

Income Poverty, Subjective Poverty and Financial Stress

For
Department of Family and Community Services

by

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
ASLS	Australian Standard of Living Survey
BHPS	British Household Panel Survey
CPI	Consumer Price Index
CIS	Centre for Independent Studies
ECHP	European Community Household Panel
FaCS	Department of Family and Community Services
GSS	Australian General Social Science Survey
HES	Household Expenditure Survey (ABS)
HPL	Henderson Poverty Line
HILDA	Household, Income and Labour Dynamics in Australia Survey
MIAESR	Melbourne Institute of Applied Economic and Social Research
NATSEM	National Centre for Social and Economic Modelling, University of Canberra
NILF	Not in the Labour Force
NLS	Negotiating the Life Course
OECD	Organisation for Economic Cooperation and Development
PSID	Panel Survey of Income Dynamics (US)
SIHC	Survey of Income and Housing Costs
SPRC	Social Policy Research Centre, University of New South Wales

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EXECUTIVE SUMMARY

This report focuses on financial disadvantage among Australians using data from the first two waves (2001 and 2002) of the Household, Income and Labour Dynamics in Australia (HILDA) survey.

HILDA has several features that make it particularly useful for the investigation of poverty and financial disadvantage. It is the first large-scale Australian longitudinal survey of adults specifically designed to investigate income dynamics, whereas previous studies of poverty have relied on cross-sectional data. Second, it includes other measures of financial disadvantage, subjective poverty and financial stress. Third, data was collected from all available (and eligible) household members, improving the accuracy of income and other variables. Fourth, HILDA includes data from wave 2 on wealth, assets and debts allowing for the examination of their relationships with financial disadvantage. Finally, HILDA includes a range of data on other factors, which are not usually collected in Australian surveys on income.

In this report, three dimensions of financial disadvantage are investigated:

- Income poverty (both before- and after-housing)
- Subjective poverty
- Financial stress

For this study, income poverty is defined as living in a household with an income of less than 50 per cent of median equivalized disposal household income. The equivalence scale used was the modified OECD scale. Both before- and after-housing measures were analysed. Subjective poverty is based simply on whether respondents view themselves as poor or very poor. The concept ‘financial stress’ is defined by the following cash-flow problems due to *a shortage of money*: could not pay utility bills on time, could not pay mortgage or rent on time, pawned or sold something, went without meals, was unable to heat home, asked for financial help from friends or family, and asked for help from welfare/community organisations. Households were defined as in financial stress if they experienced two or more incidences of cash-flow problems in a single year.

The rationale for using three dimensions of financial disadvantage is because an over-reliance on a single measure can be misleading. The concept of financial stress is understood as complementing income poverty by indicating how households were actually coping financially. Subjective poverty is another approach to financial disadvantage, taking seriously people’s own judgements of their financial situation.

This report investigates: the extent of financial disadvantage in Australia according to these three dimensions, their relationships with other factors, and their inter-relationships both between measures and across time.

Some of the major conclusions drawn from this study are:

- Before-housing measures of poverty need to be complemented with the appropriate after-housing measures. The before-housing measures tend to inflate the poverty rates of older cohorts, single person households and widows. These groups do not have notably high poverty rates on the after-housing measure since substantial proportions of these groups have little or no housing costs. Older cohorts and widowers tend to show low levels of subjective poverty and financial stress.

- The high level of financial stress among younger cohorts may be a concern. It may reflect low levels of financial literacy or spend-thrift attitudes. It is not clear if it is an aging effect — as they age they become more competent at managing finances so will show lower levels of financial stress — or of more concern, a cohort effect, reflecting a change in the way in young generations spend and save money.
- A striking result from these analyses is the degree to which marriage reduces the odds of financial disadvantage.
- Financial disadvantage is only weakly related to socioeconomic background.
- Wealth has stronger relationship with subjective poverty than with income poverty.
- The judgement that one is poor is coloured more by wealth than income.
- Debt is only weakly related to income poverty, subjective poverty and financial stress. For the groups in income poverty, subjective poverty and financial stress, debt is much lower than assets.
- It appears that in Australia, as in other countries, the proportion in income poverty in successive years is much lower than the proportion in a single year. This is also true of subjective poverty and financial stress. This indicates that on any measure, financial disadvantage is more often transitory rather than permanent.
- The low correspondence between the three dimensions of financial disadvantage undermines attempts at using these measures to identify the ‘truly disadvantaged’. Not only are the inter-correlations lower than expected, they differ in their relationships with other factors such as, gender, age, education, income, wealth and debt. This suggests that three dimensions are to a large extent conceptually distinct. Income poverty is about relatively low annual incomes, subjective poverty is a psychological judgement that gives more weight to wealth than to income, and financial stress is about not balancing expenditure with income.

SUMMARY OF MAIN FINDINGS

This section summarises the main findings in the analyses of before- and after-income poverty, subjective poverty and financial stress.

Income Poverty

The main findings on income poverty were:

Incidence and Persistence

- Approximately 15 per cent of Australian households are in poverty on the before-housing and 17 per cent on the after-housing measure. These figures are slightly higher than for individuals (12 and 14 per cent) since larger households tend to have higher incomes. A higher level of after-housing poverty is because the distribution of equivalized disposal income is more skewed when housing costs are taken into account.
- Persistent poverty in the first two waves of HILDA was considerably lower. On the before-housing measure, about 7 per cent of households were in income poverty in both waves and 9 per cent on the post-housing measure.

Gender

- Women tend to have higher levels of income poverty than men. Persistent poverty (over two years) among women was about 3 percentage points higher. However, when taking into account labour market variables (occupational status, and proportion of time spent working and unemployed) men were more likely to be in income poverty than women.

Age

- The relationship between age and income poverty differed according to the measure used. On the before-housing measure, the two oldest cohorts (aged over 65) showed the highest poverty rates, whereas on the after-housing measure these age cohorts were not so distinctive. The youngest age cohort (18 to 24 year olds) showed relative high levels of income poverty on both measures but 25 to 34 year olds had the lowest rates of before-housing income poverty. Multivariate analyses showed that age was positively related to before-housing income poverty but negatively related to after-housing income poverty. This reflects the generally lower housing costs of older Australians. These findings indicate that both before- and after-housing provide a more comprehensive account of the relationship between age and income poverty.

Ethnicity

- Multivariate analyses showed that both a non-English speaking background and Indigenous status increased the odds of being in income poverty.

Socioeconomic Background

- On average, the socioeconomic backgrounds (measured by parental occupational status) of the groups in income poverty are only slightly lower than of the groups not in poverty. In multivariate analyses the effect of socioeconomic background on income poverty was weak

Household Type

- Of household types, couples with older children (older than 15) show the lowest income poverty rates followed by couples with younger children and couples without children. Lone parent households have the highest income poverty rates especially on the post-housing

measure. About 17 per cent of lone parents were in after-housing income poverty in both waves. The comparable figure for couples with young children was 7 per cent. Single person households had the highest poverty rates on the before-housing measure.

Marital Status and Children

- On both income poverty measures, income poverty was low among those married or in de facto relationships. On the before-housing measure it was highest among widows and widowers but on the after-housing measure the poverty rate for this group was similar to that for the separated, divorced and single (those who had never married and were not in a de facto relationship) groups.
- Multivariate analyses showed marital status was strongly associated with income poverty. Its effects were stronger than for educational qualifications. Marriage and de facto relationships substantially decreased the odds of income poverty, even when controlling for labour market experiences and wealth. Single persons and the separated were more likely to be in income poverty. Widowhood was associated with substantially lower odds of being in income poverty compared to single persons.
- The number of children moderately increased the odds of income poverty but its effects were much weaker than that for marital status.

Education

- Income poverty declines with higher levels of education. Income poverty among degree holders and those with post-graduate qualifications was particularly low. Poverty rates are highest amongst those who had not completed school and next highest among those whose highest qualification was school completion (Year 12) or a TAFE certificate.
- In multivariate analyses educational qualifications had strong effects on income poverty. The fairly strong protective effects of post-graduate qualifications and Bachelor degrees against income poverty were still apparent when controlling for labour market variables and wealth.

Labour Force Experiences

- Poverty is strongly associated with labour force status with about a third of the unemployed were in poverty on the before-housing measure, and nearly 45 per cent on the after-housing measure. Of those unemployed and looking for full-time work in wave 2, about 20 per cent were in after-housing poverty in both years. The comparable figure for full time workers was less than 3 per cent and for part-time workers 8 per cent.
- There was a larger difference in occupational status (of present or previous job). The average occupation status of those in income poverty was about 10 to 12 units lower (on a 0 to 100 point scale) than those not in income poverty. Multivariate analyses indicated that the occupational status of present or prior job was moderately associated with income poverty.
- Percentage of time working since leaving full-time education decreased the odds of being in income poverty whereas percent time spent unemployed increased the odds. However, the importance of these factors was limited to those who had spent relatively very little time working or considerable time unemployed.

Wealth and Debt

- On average, the level of wealth among those in poverty was about half that of those not in poverty.
- The average levels of debt of the in-poverty groups are substantially *lower* than that of comparison groups. Assets among the groups in poverty were about 5 times debt. Median debts of the in-poverty groups were close to zero.
- Wealth lowered the odds of income poverty but its effect was weaker than expected. Small differences in wealth did not substantially change the odds of income poverty. The effect of a difference of one million dollars in wealth on income poverty was less than that for marriage.

Subjective Poverty

The main findings on subjective poverty were as follows:

Incidence and Persistence

- Approximately 5 per cent of Australian households judged themselves as ‘poor’ or ‘very poor’ (subjective poverty).
- Only 2 per cent were in subjective poverty in both waves of HILDA.

Gender

- In contrast to income poverty, higher proportions of men than women were in subjective poverty.
- Multivariate analyses showed that men were more likely than women to be in subjective poverty. The gender difference increased when controlling for labour market factors.

Age

- There was no clear relationship between age and subjective poverty with the exception of the oldest cohort that showed very low levels (less than 2 per cent) of subjective poverty. On average, households in subjective poverty were slightly younger.
- Multivariate analyses found that the high levels of subjective poverty among younger persons could not be attributed to differences in labour market experiences, income or wealth.

Ethnicity

- In contrast to the findings for income poverty there was no consistent finding for a non-English speaking background. However, Indigenous status was again strongly associated with increased odds of being in poverty.

Socioeconomic Background

- Subjective poverty was only weakly associated with socioeconomic background. Multivariate analyses showed no significant differences.

Household Type

- Lone parent households were more likely to judge themselves as poor or very poor. About 10 per cent were in subjective poverty in a single wave but only 5 per cent in both waves. Single person households showed the next highest level of subjective poverty. Couple households (with and without) children had much lower levels of subjective poverty.

Marital Status and Children

- Subjective poverty was very low among those married or widowed. Subjective poverty among those in de facto relationships was only slightly higher. Subjective poverty was highest among those divorced or separated followed by singles.
- As was the case for income poverty, marriage and widowhood strongly reduced the odds of subjective poverty. To a lesser extent, de facto relationships also reduced the odds of subjective poverty.
- The effects of number of children and occupational status of present or prior job on subjective poverty were similar to that for income poverty.

Education

- Subjective poverty was less strongly related to education than income poverty, although higher levels of education were associated with lower proportions in subjective poverty. Subjective poverty of those who did not complete school was around 6 per cent compared to 3 per cent among degree holders.

- Educational qualifications did not have as strong effects on subjective poverty as for income poverty. Non-completion of school increased the odds of subjective poverty but the difference was no longer significant when controlling for labour force experiences.

Labour Force Experiences

- Subjective poverty was strongly associated with labour force status. About 20 per cent of those unemployed and looking for full-time work saw themselves as poor or very poor in each wave, but only 6 per cent in both waves. Unemployed persons looking for part-time work also showed high levels of subjective poverty. Subjective poverty was high among those not in the labour force but marginally attached (want to work, but not looking or could not start work). Subjective poverty among full-time workers was very low at around 2 per cent.
- Differences in the occupational status (of present and previous jobs) between the groups in and not in subjective poverty were smaller (about 8 units) than the differences found for income poverty.
- Percentage of time working since leaving full-time education decreased the odds of subjective poverty but to a lesser extent than its effects on income poverty. Percentage time spent unemployed increased the odds of subjective poverty. Again the effects of these factors were only large for the small proportions of respondents who had spent considerable time not working or unemployed.

Income, Wealth and Debt

- The average household incomes of the subjective poverty groups was about half that of the comparison groups. These differences were, of course, smaller than the income differences for income poverty since income poverty is based on household income.
- Household equivalized disposable income decreased the odds of subjective poverty although its effect was not particularly large.
- On average, the wealth of the subjective poverty groups was between one-fifth and one-quarter that of the comparison groups. This compares to about one half for the income poverty groups. These findings indicate that wealth is more closely associated with subjective poverty than income poverty.
- The average level of debt among the subjective poverty groups was also substantially *lower* than among comparison groups. It was generally lower than that for the income poverty groups. Median debts of the subjective poverty groups were only slightly above zero.
- Wealth had much stronger effects on subjective poverty than on income poverty.

Financial Stress

The main findings on financial stress were as follows:

Incidence and Persistence

- Approximately 18 per cent of Australian households had two or more incidences of cash flow problems (financial stress) in wave 1 of HILDA and 16 per cent in wave 2.
- About 10 per cent had two or more incidences of cash flow problems in both survey years.

Gender

- Financial stress was slightly higher among women than men. However, multivariate analyses revealed no statistically significant gender differences.

Age

- Financial stress was much more common in the youngest cohort (18 to 24 year olds) at around 40 per cent. The level of financial stress declined in each successively older cohort to about 5 per cent in the oldest cohort (aged over 70). This contrasts with the findings with the

other measures especially before-housing income poverty where older persons were more likely to be in poverty.

- Increases in age strongly reduced the odds of financial stress. This effect could not be accounted for by differences in education, marital status, labour force experiences, wealth or household income.

Ethnicity

- A non-English speaking background increased the odds of financial stress but not to the same extent as for income poverty. Its effects were not always statistically significant.
- Indigenous status strongly increased the odds of financial stress. However, its effect was no longer significant when taking into account education and marital status.

Socioeconomic Background

- On average, the socioeconomic backgrounds of the groups in financial stress were only slightly lower than that for the comparison groups.
- In multivariate analyses, socioeconomic background was only weakly associated with financial stress and its effect was no longer significant when controlling for educational qualifications.

Household Type

- The incidence of financial stress was highest among lone parent households. About a quarter of lone parent households were in financial stress in both waves. This compares to about 10 per cent among couples with young children and 6 per cent among couples with older children. Single person households also showed high levels of financial stress.

Education

- Financial stress declined with higher educational qualifications. It was lowest among those with diploma, bachelor or post-graduate qualifications.
- Multivariate analyses showed that a post-graduate qualification or degree substantially reduced the odds of financial stress.

Marital Status and Children

- Financial stress was lowest among the widowed with about 6 per cent of widows or widowers in financial stress. This compares with about 10 per cent of those married, 25 per cent of the group in de facto relationships and 30 per cent or more among those separated, divorced or single.
- Marriage strongly reduced the odds of financial stress. Its effects were stronger than that for education. Widowhood also reduced the odds of financial stress. De facto relationships had much weaker effects on financial stress than on income poverty.
- The effects of number of children on financial stress were much stronger than its effects on income poverty and subjective poverty.

Labour Force Experiences

- Financial stress was also strongly associated with labour force status. Over 40 per cent of the unemployed were in financial stress in each wave compared to about 15 per cent among full-time workers. It was lowest among the group not in the labour force and not marginally attached to the labour force. This group comprises mainly of retired persons.
- Differences in the occupational status (of present and previous jobs) between the groups in and not in financial stress were similar to the differences found for income poverty.
- The effect of higher occupational status reducing the odds of financial stress was similar to effects on income poverty and subjective poverty.

- Percentage of time working since leaving full-time education decreased the odds of financial stress but to a lesser extent than its effects on income poverty.
- Percentage time spent unemployed increased the odds of financial stress. Again the effects of these factors were only large for the small proportion of respondents who had spent considerable time not working or unemployed.

Income, Wealth and Debt

- The average household incomes of the groups in financial stress were higher than that for the groups in subjective poverty (and of course the income poverty groups) suggesting that financial stress is not confined to low-income households.
- Similarly, multivariate analyses showed that household equivalized disposable income modestly decreased the odds of financial stress.
- On average, the wealth of the groups in financial stress was higher than that for subjective poverty groups but lower than that for the income poverty groups.
- Wealth had stronger effects on financial stress than on income poverty, but not as strong as its effects on subjective poverty.
- Household debt was higher among the groups in financial stress than the groups in income poverty. However, mean debt was about a quarter to a fifth of mean assets.

Inter-relationships between Indicators

Generally the inter-relationships between indicators and with the same indicator across time are weaker than expected.

The correspondence between the two income poverty measures was lower than expected. Of those classified as in income poverty on the before-housing nearly, only 60 to 65 per cent were in poverty on the after-housing measure. The correspondence in the other direction was greater since the incidence of after-housing income poverty is higher. Of those in after-housing poverty about 80 to 85 per cent were also in income poverty.

- About 40 per cent of those in before-housing in wave 1 were also in before-housing poverty in wave 2. For the after-housing poverty measure, the comparable figure was 50 per cent.
- Over half of those who said they were 'poor' in wave 1 said they were more prosperous in wave 2.
- On the single indicators of financial stress, of those in financial stress in wave 1 more than half were not in financial stress on that item in wave 2. The correspondence across waves tended to be weaker for the more severe indicators of financial stress.
- In contrast, about two-thirds of those who judged their households as poor were in financial stress.
- Of those in before-housing income poverty, only 25 to 30 per cent had two or more cash-flow problems. This percentage increased to between 32 and 34 per cent on the after-housing measure.
- Defining financial disadvantage by combinations of income poverty, subjective poverty and financial stress substantially reduces the estimate of the percentage of financially disadvantaged households. About 4 per cent of households were in before-housing income poverty and financial stress and 6 per cent in after-housing income poverty and financial stress. Only 1 per cent of households were in these situations in both waves.

1. INTRODUCTION

This report focuses on three dimensions of financial disadvantage in Australia: income poverty, subjective poverty and financial stress. It examines the relationships of these three aspects of financial disadvantage with a range of social and economic correlates, including wealth, assets and debt. Since these dimensions are often understood as different indicators of financial disadvantage, the report also examines the inter-relationships between these indicators and their dynamics.

Income poverty is defined as living in a household whose income, after adjusting for household composition, is below a designated poverty line. Subjective poverty is seeing oneself as 'poor' or 'very poor'. Individuals and households in financial stress are not coping financially; they have difficulty in meeting their financial obligations and may seek financial assistance from others.

Income poverty, subjective poverty and financial stress are by no means the only indicators of financial disadvantage. Other indicators include expenditure poverty which, similar to income poverty, is defined as expenditure levels less than a designated level (FaCS, 2003:92; Saunders, 1997, 1998b); relative deprivation, defined as the 'enforced lack of perceived social necessities in life' (Mack & Lansley, 1985:39); multidimensional approaches (Dewilde, 2004; Kangas & Ritakallio, 2004a) which combine several measures of poverty; and the social exclusion approach (Eurostat Task Force, 1998; Saunders & Kayoko, 2002:45-62; Tsakoglou & Papadopoulos, 2002; Whelan, Layte, & Maitre, 2003) which broadens the concept of poverty to include social relationships and participation. However, because these other indicators of poverty are not well-measured in the first two waves of the HILDA survey, this report is limited to income poverty, subjective poverty and financial stress.

Concepts such as subjective poverty, expenditure poverty, deprivation and financial stress were often developed to complement income poverty. The concept of income poverty can be criticised because a low income does not necessarily mean that such households are not spending enough money on the basic necessities of life, deprived of the basic household goods (such as cars and washing machines) widely understood necessary for modern living, judging themselves as poor, excluded from 'normal' lifestyles, or are not coping financially. The implicit assumption in much of this work is that several indicators of financial disadvantage are better than a single indicator in identifying the truly disadvantage in society.

One purpose of this report is to examine if subjective poverty and financial stress do complement measures of income poverty. Are they all indicators of the same underlying concept of financial disadvantage, and are the social profiles and risk factors for the three dimensions much the same.

Income Poverty

Much more research has been conducted on income poverty than on other indicators of financial disadvantage. This is especially the case for Australia. From the early 1970s to the late 1990s most research on poverty in Australia was based on the Henderson poverty line (HPL) developed by Ronald Henderson from the mid 1960s. The original HPL was defined in absolute terms as the basic wage plus child endowment for a family of four in the mid 1960s (Henderson, Harcourt, & Harper, 1970; Saunders, 1998a). The justification for this poverty line was that few would disagree that an income below this amount was not sufficient to support a family.

Over the last decade or so, relative measures of poverty have replaced the HPL. Relative measures draw a poverty line at a percentage (usually 50 per cent) of the median or mean

household income. There are several reasons for the move from the HPL to relative measures. Relative measures of poverty are more commonly used by the OECD and by researchers in other industrialized nations (Förster, 1994; S. Jarvis & Jenkins, 1997; OECD, 2001; Oxley, Dang, & Antolin, 2000). In addition, the HPL is now very old so many of its assumptions — the basic wage, a male-breadwinner, a typical family of four, patterns of expenditure in the 1950s and 1960s — are much less tenable today. Furthermore, in relative terms the HPL is now much higher than it was twenty years ago because of the way it has been updated.¹

Although most research on poverty in Australia uses relative measures there is little consensus on how it should be measured. The major issues are whether the measure is based on mean or median household income, where the poverty-line should be drawn, the equivalence scale used to make households with different compositions comparable and what constitutes disposable income. These issues are discussed in the following paragraphs. Appendix 2 presents a more detailed discussion of these and other issues. There is, however, broad consensus on some general issues regarding relative measures of income poverty: that disposable income — that is income after adjusting for taxation and government benefits — is preferable to gross income, that disposable income should be adjusted for household size, and household income rather than individual income should be used to assess whether an individual is in income poverty.

