1.6
50+	2.2	2.5	1.5	1.3	1.9	1.9

*Notes:* Population weighted estimates. \* Estimate not reliable.

separated by the next survey wave (approximately one year later). We estimated models for two subsamples: married couples and then all couples (thus including de facto marriages). We also restricted our sample to couples where the man was of working age (less than 65 years).

The choice of explanatory variables was partly guided by Bradbury and Norris (2005) who examined marital separation between the first two waves of the HILDA Survey data. The final list used included the following:

- Age the female was married, which is expected to be inversely associated with the risk of separation. A quadratic age term is included to (parsimoniously) allow for the possibility that this risk begins rising again beyond some point.
- Duration of marriage (again specified as a quadratic), with risk of separation expected to decline with the duration of marriage, but possibly at a declining rate (and hence the reason for the quadratic specification).
- Whether the man or woman had been married before (two variables), which we would expect to be positively associated with the risk of another separation.
- For married couples, whether the couple had cohabited prior to marriage, which some studies have found to be a predictor of future separation (perhaps because it is correlated with other factors associated with attitudes to marriage).
- The log of real equivalised household disposable income, which we expect to be inversely associated with the likelihood of marital separation (higher incomes both ease the pressures on relationships and increase the opportunity cost of separation).
- The number of children in the household, distinguishing between young children (less than five years) and older children (5–14 years), which would usually be expected to be associated with reduced separation risk.

- The education levels of both the husband and wife.
- The average level of satisfaction with the relationship with the partner, as reported on a 0 to 10 scale, as well as the difference in the two reported scores. Clearly, we would expect couples where both are highly satisfied with their partners to be less likely to separate within the next year than couples where there is a degree of dissatisfaction.
- Wave (or year) dummies.

In addition, we of course also include a series of dummy variables that control for differences in the employment status of, and the number of hours worked by, the man.

The estimated results are mostly sensible, with many of the variables performing as expected. Thus among married couples we find that the probability of separation declines with the duration of marriage, is highest among those that marry both very young and very late, is increased by living together prior to marriage, is higher where the female (but not the male) was previously married, declines with household income, and is much lower among couples that report being very satisfied with each other.

The results on the key hours variables, summarised in odds ratio form in Table 35.6, however, continue to indicate that once things like income are controlled for, long hours of work is not associated with an increased risk of separation. Indeed, the estimated coefficients suggest the risk is lower. Taken at face value, the 'optimal' working hours appears to be where the man works a 41 to 49 hour week. Beyond this, the risk of separation does rise, but it is still lower than for couples where the male works a 35 to 40 hour week. But, of course, it needs to be borne in mind that virtually all of these estimated differences, while seemingly quite large, are associated with considerable variation, and hence are mostly not statistically significant.

**Table 35.6: Estimated effects of working hours on risk of separation**

Usual weekly work hours	Odds ratios	
	Married couples	All couples
Zero (not working)	1.10	1.28
1–34	1.21	1.20
35–40	1.00	1.00
41–49	0.65 <sup>#</sup>	0.84
50+	0.85	0.94

*Note:* <sup>#</sup> indicates difference with the reference category (35–40 hours) is statistically significant at the 10% level.

One possible critique of our approach is that by controlling for satisfaction with partner, we have actually removed the channel by which long hours of work are harmful and thereby contribute to marital breakdown. We thus re-estimated our models after excluding the controls for satisfaction with partner. The only effect of this exclusion was to markedly increase the size and the significance of the variable identifying couples with non-working men. It thus appears that couples where the male is not working may be at greater risk of separation. This exclusion, however, had almost no effect on the coefficient on long working hours.

In conclusion, we can identify no evidence within the HILDA Survey data to suggest that long work weeks are in any way associated with increased likelihood of marital separation. Indeed, if anything the evidence suggests that the reverse is the case. Perhaps the effects are present, but only after many years of sustained long working hours regimes? We remain sceptical, but note that testing for such effects will require more years of HILDA Survey data collection.

