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Hardship in Australia

An analysis of financial stress indicators in the 1998–99 Australian Bureau of Statistics Household Expenditure Survey

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The views expressed are those of the author and do not represent the views of the Minister for Family and Community Services or the Department of Family and Community Services.

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Executive summary

A key concern for social policy are those households which have poor outcomes. As these outcomes are often difficult to measure, and are often assumed to be a product of the capacity of households to purchase goods and services, income analysis is commonly used as a primary social policy research tool. This can be seen in the plethora of studies of income distribution and those that report on "income poverty"

This paper, rather than looking at the reported resources of households, concentrates on reported outcomes. Specifically it considers the extent to which households may have been constrained in their activities because of a shortage of money, and if they were, at what point this might constitute an outcome of concern for social policy.

The data used in the analysis is taken from the 1998–99 Household Expenditure Survey undertaken by the Australian Bureau of Statistics. This survey asked households whether, prior to the survey, they had been unable to do a range of activities because of a shortage of money. Items in the survey ranged from taking holidays away from home and having nights out to missing meals or going without heating. This was the first time such questions had been included in a major ABS survey.

Statistical analysis indicates that this type of deprivation was composed of three different types of experience that may occur in isolation to the others, or in different combinations:

- missing out – such as being unable to have family and friends over for a meal, nights out, hobbies, holidays away from home, or having to buy second hand clothing, due to a shortage of money;
- cashflow problems – being unable to pay bills on time or needing to borrow money from friends and family; and
- hardship – being unable to afford heating and meals, or having had to pawn or sell possessions, or needed assistance from community organisations.

Some form of deprivation is quite common. 43.7 per cent of households report at least one negative response to one or more of the 13 deprivation questions. This result is not surprising. It is rare for any household to be able to afford to do everything it would like to do, and setting priorities and making trade-offs is a usual household experience. While the data shows that such trade-offs are more frequent in lower income households, they persist across the income spectrum.

As the focus of this research was to identify households with particularly poor outcomes the main focus of analysis was on those groups with a higher incidence of hardship – that is those who were more likely to miss out on essentials, or had to take last resort steps to meet their needs. Attention specifically was given to the 3.1 per cent of households that reported two or more of the hardship items. Some 600,000 Australians live in these 222,700 households. A third of these are children under the age of 15 years, the rate of multiple hardship experienced by these children, at 5.7 per cent was double that of persons aged over 15.

Factors associated with higher rates of hardship include lower income, absence of employment, receipt of some types of income support, especially Parenting Payment Single, Newstart and

Disability Support Payment, youth, living in private and public rental housing and the presence of someone with a disability restriction.

In contrast, much lower rates were experienced by home owners and purchasers, older households, including those in receipt of the Age Pension and couples without children, or with dependent children only.

There were also some types of households with particularly high concentrations of hardship. Almost 15 per cent of sole parents reported multiple hardship, with this rate increasing to 24.9 per cent for low income sole parent households paying a relatively high proportion of their income on rent in the private sector, and 28.1 per cent for those in public housing. Low income non-aged singles in higher cost private rental also had a high incidence, with 34.5 per cent reporting multiple hardship.

While not leading to specific policy prescriptions, the analysis highlights some important issues for policy development:

- There appears to be some behavioural component to the experience of hardship. While some households, such as the aged, are more likely to record some missing out, they are less likely to have cashflow problems and to experience hardship. For youth this situation is reversed.
- Employment is associated with a lower incidence of hardship that goes beyond the effect of the income this may generate. Employment was particularly important in the outcome for children.
- Although lower incomes are associated with high rates of hardship, only a relatively small proportion of all low income households experience such outcomes. In particular while, on average the rate of hardship amongst income support recipients was over double that of all households, when account is taken of household characteristics, the risk of hardship was lower. Notwithstanding similarities in the rates of payment, the incidence of hardship varies dramatically between payment types.
- Similarly, despite the majority of households reporting multiple hardship relying upon income support payments as their main source of income, they represent fewer than one in 12 of such households.
- Housing tenure and expenditure is important. For some groups outcomes were worst in the private rental market, for others those in public rental had higher rates of incidence.

Responding to these households requires more than just financial support. In many cases it would appear that there are behavioural issues to be considered, and in others, the household's outcome, relative to others, suggests financial management may be important. Addressing this may require a stronger focus on individual support and skills development.

Technical summary

This paper is based on analysis of data from the Australian Bureau of Statistics (ABS) 1998–99 Household Expenditure Survey (HES). The paper uses responses to a set of questions designated by the ABS as identifying 'financial stress' to explore whether the reported range of household experiences can be used to develop measures which can inform social analysis, especially to identify those households which may be experiencing hardship.

The collection and analysis of this type of data in Australia is still in its infancy and many unknowns exist. Little information is available on how well the concept of financial stress, and its different forms and degrees of intensity, relate to wellbeing. While financial compromises are a part of everyday life, it is not clear at what point these become barriers to full participation in society.

In addition, little is known about the sensitivity of the questions used and the degree to which respondent interpretation may play a part in the results. In this way, although the paper refers to the results of the survey as outcomes, they are rather reported outcomes. Furthermore the questions may, at times, have required individuals to provide simple ***ex post facto*** explanations of reasons for what may have been complex trade-offs. Benchmarking data are also not available, so it is not possible to identify changes over time.

While the data are contemporary by most data standards, the focus of many of the questions is on the experiences of households in the year prior to the survey, in many cases this would have been 1997–98. Since then:

- There has been substantial employment growth. In November 2001, total employment (seasonally adjusted) was 668 000 higher than the average over 1997–98. Over the same period, the unemployment rate had fallen from 8.0 per cent to 6.7 per cent.
- Incomes have grown. In 1999–2000, the real income of income units was 6.4 per cent higher than in 1997–98. The average real income of the lowest income quintile increased by 5.8 per cent and that of the second by 6.9 per cent.
- The New Tax System has resulted in many substantial changes to taxation and income support, including increased assistance to families, lower income tax rates and potential changes to consumption patterns.

It is probable that each of these factors would have some impact on the outcomes for Australian households since the time of the survey.

Measuring outcomes

Much social analysis is based on research into household income. Very frequently this type of study seeks to categorise households, families and individuals into those in satisfactory, or unsatisfactory situations, on the basis of their incomes, using concepts such as poverty lines.

Both in Australia and overseas there has been increasing recognition of the inadequacy of this approach. While the ultimate interest of social analysis and social policy is on outcomes, income-

based analysis is concerned with inputs. That is, its focus is on the inputs a household has, and not the outcomes they actually achieve.

This focus can also be explained in terms of the relative ease with which income data can be collected and analysed. In Australia especially, while income data are available from a wide range of surveys conducted by the ABS, data that seek to address outcomes have been collected on a national basis only to a limited extent.

As well as exhibiting a degree of subjectivity, and indeed at times ambiguity, the nature of outcome data is complex. Unlike income data, they lack a simple metric, or scale, and in addition they can be conceived of in many different ways: the level of satisfaction people have with their outcomes, quantification of what people have, or identification of what may be adverse outcomes, including what people have missed out on.

Financial stress

The data collected by ABS as indicators of financial stress may be considered to be a form of 'deprivation' measure in that they largely focus on those items which a household may have gone without due to financial constraints.

In the HES, the ABS collected information on:

- how households compared their standard of living with that of two years earlier;
- whether households normally broke even, spent more than they received or were able to save;
- if households are usually able to afford to: take a week's holiday away from home, have a night out once a fortnight, have friends and relatives over for a meal, have a special meal once a week, buy new clothes (or whether they need to buy second-hand) or undertake hobby or leisure activities;
- whether in the previous year, because of a shortage of money, a household: was unable to pay utility, or motor vehicle registration and insurance bills on time, sought financial help from family or friends or from a community organisation, had to sell or pawn an item, or went without a meal or heating; and
- the capacity of a household to raise $2 000 if needed for something important.

Overall, 70.8 per cent of households reported that their standard of living was the same or better than it had been two years earlier, with the proportion reporting a fall (26.1 per cent) being slightly outweighed by those reporting an improvement (28.1 per cent). With regard to household budget outcomes most households reported breaking even. The number that report that they usually spent more than they received (14.7 per cent) was less than half of the 32.4 per cent who reported that they were able to save money most weeks.

- The most frequent occurrences of financial stress were reported as being; unable to afford to take a holiday away from home for a week or longer each year (27.3 per cent), not being able to afford to have a night out once a fortnight (19.4 per cent) and being unable to pay electricity, gas or telephone bills on time at some point in the previous year (16.1 per cent).
- The least frequently reported problems were going without meals (2.7 per cent) or not being able to heat their home (2.2 per cent).

Lower-income households experienced problems, on average, more frequently than higher-income households. However, even amongst the richest 20 per cent of households (the top quintile), 5.2 percent reported being unable to pay their electricity, telephone or gas bills on time, and over 7.3 per cent indicated that they could not afford to take a holiday away from home.

Notwithstanding their higher average level of financial stress, many low-income households did not experience any financial stress at all. Indeed, 15.1 per cent of the poorest 20 per cent of households reported that they were able to save money most weeks, while one-third indicated that they had a holiday away from home for a week or longer each year, and one-third reported that they had a night out once a fortnight.

The nature of financial stress

More detailed statistical analysis of the group of questions used by ABS indicated that they reflect three quite distinct types of stress:

1. ***missing out***: This comprised the questions which related to the capacity of a household to participate in a range of activities including having family and friends for a meal, special meals, second-hand clothing, hobbies and holidays away from home;
2. ***cashflow problems***: This grouped the two questions about the inability to pay bills on time with needing to borrow money from friends and family; and
3. ***hardship***: This encompassed the two questions on not being able to afford heating and meals, as well as having to pawn items or needing to obtain assistance from community organisations.

The remaining three questions concerning changes in living standards, household financial outcomes and a capacity to raise emergency money did not relate clearly to any of these three components.

These three indicators formed the basis of the analysis in the paper, with responses being recorded at two levels: ***some*** incidence, when a household reported at least one item in a category and ***multiple*** incidence, where two or more items were recorded. This second level was considered to be the more robust indicator as it reflected a pattern of experience, whereas it is possible that a single reported negative outcome may arise from a broader range of circumstances. In addition, as the survey asked for a household's experience in the time leading up to the survey, it needs to be recognised that the negative outcome may not always relate to the household's current reported characteristics.

Missing out was the most frequently reported of these indicators, with 38.3 per cent of households reporting that they had experienced at least one occurrence and 60 per cent of these (21.8 per cent of all households) reporting having missed out at a multiple level. This was followed by cashflow problems (20.6 per cent 'some' and 9.2 per cent 'multiple') and hardship (8.2 per cent and 3.1 per cent).

While all of these indicators provide useful information, the primary concentration in this study is on the last, the incidence of multiple hardship. This measure focuses most strongly upon those households where it may be considered that appropriate outcomes are not being achieved. Just under 600 000 people live in the 222 700 households that reported multiple hardship. Over a third of these were children, with the rate of multiple hardship amongst children aged under 15 of 5.7 per cent being double that of persons above this age.

In contrast to this result, the higher level of missing out can be considered as representing a broader concept of the extent to which households make compromises about what they can or cannot do within their budget to meet their own set of priorities. Cashflow problems provide insight into the means households use to manage income and expenditure in the shorter term.

The experience of hardship

The extent of financial stress, and especially multiple hardship, varies considerably between different types of households in Australia.

- As with the individual questions, the incidence of three dimensions of stress varied with household income. This was most marked with regard to hardship, with 7.2 per cent of households in the lowest income quintile reporting multiple hardship, compared to 0.2 per cent in the top quintile. Notwithstanding the higher rate in the lowest quintile, less than half of all the households reporting multiple hardship were in this segment. The least variation is seen in some cashflow problems where the rates were 28.1 per cent in the lowest quintile and 7.8 per cent in the highest.
- Multiple hardship was typically low for households composed of aged persons, and for couples without children. Couples with children also experienced it at rates well below average. In contrast, higher levels of hardship were experienced by sole parents and some young persons. When account is taken of the other forms of stress, a more complex pattern emerged. Older households, in addition to having a very low incidence of hardship, had relatively few cashflow problems. However, their level of missing out was only a little below the national average. While this may in part be explained by their stable income flows and possibly their capacity to draw on assets, it may also be part of a behaviour pattern where their constraints on doing things, reflected in their level of missing out, may form part of deliberate financial management techniques to protect them from hardship and cashflow problems. A similar pattern can be seen for couples with dependent children.
- The relative pattern of results for youth is almost the reverse of that of aged persons and couples with dependent children. This may reflect a different behavioural pattern, with these households being less willing to accept financial limitations on their regular, and often social, activities, and as a consequence being much more exposed to cashflow problems, and ultimately a much higher risk of experiencing occasions of hardship.
- A higher incidence of multiple hardship is also seen when a household member had a disability. When account is taken of other household characteristics, the higher incidence appears to be associated with moderately restricting limitations.
- Reflecting the pattern by household type, the rate of hardship decreased with the age of the members of the household. It was higher for women than it was for men, with this result holding by age for both single-head households and in couple and group households when the gender of the main income earner is taken into account.
- Homeowners and purchasers had very low levels of hardship at 0.4 per cent and 1.1 per cent respectively. Purchasers reported, however, slightly above average rates of cashflow problems. While the average rate of multiple hardship was higher for public housing tenants than those in private rental, when account is taken of other household characteristics, private rental, and

in particular private rental in which households pay a higher proportion of their income as rent, was associated with high levels of incidence.

- When income, tenure and household/family type are considered together, some high concentrations of hardship emerged. Key groups were low-income sole parents in public housing, where 28.1 per cent reported multiple hardship, along with 23.8 per cent of those in the private rental market. For low-income private renters, the proportion of income spent on rent appeared to have only a limited impact on those families with children but an appreciable effect on single-person households. As a result, 34.5 per cent of low income single-person households aged between 25 and 54 in 'higher-cost' private rental sector reported multiple hardship.
- Households that are mainly dependent upon pensions and benefits reported much higher levels of stress (8.0 per cent have multiple hardship) than those that receive no government assistance (1.0 per cent have multiple hardship). Households receiving some, but less than half, of their income from this source sat between these two groups.
- These results are very much averages with the type of income support payment being very important. Households relying upon the Age Pension had generally positive outcomes. While their rate of missing out was just above the national average, only 1.9 per cent reported multiple cashflow problems and 1.0 per cent multiple hardship. Good outcomes were also recorded by those on veterans' pensions.
- In contrast, households reliant upon the Disability Support Pension, Newstart Allowance and Parenting Payment (Single) had high levels of financial stress. Most of these households reported multiple missing out and cashflow problems, and between 30 and 40 per cent experienced some hardship, with half of these reporting multiple hardship.
- When, however, account is taken of the level of income of households having income support as a main source of income is associated with a lower risk of multiple hardship.
- Employment had a very strong influence on household outcomes. Other than those households composed of retired persons, jobless households had rates of multiple hardship more than four times the national average, with a majority of these households also reporting multiple missing out and almost half reporting cashflow problems. In contrast, fewer than one in 50 households with one person employed full-time experienced multiple hardship. Importantly, the analysis suggests that the impact of employment goes beyond the simple contribution of employment to the income to the household. That is, employment in itself is important to the determination of household outcomes.
- Analysis of household expenditure patterns was not totally conclusive. While tobacco expenditure and credit card debt charges showed an association with increased financial stress, gambling and alcohol expenditure had little effect in either direction. This result may be linked to poor reporting of these expenditures.

Further analysis indicated that income distribution measures such as those often used in conventional income poverty analysis are not particularly effective at identifying households in stress. Although the rate of stress was higher in low-income households, around half of those households that experienced multiple hardship were on higher incomes. Only some 30 to 40 per cent of households on low incomes reported multiple missing out and some 30 per cent

report cashflow problems. Only one in six reported some hardship and fewer than one in 12 multiple hardship.

Responses to the question on a household's ability to raise funds for something important effectively highlighted the group of households that were at risk of hardship, although only a minority of such households (12.4 per cent) actually experienced such an outcome. While the question on changes in living standards over time showed that households who had experienced a fall were more likely to report hardship, little information is available on the persistence of an experience of hardship.

Conclusion

When financial stress is identified broadly to include a range of consumption trade-offs households may need to make, as well as the likelihood of some households having to react to unexpected expenditures and possible income fluctuations, it can be expected that most households will experience some stress at some time or another.

The HES financial stress data indicate, on the basis of the measures adopted by ABS, that just under half of all households had an experience of such a constraint or requirement in the previous year. For many households it is probable that the impact of this on their living standard was transient or minimal.

A priority for social policy is where such stress becomes more systemic, especially where it may result in a constraint on households' capacity to undertake more basic activities. Such outcomes may be considered to reflect a much more significant impingement on living standards.

The paper attempts to identify such a concept in its multiple hardship indicator. On the basis of household responses, an estimated 3.1 per cent of households (a total of 222 700 households, containing 590,000 people, 223,300 who were children under the age of 15) experienced 'multiple hardship' at some point in the year prior to the ABS 1998–99 Household Expenditure Survey.

While low income is a factor associated with reported higher rates of incidence of hardship, it is not the only factor, and most low-income households do not report hardship. In contrast, low levels of hardship are associated with having employment, home ownership and higher levels of education.

While some groups of income support recipients reported poor outcomes, for others, and age pensioners in particular, outcomes were generally very positive.

While identifying a need for further analysis, the research indicates some more immediate findings. These are:

- A simple focus on across the board changes to overall levels of income and income support would appear to be misplaced. Most households on lower incomes and those reliant on income support, while experiencing some lower-level constraints on their activities, do not record multiple missing out, and only a small proportion reported hardship.
- For those households of working age, employment is a critical issue. Importantly, the analysis suggests the impact of employment on outcomes goes beyond the simple issue of income. While full-time employment has the strongest effect, the data show that there is a reduced risk of multiple hardship associated with part-time employment.

- Housing also plays an important role. Home ownership, or the factors contributing to this, is associated with a strong reduction in the risk of poor outcomes. In contrast, the more intense concentrations of hardship identified in the analysis are in both the public and private rental sectors.
- The question of financial management is also critical. It appears that some patterns of consumption behaviour act to reduce risks of multiple hardship, and that others may increase them. To the extent that generally only a proportion of similar households in any given situation on similar incomes experience hardship, it can be suggested that the skills a household has to manage its resources may also play an important role.

1. Introduction

The incidence and patterns of poor living standards provide an essential guide for the development of social policy.

Measures of poverty are frequently used to try to understand these living standard outcomes. Typically these measures focus on the financial resources—the inputs—available to the household. This paper, in contrast, considers reported outcomes directly—that is the experiences of households. This section considers the way measures for such outcomes have been developed.

Traditional income-based or input measures Two broad approaches have been adopted in these traditional income-based measures to attempt to set 'poverty lines'. The first is a 'normative' approach; for this style of measure researchers stipulate the income they consider is required to purchase a particular set of goods and services consistent with what is deemed to be an appropriate (or adequate) standard of living.

Increasingly this approach has been displaced by a second group of measures, derived from the pattern of income distribution. These measures postulate a 'poverty line' as a level of income relative to a statistical point derived from the income distribution of the population as a whole. Internationally the most commonly used is the proportion of households with equivalised incomes of less than 50 per cent of the median income of the community—that is, those households whose income is less than half the income of the 'middle household' of the income distribution. In undertaking this type of analysis it is usual for incomes are equivalised to account for the different numbers and characteristics of people within households.

Whilst income provides some measure of the recurrent resources available to a household, it is not always a good predictor of a household's living standard outcomes. Rather, these outcomes, as well as reflecting current income, may be the result of many other influences, including:

- the assets a household has to draw upon. These can be physical assets such as a house, financial assets, or family and community networks;
- the relative need for income of a household. Although equivalence scales are used to take some account of household structure, they can be a rather blunt instrument and do not account for a wide range of factors which may impact upon a household's needs, such as location, presence of disabilities and the costs of earning income and undertaking education; and
- the capacity of a household to manage their resources to achieve adequate living standards.

Important also are the household's desires, preferences and expectations. The interaction of these income type approaches with the outcome measures is considered in section 4.6.

Measures of outcomes

An alternative approach to understanding living standards is to concentrate on outcomes—the wellbeing of households. The study of this can be done in various ways, for example, by examining whether households engage in forms of discretionary spending which may be considered as indicative of their having resources in excess of those required for basic living needs, or by considering whether households miss out on what might be considered as 'usual' activities,

or face limitations on their capacity to participate in society. In such applications these types of approaches to living standards are sometimes called 'deprivation measures'. In addition, information can be collected on the ways in which households manage—to identify reliance upon strategies they may have needed to adopt in order to maintain their living standards.

While such approaches can appear to be objective, they do in fact require a range of value judgements, even when they seek reference to 'community norms' as a basis for establishing the standards against which outcomes should be judged. They also involve interpretation by respondents and researchers of the specific questions asked and answers given.

1.1 Living standard and deprivation approaches

Deprivation measures are so called because they consider whether or not households have been deprived of certain items, or the capacity to undertake various activities, primarily due to their lack of resources. The measures have been used as both an alternative and a complement to income poverty in social policy analysis. Underlying the use of the method is a concept of poverty as exclusion. That is where households are excluded—generally for financial reasons, but possibly also for other reasons—from undertaking what the community may consider to be the ordinary and everyday range of social, cultural and other activities of the society[1].

How deprivation should be measured, and how the findings of such research should be used in social analysis, have been the subject of considerable debate since the concept was first used by Townsend in his study ***Poverty in the United Kingdom*** (1979).

The literature demonstrates a diverse set of approaches to the use of deprivation measures.

- In his study, Townsend extracted 12 indicators out of a much wider group of 60 indicators of 'styles of living' to form an 'experimental' deprivation index. This encompassed questions relating to food adequacy, leisure activities and household amenities. In his survey, households were asked whether they possessed the item or undertook the activity. Households recording a negative outcome on six or more of the items were considered as experiencing deprivation. In determining what items should be included, in principle, he considered that only those items held by the majority of people should be used, but in practice this was not always the case.
- Mack and Lansley (1985), similarly working with a large set of possible indicators, introduced two new concepts. The first was a criterion for deciding which items were to be kept in the scale. This was that a majority of people surveyed described the item as being 'necessary and [households] should be able to afford'. The second was that households who did not have the item were asked whether this was because they could not afford it, and were only considered as being deprived if they reported this as being the reason.

[1] Definition of poverty in such terms is not new. Perhaps the best known reference to such as concept is Adam Smiths' definition of necessities 'By necessaries I understand not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without. A linen shirt, for example, is, strictly speaking, not a necessary of life. But in the present times, through the greater part of Europe, a creditable day-labourer would be ashamed to appear in public without a linen shirt, the want of which would be supposed to denote that disgraceful degree of poverty…' (Smith 1776)

- In contrast, Nolan and Whelan (1996) in their research in Ireland, although using a similar approach to Mack and Lansley in their data collection, did not systematically exclude an item from their scale either on the basis of most households not having it, nor on the basis of it not being considered a necessity. They did, however, at the individual response level, retain the concept of an 'enforced lack', including in their key measures the absence of an item only if people reported that they lacked it because of a lack of money. In their analysis of the results they identified three dimensions of deprivation: basic deprivation, which included missing meals and inadequate clothing; secondary deprivation, which broadly covered lifestyle activities; and thirdly, deprivation of housing and housing facilities.

Another important difference in these studies relates to the purpose of the analysis. Townsend saw the primary purpose of deprivation analysis as enabling the objective setting of an income poverty line. That is, his objective was not to use the measure to indicate which households were experiencing deprivation, but rather to establish the level of a poverty line. Specifically, he hypothesised that the poverty line could be set at a point where the incidence of deprivation increased rapidly. He expected the data to show, as well as a general association between deprivation and income, a point where results took a sudden turn for the worse, as households moved from a point of income adequacy to one of income poverty.

Mack and Lansley took a different approach, relying mainly on the incidence of deprivation itself as a measure of poverty and suggesting that if such an income level existed it was simply a point where the 'risk of poverty is greatly increased', rather than as a dichotomous cut-off between poverty and non-poverty.

A third strategy identified in Ringen's critique of Townsend (Ringen 1988) and taken up by Nolan and Whelan, was to define poverty in terms of both resources and outcomes, that is, those households with incomes below an income poverty line and experiencing deprivation. Other analysts such as Halleröd (1994) do not consider income at all—but simply use deprivation alone as an indicator.

In measuring deprivation, another area of contention is how responses should be scored and aggregated. As noted above, Townsend considered a simple aggregate score based upon the number of items a household lacked, an approach also adopted by Mack and Lansley. Nolan and Whelan, on the other hand, used factor analysis to identify sub-components, and used a single occurrence of any one of the items in their 'basic deprivation' sub-component as their main measure of the existence of deprivation. Further approaches by Desai and Shah (1988) and Muffels (in Strengmann-Kuhn 2000) proposed weighting systems, initially with regard to the proportion of people in the community who possess the item, and in later work adding the proportion identifying the item as essential. These scaling approaches were designed to place greater weight on deprivation of those items that were possessed, or were considered as being a necessity, by larger proportions of the population. While most researchers have used cut-off points to identify households as either experiencing, or not experiencing deprivation, Mayer and Jencks (1998) simply focused their research on the differences in the average scores for different population sub-groups.

Some of these issues are discussed in more detail in Appendix A.

International use of deprivation measures

The initial development of these statistics, as seen above, was largely in the context of academic studies (although the Mack and Lansley research was conducted for an investigative television series). Today the use of such analysis is now much more widespread and the collection of deprivation data is increasingly finding itself on the work program of national and other statistical agencies.

United States

In the United States, a range of data is collected by the Census Bureau as 'extended measures of wellbeing'. This includes information on:

- access by families to consumer durables;
- physical living conditions, emphasising the quality of the household's dwelling and their neighbourhood; and
- the capacity of the household to meet their basic needs.

This last component considers, among other questions, whether households have been able to pay bills and afford food and medical attention. (US Department of Commerce 1995, 1999)

Europe

The statistical agency of the European Union, Eurostat, as part of its European Union Household Panel Survey conducted since 1994, asks a series of questions relating to deprivation. The core of these questions relates to whether there are items the household would like but cannot afford. These items encompass both basic items such as heating, clothing and food, and some 'luxury' items such as dishwashers and video cameras. Further living standards questions relate to housing and neighbourhood quality.

United Kingdom

The major focus for social disadvantage measurement in the United Kingdom relates to the identification of items as part of its Opportunity for All (Tackling Poverty and Social Exclusion) strategy (UK DSS 2000). These, however, tend to be 'performance measures' rather than indicators of household level deprivation, although some items, such as those relating to dwelling quality, are similar to those used in deprivation studies.