The 2001 NATSEM report on financial disadvantage in Australia presented estimates for many measures of poverty but the headline measure was based on mean disposable income (Harding et al., 2001). Mean income appears to be the basis for the study of poverty in the United Kingdom (Sarah Jarvis & Jenkins, 1998, 2000). However, poverty lines drawn at a percentage of the mean income can be criticised since they are more sensitive than median-based measures to changes in the distribution of income (Saunders & Kayoko, 2002:1-22). A flattening of the income distribution will almost invariably increase the proportion in poverty on mean-based measures.

A second issue is where to draw the poverty line. Most often the poverty line is drawn at 50 per cent of the mean or median household disposable income but there is no reason why the poverty line could be drawn at another level. A 60 per cent cut-off is increasingly used in studies of poverty in the European Community (Eurostat Task Force, 1998). Drawing poverty lines at 40, 50 and 60 per cent produces quite different estimates of the level of poverty and its persistence (Headey, Marks, & Wooden, Submitted; Layte & Whelan, 2003).

Equivalence scales are the index used to adjust for the number of adults and children in the household. The modified OCED equivalence scale is becoming the standard. It assigns a weight of 1.0 to the first adult, 0.5 to the second adult and 0.3 to children. An alternative equivalence scale simply weights by the square root of household size. In Australia, the equivalences for the HPL are often used. There are many equivalence scales that could be used to make households comparable, but different equivalence scales often produce different profiles of the types of households experiencing poverty (Coulter, Cowell, & Jenkins, 1992).

Finally, there is the general issue of what constitutes disposable income. Post-taxation and post government transfer income does not take into consideration essential costs. After essential costs, discretionary income is probably a better indicator of a household's financial situation. Estimating essential costs is a difficult exercise, since there are a myriad of goods and services (ranging from motor cars to haircuts) that could be deemed essential. Housing is one cost that is commonly deducted to compute discretionary income (for example, Harding et al., 2001). The cost of housing may comprise 40 per cent or more of a household's expenditure. A pensioner couple that have paid off their house are considerably better off than a comparable couple paying rent. Similarly, young persons on low wages living at home rent-free have much larger discretionary incomes than their peers living away from home paying

rent. On the other hand, housing costs are discretionary; individuals or couples may choose to spend a large proportion of their income on housing. Importantly, before- and after-housing measures produce notably different levels of poverty (Harding et al., 2001:35-36).

Subjective Poverty

A less common approach to poverty is whether people see themselves as living in poverty. A person's own evaluation of whether they are living in poverty should not be disregarded. They will have a reasonably accurate idea about whether their financial situation is below what they regard as an acceptable standard.

For the United Kingdom, Bradshaw (2003) asked respondents questions as to the amount of money necessary to keep households like the respondent's household out of poverty. They were then asked the position of their household relative to this amount. Almost 20 per cent of households indicated they were a little or a lot below their subjective poverty line. However, there is little consensus on the minimum income required to live decently (Saunders, 1998a).

Financial Stress

Australian research on financial stress has its origins in the 1986 Australian Standard of Living survey. In that survey, respondents were asked if, over the last two years, they had cut back on food and heating, got behind on bill or loan repayments or sought financial help. About a quarter said they cut back on food, about 20 per cent cut back on heating and almost 20 per cent received financial help from family or relatives.

The 1998-99 Household Expenditure Survey (HES) also included items on cash-flow problems in addition to items on deprivation². The cash-flow items indicated that 15 per cent of households spent more money than was earned, 19 per cent were unable to raise \$2000 for an emergency, 16 per cent could not pay utility bills on time, 7 per cent could not pay car registration or insurance on time, 4 per cent pawned or sold something, 3 per cent went without meals, 2 per cent could not afford to heat their home and 3 per cent sought assistance from welfare organizations. The incidence of financial stress was clearly related to income, but only a minority of households in the lowest income quartile were stressed on the individual indicators. The deprivation and cash-flow items were used to construct a summary measure of financial stress comprising three levels: five or more incidences of financial stress defined high stress, two to four moderate stress, and one or none no stress (ABS, 2002a; McColl, Pietsch, & Gatenby, 2001). About 13 per cent of households had high levels of financial stress, 21 per cent moderate stress and 66 per cent low or no stress.

Bray (2003a, 2003b) identified three components to financial stress after performing factor analysis on these items, as well as an item on living standards compared to a year ago. He described the three components as "Missing out", based mainly on the deprivation items, 'cash-flow problems' based mainly on items about paying bills and borrowing money, and 'hardship' based on items tapping greater stress: going without meals, selling possessions or seeking help from community organisations. He classified about 3 per cent of households as experiencing 'multiple hardship', while 8 per cent experienced some hardship.

The 2002 General Social Survey included nine cash-flow items asked in a similar manner to the HES questionnaire.³ About 13 per cent were unable to pay their utility bills on time because of a shortage of money. Eight per cent sought financial help from friends and relatives. The incidence of cash-flow problems in other areas was lower. Nearly 80 per cent of households had no incidences of financial stress, 9 per cent one incident, 5 per cent two incidences and 6 per cent three or more incidences.

Measures of financial stress may not allow identification of households 'truly' in poverty. The high incidence of not paying utility bills on time in these surveys may reflect priorities of households; they prioritise other spending knowing they can delay these payments for at least a short time. In contrast, it is more difficult to delay paying rent or servicing mortgages. On the other hand, families in financial difficulties may be able to pay bills, registration and insurance on time with credit cards but in doing so, increase their debt. The high incidence of seeking financial assistance from family or friends may include the borrowing of small amounts of money, so may not necessarily constitute financial stress. Much less ambiguity surrounds the other items: pawning or selling something for cash, not being able to heat the home, going without food, and seeking help from welfare or community organisations. However, according to these items, very few households (no more than 5 per cent) are in financial stress.

Poverty and Risk Factors

This section reviews studies on the relationships between poverty and demographic, sociological and economic factors. The first part of the review focuses on income poverty since few studies have explored these relationships with other measures of financial disadvantage. The second, much shorter, part reviews work on other indicators.

There are not strong gender differences in income poverty despite higher proportions of women heading single-parent families and working part-time. According to Harding et al. (, 2001:15) the risk of being in income poverty is no higher among women than men.

Younger people are more likely to be in income poverty than older people. On the before-housing half mean income measure with the Henderson equivalence measure, 16 per cent of 15-24 year olds were in poverty in 2000 compared to 11 to 12 per cent of older age groups. Using the half median measure, Korpi and Palme (1998) reported that poverty among Australians 65 years old and older was 5.2 per cent compared to 9.1 per cent for the general population.

Poverty among those aged 65 and older is especially low after housing costs have been taken into account (Harding et al., 2001:17,19). This is because a sizeable proportion of older people have paid off their housing loan so have no housing costs. Saunders (1996) reports findings from the Australian Institute of Health and Welfare where poverty among those aged 65 and older was 19 per cent on the pre-housing measure but only 6 per cent post-housing.

Sole parents are at most risk of being in poverty. According to estimates from the Australian Institute of Health and Welfare, poverty was about 3 times higher among sole parents in 1989-90 (Saunders, 1996). Using the before-housing half mean income with Henderson equivalences, Harding et al. (2001) estimated that 22 per cent of sole parents were in poverty, compared to 18 per cent of single persons, 12 per cent of couples with children and 6 per cent of couples without children. Since 1990, the proportion of sole parents in poverty has declined. Among sole parents with two or more children the poverty rate is over 25 per cent (Harding et al., 2001:7-8). Eardley (1998) also found that income poverty, defined by half the median income, is associated with sole parenthood and larger families.

Low education is also associated with income poverty. Among those with no post-secondary qualifications, poverty (on the half mean disposal income measure) was 15 per cent compared to 11 per cent among those with diploma, certificate and trade qualifications and only 6 per cent among those with a Bachelor degree (or higher) qualification (Harding et al., 2001:14).

Poverty is strongly associated with labour force status. In 2000, nearly 60 per cent of the unemployed were in poverty. This compares with 17 per cent of those not in the labour force (NILF), 12 per cent of part-time workers and only 5 per cent among full-time workers. Among families with no wage earners, 28 per cent were in poverty in 2000 compared to less than 7 per

cent of families with at least one full-time wage earner (Harding et al., 2001:12). Eardley (1998) found that among full-year full-time employees, poverty, defined by the half median income, was very low at around 1 per cent.

Johnson (1991) shows wide variation in income poverty according to birthplace. For 1985-86 he estimated the national poverty rate at 12.5 per cent. Although the poverty rate among all immigrants was only slightly higher at 14.6 per cent, it was around 30 per cent among immigrants from Asia and the Americas and 25 per cent among immigrants from Oceania. Poverty among Indigenous Australians is very high; about three times the rate among non-indigenous families (Ross & Whiteford, 1992).

This discussion on risk factors may give the impression that income poverty is limited to sole parents, the less educated, the unemployed and some racial or ethnic minorities. However, this is not the case since these groups are typically small. The numerically large groups comprise the bulk of those in poverty. Of those in poverty in 2000, 42 per cent were couples with children and a further 12 per cent were couples without children. Similarly, 45 per cent of those in poverty are aged between 25 and 49 (Harding et al., 2001:9,17).

Other Indicators of Poverty

The author is not aware of any study that examines the relationship between demographic, sociological and other factors with subjective poverty.

FaCS (2003:92) notes that expenditure poverty is high among elderly persons, no doubt because they have less financial obligations. In contrast, singles and couples are more likely to be in income-poverty but not expenditure poverty.

There is some research on the risk-factors associated with financial stress. High levels of financial stress were more common among sole parents (41 per cent), the unemployed (45 per cent), and those on other government support (40 per cent). Econometric analyses found that larger families, disability, sole parenthood, unemployment, having a mortgage, and paying interest on credit cards were associated with financial stress (McCull et al., 2001).

Bray (2003b) found that 'multiple hardship' was highest among single-parent households at around 14 per cent. Interestingly, couples with children had higher than average levels of 'missing out' and 'cash-flow' problems, but lower than average levels of 'hardship'. Young persons were more likely to be experiencing cash-flow problems.

Using data from the HILDA survey, La Cava and Simon (2003) report that 'cash flow problems' was negatively related to age, being in a couple without children, home ownership (and home value), disposable income and the number of credit cards and was positively related to unemployment, family size, being a single parent, and on welfare. Surprisingly, households with debt were generally less likely to be experiencing cash-flow problems.

Financial stress is related to income but not as closely as often assumed. On nine indicators, financial stress was highest among households in the lowest income quintile, and declined in each subsequent quintile. Seventeen per cent of households in the lowest quintile had two or more incidences of financial stress compared to 12, 9 and 4 per cent of households in the top three quintiles. However, 70 per cent of households in the lowest income quintile, had no cash-flow problems in the previous twelve months (ABS, 2004a:Table 32).

Inter-Relationships between Indicators of Financial Disadvantage

As suggested by the surprisingly low levels of financial stress among households in the lowest income quartile, the correspondences between income and income poverty with other measures of financial disadvantage are not strong.

The correspondence between income poverty and expenditure poverty is much less than expected. Only 2.2 per cent of Australian households were in poverty on both the income and expenditure measures, when they are defined at 50 per cent of median income and median expenditure. If the thresholds are raised to 60 per cent, then a larger 8 per cent are defined as in both income and expenditure poverty (FaCS, 2003:92). Similarly, Saunders (2002) found that the poverty rate in the United Kingdom fell by about half, if it were defined in terms of both income and expenditure. Saunders (2002) also introduces the concept of ‘core’ poverty in which households are in poverty on both the income and expenditure measures and expenditure exceeds household income. However, only 2 per cent of households in the United Kingdom were found to be in core poverty. For Australia, Saunders (2004) estimated that 12 per cent of single income unit households were in ‘core’ poverty in 1998-99, about half that for either income or expenditure poverty.

In the United Kingdom the relationship between deprivation and income is weak. Those in persistent income poverty — defined as households with incomes less than 70 per cent of the median income over 3 years — were more likely to experience deprivation. However, only between one in eight and one in five of those in persistent poverty experienced multiple deprivation (Whelan, Layte, & Maître, 2002). The authors concluded that other factors beside persistent income poverty are important in determining deprivation, and these factors differ across the type of deprivation.

A similar low correspondence was found for deprivation measures. Incidences of deprivation were clearly higher in the lowest income quartile, but deprivation was not unknown in higher income quintiles (McCull et al., 2001). Travers (1996:25) reported a correlation of only 0.2 between a deprivation index and income among social security recipients.

Saunders (2004) found that if poverty is defined in terms of the HPL and experiencing one of six core indicators of financial stress — could not pay car registration or insurance on time, pawned or sold something, went without meals, unable to heat home and sought assistance from a welfare or community agency — poverty declines from 25 per cent to less than 10 per cent. Therefore, 60 per cent of households defined in poverty on the Henderson measure had, in the past 12 months, no experience of financial stress when measured by these items. Similarly, Bray (2003b) concludes that although low incomes are associated with hardship, missing out and cash-flow problems, only a relatively small proportion of low income households experience these problems.

Similarly subjective judgements of being poor are not closely related to income, at least in the United Kingdom. Bradshaw (2003) concluded that there is ‘surprisingly little overlap’ between income poverty, deprivation and subjective poverty.

Purpose of this Report

This report contributes to our understanding of financial disadvantage in Australia by addressing areas not adequately covered by previous research.

Although there has been much work on the relationships between income poverty and demographic and social characteristics, the range of characteristics examined in a single study is fairly limited. For example, there are no recent Australia studies on the relationship between poverty and ethnicity or indigenous status. Furthermore, we know little of the social reproduction of poverty in Australia, that is, the relationship between socioeconomic background and poverty. Finally, most Australian studies are limited to income poverty. The present study examines the sociological and economic correlates of two other indicators of financial disadvantage, subjective poverty and financial stress, as well as, income poverty.

Recent studies have not usually included multivariate analyses which would enable identification of the independent effects of risk factors, that is, the effects of a factor on poverty taking into account the effects of other factors. For example, the analyses in the recent NATSEM report are bivariate analyses.

Analyses are performed on both the before-housing and after-housing income poverty measures. In the Australian and overseas literature, the before-housing measure is more frequently used and is usually the headline figure. However, the after-housing measure is arguably a better indicator of a financial situation given that a substantial proportion of owner occupiers own their properties outright, the sizable mortgage repayments of first home buyers, and the fact that non-owners almost invariably pay rent. Although the NATSEM report identified different relationships between before- and after-housing measures of poverty with age, it did not systematically compare the effects of sociological and economic factors on before- and after- housing poverty.

Another contribution of this study is to include income, wealth, assets and debt in the analysis of financial disadvantage. It is apparent from the literature that the correspondence between income and the non-income based measures of wealth are weaker than expected. This may be because of the income measures used. This study examines the relationships of subjective poverty and financial stress with a range of income measures (individual, household, disposable and equivalized). No Australian study has compared the relationships these three indicators of financial disadvantage have with wealth, assets and debt.

Finally, this report examines the inter-relationships between the three measures of financial disadvantage and stability over time. Such analyses estimate the proportions financially disadvantaged on two or three indicators and movement out of states of financial disadvantage.

Therefore, the purpose of this report is to examine before and after housing income poverty, subjective poverty and financial stress in Australia using the first two waves of the HILDA survey.

The specific aims of this report are to:

- Estimate the levels of before- and after-housing income poverty, subjective poverty and financial stress in 2001 and 2002.
- Examine the extent to which income poverty, subjective poverty and financial stress are stable over a two-year period. Are subjective poverty and financial stress more stable than income poverty?
- Comprehensively document the relationships that these indicators of financial disadvantage have with a range of demographic, socioeconomic and economic factors. These include gender, age, household type, marital status, labour force status, income, wealth, assets and debt.
- Model these relationships to estimate the independent effect of these factors on indicators of financial disadvantage.
- Explore the inter-relationships between and within these indicators of financial disadvantage.

2. DATA, MEASURES AND ANALYSIS

Data

The data used in these analyses are from the first two waves (2001 and 2002) of the longitudinal Household, Income and Labour Dynamics in Australia (HILDA) survey. HILDA has several features that make it particularly useful for the investigation of financial disadvantage. It is the first large-scale Australian longitudinal survey of adults specifically designed to investigate dynamics, whereas previous studies of poverty have relied on cross-sectional data. Second, income data was collected from all available (and eligible) household members, improving the accuracy of income and other variables. Third, HILDA includes data from wave 2 on wealth, assets and debts allowing for the examination of their relationships with financial disadvantage. The HILDA Users Manual (Watson, 2005) details the sampling, weighting, imputation and other technical aspects of the study.

Measures

Measures of Financial Disadvantage

Four measures of financial disadvantage are used: before-housing income-poverty, after-housing income poverty, subjective poverty and financial stress. The development of these measures is described in more detail in Appendix 2 (pg. 65).

Households were defined as in before-housing income-poverty if their equivalized household disposable income was below 50 per cent of the median. Disposable income is calculated as the income received after adjusting for taxes and government transfers such as pensions, unemployment and other benefits. This equivalence scale used is the modified OECD scale which assigns a weight of 1.0 to the first adult, a weight of 0.5 to second and other adults and a weight of 0.3 for children under 14 years of age (Förster, 2001:note 2; Whelan et al., 2002).

This measure differs slightly from other measures of before-housing income poverty constructed from the HILDA data. There are two main differences. In the measure used in this report the poverty line is drawn at the household with the median income, not the household that includes the individual with the median income. Second, households with negative household incomes were not included in the calculation of income poverty. Such households are usually running business so are likely to have enough assets to carry on. Nonetheless, the estimates of before-housing income poverty in this report are only slightly lower than the recent estimates by Heady, Wooden and Marks (, Submitted).

The second measure — after-housing income-poverty — is similar to the first: the only difference is that housing costs are deducted from disposable family income. For some households, the cost of housing is large and thus disposable income is very much lower than that for a household with a similar income with little or no housing costs.

The third measure subjective poverty was defined by respondents indicating that they were ‘poor’ or ‘very poor’ in response to a question on their level of prosperity.

The final measure of financial disadvantage is ‘financial stress’ was defined in terms of seven behaviours due to a *shortage of money*, sometimes described as cash flow problems. They are: could not pay utility bills on time, could not pay mortgage or rent on time, pawned or sold something, went without meals, was unable to heat home, asked for financial help from friends or family, and asked for help from welfare/community organisations. Individuals were defined as in financial stress if they experienced two or more of these events since the beginning of the year.⁴

Measures of the Correlates of Financial Disadvantage

The measurement of these variables is apparent from the tables in the following tables. The variables: household type, marital status, highest educational qualifications, labour force status, personal gross and disposable income are derived variables available on public releases of the HILDA data. The construction of the household income variables is described in Appendix 2. The occupational status measures were measured using the ANU4 occupational status scale (Jones & McMillan, 2001).⁵ For parental occupational status, father's occupation at age 14 was used. If this information was missing, then the mother's occupation was used.

The measures of wealth, assets and debts were from the questions in the wealth module in wave 2. Questions covering housing, unincorporated businesses, equity-type investments (e.g. shares and managed funds), cash-type investments (e.g. bonds and debentures), life insurance policies, vehicles and valuables (e.g. jewellery, art works) were asked at the household level and answered by one adult on behalf of the entire household. Questions about superannuation, bank accounts, credit cards, HECS debt and other personal debt, however, were asked directly of individuals. For most questions, respondents were asked to provide exact dollar amounts. Wealth is simply assets minus debts.

For the income and wealth variables, missing data was handled by imputation. For other variables, the few cases missing were excluded from the corresponding analysis. Details on the construction of the wealth variables are available (Headey, 2003; Headey, Marks, & Wooden, 2004; Marks, Headey, & Wooden, 2005).

Analysis

Because statistical significance tests require that the units of analysis are independent, individuals living in the same household are not independent in the statistical sense. Therefore, most of the analyses in the following chapters (Tables 2 to 21, but not including Tables 15 to 17) are based on reference persons randomly selected from each household. The reference person must be over 18 years of age and was not living with a parent. The results are almost identical with different random draws. This procedure is similar to the random selection of a household member at a survey interview who provides data on behalf of the household in the ABS, HES and GSS surveys. Separate random selections were made for each wave. Therefore, the unit of analysis for these analyses are households rather than individuals. This procedure is preferable to other ways of identifying a reference person. Choosing the household member with highest income would bias the results toward higher status individuals. Furthermore, it would not be possible to examine the relationships of poverty with gender and age if the reference person was selected on these characteristics. If the characteristics of all household members were used, the results would be biased toward larger households and biased against households with only one adult.⁶

Weighting

The analyses reported here were weighted and limited to adults aged 18 or older. Household weights were used for the bivariate and multivariate analyses.

Logistic Regression

The chapters on income poverty, subjective poverty and financial stress include logistic regression analyses of the independent effects of demographic, educational, socioeconomic, labour force variables and wealth on the respective measure of poverty. Logistic regression is the most appropriate statistical technique for the analysis of dichotomous dependent variables.

Highest educational qualification was entered as a categorical variable since bivariate analyses revealed that highest educational qualification does not have a truly ordinal relationship with indicators of financial disadvantage. For example, a certificate qualification was not associated with a lower incidence of income poverty than completing school. In contrast to the bivariate analyses, household type was indicated by two variables: marital status and number of children so that the independent effects of each can be assessed. Present labour force status was not included in the multivariate analyses since it is contemporaneous with poverty status. It was replaced by measures of the percentage of time spent, since leaving full-time education, in work (full- or part-time) and in unemployment. Disposable income measures were not included in the analyses of income poverty but were included in analyses of subjective poverty and financial stress. Assets and debts could not be included in the same regression analysis as wealth since they are the two components of wealth.

Within each chapter the logistic regression analyses of the wave 2 data are presented. The analyses of the wave 1 data are presented in Appendix 3. The statistical significance of the coefficients is indicated in the usual way. In the text, the logistic coefficients in these tables are discussed as odds ratios, which are the exponents of the coefficients. For categorical variables—gender, Indigenous status, language background, type of school attended, education, and marital status—the effects are relative to the appropriate contrast group—females, the non-Indigenous, an English speaking background, attended a government school, and never married and not de facto. So the interpretation of the odds ratio is relative to the contrast group, the odds of men being in poverty are so many times the odds for women, the odds of being in poverty for married persons is so many times that for single people etcetera. Unlike other interpretations of logistic regression coefficients, odds ratios do not change depending on values of the other independent (predictor) variables.