### Endnotes

- 1 It needs to be borne in mind that all self-reported survey-based measures of weekly hours of work are likely to be biased upwards. This reflects both social desirability biases and measurement errors. Examples of the latter include the inclusion by respondents of time not generally considered to be work time, such as meal breaks, time on-call, and commuting time.
- 2 The sample analysed by Radi et al. (2007) was obtained from a telephone survey of Victorian households that yielded a little over 1100 completed interviews. Additionally, while a response rate of 66% is reported, it turns out that this figure is actually the fraction of households identified as being prepared to participate in the study that eventually delivered a completed interview. A fairer reflection of response is provided by dividing completed interviews by the number of in-scope contacts, which gives a figure of just 16.6%.
- 3 Over the course of the HILDA Survey panel the reported incidence of smoking has fallen by close to two per-

centage points. Further, the decline has been common to workers in all hours categories.

- 4 In 2006 the smoking incidence rates within the total population of persons aged 15 years or older is estimated to be 23.3% for men and 18.1% for women. These are very similar to cross-sectional estimates for the population aged 14 years and over from the 2004 National Drug Strategy Household Survey—22.5% and 18.8% respectively (AIHW, 2005).
- 5 Around 15% of teenagers report being smokers, which compares with 26% of prime-age (25 to 54 years) persons.
- 6 The differences between the smoking intensity of long-hours workers (50+ hours) and standard-hours workers (35 to 40 hours) in wave 2 are significant at the 5% level for men and at the 1% level for both women and all persons. All of these differences are statistically insignificant in wave 6 data.
- 7 Observations from wave 1 are not used because of the absence of any question in that wave on the number of cigarettes smoked per week.
- 8 Specifically, we use the conditional fixed effects logistic regression procedure available in Stata. The logit model estimates the probability of an outcome as a logistic function of the explanatory variables. See, for example, Wooldridge (2000).

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## 36. Time spent travelling to and from work

Each year since 2002, HILDA Survey respondents have been asked the amount of time they spend in a 'typical' week on each of a number of activities. One of these activities is travelling to and from the place of their employment. While responses tend to be somewhat coarse approximations, there is considerable variability in reported travel times across respondents. It would therefore seem that there is good potential for responses to provide meaningful information on time spent commuting. In this article we consider patterns of commuting across both individuals and across time. We examine whether commuting time has increased over the last five years of the HILDA Survey, who spends the most time commuting, how it differs by location, and what may precipitate increases or decreases in commuting times.

### Trends in time spent commuting

Table 36.1 presents summary statistics on the distribution of commuting time of all employed persons in each year from 2002 to 2006. The estimates indicate that mean commuting times have increased slightly between 2002 and 2006, from 3.5 hours per week to 3.7 hours per week. The median commuting time has also increased, from 2 to 2.5 hours, although the median is 2.5 in all of the last four years, reflecting the strong preference for round numbers (2.5 hours translates to half an hour per day for full-time employed persons working five days per week). 10% of workers spent ten or more hours per week commuting in all of the last four years.

The aggregate data in Table 36.1 can mask greater dynamism that is taking place at a more disaggre-

gated level. In Table 36.2, mean commuting times in each year are presented for three distinct groups of workers: part-time workers, full-time workers who work daytime hours Monday to Friday, and other full-time workers, who may work on weekends and/or at night. Here we see a more substantial increase in the mean commuting time for 'regular' full-time workers than is evident for all workers combined. In every year, there is a 0.1 of an hour increase in the mean commuting time, which rises from 4.4 hours in 2002 to 4.8 hours in 2006, a sizeable 9% increase. The mean commuting time also increased for part-time workers, from 2.1 to 2.3 hours per week, but did not increase for 'irregular-hours' full-time workers.