In addition, data from the Poverty and Social Exclusion (PSE) Survey conducted by the Office of National Statistics (ONS), with additional data from the ONS General Household Survey and Omnibus Survey, have underpinned a major research project undertaken for the Joseph Rowntree Foundation. This included more than 54 possible items covering much of the scope of earlier work by Townsend and others, as well as including 'emerging' items such as mobile phones and access to the Internet. (PSE 2000)

Ireland

The Irish Government as part of their National Anti-Poverty Strategy have adopted a deprivation component into their measure of the 'consistently' poor. These are households who not only have incomes below the poverty line but also have at least one of the basic deprivation items identified by Nolan and Whelan (Nolan 2001)

Development in Australia

There has also been considerable discussion of the application of such measures in Australia. Much of this was as work undertaken in the mid-1990s in reviewing the adequacy of payments by the then Department of Social Security (DSS). (DSS 1995, Weston et al. 1995). Amongst the projects supported was a pilot study of deprivation among DSS clients conducted by Travers and Robertson (1996). This work drew upon Travers' earlier study with Richardson, reporting the results of the 1987 Australian Standard of Living Study (Travers and Richardson 1993).

One outcome of this DSS review was the establishment of a joint 'Living Standards' project by the Department of Family and Community Services and the Australian Bureau of Statistics (ABS) to consider the extent to which such measures could form part of the ABS survey program. The results of this project have been used by the ABS as a major input to their proposed General Social Survey, and, as considered below, have been drawn upon in the development of a number of financial stress questions in the 1998–99 Household Expenditure Survey. These are the focus of this paper.

1.2 ABS 1998–99 Household Expenditure Survey

Reflecting the developmental work undertaken in the Living Standards Project, the 1998–99 Household Expenditure Survey (HES) conducted by the ABS included a number of questions described by the ABS as measuring the 'financial stress' of households. The ABS indicate in their technical paper on the survey that these questions provide a 'subjective measure of the household's economic well-being' (ABS 2000d).

This paper analyses this 'financial stress' to identify the extent of poor outcomes and who experiences them.

When compared with much of the broader international development of deprivation measures, the set of financial stress measures identified by the ABS are distinguished by:

- concentrating on a narrower range of activities and outcomes, in particular not asking questions about household durables and physical living conditions; and
- not including questions that would allow a judgement to be made about community standards. That is, ABS do not ask whether or not people consider the items a necessity in terms of establishing whether or not an item should be in the scale.

These differences, however, are not necessarily a major restriction on using the data for deprivation-type analysis. One finding of much of the research that has been undertaken is that it is not necessary to ask a barrage of questions to identify deprivation, but rather, similar results can be obtained from a smaller set of questions. Albeit there is a risk that this may be at the expense of being able to fully understand the different forms of deprivation. As to the question of determining whether or not an item is a 'necessity', it can be considered that most of the items chosen by ABS are such that there are limited grounds for disputing their importance. In addition, for some items, guidance on the relative importance to households as a whole can be derived from the proportion of households indicating they had the item, and the proportion reporting its absence out of choice or other reasons.

The ABS HES financial stress questions, reproduced at Appendix B, asked one person in the household:

- how they compared their household's current standard of living with that of two years ago;
- whether the household was financially constrained in their ability to undertake a range of activities;
- whether the household had capacity to raise money in an emergency;
- whether the household, over the previous year, experienced a range of problems which could be considered as indicating significant financial stress; and
- whether overall household finances were in balance.

While analysis of the data can inform understanding of the current relative outcomes for Australian households, it is not possible to draw any conclusions about changes over time. This is because similar data have not previously been collected on a comprehensive and compatible basis in Australia. This absence also means that there is little information on which judgements can be made as to the quality of the results of this particular survey, the appropriateness of the questions and the benchmarks against which results should be measured.

Notwithstanding this absence of earlier data, it might be suggested that the question about a household's assessment of their living standard compared to two years earlier could provide information on changes over time. As discussed further in this analysis, this is not possible as only a most limited interpretation of the answers to this question is possible.

It should also be noted that while this particular question is directly worded in terms of the living standards of the household, and the subjects of many of the other questions asked by the ABS are aspects of living standards—for example, nights out and holidays away from home—the way in which the questions are asked clearly places the focus on financial stress, and not living standards themselves. This distinction is highlighted in ABS's description of this component of their survey as 'financial stress', terminology that has been maintained in this analysis.

That is, the emphasis in this analysis is on whether a household is missing an item because they cannot afford it, not whether or not they have the item, and in its absence, whether their living standard is satisfactory.

This differentiation is important. For example, while a household may have no financial constraints on their ability to take a holiday, they may not be able to do so because of severe time constraints, perhaps even as a result of the hours of work which ensure that they do not have a financial constraint (Bittman 1999). Alternative approaches to living standards may consider both of these as inadequate outcomes. In this survey, however, only the financial aspect is considered.

The statistical analysis in this paper has been undertaken using the Confidentialised Unit Record File (CURF) issued by ABS containing data from the 1998–99 Household Expenditure Survey. (ABS 2000e). Results produced in the analysis may differ from those published by ABS. Firstly, in producing the CURF, ABS takes steps, including the amalgamation of some categories and perturbation of some items, to maintain confidentiality of individual household responses. Secondly, because of the computer package used in the analysis, household weights have generally been rounded to the nearest integer[2], and thirdly, for the purposes of presenting results, a number of the classifications used do not reflect the original ABS classifications.

[2] A consequence of this and the derivation of the CURF is that the total number of households shown in the tables is 7 121 900 compared to published estimates of 7 122 800.

As the HES data are derived from a survey, the results take the form of estimates of the characteristics of the total population, and are the subject of sampling variability. For small populations this variability can be large and care must be exercised in interpreting results. While details of relative standard errors are not presented in the body of the paper, Appendix C provides estimates for the main analysis variables.

Unless otherwise indicated, all data used in the paper have been derived from the 1998–99 HES.

1.3 Summary

Social analysis of wellbeing has traditionally focussed on the inputs available to households, individuals and families. Generally, this has used income-based poverty measures that report on the adequacy of social outcomes based on the income a household has available to it. An alternative approach is to focus on the outcomes, either directly identifying episodes of outcomes that may be considered to be inappropriate, or recording the characteristics that may be associated with these outcomes. One such approach is to identify activities that a household is unable to undertake because they cannot afford to do so.

There has been an increase in the use of this type of measure internationally, sometimes as the sole measure, and on other occasions in association with levels of income.

Following a joint project with the then Department of Social Security, the Australian Bureau of Statistics included a number of questions relating to the concept of financial stress in its 1998–99 Household Expenditure Survey. While these do not cover as wide a range of questions as many other surveys of deprivation, they do provide a valuable insight into aspects of wellbeing in Australia and provide an important dataset for analysis of social outcomes.

2 Indicators of financial stress

This section considers the results of the five sets of questions used by ABS to measure the incidence of financial stress.

The key results of the 16 questions within these groups, cross-classified by income quintile[3], are provided in Table 1. This highlights the relationship between the incidence of stress and the incomes of households.

Table 1: Incidence of financial stress by net equivalised income quintile

Financial stress question	Household income quintile					Total
	Q1 (Low)	Q2	Q3	Q4	Q5 (High)	
	% of households					
Living standard compared to 2 years ago:						
Better	14.6	16.7	26.1	35.0	48.3	28.1
Same	42.5	48.7	44.6	42.6	35.2	42.7
Worse	41.1	32.3	26.8	18.6	11.7	26.1
Household not comparable	1.7	2.3	2.5	3.8	4.9	3.0
Over the past 12 months usually:						
Spend more money than we get	23.0	19.3	14.9	11.0	5.4	14.7
Just break even most weeks	61.9	60.7	57.2	50.9	33.7	52.9
Able to save money most weeks	15.1	19.9	28.0	38.2	60.9	32.4
Cannot afford:						
Week's holiday away from home each year	44.0	38.0	29.6	17.7	7.3	27.3
Night out once a fortnight	31.2	28.9	21.7	11.3	3.9	19.4
Friends/family over for meal once a month	11.1	9.5	3.5	1.9	0.4	5.3
Special meal once a week	22.6	17.2	10.8	6.0	1.6	11.6
Brand new clothes (Usually buy second-hand)	23.4	19.7	9.6	4.6	1.4	11.8
Leisure/Hobby activities	18.1	14.0	7.9	4.4	1.1	9.1
In past year due to shortage of money:						
Could not pay gas/electricity/telephone on time	23.4	22.5	17.6	11.7	5.2	16.1
Could not pay car registration/insurance on time	8.8	7.9	8.0	5.6	2.3	6.5
Pawned or sold something	7.9	6.4	3.6	2.5	0.8	4.2
Went without meals	6.5	3.7	1.7	1.3	0.3	2.7
Unable to heat home	5.1	3.6	1.4	0.8	0.3	2.2
Sought assistance from welfare/community	7.5	5.7	2.6	1.2	0.3	3.5
Sought financial help from friends /family	14.6	13.3	9.6	8.5	3.6	9.9
Could not raise $2 000 in a week	36.0	27.4	16.3	11.6	4.3	19.1
Households ('000)	1 426.7	1 422.7	1 423.8	1 424.9	1 423.7	7 121.9
(%)	20.0	20.0	20.0	20.0	20.0	100.0

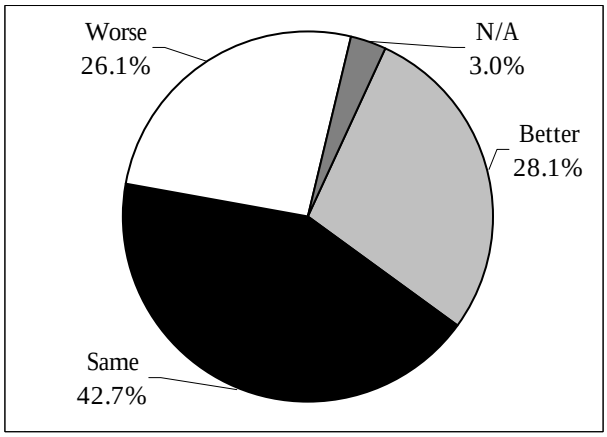
2.1 Living standard compared to two years earlier

In 1998–99, a total of 70.8 per cent of Australian households indicated that their standard of living was equal to, or better than the standard they experienced two years earlier. The proportion

[3] Each quintile represents 20 per cent of the population ranked by income, with the first quintile containing the 20 per cent of households with lowest incomes, and the 5th quintile the 20 per cent of households with highest incomes. The income quintiles used in this analysis are based upon net, post-income tax, current income and have been equivalised using the revised OECD scale which uses a weight of 1 for the first adult, 0.5 for the second and subsequent adults and 0.3 for each child aged 15 years or under.

reporting that they considered that their living standards had declined over the previous two years, 26.1 per cent, was marginally outweighed by the 28.1 per cent reporting an improvement.

Figure 1: Living standards compared to two years earlier



For all income quintiles, other than the top quintile, the major response was that household living standards had remained unchanged. The largest response category of the highest quintile was that living standards had improved. Upper-income households, on balance, reported improving standards of living and lower-income households reported, on balance again, declining outcomes. As, however, no information is available on the living standards of these households for the earlier period, no simple interpretation can be made of this result. Specifically, it is not possible to conclude whether this pattern reflects an improvement in living standards at the top, and on balance some decline at the bottom, or whether it reflects mobility of households between different income quintiles. That is, this result could be reflecting either:

- the same group of higher-income households experiencing improved standards of living over the two years prior to the survey, with the standard of living of a constant group of low-income households declining over the same period; or
- a re-ranking of households. That is, the current classification of a household as higher or lower income is a result of the rise or decline in the living standards they are retrospectively reporting. To the extent this occurs, more higher-income households will report an improvement in their living standards as a result of the higher incomes which made them, at the time of the survey, higher-income households, whereas two years earlier they had a lower standard of living and were in a lower-income quintile. Conversely, lower-income households may report a decline in living standards more frequently because their income has declined from where it was two years earlier, and this decline has resulted in their moving into a lower-income quintile.

It is not possible to track the incomes of the survey respondents over the two-year period prior to the survey. However, other ABS data, at the income unit level[4] as shown in Table 2, suggest that

[4] An income unit is a group of persons within a household who are assumed to have shared command over income. As such, while couples with dependent children are treated as a single-income unit, independent children in the same family, or other adults in the household are treated as separate income units. The data is unequivalised, that is no account is taken of differences in the size of families.

an increase in real incomes (in constant 1999–2000 prices) has been recorded across all income quintiles over the period.

Table 2: Real average income (income units), by income quintile, 1996–97 to 1999–2000

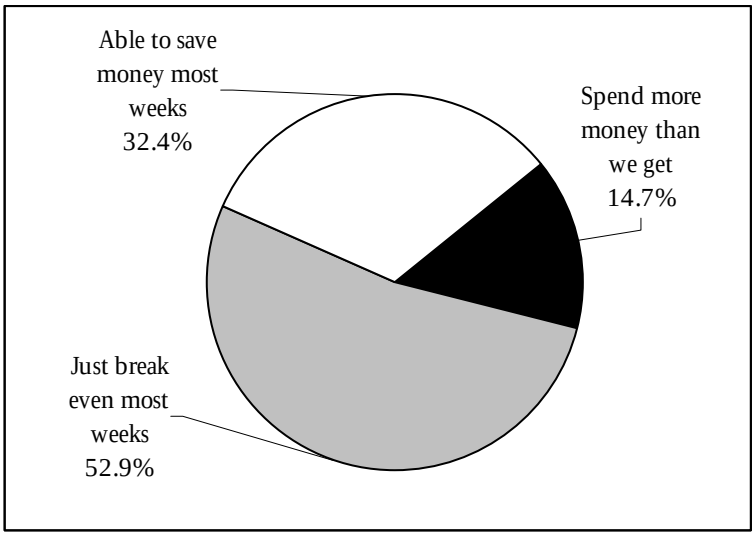
Average income	Income quintile					Total
$1999–2000 prices	1 (Lowest)	2	3	4	5 (Highest)	
			$ per week			
1996–1997	125	305	493	780	1539	648
1999–2000	136	327	541	866	1765	726
			- % -			
% change	8.4	7.3	9.6	11.1	14.7	12.1

Source: ABS, ***Income Distribution***, Cat No 6523.0

2.2 Budget outcomes

In the survey, households were asked whether their financial outcome over the past 12 months could be best described as: spending more than we get, just breaking even most weeks, or able to save money most weeks. In response, 52.9 per cent of households reported that they 'just broke even', 32.4 per cent reported that they were able to save money most weeks, while just under half this number, 14.7 per cent, reported usually spending more than they receive.

Figure 2: Weekly financial outcome



The pattern of responses by household income is marked. Four times as many households in the highest income quintile reported being able to save most weeks than in the lowest income quintile, (60.9 per cent compared to 15.1 per cent). This ratio of outcomes between the top and bottom quintiles was reversed (5.4 per cent to 23.0 per cent) for the proportion of households reporting that they spent more than they received.

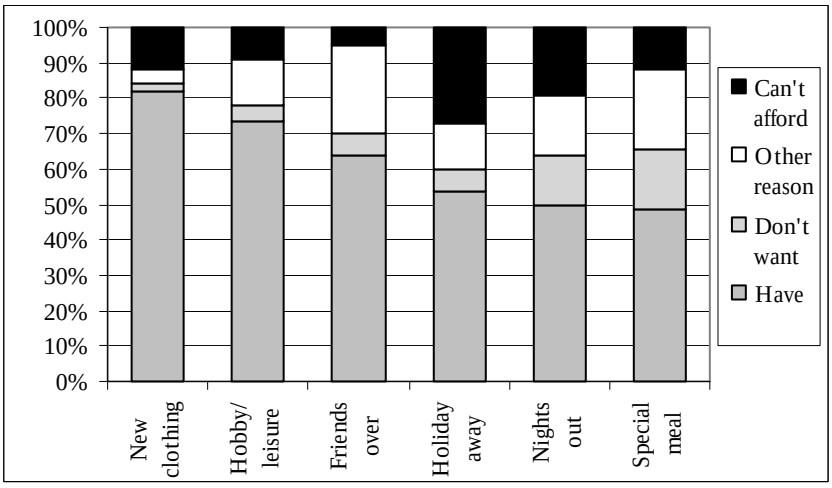
Notwithstanding the overall result, the data indicate that one in six of the lowest quintile households had a level of income sufficient for them to save most weeks, while one in 20 of the highest income households found that their income was still insufficient to meet their needs.

2.3 Financial constraints

The survey questions on financial constraints provide information not just on the way inadequate income may restrain the range of activities of a household, but also on the activities and preferences of households.

The results show that a majority of households usually bought new, not second-hand clothing, were able to engage in hobby and leisure activities, had friends or family over once a month for a meal, and took a holiday away from home for a week or longer each year. Just under half reported having a night out once a fortnight and a special meal once a week. The lower response to these last two questions is in part a result of the relatively large proportions (14.2 per cent and 17.1 per cent of households respectively) that reported they did not want to do these activities.

Figure 3: Impact of financial constraints on household activities



The most frequent item households reported that they could not afford was a holiday away from home. Just over a quarter of households reported this was outside their financial reach. The extent of this constraint was higher for low-income households than for those with higher incomes. In the first, lowest, income quintile, 44.0 per cent of households said they were unable to afford to take a holiday, with this proportion declining only slowly to 38.0 per cent in the second quintile and 29.6 per cent in the third. Only 7.3 per cent of the top quintile reported such a constraint.

The next highest levels of financial constraint on household activities were recorded in relation to having a night out (19.4 per cent) and purchasing brand new, rather than second-hand, clothing (11.8 per cent). A total of 23.4 per cent of households in the lowest income quintile reported that they usually buy second-hand clothing because they cannot afford new ones. This proportion remains high at 19.7 per cent for the second lowest quintile before falling to half this rate, 9.6 per cent, for the third. However, even in the second-to-top income quintile, one in 22 households reported to the ABS that they usually bought second-hand, rather than new, clothing due to financial limitations.

The strongest contrast in experience by income quintile is recorded in the questions on having friends or family over once a month, where the ratio of negative responses in the lowest quintile relative to the highest quintile was 28:1. This was followed by clothing and leisure and hobby activities each at 16:1. While these ratios reflect a strong relationship between income and the experience of being unable to undertake these activities more generally, the persistence of negative responses to a number of the questions across income ranges suggests that financial constraints on

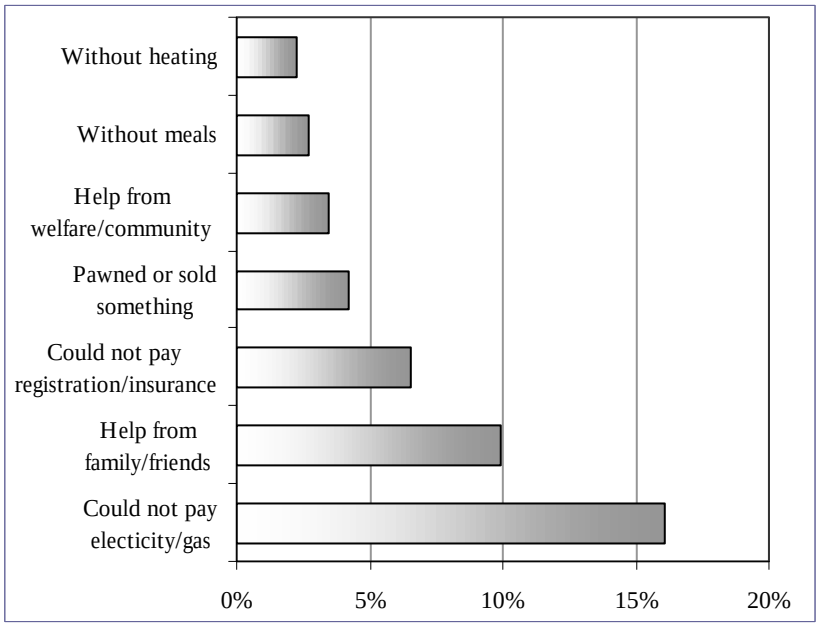
what may be considered to be normal social and family activities are a part of the experience of a wide cross-section of households.

Although this is not undertaken in this paper, the pattern of responses would suggest, using the approach identified by Desai and Shah (1988), that greater weight could be attached to items such as the purchase of new rather than second-hand clothing, a capacity to undertake leisure/hobby activities and having friends and family over for a meal, as these are all marked by a large proportion of the population possessing them, and only a small number missing out.

2.4 Financial management

The next group of items in the survey took the form of questions as to whether in the previous year 'any of the following happened to your household because of a shortage on money'.

Figure 4: Financial management, proportion of households with negative outcome due to a shortage of money



This group of questions can be considered to fall into two categories. There are the questions relating to going without heating or meals which ask about an actual deprivation, and the balance, which relate to coping mechanisms, either delaying the payment of bills, obtaining assistance from outside of the household, or selling or pawning an item to raise money.

Four of the questions, going without heating or meals, seeking help from community organisations and selling or pawning an item had low levels of negative responses—less than 5 per cent of households. In contrast, 16.1 per cent said that they had been unable to pay an electricity, gas or telephone bill on time because of a shortage of money, and 6.5 per cent could not pay car registration or insurance bills for the same reason. It is probable that the lower response to this last question is a result of the number of households that do not have such charges to pay, whether that is because they do not wish to have a car, because they have access to a car as part of their employment, because they cannot afford a motor vehicle, or, if they do have one, they cannot afford to insure it.

As with financial constraints, the pattern of responses varied by income. The only slight exception to increasing levels of constraint with falling income was the case of paying motor vehicle registration and insurance bills on time, where the rate rises slightly between the second and third quintiles. This is probably a reflection of the possibility noted above of lower-income households being less likely to have such bills to pay.

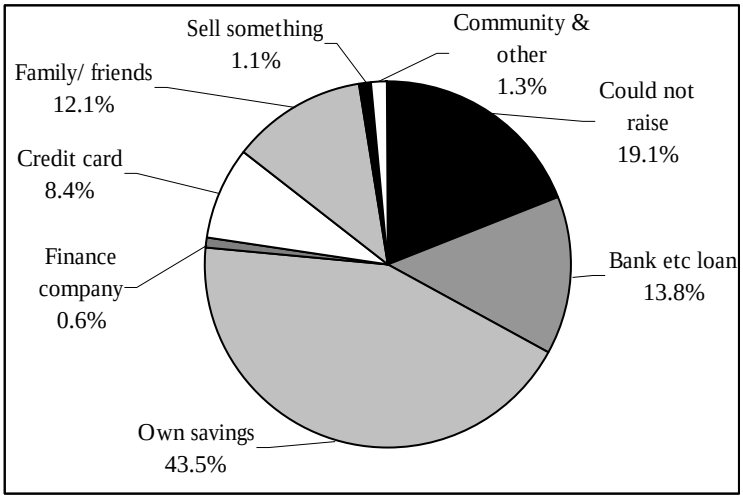
A similar type of distortion, as a result of non-universality of the question, may be present in responses to the question on heating. In aggregate, fewer households reported going without heating than reported going without meals. The reason for this seems to be the numbers living in climates where heating may not be required. Hence, while absence of heating is a more frequent privation than missing meals in Victoria, South Australia and Western Australia, it has much less significance in Queensland and the Northern Territory, and to some extent in New South Wales.

With the exception of paying electricity, gas and telephone bills on time and seeking financial assistance from friends or family, fewer than one in ten households, even in the lowest income quintile, reported a negative response to any one of the questions in this group. At the same time, however, the data estimate that one in 15 households in the lowest income quintile went without a meal at some time in the year before the survey because of a shortage of money—a significant indicator of a small group of households experiencing a marked disruption in their standard of living. While in total they represent a quite small proportion of all Australian households (2.7 per cent) the group does, however, represents 417 300 people living in 193 000 households.

2.5 Meeting emergency needs

The final question in the survey asked a household whether they could 'get hold of $2 000 in a week for something important', and if so from what source they would obtain the money.

Figure 5: Whether could raise $2 000 by source



Over 80 per cent of households reported that they could raise this amount of cash, with savings (43.5 per cent) being the main source followed by a loan from a bank (13.9 per cent) and a loan from family and friends (12.1 per cent).

Lower-income households were eight times more likely to report being unable to raise $2 000 than households in the top income quintile. The strategies used by households also varied by their relative level of income.

- Sixty per cent of the top quintile responded they would draw the money from their savings, with a further 15 per cent proposing a bank loan and 12 per cent a credit card.
- In contrast, only 35 per cent of the lowest income quintile could access the funds from their savings and 8 per cent from a bank, while 14 per cent suggested they would obtain a loan from friends or family—a proportion that remained constant across the second to fourth income quintiles.

These responses, as well as highlighting the relative access to savings, also point to some difference in access to formal financial systems. 'Better-off' households as well as having higher savings were able to access bank loans and credit cards, while lower-income households were relatively more reliant upon informal loans from families and friends. Very few households indicated that they would seek to obtain funds in an emergency from high-cost sources, or from welfare and other agencies.

2.6 Incidence of any negative outcomes

If all the questions, other than those relating to the household's standard of living compared with two years earlier their ability to raise $2 000 and whether they usually break even, are grouped together, 43.7 per cent of households respond negatively to at least one question. This rises from 15.5 per cent of households in the highest income quintile, and 35.9 per cent in the second highest, to 61.4 per cent for the lowest income quintile and 56.5 per cent in the second lowest.

If household budget outcomes are included and 'spend more money than we get' is treated as the negative response to the question on financial outcomes, 48.3 per cent of households respond negatively to at least one question. This rises from 18.3 per cent of households in the highest income quintile, to 66.7 per cent for the lowest income quintile. Including the other two questions, and treating a falling living standard and an inability to raise $2 000, as negative responses increases the overall proportion who report some financial stress to 57.0 per cent. Under this approach, 26.7 per cent of all households in the highest income quintile and 76.6 per cent of those in the lowest quintile report at least one problem.

2.7 Some issues of interpretation

In seeking to interpret these responses attention needs to be given both to their conceptual basis and the context and interpretation of the questions by respondents. This is particularly important as the answers to the questions may often involve the household in having to provide a simple ***ex post facto*** rationalisation of what might have been a complex chain of events or trade-offs.

Fundamental to any interpretation is what an 'inability to afford' may mean. This may mean different things to different people and can be conceived of both as an absolute and as a relative concept. In addition, there may be different reasons for households being unable to afford a particular activity, such as:

- an ongoing lack of financial resources;
- a temporary reduction in resources: a failure of a creditor to pay a bill on time, a brief period of unemployment that may severely restrict the household's income, but not their ongoing expenses, or the impact of a sudden expense— such as a need to travel interstate or overseas for family reasons, a bill for a major car repair;

- a different set of priorities: for example, 'I cannot afford to have a regular night out because I prefer to save for an overseas holiday'.

  While such priorities would generally be seen as benign and are simply a reflection of the preferences of different households, in other cases they may give rise to concern. This is particularly so where the preference of the household is to spend money on activities such as gambling, smoking or excess consumption of alcohol, rather than what the community may consider to be more meritorious activities;

- an inability to manage resources in a prudent manner, even though the resources may be adequate.

From a social policy perspective, each of these interpretations could involve quite different responses, if indeed a response is required at all. To the extent that problems may arise for reasons other than inadequate financial resources, traditional approaches of increased levels of government-funded assistance may not be appropriate.