The interpretation of the logistic regression coefficients for continuous variables depends on the unit of measurement. The coefficients refer to a single unit change so its magnitude depends on how the variable is measured. The number of siblings and number of children are continuous variables ranging from zero. Therefore, the coefficients of these variables are the effects on being in poverty for a one unit change, that is, for one additional sibling or child. For two siblings or two children the effects are doubled. The odds ratios are squared. Similarly, the effects for three siblings or three children are three times the effects for one sibling or child and the odds ratios are cubed. Age has been divided by 10 so the effects are the change in the odds of being in poverty for a 10 year difference in age. Similarly, both parental and respondents' occupational status has been divided by 10 so that effects are for a 10 unit difference on the zero to 100 occupational status scales. Again the effect for a 20 year or unit difference is twice that for a ten year difference and the odds ratio is squared. Percentage time spent working is divided by 10 so the effects relate to an increase in 10 percentage points in the time spent in work since leaving school. For unemployment, the effects are for an increase of one percentage point in time spent unemployed. Income was divided by 10,000 so the effects are for a \$10,000 difference in income. Similarly, wealth was divided by 100,000 so the effects are for a \$100,000 change in wealth.

Where appropriate, the variables have been centred so the estimate for intercept is meaningful. Parental and respondents' occupation were centred at their respective means (about 43 and 47 on the 100 point scale). Percentage of time spent working since leaving school was centred at its mean of 73 per cent. Wealth was centred at average household wealth, which was approximately \$420,000. Therefore, the estimate for the intercept can be understood as the log odds of being in poverty (or subjective poverty or financial stress) for individuals that score zero on all variables. That is female, 45 years old, with an average socioeconomic background, attended a government school, completed school (Year 12), single with no children; works in a

job with an average occupational status, and since leaving full-time education has spent the average percentage of time working but no time unemployed, with average incomes and wealth.

For the logistic regression analyses, groups of variables were added sequentially beginning with a model comprising only demographic and socioeconomic background factors. The first group added was education, followed by marital status and number of children, occupational status and work and unemployment history. The final variable added was wealth and in the analyses of subjective poverty and financial stress, disposable income. The sequential modelling procedure shows which variables have statistically significant independent effects on financial disadvantage and which variables have effects mediated by variables added in later model specifications. For example, if 'First language not English' has a significant negative effect, this may be because 'First language other than English' is associated with lower levels of education, or different experiences in the labour market or lower levels of wealth. Alternatively, 'First language other than English' may increase the likelihood of financial disadvantage, even when taking into account differences between first language groups in educational attainment, labour force experience, wealth and, for analyses of subjective poverty and financial stress, disposable income. In other words, education, labour force experience and wealth may not account for the higher odds of this group being financially disadvantaged.

Included in these tables are the pseudo R square values which indicate how well the independent variables account for distribution of households on respective indicator of financial disadvantage.⁷

3. INCOME POVERTY

Table 1 presents estimates of the proportion in the percentage of individuals in income poverty on the before and after housing measures. In both measures the poverty lines are drawn at 50 per cent of median household income after taxes and transfers. The modified OECD equivalence scale was used to adjust for household size. About 13 per cent are defined as poor on the before-housing measure and nearly 17 per cent on the post-housing measure. These estimates from the HILDA survey waves 1 and 2 are higher than comparable estimates for 2000: 10 per cent on the before-housing measure and 15 per cent after housing (Harding et al., 2001:35-36). These differences of 2 to 3 percentage points are probably due to differences in sampling, data processing or other technical aspects rather than reflecting a trend of increasing income poverty. The most important technical difference is the estimates from HILDA are based on annual income, whereas the estimates the ABS surveys are based on, is weekly income. Weekly income measures are less likely to include income from all sources.

Table 1: Estimates of Percentage of Individuals Living in Poverty

<i>Income Poverty Measure</i>	<i>Definition of Poverty Line</i>	<i>Wave 1</i>	<i>Wave 2</i>
Before-Housing Income Poverty	50 per cent or below of median equivalized Household Disposable Income not Adjusting for Housing Costs	12.8	12.0
After-Housing Income Poverty	50 per cent or below of median equivalized Disposable Income after deducting Housing Costs	16.6	16.4

Note: Unit of Analysis Individuals. Enumerated Person Weights.

Bivariate Relationships

Tables 2 to 5 report the relationships between income poverty and a range of demographic, sociological and economic factors. Tables 2 and 3 present the relationships with categorical variables, and Tables 4 and 5 focus on continuous variables.

The percentage of households defined as in poverty on the before-housing measure is slightly higher at 15.5 and 14.4 per cent compared to 12.8 or 12.0 per cent for individuals. This is because larger households tend to have higher incomes than smaller households. About 7 per cent were categorized on this measure as in poverty in both waves (Table 2). On the after housing measure, the percentage of households in poverty was 18.1 per cent in wave 1, 17.4 per cent in wave 2 and 8.9 per cent were defined in poverty on the after housing measure in both waves (Table 3). Again the percentages for household levels of poverty are higher than for individuals.

The bulk of tables 2 and 3 present the percentages in income poverty for each and both waves by gender, age cohort, household type, marital status, highest education level and labour force status. For each wave the characteristics of individuals were measured the same year as poverty. For estimates of income poverty in both years, the characteristics were measured from the second wave data. It is important to note that these percentages are of the group in income poverty, not the percentage of those in poverty that belong to that group.

On the before-housing measure, poverty is higher among women than men. In wave 1 the poverty rate among women was nearly 6 percentage points higher and in wave 2, 4 percentage points. About 8 per cent of women were defined as in poverty in both survey years compared to about 5 per cent of men.

Before- housing poverty is higher in the youngest cohort (18 to 24 year olds) and two oldest age cohorts (65-70 and 70 and older). In wave 1, among those aged between 25 and 54 about 10 per cent are in poverty, compared to around 20 per cent of 18 to 24 year olds and over 30 per cent of those older than 70. Wave 2 showed much the same pattern with a slightly higher level of poverty among the youngest cohort, and a slightly lower level among the oldest cohort. Less than 4 per cent of 25 to 54 year olds were in poverty in both survey years.

Table 2: Level of Before-housing Income Poverty by Demographic and other Factors

<i>Characteristic</i>	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 1 and Wave 2</i>
All	15.5	14.4	6.7
Gender			
Male	12.3	12.3	5.3
Female	18.0	16.1	7.8
Age Group			
18-24	20.8	25.7	9.1
25-34	8.9	9.7	3.4
35-44	11.2	8.4	3.8
45-54	11.0	9.5	3.7
55-64	17.5	16.9	9.1
65-70	23.2	21.8	10.5
>70	32.0	28.2	16.1
Household Type			
Couple without Children	11.3	10.0	3.1
Couple with Children 15 or younger	9.3	8.0	3.3
Couple with Children older than 15	5.8	6.8	1.5
Lone Parent	17.8	15.9	5.7
Single Person	29.5	27.4	16.2
Other	11.5	14.7	4.1
Marital Status			
Legally married	10.0	9.2	3.0
De facto	7.4	8.1	2.4
Separated	22.2	21.0	8.4
Divorced	23.9	19.8	12.9
Widowed	38.1	33.0	21.2
Never married and not de facto	19.6	20.4	9.7
Education Level			
<Year 12	23.3	21.4	11.3
Year 12	15.5	16.3	5.4
Certificate	14.5	16.2	6.9
Adv Certificate	13.2	10.9	4.9
Diploma/Adv Diploma	11.5	8.6	4.3
Bachelor	7.9	7.2	2.7
Post-Graduate	4.0	5.7	1.8
Labour Force (LF) Status			
Working Full-time	4.4	3.8	0.9
Working Part-time	9.2	11.1	3.3
Unemployed, looking for ft work	32.5	31.9	17.3
Unemployed, looking for pt work	31.4	36.0	11.4
Not in the LF, marginally attached	26.6	29.6	14.1
Not in the LF, not marginally attached	30.2	26.1	14.3

Table 3: Level of After-Housing Income Poverty by Demographic and other Factors

<i>Characteristic</i>	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 1 and Wave 2</i>
All	18.1	17.4	8.9
Gender			
Male	14.7	15.6	7.3
Female	20.8	18.9	10.2
Age Group			
18-24	28.6	36.3	17.1
25-34	16.8	18.4	9.2
35-44	16.9	15.9	8.5
45-54	13.9	12.0	5.5
55-64	17.8	17.2	9.4
65-70	18.6	16.0	10.2
>70	24.0	18.6	9.6
Household Type			
Couple without Children	12.6	10.7	4.7
Couple with Children 15 or younger	14.3	14.3	6.7
Couple with Children older than 15	6.3	7.7	2.7
Lone Parent	30.3	31.0	16.8
Single Person	27.9	26.0	14.7
Other	17.2	18.9	10.6
Marital Status			
Legally married	12.0	12.0	5.2
De facto	12.9	11.1	6.1
Separated	32.3	31.8	16.3
Divorced	25.0	23.9	14.8
Widowed	28.4	19.1	12.7
Never married and not de facto	27.4	29.7	15.2
Education Level			
<Year 12	24.0	22.1	12.7
Year 12	19.9	22.0	8.9
Certificate	20.3	21.5	11.8
Adv Certificate	15.5	15.1	7.1
Diploma/Adv Diploma	15.5	11.0	5.3
Bachelor	12.1	11.1	5.4
Post-Graduate	7.1	8.5	3.6
Labour Force (LF) Status			
Working Full-time	7.4	7.7	2.4
Working Part-time	14.6	18.1	8.1
Unemployed, looking for ft work	44.2	43.2	27.0
Unemployed, looking for pt work	47.0	47.6	19.4
Not in the LF, marginally attached	34.9	38.8	24.6
Not in the LF, not marginally attached	28.2	23.1	13.4

Of household types, lone parent and single person households show the highest before-housing poverty levels. On this measure of poverty, nearly 30 per cent of single person households, which include widows and widowers, are in poverty. Sixteen per cent were in poverty in both years. Lone parent households show the next highest level of poverty, at around 16 per cent each year, but only 6 per cent were in poverty in both years. The incidence of poverty among couples is low, about 10 per cent among couples without children, and less among couples with children younger than 15 and even less among couples with older children.

Before-housing income poverty differs considerably by marital status. Married persons enjoy the lowest poverty rates at around 10 per cent each year with only 3 per cent in poverty in both years. This compares to over 20 per cent of widows and widowers, and 13 per cent of divorcees. De facto couples show similar (or slightly lower) levels of poverty as married couples.

Poverty has a generally ordinal relationship with education, the higher educational qualification, the lower the percentage in poverty. Among those whose highest qualification was less than Year 12, over 20 per cent were in poverty in a single year. Over 10 per cent were in poverty in both years. This contrasts with less than 3 per cent of those with Bachelor degrees or post-graduate qualifications. The only exception to the ordinal pattern is the slightly higher levels of poverty among certificate holders than those whose highest qualification was Year 12 or school completion.

Labour force status has an even stronger relationship with poverty. Among full-time workers, less than 5 per cent were in poverty each year and only 1 per cent were in poverty in both years. Part-time workers show higher poverty rates at around 10 per cent each year but only 3 per cent in both years. Poverty rates are substantially higher among those not working. Of the unemployed, 30 per cent are in poverty in a single year and about 15 per cent in both years. The group not in the labour-force show similarly high levels of before-housing income poverty. There was little difference in the poverty rates between the marginally attached and not attached groups.⁸

Although the overall levels of after-housing poverty are higher, the pattern of its relationship with gender and education are similar to those found with the before-housing measure (Table 3). Each year, after-housing poverty is substantially higher among women than men, and 10 per cent of women were in poverty in both years compared to 7 per cent of men. After-housing poverty shows the familiar inverse relationship with education; over 10 per cent of those without post-secondary education were in poverty in both years compared to about 5 per cent or less among those with diplomas, degrees or post-graduate qualifications.

However, the relationships between poverty and the other variables are quite different with the after-housing measure. After-housing poverty among 55 to 70 year olds is similar to that among 25 to 44 year olds, whereas it was substantially higher on the before-housing measure. Single person households do not show substantially higher levels of after-housing poverty than other household types. On the before-housing measure they had the highest rates. Lone parents show much higher levels of poverty on the after-housing measure compared to the before-housing measure. Couple households with older children clearly have much lower levels of poverty on the after-housing measure, whereas the differences were smaller on the before-housing measure.

Similarly, the relationship between poverty and marital status is different with the after-housing measure. The widowed showed the highest level of poverty on the before-housing measure but on the after-housing measure have similar levels of poverty as the separated, divorced and single groups. Differences in poverty levels between the married, de facto and other marital status groups are larger on the after-housing measure.

After-housing income poverty is less than 10 per cent among those working full-time and 15 to 20 per cent among the group working part-time. However, it is over 40 per cent among the two unemployed groups. Of those not in the labour force, the group marginally attached to the labour market show higher proportions in poverty than those unattached to the labour force. This is because the second group is more often older, retired and home owners. This difference was not apparent on the before-housing measure

Table 4: Characteristics of Households in and Not in Poverty (Before-housing Income Poverty Measure).

<i>Factor</i>	<i>Wave 1 (2001)</i>				<i>Wave 2 (2002)</i>				<i>Wave 1 & 2</i>			
	<i>Means</i>		<i>Medians</i>		<i>Means</i>		<i>Medians</i>		<i>Means</i>		<i>Medians</i>	
	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>
Age	53.9	46.4	54.0	44.0	52.5	46.7	54.0	45.0	56.6	47.2	60.0	45.0
Number of children	2.4	1.9	2.0	2.0	2.1	1.8	2.0	2.0	2.3	1.8	2.0	2.0
Occupational Status	34.2	45.1	31.8	39.5	34.7	45.1	32.2	39.9	32.8	44.4	30.1	39.5
Parental Occupational Status	38.7	42.0	39.9	40.6	39.7	42.5	40.4	40.6	38.2	42.4	39.9	40.6
Personal Income	7.6	34.6	8.2	28.0	8.7	36.6	9.4	30.0	9.5	34.3	10.1	27.0
Personal Disposable Income	7.0	26.7	8.2	23.0	7.9	28.1	9.4	24.3	8.8	26.4	10.0	22.4
Household Income	11.1	65.4	10.3	54.3	11.8	66.9	11.0	55.8	12.1	62.0	10.8	50.5
Equivalentized Household Income	10.1	50.5	10.2	43.5	10.7	51.4	10.9	44.1	11.1	47.8	10.8	40.8
Equivalentized Disp. HH Income	6.6	29.8	8.6	25.5	7.2	30.9	9.4	26.7	8.2	28.8	9.9	25.1
Equiv Disp. HH Income after Housing	3.8	25.7	5.9	21.6	4.5	26.8	6.7	22.9	6.0	24.8	7.7	21.2
Household Wealth (Wave 2 Only)	239.3	458.4	120.9	266.7	243.6	432.4	100.2	244.2	190.4	425.0	80.2	239.0
Household Assets (Wave 2 Only)	269.2	535.3	130.2	344.7	269.9	508.2	114.6	322.9	202.7	498.1	90.2	311.0
Household Debt (Wave 2 Only)	30.5	77.2	0.0	15.5	27.3	75.6	0.0	15.5	15.7	72.5	0.0	12.7

Table 5: Characteristics of Households in and Not in Poverty (After-housing Income Poverty Measure).

<i>Factor</i>	<i>Wave 1 (2001)</i>				<i>Wave 2 (2002)</i>				<i>Wave 1 o& 2</i>			
	<i>Means</i>		<i>Medians</i>		<i>Means</i>		<i>Medians</i>		<i>Means</i>		<i>Medians</i>	
	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>
Age	48.2	47.5	45.0	46.0	45.6	48.0	43.0	46.0	46.9	47.9	43.0	46.0
Number of children	2.2	1.9	2.0	2.0	1.9	1.8	2.0	2.0	2.2	1.9	2.0	2.0
Occupational Status	35.3	45.2	32.2	39.5	36.1	45.2	32.8	39.9	33.6	44.6	31.3	39.5
Parental Occupational Status	39.6	41.9	39.5	40.6	41.2	42.3	40.5	40.6	40.0	42.3	39.6	40.6
Personal Income	10.2	34.9	8.9	28.4	12.3	36.9	10.5	30.0	12.4	34.6	10.7	27.6
Personal Disposable Income	9.0	26.9	8.8	23.1	10.7	28.2	10.4	24.5	10.9	26.6	10.7	22.5
Household Income	15.4	66.2	12.5	55.5	17.5	67.7	14.3	57.0	17.0	62.7	13.5	51.7
Equivalentized Household Income	13.4	51.1	12.1	44.4	15.1	52.0	14.0	45.1	14.8	48.3	13.4	41.6
Equivalentized Disp. HH Income	8.3	30.2	9.3	26.0	9.4	31.3	10.4	27.3	9.5	29.2	10.5	25.6
Equiv Disp. HH Income after Housing	3.6	26.5	5.9	22.1	4.1	27.6	6.4	23.5	4.6	25.3	6.6	21.7
Household Wealth (Wave 2 Only)	225.4	468.3	64.0	278.1	202.6	448.0	32.3	261.1	144.9	435.3	13.0	249.9
Household Assets (Wave 2 Only)	273.2	542.7	81.2	351.0	248.0	521.5	48.4	332.6	178.3	507.7	15.4	321.0
Household Debt (Wave 2 Only)	45.8	75.4	0.6	14.5	44.5	73.7	1.0	14.0	33.9	72.1	0.1	12.0

Note:

Tables 4 and 5 present the means and medians of those in poverty and not in poverty for a range of continuous variables. The medians are included here because mean values may be misleading as they are more sensitive to very high and very low incomes. The before-housing measure was used in Table 4 and the after-housing measure in Table 24. The comparison variables were measured in the same year except for the wealth, assets and debt which were collected in wave 2. The tables are arranged in three groups of four columns; the first two groups of columns compare those in poverty and not in poverty in waves 1 and 2; and the third group of columns compares those in poverty in both waves with those not in poverty in both waves.

On the before-housing poverty measure, those in poverty tend to be older with average median ages in the low to mid 50s. These summary statistics hide the cohort differences presented in Table 2, which shows higher levels of before-housing income poverty in the youngest, and two oldest age cohorts. On average, adults from households in poverty have had more children, although the differences are small. There is no difference in the median number of children.

The average occupational status of their present or previous jobs is about 10 score points lower than that for comparison groups. Thus, the group in poverty work, or more accurately have worked, in lower status jobs than the group not in poverty. However, the difference is relatively small considering that this measure of occupational status ranges from zero to 100. There are even smaller differences in socioeconomic origins. The socioeconomic backgrounds of those in poverty are only 3 to 4 score points lower than the comparison groups not in poverty. There is almost no difference in the medians. These results suggest that poverty is not closely associated with socioeconomic background.

Because poverty is measured by income, the mean and median personal, household incomes are much lower for the 'in poverty' group. The equivalized annual disposable incomes of the 'in poverty' groups are very low; \$6,000 to \$8,000 before housing and \$3,800 to \$6,000 after deducting housing costs. They are about one-quarter to one-fifth of the incomes of the comparison groups.

In both waves, the groups defined as in poverty have considerable amounts of wealth, on average between \$200,000 and \$250,000. However, they are only about half as wealthy as the 'not in poverty group'. The group that was in poverty in both years shows substantially less wealth (at around \$190,000), suggesting some running down of assets. Similarly, the 'in poverty' groups have fewer assets than the comparison group, but the differences are not as large as that for income. Incomes differ by a factor of around 5 whereas wealth and assets differ by a factor of two. A surprising result is that the 'in poverty' groups have less debt than the comparison groups. In waves 1 and 2, the mean debt of those in poverty was around \$30,000 compared to over \$70,000 in the comparison groups. The group in poverty in both waves has even less debt at around \$16,000 in wave 2. The median household in poverty has no debt.

With the after-housing measure of income poverty, the age differences are minimal. In wave 2 the group 'in poverty' tends to be slightly younger. This is also true of the smaller group that was in poverty in both waves. As was the case for the before-housing measure, the groups in poverty have had, on average, slightly more children. Similarly, the results for the occupational status of present or previous jobs and parental occupational status are the same as for the before-housing measure. There are no striking differences between before- and after-housing measures on the mean and median incomes of the two groups. The results for wealth, assets and debts are almost identical between the two poverty measures.

Effects on Before-Housing Income Poverty

Table 6 presents the results from analyses of the influences on before-housing income poverty. There are significant gender differences.

In the initial model, gender, age, the number of siblings, Indigenous status, language background and school type account for about 7 per cent of the variation in before-housing poverty. This increases to about 9 per cent with the addition of education but increases more substantially to 16 per cent with the addition of marital status and the number of children. Labour force experience and occupation increase the R square value to 19 per cent, and the addition of wealth increases it very slightly to just over 20 per cent.

Spelling out the odds ratio, the odds for women being in poverty rather than not in poverty are about 1.4 times the odds for men.⁹ This effect is net of the other factors in the initial model (Table 6). Gender differences decrease when controlling for education and marital status. The average education of men is still higher than that of women, and the bulk of sole parents and the widowed are women. Gender differences disappear when controlling for education and marital status. When taking into account occupational status labour market history, the situation is reversed: the odds of men being in poverty are about 1.3 times that for women. So comparing men and women with the same labour market experiences, men are more likely to be in poverty than women. The addition of wealth slightly decreases the difference, but men are more likely to be in poverty than women when taking into account labour market experiences and wealth.

A ten year difference in age increases the odds of being in before-housing income poverty about 1.2 times. Controlling for education, marital status and other factors makes little difference to the age effect.

In the initial model, the number of siblings is associated with increased odds of being in poverty. Compared to having no sibling, one sibling increases the odds of being in poverty by a factor of 1.04, for two siblings 1.08, and for three siblings 1.12. This is a weak effect and disappears when controlling for educational qualifications.

‘Not living with both parents at age 15’ is not associated with before-housing income poverty in wave 2. Analyses of income poverty in wave 1 show significant effects for ‘not living with both parents at age 15’ suggesting some effect.