Regular-hours full-time workers are the most likely of the three groups distinguished in Table 36.3 to be affected by increased traffic congestion, since they are generally commuting at the peak hours. The 0.4 of an hour, or 24 minute, mean increase in commuting time is therefore arguably attributable to increased congestion. The steady growth in the size of the population and—perhaps more pertinently—the number of full-time workers over the 2002 to 2006 period is consistent with increased traffic congestion, whether it be on the roads or public transport systems. It is also consistent with recent assertions of failure of transport infrastructure investment to keep pace with growth in demand (e.g. see Productivity Commission (2006) for a summary of the arguments put forward by a number of bodies).

An alternative to the 'increased congestion' explanation is that the average distance between home and place of work has increased for regular-hours full-time workers, because of changes to the locations of work and/or changes to the locations of their homes. For example, high growth in inner urban property prices may encourage more full-time workers to locate in outer suburban locations. This could also explain the proportionately almost-identical growth in the mean commuting time of part-time workers of 0.2 hours. It is, however, difficult to reconcile with the absence of an increase in the mean commuting time of full-time workers working irregular hours and days of the week. The absence of an increase in commuting times of irregular-hours full-time workers is, by contrast, possibly consistent with the 'increased congestion' hypothesis, because they are less likely to be commuting at the peak times when congestion problems are greatest.

A further hypothesis is that the mix of travel modes used by workers has changed over the 2002 to 2006 period. Although this period predates the very high petrol prices experienced more recently, it may still be that use of alternatives to cars, such as public transport and bicycles,

**Table 36.1: Commuting times of employed persons (hours)**

	<i>Mean</i>	<i>Median</i>	<i>10th percentile</i>	<i>90th percentile</i>
2002	3.5	2.0	0.1	9.0
2003	3.6	2.5	0.2	10.0
2004	3.7	2.5	0.2	10.0
2005	3.7	2.5	0.0	10.0
2006	3.7	2.5	0.0	10.0

*Note:* Population weighted results.

**Table 36.2: Mean commuting times by full-time/part-time status (hours)**

	<i>Part-time</i>	<i>Full-time, regular Monday–Friday</i>	<i>Other full-time</i>
2002	2.1	4.4	4.0
2003	2.2	4.5	4.0
2004	2.3	4.6	3.9
2005	2.2	4.7	4.0
2006	2.3	4.8	3.9

*Note:* Population weighted results.

**Table 36.3: Mean commuting times of full-time workers by location (hours)**

	2002	2003	2004	2005	2006
Major capital city	4.8	5.0	5.0	5.0	5.2
Other location	3.1	3.2	3.3	3.4	3.2
Sydney	5.4	5.4	5.5	5.5	5.8
Balance of New South Wales	3.4	3.2	3.3	3.4	3.2
Melbourne	5.1	5.2	5.0	5.2	5.2
Balance of Victoria	3.0	3.3	3.4	3.2	3.3
Brisbane	4.2	5.0	4.6	4.6	5.0
Balance of Queensland	3.3	3.4	3.4	3.7	3.3
Adelaide	4.0	3.9	4.2	4.4	4.3
Balance of South Australia	2.6	2.7	3.0	2.7	3.0
Perth	4.3	4.2	4.3	4.3	4.4
Balance of Western Australia	2.4	2.7	2.7	2.8	2.8
Tasmania	3.5	2.8	3.2	3.3	3.3
Northern Territory	2.5	2.6	2.5	3.1	3.1
Australian Capital Territory	2.4	3.2	3.2	3.1	3.5

*Note:* Population weighted results.

increased over the period, and that these modes are slower. Irregular-hours workers may be less likely to change to other transport modes because of the times of the day and week that they work, and possibly even the types of locations in which they work, which may make substituting to alternative modes less viable or attractive.