Some caution is also needed in interpreting results that relate outcomes to particular household characteristics identified in the survey, especially those such as employment and earnings, which often fluctuate over time. Given the structure of the survey questionnaire, while most household characteristics, and very importantly income, are recorded to reflect the current circumstances of the household at the point of survey, the financial stress questions usually ask about the experience of the household over the previous year. As a consequence there may be a timing mismatch between the experience and characteristics ascribed to the household.

For example, it may be possible that one of the reasons some high-income households reported financial stress is that they experienced the stress at an earlier time when the household income was lower than it was at the time of the survey. That is, the experience of stress had nothing to do with their current level of income.

A further issue is the quality of household responses to the ABS, especially answers to the question on household income. Around 1.3 per cent of households, that is some 7 per cent of the lowest quintile, reported having zero or negative incomes. When analysed separately, these households reported levels of financial stress much closer to, or even lower than, those of the population as a whole rather than to those of other members of their income quintile. In addition, a further and more significant proportion of households reported incomes below those that would be expected, given the income support safety net provided by social security. This raises some questions about the extent to which income is fully or accurately reported.

Also, simple reporting errors and the potential for literal responses are not to be ignored in considering the responses recorded by ABS. For example, 'I went without a meal because I was short of money because I forgot to take my wallet/purse with me', or 'I couldn't pay the bill on time because I had paid for a major purchase of shares that week'. Finally as noted above the data are collected by ABS through a sample survey and estimates are subject to sampling error.

2.8 Summary

The responses to the ABS financial stress questions indicate that many households experience some dimensions of financial stress.

- The most frequent occurrences of stress were being unable to take a holiday away from home for a week or longer each year, not being able to have a night out once a fortnight and being unable to pay some bills on time at some point in the previous year.
- The least frequently reported problems were going without meals or heating at some time in the previous year because of a shortage of money.

The incidence of poor outcomes was associated with income levels. Indeed, with only one minor exception, lower-income quintiles consistently reported higher incidences of financial stress than higher quintiles. At the same time, however, some degree of stress tended to persist even into the top income quintile. While the incidence of what could be considered to be the more significant privations—inability to afford a meal or heating, or requiring assistance from community or welfare organisations—was low in the upper quintiles, it was not absent.

Further, while lower-income households have, on average, higher levels of stress, many of these households experience no financial stress at all. For example, a significant minority, 15.1 per cent of the poorest 20 per cent of households, report that they are able to save money most weeks, while a third indicate that they have a holiday away from home for a week or longer each year, and a third that they have a night out once a fortnight. In no case, not even for the lowest income quintile, did the majority of households indicate a negative response to any one individual question, and just under a quarter of the lowest income households did not respond negatively to a single question.

While the rates of stress identified on all the questions were much higher for the lowest income quintile, the relative incidence of negative responses by households in this quintile was less than double that of the community as a whole except in the cases of an inability to purchase a meal or heating, requiring assistance from community or welfare organisations, and being able to have friends over for a meal once a month.

Notwithstanding the overall pattern of trends in the data, which suggest a high level of robustness in the responses, some limitations need to be noted, in particular that financial stress may result from a range of circumstances, not all of which are related to the underlying level of income a household receives.

3 The nature of financial stress

The first section of this paper discussed a range of different approaches to the aggregation of responses to deprivation questions. The simplest approach, and that which is most frequently used, is to consider stress as a simple linear concept and just add the number of negative responses together to form a summated scale. This approach has not been adopted, rather the analysis for this paper began with an investigation of the relationship between the responses to the set of questions used by the ABS.

This analysis had two goals:

- to test whether it was possible to reduce the responses into a more manageable structure by grouping questions; and
- to consider whether all of the questions related to the same concept of financial stress, or whether there were different forms of stress that various types of households may experience in different ways.

3.1 The components of financial stress

The technique of factor analysis was used for this investigation. This is a statistical technique that seeks to summarise, or group, observed variables into a smaller number of variables. In this methodology, the factors can be considered as latent constructs that underpin the correlations between the initial observed variables. More simply, each factor can be taken as an underlying, but unmeasured, variable, of which the original variables are observed estimates.

In the final analysis, three of the financial stress questions were omitted. These questions were the household's capacity to raise emergency funds, its financial position compared to two years earlier and whether the household usually broke even, spent more than it received or saved. Further discussion of the reasons for the exclusion of these three variables is provided in Appendix D, which describes the analysis in more detail. In summary, this concluded that:

- The questions were conceptually different in that they did not record, to the same extent as other questions, particular events or outcomes. Specifically: capacity to raise funds in an emergency would have been, for many households, a hypothetical rather than an experiential question; the question on standards of living simply gained information on current status relative to an unknown earlier status; and the question about usually breaking even was at a higher level of abstraction and generality ('usually', 'most weeks', etc), than most other questions.
- Possibly related to this, answers to these questions did not show a consistent relationship to the other questions.

While excluded from the final measures, the interaction of these responses with the measures will be considered in section 5.

The factor analysis indicated the remaining 13 questions were grouped into three factors. This result suggests that financial stress is not itself a single concept, but rather it comprises a number

of different forms of stress and that these impact on different households in different ways. Each of these three factors is considered in more detail below.

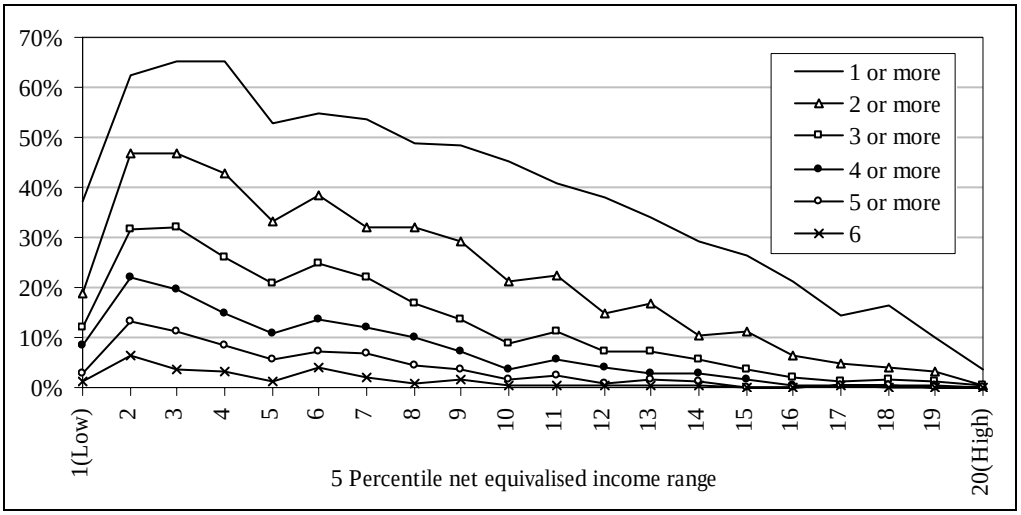
Missing out

The first factor had the most elements and comprised the questions about whether households could afford to have:

- family and friends over once a month for a meal;
- a special meal once a week;
- new clothing rather than second-hand;
- hobby or leisure activities;
- a holiday away from home once a year; and
- nights out once a fortnight.

These questions appear to relate to the capacity of a household to participate in a range of activities that could be considered to be consistent with a reasonable standard of living in the community, with financial stress being reflected in terms of doing without. It suggests an indicator of the extent to which households are ***missing out*** on fully participating in daily life because of their financial constraints.

Figure 6: Incidence of missing out by five percentile income ranges.



Overall, 38.3 per cent of households indicated that they had missed out on one or more of these activities because of a shortage of money. A large proportion of these households (16.5 per cent), however, only identified one item out of the six, suggesting that the extent of the constraint upon such households did not severely limit their capacity to participate. Importantly also, as shown in Figure 6, while missing out on one item is not uncommon among higher-income households, the relative incidence of multiple missing out is much lower.

The chart displays a number of interesting characteristics in the distribution of missing out. A key feature is the relatively low incidence of missing out in the lowest income grouping—those

households with the lowest 5 per cent of equivalised income. This seems to be a result of the number of households in this classification that reported they had zero or negative incomes, notwithstanding levels of expenditure that would place them much higher on a consumption scale. While the incidence of any missing out peaks in the fourth income range, and the incidence of missing out on two or more, or three or more items, peaks in the third income range, more intense rates of missing out (on four or more items) peak in the second range.

Using the more aggregated presentation of data in Table 3, it can be seen that missing out, especially with regard to one or two items, is quite extensive in the first two income quintiles. Here 57.4 per cent and 52.5 per cent of households respectively report at least one occurrence. This relatively high rate tends to persist into the third quintile, where 43.2 per cent of what might be considered as being middle Australia report some missing out. More intensive missing out is much less persistent, dropping very rapidly between the second and third income quintiles.

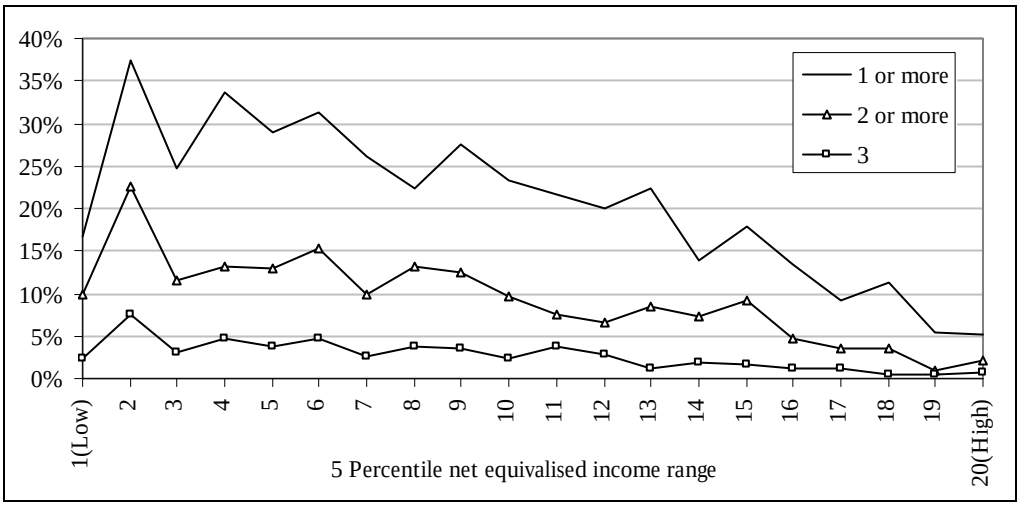
Even then, however, missing out is not simply a low and middle-income experience. Rather, 27.6 per cent of fourth quintile households, and even 11.0 per cent of the top quintile, report that there are some commonplace activities in which they are unable to participate due to financial stress. It is, of course, possible that this pattern may be a result of different perceptions of what these items are. For example, a week's holiday away from home may be judged on the basis of a week's skiing in Europe, rather than a week in a caravan park on the coast.

Cashflow problems

The second factor grouped three questions concerning an experience in the previous year of:

- being unable to afford to pay motor vehicle registration or insurance bills on time;
- being unable to afford to pay gas, electricity or telephone bills on time; and
- having had to seek financial assistance from families and friends.

Figure 7: Incidence of cashflow problems by five percentile income ranges



In contrast to the other two components, it can be suggested that this factor is more concerned with processes rather than outcomes, and relates to what may be considered to be ***cashflow problems***.

As with missing out, the bottom five percentile income grouping had much lower levels of incidence than the second category, which in this case recorded the highest incidence at each of the three levels, especially with regard to recording two or more items. Beyond this point, however, in marked contrast to the diminishing pattern seen in missing out, while the incidence of cashflow problems reduces with income, the trend is much more muted, and with regard to multiple problems, less consistent. This might be interpreted as suggesting that while income plays a role in the level of incidence of cashflow problems, other characteristics may also come into play.

The graph also shows that the large gap, seen in the total response, between the 20.6 per cent of households with at least one problem and the 9.2 per cent with more than one, is reflected in most income quintiles.

Again, at the more aggregate level, the pattern of responses within the cashflow factor has a number of similarities with missing out, with similar rates for both of the first two quintiles. Just under 30 per cent of households identified one or more problems, with quite high incidence persisting into the third quintile. In contrast to missing out, however, the persistence is even more marked, and can be considered to even continue into the fourth quintile.

This suggests that, while problems with cashflow are more frequent for lower-income households, it remains a difficulty that some households at all income levels face. This can also be seen in the flatter distribution of the variable. The incidence of at least one reported experience of cashflow problems in the bottom quintile, at 28.1 per cent, is only 3.6 times higher than the 7.8 per cent recorded by the top quintile, a much lower ratio than for the other two factors.

Hardship

The third factor identified in the analysis comprised four questions relating to the household's experience. These were that, due to a lack of money, in the previous 12 months, the household:

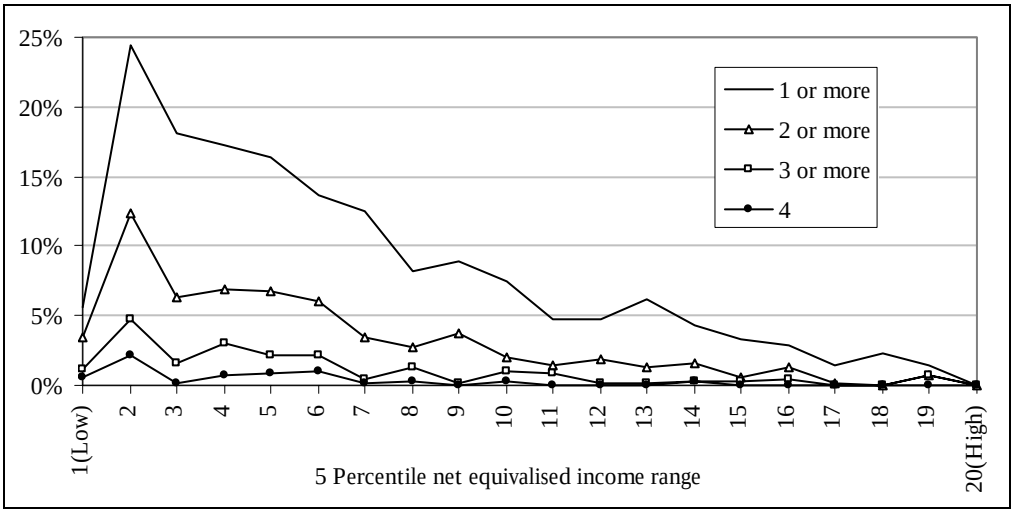
- had gone without a meal;
- had gone without heating;
- sought help from community organisations; or
- needed to pawn or sell something.

The presence of the first two of these questions in this factor suggests that it is associated with a more basic type of deprivation, suggesting a potential degree of real ***hardship*** in the household, and that the coping mechanisms of pawning and selling items, or reliance upon community organisations for assistance, are closely associated with such an experience.

Overall, 8.2 per cent of households identified one or more of these items in response to the ABS questions. Notably however, 5.1 per cent of respondents reported only one out of the four, with the remaining 3.1 per cent of households experiencing multiple hardships.

The pattern of these responses by income is also somewhat different from that shown by the other two factors. From the second five percentile range, the incidence of one or more problems declines rapidly with increasing income until the middle income range, where the rate of decline slows down. A similar, but less consistent, pattern can be seen for households with two or more areas of hardship.

Figure 8: Incidence of hardship by five percentile income ranges



This more concentrated pattern can also be seen in the analysis of income quintile data. The 16.3 per cent rate of at least some incidence of hardship amongst the lowest-income quintile households was almost 13 times higher than for the highest income quintile, which recorded a rate of 1.3 per cent. As noted, the variable also shows much more rapid decrease with higher income, and there is a much clearer demarcation between the experience of the first and the second income quintile, in particular with regard to multiple incidence.

Table 3: Financial stress factors—number of items on scale reported by equivalised net income quintile

Number of problems identified in factor	Household income quintile					Total
	Q1 (Low)	Q2	Q3	Q4	Q5 (High)	
Missing out	% of households					
6	3.6	2.0	0.6	0.1	0.1	1.3
5 or more	9.0	6.1	2.1	0.6	0.2	3.6
4 or more	16.2	11.5	5.1	1.9	0.3	7.0
3 or more	25.4	21.1	10.2	4.6	1.1	12.5
2 or more	38.8	34.0	21.9	11.1	3.1	21.8
At least 1	57.4	52.5	43.2	27.6	11.0	38.3
Cashflow problems						
3	4.5	3.7	3.2	1.5	0.7	2.7
2 or more	14.3	12.8	9.0	7.4	2.6	9.2
At least 1	28.1	27.1	23.1	16.9	7.8	20.6
Hardship						
4	0.9	0.6	0.1	0.1	0.0	0.3
3 or more	2.6	1.5	0.5	0.3	0.2	1.0
2 or more	7.2	4.7	2.2	1.2	0.2	3.1
At least 1	16.3	12.7	6.5	4.1	1.3	8.2

3.2 Summary indicators

The results of factor analysis can be used in a number of ways to construct summary variables. Weighted scales can be derived using the factor loadings, or a series of summated scales can be based on the incidence of the initial variables. Alternatively, the methods of weighting using the

relative 'importance' of different items based upon the extent of other households' experience, could be applied.

In this analysis, however, a simpler approach is used—that of identifying whether a household recorded a negative outcome against any of the components of each of the factors. This results in each of the factors being re-scored as a simple dichotomous variable. Thus, for example, a household was recorded as having experienced cashflow problems if they answered that they had a problem in any of the four questions relating to cashflow.

As the above analysis suggests there are though some marked differences in the pattern of responses for households with just one, as opposed to multiple, experiences. Accordingly a second set of variables that only identifies those households with multiple experiences was developed.

In broad terms, this second set may be considered as being more robust, highlighting more systemic patterns of poor outcomes, and as a measure that is more tightly focused on the outcomes that appear to be more frequent amongst lower-income households.

For these reasons, while both sets of indicators are reported on in the paper, greater emphasis will be placed on the second group, which identifies cases of multiple incidence, and in particular on the third of the three factors, that relating to hardship. That is, emphasis will be placed on those households that experience multiple incidence of hardship, as this may be considered as best pinpointing those experiencing particularly adverse outcomes.

This results in the following six variables that will form the basis for the balance of the analysis in this paper:

- Some Missing Out: households that responded that they face one or more of the identified constraints on their activities due to a lack of money;
- Multiple Missing Out: households that miss out in two or more areas;
- Some Cashflow Problems: households experiencing any of the identified cashflow problems;
- Multiple Cashflow Problems: households with more than one type of cashflow problem;
- Some Hardship: households that reported experiencing any of the four aspects of hardship—that is, missing meals or heating, having to sell or pawn an item or seeking assistance from community organisations; and
- Multiple Hardship: households experiencing two or more aspects of hardship.

3.3 Interrelationship of factors

While the analysis indicates that the factors represent quite distinct elements of financial stress, many households are affected by more than one of these dimensions. This interaction is illustrated in Table 4, which shows the eight permutations of the three factors, at both the lower ('some') level and higher ('multiple') level.

In aggregate, the table indicates that some 43.7 per cent of households experience at least one financial stress indicator at the lower level, and a much lower 25.9 per cent experience one at the higher, more intense, level. In addition:

- While 70 per cent of households experiencing hardship at the lower level also experience both missing out and cashflow problems; at the higher level only half do so.

Table 4: Combination of indicator outcomes

Combinations of financial stress summary indicators			Households	
Low level indicators : some missing, some cashflow and some hardship				
			'000	%
–	–	–	4 010.5	56.3
Some missing	–	–	1 537.5	21.6
–	Some cashflow	–	292.7	4.1
Some missing	Some cashflow	–	698.5	9.8
–	Some cashflow	Some hardship	66.6	0.9
–	–	Some hardship	21.1	0.3
Some missing	–	Some hardship	86.4	1.2
Some missing	Some cashflow	Some hardship	408.5	5.7
High level indicators: multiple missing, multiple cashflow and multiple hardship				
–	–	–	5 279.8	74.1
Multiple missing	–	–	1 115.2	15.7
–	Multiple cashflow	–	241.5	3.4
Multiple missing	Multiple cashflow	–	262.7	3.7
–	Multiple cashflow	Multiple hardship	36.5	0.5
–	–	Multiple hardship	11.9	0.2
Multiple missing	–	Multiple hardship	58.6	0.8
Multiple missing	Multiple cashflow	Multiple hardship	115.7	1.6

- Hardship by itself is relatively uncommon, with fewer than one in twenty five of those households experiencing low level hardship doing so in isolation from some other dimensions of stress, and just over one in twenty of those reporting it at the high level doing so without missing out or cashflow problems.
- Where households reported experiencing two dimensions of stress, the most common combination is 'missing out' and 'cashflow', with no 'hardship', followed by 'missing out' and 'hardship' together and, least commonly, 'cashflow' and 'hardship'.
- Most households with cashflow problems, or who experience missing out, even where these occur together, do not experience hardship. This applies to both the low and high level indicators.

3.4 Summary

Data from 'financial stress' questions contained in the ABS 1998–99 Household Expenditure Survey permit a number of living standards outcomes to be measured. Analysis indicates that the concept of 'financial stress' used by the ABS contains three distinct, and to a large degree independent, dimensions. These are:

- missing out on activities considered as usual community practice;
- experiencing cashflow problems; and
- hardship.

The paper proposes two scoring regimes for these. The first is a low level 'some' incidence where a household reports one or more adverse outcomes. The second is 'multiple' incidence when more than one item is recorded. It is considered that this latter is more robust.

The key indicator for further analysis is the concept of multiple hardship. This is where households record two or more negative responses to the questions on missing meals and heating, selling or pawning items or seeking assistance from community organisations.

4 Who records poor outcomes?

This section uses the six measures identified in the earlier discussion to consider the comparative outcomes for households in Australia. The analysis considers their geographic characteristics, as represented by their State, the structure of families and households, housing tenure, sources of income and employment arrangements. Emphasis will be placed on the occurrence of multiple hardship.

4.1 Outcomes by State

Unfortunately, the dataset used for this analysis only identifies geographic locations by State/Territory, and the socioeconomic status of the area[5]. In particular it does not contain any section of State identifier that would have permitted the outcomes of different regions to be studied[6].

Table 5: Financial stress by State

State/Territory	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
New South Wales	2 371.0	34.6	19.3	7.1	18.7	8.3	2.7
Victoria	1 740.3	36.9	18.8	7.6	21.8	7.7	2.3
Queensland	1 337.6	44.0	23.2	8.9	24.8	11.3	3.8
South Australia	605.4	42.7	24.3	9.5	23.9	10.5	3.6
Western Australia	712.5	39.7	19.9	10.3	24.1	10.4	4.0
Tasmania	185.8	42.8	23.0	11.6	25.3	8.8	5.8
Northern Territory	52.4	40.4	27.1	6.5	18.7	11.4	2.2
Australian Capital Territory	116.9	33.0	22.2	7.1	21.3	11.8	4.0
Total	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1

The dominant feature of the analysis of outcomes by States is the very marked division between the two most populous States and the others. New South Wales and Victoria both recorded levels of financial stress consistently lower than the national average, while the remaining States consistently reported rates above the national average.

- Each of the two largest States record better results than the other on three of the indicators. Those that were higher in NSW were both cashflow indicators and multiple hardship, while Victoria had consistently higher levels of missing out, and a higher incidence of some hardship. Notwithstanding its lower-than-national-average rate of multiple hardship, given its population base, as illustrated in Figure 9, NSW had the most households of any State that

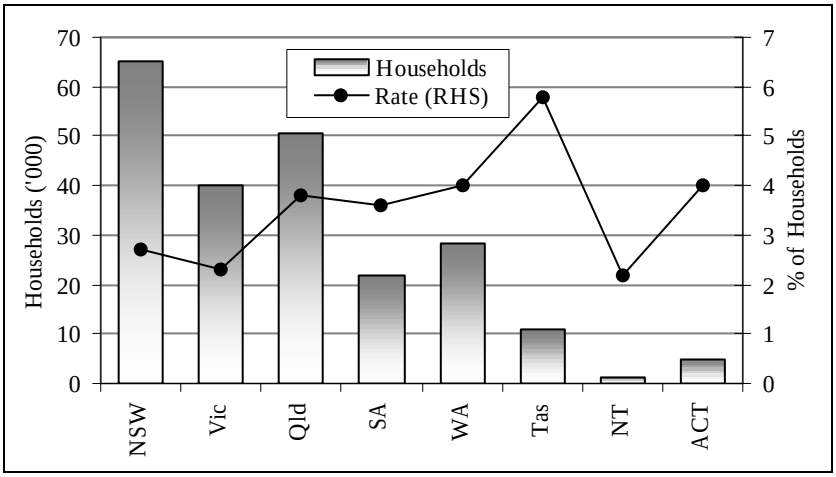
[5] This variable was not used in this analysis as a number of the individual component elements of the ABS Socioeconomic Indexes for Australia (SEIFA) are used independently in this analysis. Summary results of the incidence of multiple hardship by the socioeconomic status of the area are contained in Appendix C.

[6] While Section of State is available on the Master Unit Record File held by ABS and results may be able to be obtained from them for this variable, for reasons for confidentiality, the ABS did not make it available on the CURF used in this study.

reported multiple hardship. Overall, the most negative outcomes for any State appear in Tasmania, which has particularly high levels of some and multiple hardship but relatively lower levels of cashflow problems. Tasmanian households experienced multiple hardship at over double the rate of those in New South Wales and Victoria.

- Of the remaining States, outcomes were generally best in Queensland, although this State recorded a high rate of some missing out and also an above average rate of multiple hardship. This latter result meant that while having a smaller population than Victoria, Queensland had a larger number of households reporting multiple hardship.

Figure 9: Incidence and level of multiple hardship[7] by State



- Both South Australia and Western Australia have outcomes above the national average on most of the factors. In Western Australia this was most marked in the incidence of some and multiple hardship where, of all the States, it was second only to Tasmania. South Australia, while also having quite an elevated rate of some hardship, recorded a lower rate of multiple hardship.

The pattern in the two Territories is much less consistent and difficult to interpret. The Northern Territory showed high levels of some missing out and of cashflow problems, but low levels under the other indicators. The generally low level of some problems in the ACT is offset by relatively higher rates of multiple problems. It is possible that these results may reflect the small sample sizes in the two Territories and hence the validity of these results may be open to question. In addition the result in the Northern Territory may be skewed by the exclusion of remote and sparsely settled areas from the HES.

4.2 Household/family type

Households and the families that live in them experience aspects of financial stress in quite different ways, with the incidence and combination of the different indicators varying with a wide

[7] In this and subsequent charts on the incidence and level of multiple hardship, the vertical bars are plotted on the left-hand axis and show the number of households experiencing multiple hardship. The points connected by the line show this number as a proportion of all households in the classification, that is the rate of multiple hardship, and are plotted against the right-hand axis.

range of characteristics. This section considers a number of these, including age, gender, family structure and the presence, status and number of children, as well as whether any member of the household had a disability.