Table 6: Effects on Income Poverty (Before-housing). Wave 2

	<i>Back-ground</i>	<i>+Educ</i>	<i>+Marital Status</i>	<i>+Work</i>	<i>+Wealth</i>
Intercept	-2.01***	-1.81***	-1.10***	-1.53***	-1.60***
Male	-0.31***	-0.20**	-0.13	0.23*	0.21*
Age	0.22***	0.17***	0.17***	0.20***	0.21***
Number of Siblings	0.04*	0.02	0.01	0.00	0.00
Not with both parents at age 15	0.04	0.03	-0.04	-0.07	-0.07
1 st Language not English	0.61***	0.65***	0.84***	0.65***	0.63***
Indigenous	0.96***	0.91***	0.65**	0.43	0.42
Parental Occ. Status (10s)	-0.05**	0.00	0.00	0.00	0.01
Catholic School	-0.15	-0.09	-0.12	-0.10	-0.08
Independent School	0.13	0.25*	0.27*	0.23	0.26
Post-Graduate Qualifications		-1.14***	-1.06***	-0.57*	-0.53*
Bachelor Degree		-0.88***	-0.90***	-0.51**	-0.51**
Diploma		-0.66***	-0.68***	-0.50**	-0.48*
Advanced Certificate		-0.40**	-0.36*	-0.23	-0.22
Certificate		0.05	0.08	0.05	0.06
<Year 12		0.17	0.15	-0.06	-0.06
Married	.	.	-1.56***	-1.23***	-1.13***
De facto	.	.	-1.29***	-1.02***	-0.97***
Separated	.	.	-0.43**	-0.08	-0.08
Divorced	.	.	-0.52***	-0.18	-0.18
Widowed	.	.	-0.51**	-0.40*	-0.37*
Number of Children	.	.	0.10***	0.05	0.04
Occupational Status (10s)	.	.	.	-0.09***	-0.08***
% Time in Work (10s)	.	.	.	-0.16***	-0.15***
%Time Unemp (1s)	.	.	.	0.01***	0.01**
Wealth (100K)				.	-0.05***
Rescaled R Square	0.06	0.09	0.15	0.20	0.20

Note *** P<0.001, ** 0.001<P<0.01, * 0.01<P<0.05

Those whose first language was not English are more likely to be in poverty. The effects are reasonably large; according to the initial model their odds of being in poverty (rather than not in poverty) are 1.8 times the odds for the comparison group. This effect is net of parental occupational status, type of school attended and other variables in the initial model. This difference remained the same when controlling for other factors. This is a remarkable finding, even when taking into account education, marital status, children, labour force history and wealth, this group were still nearly twice as likely to be in poverty (rather than not in poverty) than those with English-speaking backgrounds.

In the initial model, the effect for being Indigenous was even larger. The odds for the Indigenous group being in poverty rather than not being in poverty, was 2.6 times the odds for

the non-Indigenous group. This effect was much the same when controlling for educational qualifications, decreased more substantially when taking into account marital status and children, and was no longer significant when taking into account labour market history.

In the initial model, parental occupational status was significantly associated with being in poverty. However, the effect is rather weak. A 10 unit increase in parental occupational status decreased the odds of being in poverty by 1.05 times. Comparing the highest possible occupational background with the lowest, medical practitioners (score=100) and agricultural labourers (score=0), also shows that poverty is only weakly associated with occupational background; the odds ratio for this extreme comparison is 1.7, comparable to that for a non-English speaking background and much less than that for a bachelor degree or marriage. The effect of occupational background is not statistically significant when taking into account differences in educational qualifications, so its effect is mediated through educational attainment.

There were no significant relationships between type of school attended and income poverty in wave 2. However in wave 1, respondents who had attended a catholic school were less likely to be in after-housing income poverty than those who attended a government school (Table A 12). However, this effect was barely significant and was no longer significant when controlling for educational attainment.

Educational qualifications have a strong relationship with income poverty. In the model that includes the variables in the initial model and educational qualifications, post-graduate qualifications reduce the odds of being in poverty compared to school completion by 3.1 times, bachelor degrees 2.4 times, diplomas 1.9 times and advanced certificates 1.5 times. These effects are slightly reduced when taking into account marital status, and apart from the advanced certificate, have significant and quite substantial effects when controlling for occupational status, labour market experiences and wealth. In the final model, post-graduate qualifications and degrees reduce the odds of income poverty by about a factor of 1.7. These are strong effects, and indicate that the reduced chances of being in poverty from higher educational qualifications can only be partially attributed to the associations between education with labour market experience, occupational status and wealth.

A certificate appears not to affect the chances of being in income poverty compared to school completion. In wave 2, not completing school was not associated with an increased likelihood of being in poverty although in wave 1, the coefficient was significant at the $P < 0.05$ level. However, its magnitude (0.24) was not much larger than that estimated for wave 2, and it was no longer statistically significant when controlling for labour market experiences.

Marital status has an even stronger relationship with income poverty than educational qualifications. The odds of married persons being in poverty, net of the variables in the initial model and educational qualifications, is 4.8 times less than the odds for single persons. This effect remained large after controlling for labour market experiences and wealth. According to the final model, compared to being single, marriage reduces the odds of being in poverty 3.1 times net of differences in social background, education, occupational status, labour force experiences and household wealth. De facto relationships also reduce the chances of being in poverty. In the final model, being in a de facto relationship reduced the odds of being in poverty 2.6 times.

It should be noted that the effects of marriage and being in a de facto relationship are sensitive to the equivalence scale used. If the older OECD scale was used which assigns a weight of 0.7 to the second adult instead of 0.5, these effects would be weaker. However, the relevant poverty lines would increase by only about \$2,000 so would not change the general conclusion that marriage and de facto relationships strongly reduce the odds of poverty. On the other hand,

if the international equivalence scale were used, the protective effects of marriage and de facto relationships would appear even stronger, since less weight is given to the second adult.

Being separated, divorced or widowed also reduced the odds of being in poverty compared to being single, although not nearly to the same extent as marriage or a de facto relationship. Separation, divorce and widowhood reduced the odds of being in poverty by between 1.5 and 1.7 times, a larger effect than that for gender or occupational background. The effects for the separated and divorced were substantially lower when taking into account labour market experiences. However, widowhood was associated with a reduced risk of poverty even when controlling for wealth.

In the third model comprising the variables in the initial model, education, marital status and children, one child increased the odds of being in poverty 1.1 times. By extension, two children increase the odds by 1.2 times and three children by 1.3 times. So a small number of children do not substantially increase the risk of being in poverty, although many children will. Of course these effects are sensitive to the equivalence scale employed. This effect did not survive further controls, so the number of children has little or no effect on being in poverty once labour market experiences are taken into account.

Respondent's occupational status, either present occupation or if not working, previous occupation was as expected, inversely related to the odds of being in poverty. However, the relationship is not particularly strong. A 10 unit increase in occupational status reduced the odds of being in poverty 1.09 times. A 40 unit difference reduced the odds by about 1.4 times.

Labour market histories had moderate effects on being in poverty. A ten percentage point difference in the time, since leaving full-time education, spent working decreased the odds of being in poverty 1.2 times. A thirty percentage difference changes the odds 1.6 times and a fifty percentage point difference — for example, contrasting those who have worked the entire time since leaving school and those who have worked only half the time — changed the odds 2.2 times. Experience of unemployment increased the odds of being in poverty, although the effect was also not large. A ten percentage point difference in the time spent unemployed since leaving school increased the odds of being in poverty 1.2 times. The effects of labour market histories remained significant when controlling for household wealth.

A \$100,000 increase in wealth reduced the odds of income poverty by only 1.05 times. The odds of households with average levels of wealth (at around \$400,000) being in poverty, were 1.2 times less than that of households with no wealth. A million dollar difference in wealth was associated with a change of odds by a factor of 1.6. This is less than the effects for marriage, de facto relationships, post-graduate qualifications and bachelor degrees. Therefore, the effect of wealth on before-housing income poverty is not particularly strong.

Table 7: Effects on Income Poverty (After Housing). Wave 2

	<i>Back-ground</i>	<i>+Educ</i>	<i>+Marital Status</i>	<i>+Work</i>	<i>+Wealth</i>
Intercept	-1.70***	-1.60***	-0.98***	-1.30***	-1.42***
Male	-0.23***	-0.15*	-0.13	0.21*	0.19*
Age	-0.08***	-0.12***	-0.11***	-0.09**	-0.05
Number of Siblings	0.05***	0.03*	0.02*	0.01	0.00
Not with both parents at age 15	0.14	0.14	0.08	0.03	0.02
1st Language not English	0.40***	0.45***	0.60***	0.36***	0.34***
Indigenous	0.79***	0.73***	0.51*	0.29	0.27
Parental Occ. Status (10s)	-0.03	0.02	0.02	0.02	0.03
Catholic School	-0.11	-0.03	-0.07	-0.04	-0.02
Independent School	0.07	0.18	0.22	0.21	0.25*
Post-Graduate Qualification		-0.92***	-0.85***	-0.50*	-0.44*
Bachelor Degree		-0.68***	-0.69***	-0.40*	-0.40*
Diploma		-0.60***	-0.65***	-0.49**	-0.47**
Advanced Certificate		-0.25*	-0.25	-0.15	-0.14
Certificate		0.18	0.19	0.14	0.16
<Year 12		0.27*	0.24	0.02	0.01
Married	. .		-1.37***	-1.05***	-0.89***
De facto	. .		-1.41***	-1.20***	-1.14***
Separated	. .		-0.15	0.18	0.17
Divorced	. .		-0.45***	-0.14	-0.15
Widowed	. .		-0.83***	-0.76***	-0.75***
Number of Children	. .		0.14***	0.08***	0.08***
Occupational Status (10s)	. .		.	-0.09***	-0.07***
% Time in Work (10s)	. .		.	-0.15***	-0.14***
% Time Unemp (1s)	. .		.	0.01**	0.01**
Wealth (100K)	.		.	.	-0.07***
Rescaled R Square	0.02	0.05	0.12	0.16	0.17

Note *** P<0.001, ** 0.001<P<0.01, * 0.01<P<0.05.

Effects on After-Housing Income Poverty

Table 7 presents the results on after-housing income from an identical regression analysis to that on the before-housing measure. Generally the pattern of effects is very similar, although the effects are a little weaker for many variables which accounts for the lower rescaled R square values.

Gender differences in after-housing income poverty follow the same pattern as for the before-housing measure. Women are more likely to be in poverty in the initial model and when controlling. The odds ratios of women being in poverty (rather than not in poverty) are about

1.2 times that for men. However, once experience in the labour market is taken into account, men are more likely to be poverty than women. However, the effect is not large.

In contrast to the before-housing measure, age is negatively associated with after-housing income poverty. A ten year increase in age decreases the odds of being in income poverty about 1.1 times. For a thirty year difference in age, the odds of being in poverty are reduced by between 1.2 and 1.3 times. These are not large effects but as was concluded from the bivariate analyses, reflect the generally lower housing costs of older households.

The effect for the number of siblings on the after-housing poverty measure is also small, and is reduced further when controlling for education and marital status. The effects for 'first language not English' and 'Indigenous Status' are weaker on the after housing measure. This implies that these two groups have, on average, lower housing costs. The effects for language background are notable. Compared to native English speakers, having a first language other than English increases the odds of being in after-housing poverty 1.4 times, net of differences in education, labour force experiences and wealth.

The weaker effects for educational qualifications on after-housing compared to before-housing poverty suggest that education has a stronger effect on income than on housing costs. However, they are still substantial. Compared to school completion, post-graduate qualifications, bachelor degrees and diplomas reduced the odds of being in after-housing poverty by between 1.5 and 1.6 times, net of labour market experiences, occupational status and household wealth.

Marriage substantially reduces the odds of being in post-housing poverty by income poverty 3.9 times. The effect for being in a de facto relationship is even stronger. These effects for marriage are strong on the before-housing measure but for de facto relationships are stronger on the after-housing measure.

The effect of widowhood on poverty is stronger with the post-housing measure. The odds of widows and widowers being in poverty on the post-housing measure are less than half that for single persons.

In contrast to the analyses of the before-housing measure, the effect of number of children on after-housing income poverty is stronger and remains significant in the final two models. The odds of being in poverty increase by about 1.2 times for each additional child. So, on the after-housing measure, children do increase the odds of being in poverty, reflecting the costs associated with raising children. The discrepancy in the findings for the before- and after-housing measure probably reflects that, on average, households with larger numbers of children have higher housing costs. However, with the exception of households with very large numbers of children, the effects for the number of children are smaller than for marriage suggesting that the reason that sole parents are more often in poverty, has more to do with not being in a couple than having children.

Wealth has a stronger influence on after-housing than before-housing poverty. This reflects the fact that about half of household wealth in Australia is tied up in housing. As was the case for the before-housing measure, the effects of wealth on poverty are only comparable with that of qualifications and marital status when large differences in wealth are being compared.

4. SUBJECTIVE POVERTY

Subjective poverty is an understudied aspect of poverty. The rationale for examining subjective poverty is that people's own knowledge of their financial situation should be given some credit.

The percentage of households which describe themselves as poor or very poor is small: 5.3 per cent according to wave 1 in HILDA and 4.5 per cent in wave 2. The proportion that indicated they were 'poor' or 'very poor' in both waves was only 2.1 per cent (Table 8). The small percentage seeing themselves in poverty in both waves reflects the only moderate stability of respondents' judgements of their level of prosperity (see Table 16).

Bivariate Relationships

The incidences of subjective poverty by social groups are presented in Table 8. Men are more likely to indicate they are in poverty ('poor' or 'very poor') than women, contrasting with the higher rates of women in before- and after-housing income poverty (see Table 2 and Table 3). Subjective poverty does not show the strong age differences apparent in before-housing poverty income. Compared to older cohorts, the youngest age cohort were more likely to say they were poor in wave 1 but not in wave 2, and the percentage of the youngest cohort indicating they were in poverty in both waves is lower than the average for all cohorts. Generally, there is little difference among cohorts except that the level of subjective poverty among the oldest cohort is very low, less than 2 per cent each year and less than 1 per cent in both years.

As was the case for income poverty, subjective poverty is highest among lone parents. In wave 1, 13.0 per cent of lone parents saw themselves as 'poor' or 'very poor' and 9.6 per cent in wave 2. However, even among lone parents, feeling 'poor' is often transitory; only 4.5 per cent of lone parents saw themselves in poverty for both waves. Despite the considerable financial outlays involved in bringing up children, very few couples with young children see themselves as poor, 3.1 per cent in wave 1, 2.3 per cent in wave 2 and less than 1 per cent in both waves. Slightly higher percentages of couples with older children (15 and older) judge themselves as 'poor' or 'very poor'. Single person and other (usually shared) households are more likely to indicate they are in poverty than couple households.

Marriage is associated with lower levels of subjective poverty. Less than 3 per cent of those legally married saw themselves in poverty each year and only 1 per cent in both years. This contrasts with 5.2 and 4.7 per cent of the divorced and separated groups. Low levels of subjective poverty were also observed among persons in de facto relationships. Subjective poverty among those who have never married and not in a de facto relationship is only a little lower than that among divorcees and the separated.

Education is also associated with subjective poverty. Subjective poverty tends to be highest among those who did not complete school. It is lowest amongst the groups with bachelor degrees or post-graduate qualifications. However, the differences in subjective poverty across education levels do not appear as great as that for the before- and after-income poverty measures.

Labour force status shows a strong relationship with subjective poverty. Nearly one-fifth of the unemployed see themselves in poverty compared to less than 3 per cent of full-time workers. Subjective poverty among part-time workers is only slightly higher at around 4 per cent. The group not in the labour force but marginally attached shows moderate levels of subjective poverty, whereas the NILF not marginally attached group shows much lower levels of

subjective poverty. Subjective poverty is very low among those who work full-time and only a little higher among full part-time workers.

Table 8: Percentages in Subjective Poverty (Poor and Very Poor) by Demographic and other Factors

<i>Characteristic</i>	<i>Wave 1</i>	<i>Wave 2</i>	<i>Waves 1 & 2</i>
All	5.3	4.5	2.0
Gender			
Male	5.9	5.1	2.6
Female	4.8	4.2	1.5
Age Group			
18-24	7.2	4.4	2.3
25-34	4.7	4.8	1.9
35-44	6.2	6.3	2.8
45-54	5.5	4.1	1.6
55-64	6.3	6.1	3.2
65-70	4.6	2.3	0.3
>70	1.9	1.4	0.7
Household Type			
Couple without Children	2.9	2.2	0.9
Couple with Children 15 or younger	3.1	2.7	0.9
Couple with Children older than 15	2.7	4.2	1.3
Lone Parent	13.0	9.5	4.5
Single Person	7.6	7.2	3.6
Other	6.9	4.6	2.2
Marital Status			
Legally Married	2.6	2.4	0.8
De facto	5.1	5.2	2.0
Separated	11.0	9.2	4.3
Divorced	13.0	10.9	5.3
Widowed	2.5	1.7	0.8
Never married and not de facto	9.6	8.2	4.2
Education Level			
<Year 12	6.6	5.9	2.5
Year 12	4.8	4.5	2.0
Certificate	6.5	5.4	1.9
Adv Certificate	6.3	4.4	2.2
Diploma/Adv Diploma	4.0	3.7	1.7
Bachelor	3.3	2.6	1.0
Post-Graduate	2.1	2.9	1.6
Labour Force (LF) Status			
Working Full-time	2.4	2.2	1.0
Working Part-time	4.3	4.7	2.2
Unemployed, looking for ft work	19.5	18.2	6.0
Unemployed, looking for pt work	20.4	10.7	8.3
Not in the LF marginally attached	13.6	11.8	4.6
Not in the LF not marginally attached	6.3	5.1	2.2

Table 9: Characteristics of Households in and Not in Subjective Poverty (Poor and Very Poor).

<i>Factor</i>	<i>Wave 1 (2001)</i>				<i>Wave 2 (2002)</i>				<i>Wave 1 and 2</i>			
	<i>Means</i>		<i>Medians</i>		<i>Means</i>		<i>Medians</i>		<i>Means</i>		<i>Medians</i>	
	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>	<i>Poverty</i>	<i>Not</i>
Age	45.1	47.8	44.0	46.0	44.1	48.0	42.0	46.0	44.7	48.4	43.0	47.0
Number of children	2.1	2.0	2.0	2.0	1.8	1.9	2.0	2.0	1.8	1.9	2.0	2.0
Occupational Status	35.9	44.2	31.7	39.5	36.0	44.3	32.1	39.5	37.6	44.2	33.7	39.5
Parental Occupational Status	39.6	41.6	39.5	40.5	39.9	42.1	37.3	40.5	39.8	42.1	40.5	40.6
Personal Income	18.8	31.2	12.0	24.3	17.7	33.7	13.1	26.1	16.6	33.3	12.6	25.6
Personal Disposable Income	15.8	24.2	11.9	20.4	15.3	26.0	12.9	21.7	14.6	25.6	12.6	21.2
Household Income	30.1	58.3	21.7	47.8	30.2	60.8	22.3	49.3	23.3	59.9	17.6	48.1
Equivalentized Household Income	25.2	45.2	20.4	38.8	25.4	46.8	20.4	39.7	20.5	46.2	17.2	38.8
Equivalentized Disp. HH Income	16.2	26.8	12.7	23.1	16.7	28.3	13.8	24.7	14.7	27.9	12.5	24.3
Equiv Disp. HH Income after Housing	12.2	23.0	9.7	19.6	12.6	24.4	10.6	20.8	10.7	24.1	9.2	20.6
Household Wealth (Wave 2 Only)	99.6	447.2	21.8	262.3	107.5	429.8	32.3	244.0	71.3	428.9	11.5	247.0
Household Assets (Wave 2 Only)	124.1	519.0	34.1	333.5	133.5	500.3	57.1	314.0	91.8	497.9	21.4	317.0
Household Debt (Wave 2 Only)	24.5	72.7	3.5	10.5	31.3	70.8	3.7	11.0	20.5	69.1	4.0	10.5

Table 9 presents the means and medians for the groups who judged themselves as ‘poor’ or ‘very poor’ and those who did not.

On average those who see themselves as poor are slightly older. This is because the level of subjective poverty among 35 to 64 year olds is slightly higher than for the other age cohorts. It is not because the oldest age group judges themselves as poor.

There is no consistent relationship between subjective poverty and the number of children. In wave 1 the subjective poverty group had a slightly higher mean level of children while in wave 2, a lower average number of children. The median numbers of children are identical for both waves.

Differences in occupational status are very similar to the differences observed for before- and after-housing income poverty; the average occupational status of the in poverty group are about 10 units lower than the comparison groups. As was found for income poverty, the group in subjective poverty in both waves do not have a particularly low occupational status. Subjective poverty is not closely associated with socioeconomic background; there are only small differences in mean and median parental occupational status.

There are only small differences in socioeconomic origins. The socioeconomic backgrounds of those in poverty are only 3 to 4 score points lower than the comparison groups not in poverty. There is almost no difference in median occupational background. These results indicate that poverty is not closely associated with socioeconomic background.

Subjective poverty is more strongly associated with income. Mean and median personal, household incomes are much lower in the subjective poverty groups. Their mean household income was about \$30,000 compared to about \$60,000 for the comparison group. The equivalized annual disposable incomes of the ‘in poverty’ groups was about \$16,000 compared to about \$27,000 for not in poverty groups. The income differences are, of course, smaller than that for income poverty, since income poverty is defined by household income. The mean and median equivalized incomes of the group in subjective poverty in both waves were about \$2,000 lower than that for the group in subjective poverty only in wave 2.

Household wealth is more strongly associated with subjective poverty than income poverty. The average wealth of the subjective poverty group in wave 1 was about \$100,000 and in wave 2 \$107,000. The comparative figures for income poverty are around \$240,000 and \$270,000. The small group in subjective poverty in both years had a mean household wealth of \$71,000 less than half that of the group that was in income poverty in both years. Mean household wealth of the subjective poverty groups is about a quarter that of comparison groups. Median wealth differences are even larger. In contrast, income differences for subjective poverty are much less than that for income poverty. Therefore, judgements about whether one is in poverty are to a large extent influenced by household wealth.