### Regional difference in commuting times

On the basis that traffic congestion is the primary driver of commuting times, one might expect mean times to be higher in the more densely populated areas. On the other hand, average travel distances may be greater outside the major cities. Table 36.3 examines this geographic dimension, presenting average commuting times of full-time workers for different regions. The top panel compares workers residing in major cities with workers residing elsewhere. Mean commuting times are consistently higher in major cities, which also experienced greater increase in mean commuting times. In 2006, the mean commuting time was 5.2 hours per week in the major cities and 3.2 hours per week in other locations.

The lower panel presents average commuting times for the capital city of each state other than Tasmania, for the balance of each state and for each of Tasmania and the two territories. Some variation apparent in this breakdown will be due to sampling variability, but clear patterns are nonetheless evident. The capital cities all have higher average commuting times than elsewhere in the country. Average commuting times also tend to be ordered by city size, with Sydney having the highest average commuting time of 5.4 hours in 2002, increasing to 5.8 hours in 2006, followed by Melbourne, Brisbane, Perth and finally Adelaide. Brisbane had the largest increase of the capital cities, rising from 4.2 hours to 5 hours per week.

### Who spends the most time commuting?

What types of people spend the most time commuting? Focusing now just on 2006, we consider in Table 36.4 differences in commuting times by occupation. Those in higher skilled occupations tend to have higher average commuting times, with professional workers having the highest average commuting time and elementary clerical, sales and service workers having the lowest average commuting time. However, tradespersons have a relatively high average commuting time, which may reflect the need for many tradespersons to work at different sites. Managers and administrators have relatively low average commuting time of 4 hours, possibly because this includes a number of people who run a business from home.

Table 36.5 examines differences in mean commuting times of full-time workers by sex, household type and age group. Males aged 45–64 years in couple households with dependent children have the highest average commuting time of 5.2 hours per week, followed by single females in the 25–64

**Table 36.4: Mean commuting times of full-time workers by occupation, 2006 (hours)**

	Mean commuting time
Managers and administrators	4.0
Professionals	5.0
Associate professionals	4.6
Tradespersons and related workers	4.8
Advanced clerical and service workers	4.7
Intermediate clerical, sales and service workers	4.1
Production and transport workers	3.7
Elementary clerical, sales and service workers	3.5
Labourers and related workers	4.3

*Note:* Population weighted results.

**Table 36.5: Mean commuting times of full-time workers by sex, household type and age group, 2006 (hours)**

	Males	Females
Couple with children, aged 25–44	4.5	4.1
Couple with children, aged 45–64	5.2	3.8
Couple no children, aged 25–44	4.6	4.5
Couple no children, aged 45–64	4.3	3.6
Lone parent	–	3.8
Single person, aged 15–24	4.1	4.7
Single person, aged 25–44	4.4	4.9
Single person, aged 45–64	4.5	4.9

*Note:* Population-weighted results.

age range, who have an average commuting time of 4.9 hours. Lone mothers and partnered females aged 45–64, whether or not they have dependent children, have the lowest mean commuting times of the groups examined in Table 36.5. For reasons that are unclear, partnered males have higher commuting times than partnered females, but single males have lower average commuting times than single females.

### Individual-level changes in time spent commuting

In Table 36.6 we present mean changes in time spent commuting between 2002 and 2006 for individuals who were employed full-time in both years. The restriction to those who stayed employed full-time is to reduce the effects of changes in days worked per week, so that we obtain a picture of changes in ‘travel time per trip’. The mean change in commuting time among persons who were employed full-time in both 2002 and 2006 was an increase of 0.21 hours, or 12.6 minutes. Those who remained in the same job (which does not necessarily mean no change in location of employment) had a mean increase of 0.23 hours, while those who changed jobs had a slightly smaller mean increase of 0.18. Those who

**Table 36.6: Mean change in commuting times of individuals employed full-time in both waves 2 and 6, 2002–2006 (hours)**

	Mean change
All	0.21
Same job	0.23
Changed job	0.18
Same house	0.09
Moved house	0.42
Same job and house	0.27
Same job, moved house	0.13
Changed jobs, same house	–0.35
Changed job and moved house	0.73
Capital city in 2002	0.20
Other location in 2002	0.23

*Note:* Population weighted results.

moved house had a 0.42 hour increase in mean travel time, compared with only a 0.09 increase for those who stayed in the same house.