Taking firstly the family composition, apparent in Table 6 is wide variation in the incidence of multiple hardship between different household types. While fewer than 1 per cent of aged couples, or non-aged couples with non-dependent children, reported experiencing multiple hardship, this rose to 10 per cent for young single households and 15 per cent for sole parents.

The relationship between the stress indicators showed some important differences:

- Couples with dependent children, while experiencing missing out and cashflow problems at a higher rate than the community as a whole, had lower levels of hardship.
- This pattern was even more marked for elderly households who, while recording relatively high but slightly below average levels of missing out, had a low incidence of cashflow problems and low levels of hardship, especially multiple hardship.
- Conversely, young single households, while ranked below average in relation to missing out, were well above average in the incidence of hardship.

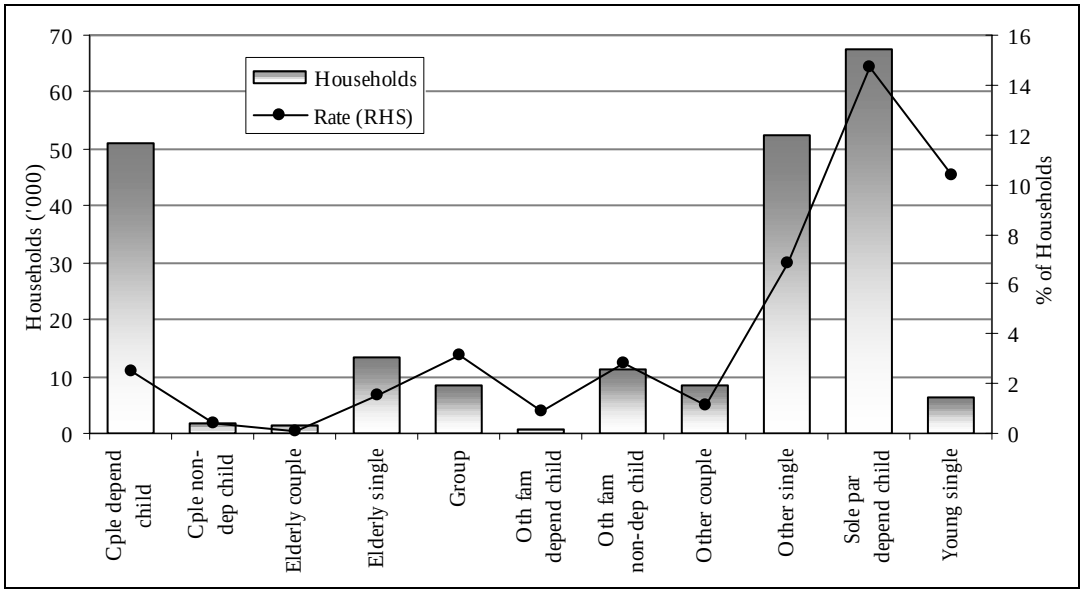
Table 6: Financial stress by family composition of household

Household/family composition	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
Couple with dependent children	2 011.2	43.8	24.7	6.6	26.0	12.0	2.5
Couple with non-dependent children	433.1	24.2	8.5	2.1	9.8	2.8	0.4
Other couples	790.3	25.1	16.1	4.9	11.6	6.4	1.1
Elderly couple	963.8	30.9	4.8	2.0	17.1	0.8	0.1
Sole parent with dependent children	460.5	75.7	55.7	31.8	50.8	29.9	14.7
Other families with dependent children	71.5	49.1	23.7	10.6	32.5	17.1	0.9
Other families with non-dependent children	401.0	36.6	25.9	8.0	18.1	9.6	2.8
Young single	62.8	33.8	48.2	17.3	20.5	28.0	10.4
Other single	771.0	39.2	26.7	14.3	22.6	11.8	6.8
Elderly single	886.9	36.4	8.4	5.4	20.7	2.4	1.5
Group households	269.9	26.8	26.7	10.3	10.7	9.7	3.1
Total	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1

As well as having the highest incidence of stress in absolute terms, the 67 700 sole parents with dependent children, 14.7 per cent of the 460 500 sole-parent households identified in the survey, were the largest single family type experiencing multiple hardship. They were followed by the 52 300 households comprising a single person aged between 25 and 54 years and 51 000 couples with dependent children, who, had a below average incidence of multiple hardship.

This result can also be considered on the basis on the number of people living in households, rather than the number of households. On this basis, because of the larger household size of couples with dependent children, these households accounted for 231 600 of the 590 400 people living in households that experienced multiple hardship.

Figure 10: Incidence and level of multiple hardship by household family type



The differences in patterns of the relative incidence of the three forms of financial stress may be explained in a number of ways. In the case of the aged, the low incidence of cashflow problems and hardship may reflect prudent financial management, stable income flows and possibly a capacity to draw upon assets. Similarly, couples with dependent children may avoid hardship as a result of their higher degree of missing out on social and related activities, which could again form part of a deliberate financial management strategy.

The results seen for youth may reflect a different behavioural pattern. It may be that young people are less willing to accept financial limitations on their regular, and often social, activities, rather choosing to run 'close to the line'[8]. As they are often without much asset or other backing to call on in the event of changes in circumstance, they are as a result more prone to cashflow problems, and ultimately have a higher risk of experiencing occasions of hardship. Some aspects of this will be considered in more detail below.

Children

Households with no dependent children while accounting for 45 per cent of households experiencing multiple hardship had, at 2.3 per cent, a much lower rate of incidence of this type of stress than households with children. In large part this is as a result of the outcomes for couples without children, and elderly single people seen above. Due to the smaller average size of these childless households they, however, only accounted for 24.2 per cent of the people living in

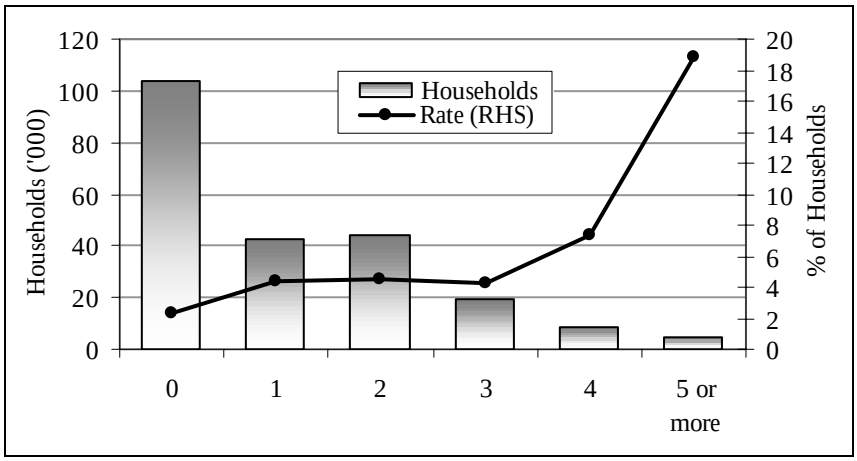
[8] A possible alternative explanation is that the low rate of missing out is because the items used in the scale are not activities of interest to this group. An examination of the data indicates this is not the case. With one exception, fewer or equal proportions of young single households reported that the reason they did not undertake an activity was because they did not want it, or 'other' reasons, than other households. The exception was the question relating to second-hand clothing, where 8.2 per cent of young single households report that they did not purchase new clothing because they did not want to, or for some other reason, as opposed to 6.4 per cent of all households.

In contrast to the young, amongst the aged a response of 'did not want' or 'other reasons' was much more common. It could be argued that this may be a case of lower expectations, possibly conditioned by lower income, or more retrospective perceptions of what constitute usual activities.

households experiencing multiple hardship. Indeed overall more than one third of the 590 000 people living in households experiencing multiple hardship were children aged under 15. These 223 300 children represent 5.7 per cent of all children in this age group. In contrast the rate for persons above this age was just 2.5 per cent.

For those households with dependent children, there was little difference in the incidence of multiple hardship between those with one, two or three children, all of which recorded rates of 4.2 per cent to 4.5 per cent. This rate, however, increases rapidly to 7.4 per cent for those households with four children and 18.9 per cent for the small number with five or more children. In both these latter cases, the relatively small sample size needs also to be taken into account.

Figure 11: Incidence and level of multiple hardship by number of dependent children



Sole parents

The much higher rates of financial stress amongst sole parents have been identified in earlier analysis. Table 7 provides a more detailed look at this group using the incidence of multiple hardship as the measure, taking account of the age of the sole parent and the age of their oldest child.

Table 7: Sole parents, incidence of multiple hardship by age of parent and age of youngest child

Age of parent	Households				Proportion with multiple hardship			
		Age of youngest child		All	Age of youngest child			All
	Under 5 years	5–14 years	15 years and over		Under 5 years	5–14 years	15 years and over	
	'000				% of households			
Under 25 years	27.6	3.4	0.0	31.0	19.7	0.0	–	17.5
25–34 years	76.4	75.8	0.0	152.2	17.6	16.0	–	16.8
35–44 years	29.3	139.3	23.1	191.6	11.1	15.5	7.2	13.8
45 years and over	2.6	40.8	42.3	85.7	43.8	13.3	8.5	11.8
Total	135.9	259.3	65.3	460.5	17.1	15.1	8.0	14.7

Two key features emerge from this:

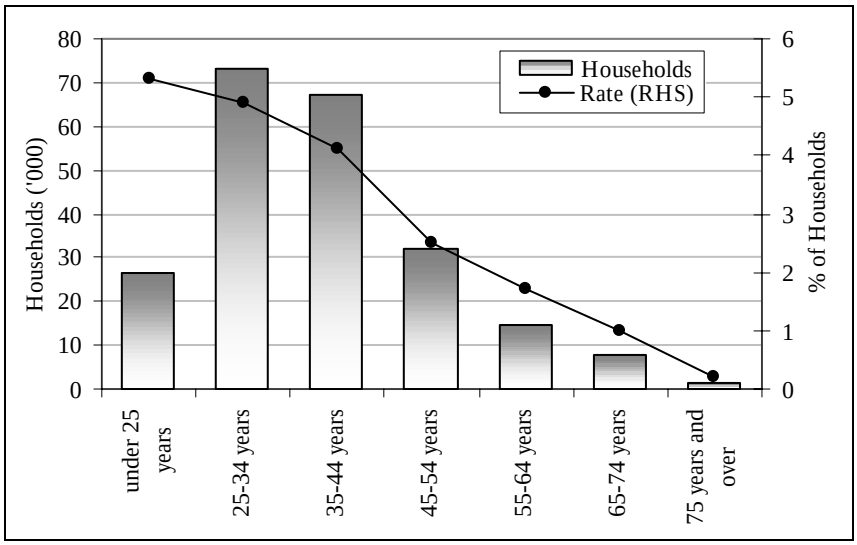
- All the identified categories of sole parents have rates of multiple hardship well in excess of the community as a whole. There is some diminution of the rate as the age of the sole parent increases. This is perhaps partially a result of the age of their children.

- While the rate of multiple hardship for sole parents with an eldest child aged 5–14 years was only a little lower than for those with a child aged under 5, it fell strongly from 15 per cent and above, to 8 per cent for those sole parents whose youngest child was aged over 15.
- Analysis by the labour force status of the reference person in these households shows some dramatic differences. For those with full-time employment the rate of multiple hardship was 3.7 per cent this rises marginally to 4.1 per cent for part-time employment and then jumps markedly to 19.9 per cent for those not in the labour force and again to 36.9 per cent for those identified as unemployed.

Age

Earlier analysis has shown that young single-person households display somewhat different financial stress characteristics to other households. This section considers the role of age more generally As illustrated in Figure 12, there appears to be a strong relationship between age[9] and multiple hardship, with the rate dropping steadily from over 5 per cent for the under-25 year age group to just 0.2 per cent for the 75 years and over age group.

Figure 12: Incidence and level of multiple hardship by age



This relationship, as seen in Table 8, is also true with respect to most other financial stress indicators, even when account is taken of different types of households. The one exception is the pattern seen earlier of young singles who have, in most cases, relatively low levels of missing out, given the incidence of other types of stress.

As can be seen in the table, this pattern does not seem to be restricted to just the youngest age group alone, but rather also extends to single-person households in the 25–34 year and 35–44 year age groups.

[9] In multiperson households, other than sole parent households where the age of the sole parent is used, the age used in analysis in this section is the age of the person in the household with the highest personal earnings. Where a household has no earned income the age of the person with the highest income from all sources is used. In a number of cases where both these tests only identified people with zero or negative incomes, the age of the reference person of the household was used.

Table 8: Financial stress by age and household composition

Age group	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
Couple, group or multi-family households							
Under 25 years	400.5	39.7	37.8	14.1	17.5	15.7	3.6
25–34 years	1 090.8	35.9	26.8	6.3	20.0	12.1	2.0
35–44 years	1 218.5	39.7	20.1	5.8	23.2	9.4	2.3
45–54 years	959.3	31.4	12.5	3.7	15.9	5.0	1.2
55–64 years	591.6	34.6	10.5	3.9	21.2	4.0	1.1
65–74 years	466.2	31.1	5.0	2.8	14.2	1.2	0.3
75 years and over	213.8	24.1	2.2	0.5	14.9	0.5	0.0
Total	4 940.7	35.1	18.2	5.4	19.2	7.9	1.7
Single-person households							
Under 25 years	62.8	33.8	48.2	17.3	20.5	28.0	10.4
25–34 years	263.5	35.7	36.0	18.6	21.0	16.1	10.0
35–44 years	239.0	35.3	23.4	11.3	19.8	11.7	5.4
45–54 years	268.4	46.0	20.7	12.6	26.8	7.8	4.9
55–64 years	265.4	47.0	12.8	9.8	29.1	5.3	2.2
65–74 years	316.9	35.5	10.2	4.9	20.6	1.6	2.1
75 years and over	304.6	28.0	2.7	2.3	13.6	0.7	0.4
Total	1 720.7	37.5	18.1	9.8	21.6	7.6	4.2
Sole-parent households							
Under 25 years	31.0	86.2	73.7	40.4	56.0	28.5	17.5
25–34 years	152.2	79.2	66.6	38.3	54.1	38.5	16.8
35–44 years	191.6	73.1	48.4	29.7	53.3	25.8	13.8
45–54 years	72.4	70.7	48.8	21.9	37.6	26.0	11.1
55–64 years	11.1	72.4	37.6	25.5	37.5	18.6	19.0
65–74 years	2.2	100.0	0.0	0.0	43.4	0.0	0.0
Total	460.5	75.7	55.7	31.8	50.8	29.9	14.7
All households	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1

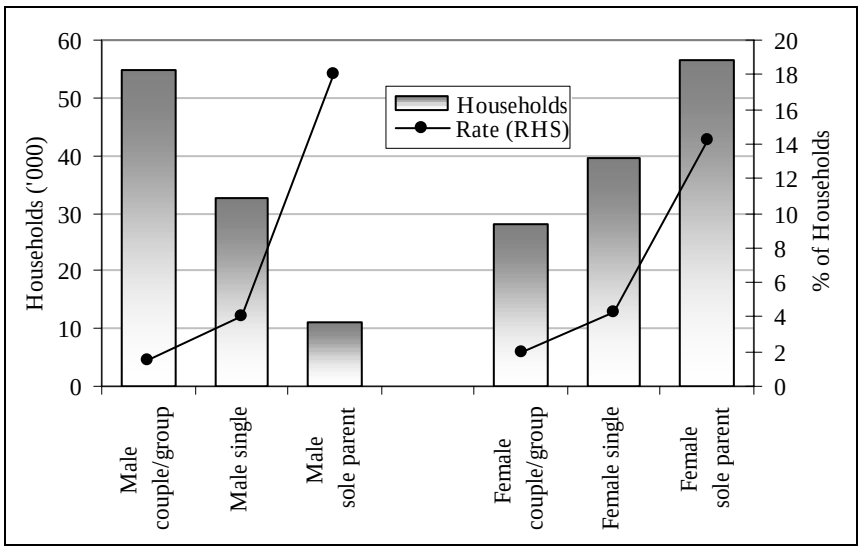
Gender

While the analysis of single-person and sole-parent households by gender is relatively simple, this analysis does not provide any insight into households comprising couples or multiple families, especially where gender of the income-earner may be related to the household's outcome. To overcome this, in this analysis, a gender was attributed to such households on the basis of the main income earner, using the same set of rules as applied for determining age. A male household is thus a household where the main income earner is a male and a female household identifies those households where a woman is the main source of income.

The outcome of analysis of the indicators by gender reveals a complex pattern of interaction by age and type of household. The presentation here again concentrates on the incidence of multiple hardship.

Figure 13 shows that while the rates of multiple hardship were similar for both male and female households in each of the three types of household identified, female households accounted for the majority of households that recorded multiple hardship. Unlike male households, where most of the households are couples, groups and multi-family households, female households experiencing multiple hardship were mainly sole parents and single persons.

Figure 13: Incidence and level of multiple hardship by gender



Even further complexity is revealed in Table 9, which presents the interaction between household type, age and gender.

Table 9: Incidence of multiple hardship by gender, age and household type

Age group	Couple, group, multi-family		Single		Sole parent		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
				Households ('000)				
Under 25 years	241.1	159.4	33.8	28.9	0.8	30.3	275.6	218.7
25–34 years	772.5	318.3	174.6	88.9	12.8	139.4	959.9	546.7
35–44 years	907.4	311.1	161.6	77.4	25.8	165.8	1 094.7	554.3
45–54 years	689.8	269.5	157.7	110.8	15.1	57.3	862.6	437.6
55–64 years	415.6	176.0	112.5	152.9	6.1	4.9	534.2	333.9
65–74 years	361.3	104.9	81.4	235.5	1.0	1.2	443.6	341.7
75 years and over	163.2	50.6	75.2	229.4	0.0	0.0	238.4	280.0
Total	3 550.8	1 389.9	796.8	923.9	61.6	398.9	4 409.2	2 712.7

	Couple, group, multi-family		Single		Sole parent		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
				% Multiple hardship				
Under 25 years	5.0	1.5	3.6	18.2	100.0	15.4	5.1	5.7
25–34 years	1.4	3.3	8.6	12.6	25.6	16.0	3.0	8.1
35–44 years	2.1	2.7	5.3	5.7	13.0	14.0	2.8	6.5
45–54 years	1.1	1.2	4.0	6.1	15.3	10.0	1.9	3.6
55–64 years	0.8	1.9	0.0	3.7	22.6	14.4	0.9	2.9
65–74 years	0.4	0.0	1.8	2.1	0.0	0.0	0.6	1.5
75 years and over	0.0	0.0	0.0	0.5	–	–	0.0	0.4
Total	1.5	2.0	4.1	4.3	18.0	14.2	2.2	4.6

The main features that emerge from this are:

- Couples, groups and other multi-family households with a female main income earner, which accounted for 28 per cent of such households, had a multiple hardship rate of 2.0 per cent

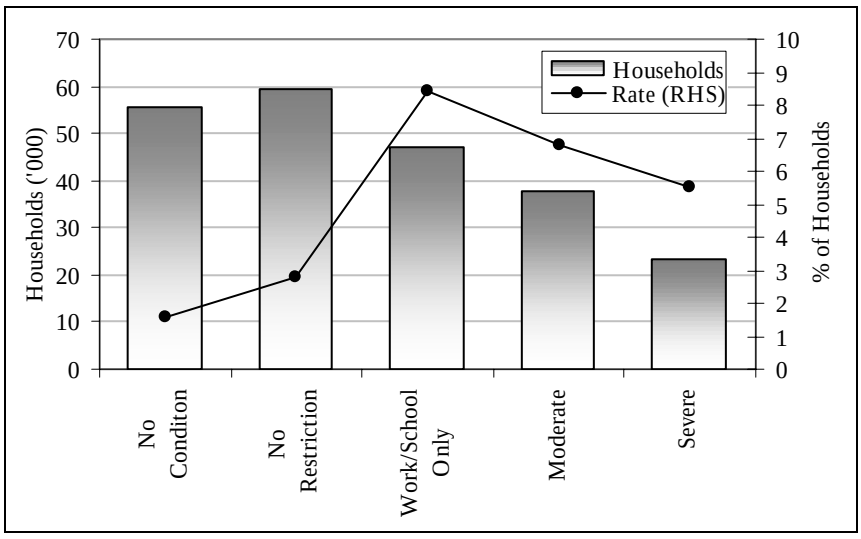
compared to 1.5 per cent for those where the main income earner was a male. This relationship held across most age groups.

- Single female households, when broken down by age, show in most cases markedly higher rates of multiple hardship than similar male households. However, due to the different age structures of these households, with males being concentrated in the younger age groups and females in the older classifications, these age specific imbalances tend to be concealed when households are aggregated by gender alone. Consequently the overall rate of multiple hardship amongst all single female households of 4.3 per cent was only marginally above the 4.1 per cent of males.
- Male sole parents had higher rates of multiple hardship than female sole parents, although some caution needs to be exercised given the small number of households these represent.
- The overall female rate of multiple hardship is a product of the disproportionately large number of female sole parents relative to the number of couple and other households that were identified as female.

Disability

The presence of someone with a disability in the household is often seen as a factor that can lead to disadvantage, both as a result of the impact of the disability on the household's capacity to earn income, and because of the demands of care (see Elwan 1999). Data from the HES can identify whether a person over the age of 15 years in the household has a health or disability condition, and whether this condition imposes any restrictions. These restrictions are identified by ABS as 'school/work only', 'moderate' and 'severe'. In this analysis, households have been classified on the basis of the most severe disability restriction recorded by any of the members of the household.

Figure 14: Incidence and level of multiple hardship by disability condition and restriction



As shown in Figure 14, the presence of a disability, even where this did not entail a restriction, was associated with a higher rate of multiple hardship. This increase was, however, much more marked in households having someone with a disability that entailed a work or school restriction

only. The rate then declined for households having someone with a moderate restricting condition and again for those with a person with a severe disability.

A similar pattern occurs with other measures of stress, with the exception of moderate missing out, which was higher in those households having someone with a moderate restricting disability than those having a member with a school or work restriction only.

Table 10: Financial stress by disability condition and restriction

Disability restriction	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
No health/disability condition	3 478.5	31.4	17.3	5.5	16.4	6.9	1.6
Disability—no restriction	2 102.5	39.3	19.5	7.8	22.4	9.3	2.8
Work/School restriction only	560.7	57.6	36.4	18.1	34.1	17.7	8.4
Moderate restriction	557.1	53.5	28.2	13.3	35.0	13.9	6.8
Severe restriction	423.1	44.9	21.6	12.8	29.5	10.1	5.5
Total	7 121 9	38.3	20.6	8.2	21.8	9.2	3.1

When account is taken of source of income—see Table 11—a more complicated picture is seen. A key difference for those households that had wages and salaries as their main source of income was that the highest rate of multiple hardship was associated with a person in the household having a moderate disability restriction.

In contrast to this, in those households with income support as their main source, as with the population as a whole, the highest risk was associated with work and school restrictions. The role of income support payments varied significantly by type of disability restriction. A third of those households with someone with a work and school restriction, or a disability without restriction had income support as their main source of income. This increased to a half for moderate or severe restrictions.

Table 11: Incidence of multiple hardship by disability condition and restriction and main source of income

Disability condition	Main source of income:					Total
	Wage and salary	Self employed	Super/ invest	Pension & benefits	Negative or zero	
	Households ('000)					
No health/disability condition	2 443.6	236.8	214.9	532.0	51.2	3 478.5
Disability—no restriction	989.2	124.3	242.8	723.5	22.7	2 102.5
Work/School restriction only	322.2	30.3	26.6	178.8	2.8	560.7
Moderate restriction	189.1	17.6	51.1	292.2	7.1	557.1
Severe restriction	131.3	13.2	42.3	225.4	10.8	423.1
Total	4 075.4	422.2	577.8	1 951.8	94.6	7 121.9
	% with multiple hardship					
No health/disability condition	0.8	0.0	0.9	6.3	0.0	1.6
Disability—no restriction	1.1	3.6	0.0	6.0	0.0	2.8
Work/School restriction only	4.0	15.0	7.7	15.5	0.0	8.4
Moderate restriction	5.6	0.0	0.6	9.2	0.0	6.8
Severe restriction	2.3	0.0	0.0	8.9	0.0	5.5
Total	1.4	2.1	0.7	7.8	0.0	3.1

4.3 Housing tenure

The housing circumstances of households reflect a range of influences, including lifecycle stage and household income. It is therefore to be expected that some of the patterns already seen in outcomes by income and family type will also be reflected in the incidence of financial stress by housing tenure.

Table 12: Financial stress by housing tenure

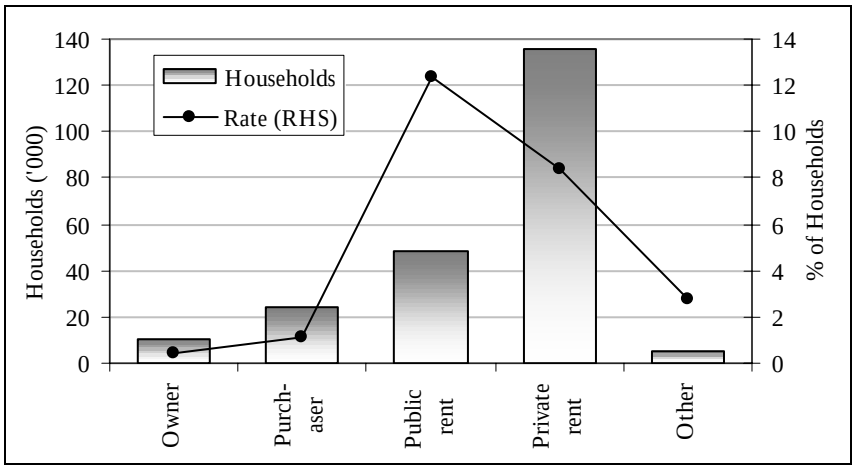
Housing tenure	Households ('000)	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
All households		% of households					
Owned outright	2 820.6	28.5	6.4	2.3	15.2	2.2	0.4
Being purchased	2 119.0	37.8	21.2	4.6	18.9	9.3	1.1
Public rental	389.1	74.1	43.7	26.6	52.0	21.6	12.4
Private rental	1 620.8	47.6	38.3	18.4	29.5	18.3	8.4
Other	172.4	37.6	27.4	10.6	25.6	9.3	2.8
Total	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1
Low-income private renters							
Paying <30% of income on rent	197.7	76.3	51.3	25.9	54.8	29.3	11.7
Paying 30% or more of income on rent	395.2	76.9	57.1	36.8	57.2	29.8	20.0

Outright homeowners exhibited levels of stress well below the average of the community. Their level of multiple hardship, at only 0.4 per cent, was extremely low. They also had a low incidence of cashflow problems. While persons currently purchasing a home also had relatively low levels of hardship, their experience of missing out and of cashflow problems was quite close to the community average. This pattern is consistent with other characteristics of this group of households, especially the large proportion who are couples with children.

In sharp contrast to these tenures, outcomes for public housing tenants were poor. Almost three-quarters showed some missing out, and over half reported multiple restrictions on their activities due to financial constraints. These households also had the highest incidence of cashflow problems of any of the tenures and an elevated incidence of hardship. Over one in four reported some hardship in the previous year and one in eight multiple hardship.