Interestingly, the subjective poverty group is not characterized by large debt. The average debt of these groups is consistently smaller than that of the comparison groups.

Table 10: Effects on Subjective Poverty (Poor and Very Poor). Wave 2

	<i>Back-ground</i>	<i>+Educ</i>	<i>+Marital Status</i>	<i>+Work</i>	<i>+Income & Wealth</i>
Intercept	-3.38***	-3.69***	-3.18***	-3.36***	-4.12***
Male	0.21	0.27*	0.29*	0.39*	0.40*
Age	-0.16***	-0.20***	-0.14*	-0.09	0.01
Number of Siblings	0.06*	0.05*	0.04	0.03	0.03
Not with both parents at age 15	0.62***	0.62***	0.51**	0.48**	0.47*
1st Language not English	0.21	0.30	0.47**	0.33	0.22
Indigenous	0.80*	0.75*	0.51*	0.32	0.20
Family Occ. Status (10s)	-0.04	0.00	0.01	0.02	0.03
Catholic School	-0.33	-0.23	-0.27	-0.21	-0.21
Independent School	-0.24	-0.10	-0.07	-0.18	-0.12
Post-Graduate Quals		-0.13	-0.07	0.26	0.44
Bachelor Degree		-0.38	-0.37	-0.06	0.01
Diploma		0.12	0.05	0.26	0.33
Advanced Certificate		0.19	0.16	0.22	0.27
Certificate		0.47	0.44	0.29	0.32
<Year 12		0.68*	0.65**	0.47	0.43
Married	.	.	-1.43***	-1.26***	-0.78***
De facto	.	.	-0.55*	-0.49*	-0.19
Separated	.	.	-0.09	0.06	-0.03
Divorced	.	.	0.26	0.37	0.40
Widowed	.	.	-1.69***	-1.74***	-1.58***
Number of Children	.	.	0.13**	0.10*	0.08*
Occupational Status (10s)	.	.	.	-0.09*	-0.02
% Time in Work (10s)	.	.	.	-0.09***	-0.05
% Time Unemp (1s)	.	.	.	0.02***	0.02***
Wealth (100K)				.	-0.24***
HH Equiv. Disp. Income (10K)					-0.03***
Rescaled R Square	0.03	0.04	0.11	0.13	0.18

Note *** P<0.001, ** 0.001<P<0.01, * 0.01<P<0.05.

Effects on Subjective Poverty

Table 10 presents the results from analyses of the influences on subjective poverty in wave 2. The results for identical analyses of subjective poverty in wave 1 are presented in the appendix (Table A 14). The modelling procedure is the same as that for income poverty except that the final model includes household equivalized disposable income. Details on the measures used, the modelling procedure and the interpretation of the coefficients are presented in the previous chapter.

The extent that these variables account for differences in subjective poverty in wave 2, is generally less than that for before-housing income poverty, but comparable to that for the after-housing measure. Social background factors account for only about 2 per cent of the variation in subjective poverty. The addition of educational qualifications increases this figure very marginally to 3 or 4 per cent, and a more substantial increase is found to around 11 per cent with the addition of marital status and the number of children. Occupational status and experiences in the work force add little, while a substantial increase to around 18 per cent is found with the addition of wealth and equivalized disposable household income. The same pattern is found for wave 2 (Table A 14).

Men are more likely to judge themselves as 'poor' or 'very poor' than women. In the initial models, the effects are not particularly large; the odds of men seeing themselves in poverty are about 1.2 times the odds for women. However, the odds ratio increases to around 1.6 with the inclusion of occupational status and labour market experiences. Therefore men's judgements of subjective poverty are more sensitive to their position in the labour market. The addition of wealth and income does not change the gender difference. In the final two models, gender differences for subjective poverty are greater than that for income poverty.

In the initial model, a ten year increase in age decreases the odds of subjective poverty by about 1.2 times. The effect does not change substantially when controlling for education, but declines with the addition of marital status and children. There are no significant age differences after controlling for occupational status and labour market experiences. This result implies that age differences in subjective poverty can to a large extent be attributed to differences in labour market experience.

The number of siblings was associated with increased odds of subjective poverty. Compared to having no sibling, one sibling increases the odds of subjective poverty by a factor of 1.06, and for two siblings 1.12. As was the case for income poverty, this effect is weak and becomes not statistically significant when controlling for educational qualifications and marital status.

In wave 2 'Not living with both parents at age 15' was associated with subjective poverty. In wave 1 the effects just failed to reach statistical significance ($P=0.055$ for the initial two models). In wave 2, this effect was reasonably large. In the initial model, not living with both parents at age 15 increased the odds of subjective poverty by about 1.8 times. The effect remained significant with the addition of other variables. According to the final model, the odds ratio was about 1.6.

In wave 2 a non-English speaking background was not significantly associated with subjective poverty with the exception of the third model. In contrast, analyses of wave 1 suggest that this group are more likely to see themselves in subjective poverty. The inconsistency can be attributed to the small sample sizes for the non-English speaking background and subjective poverty groups.

Such inconsistency was also apparent for the Indigenous group where significant effects were found in wave 2 but not for wave 1. In wave 2, the odds for Indigenous Australians being in subjective poverty was 2.2 times the odds for non-Indigenous Australians. As was the case for income poverty, the effect was not significant when controlling for occupational status and labour market experiences.

Family occupational status and type of school attended were not associated with subjective poverty in either wave.

Educational qualifications have a much weaker influence on subjective poverty than on income poverty. For before-housing income poverty, the effects for post-graduate, bachelor and diploma qualifications were large. On the after-housing measure they were smaller but still

substantial. In contrast, these qualifications had no effect on subjective poverty. (The exception was post-graduate qualifications in wave 1). However, non-completion of school was associated with a sizable increase in the odds of subjective poverty. The odds for non-completers indicating they were 'poor' or 'very poor' were almost twice that for school completers. This difference was not significant in wave 2 when taking into account differences in occupational status and labour market experiences.

As was the case for income poverty, marital status was strongly associated with subjective poverty. Marriage reduced the odds of subjective poverty by about 4 times. This effect declined only marginally to 3.5 times when controlling for occupational status and labour market experiences. The effect for marriage was still substantial (an odds ratio of 2.2) when controlling for wealth and income. The effect for being in a de facto relationship was weaker although still substantial. The odds of this group being in subjective poverty were about 1.7 times less than that for single persons. In wave 2, the effects for a de facto relationship disappeared when controlling for wealth and income.

Widows and widowers are particularly unlikely to judge themselves as in poverty. The effects for widowhood were large with odds ratios around five. This effect for subjective poverty was much larger than that for income poverty and did not decline substantially with the addition of control variables.

Children are associated with subjective poverty. Each child increased the odds of subjective poverty slightly by about 1.1 times. Obviously, a large number of children will substantially increase the likelihood of subjective poverty; 1, 2 or 3 children do not have a large impact.

Higher status occupations in the present or previous job reduced the odds of subjective poverty. Its effects were of a similar magnitude to its effects on income poverty; reducing the odds by about 1.1 times for each 10 unit difference in the occupational status scale. As expected, lower occupational status jobs are associated with subjective poverty, although the relationship is not particularly strong. When controlling for income and wealth, its effect on subjective poverty is no longer statistically significant, suggesting that its influence is mediated through these variables.

The effect of experience in the work force on subjective poverty is about half its effect on income poverty. Its effect is not significant when controlling for wealth and income. In contrast, the effect of time unemployed on subjective poverty is similar to its effect on income poverty and survives controls for income and wealth. Therefore, subjective evaluations of poverty are more sensitive to experiences of unemployment than time spent working.

Confirming the bivariate analyses presented in the previous section, subjective poverty is sensitive to household wealth. A \$100,000 difference in wealth decreases the odds of subjective poverty 1.4 times. A \$200,000 difference 1.9 times. The coefficient for wealth on subjective poverty is about 5 times the size of the coefficient for before-housing income poverty.

Equivalent household disposable income also affects subjective poverty, but much more weakly than wealth. A \$10,000 difference changes the odds 1.03 times, a \$20,000 difference 1.06. A \$100,000 difference in equivalized disposable income — a very large difference — changes the odds about 1.3 times, much less than that for marriage or widowhood.

5. FINANCIAL STRESS

This chapter follows the same structure as the two previous chapters. The first section describes the relationships of financial stress with a variety of demographic, socioeconomic and economic variables. The following section models financial stress in order to identify the factors with the strongest effects.

Financial stress was defined by two or more incidences of cash-flow problems in a single year. This follows from the ABS's analysis of HES in which moderate stress was defined by two to four cash flow problems (from a slightly larger pool of items). Under this definition 17.9 per cent of households were in financial stress in wave 1, 15.8 per cent in wave 2 and 10.4 per cent in both waves (Table 11).

Bivariate Relationships

There was only a weak relationship between gender and financial stress, with males showing slightly lower levels of financial stress. Gender differences on financial stress are much smaller than gender differences in income poverty or subjective poverty.

Financial stress is substantially more common among young people. In wave 1, 44 per cent of 18 to 24 year olds had experienced two or more cash flow problems. In wave 2 the comparable figure was 38 per cent. About a quarter of this age cohort were in financial stress in both waves. In each older age cohort, financial stress is less common. In the oldest cohort, only 5 per cent had two or more incidences of financial stress in a single year and less than two per cent in both years. The relationship between age and financial stress is very different to that between age and income or subjective poverty. The oldest cohort showed the highest incidence of before-housing income poverty and higher than average levels of after-housing income poverty. For subjective poverty, there were no clear age cohort differences.

Financial stress is particularly high in lone parent households. In wave 1, 42 per cent of lone parent households had two or more cash flow problems. For wave 2, the comparable figure was 34 per cent and about a quarter were in financial stress in both years. Financial stress was lowest (around 10 per cent) among couple households without children and couple households with children older than 15.

Financial stress varied with marital status. Financial stress was around 10 per cent among those married, substantially higher among those in de facto relationships. It was higher again among the separated and divorced and particularly among singles. Annually about 30 per cent of this group were in financial stress. Financial stress was particularly low among widows and widowers.

The incidence of financial stress among school non-completers, school completers and certificate holders was similar. About 20 per cent of these groups had two or more cash flow problems each year and over 10 per cent in both years. This pattern is similar to that for subjective poverty but is different to that for income poverty, which was much higher among school non-completers than the other groups. Financial stress was lower among those with diplomas, lower again among degree holders and lowest amongst those with post-graduate qualifications.

Financial stress is highest among the unemployed. In wave 1 about 45 per cent of the unemployed were in financial stress and in wave 2, around 50 per cent. This contrasts with about 15 per cent of full-time workers and nearly 20 per cent of part-time workers. Financial stress was low among the group not in the labour force and not marginally attached to the

labour force, but substantially higher among the NILF marginally attached group. Of all groups examined, the unemployed showed the highest incidence of financial stress in both years.

Table 11: Percentage in Financial Stress (Two or more Incidences) by Demographic and other Characteristics

	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 1 and Wave 2</i>
All	18.2	16.1	9.9
Gender			
Male	17.0	15.1	8.9
Female	19.1	16.8	10.7
Age Group			
18-24	44.2	37.8	26.8
25-34	27.0	24.1	16.6
35-44	21.3	19.5	13.6
45-54	14.7	13.8	7.2
55-65	11.1	9.0	5.5
65-70	7.7	5.4	0.6
>70	5.2	4.6	1.4
Household Type			
Couple without Children	9.9	8.4	3.3
Couple with Children 15 or younger	16.9	16.0	9.8
Couple with Children older than 15	8.8	9.5	5.8
Lone Parent	42.0	34.4	25.6
Single Person	20.4	19.3	13.0
Other	31.8	23.0	11.3
Marital Status			
Legally married	10.1	9.1	4.7
De facto	25.7	25.4	16.8
Separated	36.6	31.2	22.5
Divorced	30.7	24.5	16.4
Widowed	6.6	6.3	3.1
Never married and not de facto	34.2	30.0	20.6
Education Level			
<<Year 12	20.3	15.9	10.4
Year 12	22.7	21.5	13.4
Certificate	24.3	19.4	12.9
Adv Certificate	19.3	18.5	11.7
Diploma/Adv Diploma	15.6	14.2	8.7
Bachelor	13.2	12.3	6.5
Post-Graduate	6.2	7.2	2.2
Labour Force (LF) Status			
Employed Full-time	15.3	13.5	7.9
Employed Part-time	19.8	17.8	10.9
Unemployed, looking for ft work	45.5	51.4	36.9
Unemployed, looking for pt work	44.6	49.4	34.8
Not in LF marginally attached	37.4	28.5	21.3
Not in LF not marginally attached	13.7	12.1	6.9

Table 12: Characteristics of Households in Financial Stress (Two or more Incidences) compared to those not in Financial Stress.

<i>Factor</i>	<i>Wave 1 (2001)</i>				<i>Wave 2 (2002)</i>				<i>Wave 1 or 2</i>			
	<i>Means</i>		<i>Medians</i>		<i>Means</i>		<i>Medians</i>		<i>Means</i>		<i>Medians</i>	
	<i>Fin Stress</i>	<i>Not</i>	<i>Fin Stress</i>	<i>Not</i>	<i>Fin Stress</i>	<i>Not</i>	<i>Fin Stress</i>	<i>Not</i>	<i>Fin Stress</i>	<i>Not</i>	<i>Fin Stress</i>	<i>Not</i>
Age	39.2	49.6	37.0	48.0	39.3	49.6	37.0	48.0	37.8	49.6	36.0	48.0
Number of children	1.9	2.0	2.0	2.0	1.7	1.9	2.0	2.0	1.8	2.0	2.0	2.0
Occupational Status	36.9	45.2	32.8	39.6	37.6	45.0	34.7	39.9	36.7	44.8	32.2	39.6
Parental Occupational Status	40.5	41.6	39.5	40.6	40.8	42.2	39.5	40.6	39.8	42.2	37.3	40.6
Personal Income	21.9	32.4	17.8	25.1	24.0	34.6	18.9	27.0	22.3	34.0	17.9	26.1
Personal Disposable Income	18.1	25.0	16.3	21.1	19.5	26.5	17.5	22.3	18.4	26.1	16.9	21.7
Household Income	39.6	60.5	32.0	50.5	41.0	62.6	32.0	51.1	36.1	61.4	29.1	50.1
Equivalentized Household Income	32.2	46.7	26.9	40.7	33.0	48.1	27.2	41.3	29.4	47.3	24.5	40.4
Equivalentized Disp. HH Income	19.4	27.7	16.7	24.1	20.5	29.1	17.0	25.4	18.7	28.6	15.2	25.0
Equiv Disp. HH Income after Housing	14.8	24.0	12.6	20.5	15.6	25.3	13.1	21.8	13.8	24.9	11.6	21.3
Household Wealth (Wave 2 Only)	138.1	489.9	40.8	302.7	142.3	464.8	34.0	275.7	93.5	455.4	16.2	271.7
Household Assets (Wave 2 Only)	180.0	564.8	67.0	370.0	190.2	536.8	59.3	345.7	129.5	526.5	29.5	342.0
Household Debt (Wave 2 Only)	43.8	75.6	9.0	10.0	46.9	72.9	9.1	10.5	38.6	70.9	8.0	10.5

Note:

Table 12 presents the means and medians for the groups in and not in financial stress defined by two or more cash flow problems in a single year.

The cohort analysis in Table 11 showed that financial stress was more common among younger cohorts. This is reflected in the younger mean and median ages of the financial stress groups compared to the comparison groups.

There are not substantial differences between the financial stress and comparison groups in the number of children.

The mean occupational status of the financial stress groups are about 8 to 10 score points lower than for the comparison groups. This result is similar to the occupational status differences for subjective poverty but less than the occupational status differences found for income poverty. There is little difference in parental occupational status, consistent with the findings for the other measures of financial disadvantage.

Households with two or more incidences of financial stress have lower mean and median incomes than comparison groups. However, the income differences for financial stress are lower than that for subjective poverty and much lower than that for income poverty. For example, in wave 1 the mean household income of the financial stress group was around \$40,000 compared to about \$60,000 for the not in financial stress group. The comparable figures for subjective poverty are \$30,000 and \$60,000 and for after-housing income poverty, \$11,000 and \$65,000. The same pattern was observed for the other income measures. The equivalized disposable income of households in financial stress in wave 1 was \$19,000 compared to \$16,000 for the subjective poverty group. These findings indicate that household income has less to do with financial stress than subjective poverty.

Similarly, household wealth is less strongly associated with financial stress than subjective poverty. The average wealth of households in financial stress in wave 1 was about \$138,000 and in wave 2 \$142,000, compared to \$100,000 and \$107,000 for subjective poverty. However, the wealth of households in financial stress is considerably less than households in income poverty. (The comparable figures for before-housing poverty are \$239,000 and \$243,000. Therefore, financial stress is more strongly associated with lower levels of wealth than income poverty, but not to the same degree as subjective poverty.

Households in financial stress have larger average debt than households in income or subjective poverty. In wave 1, the mean debt of financial stress households was \$43,800 compared to mean debts of \$24,500 and \$30,500 for the subjective and income poverty groups. A similar pattern was found for wave 2. Therefore, part of the reason why households experience incidences of financial stress is because of loans or other debts.

Households experiencing financial stress tend to have higher incomes and larger debts than households in subjective or income poverty.

Effects on Financial Stress

This section discusses the results obtained from logistic regression analyses on two or more incidences of financial stress. The models and procedures are identical to those used for subjective poverty in the last chapter. The measures and interpretation of the coefficients are presented in the methods chapter. The coefficients for wave 2 are presented in Table 13 and for wave 1 in Table A 15 in the appendix.

The initial model comprising social background variables accounted for more variation in financial stress than in income or subjective poverty. The adjusted R square value for wave 2 was 11 per cent compared to 3 per cent for subjective poverty and 6 per cent for before-income housing. The greater explanatory power can be attributed to the stronger effect of age on financial stress.

Table 13: Effects on Financial Stress (Two or more Incidences). Wave 2

	<i>Back-ground</i>	<i>+Educ</i>	<i>+Marital Status</i>	<i>+Work</i>	<i>+Income & Wealth</i>
Intercept	-1.87***	-1.84***	-1.55***	-1.68***	-2.08***
Male	-0.08	-0.09	-0.04	0.03	0.04
Age	-0.46***	-0.48***	-0.49***	-0.45***	-0.36***
Number of Siblings	0.06***	0.05**	0.04*	0.03	0.02
Not with both parents at age 15	0.20	0.21	0.12	0.10	0.09
1st Language not English	0.07	0.15	0.32**	0.25*	0.17
Indigenous	0.75***	0.71**	0.45	0.31	0.22
Parental Occ. Status (10s)	-0.06***	-0.02	-0.02	-0.01	-0.01
Catholic School	-0.17	-0.08	-0.12	-0.06	-0.04
Independent School	-0.18	-0.07	-0.03	-0.09	-0.05
Post-Graduate Quals		-0.86***	-0.77***	-0.46*	-0.28
Bachelor Degree		-0.56***	-0.53***	-0.25	-0.14
Diploma		-0.17	-0.21	-0.02	0.07
Advanced Certificate		0.15	0.13	0.15	0.21
Certificate		0.11	0.07	-0.04	-0.03
<Year 12		0.20	0.15	0.00	-0.03
Married	.	.	-1.25***	-1.09***	-0.75***
De facto	. .	.	-0.33*	-0.27***	0.01
Separated	. .	.	0.11	0.24	0.21
Divorced	. .	.	0.13	0.23	0.26
Widowed	. .	.	-0.84***	-0.82***	-0.74**
Number of Children	. .	.	0.19***	0.17***	0.15***
Occupational Status (10s)	. .	.	.	-0.08***	-0.03
% Time in Work (10s)	. .	.	.	-0.06***	-0.02***
% Time Unemp (1s)	. .	.	.	0.02***	0.02***
Wealth (100K)				.	-0.12***
HH Equiv. Disp. Income (10K)				.	-0.03***
Rescaled R Square	0.11	0.12	0.19	0.21	0.26

Note *** P<0.001, ** 0.001<P<0.01, * 0.01<P<0.05.

The explanatory power of the model increased marginally (12 per cent in wave 2 and 15 per cent in wave 1) with the addition of educational qualifications. Marital status and the number of children produced a larger increase to around 19 per cent in wave 2 and 24 per cent in wave 1. Occupational status and labour experiences did not substantially increase the explanatory power of the model. The final model which included income and wealth, accounted for about 26 per cent of the variation in financial stress in wave 2 and 30 per cent in wave 1. The final model was better at predicting financial stress than income or subjective poverty.

There were no statistically significant gender differences in any of the models of financial stress in either wave. In contrast, women were more likely to be in income poverty (until controls were included for labour market experiences) and men were more likely to say they were 'poor' or 'very poor'.

Confirming the bivariate analyses, age has a much stronger effect on financial stress than it has on income or subjective poverty. In the model, a ten year increase in age decreases the odds of financial stress 1.6 times. A thirty year age increase decreases the odds of financial stress 3.9 times. The effect for age does not change substantially until the addition of wealth and income. Even so the effect is still substantial; a 10 year increase in age decreases the odds of financial stress 1.4 times and a 30 year difference 3.0 times. Therefore, younger households are more likely to experience financial stress, even when taking into account differences in occupational status, work experiences, income and wealth.

As was found for income and subjective poverty, the number of siblings is weakly associated with financial stress. Compared to having no sibling, one sibling increases the odds of financial stress by a factor of 1.06, and for two siblings 1.12. The effect was not significant after controlling for occupational status and work experiences.

In wave 2, 'Not living with both parents at age 15' was not associated with financial stress. However, it just failed to reach statistical significance in the two initial models. In wave 1 it had statistically significant effects in these two models. 'Not living with both parents at age 15' increased the odds of financial stress 1.2 times.

A non-English speaking background was significantly associated with financial stress only in the third and fourth models after controlling for marital status. It is not clear why the effect becomes significant when controlling for marital status and children. This also occurred for the third model in analysis of the wave 1 data, which is based on a different group of reference persons.