Examining joint changes in job and house shows that changing both job and house is associated with the largest increase in commuting time, averaging nearly three-quarters of an hour. Those who changed jobs but remained living in the same house on average had a *decline* in commuting time of 0.35 hours. Of most interest here is the mean change in commuting time for those who remained in the same job and house. With no change in house or job, the mean change in commuting time is 0.27, a 16 minute increase. This would seem to be a reasonable estimate of a pure ‘congestion effect’, based on the argument that, for most people in this group, the distance travelled to and from work has not changed—and thus it is taking longer to make the same journey. However, it must be acknowledged that travel mode composition may have changed, and the location of the job could have changed.

The last panel of Table 36.6 shows that the mean change in commuting time was actually slightly higher for those living outside the capital cities in 2002. At first glance, this appears to be at odds with the cross-sectional evidence presented in Table 36.3. However, many of those living outside the capital cities in 2002 had moved into them by 2006, and some of those living in the capital cities in 2002 had moved out of them by 2006. The former move would tend to increase the commuting time, while the latter move would tend to decrease it.

### Conclusion

All else equal, an increase in commuting times is detrimental to community wellbeing. Time spent commuting is time not spent in economically productive or enjoyable leisure activities, such as spending time with family and friends. To the extent that the increase involves additional time spent in cars, it is also increasing fuel usage, which has both financial and environmental costs. From this perspective, the apparent increase in commuting times in the four-year period from 2002 to 2006 is an unwelcome development, and certainly one that we would hope does not continue in the future.

It should, however, be acknowledged that the increase in travel time is likely to be very much a product of the economic growth experienced over the 2002 to 2006 period, which has seen increased numbers in employment, and in particular, in full-time employment. The positive effects on community wellbeing of this strong employment and income growth are likely to substantially outweigh any negative effects of increased commuting times.

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## GLOSSARY

**Absolute poverty**

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.

**ANZSIC**

ANZSIC is the Australia and New Zealand Standard Industry Classification. It classifies the economic activity of firms and other employers. See ABS Catalogue No. 1292.0 for details.

**ASCO2**

ASCO2 stands for Australian Standard Classification of Occupations, 2nd edition. This is the Australian Bureau of Statistics (ABS) classification scheme for occupations. It is based on a conception of types of tasks and skill level requirements. It has six 'levels', with 10 occupation groups distinguished at the highest level of aggregation, known as the one-digit level, 54 groups distinguished at the next (two-digit) level of aggregation, and so on. See ABS Catalogue No. 1220.0 for details.

**Body mass index**

Body mass index (BMI) is an arithmetic derivation of an individual's height and weight—weight in kilograms divided by height in metres squared—and is widely used as an indicator of nutritional status and healthy body weight. It is common to classify people into the following BMI groups: underweight (BMI < 18.5), normal range (BMI ≥ 18.5 and BMI < 25.0), overweight (BMI ≥ 25.0 and BMI < 30.0) and obese (BMI ≥ 30.0).

**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.

**Deciles and quintiles**

A decile is any of the nine values that divide data that has been sorted from lowest to highest into ten equal parts, so that each part represents 1/10th of the sample or population. Thus, for example, the first decile of the income distribution cuts off the lowest ten per cent of incomes, and persons in the first (or bottom) decile have the lowest ten per cent of incomes. A quintile is any of the four values that divide data that has been sorted from lowest to highest into five equal parts; so, for example, persons in the first (or bottom) quintile have the lowest 20% of incomes.

**Equivalence scale**

See equivalised income.