Rates of financial stress in the private rental sector are also well above those for the community as a whole. As shown in Figure 15, this sector, while having a lower rate of incidence of multiple hardship than public housing, provides housing to some 60 per cent of those households experiencing multiple hardship.

Figure 15: Incidence and level of multiple hardship by tenure



Of particular interest to social policy are lower-income households in the private rental market, as these are often identified as having poor outcomes. Details for privately renting households in the lower two income quintiles are shown in the second half of Table 12. Such households account for 36.6 per cent of all private renters, indicating a slightly lower than average use of this tenure by these households. The table presents results for two groups: those households who pay less than 30 per cent of their income as rent[10] (who account for a third of low-income renters), and the remaining two-thirds who pay more than this proportion.

When compared to the results for private renters as a whole, these lower-income renters exhibited much higher levels of stress, resembling public renters much more than other private renters.

Looking across the different stress indicators both groups of low-income private renters recorded levels of missing out consistent with those of public renters, with no major difference on the basis of the proportion of income spent on rent. In contrast to private renters as a whole, as well as public renters, however, lower-income private renters have much more elevated levels of cashflow problems.

Turning to the measure of hardship, while low-income private renters paying less than 30 per cent of their income as rent have rates similar to public renters, over a third of those paying more than 30 per cent of their income as rent experience some hardship, and one in five experience multiple hardship.

While these data initially suggest that public rental rent subsidies, or access to low-cost private rental, bring some consistent benefits in terms of reducing hardship, the picture is more complex.

[10] In housing stress analysis it is usual to use an estimate of the proportion of net income paid on rent, after allowance is made for the payment of rent assistance. This is undertaken in order to treat rent assistance as a direct offset to housing costs in a manner analogous to the charging of rebated rents in the public housing sector. This is particularly important in analysis where comparisons are made of the rent to income ratios between tenures. As these detailed data are not available on the HES Unit Record File, and this analysis has not used imputed estimates of income support payments, only a gross proportion is used.

A result of this is that the data shown in the tables will tend to overestimate the proportion of households paying such a high proportion of their income as rent.

Table 13: Low-income (lower two equivalised income quintiles) renters by tenure and proportion of income spent on rent in the private sector, by incidence of multiple hardship

Family composition of household	Households			Proportion with multiple hardship		
	Public rental	Private rental (% of income on rent)		Public rental	Private rental (% of income on rent)	
	All	Less than 30%	More than 30%	All	Less than 30%	More than 30%
		('000)			% of households	
Couple with dependent child	37.2	81.7	72.0	24.3	11.5	12.8
Elderly couple	29.6	6.0	19.4	0.0	0.0	6.4
Elderly single	105.6	19.9	50.4	4.6	6.1	9.5
Other single	37.2	14.8	81.7	16.5	23.3	34.5
Sole parent with dependent child	70.8	34.5	105.5	28.1	20.3	24.9
Total (including other families)	309.3	197.7	395.2	14.3	11.7	20.0

Table 13 shows the incidence of multiple hardship for the major family types of low-income renters in the public and private rental sector, again splitting the private rental sector into two groups on the basis of the rent to income ratio. Specifically the table shows:

- While only a small proportion of couples with dependent children are in the public rental sector, those who are, have very high levels of multiple hardship. For those who are low-income private renters the proportion of income spent on rent had only a limited impact on the extent of this form of disadvantage.
- Elderly couples, and to an even greater extent elderly singles, were concentrated in the public rental sector. Elderly households in both the public rental and lower-cost private rental sectors had relatively low levels of multiple hardship, when compared with those paying a high proportion of their income as rent in the private rental market.
- In contrast, low-income 'other' single-person households had higher rates of multiple hardship, with this being higher in the private rental market where most of these households were located. While the rate of multiple hardship was lower amongst those paying a lower proportion of their income as rent, this was a very small group, and the estimate may not be robust.
- The one-third of low-income sole parents in public housing exhibited much higher levels of multiple hardship than those in the private rental market. As with couples with children, the proportion of income spent on rent by these privately renting households made only a small difference to the incidence of this more severe disadvantage.

Thus it would appear that access to 'lower-cost' (or more highly subsidised) housing, in either the public or the private sector, is associated with lower levels of multiple hardship amongst the elderly and single-person low income households. The public rental sector was, however, associated with elevated levels of hardship amongst couples with dependent children and sole parents with dependent children. Outcomes for these groups in the private rental market did not show major differences on the basis of their housing cost-to-income ratio.

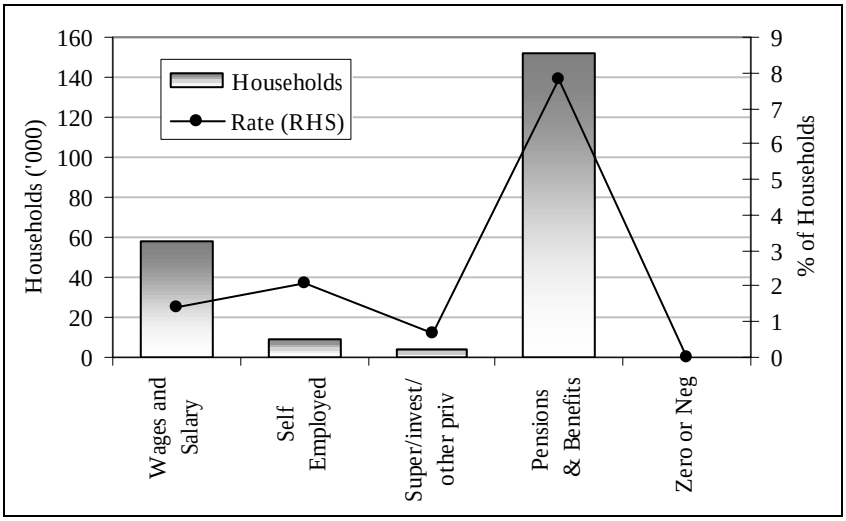
4.4 Income source

The way in which households gain their income also has an association with the extent and types of financial stress they experience. Most significantly, as shown in Figure 16, households with

pensions and benefits as their main source of income experienced higher levels of stress and, in particular, reported multiple hardship at rates well above those with other forms of income. Indeed, over 68 per cent of households experiencing multiple hardship had pensions and benefits as their main source of income. At the same time, however, only a small minority, 7.8 per cent, of the households who mainly relied on this income source experienced multiple hardship.

Households with income largely derived from superannuation, investments or some other private savings had, on average, very low levels of incidence of any of the stress indicators. Interestingly, those households recorded in the 1998–99 HES as having zero or negative income experienced hardship at a rate well below the national average.

Figure 16: Incidence and level of multiple hardship by main source of income



Although the overwhelming negative outcomes of those households reliant upon pensions and benefits dominate the data, some other subtle patterns are also present. Households with income mainly derived from self-employment reported much lower levels of missing out compared to both the average population and wage and salary earners. This distinction is less apparent with regard to cashflow problems and hardship. This might reflect the effect of income fluctuations, or as discussed in the context of family types, may be indicative of a lifestyle which 'sails close to the wind', making fewer concessions in household consumption and participation, and, possibly as a consequence, on occasions running into cashflow problems, and even hardship.

Table 14: Financial stress by main source of household income

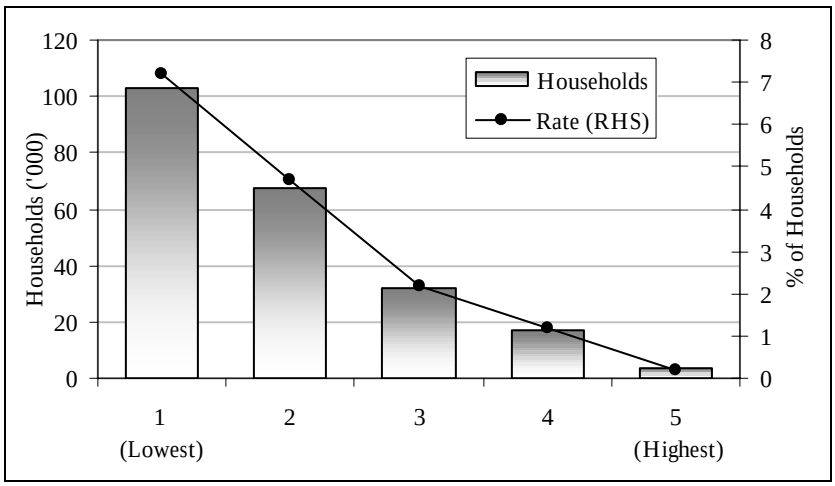
Main source of income	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
Wages and salaries	4 075.4	32.4	18.9	4.8	16.1	7.9	1.4
Self-employed	422.2	27.4	14.4	4.5	10.8	6.9	2.1
Super/invest/other private	577.8	19.9	8.1	2.9	9.0	2.6	0.7
Pensions and benefits	1 951.8	58.8	29.3	17.8	40.2	14.5	7.8
Zero or negative income	94.6	33.5	15.7	1.2	16.3	6.7	0.0
Total	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1

However, both these households, and those on wages and salaries, had well below average rates of hardship. The survey results suggest that only one in 70 households that rely mainly on wage and salary income, and one in 48 households with income mainly from self-employment, experienced multiple hardship in the previous year. Recognising that such hardship is not simply an issue of income, but also can arise as a result of mismanagement, or an unexpected event, this can be considered very low indeed. Even at the far less stringent 'some hardship' level, the rate for both groups is below one household in 20.

Level of income

Table 3 in section two presented, in detail, the level of incidence of each of the indicators by income quintile. As discussed in that section, the rate for each of the factors shows a strong inverse relationship with income, although the actual strength varies for the individual indicators and the number of factors taken into account.

Figure 17: Incidence and level of multiple hardship by equivalised income quintile



This overall pattern is illustrated in Figure 17. The rate of multiple hardship falls steadily and steeply between the first three income quintiles, before declining more slowly between the third and the fifth. While the rate of multiple hardship, at 7.2 per cent in the first quintile, is double the national average, fewer than half the households with multiple hardship had incomes low enough to be in this quintile.

Type of income support

The higher concentration of adverse outcomes amongst income support recipients as a whole disguises a much more diverse set of outcomes for recipients of particular payments. This is clearly shown in Table 15.

The table shows all households, disaggregated by those who had more than half their income derived from pensions and benefits, those who received some income from these payments and

those with no income from these sources. The table details, for the first two groups, the main payment type[11].

Table 15: Households, whether 50% or more of income is derived from pensions and benefits, financial stress by type of pension and benefit.

Main type of pension/ benefit	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
Household with 50% or more of income from pensions and benefits							
Age Pension	862.7	43.5	9.4	4.9	24.5	1.9	1.0
Disability Support Pension	260.0	76.2	39.6	29.0	57.8	16.7	13.9
Parenting Payment—Sole Parent with Dependent Child	230.8	85.6	69.3	42.6	60.3	39.9	20.0
Newstart	208.5	80.9	52.4	35.0	59.9	33.4	17.7
Department of Veterans' Affairs Pension	115.7	23.0	5.2	3.1	17.4	2.6	2.8
Parenting Payment—Other (a)	71.7	77.3	53.2	21.7	58.0	30.7	6.7
Mature Age Allowance	35.4	68.7	33.6	2.5	49.1	11.1	0.0
Wife/Carer	28,.2	77.4	31.3	20.3	53.7	18.4	4.8
Widow Allowance	27.7	74.5	27.2	34.6	67.8	21.3	8.7
Youth Allowance	27.3	59.8	63.4	23.2	37.1	32.9	8.0
Austudy	26.9	62.3	62.0	31.8	55.2	21.5	16.9
Family Allowance (a)	18.1	72.6	57.2	30.4	48.4	47.4	26.2
Sickness Allowance	11.0	84.0	76.9	30.8	74.8	28.2	30.8
Other pension or benefit	7.3	87.5	33.0	30.6	66.8	16.4	0.0
Total	1 931.4	59.6	30.1	18.2	40.7	15.0	8.0
Other households with some income from pensions and benefits							
Age Pension	309.5	25.6	3.4	1.3	10.8	2.0	0.0
Disability Support Pension	117.9	58.4	31.6	10.8	36.5	12.3	3.1
Parenting Payment—Sole Parent with Dependent Child	56.5	70.7	43.5	16.3	36.8	10.7	2.6
Newstart	160.7	47.9	43.7	20.3	30	19.1	6.6
Department of Veterans' Affairs Pension	58.1	19.6	1.7	0.0	14.8	1.7	0.0
Parenting Payment—Other	367.2	48.7	31.0	7.4	32.6	15.5	1.1
Mature Age Allowance	11.7	20.5	0.0	0.0	11.7	0.0	0.0
Wife/Carer	14.3	49.2	17.6	33.5	37.7	16.5	6.4
Widow Allowance	11.0	61.6	3.0	11.2	12.0	0.0	0.0
Youth Allowance	97.1	55.0	32.2	9.4	26.3	9.3	2.4
Austudy	90.7	54.5	26.3	4.9	29.4	13.5	1.4
Family Allowance	746.6	45.7	24.7	3.9	24.1	10.4	1.8
Sickness Allowance	10.2	79.7	30.1	19.1	8.5	30.1	0.0
Other pension or benefit	60.6	58.0	23.8	8.3	31.5	13.5	1.8
Total	2 112.0	45.4	24.5	6.7	25.3	10.8	1.8
Households with no income from pensions and benefits							
Own income only households	3 078.5	20.2	12.0	3.0	7.6	4.5	1.0
Total—All households	***7 121.9***	***38.3***	***20.6***	***8.2***	***21.8***	***9.2***	***3.1***

(a) Parenting Payment—Other and Family Allowance are not usually viewed as primary household payments. Their presence in this first part of the table may be the result of a number of factors, including households reporting negative income from other sources, or where a range of payments or part payments are received by other household members.

[11] An exception to this 'main payment' are households where the largest single source of income is family allowance, but another primary benefit is received, often at a reduced rate due to earnings; here the main base payment is recorded.

In interpreting the data, two technical issues need to be noted: firstly, the number of households shown in the table with more than 50 per cent of income from government payments is lower than the number shown in the earlier table as having such payments as their main source of income. This arises because, while such payments may be the single major source of income, it may not necessarily be the majority of the household's income. Secondly, with regard to the second part of the table, the meaning of the presence of some income support payments may need careful interpretation. The payments may be those made to an independent child living at home with their parents, to a grandparent, or a boarder in the household. The nature of the survey does not attempt to relate the level of stress recorded by the household as a whole to that of any one individual.

Household with mainly social security income

The largest group of income support recipients were households receiving the Age Pension. Very few of the 862 700 such households reported multiple hardship. In addition, these households had few cashflow problems and showed a degree of missing out just above the community as a whole.

The same cannot be said for those who received some other payments. Indeed, a significant minority of households reliant on each of the next three largest sources of income support reported an experience of multiple hardship. Table 15 shows that one in seven households mainly reliant upon the Disability Support Pension, around one in five of those on Newstart Allowance and sole parents on Parenting Payment experienced multiple hardship.

These latter two groups also exhibited high levels of missing out and cashflow problems. Indeed, less than 15 per cent of the sole parents on Parenting Payment and 20 per cent of households with Newstart as their main source of income reported not being constrained in their activities by a shortage of money. Just 30 per cent of sole parents did not experience some cashflow problems, with almost 40 per cent experiencing multiple cashflow problems.

The experience of those households with income from Department of Veterans' Affairs pensions, with the exception of their multiple cashflow problems and hardship, suggests an even better set of outcomes than for age pensioners, with rates well below the average of the community as a whole. While the 2.8 per cent incidence of multiple hardship for these pensioners was lower than that of most other groups, it is high, given the relatively low incidence of basic hardship and other problems amongst them. This result suggests either some unreliability in estimates, given the small sample for this group, or perhaps the presence of a subgroup with different outcomes for the population as a whole. Because of the limited data, no conclusion can be drawn, although analysis by age suggests that the more negative outcomes may be associated with younger recipients.

The next largest group of households, those in receipt of Parenting Payment—Other, showed a very poor set of outcomes, as did those households which reported that the source of their income was Family Allowance. However, the nature of these households needs to be considered. While it is possible that some of these were households in particular circumstances—for example, with very large numbers of children—households with either of these payments as their main income source are more likely to do so because of apparently low levels of income from other sources, possibly because of reported low or negative income from business and other activities.

Only fairly small numbers of households reported receiving more than half their income from any of the other identified payments, and the results for these are quite divergent. Below average levels of stress were experienced by households relying on Wife/Carer Pensions and well above average levels for households with Austudy and Sickness Allowance as the source of income. Given the sample size, however, these estimates need to be treated with some caution.

Households with some income support

Those households that received some income from income support payments, but where this represented less than half the income of the household, had distinctly lower levels of stress than those for whom such payments accounted for the majority of their income. This is most clearly seen in terms of the incidence of hardship. Only 1.8 per cent of these households experienced multiple hardship compared to 8.0 per cent of those where most income was derived from income support payments. The level of some hardship of 6.7 per cent experienced by these households was also well down on the 18.2 per cent for those with a primary reliance.

Three payments accounted for over half of these households. The largest of these was Family Allowance. While the households receiving this allowance experienced missing out and cashflow problems at a rate slightly above the national average, their incidence of hardship was well below average. Only 3.9 per cent of such households reported some hardship and just 1.8 per cent multiple hardship. The second biggest group was those households with some income from Parenting Payment—Other. Of interest here is that while these households had a level of some hardship only a little below the national average, they had very low levels of multiple hardship. This result may be associated with their level of some cashflow problems, which appears to be disproportionately high relative to their level of missing out, suggesting that while they managed to avoid multiple hardship reasonably well, they did, on occasions, experience some money management problems and potentially some hardship, but rarely faced circumstances which resulted in multiple hardship. The third group was age pensioners, who showed low levels of stress.

As with households with most of their income coming from income support, households with the more minor payments also showed quite polarised results. For example, there was low stress among recipients of Mature Age Allowance and high stress among those with assistance from Wife or Carer benefits. These results are again likely to be affected by the small sample size. Caution should be exercised in considering them as substantive findings.

Finally, it is possible to compare both of these groups of households with those who received no income support payments at all. These latter households experienced low levels of stress. Only 20 per cent experienced any missing out, just 3 per cent experienced hardship and 1 per cent experienced multiple hardship.

4.5 Employment

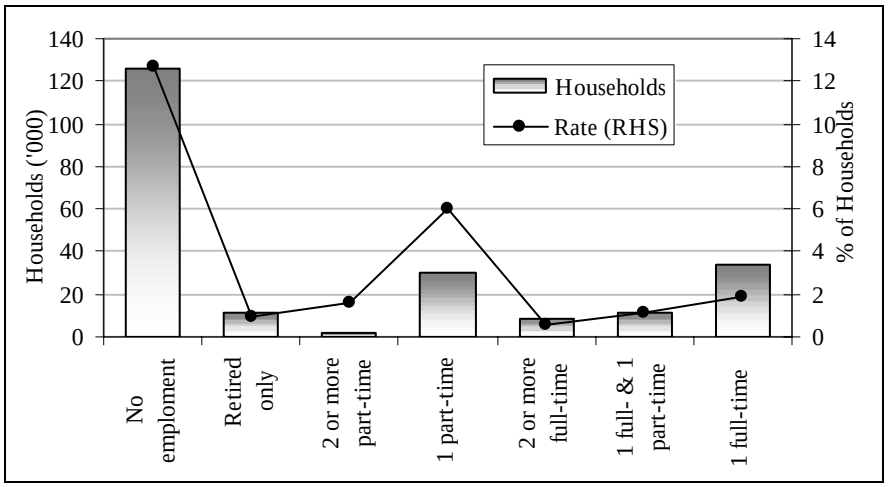
The role played by earned income in reducing the extent of financial stress has been seen in the above analysis. Table 16 provides another perspective on this—the relationship between the nature of employment and experience of financial stress.

Table 16: Financial stress by employment status

Employed persons in household	Households ('000)	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
				% of households			
No person employed	986.7	67.5	43.5	26.0	50.2	21.6	12.7
Retired only	1 218.7	33.0	5.6	3.8	18.1	1.3	0.9
2 or more part-time employed	133.5	38.1	31.9	7.3	21.1	13.5	1.6
1 part-time employed	503.6	55.6	33.2	15.5	33.0	15.4	6.0
2 or more full-time employed	1 505.5	23.5	13.0	2.4	9.5	5.6	0.6
1 Part-time and 1 full-time employed	1 031.6	31.0	18.2	4.2	15.2	7.5	1.1
1 full-time employed	1 742.4	37.8	21.5	6.4	19.7	9.7	1.9
Total	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1

As would be anticipated from earlier data, the incidence of financial stress was highest in those households with some members of working age but with no employed persons. This pattern is noticeable across all of the indicators—with the degree of missing out and cashflow problems being around double the community average—but is most apparent with regard to hardship, where some hardship is three times as prevalent and multiple hardship four times. As shown in Figure 18, such households accounted for 56.3 per cent of all households in multiple hardship.

Figure 18: Incidence and level of multiple hardship by employment status



While households consisting of retired people only also had no-one employed, their outcomes were quite different, [12] They reported missing out slightly below the average rate, had much lower than average rates of cashflow problems and some hardship, and experienced multiple hardship at less than one-third the rate of all households.

The pattern of full and part-time employment provides some interesting insights:

- Those households with a single part-time employed person, while recording better outcomes than those households with no employed persons, had appreciably more financial stress than

[12] A household is considered to be 'retired' if it comprises only males over the age of 65 years and females over the age of 60 years, and where no member undertakes any employment.

those households with higher levels of employment. While the incidence of missing out and cashflow problems for these households were 50 per cent higher than the average for the community, levels of some and multiple hardship were almost double. This latter, however, is still only half the rate of those households without any employment.

- While two part-time-worker households were only a small group of households and estimates for this sector are subject to high sampling variability, the addition of a second part-time worker appears to reduce levels of missing out and hardship to just below the community average, although the rate of cashflow problems remained very elevated. This suggests that, while positive outcomes were produced from this workforce activity, it might be associated with a reasonable degree of instability with many of these households being in a somewhat precarious position.
- A single full-time employee in the household resulted in levels of missing out and cashflow problems a little below the community average, but much lower levels of hardship.
- Hardship was even further reduced with an additional part-time employee, and much more so if the second person worked full-time. The presence of two or more full-time employed persons in a household saw multiple missing out drop below 10 per cent and multiple hardship drop to 0.6 per cent.

This employment effect also persisted even in those cases where earned income did not represent the main source of income for the household. Taking the 1.9 million households with pensions and benefits as their main source of income, the incidence of multiple hardship was:

- 1.4 per cent in the 850 800 households composed of retired persons;
- 15.2 per cent in the 798 100 households with no employed person;
- 8.3 per cent for the 184 400 households with a single part-time employed person; and
- 7.4 per cent for the 65 100 where there was someone employed full-time—even if this person's earnings did not represent the main income of the household.

The relationship between multiple hardship and employment seen above is largely repeated when analysis takes account of household family structure. The case of sole parents was discussed earlier, similar patterns occur for couple families with children. Where one person in such households is employed full-time the rate is 2.6 per cent, this falls to 0.7 per cent where one is employed full-time and one part-time, and 0.6 per cent for families with two full-time employees. In contrast, where no one is employed the rate is 14.3 per cent.

Very importantly these results are also seen when the incidence of living in a household with multiple hardship for children under the age of 15 years is considered. The rate is 3.7 per cent for those households with one full-time employed person, but falls to 0.6 per cent where one person is employed full-time and one part-time, and 0.7 per cent if two persons are employed full-time. In contrast it rises to 7.9 per cent where there is only one part-time employed person and 21.4 per cent where no-one had employment.

Hours of work and rate of pay

Another approach to the impact of employment and income is to consider the actual hours worked by household members and their average rate of earnings. Table 17 shows the interaction of these two variables for the incidence of multiple hardship.

Table 17: Incidence of multiple hardship by hours worked and hourly rate of earnings

Average hourly rate of earnings	Hours worked by household per week					Total
	0	under 15	15–34	35–44	45 or more	
	Households ('000)					
No earnings/nil income	2 195.4	13.8	16.9	27.0	48.6	2 301.7
Under $7.50	0.0	27.1	37.8	52.0	343.3	460.2
$7.50–9.99	0.0	13.7	24.7	48.3	249.9	336.6
$10.00–12.49	0.0	37.7	67.1	132.6	468.1	705.4
$12.50–14.99	0.0	30.0	67.5	197.1	577.5	872.0
$15.00–19.99	0.0	27.0	64.9	286.1	926.6	1 304.7
$20.00–24.99	0.0	10.2	27.6	127.1	417.3	582.2
$25 and over	0.0	38.8	30.3	140.1	349.7	559.0
Total	2 195.4	198.3	336.9	1 010.3	3 381.0	7 121.9
	Rate of multiple hardship (%)					
No earnings/nil income	6.2	0.0	0.0	0.7	2.6	6.0
Under $7.50	–	8.2	5.9	2.2	2.0	2.7
$7.50–9.99	–	17.6	18.0	6.5	1.6	4.2
$10.00–12.49	–	7.7	7.6	2.3	2.4	3.2
$12.50–14.99	–	10.3	8.7	0.6	2.2	2.6
$15.00–19.99	–	7.4	1.8	0.9	0.5	0.8
$20.00–24.99	–	2.9	0.0	0.7	0.2	0.3
$25 and over	–	3.0	0.0	0.0	0.2	0.3
Total	6.2	7.1	5.6	1.2	1.2	3.1

The data in the table report the hours worked by all members of the household and a derived hourly rate of pay based on these hours, and the total gross earned income of all members. Given this derivation, the data are best considered to be broadly indicative, rather than accurate, in terms of the rates of pay people may have received. Amongst other factors, including that this item is collected on the basis of the 'usual' hours worked and hence may not match the hours worked in the time period for the income which is recorded, is the extent to which the estimate may have been affected by factors such as being self-employed and some members of the household reporting significant hours of work, but little, or even negative, income. Noting these issues, particular caution needs to be exercised in interpreting the results relating to those households reporting earnings rates of under $7.50 per hour[13].

Notwithstanding these limitations on the data, the results suggest that higher rates of stress are associated with both low rates of pay and relatively short working hours. Indeed, for all households working fewer than 15 hours per week, only the very small group reporting hourly rates of pay of more than $20 had an incidence of multiple hardship below the national average. Even when a more substantial period of part-time work is considered, only those whose average rate of pay was above $15 per hour had a below-average incidence.

In contrast, for those households working more than 35 hours a week, only a relatively small group of just under 50 000 households with an estimated hourly wage rate of $7.50 to $9.99 had above average-incidence of multiple hardship. Given the sample size this result needs to be treated with caution.