Indigenous status increased the odds of financial stress 2.1 times in the initial model in both waves. The magnitudes of the effect for Indigenous status on the four measures of financial disadvantage are very similar. Also the effects show a similar pattern; in the initial model the effect was reasonably large with a coefficient around 0.80, declined slightly with the addition of educational qualifications, declined more substantially with the addition of marital status and children and was not significant when controlling for occupational status and labour market experiences. These results indicate that financial disadvantage among Indigenous Australians would be reduced if their occupational status and labour participation was more similar to that of non-Indigenous Australians.

Parental occupational status was only weakly associated with financial stress. The effect was of a similar magnitude found in relation to before-housing income poverty. Type of school attended was not associated with financial stress.

Financial stress is more common among the less educated. A post-graduate qualification reduced the odds of financial stress 2.3 times and a degree 1.8 times. There were differences between other educational levels and school completion. The effects for post-graduate and degree qualifications declined substantially when controlling for the labour market variables and neither had significant effects in the final model.

As was the case for the other measures of financial disadvantage, marriage strongly reduces the odds of financial stress. Compared to single persons, marriage reduced the odds of financial stress 3.5 times. Its effect was smaller when controlling for occupational status and work experiences and further reduced with the addition of wealth and income. However, in the final model marriage reduced the odds of financial stress 2.1 times. This is a large effect considering it is net of differences in wealth and income between married and single persons. The effect of a de facto relationship on financial stress was much weaker especially in wave 2. In contrast, being in a de facto relationship had only a slightly smaller effect than marriage on income poverty. Therefore, a de facto relationship more strongly reduces the likelihood of income poverty than financial stress.

Widow and widowers are less likely to experience financial stress. Compared to never married and not de facto single persons, widowhood reduced the odds of financial stress 2.3 times. This effect did not decrease with the addition of the labour market variables and in the final model, income and wealth.

Children substantially increased the odds of financial stress. Each additional child increased the odds of subjective poverty slightly by about 1.2 times. In wave 1 the effect is larger; one additional child increasing the odds of financial stress 1.3 times. These effects for the number of children on financial stress are greater than its effects on the two measures of income poverty and subjective poverty. Therefore, children are more closely associated with financial stress than income or subjective poverty. Children involve unanticipated expenses which may lead to financial stress.

Higher occupation status reduced the odds of financial stress. Its effects were of a similar magnitude to its effects on income and subjective poverty; reducing the odds by about 1.1 times for each 10 unit rise in occupational status. Its effect was not significant when controlling for income and wealth.

Experience working has weaker effects on financial stress than it does on income poverty. The estimated coefficient was -0.06 for financial stress compared to around -0.15 for income poverty. Therefore, a 10 percentage point increase in time spent working reduced the odds of financial stress 1.06 times compared to around 1.2 times for income poverty. The comparable odds ratios for a 50 percentage point difference are 1.3 and 2.1. Therefore, work experience has a substantial influence on subsequent income poverty but has a substantially weaker influence on financial stress.

The effect of time spent unemployed on financial stress was similar to its effects on income poverty and subjective poverty. Although the size of the coefficient is of a similar magnitude to that for work experience — the coefficient for a ten percentage point difference was 0.20 — it is relevant to only a small proportion of persons. About 75 per

cent have had no experience of unemployment. Of those who had experienced unemployment, 90 per cent had been unemployed for less than 10 per cent of the time since leaving school and 3 per cent had been unemployed for more than 30 per cent of the time since leaving school. For this small minority, the odds of financial stress are 1.8 times that for those who have spent no time unemployed. This effect is similar to that for marriage. So experience of unemployment does increase the odds of financial stress, as well as the odds of income and subjective poverty, but a relative short time spent unemployed does not have strong detrimental consequences.

The effect of wealth on financial stress is stronger than its effects on income poverty but weaker than its effect on subjective poverty. A \$100,000 increase in wealth reduces the odds of financial stress 1.1 times and a \$400,000 difference 1.6 times. So its effect is weaker than expected, indicating that financial stress is not unknown in wealthy households.

Equivalent household disposable income has similar effects on financial stress as it does on subjective poverty. Its effect is surprisingly small; a \$10,000 difference changes the odds 1.03 times, and a \$100,000 difference in equivalized disposable income changes the odds about 1.3 times. So financial stress is not closely associated with disposable income.

6. INTER-RELATIONSHIPS BETWEEN INDICATORS

This chapter summarizes the inter-relationships between income poverty, subjective poverty and financial stress. The first section examines the inter-relationship between the two measures of income poverty, the second section focuses on the correspondence of each measure across the first HILDA waves and the third section examines the proportions financially disadvantaged on two or three indicators in each wave and in both waves.

Inter-Relationships between Before- and After-Housing Income Poverty

The correspondence between the two measures of income poverty is by no means perfect. Of individuals classified as in poverty on the before-housing measure in wave 1, 84 per cent were also classified as in poverty on the after-housing measure. For wave 2, this figure was 83 per cent. This result reflects that adjusting for housing costs substantially changes the ranking of equivalized disposable incomes. The correspondence in the other direction is weaker, since a substantially smaller proportion is classified as in poverty on the before-housing measure than on the after housing measure. Of individuals classified as in poverty on the after housing measure in wave 1, 65 per cent were also classified as in income poverty on the before-housing measure. For wave 2 the figure was even lower at 61 per cent.

Table 14: Correspondence of Poverty Measures

	<i>Percentage also classified in Income Poverty According to Measure</i>	
	<i>Before-Housing</i>	<i>After-Housing</i>
Wave 1		
Of those classified as in Before-Housing Income Poverty	-	84
Of those classified as in After-Housing Income Poverty	65	-
Wave 2		
Of those classified as in Before-Housing Income Poverty	-	83
Of those classified as in After-Housing Income Poverty	61	-

Note: Unit of Analysis Individuals. Enumerated Person Weights.

Inter-Relationships within Measures across Waves

Income Poverty

Table 15 shows the percentages staying in and moving out of income poverty for the first two HILDA waves. The proportions of movers and stayers are quite sensitive to whether the before or after measure was used. According to the before-housing measure, 41 per cent of individuals in poverty in wave 1 were 'stayers', that is were also in poverty in wave

2. Nearly 60 per cent were ‘movers’, that is had moved out of poverty. On the after housing measure, about half were stayers and half were movers. This difference is not simply due to differences between the two measures in the proportions defined as in poverty. Odds ratios which summarise the association between variables independent of the marginal distributions also show higher stability in the after-housing measure. On the before-housing measures, the odds for those in poverty in wave 1 of being in poverty in wave 2 (rather not being in poverty) in wave 2 is 7.9 times that of those who were not in poverty in wave 1. This compares to an odds ratio of 9.1 on the after-housing measures. Therefore, the after-housing measure of income poverty shows higher levels of stability, probably because housing costs are more stable year-to-year than annual household income.

Table 15: Proportions in and out of Income Poverty for Two Waves

<i>Measure</i>	<i>Wave 2</i>	
	<i>Stayers</i>	<i>Movers</i>
<i>Wave 1</i>		
Before-Housing Income Poverty	41.0	59.0
After-Housing Income Poverty	50.0	50.0

Note: Unit of Analysis Individuals. Longitudinal Weights.

Subjective Poverty

The measure of subjective poverty was based on responses to a question on subjective prosperity. The association across waves in respondent’s subjective evaluation of their level of prosperity is presented in Table 16. Because of the small numbers who said they were ‘poor’ or ‘very poor’, the table is for all respondents with valid responses, not the randomly selected group. Of the 348 respondents who said they were ‘poor’ in wave 1, 42 per cent said they were poor or very poor in wave 2. A larger proportion judged themselves more prosperous, nearly half (49 per cent) said they were ‘just getting along’ and 10 per cent were ‘reasonably’ or ‘very comfortable’. Of the 64 respondents who said they were ‘very poor’ in wave 1, only 19 per cent were also very poor in wave 2 and a further 33 per cent ‘poor’. Forty-seven per cent of the ‘very poor’ group in wave 1 judged themselves not to be poor in wave 2.

Assuming that subjective prosperity constitutes an ordinal variable, the correlation of subjective prosperity among 10,295 respondents who answered the question in both waves was 0.62, similar to the correlation for income across waves.

Table 16: Correspondence in Subjective Evaluations of Prosperity

<i>Prosperity Wave 1</i>		<i>Prosperity Wave 2</i>						<i>All</i>
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	
1 Prosperous	N	49	58	31	7	1	1	147
	Row %	33	39	21	5	1	1	
	Col %	46	4	1	0	0	1	1
2 Very comfortable	N	40	649	536	55	7	2	1289
	Row %	3	50	42	4	1	0	
	Col %	38	50	10	2	2	3	13
3 Reasonably comfortable	N	10	534	3806	956	30	3	5339
	Row %	0	10	71	18	1	0	
	Col %	9	41	72	30	9	4	52
4 Just getting along	N	6	54	894	1963	165	26	3108
	Row %	0	2	29	63	5	1	
	Col %	6	4	17	62	48	37	30
5 Poor	N	-	6	28	170	117	27	348
	Row %	-	2	8	49	34	8	
	Col %	-	0	1	5	34	38	3
6 Very poor	N	1	-	3	27	21	12	64
	Row %	2	-	5	42	33	19	
	Col %	1	-	0	1	6	17	1
All	N	106	1301	5298	3178	341	71	10295
	%	1	13	51	31	3	1	100

Note: Data from merged responding person questionnaires. Unweighted. Missing data excluded. N=10,295

Financial stress

There is not a strong association across waves in the incidences of cash-flow problems (Table 17). Of those who could not pay their utility bills on time in wave 1, nearly 56 per cent were in the same situation in wave 2. About half of those who asked for financial assistance from friends or family in wave 1 also asked for assistance from friends or family in wave 2. The correspondence across waves for the other items tended to be lower, between 30 and 40 per cent. Table 17 also shows the correlations between waves for the single items and for the summary measures which simply sums the number of incidences of financial stress (see pg. 74). There is a tendency for the cross-wave correspondence to be weaker for the more severe cash-flow problems. The wave-to-wave correlation for the summary measure was 0.60, similar to the wave-to-wave correlations for the income and subjective prosperity measures.

Table 17: Year-to-Year Correspondence of Financial Stress

<i>Item/Measure</i>	<i>Per Cent¹</i>	<i>Correlation</i>
C2a Could not pay electricity, gas or telephone bills on time	55.7	-
C2b Couldn't pay Mortgage/rent on time	40.8	-
C2c Pawned or sold something	37.2	-
C2d Went without meals	42.3	-
C2e Was unable to heat home	32.6	-
C2f Asked for financial help from friends or family	47.6	-
C2g Asked for help from welfare/community organisations	35.2	-
Summary Measure of Financial Stress	-	0.60

1. Percentage of respondents answering 'Yes' to item in Wave 2 of those who answered 'Yes' to same item in Wave 1. N=10,445 Unweighted.

Inter-Relationships between Indicators

Table 18 shows the before- and after-housing poverty rates by subjective prosperity. Poverty is higher among households who judge themselves as 'poor' or 'very poor' but the relationship is not particularly strong. Among households whose standard of living, according to a randomly selected household member, was prosperous or very comfortable, 6 to 10 per cent were in income poverty. About 10 per cent of the reasonably comfortable group were also defined as in income poverty. Of the group who judged themselves as poor, only 30 to 40 per cent were in income poverty indicating that 60 to 70 per cent were above the poverty line. Only among the very small group (about 1 per cent of households) that judged themselves as very poor, was the level of income poverty, on the after-housing measure only, above 50 per cent.

Table 18: Percentage in Income Poverty by Subjective Level of Prosperity

	<i>Before-housing</i>			<i>After Housing</i>		
	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 1 & 2</i>	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 1 & 2</i>
Prosperous	7.0	8.0	3.1	6.0	6.2	1.9
Very comfortable	7.8	10.3	4.3	10.4	10.2	5.1
Reasonably comfortable	10.8	10.2	3.8	12.1	10.2	4.2
Just getting along	20.6	17.4	8.9	24.7	21.9	12.9
Poor	35.8	29.8	15.2	42.6	40.4	25.0
Very poor	38.4	40.2	25.0	58.2	50.1	36.8

Table 19 presents the results from a similar analysis of subjective prosperity and financial stress. Here the correspondence is stronger. About two-thirds of 'poor' and over 80 per cent of 'very poor' households experienced two or more incidences of financial stress. About 30 per cent of households 'just getting along' experienced financial stress. Financial stress was much lower among more prosperous households. Of households who indicated

they were poor or very poor in wave 2, just over half had two or more incidences of financial stress in both waves.

Table 19: Levels of Financial Stress (Two or more Incidences) by Subjective Level of Prosperity

	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 1 & 2</i>
Prosperous	6.7	6.0	4.1
Very comfortable	4.4	4.6	1.3
Reasonably comfortable	7.5	6.6	3.5
Just getting along	32.3	27.3	17.2
Poor	66.5	65.4	50.7
Very poor	80.9	76.4	55.7

Note: Percentages are proportion indicating two or more incidences of financial stress within each group. Last column is percentage with two or more incidences of financial stress in both years.

Financial stress is not closely associated with income poverty (Table 20). Less than 30 per cent of households in before-housing poverty had two or more incidences of financial stress. Therefore, more than 70 per cent reported no incidences of financial stress. The relationship between income poverty and financial stress was a little stronger; about a third of households in after-housing income poverty had two or incidences of financial stress.

Table 20: Levels of Financial Stress (Two or more Incidences) by Income Poverty

	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 1 & 2</i>
Income Poverty Before-housing	29.1	25.7	18.6
Not in Poverty Before-housing	16.3	14.5	8.6
Income Poverty After Housing	34.4	32.0	23.4
Not in Poverty After Housing	14.7	12.9	7.3

Note: Percentages are proportions of each group with two or more incidences of financial stress within each group. Last column is percentage with two or more incidences of financial stress in both years by income poverty in wave 2.

Table 21 summarises the percentage of households that are financially disadvantaged on one, two or three indicators. The first two lines show the percentages for before- and after-housing income poverty. If subjective poverty ('poor' or 'very poor') is added as a criterion, the percentage that is financial disadvantaged falls substantially to around two per cent. If financial stress is the additional criterion, the decline is not as substantial but only 4 to 6 per cent of households were in income poverty and experienced financial stress. Only 1 to 2 per cent of Australian households in income poverty indicated they were poor or very poor, and experienced two or more cash-flow problems. For persistent financial disadvantage across both waves 1 and 2 the estimates are more than halved.

Table 21: Percentages in Poverty on 2 or 3 Dimensions

	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 1 & 2</i>
Before-Housing Income Poverty	15.5	13.9	6.7
After-Housing Income Poverty	18.1	16.3	8.9
Before-Housing Income Poverty + Subjective Poverty	1.9	1.5	0.4
After-Housing Income Poverty + Subjective Poverty	2.4	2.1	0.7
Before-Housing Income Poverty + Financial Stress	4.1	3.5	1.0
After-Housing Income Poverty + Financial Stress	6.1	5.3	1.2
Before-Housing Income Poverty + Subjective Poverty + Financial Stress	1.4	0.9	0.3
After-Housing Income Poverty + Subjective Poverty + Financial Stress	1.7	1.5	0.5

7. DISCUSSION

One striking finding from these analyses is the protective role of marriage and to a lesser extent de facto relationships. Marriage strongly reduces the odds of income poverty, subjective poverty and financial stress. Part of its effect is because there is a second adult who can provide additional income. However, the benefits of marriage appears to be more than just higher incomes and greater wealth since it has strong effects on both subjective poverty and financial stress even when taking into account these factors.¹⁰ It appears that marriage is also associated with a set of attitudes and behaviours that mitigate against financial disadvantage.

Another important finding was the strong relationship between age and financial stress. Financial stress is highest in the youngest cohort, and declines in successive older cohorts. The negative of age was apparent in the final model which included controls for education, marital status, labour force experiences, wealth and income. This finding may be due to an aging effect; young people are less experienced in financial management but as they get older they become more skilled at organising their finances. An alternative explanation is that it is a cohort effect. In other words due to a range of factors influencing young people today; for example, the availability of credit and expensive consumer goods such as mobile phones and pressures to spend rather than save, have caused an enduring change in young people's behaviour towards finances. If the second explanation proves correct, then efforts should be made to improve the financial literacy of young people.

These analyses of the HILDA data show that the proportion in income poverty in successive years is much lower than the proportion in a single year. Such movement out of income poverty is well-established for other countries. Furthermore, there is considerable movement in and out of subjective poverty and financial stress. This indicates that financial disadvantage for many households, is transitory rather than permanent. Analyses of HILDA future waves will show what proportions of 'movers' move back in. Furthermore, it is important to understand what factors are associated with moving in and out of financial disadvantage. Prime candidates are relationship formation (and dissolution), further education and training, health and changes in workforce participation.

Before moving to more general issues it is worth noting differences in the before- and after-housing income poverty measures. Although before-housing measures are used more in research poverty, care should be taken with its use. For example, the before-housing measure indicates high poverty rates among those aged over 70, single persons, and widows and widowers. However, this is very likely to be misleading since sizable proportions of these groups have little or no housing costs so have relatively high discretionary incomes. On the after-housing measure these groups do not have particularly high levels of poverty. Further evidence that these groups are not facing particularly severe financial difficulties are the low proportions of the 70 plus age group and widows who view themselves as poor or very poor, or are suffering financial stress. So relying on the before-housing measure of income poverty in these instances can be misleading.

More generally, poverty research needs to move away from a single indicator. All indicators can be criticized; for being absolute or relative; for setting the poverty-line too high or too low; for the weights assigned to second adults or children; for taking or not taking into account costs and expenditures; for including or not including cash-flow

problems; to name a few. Almost all criticisms of a single indicator make valid points. Although a large body of research literature has been built up over the last 30 years, it is unlikely that any consensus will be reached on the conceptualization and measurement of poverty. Although it is convenient to have a single indicator, a better understanding is gained by examining a range of indicators and evaluating if the same conclusions are reached with different indicators with different criteria.

An initial understanding is that subjective poverty and financial stress are both indicators of financial disadvantage that when combined with measures of income poverty would more accurately identify the 'truly' disadvantaged. However, they appear not to be indicators of the same underlying concept. For a start, their correspondence is not as strong as expected if they were indicators of the same concept. Furthermore, their relationships with social background, demographic, work-related and other variables are in many instances very different. Income poverty is about having an income less than that defined by the poverty line. Its relationships with other variables are similar to that for income. It is associated with some social background variables, a non-English speaking background and Indigenous status, strongly associated with education, marital status and experiences in the workforce. Households experiencing income poverty do not have high levels of debt. In contrast, subjective poverty is a judgement of one's level of prosperity, which is much less associated with education, and more strongly associated with wealth. It is a psychological judgement which probably involves a range of other factors such as, type and standard of housing, the area of residence, networks and future prospects.

Finally, financial stress is about shortages of cash. It is much more strongly associated with age and the number of children than either income poverty or subjective poverty. A shortage of cash may be because of inexperience in the management of expenses (or lack of financial literacy), large debts, and unforeseen expenses. It is possible to have a moderate or even high household income and experience financial stress. Therefore, these three aspects of financial disadvantage are quite distinct concepts and should be understood as such.

APPENDIX 1- CONCEPTUAL AND TECHNICAL ISSUES

There a variety of technical and measurement issues that affect estimates of the level of poverty. These issues include: what constitutes disposable income, equivalences between different types of households, the under-reporting of household incomes, sampling, the handling of missing income data, weighting, the unit of analysis and whether weekly or annual income should be used. In the Australian context, these issues have been discussed elsewhere (Greenwell et al., 2001; Harding et al., 2001; Johnson, 1987, 1996). The purpose of this section to provide a reader an overview of the issues that are relevant to the estimates presented in this report.

Absolute and Relative Measures

The dominant approach to the study of poverty in Australia and in other western countries is relative. The poverty line is most often drawn at half the median disposable household income after adjustment for household size (Atkinson, 1998; Brady, 2003; Moller, Heber, Stephens, Bradley, & Nielsen, 2003; Oxley, Burniaux, Dang, & d'Ercole, 1997). Less often, the poverty line has been drawn at half the mean disposable income (Harding et al., 2001). Relative measures are easy to understand and especially suited to cross-national studies. They do not require justifications for a particular basket of goods and services. Furthermore, they do not require updating.

A common criticism with relative measures of income poverty is that they are measures of distribution rather than of financial disadvantage (Saunders & Kayoko, 2002). There is a sense that with relative measures, poverty will always be with us. It is often pointed out that if the real incomes of all households doubled over the next ten years, relative poverty would remain the same. Mean based measures are particularly sensitive to the distribution of income; if the real incomes of higher income households grew more strongly than that of other households, poverty would increase. Relative poverty can only be eliminated by radical changes to the distribution of household income — not a feasible or desirable policy option — rather than substantially increasing the standard of living of the lowest income households. Another criticism of relative measures is their arbitrariness. There is no particular reason why 50 per cent is chosen. For example, *Eurostat* recommended that the poverty line should be drawn at 60 per cent of median income (Eurostat Task Force, 1998). Furthermore, relative measures do not have the community support that absolute measures do (Saunders, 2004:8). Finally, half the median or mean income measures provide no indication of the standard of living. An income below half the median income provides a very different standard of living in Australia to that in other industrialised countries (Kangas & Ritakallio, 2004b).

An alternative to approach are absolute measures of poverty. Absolute measures are defined as having insufficient income to purchase the very basic physical necessities of life such as not having enough to eat.¹¹ Absolute measures of poverty were dominant approach for the first half of the 20th century (Saunders et al., 2002). In Australia, the original Henderson poverty line was defined in absolute terms as the basic wage plus child endowment for a family of four in the mid 1960s (Henderson et al., 1970; Saunders, 1998a).¹² The income required for other family types was calculated from this benchmark.

Also formulated in the 1960s was the official poverty line for the United States which was defined as three times the cost of a basic food basket.¹³

The problem with absolute measures of income poverty is that very few citizens of industrialized societies live without shelter, running water, or sufficient food so to define poverty in such absolute terms would be to define it out of existence. Furthermore, there is no community consensus on the minimum income required to live decently (Saunders, 1998a). Similarly, there would be little agreement among experts on the selection and level of goods and services required to live in contemporary Australia.