**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 one 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 to achieve the same standard of living.

**Fertility intentions**

Fertility intentions relate to the number of children one wishes to have, the gender balance (e.g. one boy and one girl) and the gender sequence (e.g. a boy followed by a girl). Demographers are extremely interested in fertility intentions as one factor determining likely future population levels. Fertility intentions were asked in detail for the first time in HILDA in 2005.

**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.

### 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 the wave was conducted (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 September 2006 prices, to give *real* income. Since prices tend to rise over time, the income statistics we present for waves 1–5 are higher than estimates that would be obtained 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.

### Household wealth

The HILDA Survey obtains a measure of household wealth by asking a detailed set of questions on all main financial assets, non-financial assets and debts. Total wealth—or net worth—is equal to total (financial and non-financial) assets minus total debts of all members of the household. Financial assets comprise bank accounts, superannuation, cash investments, equity investments (shares), trust funds and the cash-in value of life insurance policies. Non-financial assets comprise the home, other property, business assets, collectibles and motor vehicles. Debts comprise unpaid credit card debt, HECS debt, other personal debt (including car loans, investment loans, hire purchase agreements and loans from friends or relatives not living in the household), business debt, home debt, other property debt and overdue household bills.

### Housing stress, mortgage stress and rental stress

Housing stress refers to a situation in which a household’s housing costs, consisting of rental payments or mortgage repayments on the primary residence, are regarded as ‘excessively’ burdensome. In this Report, a household is defined to be in housing stress if housing costs are greater than 30% of gross household income. Mortgage stress refers to housing stress that applies only to home owners (i.e. high mortgage repayments relative to income) and rental stress refers to housing stress that applies only to renters (i.e. high rent relative to income).

### Housing wealth

A household’s housing wealth is equal to the value of housing owned by household members, whether residing in that housing or not, minus mortgage debt owed on that housing.

### 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.

### Jobless households and job-poor households

In this Report, a household is defined to be jobless if no household member was in paid employment (or on paid leave from employment) at the time of interview and is defined to be ‘job-poor’ if total usual hours of paid employment of all household members combined are less than 35 hours per week.

### Liquidity constraints

Liquidity (or credit) constraints refer to limits on the ability of an individual or household to borrow money. A measure of short-term but acute liquidity constraints is available in the HILDA data, which is the ability of individuals to raise \$2,000 within one week.

### 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% of the data points will lie below the median and 50% above it. The mode is simply the most frequently occurring value of a data series.

### NESB immigrant

A non-English speaking background immigrant, a person born in a country other than the main English speaking countries of Australia, the UK, USA, New Zealand and South Africa.

### 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 equivalent income is less than 50% of the median household equivalent income.

### 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% probability that the true mean lies within 1.96 standard errors 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%. Note that a relative standard error that is less than 25% implies there is a greater than 95% probability the true quantity lies within 50% of the estimated value.

### Remoteness of region of residence

Remoteness of region of residence is derived from the Accessibility/Remoteness Index of Australia (ARIA) scores from the 2001 Census. ARIA scores are assigned based on the Census Collection District (CD) code. In most region analysis presented in this Report, we distinguish persons residing in the major cities from persons residing in other locations, which consist of inner regional

Australia, outer regional Australia, remote Australia and very remote Australia. Approximately two-thirds of the in-scope Australian population resides in a major city.

### 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. The survey 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.

### Social capital

Most measures of social capital are essentially measures of social networks, although measures of neighbourhood quality and safety are sometimes also included. A person's social networks range from intimate attachments to spouse and family, through friendship and social support networks, to acquaintances (including neighbours) whom they may be able to rely on for relatively minor assistance like borrowing household items and keeping an eye on the house while away on holiday.

### 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%. However, 90% and 99% 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.

### 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% of household income came from income support and non-income support payments.*
2. *The household received income support payments and more than 90% of household income came from income support and non-income support payments.*