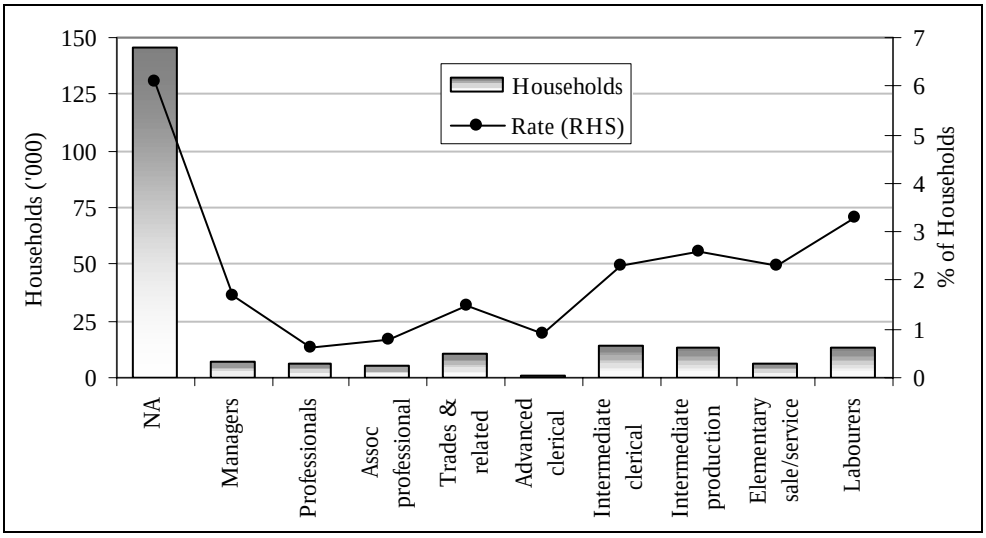
[13] Analysis of the data indicates that for each occupational grouping other than 'professionals', around 7–14 per cent of households report having earnings of less than $7.50 per hour. This was as high as 11 per cent for 'managers', 14 per cent for 'advanced clerical and service workers' and the same proportion for 'elementary clerical, sales and service workers'. Only 5 per cent of households with wage and salary income as their main source of income reported hourly earnings at such rates compared to 30 per cent of the self-employed.

Occupation

A further perspective on the role of employment is given by analysis by occupation. The incidence and level of multiple hardship cross-classified by the occupation of the main income earner of the household is shown in Figure 19.

Reflecting previous data, the high rate of incidence and overall concentration of multiple hardship in those households without a person reporting an occupation dominates the picture. The graph shows, in contrast to this experience, that for all identified occupational groupings, other than 'labourers and related workers', where the rate of multiple hardship was 3.3 per cent, the level of this form of stress was below the national average. This reflects the more general pattern of low multiple hardship amongst households with employment.

Figure 19: Incidence and level of multiple hardship by occupation



The data also reveal a quite differentiated set of outcomes between two groupings of occupations. 'Managers and administrators', 'professionals', 'associate professionals', 'trades and related' and 'advanced clerical and sales workers' all had rates of multiple hardship of under 1.7 per cent. In contrast, 'intermediate clerical and sales workers', 'intermediate production and transport workers', as well as 'elementary sales and service workers' and 'labourers and related workers', all had rates of 2.3 per cent or higher. As noted earlier, however, it is only in the case of 'labourers and related workers' that the rate for any occupational group was above the total national average.

4.6 Households on low incomes

The introduction discussed the nature of financial stress measure as part of a class of 'outcome' measures of living standards, in contrast to income poverty measures which focus on 'inputs'. This section considers how the results of this outcomes approach compare with estimates of the number of low-income households.

Despite the extensive use of income poverty analysis, there is little agreement, other than in the abstract, on where a poverty line should be drawn. (Indeed, there is also a criticism that as income tends to be a continuous distribution, drawing an arbitrary cut-off point and declaring it as a poverty line creates an artificial dichotomy between those considered to be in poverty, and those

considered out of poverty, notwithstanding very small differences in income between members of the two different groups.)

Reflecting these and other issues, no Australian Government has ever endorsed the use of a poverty line (unlike for example the United States, which has an official poverty line—but even after some recent revision this line has limited credibility due to its low level).

Notwithstanding such limitations and concerns the use of such methodology remains common in academic analysis. Traditionally in Australia, such analysis frequently used the Henderson Poverty Line. Today, however, this has generally fallen into disuse among researchers (see for example Harding and Szukalska (1999)). While a number of factors lie behind this, the most significant relates to the way in which the Henderson Poverty Line has been updated. This has resulted not only in the poverty line rising strongly in real terms, but also in it increasing much faster than ordinary household income growth.

In its stead the main contemporary measures used to define poverty, or low income, are based on the number of households with incomes below a cut-off point simply set relative to the overall distribution of income across the population. There are three common variations in this approach. The first is households with less than 50 per cent of the income of the median household. This has been used by the OECD (see for example OECD 1998, 2000) and was recommended by the Economic Policy Committee of the European Commission (2000) for use as a European structural indicator. The second is households with incomes below 60 per cent of the median, the benchmark most commonly used by Eurostat (see Eurostat 2000), and the third households with less than half the mean, or average, income. This last is less frequently used in international analysis[14].

A weakness of this third approach is that as the cut-offs are based on a proportion of the mean income of the population they can be affected in perverse ways by changes in income at different points of the income distribution. If the incomes of those already on low incomes fall, under such a measure the numbers identified as being on low incomes are reduced, even if nobody else's income changes. Similarly, an increase in the income of a single person at the top of the distribution acts to increase the numbers measured as having low income. Measures based on the median are much less susceptible to this type of distortion.

To illustrate the interaction between outcome and input measurement estimates of stress, Table 18 uses three different low-income cut-offs derived from income distribution-based measures. In all cases, the modified OECD equivalence scale has been used, as has post-income tax net income. No allowance has though been made for negative or zero values.

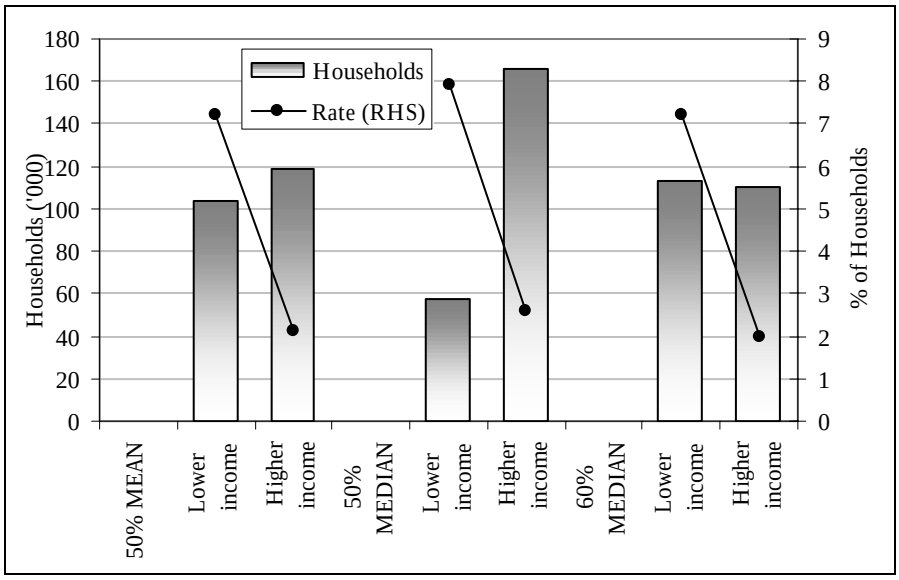
[14] One recent use of this benchmark was in Harding and Szukalska (2000a). In their report, the authors indicate that they have adopted this in response to a request by The Smith Family. It is also a measure that has some currency in the UK (Sutherland & Piachaud 2001).

Table 18: Comparison of low-income distribution measures and financial stress

	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
50% mean income							
Lower incomes	1 448.0	57.6	28.2	16.4	38.8	14.4	7.2
Higher incomes	5 673.9	33.4	18.7	6.1	17.4	7.9	2.1
50% median income							
Lower incomes	723.8	49.8	27.0	15.0	32.9	16.3	7.9
Higher incomes	6 398.0	37.0	19.9	7.4	20.5	8.4	2.6
60% median income							
Lower incomes	1 570.7	57.5	28.3	16.1	38.3	14.3	7.2
Higher incomes	5 551.2	32.9	18.4	6.0	17.1	7.8	2.0
Total	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1

The three measures provide a wide range of estimates of the number of households with low incomes. Most noticeable is the difference between the 50 per cent and 60 per cent median measures, where the estimated number of households having low incomes doubles with a 10 per cent of median income shift. This reflects the sensitivity of these distributional measures to the shape of the income distribution, especially their interaction with the flat rate structure of income support in Australia. The Australian social security system results in there being many households, mainly in the lower end of the income distribution, with essentially the same level of income. Large groups may thus either be just above or below the cut-off point on the basis of very small differences in where the benchmark is set.

Figure 20: Incidence and level of multiple hardship by income distribution measures



Turning attention to the relationship between the income and outcome measures, the most marked feature is that simply classifying households into higher and lower-income groups does not at all clearly differentiate between those households experiencing financial stress and in particular multiple hardship and those who do not.

Indeed, under only two of the three distributions do even half the households below the cut-offs experience some missing out, with, in all cases, less than 40 per cent of households having felt a need to curtail their activities in more than one area, due to a shortage of money.

Less than a third of the households under the cut-offs reported having had some cashflow problems over the year, a rate only 10 percentage points higher than those households at the higher end of the income distribution. Turning to hardship, two points become apparent:

- Very few, at most one in six, of the households identified as having low incomes under the income distribution measures reported hardship, and fewer than one in eight reported multiple hardship in the previous year.
- While these rates are much higher than those for households further along the income distribution, in most cases the number of households identified as being in multiple hardship and having low incomes is less than half of the total number of households experiencing multiple hardship. This can be seen in Figure 20. That is, simply focusing on households on low incomes would ignore half the households who have experienced multiple hardship. The one exception is when the 60 per cent of median income measure is used. Even here, however, only 50.5 per cent of households with multiple hardship were identified as being below this cut-off. This form of income classification also, however, results in over 12 times as many households being identified as being on low incomes and not experiencing multiple hardship, as it identifies with multiple hardship.

4.7 Summary

This analysis indicates that the extent of financial stress, and especially multiple hardship, varies considerably between different types of households in Australia. It was typically low for households composed of aged persons, and for couples with and without children. Higher levels of hardship were experienced by sole parents and some young persons.

Over a third of the 590 000 persons living in household which had reported multiple hardship were children under 15, a rate of 5.7 per cent, compared to 2.5 per cent for adults.

Homeowners and purchasers also had low levels of hardship, although the latter had a more elevated level of cashflow problems, and, in common with some other groups, may have achieved their lower hardship rates by being more constrained in their activities.

When tenure and household/family type are considered together, some high concentrations of very poor outcomes are identified. Most noticeable are low-income sole parents, where 28.1 per cent of those in public housing and 23.8 per cent in private rental reported multiple hardship. For low-income private renters, the proportion of income spent on rent appeared to have had limited impact on those families with children but an appreciable effect on single-person households.

The analysis also indicates that the rate of hardship decreased with the age of households and was higher for women than for men. This latter held true both for single head households and when the gender of the main income-earner is taken into account in couple and group households. A higher incidence of multiple hardship was also seen when a household member has a disability, with this being most severe when the disability involves a work/school restriction.

Employment had a very strong influence. Other than those households composed of retired persons, jobless households had rates of multiple hardship more than four times the national

average. A majority of these households also reported multiple missing out and almost half reported cashflow problems. In contrast, fewer than one in 50 households with one person employed full-time experienced multiple hardship.

Associated with these outcomes, the source of household income is important. Those households that were mainly dependent upon pensions and benefits had much higher levels of stress than those that receive no government assistance. Households receiving some, but less than half, of their income from this source sat between these two groups. For households reliant upon income support outcomes varied markedly by the type of pension or benefit received. Households relying on the Age Pension had generally positive outcomes. In contrast, those reliant upon Disability Support Pension, Newstart Allowance and Parenting Payment (Single) had high levels of stress, with most reporting multiple missing out and cashflow problems; between 30 per cent and 40 per cent of them reporting that they had experienced basic hardship, and half of these, multiple hardship.

Income distribution measures such as those used in some 'poverty' analysis that simply take into account household income are not particularly effective at identifying households in stress. While those households reported as being on low incomes were more likely to experience financial stress than those on higher incomes, around half of those households that experienced multiple hardship are on what the measures reported were higher incomes. Conversely only some 30–40 per cent of households on low incomes report multiple missing out and some 30 per cent reported cashflow problems. Only one in six reported some hardship and one in 12 multiple hardship.

5 Interaction with other financial stress variables

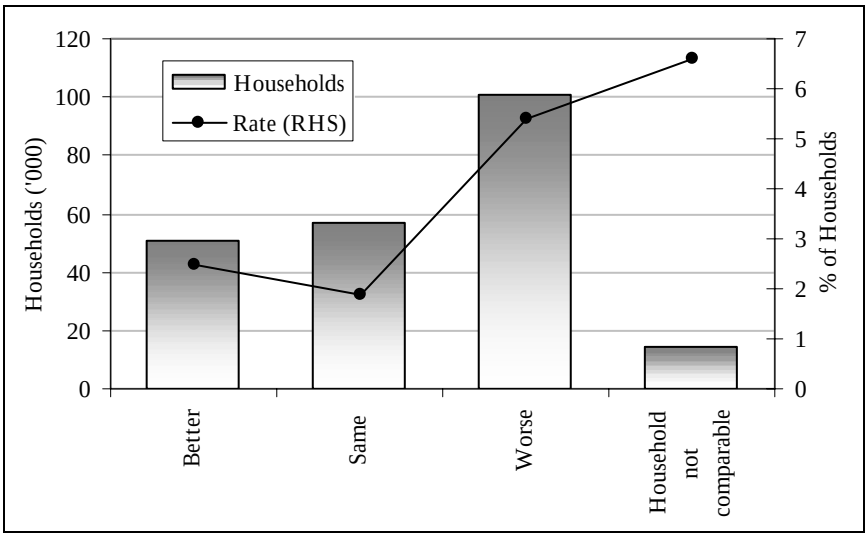
Three of the financial stress variables included by ABS in the Household Expenditure Survey (HES) were not included in the set of variables used to construct the three indicators used in this paper. This exclusion was based on both methodological and conceptual considerations.

In themselves, each of the three variables—that is, whether households' standards of living had improved or deteriorated over the previous two years, whether they had a capacity to meet an urgent financial need, and whether they usually spent more than they earned or saved—has strong intuitive appeal as measures of social outcomes. This section considers these three questions, and whether this intuitive appeal is justified, in more detail.

5.1 Comparative standard of living over time

Households who felt that their standard of living had declined over the two years prior to the survey exhibited levels of multiple hardship almost double those of the community as a whole. Indeed, the 5.4 per cent of households in this group who experienced multiple hardship accounted for 45.4 per cent of all the households reporting this outcome.

Figure 21: Incidence and level of multiple hardship by perceived change in standard of living



Notable, however, in Figure 21 is that, when compared to those whose standard of living remained stable, households who reported an increase in their standard of living also reported higher rates of multiple hardship. This pattern does not, however, hold across all indicators. While it is also the case for the incidence of cashflow problems, it is reversed for missing out.

Even more surprising is that when account is taken of household incomes, there is little difference in the level of multiple hardship reported by those whose standard of living had improved and those where it had fallen, at least for lower and some middle income households. In the first

income quintile, those reporting an improvement in their standard of living had a multiple hardship rate of 10.2 per cent, just above the 10.1 per cent recorded by those who considered they were worse off. This held for both the second and third income quintiles, with ratios of 5.7:6.4, and 2.3:2.7. In contrast to these groups, those households in the lower two income quintiles reporting that their standard of living had not changed had rates of hardship that were half of those who had changed.

Table 19: Financial stress by perceived change in standard of living

Living standard	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
Better than 2 years ago	2 004.4	25.6	17.4	6.5	12.2	7.7	2.5
Same as 2 years ago	3 042.4	32.4	14.6	5.1	17.2	5.9	1.9
Worse than 2 years ago	1 859.0	62.0	32.3	14.1	40.3	15.4	5.4
Household not comparable	216.1	36.0	34.3	16.4	16.0	16.9	6.6
Total	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1

These results suggest that a number of different factors are coming into play including that some compositional factors may be affecting the results. While not fully explored, one factor may be the composition of those households that report improvements relative to the group of households reporting a decline. By household and family type, couples both with and without dependants and singles aged from 25–54 years on balance reported improved standards of living, while elderly couples and singles and sole parents reported a decline. This contrast was very marked amongst the elderly, where around 30 per cent reported a decline and just 10 per cent an improvement.

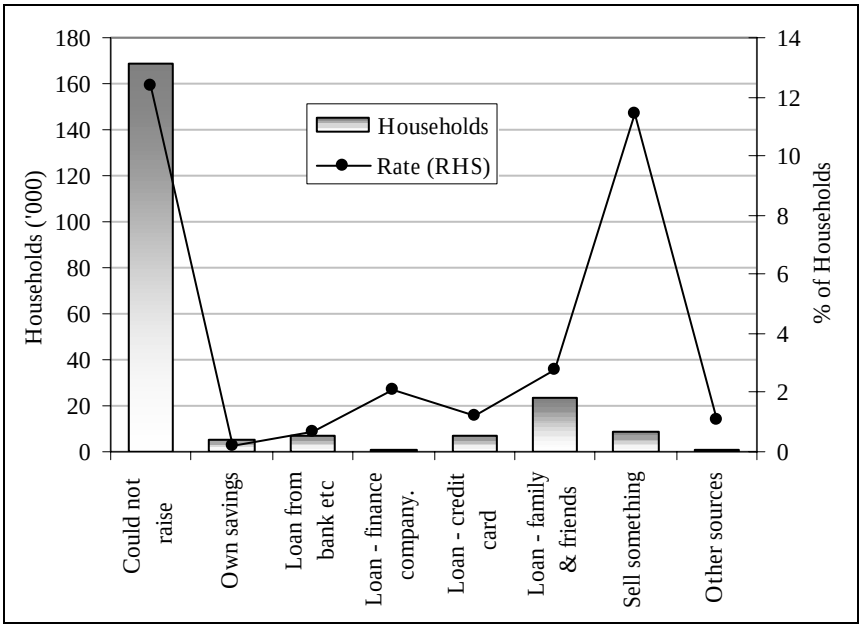
5.2 Capacity to raise $2 000

Just under 20 per cent of all households reported that they would not be able to obtain $2 000 within a week if they needed it for something important. As illustrated in Figure 22, these households had a high (12.4 per cent) incidence of multiple hardship, and indeed 75.8 per cent of all households that experienced multiple hardship came from this group of respondents. Such households also had high levels of other forms of financial stress. Almost 80 per cent reported missing out on at least one item, and just under 60 per cent on more than one. In addition they had high rates of cashflow problems.

Table 20: Financial stress by capacity to raise $2 000 by source of funds

Source of funds	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
Could not raise	1 361.4	79.4	54.1	28.2	57.1	27.6	12.4
Own savings	3 100.5	18.1	4.1	0.8	7.0	1.3	0.2
Loan from a bank etc	986.0	37.0	15.9	3.4	16.8	5.9	0.7
Loan from a finance company	42.7	34.2	22.6	8.7	20.8	6.5	2.1
Loan on credit card	601.8	32.8	13.7	5.0	16.6	4.2	1.2
Loan from family or friends	860.1	51.6	34.7	9.8	29.0	14.5	2.8
Sell something	75.2	49.3	41.4	26.1	22.1	22.9	11.4
Other sources	94.1	35.2	25.4	4.7	18.0	12.1	1.1
Total	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1

Figure 22: Incidence and level of multiple hardship by capacity to obtain $2 000



The figure also shows higher rates of multiple hardship for two other groups. The first was those households, mainly non-aged couples and singles without children, who reported that they would sell something to raise the money. This sector experienced rates of hardship similar to those households who reported that they could not raise the money. The second group comprised those households who said they would seek a loan from family or friends. These were disproportionately sole parents and young singles. While households proposing to use this means of raising the money still had a below-average rate of multiple hardship, as seen in Table 20, their rates of cashflow problems and missing out were significantly elevated.

A further feature of this group of households reporting that they would borrow from family and friends as the way of raising emergency money becomes apparent when account is taken of their source of income. Those with wages and salaries as their main source had an incidence of multiple hardship of 2.7 per cent, well above the average of 1.4 per cent for wage and salary earners overall. In contrast, for those who mainly relied upon income support, the rate of multiple hardship of 3.1 per cent was below the overall average of 7.8 per cent for all income support-reliant households. This suggests that the support from family and friends that they seem

confident about as a source of emergency money may currently be being drawn on to assist in their present outcomes.

In contrast to these findings is the very low incidence of stress, and in particular cashflow problems, among those who have sufficient funds in their bank accounts to meet such needs. This suggests a very strong link between the level of assets, and possibly liquid assets in particular, and the incidence of financial stress—particularly cashflow problems and hardship. Unfortunately collecting this type of data can be both complex and sensitive and it is rarely available.

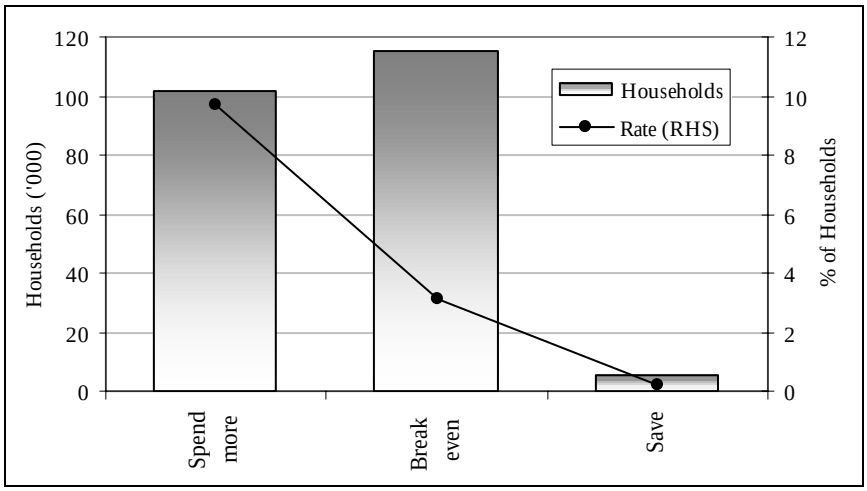
5.3 Household budget outcomes

The third question asked whether households would best describe their financial position over the previous year as: spending more money than they received; just breaking even most weeks; or able to save money most weeks.

In total, 14.7 per cent of households reported spending more than they received, 32.4 per cent that they could save and 52.9 per cent broke even. Figure 23 shows a clear trend in the relationship between these categories and the extent to which multiple hardship was recorded. Multiple hardship rises from 0.2 per cent for those households who save, to 3.1 per cent, the same as the national average, for those who broke even, and to 9.7 per cent for those who reported spending more than they received. Notwithstanding the elevated rate of multiple hardship amongst households that spent more than they received, most households experiencing multiple hardship reported usually breaking even.

This broad relationship also holds with respect to the other indicators of financial stress, as shown in Table 21. One exception is that while, as noted above, those households that reported just breaking even most weeks had a rate of multiple hardship equal to the national average, they recorded above average rates of stress on each of the other indicators.

Figure 23: Incidence and level of multiple hardship by usual household budget outcome



In contrast to this, households that reported being able to save most weeks reported very low levels of missing out and cashflow difficulties, especially at the multiple level.

Table 21: Financial stress by usual household budget outcome

Usual financial outcome	Households	Some			Multiple		
		Missing out	Cash-flow	Hard-ship	Missing out	Cash-flow	Hard-ship
	('000)	% of households					
Spend more money than we get	1 048.9	60.2	44.7	21.5	41.2	25.2	9.7
Just break even most weeks	3 764.9	48.7	24.3	9.1	27.4	9.9	3.1
Able to save money most weeks	2 308.1	11.4	3.7	0.5	3.8	0.9	0.2
Total	7 121.9	38.3	20.6	8.2	21.8	9.2	3.1

5.4 Summary

While not used in the main analysis, these questions do appear to identify some aspects of financial stress. However, neither the question on the change in households' standard of living nor the question on usual budgetary outcomes appears to add significantly to an understanding of outcomes.

In contrast, the question on the capacity of a household to raise funds for an emergency appears to highlight a group with a much elevated risk of multiple hardship, although only one in eight of the households reporting that they could not raise $2 000 in a week actually experienced hardship. The analysis also provides some insights based on the means that households reported they would use to raise the funds. Reliance upon selling assets is associated with high rates of hardship, while the results for those who would borrow from family and friends are ambiguous. For wage and salary earners, reliance upon this source appears to be associated with a higher risk of negative outcomes, while for sole parents it appears to be associated with support networks that act to reduce their risks.

6 Multivariate analysis

The analysis in the previous section shows a complex pattern of factors associated with financial stress and in particular hardship, with multiple cross-classification and 'drilling down' required to identify those households most at risk. A major problem with this type of approach is that it is often very difficult to differentiate the direct impact of one variable from that of another. For example, if considering housing tenure, how much of the results seen for private rental arise from the effect of the tenure itself, and how much is it a result of the compositional effect of the different types of households that live in the tenure?

Given these interactions, it is of interest to know what the specific contributions of the various factors are. This can be done through multivariate analysis. This permits the independent contribution of each variable to overall outcomes to be observed. It must be cautioned, however, that such statistical analysis is based on association only. While the analysis can explain variance in the results and the contributions of individual factors to predicting outcomes, this does not prove a causal relation. It can, however, be taken as evidence to provide some support to a hypothesised causal analysis.

6.1 Interpreting logistic regression results

The statistical technique used for this analysis is logistic regression, a form of multiple regression, which is appropriate given the dichotomous nature of the financial stress indicators. That is, for example, a household either experiences or does not experience multiple hardship.

One difficulty with logistic regression lies, however, in the form in which the results are produced. The specific limitations of these are discussed below. However, while these are important to fully analyse the results, some more simple interpretations of the results are possible. Specifically, odds of less than one indicate a lowered chance of a negative outcome, while those greater than one a higher chance. While the scale is not linear, the larger the odds the higher the likelihood.

Logistic regression provides its results, parameter estimates, in the form of log odds, rather than the more simple weights produced in standard regression analysis. While these log odds can be easily transformed into odds or odds ratios, as has been done here, simple interpretation of even these is not always intuitive. The odds ratio is the probability of a particular outcome, over the probability of it not happening, that is, an odds of 2:1 indicates that it is twice as likely that an event will happen than that it will not. For example, in this analysis, an estimate of the odds of 2:1 for one household suggests that it is twice as likely that the household will be experiencing financial stress than that it will not.