There is an argument that distinguishing absolute and relative conceptions of poverty is a false dichotomy. The Henderson and official US policy lines first formulated in the 1960s have been updated continuously to attempt to preserve their relative level. Sen's (1987) influential theoretical work on poverty combines absolute and relative notions of poverty. Poverty is defined in terms of not having the capabilities to function in society at minimally acceptable levels. This includes adequate nourishment, clothing, shelter, access to health services but also participation, or at least the capacity to choose to participate, in a wide range of aspects of modern society. However, the distinction between absolute and relative approaches to poverty remains useful.

Estimates of the Extent of Poverty in Australia

Absolute and Relative measures of income provide differing estimates of the extent of poverty in Australia are very sensitive to the measure used. For the year 2000, 22 per cent of adults and children were below the Henderson Poverty Line (HPL). Absolute measures based on half mean or median disposable incomes indicate substantially lower levels of poverty, 13 and 9 per cent (using the same Henderson equivalences) The HPL also shows much higher rates of poverty among children at around 25 per cent, compared to 15 and 10 per cent with the mean and median measures (Harding et al., 2001:35).

Different cut-off lines for the relative measures provide very different estimates of the extent of poverty in Australia. About six per cent of Australians are in poverty according to poverty defined at 40 per cent of the median equivalized disposal income, rising to about 20 per cent with the 60 per cent cut-off (Förster, 1994; Harding & Mitchell, 1992).

Mean and median based measures can lead to quite different conclusions on changes in poverty over-time. According to the half-mean measure with Henderson equivalences (see below for discussion of Equivalence Scales), poverty increased from 11.3 per cent in 1990 to 13.0 per cent in 2000. However, the half median measure shows a much smaller increase from 8.2 to 8.7 per cent (Harding et al., 2001:4-5). It is difficult to reconcile an increase in poverty during the late 1990s with increases in the real incomes of low-income households. Using changes in real incomes to update the 1984 half-median poverty line for other years, FaCS (2003:79-80) concluded that poverty had declined from about 11 per cent in 1984 to just over 5 per cent in 1998-99. Performing the same exercise with the 1984 half-mean measure also indicates a decline in poverty from over 17 per cent in 1984 to less than 10 per cent in 1998-99.

Disposable, Discretionary Income and Housing

Almost all studies of income poverty use disposable income, which is the income after adjusting for taxes and government transfers. Government transfers include pensions,

unemployment, disability and family benefits. Moller (2003) reported a substantial reduction in poverty in Australia through taxation and government transfers. Poverty, defined by half-median income, declined from 16.2 per cent before taxes and transfers to 9.2 per cent post-tax post-transfer.

Discretionary Income and Estimates of the Poverty

Before- and after-housing measures produce notably different levels of poverty. According to the half-median income before-housing costs measure, with the modified OECD equivalence scale, 10 per cent of the population were in poverty. After deducting housing costs, the poverty rate increases to 15.5 per cent. Higher estimates of poverty after taking into account housing costs are also apparent on the other relative measures. On the half median measure using the international equivalence scale, 12 per cent were in poverty before deducting housing costs rising to nearly 16 per cent after deducting housing costs (Harding et al., 2001:35-36). In contrast, the Henderson poverty line does not show higher levels of poverty with the after housing measure. Saunders (1996) reports data from the Australian Institute of Health and Welfare which shows a slightly higher level of poverty on the before-housing measure at 13.0 per cent compared to 13.8 per cent for the after-housing measure. Chotikapanich et al. (2003) reports substantially lower levels of poverty in the post-housing HPL measure compared to the pre-housing measure.¹⁴ The reason for the discrepancy between relative measures and the HPL is that with relative measures, the poverty line is recalibrated with changes in the distribution of disposable incomes. In contrast, the Henderson poverty lines are based on fixed pre- and post-housing poverty lines that may not accurately reflect housing costs.

In contrast to the poverty rates increasing or decreasing when taking into account housing costs, estimates of poverty decline after taking into account the non-cash benefits in health and education. According to Smeeding et al. (1993) the estimated level of poverty in Australia (in 1981-82), defined by the half median disposable income, was only 7.4 per cent after taking into account these non-cash benefits compared to 15.1 per cent before adjustment.

Equivalence Scales

Measures of poverty must adjust for household size. An income of \$50,000 provides a very different standard living for a single person than for a family of five. There are two common procedures to adjust for household size: the calculation of a multitude of poverty lines for different family arrangements and equivalence scales. One example of the first approach is the HPL where required expenditure for different family types was calculated using survey data on expenditure patterns in New York households in the mid-1950s¹⁵ (Johnson, 1987). The Melbourne Institute's regular updates of the HPL publish a total of 40 poverty lines. Separate poverty lines are calculated for ten different household arrangements with and without the household head working, and including and not including housing costs—a total of 40 poverty lines (for example MIAESR, 2002). The ten household types do not cover all household types. The HPL poverty lines are often referred to as the Henderson equivalence scale, although it is really a series of poverty lines for different family types.

More commonly, adjustments are made with equivalence scales that assign weights to additional adults and children. The modified OECD equivalence scale is becoming the most widely used equivalence scale which assigns a weight of 1 to the first adult and weights of 0.5 to the second and subsequent adults. A weight of 0.3 is assigned to children under 14 years of age (Förster, 2001:note 2; Whelan et al., 2002).¹⁶ The main disadvantage of this equivalence scale is that it does not incorporate economies of scale for a larger number of children or adults. Another popular equivalence scale that does incorporate 'economies of scale' is the international scale that simply takes the square root of household size (OECD, 1998; Osberg & Xu, 2000:6; Oxley et al., 1997).¹⁷ In Australia, the choice of equivalence scale changes the estimates of the proportion of those in poverty (see below). An international study based on data from the Luxembourg equivalence scale concluded that the choice of equivalence scale does not substantially change the proportions in poverty but does change the composition (Buhmann, Rainwater, Schmaus, & Smeeding, 1988).

Equivalence Scales and Estimates of Income Poverty in Australia

Estimates of the level of poverty in Australia are sensitive to the equivalence scale employed. Focusing on the half median disposable income measure before deducting housing costs, the proportion of persons living in poverty was 8.7 per cent using the Henderson equivalence, 10.1 with the modified OECD equivalence scale and 11.9 per cent with the international equivalence scale (Harding et al., 2001:35). In an international study of equivalence scale, Förster (1994) found that the estimates of poverty in Australia were particularly sensitive to the weight assigned to additional household members.

Zero and Very Low Incomes

In most surveys of income, there is a small proportion of respondents that claim to have very low, zero or negative incomes. Logically it is not possible for households to have little or no income for substantial periods. This may be because not all income sources have been documented or that there is considerable under-reporting. Low-income households tend to underestimate government transfer payments (Oxley et al., 1997:59). FaCS (2003:91) reports that aggregate level of income support benefits reported in the 2000-2001 SIHC was over 20 per cent less than expected.¹⁸ In a recent study, Saunders (2004) excludes all households with negative incomes since he believes them to be unreliable. Similarly, in the section on financial disadvantage in the 2002 edition of *Measuring Australia's Progress*, the ABS (2002b:40) excluded households with the lowest 10 per cent of incomes since there were doubts about their accuracy. Excluding households with unrealistically low or zero incomes would reduce the proportions in poverty.

APPENDIX 2 –DETAILS ON THE DATA, MEASURES AND WEIGHTS

Data

The data used in this report come from the second wave of the Household, Income and Labour Dynamics in Australia (HILDA) Survey, a longitudinal survey of households focusing on the interactions between the labour market, families and social welfare. The survey commenced in 2001, with a two-stage probability sample. In the first stage 488 Census Collection Districts (CDs), based on 1996 Census boundaries, were randomly selected. Within each CD, all households (approximately 200 to 250) were enumerated and 22 to 34 dwellings randomly selected.¹⁹ An adult representative of the household was asked to answer questions on the household questionnaire about the household. Interviews were obtained from 7,682 households, 66 per cent of all households identified as in-scope. The household grid enumerated basic information (age, gender, relationship with other household members) on all 19,914 enumerated household members. Personal interviews were attempted with the 15,127 household members aged 15 years and over. Successful interviews were obtained from 13,969 household members; a response rate of 92 per cent.²⁰ Respondents were also asked to complete the self-completion questionnaire, which included the questions on financial stress, subjective prosperity, and spending and saving behaviour. Of the 13,969 individuals who responded to the person questionnaire, 13,058 (or 93.5 per cent) provided usable data for the self-completion questionnaire.

For this and subsequent waves, three data files were created: a household data file derived from the household questionnaire, a responding person file derived from the person questionnaire and the self-completion questionnaire. The enumerated person data file was derived from the household grid. The questionnaires can be downloaded from the Internet.²¹

In 2002 all responding households from wave 1 were recontacted. Sixty-nine households were out of scope due to death or moves overseas and there were an additional 713 households arising from changes in household composition.²² Thus a total of 8,326 households were ‘in-scope’ for wave 2. Interviews with the household questionnaire were obtained from 7,245 households, a household response rate of 87 per cent. Interviews were again sought with all household members aged 15 or over, including persons who did not respond in wave 1, as well as any new household members. In total, interviews were completed with 13,041 persons. Of this group, almost 12,000 were respondents from wave 1, which represented almost 87 per cent of the wave 1 individual sample.²³ A slightly lower response rate was obtained for the self-completion questionnaire at around 90 per cent. Of the 13,041 respondents who were interviewed, 11,691 completed and returned the Self-Completion Questionnaire (Watson & Wooden, 2004).

Income Poverty

The measure of income poverty is based on household disposable income. Household income is the annual income from wages and salaries, self-employment, investments, superannuation and government benefits for all household members. Disposable income is

the income after taxes (federal tax and the Medicare levy) and government transfers. These were imputed from gross income. For more details see Headey (2003).

Deductions were not made for:

- employer, employee or private superannuation or insurance contributions
- land taxes and rates
- health insurance

Table A 1 presents the means, medians, 25th and 75th percentiles for annual gross income, disposable income and disposable income after deducting housing costs. For these measures, missing incomes are imputed (see Watson, 2004a).

Table A 1: Summary Statistics for Household Incomes (\$)

	<i>Mean</i>	<i>Median</i>	<i>Bottom Quartile</i>	<i>Top Quartile</i>
<i>Wave 1 (2001)</i>				
Annual Household Income	57,298	46,060	22,574	77,588
Annual HH Disposable Income	44,490	37,657	20,521	59,804
Annual HH Disposable Income after Housing Costs	38,284	31,120	16,406	52,005
<i>Wave 2 (2002)</i>				
Annual Household Income	58,943	47,500	23,500	79,758
Annual HH Disposable Income	45,608	38,451	21,210	61,263
Annual HH Disposable Income after Housing Costs	39,448	32,198	17,264	52,852

For comparison, the ABS estimate for Gross Household Income in the 2000-2001 Survey of Income and Housing Costs was \$972 per week or \$50,544 per year. The estimate for median income was \$773 per week or \$40,196 per year (ABS, 2000-01, 2004b). Although the HILDA and ABS estimates are for different years and there are technical differences in the estimation procedures, they do indicate that the HILDA estimates are not too dissimilar from the ABS estimates. For comparison Watson, (2004a:9-10) estimates from HILDA the average household income, not including family tax benefits A and B and Child Care benefit, at \$54,689 for wave 1 and \$57,810 for wave 2.

Table A 2: Summary Statistics for Housing Costs

	<i>Wave 1 Households</i>	<i>Wave 2 Households</i>
Proportion Owning/Paying Off	68.0	67.7
Proportion Renting	29.5	29.2
Other Tenure	2.5	3.2
Proportion of owners with no 1st mortgage	59.4	59.7
Proportion of owners with no 2nd mortgage	94.0	92.6
Mean Annual Repayment 1st Mortgage (of those with outstanding mortgage)	\$11,635	\$12,071
Mean Annual Repayment 2nd Mortgage (of those with outstanding mortgage)	\$11,694	\$12,386
Mean Annual Rent (of Renters)	\$8,134	\$8,240
Mean Annual Housing Costs (All Households)	\$5,956	\$5,981

Note: Unit of Analysis is Households

Housing costs were defined as the sum of the costs of home mortgages and rent. For the 245 households in wave 1 and the 39 cases in model 2 on which the data for housing costs were missing, housing costs were imputed by the nearest neighbour method. A regression model of housing costs on household income, tenure and household type was estimated and the predicted values were used to impute housing costs for those cases with missing data. The estimates are presented in Table A 2.

Table A 3 presents the correlations for these measures of individual and household income for the first two waves of HILDA. Generally, the correlations are between 0.50 and 0.65, indicating that there is substantial year-to-year movement in incomes. Watson (2004a:17) presents the wave 1 wave 2 correlations for imputed and non-imputed wages and salaries, and benefit incomes.

Table A 3: Correlations for Waves 1 and 2 for Individual and Household Income Measures

	<i>Correlation</i>
Individual Gross Income	0.60
Individual Disposable Income	0.61
Annual Household Income	0.61
Annual HH Disposable Income	0.60
Annual HH Disposable Income after Housing Costs	0.56
Equivalentized Household Income	0.60
Equivalentized HH Disposable Income	0.57
Equivalentized HH Disposable Income after Housing Costs	0.52

Note: Unit of Analysis is the individual. Includes individuals that have moved households.

Table A 4: Summary Statistics for Equivalized Household Incomes (\$)

	<i>Mean</i>	<i>Median</i>	<i>50 Per Cent of Median</i>
<i>Wave 1 (2001)</i>			
Equivalized Household Income	33,609	27,467	13,734
Equivalized HH Disposable Income	26,227	22,350	11,175
Equivalized HH Disposable Income after Housing Costs	22,363	18,924	9,462
<i>Wave 2 (2002)</i>			
Equivalized Household Income	35,282	29,412	14,706
Equivalized HH Disposable Income	27,438	23,850	11,925
Equivalized HH Disposable Income after Housing Costs	23,545	20,224	10,112

Note: Weighted Estimates

Table A 4 presents the mean and median equivalized household incomes for waves 1 and 2. For comparison the ABS estimate for mean equivalized Disposable Household Income in 2000-2001 was \$469 per week or \$24,388 per year. They used the same equivalence scale as used here. The estimate for median equivalized disposable household income was \$414 per week or \$21,528 per year (ABS, 2000-01, 2004b). Again, the estimates from HILDA are not too dissimilar from the ABS estimates.

The last column of Table A 4 shows the half the median equivalized incomes. Therefore, in wave 1 the before-housing equivalized disposable income poverty line, for single persons, was drawn at \$11,175 and after housing poverty line at \$9,362. For wave 2 the poverty lines are slightly higher at \$11,925 and \$10,112. Note that if the poverty lines were drawn at 40 or 60 per cent of median income they would differ by only slightly. The 40, 50 and 60 per cent after housing poverty lines for wave 1 are \$7,570, \$9,462 and \$11,354. However, these poverty lines generate quite different estimates of the proportions in poverty.

The 50 per cent median poverty lines differ according to household structure. According to the modified OECD equivalence scale, the poverty line for a couple is 1.5 times that for a single person, for a sole parent 1.6 times, and for a couple with two children 2.1 times. Table A 5 presents the poverty lines for a selection of household structures calculated using the modified OECD equivalence scale. For example, for a family of 2 adults and 2 children, the cut-off line for before-housing income poverty was at \$23,467.

Table A 5: Poverty Lines (Annual Disposable Income) for Different Family Arrangements (\$)

<i>Family Structure</i>	<i>Wave 1</i>		<i>Wave 2</i>	
	<i>Before Housing</i>	<i>After Housing</i>	<i>Before Housing</i>	<i>After Housing</i>
A couple with no children	16,762.5	14,193.0	17,887.5	15,168.0
A couple with one child	20,115.0	17,031.6	21,465.0	18,201.6
A couple with two children	23,467.5	19,870.2	25,042.5	21,235.2
A couple with three children	26,820.0	22,708.8	28,620.0	24,268.8
Single Adult	11,175.0	9,462.0	11,925.0	10,112.0
Single Adult with one child	14,527.5	12,300.6	15,502.5	13,145.6
Single Adult with two children	17,880.0	15,139.2	19,080.0	16,179.2
Single Adult with three children	21,232.5	17,977.8	22,657.5	19,212.8

Source: HILDA Waves 1 and 2

Subjective Poverty

A measure of subjective poverty based on the following question:

C1: Given your current needs and financial responsibilities, would you say you and your family are:

Prosperous

Very Comfortable

Reasonably Comfortable

Just Getting Along

Poor

Very Poor

Table A 6 presents estimates of the response frequencies to the question on standard of living. Very few indicate they are prosperous, whereas over 60 per cent say they are ‘very comfortable’ or ‘reasonably comfortable’. Less than 4 per cent indicate they are poor and a further 1 per cent indicate they are ‘very poor’. The frequency distributions for the two waves are very similar. If continuous variables are constructed from the responses to this question, (Prosperous scored 1, Very Comfortable scored 2....Very Poor scored 6), the mean scores for both years was 3.2.

Table A 6: Distributions of Subjective Prosperity

	<i>Wave 1 (2001)</i>	<i>Wave 1 (2002)</i>
Prosperous	1.6	1.2
Very comfortable	12.4	12.9
Reasonably comfortable	51.0	50.9
Just getting along	30.6	31.1
Poor	3.6	3.3
Very poor	0.7	0.7

Note: Responding Person Questionnaires. For Wave 1 N=12,953, for wave 2 N= 11,519. Unweighted.

Financial Stress

For this report, financial stress was measured using question C2 in the HILDA self-completion questionnaire that asked respondents, if *because of a shortage of money* they could not pay bills, mortgage or rent on time, sold or pawned possessions, went without meals, could not heat their home, sought financial help from friends or family, or asked for help from welfare or community organisations. These are understood as cash-flow problems. The question was asked in an identical form in both waves.

The question was worded as follows:

Since January (Year), did any of the following happen to you because of a shortage of money?

- | | | | |
|----|--|------------|-----------|
| a) | <i>Could not pay gas, electricity or telephone bills on time</i> | <i>Yes</i> | <i>No</i> |
| b) | <i>Could not pay the mortgage or rent on time</i> | <i>Yes</i> | <i>No</i> |
| c) | <i>Pawned or Sold Something</i> | <i>Yes</i> | <i>No</i> |
| d) | <i>Went Without meals</i> | <i>Yes</i> | <i>No</i> |
| e) | <i>Was Unable to heat home</i> | <i>Yes</i> | <i>No</i> |
| f) | <i>Asked for financial help from friends or family</i> | <i>Yes</i> | <i>No</i> |
| g) | <i>Asked for help from welfare/community organisations</i> | <i>Yes</i> | <i>No</i> |

This question is very similar to the one used in the HES. The difference is the replacement of the item on car registration by an item on mortgage or rent. The time frame for the HILDA question is shorter, since the beginning of the year rather than in the last twelve months.

These items were recoded with a score of one if the respondent answered ‘yes’ to the item and zero if responded ‘no’. Respondents who completed the self-completion questionnaire, but did not provide a valid response to the item, were also assigned a score of zero. Data for respondents who did not return a usable self-completion questionnaire were declared missing.

Table A 7: Frequencies of Individuals Answering ‘Yes’ to the Financial Stress Items

<i>Item</i>	<i>Wave 1 (2001)</i>		<i>Wave 2 (2002)</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
C2a Could not pay electricity, gas or telephone bills on time	2463	18.9	1902	16.4
C2b Couldn't pay mortgage/rent on time	1151	8.9	891	7.7
C2c Pawned or sold something	850	8.8	608	5.2
C2d Went without meals	603	4.6	448	3.9
C2e Was unable to heat home	482	3.7	369	3.2
C2f Asked for financial help from friends or family	2151	16.5	1579	13.6
C2g Asked for help from welfare/community organisations	687	5.3	451	3.8

Note: Wave 1 N=13,058 .Wave 2 N=11,636

Table A 7 presents the distributions of the financial stress items for the first two waves of HILDA. In 2001, 19 per cent did not pay utility or telephone bills on time, 15 per cent asked for financial help from friends and family, 10 per cent had not paid their rent or mortgage on time, 7 per cent pawned or sold something because of a shortage of money, 6 per cent had gone without meals, 5 per cent were unable to heat their home and 6 per cent had sought help from welfare or community groups. For 2002 the percentages were about 2 percentage points lower. These figures include more than one respondent in many households. However, the frequency distribution changes only marginally if the data is restricted to one adult randomly selected from each household (Table A 8).

Table A 8: Frequencies of Randomly Selected Adult Household Member Answering ‘Yes’ to the Financial Stress Items

<i>Item</i>	<i>Wave 1 (2001)</i>		<i>Wave 2 (2002)</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
C2a Could not pay electricity, gas or telephone bills on time	1461	20.7	1188	18.6
C2b Couldn't pay mortgage/rent on time	682	9.6	564	8.9
C2c Pawned or sold something	505	7.1	373	5.9
C2d Went without meals	396	5.6	278	4.3
C2e Was unable to heat home	310	4.4	243	3.8
C2f Asked for financial help from friends or family	1187	16.8	893	14.0
C2g Asked for help from welfare/community organisations	396	5.6	276	4.3

Note: Percentages Weighted by Household Weights. Random Selection of non-child responding person aged 18-90.

Table A 9: Percentages of Households Answering ‘Yes’ to Financial Stress Items in Earlier Studies

<i>Item</i>	<i>ASLS 1986</i>	<i>HES 1998-99</i>	<i>GSS 2002</i>
Utility bills	16	16	13
Mortgage or Rent on time		.	5
Pawned or sold something		4	3
Without meals		3	2
Unable to heat home		2	1
Financial help from friends or family	19	10	8
Help from welfare/community organisations	3	3	3

Note: ASLS Frequencies over 2 years, From (Travers, 2004).HES Frequencies from (McColl et al., 2001), GSS Frequencies from the ABS (ABS, 2004a:Table 32)

The incidences of cash-flow problems are higher in HILDA than in other surveys (Table A 9). The figures for the Australian Standard of Living Survey (ASLS) are not really comparable due to differences in question wording and the longer (two year) time-frame. Even so they indicate higher levels of financial stress; 16 per cent of ASLS respondents had trouble paying utility bills on time in the last 2 years compared to over 20 per cent of HILDA respondents since the beginning of the year. Similarly, the proportion seeking financial help from friends and family is the same in HILDA since the beginning of the year as in for the ASLS over the previous two years. Comparison with the HES and GSS also show that the HILDA survey shows higher levels of financial stress.