While such a simple odds ratio can be easily transformed into a probability[15], in this case the odds ratio of 2 being the equivalent to a probability of 0.667, it is not meaningful to simply undertake this transformation for the results as a whole. The difficulty in this transformation is that the relationship between odds and probability is not linear. Specifically, an increase in the odds of a certain order does not translate into an increase in the probability by the same order. For

[15] To convert from an odds ratio θ to a probability P, the odds are divided by the odds plus one: $P\boldsymbol{i} = \theta\boldsymbol{i}/(1+\theta\boldsymbol{i})$

example, while an odds of 1:1, represents a probability of 0.5, an increase in the odds to 5: 1 results in an increase in the probability to 0.83, an increase to 10:1 produces a probability of 0.91, and doubling the odds again to 20:1, a probability of 0.95. Hence an apparently large increase in odds from 10 to 20 only represents an increase in probability from 0.91 to 0.95.

This has important implications because in the logistic regression result, as with all regressions, the parameters are additive, and hence as in this case, where the results are expressed as odds, these are multiplicative[16]. That is, the odds for a home owning sole parent is equal to the odds of a homeowner, multiplied by the odds of a sole parent. Since, however, the relationship between odds and probabilities is not linear the change in probability associated with the difference in odds of being a homeowner and say a renter, differs depending upon whether, for example, the household is a sole parent or an elderly couple.

Notwithstanding the complexity involved in using the odds produced by the logistic regression for calculating the specific impacts of variables upon the likelihood of a household experiencing financial stress, as noted earlier, some simple and quite powerful interpretations can still be made on the basis of the odds ratio. An odds ratio of greater than 1 implies an increased risk, while that of less than 1 means a reduced risk, and while caution must be exercised in interpreting the magnitude of the difference, bigger numbers mean higher risk.

6.2 The model approach

The models, illustrated in Table 22, use a number of variables that have already been analysed: income, tenure, source of income, family type and number of employed persons. In addition, a number of further variables have been introduced:

- educational qualification
- country of birth; and
- a range of expenditure variables—focusing upon household expenditure on education and consumer debt, alcohol, gambling and tobacco.

Some improvement in fit can be gained by the addition of further variables, such as detailed age, using more complex transformations of the variables and permitting interaction effects between individual variables. This however has not undertaken here. It is considered that these inclusions, for the purpose of this analysis, add considerable complexity for relatively small gains[17].

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[16] The odds ratio equals the exponential of the logit or log odds of the parameter values. $Exp^{(a+b)} = Exp^{(a)}.Exp^{(b)}$

[17] There is much debate on the use of measures of fit for logistic regressions. One common indicator is the ratio of the Scaled Deviance to the Degrees of Freedom. In the model for multiple hardship this was 186, a very large term for such regressions, but well below the null model, that the independent variables had no effect, of 287. (Alternative estimates can be obtained by attempting to emulate the R^2 of a simple regression, but in this case to estimate the predictive efficacy rather than explanatory power. A wide range of alternatives have been forward for this purpose, a number of these were considered. McFadden's Likelihood Ratio, the most common measure, provided an estimate of 0.357, with similar results from the extended Craig-Uhler estimate, 0.389 and the Veal-Zimmerman statistic 0.415. In contrast the Aldritch Nelson statistic was 0.09 and while the Esterella which was 0.750, fell to 0.116 for the adjusted Esterella. Measures of association between the predicted probabilities and observed responses were generally high, Somer's D = 0.837, c=0.919, while this could have been the result of the highly skewed response pattern when repeated for a sample with a reduced number of 'non-hardship' records a similar result was achieved.)

Notwithstanding this variation in assessment of the fit, the primary purpose of the modelling was to identify the relative roles of parameter values in predicting the outcome. Hence the presence of a significant error term or the

Very importantly, analysis suggests that even when these variables are introduced into the models, the relationships of the other parameter estimates used in these simpler models do not change to any great extent.

In all cases, the models predict the odds of an adverse outcome, that is, the odds of a household being in hardship, having cashflow problems or missing out, against the odds of them not being in such a state. The odds are also relative to the base case, to which odds of 1 are attached. That is, the odds ratios all represent the relative odds to the reference case which is assigned odds of 1. The reference cases, as can be seen in the table, are those rows that all have an odds value of 1, that is, a couple with dependent children, living in a home they own, with one employed person, etc.

In the case of the continuous expenditure variables, the odds are the effect of a percentage point change in the proportion of total household expenditure spent on each of the items. In these cases, the odds of a multi-percentage point increase in expenditure is obtained by raising the odds by this change as a power, for example, a squaring of the odds for a two percentage point change and so on.

6.3 Key results

The results of the logistic regression equations for each of the six financial stress measures are shown in Table 22. As indicated, the parameter estimates are provided as odds ratios, rather than their original logit values. The models were run using a logit link function with the SAS Proc Genmod procedure.

Income

A number of different approaches were tested in modelling income. In addition to the model presented in this section, which uses net equivalised income quintiles, income was treated as a continuous variable by itself and with the log of income. Neither of these resulted in any appreciable improvement in model fit, while the use of continuous and transformed variables gave results that were harder to interpret. In addition, none of the alternative models made materially important changes to the value of other variables.

The incidence of stress increases with low income. The odds of a household in the lowest income quintile experiencing different forms of financial stress, especially at the multiple level, are around double those in the middle income quintile. As discussed in the introduction, this, with respect to multiple hardship, if all other variables were assessed at their reference point, would indicate that relative to a 50 per cent probability for the middle quintile the probability for someone in the lowest income quintile would be 66.3 per cent. This probability does not, however, directly estimate the outcome, as it is necessary to also take account of the base likelihood—given by the odds ratio of the intercept, which at 0.0023 is very low. A more fully worked example of this is given below.

The multivariate analysis also suggests that the odds of missing out seem to drop rapidly between the third and fourth quintiles and those for cashflow problems and hardship between the fourth and fifth quintiles.

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possibility of other independent variables, does not nullify the results relating to the relationship between the dependent variables and the predictor categories.

Table 22: Logistic regressions, odds ratios of modelled parameters

		House-holds '000	Some			Multiple		
			Missing out	Cashflow	Hardship	Missing out	Cashflow	Hardship
			Odds ratio					
Intercept			0.4914	0.1048	0.0143	0.2226	0.0361	0.0023
Debt repayment			1.0776	1.2019	1.0321	1.0738	1.1777	1.0344
HECS repayment			1.0289	1.0461	0.9198	0.9969	0.9595	0.6518
Gambling expenditure			1.0057	1.0000	0.9994	1.0008	0.9996	0.9990
Alcohol expenditure			0.9694	1.0112	1.0171	0.9585	1.0310	1.0490
Tobacco expenditure			1.0631	1.0460	1.0505	1.0458	1.0474	1.0460
Income quintile	1 (Lowest)		1.8338	1.5350	2.2682	2.0208	2.1085	1.9707
	2		1.3354	1.2507	1.5086	1.5691	1.4761	1.2176
	3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	4		0.4966	0.6991	0.7608	0.4751	0.9057	0.8225
	5 (Highest)		0.1806	0.2993	0.2666	0.1468	0.3368	0.2286
Tenure	Public rental	389.1	2.7829	4.8312	4.7707	2.2700	4.3662	9.3129
	Private rent (>30% Income)	575.8	2.5490	6.5463	7.9019	2.5795	5.6204	18.2671
	Private rent (<30% Income)	1 045.0	1.9697	6.2115	6.2121	1.7903	5.7173	11.9269
	Purchaser	2 119.0	1.9933	3.6259	2.5327	1.5839	3.3906	3.3933
	Other	172.4	1.2119	3.7363	3.0688	1.6688	2.4594	3.3228
	Owner	2 820.6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Family	Group	269.9	0.6174	0.9358	1.5482	0.4155	0.7012	0.9723
	Elderly single	886.9	0.6307	0.2868	0.4558	0.5201	0.2157	0.2115
	Other single	771.0	0.8875	0.8556	1.5284	0.7690	0.7413	1.2021
	Young single	62.8	0.4360	1.4742	1.2090	0.4339	1.7609	1.3348
	Sole parent dep. child	460.5	1.9315	1.7798	2.3441	1.1805	1.5733	1.7759
	Other fam. non-dep. child	401.0	0.7310	1.0795	1.0400	0.5481	0.7450	0.6657
	Other fam. dependent child	71.5	0.9314	0.9690	1.8565	1.0160	1.6307	0.3400
	Elderly couple	963.8	0.6033	0.2018	0.2519	0.5181	0.0902	0.0317
	Other couple	790.3	0.7827	0.8070	1.1411	0.6988	0.6867	0.4501
	Couple non-dep. child	433.1	0.5087	0.4682	0.4788	0.3632	0.3277	0.2229
	Couple dependent child	2 011.2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Source of income	Self-employed	422.2	0.5937	0.7598	0.8986	0.4394	0.8856	1.5572
	Pension/benefit	1 951.8	1.3957	1.2557	1.3896	1.1873	1.4972	0.8453
	Super/invest/other private	577.8	0.5285	0.6981	0.6488	0.4054	0.7626	0.3480
	Zero or negative	94.6	0.4717	0.8042	0.0972	0.3958	0.7970	0.0000
	Wages and salaries	4 075.4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Employ-ment	No employment	986.7	1.0874	1.5291	1.3767	1.4537	0.8861	3.0824
	Retired only	1 218.7	0.5991	0.6852	1.0425	0.7099	0.4041	3.0075
	1 P/time employed	503.6	1.0146	1.7572	1.0318	1.1547	1.5067	0.9603
	2+ P/time employed	133.5	1.1716	1.2361	1.2977	1.1498	0.9702	1.9901
	2+ F/time employed	1 505.5	1.0352	0.9674	0.7605	0.9738	1.0106	0.7574
	1 F/T 1+ P/T employed	1 031.6	0.8547	0.9823	0.9525	0.8801	0.8887	0.9098
	1Full-time employed	1 742.4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Education	Low qualification	3 747.2	1.3996	1.0256	1.4632	1.3075	1.1892	1.6292
	'Yr 12' or equivalent	3 374.7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Disability	No health/disab. condition	3 478.5	0.7486	0.6827	0.6715	0.7534	0.5971	0.5690
	Work/school restriction	560.7	1.5567	1.4134	1.7475	1.2562	1.2300	2.2293
	Moderate restriction	557.1	1.4706	1.6495	1.8602	1.5638	1.6279	3.5701
	Severe restriction	423.1	1.0876	1.3119	2.0249	1.3087	1.3169	2.9740
	Disability - no restriction	2 102.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Country of birth	Other	1 189.0	1.7341	0.9393	0.9339	1.9180	0.9286	0.8581
	NW Europe	796.2	1.0574	0.7217	1.1099	1.0669	0.6723	0.9679
	Australia	5 136.7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Scaled Deviance/Degrees of Freedom			1 091	802	420	846	493	186
Scaled Pearson Chi-square/Degrees of Freedom			1 042	961	935	1 061	962	847

Using 6 889 observations and household weights as scale weights.

= Coefficient not significant at 5% level

Tenure

Consistent with earlier analysis, the lowest odds of poor outcomes are associated with homeowners. Other than for 'some' and 'multiple' missing out, where the relativities are somewhat less, the odds increase by two or three times for purchasers and other rental tenures.

An even larger increase in the odds is associated with renting from State housing authorities. The odds of these households being in some hardship are five times those of homeowners and the odds of multiple hardship nine times as high. The odds for private renters are even higher again. For these two hardship measures they rise to 6 and 12 respectively for those households paying less than 30 per cent of their income as rent and 8 and 18 for those paying more than this proportion.

Again, caution must be exercised in interpreting these results. Simply evaluated (for example, ignoring all other variables and interactions), the odds for multiple hardship represent a 0.5 probability for owners, a 0.772 probability for purchasers, 0.903 for public renters, 0.923 for low cost private renters, and 0.948 probability for those paying a high proportion of their income as rent. This clearly illustrates the way in which the apparently large differences in the odds ratio reduce to much smaller differences in probabilities. Also, as noted, it is necessary to evaluate all of the parameters to attempt an estimate.[18]

The more general finding of higher odds for private renters when compared to the public rental sector can be contrasted with the earlier analysis of public and private renters, which found no difference for some groups, in particular sole parents with children. This suggests that either sole parents in the private rental sector may have a different set of characteristics from those in the public rental sector which put them less at risk, or that there may be more complex interactions between the variables—that is, the relationships are not necessarily linear, and interactions may be occurring.

The housing variable generates the highest odds ratios of any of the variables, with the odds ratio of high-cost private renters being in multiple hardship being 18:1. However, no particular regard is due to this, as the magnitude of this parameter is as much the product of the low risk of adverse outcomes associated with base case—home ownership, which has been assigned an odds ratio of 1. Also, as noted earlier, very large increases in odds ratios do not imply changes in probability of the same order.

Family

With the exception of sole parents with dependent children, in broad terms, most family types had lower odds of being in financial stress than the reference case of a couple with dependent children. Persistently lower odds were recorded for aged couples and aged singles, with these groups having odds ratios of between half and one-thirtieth of the reference group (although as discussed below account needs also to be taken of employment status for these households).

[18] For example, to calculate the modelled probability of experiencing multiple hardship in the case of a sole parent in the lowest income quintile paying more than 30 per cent of their income on rent, reliant on income support, not in employment, who did not complete secondary school, has no health or disability condition and was born in Australia, ignoring any expenditures on alcohol, tobacco, debt, etc, the model would give an odds of: 0.0023*1.9707*18.2671*1.7759*0.8453*3.0824*1.629*0.569 = 0.355, or as a probability 0.262. This estimate is not inconsistent with the result shown earlier in the paper for all sole parents in this rent/income segment of this tenure of 24.9 per cent.

The pattern of odds for single-person households aged under 25 years, and between 25 and 54 years, confirms the relativities seen in the cross-tabulations. Young singles, while having much elevated risks of cashflow problems, and to a reduced extent hardship, have much lower odds of missing out. For singles aged 25–54 years, while their odds of missing out remain low, the odds of cashflow problems are also lower, while their odds of hardship increase to 1.5 for some hardship and 1.2 for multiple hardship.

Income source

As income is also a parameter in this model, this variable considers the extent of variation by source and not by level. Interestingly it suggests that those households with pensions and benefits as their main source of income have reduced odds of multiple hardship, once account is taken of the actual income level, although they have higher odds with respect to the other stress measures. The self-employed show the opposite pattern to this, having lower odds on all of the measures, with the exception of multiple hardship. The reduction in odds for these households is much higher with regard to missing out than it is for cashflow problems.

Replicating the results of the earlier analysis, the multivariate analysis indicates that the odds of poor outcomes for households reliant on superannuation and other investments are low, this being particularly noticeable with regard to multiple hardship.

The small size of the zero or negative group makes estimates difficult, but in general terms this group has low odds of adverse outcomes. This was less marked with respect to cashflow.

In interpreting these results, attention also needs to be given to the household's employment status, as for many households these will be closely related. That is, a household reliant upon income support or superannuation and other investment income is much more likely to have an employment status of no-employment or retired-only. While it would have been possible to model these combinations of these two variables individually, it has not been done because it would involve some 35 separate response categories.

Employment

As income is already entered into the analysis, this variable gives conceptually an insight into the effect of employment on outcomes, independent of the income it provides. While independence of the two variables is unlikely to be complete, it nevertheless provides some indication of the role employment may play.[19]

While the odds of a household with no employment experiencing multiple cashflow problems are lower than those of the base case of a single full-time employed person, the odds of other forms of financial stress and of multiple hardship, in particular, are significantly higher.

Retired-only households also have quite high odds with respect to hardship. This though needs to be considered in conjunction with the other probable characteristics of these households, in particular that they are most likely to be either single aged or aged couple households, both of which record very low odds against this variable.

[19] In the analysis, a variety of testing was undertaken to determine whether employment had an effect independent from that of income. This included running a number of models with income alone, and with the addition of the questions on source of income and employment activity in various combinations. These indicated that the inclusion of both questions resulted in statistically significant improvements to the model.

Turning to households with some employment, again remembering that income itself is controlled for, a number of features emerge. Those households with part-time employment only generally have somewhat higher odds of poor outcomes, although in the case of multiple part-time jobs the estimate is not significant. The differences between households with one or two full-time, or one full and one part-time employed, are on the whole slight. In broad terms, it would appear that those with one full-and one part-time employed person have the lower risk of experiencing financial stress and those with two full-time employed persons have a much lower risk of hardship.

Education

Lower levels of educational achievement and training are often cited as a factor in explaining differences in living standards outcomes. Frequently this type of analysis considers whether or not people have completed high-school education. While this is a reasonable measure for many groups in the population, it is limited in its value for whole-of-population studies, in that it tends to confound educational attainment with age. For this analysis, a modified scale has been used that uses a variety of cut-off points that vary for different age groups.[20]

The results for this variable suggest that the incidence of financial stress is higher for households where the main income-earner has a lower level of educational achievement. With the exception of cashflow problems, where the odds increase slightly only, failure to achieve year 12 education, or its equivalent, increases the odds of missing out or experiencing hardship by a factor of 1.3 to 1.6.

Disability

The multivariate analysis confirms earlier observations of an increase in financial stress in households where a member has a health or disability condition. Relative to the base case of a household with a member who has a non-restrictive health or disability condition, the odds of negative outcomes for those households where no member has a health or disability condition are around one-half to three-quarters. The multivariate analysis, however, suggests a different pattern in the relative impact of the different restricting disabilities to what was seen in the simple cross-tabular presentation. It indicates, especially at the multiple level, higher odds of financial stress, and especially multiple hardship, amongst those households with a member with severe or moderate disability restrictions relative to those where there was only a work or education restriction.

Country of birth

Only a limited amount of information is available on the country of birth of people in the HES CURF. In particular, the classification does not permit the identification of persons on the basis of whether they have English-speaking backgrounds, nor is the issue of language skills identified elsewhere. For this analysis, only three classifications have been used: Australia, North Western Europe and the balance of locations.

[20] The cut-offs used are: aged under 29 years Year 12, aged under 49 years Year 11, or aged 50 years and over Year 10. In all cases a person who had completed a degree or diploma was deemed to have a Year 12 level education. The cut-offs were chosen to provide approximately equal proportions of households with an educational qualifications by age group so as to maintain a relative standard within each age groups.

Two features stand out in the analysis. The first is that households where the household reference person was born in North-Western Europe had markedly lower odds of cashflow problems, at both the some and multiple levels. The second was that those born in countries other than Australia or North-Western Europe, while having lower odds of hardship compared to these other groups, had odds ratios of missing out well above those of the other two groups.

Types of expenditure

The multivariate analysis also incorporates four variables that sought to measure the proportion of total expenditure households spent on certain types of items. These were:

- interest payments on consumer card debt, arising from either cash advances or purchases;
- Higher Education Contribution Scheme (HECS) repayments;
- expenditure on gambling;
- expenditure on alcohol; and
- expenditure on cigarettes and other tobacco products.

In undertaking this analysis, it should be noted that the quality of information on expenditure on the last three items may be limited. The reasons for this are twofold. To the extent that these items may be viewed by some as being less meritorious than other household expenditures, people may understate their expenditures. Secondly, the expenditures are often in cash and un-receipted, which makes recall, and hence data collection, much more difficult.[21]

The results of the analysis for each of these variables are shown in Table 22. This shows the odds associated with a percentage point increase in share of total household expenditure that is spent on each of the items. As discussed, the odds need to be increased by a power for each additional percentage point of expenditure.

The level of consumer debt interest payments faced by the household has the strongest impact on increasing the odds of a household having adverse financial stress outcomes. This is particularly so with respect to cashflow problems, where the odds ratio is around 1.2 for both some and multiple incidence of these problems. While the magnitude of this does not seem all that great, a change of say five percentage points produces an odds ratio of 2.5. That is, the odds ratio for a household

[21] The extent of the under-reporting of these items is difficult to ascertain. ABS report that while the CPI weights are largely derived from the HES, ' … some adjustments are made to HES data to account for known instances of under-reporting (the most notable being alcohol and tobacco)' (ABS 6440.0). Carnahan (1998) indicates that the weighting given to alcohol in the CPI exceeds its share of HES expenditures by 91 per cent, while for tobacco the proportion is 59 per cent. The Productivity Commission in its report on Australia's Gambling Industries noted that while the 1993–94 HES estimated gambling expenditure at $1.8 billion, alternative estimates by the Tasmanian Gaming Commission at the time suggested expenditure was in fact $7.6 billion. It would appear that under-reporting of these expenditures continues in this HES. Initial exploratory analysis indicated, for example, that in aggregate casino gamblers reported a profit on their activities.

A number of alternative approaches to the use of these variables were tested. These included modelling the occurrence of these expenditures as simple dichotomous variables rather than their reported level as a continuous variable, and treating reported gambling profits as expenditure. These approaches did not, however, significantly add to the explanatory power of the model.

Notwithstanding these limitations, it was considered that the variables should be maintained in the model to permit discussion.

with 5 per cent of their expenditure being for such interest payments is 2.5. Of course, the regression does not inform any interpretation of causality, and causality in both directions can be postulated—that increased debt interest charges increase cashflow problems, or that higher levels of cashflow problems increase debt.

HECS repayments appear to have a neutral effect across most of the indicators, except hardship, where it significantly reduces the odds of a negative outcome. This finding suggests that the regression is picking up not just the value of the repayments, but also certain characteristics of the type of households with such debt, including their income.

The level of spending on gambling is neutral across all indicators. Given the extent of estimated under-reporting of this item, little of substance can be derived from this finding.

Expenditure on alcohol is associated with lower odds of missing out, but marginally increased odds of cashflow problems and hardship. While again it is difficult to put too much weight on this finding, a number of factors may come into play. Alcohol expenditure varies by household type, representing, for example, a much higher proportion of household expenditure on goods and services for group households and those with a young head. It also varies with income, rising from 2.1 per cent of expenditure for household in the lowest gross unequivalised income quintile to 3.5 per cent in the top. It is quite possible that as both these young and higher-income households have lower levels of missing out, these household characteristics, rather than the impact of the expenditure itself, may be being reflected.

The final expenditure to be considered is spending on tobacco. In contrast to the results of alcohol and gambling expenditure, while this variable would again be the subject of significant levels of under-reporting, it reveals a clear and unambiguous finding that a 1 percentage point increase in the proportion of expenditure on this commodity by a household had an odds ratio of around 1.05. At this rate, spending 5 per cent of the household's budget on tobacco would generate odds of negative outcomes of 1.276.

6.4 Summary

Multivariate analysis of variables considered descriptively in Section 4 largely confirms the patterns seen in earlier analysis, although it provides somewhat different results to the interpretation of the more simple analysis of rental tenure and the impact of different disability restrictions.

Of particular interest is that the analysis suggests that, even when income is taken into account, having employment is associated with a reduced likelihood of adverse outcomes.

The analysis also drew on a number of additional variables. Low levels of educational attainment were associated with increased odds of missing out and of experiencing hardship. Analysis by country of birth showed that, while those households with a reference person born in North-West Europe had a lesser likelihood of cashflow problems, those born in other overseas locations were more inclined to report missing out.

Analysis of household spending provided few clear and unambiguous findings, a result not entirely surprising given the questionable nature of some of the data. It can be concluded that expenditure on debt repayments and tobacco appears to be associated with increased odds of poor outcomes.

7 Conclusion

How well households live is a fundamental measure of the wellbeing of society. In social research, much attention has been given to the financial resources available to households, with an assumption that this can be equated with a household's outcomes. Increasingly, attention is being paid to a wider and more direct set of measures of wellbeing, and this narrow focus on income has been questioned.

7.1 Financial stress

The inclusion of financial stress questions in the 1998–99 Household Expenditure Survey conducted by the Australian Bureau of Statistics (ABS) provides an important data collection that can be used to identify aspects of wellbeing for Australian households.

Analysis in this paper indicates that the concept of financial stress as identified by the ABS consists of three distinct dimensions:

- the degree to which households constrain the activities they undertake in order to meet household budget limitations. That is, the extent to which they miss out on doing some things they would like to do because they cannot afford to;
- the capacity of households to be able to manage their financial activities, and in particular their cashflow; and
- situations where a household may have been unable to achieve some basic outcome, or has needed to rely on 'last resort' mechanisms to manage. This has been considered in this paper to represent an experience of hardship.

The incidence of each of these dimensions varies with household income, with lower-income households experiencing greater levels of financial stress than higher-income households. However, with the exception of a low level of constraint on household activities (that is, households that miss out on only one item), only a minority of households in any income quintile experience any one form of financial stress.

While income is important, the incidence of the different forms of financial stress differs on the basis of a wide range of other characteristics, such as family type, age, tenure, occupation, and education.

Importantly, variation is also recorded in the pattern of relative incidence of the different forms of stress. Indeed it can be suggested that the patterns seen for some types of households may reflect different behavioural patterns, rather than circumstances alone.

Missing out

Just under 40 per cent of all Australian households report some financial constraint on their ability to undertake what may be considered normal social and other activities in our society, such as taking holidays away from home, having friends over for meals and having nights out. Almost half of these households identified only one constraint, with 21.8 per cent identifying two or more limitations.

For many households, these constraints may be voluntary, and imposed in favour of some other activity that the household ranks more highly. Hence, they are little more than a reflection of household preference patterns. Thus, while there is a strong inverse relationship between the extent of missing out and household income, even amongst the 20 per cent of highest income households in Australia more than one in ten report financial constraints on their capacity to undertake one of the activities identified by ABS in the survey.

For other households, the extent to which they miss out would appear to be a prudential mechanism to manage within their incomes. Indeed, in some cases it can be suggested that this behaviour acts to reduce their risk of other more adverse forms of financial stress, and in particular reduces their probability of experiencing hardship. Amongst the aged, for example, it can be postulated that the low level of hardship may, in part, be a result of their relative higher level of missing out. The pattern of outcomes for other groups, including some young single-person households, seems to be the opposite. That is, they report missing out at relatively low levels but report much higher incidence of other forms of financial stress. Indeed, as noted above, in this case the pattern may reflect a causal relationship between being unwilling to forgo some forms of consumption and a subsequent higher risk of cashflow problems and hardship. The nature of the data does not, however, permit these hypotheses to be further tested.

Cashflow problems

In addition to moderating consumption, households can also use a number of other mechanisms to make ends meet, including managing their cashflow by delaying the payment of some bills, or borrowing. As with missing out, this type of stress, while seen much more frequently among low-income households, occurs across all income ranges. Such cashflow problems are, however, seen relatively rarely among older households and are much more common for groups such as young singles. A further factor that appears to have an impact is the level of liquid assets available to the household.

Hardship

The data also identified a group of households where financial stress had resulted in what might be considered to be more severe outcomes. In this paper, this is described as multiple hardship—households that in the previous year have experienced two or more of: going without a meal or heating because of a lack of money, having to pawn or sell an item, or seeking assistance from a community organisation. On this definition, 3.1 per cent of Australian households reported having experienced multiple hardship. Just under 600 000 people live in these 222 700 households. Over a third of these are children aged under 15 years, with the rate of multiple hardship amongst these children, 5.7 per cent over double the rate of persons above this age.