The most apparent explanation for the higher levels of financial stress in HILDA than in HES and the GSS are differences in the mode of data collection. The HES and GSS surveys were conducted by personal interview, whereas information on financial stress in HILDA was obtained from the self-completion questionnaire. It is plausible that respondents are less likely to admit cash-flow problems in face-to-face interviews than in self-completion questionnaires.

Table A 10: Item Statistics for Financial Stress Measures (Waves 1 and 2)

<i>Variable</i>	<i>Wave 1 (2001)</i>				<i>Wave 2 (2002)</i>			
	<i>Mean</i>	<i>Std</i>	<i>Corr</i>	<i>Load.</i>	<i>Mean</i>	<i>Std</i>	<i>Corr</i>	<i>Load</i>
C2a Could not pay electricity, gas or telephone bills on time	0.21	0.41	0.56	0.65	0.16	0.37	0.56	0.64
C2b Couldn't pay Mortgage/rent on time	0.17	0.37	0.52	0.61	0.08	0.27	0.49	0.56
C2c Pawned or sold something	0.07	0.25	0.45	0.54	0.05	0.22	0.43	0.50
C2d Went without meals	0.05	0.23	0.46	0.57	0.04	0.19	0.49	0.57
C2e Was unable to heat home	0.05	0.21	0.39	0.46	0.03	0.18	0.37	0.45
C2f Asked for financial help from friends or family	0.17	0.38	0.54	0.60	0.14	0.35	0.54	0.60
C2g Asked for help from welfare/community organisations	0.06	0.23	0.41	0.50	0.04	0.19	0.42	0.49
Cronbach's Alpha	0.74				0.74			

Note: Wave 1 N=13,058 .Wave 2 N=11,636

Table A 10 presents analyses investigating whether the items all relate to the same underlying or latent concept. These analyses serve only as a guide since such analyses are not usually performed on dichotomous variables. Factor analysis is used to see if a group of items relate to a single underlying concept (or dimension) or relate to two or more underlying concepts. It is based on the pattern of responses. If a group of items are elicited similar responses then they are likely to be tapping the same underlying concept.

Factor analysis showed that the items loaded a single factor. Each item had a factor loading over 0.4 which can be understood as the correlation between the item and the latent factor. Loadings over 0.4 are usually considered as part of the latent construct. The item on not paying utility bills on time had the highest loading. Correlational analyses, which estimate the correlation of each item with the sum of the other variables, also indicated substantial inter-relationships between the financial stress items. Cronbach's alpha, a statistic that indicates the consistency in which respondents answer the items, was 0.74 in both years.²⁴ Because of the high inter-item correlations, there is no need to discard items or just focus on the 5 core items identified by Saunders (2004). There was no statistical reason to discard the non-core items.

Table A 11 presents the number of incidences of financial stress reported by households for these items. In 2001, 69 per cent had not experienced any financial stress, 12 per cent had answered 'yes' to one of seven financial stress items, 8 per cent two items, 5 per cent three items and a further 5 per cent four or more items. In 2002, 73 per cent had not experienced any financial stress. Across both waves, 63 per cent of households reported no incidences of financial stress, 11 per cent one instance of financial stress over the two years and 8 per cent two incidences. Direct comparisons with the GSS data are not possible since financial stress in that survey was measured by 8 rather than 7 items. Even so, financial stress is higher in the HILDA data with lower proportions indicating no stress.

Table A 11: Frequencies for Summary Measures of Financial Stress

<i>No. of Incidences</i>	<i>Wave 1</i>		<i>Wave 2</i>	
	<i>N</i>	<i>Per Cent</i>	<i>N</i>	<i>Per Cent</i>
0	9185	70.3	8700	74.8
1	1645	12.6	1234	10.6
2	999	7.7	848	7.3
3	625	4.8	432	3.7
4	315	2.4	220	1.9
5	171	1.3	111	1.0
6	72	0.5	50	0.4
7	46	0.4	41	0.4
Total	13,058		11,636	

Note: Unweighted.

WEIGHTS

Several weights have been constructed for each wave of HILDA. There are cross-sectional weights for households, enumerated person and responding person weights. In addition, there are longitudinal enumerated and longitudinal responding person weights. Also weights either adjust to the sample or population size.

The household weights for wave 1 were constructed in 3 steps. The design weights adjusted for the probability of selection households into the sample. The second step was to model response/non-response by a number of household and neighbourhood characteristics. The inverse of the probabilities of response were included in the weights, so that responding units with characteristics associated with non-response received larger weights. The third step was to adjust for differences in the distributions of benchmark variables between the sample and population. The final household weights were the basis for the enumerated person and the responding person weights. The responding person weight was further adjusted by using information on responding and non-responding persons. The enumerated person weights were adjusted in relation to state, part of state, sex and age. The responding person weights were adjusted by these variables as well as by labour force status and state. Details on the wave 1 household and person weights can be found in Watson and Fry (Watson & Fry, 2002).

The weights for the wave 2 were based on the wave 1 weights.

The wave 2 household weight adjusts for:

- the change in selection probabilities since new household entrants to the survey change the selection probabilities for households with new entrants.
- characteristics relating to wave 2 response/non-response among wave 1 responding households.
- differences in the distributions of benchmark variables in the sample and population using ABS estimates for 30 September 2002.

The wave 2 person weights adjust for:

- person and household characteristics relating to wave 2 response/non-response among wave 1 respondents.
- differences in the distributions of benchmark variables in the sample and population using ABS estimates for 30 September 2002.

The enumerated person weights were adjusted in relation to state, part of state, sex and age. The responding person weights were adjusted by these variables as well as by labour force status and state.

See Watson (2004b) further details on the wave 2 weights.

APPENDIX 3- ANALYSES OF WAVE 1 DATA

Table A 12: Effects on Before-housing Income Poverty. Wave 1

	<i>Back-ground</i>	<i>+Educ</i>	<i>+Marital Status</i>	<i>+Work</i>	<i>+Wealth</i>
Intercept	-1.96***	-1.83***	-1.21***	-1.54***	-1.69***
Male	-0.42***	-0.36***	-0.29***	0.02	-0.03
Age	0.26***	0.22***	0.19***	0.22***	0.25***
Number of Siblings	0.06***	0.04***	0.04**	0.03*	0.03*
Not with both parents at age 15	0.33**	0.33**	0.25*	0.20	0.30*
1 st Language not English	0.49***	0.53***	0.66***	0.51***	0.56***
Indigenous	0.61**	0.56*	0.27	0.03	0.03
Family Occ. Status (10s)	-0.05**	0.00	0.00	0.00	0.01
Catholic School	-0.18	-0.12	-0.17	-0.12	-0.14*
Independent School	-0.10	0.04	0.02	-0.02	0.02
Post-Graduate Quals		-1.46***	-1.37***	-0.86***	-0.80*
Bachelor Degree		-0.70***	-0.71***	-0.38*	-0.32
Diploma		-0.37*	-0.37*	-0.14	-0.18*
Advanced Certificate		-0.12	-0.06	0.01	0.07
Certificate		-0.09	-0.07	-0.16	-0.17
<Year 12		0.24*	0.23**	-0.01	-0.02
Married	. .		-1.48***	-1.23***	-1.12***
De facto	. .		-1.30***	-1.13***	-1.08***
Separated	. .		-0.46**	-0.23	-0.22
Divorced	. .		-0.39**	-0.13	-0.14
Widowed	. .		-0.40**	-0.36*	-0.32
Number of Children	. .		0.12***	0.07**	0.07**
Occupational Status (10s)	. .		.	-0.11***	-0.09***
% Time in Work (10s)	. .		.	-0.14***	-0.12***
% Time Unemp (1s)	. .		.	0.02***	0.02***
Wealth (100K)				.	-0.07***
Rescaled R Square	0.07	0.10	0.16	0.21	0.22

Note *** P<0.001, ** 0.001<P<0.01, * 0.01<P<0.05.

Table A 13: Effects on After-Housing Income Poverty. Wave 1

	<i>Back-ground</i>	<i>+Educ</i>	<i>+Marital Status</i>	<i>+Work</i>	<i>+Wealth</i>
Intercept	-1.63 ^{***}	-1.62 ^{***}	-1.05 ^{***}	-1.32 ^{***}	-1.50 ^{***}
Male	-0.41 ^{***}	-0.35 ^{***}	-0.31 ^{***}	-0.04	-0.07
Age	0.01	-0.02	-0.03	0.00	0.03
Number of Siblings	0.06 ^{***}	0.04 ^{**}	0.03 [*]	0.03 [*]	0.03 [*]
Not with both parents at age 15	0.20 [*]	0.21 [*]	0.12	0.08	0.12
1 st Language not English	0.57 ^{***}	0.62 ^{***}	0.75 ^{***}	0.59 ^{***}	0.64 ^{***}
Indigenous	0.45 [*]	0.41 [*]	0.11	-0.12	-0.21
Parental Occ. Status (10s)	-0.04 ^{**}	0.00	0.00	0.01	0.01
Catholic School	-0.15 [*]	-0.09	-0.15	-0.09	-0.08
Independent School	-0.06	0.05	0.05	0.02	0.12
Post-Graduate Quals		-1.04 ^{***}	-0.94 ^{***}	-0.47 [*]	-0.39 [*]
Bachelor Degree		-0.49 ^{***}	-0.48 ^{***}	-0.17	-0.14 [*]
Diploma		-0.18	-0.19	0.03	-0.01
Advanced Certificate		-0.08	-0.02	0.07	0.12
Certificate		0.13	0.16	0.09	0.10
<Year 12		0.33 ^{***}	0.31 ^{**}	0.09	0.05
Married	.	.	-1.43 ^{***}	-1.21 ^{***}	-1.05 ^{***}
De facto	.	.	-1.11 ^{***}	-0.96 ^{***}	-0.86 ^{***}
Separated	.	.	-0.18	0.03	0.05
Divorced	.	.	-0.49 ^{***}	-0.27 [*]	-0.27
Widowed	.	.	-0.54 ^{***}	-0.56 ^{***}	-0.53 ^{**}
Number of Children	.	.	0.14 ^{***}	0.10 ^{***}	0.09 ^{***}
Occupational Status (10s)	.	.	.	-0.11 ^{***}	-0.10 ^{***}
% Time in Work (10s)	.	.	.	-0.13 ^{***}	-0.12 ^{***}
% Time Unemp (1s)	.	.	.	0.01 ^{***}	0.01 ^{***}
Wealth (100K)	.	.	.	.	-0.06 ^{***}
Rescaled R Square	0.03	0.06	0.12	0.17	0.18

Note *** P<0.001, ** 0.001<P<0.01, * 0.01<P<0.05.

Table A 14: Effects on Subjective Poverty (Poor and Very Poor). Wave 1

	<i>Back-ground</i>	<i>+Educ</i>	<i>+Marital Status</i>	<i>+Work</i>	<i>+Income & Wealth</i>
Intercept	-3.22 ^{***}	-3.45 ^{***}	-2.86 ^{***}	-3.06 ^{***}	-3.92 ^{***}
Male	0.26 [*]	0.28 [*]	0.29 [*]	0.44 ^{***}	0.38 ^{**}
Age	-0.11 ^{**}	-0.15 ^{***}	-0.07	-0.03	0.08
Number of Siblings	0.06 ^{**}	0.04	0.03	0.03	0.02
Not with both parents at age 15	0.32	0.32	0.18	0.15	0.09
1 st Language not English	0.36 [*]	0.46 ^{**}	0.62 ^{***}	0.52 ^{***}	0.30
Indigenous	0.38	0.33	-0.03	-0.19	-0.39
Parental Occ. Status (10s)	-0.04	0.00	0.00	0.01	0.01
Catholic School	-0.23	-0.14	-0.19	-0.15	-0.04
Independent School	-0.25	-0.10	-0.12	-0.17	-0.28
Post-Graduate Quals		-0.80 [*]	-0.71 [*]	-0.35 [*]	-0.10
Bachelor Degree		-0.30	-0.28	-0.05	-0.02
Diploma		-0.04	-0.08	0.09	0.14
Advanced Certificate		0.36	0.38	0.44 [*]	0.27
Certificate		0.49 [*]	0.47 [*]	0.40	0.33
<Year 12		0.56 ^{**}	0.54 ^{**}	0.41 [*]	0.19
Married	.	.	-1.67 ^{***}	-1.50 ^{***}	-1.00 ^{***}
De facto	.	.	-0.82 ^{***}	-0.72 ^{***}	-0.51 ^{**}
Separated	.	.	-0.16	-0.02	-0.18
Divorced	.	.	0.12	0.25	0.10
Widowed	.	.	-1.64 ^{***}	-1.69 ^{***}	-1.63 ^{***}
Number of Children	.	.	0.14 ^{***}	0.11 ^{**}	0.06
Occupational Status (10s)	.	.	.	-0.08 [*]	0.01
% Time in Work (10s)	.	.	.	-0.08 ^{**}	-0.03
% Time Unemp (1s)	.	.	.	0.01 ^{**}	0.01 [*]
Wealth (100K)		.	.	.	-0.33 ^{***}
HH Equiv. Disp. Income (10K)		.	.	.	-0.04 ^{***}
Rescaled R Square	0.02	0.03	0.11	0.13	0.22

Note *** P<0.001, ** 0.001<P<0.01, * 0.01<P<0.05.

Table A 15: Effects on Financial Stress (Two or more Incidences). Wave 1

	<i>Back-ground</i>	<i>+Educ</i>	<i>+Marital Status</i>	<i>+Work</i>	<i>+Income & Wealth</i>
Intercept	-1.81 ^{***}	-1.89 ^{***}	-1.61 ^{***}	-1.73 ^{***}	-2.10 ^{***}
Male	-0.11	-0.09	-0.02	0.03	0.01
Age	-0.47 ^{***}	-0.51 ^{***}	-0.55 ^{***}	-0.51 ^{***}	-0.40 ^{***}
Number of Siblings	0.09 ^{**}	0.08 ^{***}	0.06 ^{***}	0.06 ^{***}	0.04 ^{**}
Not with both parents at age 15	0.27 [*]	0.28 [*]	0.18	0.15	0.14
1 st Language not English	0.01	0.11	0.24 [*]	0.16	0.07
Indigenous	0.74 ^{***}	0.70 ^{***}	0.38	0.30	0.19
Parental Occ. Status (10s)	-0.04 [*]	0.01	0.02	0.03	0.02
Catholic School	-0.14	-0.03	-0.08	-0.03	-0.04
Independent School	-0.23	-0.09	-0.07	-0.08	0.08
Post-Graduate Quals		-1.17 ^{***}	-1.09 ^{***}	-0.79 ^{***}	-0.51 [*]
Bachelor Degree		-0.53 ^{***}	-0.50 ^{***}	-0.29 [*]	-0.23
Diploma		-0.11	-0.16	-0.04	0.09
Advanced Certificate		0.15	0.14	0.18	0.06
Certificate		0.35 ^{**}	0.33 [*]	0.26	0.16
<Year 12		0.47 ^{***}	0.41 ^{***}	0.29 [*]	0.13
Married	.	.	-1.44 ^{***}	-1.31 ^{***}	-0.92 ^{***}
De facto	.	.	-0.63 ^{***}	-0.57 ^{***}	-0.38 ^{**}
Separated	.	.	0.03	0.13	0.12
Divorced	.	.	0.19	0.27 [*]	0.16
Widowed	.	.	-0.95 ^{***}	-0.95 ^{***}	-1.04 ^{***}
Number of Children	.	.	0.26 ^{***}	0.23 ^{***}	0.19 ^{***}
Occupational Status (10s)	.	.	.	-0.07 ^{***}	-0.02
% Time in Work (10s)	.	.	.	-0.05 ^{**}	-0.01
% Time Unemp (1s)	.	.	.	0.02 ^{***}	0.01 ^{***}
Wealth (100K)					-0.18 ^{***}
HH Equiv. Disp. Income (10K)				.	-0.03 ^{***}
Rescaled R Square	0.12	0.15	0.24	0.26	0.30

Note *** P<0.001, ** 0.001<P<0.01, * 0.01<P<0.05

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NOTES

1 Between 1990 and 2000, household disposable income rose 36 per cent compared to 18 per cent for the Consumer price index (Greenwell, Lloyd, & Harding, 2001:22). This is why the HPL shows a higher proportion of Australians living in poverty than other measures (Harding, Lloyd, & Greenwell, 2001:37). In 2002 the HPL was about 35 per cent higher than it would have been if it had been updated with the CPI (MIAESR, 2002). Saunders and Tsumori (2002:9-10) make the same point.

2 The HES Cash-flow questions were as follows:

Over the last 12 months, which of the following best describes your household's financial situation?

Spend more money than we get

Just break even most weeks

Able to save money most weeks

If all of a sudden you had to get \$2000 for something important, could the money be obtained within a week?

Yes

No

Over the past year have any of the following happened to your household because of a shortage of money?

Could not pay electricity, gas or telephone bills on time

Could not pay for car registration or insurance on time

Pawned or sold something

Went without meals

Unable to heat home

Sought assistance from welfare/community organisations

Sought financial help from friends or family

3 The GSS question wording was as follows:

In the last 12 months, have any of these happened to you/members of this household because (any of) you were short of money?

Interviewer: If 'yes', prompt for which ones. More than one response is allowed. Press space bar between

Could not pay electricity, gas or telephone bills on time

Could not pay mortgage or rent payments on time

Could not pay for car registration or insurance on time

Could not make minimum payment on credit card

Pawned or sold something because you needed cash

Went without meals

Were unable to heat your home

Sought financial assistance from friends or family

Sought assistance from welfare or community organisations

No/none of these

Don't know

4 **This study differs from that of Bray (2003b:v) which isolated three dimensions to financial stress: 'missing out', cash-flow problems and hardship.**

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- 5 A list of occupations and their ANU4 occupational status scores is available on the internet
http://www.dest.gov.au/archive/highered/eippubs/eip02_4/appendix_02.htm
- 6 A superior but more consuming procedure would be to perform this random selection many times and take the mean of the estimates. However, the estimates of percentages and other statistics from two random selections are very close. There is no difference in the overall estimates of the proportion in poverty but differences become larger with smaller categories.
- 7 In the context of logistic regression there is no R square or proportion of variance explained. However, the likelihood ratios for the null and predicted models provide a pseudo R square measure. This measure compares the likelihood ratio of the null model to that of the model with predictor variables. Mathematically:
Pseudo R square

$$= 100 \times \frac{(\text{Likelihood Ratio of Null Model}) - (\text{Likelihood Ratio of Model with predictors})}{(\text{Likelihood Ratio of Null Model})}$$
- The rescaled R square is the pseudo R square adjusted for the maximum possible R square.
- 8 Marginal attachment to the labour force was determined by first establishing whether a person not in the labour force has a desire to work, and then by whether they have been actively seeking work or are available to start work within a short period of time. Persons who are marginally attached may satisfy some, but not all, of the criteria required to be classified as unemployed. Persons not in the labour force are considered to be marginally attached to the labour force if they: (i) want to work and are actively looking for work but not available to start work in the reference week; or (ii) want to work and are not actively looking for work but are available to start work within four weeks. Persons not in the labour force are not marginally attached if they: (i) do not want to work; or (ii) want to work but are not actively looking for work and are not available to start work within four weeks. For more details see the relevant ABS publication (ABS, 2001).
- 9 The exponent of the estimate -0.31 is 0.73. This is the odds ratio for men compared to women. It is more meaningful for the odds ratio to be above 1, so taking the inverse of 0.73 (1.36), the estimate can be interpreted as the odds of women being in poverty rather than not in poverty, is 1.4 times the odds for men.
- 10 This proposition was also tested controlling for unequivalized household income.
- 11 The Australian public also understands poverty in absolute terms. About three-quarters of Australian adults define poverty in subsistence terms (Saunders, 2004:8). However, there is little consensus on what income level is required not to be in poverty (Saunders, 1998a).
- 12 Saunders (2004) notes that the original Henderson poverty line was based on the basic wage, whereas nowadays the updated Henderson poverty line is used to argue for increases in the minimum wage.
- 13 The factor of three was used because food constitutes about a third of household expenditure. The food basket was stipulated according to American Nutrition standards (Ringgen, 1998).
- 14 In this study the notional cost of rent was deducted from the incomes of owner-occupiers.
- 15 Apparently the budget did not include motor vehicle costs (FaCS, 2003).
- 16 The original OECD equivalence scale assigned a score of 1.0 for the first adult, 0.7 for the second and 0.5 for each child.
- 17 Oxley et al. (1997:60) note the international equivalence scale where incomes are adjusted in proportion to the square root of household size is just one of a number of “elasticities” for the relationship between household size and income. In the international scale the elasticity is 0.5, but it could theoretically be any value. A value of one assumes there are no economies of scale whereas a value less than 0.5, assumes stronger economies of scale.
- 18 Saunders (2004) in his discussion paper on developing a framework for the examination of poverty excludes all households with negative incomes since they may be unreliable. Similarly, in the section on financial disadvantage in the 2002 edition of Measuring Australia’s Progress, the ABS (2002b:40) excluded households with the lowest 10 per cent of incomes since they were doubtful about the accuracy of household incomes.
- 19 In dwellings which included three or less households, all households were selected.

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- 20 For further details on the HILDA Survey, including wave 1 outcomes, see Watson and Wooden (2001) and Wooden et al. (2002).
- 21 The web address is: <http://www.melbourneinstitute.com/hilda/sinstruments.html> .
- 22 'Split households' are households in which individuals from households in wave 1 created new households. New households are most often formed by separation and divorce and as a result of young adults leaving the parental home.
- 23 Further details on the methodology for wave 2 are available in Watson and Wooden (2004).
- 24 A Cronbach's Alpha over 0.70 is acceptable (Nunnally, 1978).