The characteristics associated with a high risk of hardship include:

- low income, with the rate being much higher (7.2 per cent) in the bottom income quintile, although most households with multiple hardship were not in that quintile,
- eligibility for and receipt of particular types of income support, in particular Parenting Payment (Single), Newstart Allowance and to a lesser degree Disability Support Pension;
- living in public housing, or in private rental housing, especially for those households paying more than 30 per cent of their income on rent;

- having left school before completing year 12 (or its equivalent for some older age groups);
- not having an employed person in the household, other than retired households;
- being a sole parent or a single young person household; and
- having someone in the household with a health or a disability condition.

Higher levels of hardship are also associated with having limited resources to fall back on, with most households in stress reporting they would be unable to raise money if this was needed in an emergency.

Where households experience a number of these high risk factors, significant concentrations of hardship exist. For example, an estimated 28.1 per cent of 70 000 lower-income sole parents in public housing and 23.8 per cent of the low-income sole parents in private rental housing report multiple hardship, as do 34.5 per cent of the 80 000 lower-income single people aged 25–54 living by themselves in higher-cost private rental housing.

Conversely, some factors are associated with positive outcomes

- home ownership;
- higher incomes
- retirement, especially when self-funded; and
- employment, especially full-time, with this appearing to be, in part, independent of the income effect.

For outright homeowners, less than one in 200 households report multiple hardship, with similar figures being recorded for couples with non-dependent children and households with two or more full-time employed persons.

While income is important, traditional concepts of low income are poor predictors of financial stress as a whole, and of multiple hardship in particular. At best, the measures only identify half the households experiencing multiple hardship, while at the same time classifying as low-income large numbers of households who report no financial stress at all. This is not surprising, as, while the incidence of financial stress is related to income levels, and hence income can be considered as a risk factor, it ignores the wider range of circumstances that also comes into play, and indeed the extent to which consumption behaviour and management may also be important.

7.2 Concluding comments

An experience of financial stress is not uncommon for households in Australia. This is not unexpected, as most households at one time or another do have to take decisions on what they can and cannot afford to do, or need to cope with unexpected financial demands or reduced incomes.

As the data collected by ABS indicate, just under half of all households had an experience of such a constraint or requirement in the previous year. For many households, it is probable that the impact of this on their living standard was transient or minimal.

However, where such stress becomes more systemic, resulting in a constraint on households' capacity to undertake more basic activities, it may be considered to reflect a much more significant impingement on living standards.

While most households do not experience such outcomes, this analysis indicates that for some Australians, this was the case. It is estimated that over 220 000 households experienced multiple hardship at some point in the year prior to the ABS 1998–99 Household Expenditure Survey.

Although income is a factor associated with an increased risk of such a poor outcome, the persistence of some rates of incidence at even relatively high income levels, and the quite small proportions of the population who report hardship even at relatively low income levels, suggest that income is not the only issue. Rather, the analysis identifies a wide range of characteristics associated with adverse or more positive outcomes. In particular, having someone in the household in full-time employment and home ownership are indicators of low risk.

There are also grounds to consider that behaviour is important for some groups in the community—in terms of both increasing and reducing the risk of hardship.

Notwithstanding the reasons for this, for some sectors of the community in particular circumstances, the levels of incidence are very high.

Reflecting the complexities of the outcomes themselves and given the limited experience of this type of information in Australia, as well as the lack of time series data, there is a need for more intensive and targeted research in this area. But some policy implications are clear. It is suggested that:

- A simple focus on across the board changes to overall levels of income and income support would appear to be misplaced. Most households on lower incomes and those reliant on income support, while experiencing some lower-level constraints on their activities, do not record multiple missing out, and only a small proportion reported hardship.
- For those households of working age, employment is a critical issue. Importantly, the analysis suggests the impact of employment on outcomes goes beyond the simple issue of income. While full-time employment has the strongest effect, the data show that there is a reduced risk of multiple hardship associated with part-time employment.
- Housing also plays an important role. Home ownership, or the factors contributing to it, are associated with a strong reduction in the risk of poor outcomes. In contrast, the more intense concentrations of hardship identified in the analysis are in both the public and private rental sectors.
- The question of financial management is also critical. It appears that some patterns of consumption behaviour act to reduce risks of multiple hardship, and that others may increase them. To the extent that generally only a proportion of similar households in any given situation on similar incomes experience hardship, it can be suggested that the skills a household has to manage its resources may also play an important role.

Appendix A Development of deprivation measures

The purpose of this appendix is to provide a more detailed overview of the development and application of deprivation measures. In the evolution of these measures, much controversy has concentrated on four aspects:

- the relationship between deprivation and income poverty;
- how aspects of deprivation should relate to community norms and, if these norms are to be used, how they should be measured;
- whether deprivation of an item itself or only financially constrained deprivation should be taken into account; and
- how the results of deprivation questions should be aggregated.

More generally, these questions have been asked in the context of a wider debate on whether or not poverty should be considered as an absolute or relative concept.

While each of these areas of debate will be touched on by illustration, it is not intended to review the subjects systematically. Rather the focus is on describing the approaches used by some of the major players.

The analysis in the main paper has focused solely on deprivation and hardship, and has sought to describe the incidence of these in the population as a whole and for population subgroups. It has not, unlike most (but not all) of the studies listed below, sought to relate these outcomes to a more specific, and often value laden, concept of poverty.

Townsend

Peter Townsend in his massive volume ***Poverty in the United Kingdom*** (1979) is generally credited with inaugurating the use of deprivation measurement. His focus was not, however, on deprivation itself but rather on how a study of deprivation could be used to identify an income poverty line. He summarised the goals of his study as to 'provide an estimate of objective poverty on the basis of deprivation disproportionate to resources'. Specifically he indicated that:

> 'it is hypothesised that, at a particular point for different types of families, a significantly large number of families reduce more than proportionately their participation in the community's style of living. They drop out or are excluded. These income points can be identified as a poverty line' (Townsend, p. 249).

His interest was not so much in the actual nature of deprivation people experienced or whether this was voluntary or involuntary, but rather the numerical incidence of deprivation. Even here, his interest was not with the fact that this incidence increased with a range of characteristics including decreasing income, but rather simply to identify the income point where this increased disproportionately.

To study deprivation, Townsend developed a survey that included 60 questions which sought to measure characteristics of 'style of living'. These were structured to include indicators relating to

clothing, food and light, household facilities, housing conditions and amenity, working conditions, health, education, environment, family and recreational and social activities.

While recognising that a number of different combinations of responses could be used, in his study, he extracted from the responses for 'illustrative purposes', a set of 12 questions that formed the main index in his analysis. These are detailed in Table 23 and were designed by him to draw upon the 'major aspects of dietary, household, familial, recreational and social deprivation'. Two of the 12 questions were for children, and two for adults—giving in effect a set of ten questions for any one person.

In presenting this set, he noted that 'while, in principle we would have wished each of the indicators to apply to a minority of the population, three of the 12 in the present research in fact apply to a small majority' (p. 251). These were having a holiday away from home and not having a cooked breakfast. That is, while conceptually the scale was to measure deprivation from a community norm, some of the aspects chosen were in fact minority characteristics.

From his 12 items he constructed a simple summated scale recording the number of items a person was deprived of. He specifically noted that:

> 'No single item by itself, or pair of items by themselves, can be regarded as symptomatic of general deprivation. People are idiosyncratic and will indulge in certain luxuries and apply certain prohibitions, for religious, moral, educational and other reasons, whether they are rich or poor ... A score of 5 or 6 or more is regarded as highly suggestive of deprivation. Twenty per cent of households scored an average of 6 or more.' (p. 252)

Table 23: Townsend's 12 item deprivation index

Characteristic	% of Population without
1. Has not had a week's holiday away from home in last 12 months	53.6
2. Adults only. Has not had a relative or friend to the home for a meal or snack in the last 4 weeks	33.4
3 Adults only. Has not been out in the last 4 weeks to a relative or friend for a meal or snack	45.1
4. Children only (under 15). Has not had a friend to play or to tea in the last 4 weeks	36.3
5. Children only. Did not have party on last birthday	56.6
6. Has not had an afternoon or evening out for entertainment in the last two weeks	47.0
7. Does not have fresh meat (including meals out) as many as four days a week	19.3
8. Has gone through one or more days in the past fortnight without a cooked meal	7.0
9. Has not had a cooked breakfast most days of the week	67.3
10. Household does not have a refrigerator	45.1
11. Household does not usually have a Sunday joint (3 in 4 times)	25.9
12. Household does not have sole use of four amenities indoors (flush W C; sink or washbasin and cold-water tap; fixed bath or shower; and gas or electric cooker)	21.4

The use of a simple additive scale of the number of incidences of deprivation was also based on his conceptualisation of the relationship between deprivation and income. While, as he correctly anticipated, the average rate of deprivation increased with lower income (although he noted that it was not an ***a priori*** assumption for some of the variables he used in his scale), his interest in this relationship, as indicated above, was not with this linearity, but rather in seeking to identify a discontinuity where the rate of increase of deprivation increased rapidly.

About this central question of his study he concluded:

‘ … is there evidence of the existence of a threshold of income for different types of household, below which people are disproportionately deprived? The evidence from this survey is inconclusive, but suggests such a threshold may exist.’ (p. 255).

Piachaud, Ringen and other critics

Amidst much debate on Townsend’s work, two strong critiques emerged. The first concerned his use of a concept of deprivation as being the absence of an item, ignoring the issue of choice; the second questioned his focus on using deprivation as a means for finding an income poverty measure.

The first criticism was raised by Piachaud. His key thrust was that Townsend had not taken account of taste and diversity in determining whether the absence of some lifestyle indicators in a household’s experience could be interpreted as actually representing deprivation, or whether account needed to be taken of the reasons for a household not having the item (See Callan 1993, Boltvinik).

This criticism was, however, not simply concerned with whether deprivation was being measured correctly, but also cut to a more fundamental question of whether the ‘scientific’ methodology espoused by Townsend was valid:

‘The term, 'poverty', carries with it an implication and a moral imperative that something should be done about it. The definition by an individual, or by society collectively, of what level represents 'poverty', will always be a value judgment. Social scientists have no business trying to pre-empt such judgements with ‘scientific' prescriptions.’ (Piachaud 1981 quoted in Mack & Lansley 1985)

While in the debate there was general support for this critique, Piachaud’s concept of choice was questioned by some on whether choice is conditioned. That is, the absence of an item even where this was indicated that this was by choice, may in fact represent a household constraining their behaviour in accordance with what they consider, or the society has led them to consider, to be appropriate to their circumstances.

The second critique was formulated by Ringen, who suggested that there were two concepts of poverty. The first was subsistence (or income); that is, people are poor when they lack the resources deemed necessary to achieve a certain level of consumption; and the second was deprivation. Under this latter definition, people are poor if their ‘standard of consumption is seriously below what is considered decent in their society so that they are, in effect, excluded from the ordinary way of life and activities of their community’ (Ringen 1988, p. 354).

A trenchant element of his critique was that Townsend had used a study of the second form, which Ringen considered represented a direct measure of poverty, to attempt to justify the postulation of an income poverty line under the first definition, which Ringen considered was an indirect concept.

In addition to this conceptual difference, Ringen noted that Townsend’s results indicated that far from all members of low-income groups suffered deprivation, and that deprivation was also reported in higher-income groups. Taking both these issues together, he concluded:

‘Income, in other words, is not a reliable measure of poverty once poverty is defined as low consumption. It is an arbitrary measure, empirically as well as theoretically.’(p. 359)

This criticism was also echoed by Sen:

> 'In an obvious sense the direct method is superior to the income method, since the former is not based on particular assumptions of consumption behaviour which may or may not be accurate. Indeed, it could be argued that only in the absence of direct information regarding the satisfaction of the specific needs can there be a case for bringing in the intermediary of income, so that the income method is at most a second best.' (Sen, 1982, in Mack & Lansley 1985).

Ringen, however, did not reject income entirely, suggesting working from an assumption of poverty as a 'state of general deprivation [which] is characterised by both a low standard of consumption and a low level of income' and proposed that:

> 'If poverty means, in any sense, exclusion from one's society, it must be visible in the way the poor live. This is covered by the criterion of low consumption. By including, in addition, the criterion of low income, we exclude from the poverty category those who have a low standard of consumption for reasons other than low income, for example, because of eccentric preferences. Also excluded are those who have a low income (as we are able to measure it) but still do not suffer deprivations in consumption because they have other sources of consumption (or because our income measure is inaccurate).' (Ringen 1988 p.361)

It would appear that this approach is now also accepted, at least in part, by Townsend:

> 'In scientific terms, a person or household in Britain is 'poor' when they have both a low standard of living and a low income. They are 'not poor' if they have a low income and a reasonable standard of living or if they have a low standard of living but a high income.' (Gordon and Townsend)

An alternative approach to this concept of poverty being in terms of the actual living standards of households is what is termed the 'rights' approach. In this formulation, poverty is conceptualised as the deprivation of a right—in particular the right to a minimum quota of resources that would permit a person to participate in society. As described by Atkinson

> 'On the rights approach, people are entitled, as citizens, to a minimum income, the disposal of which is a matter for them. The reference to citizenship is deliberate. Entitlement to a minimum is seen both as a reward for citizenship and as a prerequisite for participation in society.' (Atkinson 1985 cited in Nolan & Whelan 1996)

Obviously there is little place for deprivation measures with their focus on outcomes under this type of conceptualisation.

As well as these conceptual critiques, there was also debate on how the scores of deprivation studies should be aggregated.

An initial proposal by Desai and Shah (1988) was for the adoption of a weighting system for responses based on the 'subjective feeling of deprivation' in addition to the objective measurement of not having an item. This former would be proxied by the proportion of the population with an item. Hence if a person were deprived of an item that was possessed by only a small proportion of the population, then this would only have a small weighting in the aggregation of results. Conversely, deprivation of an item held by most people would have much

higher weighting[22]. Desai and Shah also proposed, given the possibility of diversity in consumption patterns due to cultural and other reasons, that such weighting should be based on communities of similar practices and not the community as a whole.

An even more sophisticated approach was proposed by Muffels (see Strengmann-Kuhn 2000). Muffels proposed an index where deprivation was weighted both by the proportion of the population with the item, and the proportion that believed that it was necessary. In addition, after generating such a score on items on which a person was deprived, this would be offset by deducting a score for those items that the household possessed. In this latter case, the items would be weighted by the number of households that deemed it not to be necessary and the number who did not have it. Thus, while missing out on an item possessed by most households and which most households considered as important would provide a high score, possessing an item that few other households held, and that few considered was necessary, would generate a high negative offset.

Mack and Lansley

Mack and Lansley, while stating that their research was 'to try, in a modest way, to update the work of Townsend' (Mack & Lansley 1985, p. 9) responded to a number of the major critiques of Townsend's work. In particular they defined poverty as 'an enforced lack of socially perceived necessities' and operationalised these concepts as follows:

- ***enforced lack***: respondents were asked whether the absence of an item was because they were 'unable to afford it'; and
- ***socially perceived necessities***: respondents were asked whether they considered the item to be a necessity and items were only included if a majority of households indicated that they were so considered.

While this methodology did not require that most households actually possessed the item for it to be included in the scale, Mack and Lansley noted that in their analysis 'the findings … indicate that widespread ownership is a prerequisite of an item being seen as a necessity' (p. 67).

Table 24 shows the 22 items included in their scale, as well as 13 that were excluded for a range of reasons, including on the basis that fewer than 50 per cent of households considered they were necessary. In common with Townsend, their scale used some items that were specifically addressed to children and some for adults, reducing the scale to 18 items for adults and 18 for children.

While they discussed the use of weighting scales, in particular with regard to seriousness, or even a criterion that a household needed to experience at least some 'serious' type of deprivation before being considered in poverty, they rejected this and adopted a simple summated scale.

In terms of a cut-off point for their scale, they indicated that:

> '… the effect of a lack of one or two necessities is in the main relatively marginal simply because people's lives are inevitably touched in most one or two areas. By contrast those who lack three or more necessities are generally cutting back in a range of ways in

[22] The actual measure proposed by Desai and Shah was somewhat more complex in that it sought to also include the frequency of deprivation of some items, for example the number of times a person missed out on a hot breakfast, relative to the community modal value.

particular, the distribution of the specific necessities lacked by this group showed that they were cutting back in ways that affected a range of areas of their life and not just one. Taking the criterion that those facing deprivation will be classed as being in poverty only if those deprivations have widespread effects then all those with an enforced lack of three or more necessities are in poverty.' (p. 178).

Table 24: Mack and Lansley items

Standard of living items	% Classing item as necessity	% of population having item
Items included		
Heating	97	92
Indoor toilet	96	98
Damp-free home	96	85
Bath	94	97
Beds for everyone	94	97
Warm water-proof coat	87	88
Three meals a day for children (b)	82	90
Two pairs of all-weather shoes	78	84
Sufficient bedrooms for children (so that each child over 10 of a different sex could have their own)(b)	77	76
Refrigerator	77	96
Toys for children (b)	71	92
Carpets	70	97
Celebrations on special occasions	69	93
Roast joint once a week	67	87
Washing machine	67	89
New, not second-hand, clothes	64	85
Hobby or leisure activity	64	77
Two hot meals a day (adults)	64	81
Meat/fish every other day	63	81
Presents once a year	63	90
Holiday	63	68
Leisure equipment for children (b)	57	79
Items not included		
Public transport	88	87
Self-contained accommodation	79	93
Garden	55	88
Television	51	98
'Best outfit'	48	78
Telephone	43	82
Outing for children once a week (b)	40	58
Dressing gown	38	84
Children's friends round once a fortnight (b)	37	60
Night out once a fortnight	36	57
Friends/family round once a month	32	64
Car	22	61
Packet of cigarettes	14	39

(b) Families with children under 16 only

Mayer and Jencks

In contrast to the tradition set by Townsend and Mack and Lansley of attempting to objectify the study of poverty by focusing on some form of 'community' pattern of behaviour and viewing deprivation as divergence from this, the work of Mayer and Jencks commences with a strong statement of the areas of deprivation they considered to be important and the reasons for this:

> 'The rationale for looking at our particular measures of material well-being is not that they are of special concern to individual consumers but rather that they are of special concern to policymakers and the public. We will not address the question of whether adequate food, housing, or medical care contributes more to subjective wellbeing than an adequate television set or an adequate supply of beer does. We claim only that Americans expect their ***government*** to make some effort to ensure that everyone gets adequate food, housing, and medical care, while regarding television sets and beer as a private responsibility. (Mayer & Jencks 1989, p. 90).

This led them to a somewhat different set of questions, as shown in Table 25. These focus mainly on those outcomes that could be considered to represent key breakdowns in this more limited scope of living standards. While most of the questions related to deprivation, the survey also included an estimate of the income-to-needs ratio for the household. In addition, one question—that of housing condition—can be considered as a sub-scale on which respondents needed to have two items recorded before being considered as having a housing problem.

While they did not incorporate it as part of their scale, they also included a question in one part of their study that asked the household if it could borrow $500 if it needed it. They found this had a very strong relationship with deprivation—equal in fact to multiplying the household's current income by three.

Mayer and Jencks used a simple summated scale, but again differed from other analyses by not specifying a categorical cut–off point at which a household moved from being non-deprived to deprived. Rather, they focused their analysis on the average score for particular population subgroups drawn from the continuous scale, as well as the use of this continuous scale in multivariate analysis.

In common with much of the earlier research, they found that income was a poor predictor of material hardship. On the basis of this, they concluded that:

> '… if the link between income and material hardship is as loose as the Chicago data suggests, and if public officials are concerned with eliminating hardship rather than simply increasing family income, programs which focus on specific hardships may also be more efficient than economists have traditionally thought.'(p. 112)

Table 25: Deprivation survey questions used by Mayer and Jencks

COULDN'T AFFORD FOOD	Has there been a time in the last year when you needed food but couldn't afford to buy it or couldn't get out to get it? Yes, couldn't afford it = 1: all other responses = 0.
HOUSEHOLD FOOD SPENDING BELOW 'THRIFTY' FOOD BUDGET	A) Counting both cash and any food stamps that you might get, about how much do you and your family spend each week on groceries? B) Thinking about yourself and the other people that you buy groceries for, could you guess about how much all of you spend in an average week on eating out, including breakfasts, lunches, dinners and snacks?' (LT USDA = 1 if A + B/3 < I, where I is the family's thrifty food budget; otherwise LT A = 0.)
RENT UNPAID	In the last two years has there been a time when you couldn't afford a place to stay or when you couldn't pay the rent? (Yes = 1 No = 0.) This question was not asked of homeowners. Since almost all homeowners were able to make their monthly housing payments, they were coded as 0.
CROWDED	How many rooms are there in your home, not counting bathrooms? (CROWDED = 1 if number of rooms < number of household members; otherwise = 0.)
EVICTED	Have you been evicted from your home in the past two years for not being able to pay your rent? (Yes = 1 No = 0.)
UTILITIES OFF	Has your gas or electricity been turned off for not paying the bill any time during the last two years? (Yes = 1 No = 0.)
HOUSING PROBLEMS	Now I'm going to name some problems with housing that sometimes cause people difficulty. Do any of these things cause you difficulty now? 1) A leaky roof or ceiling? 2) A toilet, hot water heater or other plumbing that doesn't work right? 3) Rats, mice, roaches or other insects? 4) Broken windows? 5) A heating system that doesn't work properly? 6) Exposed wires or other electrical problems? 7) A stove or refrigerator that doesn't work properly? ***For each 'Yes' answer:*** Would you say that this hasn't been taken care of due to the high cost involved, lack of time, a problem with the landlord, or some other reason ? (HOUSING PROBLEMS = 1 if respondent has two or more problems due to cost or landlord; otherwise = 0.)
NO INSURANCE	Is everyone in your household covered by health insurance such as Medicare, Medicaid, Veteran's benefits, Blue Cross, Prudential, an HMO; or any other program? (No = 1; Yes = 0).
UNMET MEDICAL NEEDS	Has there been any time in the last year when you or anyone else in your family needed to see a doctor or go to the hospital but didn't go? ***(If yes)*** Was that because of lack of money, lack of time, because you didn't know who to see or what? (Yes, because of lack of money = 1 all others = 0.)
UNMET DENTAL NEEDS	Has there been any time in the last year when you or any one else in your family needed to see a dentist but didn't go? ***(If yes)*** Was that because of lack of money, lack of time, because you didn't know who to see, because you are afraid of the dentist or some other reason? (Yes, because of lack of money = 1; all others = 0.)

Nolan and Whelan

As noted, Ringen suggested that one strategy to address the dual nature of poverty was to develop a measure that included both income and deprivation. This has been done by Nolan and Whelan (1996), and has now been incorporated into the official anti-poverty strategy of Ireland (Layte, Nolan & Whelan 2000).

The deprivation instrument used by Nolan and Whelan drew upon a number of the approaches developed by previous researchers.

While they use a similar question structure to Mack and Lansley for most of their questions, they have not used the less than 50 per cent of the community considering the items to be a necessity as an automatic criterion for exclusion. In addition they included a number of questions where people are simply asked if they lack the item, with an assumption that this would only arise out of a shortage of money—for example, going a day without a substantial meal, debt and payment problems.

In their analysis of the results of their survey, they also adopted a somewhat different tack to earlier researchers. Rather than treating deprivation as a single concept and developing a one-dimensional scale, they analysed the data to attempt to identify whether or not there were different dimensions to a household's experience. The results of this analysis suggested that there were in fact three dimensions.

- basic lifestyle deprivation—consisting of basic items such as food and clothes;
- secondary lifestyle deprivation—consisting of items such as leisure activities;
- housing deprivation—consisting of items related to housing quality and facilities. (Nolan & Whelan 1996, p. 87)

The structure of these factors and the key survey responses to the component questions are shown in Table 26.

The final phase of their study was to construct a compound scale of deprivation and income. This had three key features:

- Only the basic deprivation scale was used.
- A household with one or more items on this scale was considered to be deprived.
- Low-income households were considered to be those on below 60 per cent of mean equivalised disposable income.

Application of this to the survey responses identified four groups:

'1. households that are above the 60 per cent income threshold and are not experiencing basic deprivation—which we will call consistently non-poor;

2. households that are above this income line but still report enforced basic deprivation—which we call the deprivation-poor only;

3. households that are below the income line but do not report basic deprivation—which we will call the income poor only;

4. households that are below the income threshold and are also experiencing primary deprivation—which we will call the consistently poor.' (p. 133).

It is the last of these that is consistent with Ringen's notion, and that has been adopted in Ireland.

Table 26: Nolan and Whelan, lifestyle deprivation items

Item	% Lacking/ Exper-iencing	% Enforced lack	% Stating necessity
Basic Items			
Whether the household manager had to go without heating during the last year through lack of money, ie. having to go without a fire on a cold day, or go to bed early to keep warm, or light the fire late because of lack of coal/fuel;	7	(a)	(a)
Whether there was a day during the previous two weeks when the 'household manager' did not have a substantial meal at all - from getting up to going to bed;	4	(a)	(a)
Whether the household has experienced debt problems in terms of any of the following:			
(a) it is currently in arrears on rent, mortgage, electricity or gas;			
(b) it has had to go into debt in the last twelve months to meet ordinary living expenses (such as rent, food, Christmas, or back to school expenses);			
(c) it has had to sell or pawn anything worth £50 or more to meet ordinary living expenses; or			
(d) it has received assistance from a private charity in the past year.	15	(a)	(a)
New, not second-hand, clothes	10	8	77
Meal with meat, chicken, or fish every second day	13	9	84
Warm, waterproof overcoat	13	8	93
Two pairs of strong shoes	16	11	88
Roast meat joint or equivalent once a week	24	13	64
Secondary Items			
Week's annual holiday away from home	68	49	50
To be able to save regularly	57	55	88
Daily newspaper	45	16	39
Telephone	48	31	45
Hobby or leisure activity	33	12	73
Central heating in the house	45	30	49
Presents for friends or family once a year	24	13	60
Car	38	22	59
Could not afford Afternoon/Evening Out	17	(a)	(a)
Housing Items			
Bath or shower	9	7	98
An indoor toilet in the dwelling	7	6	98
Washing machine	20	10	82
Refrigerator	5	3	92
Colour TV	20	11	37
Dry damp-free dwelling	10	9	99
Heating for the living rooms when it is cold	3	2	99

(a) Items deemed to indicate poor outcomes

Other studies

While these can be considered to be the seminal studies, at least in terms of the development of approaches to deprivation, many others have worked on the concept. These include:

- The European Community Household Panel, which provides data on a wide spectrum of lifestyle issues, including financial deprivation, and permits studies to be conducted across members of the community; and
- The Poverty and Social Exclusion Survey in the United Kingdom. This is a very extensive survey that includes 29 items where deprivation is considered to be representative of absolute poverty and a further 51 where deprivation represents relative poverty.

Appendix B ABS financial stress questions

Population: First interview of Head or Spouse

THE NEXT FEW QUESTIONS ARE ABOUT ASPECTS OF YOUR HOUSEHOLD'S STANDARD OF LIVING.[23]

Q1 THINKING OF YOUR HOUSEHOLD'S SITUATION OVER THE LAST 12 MONTHS, WHICH ONE OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR HOUSEHOLD'S FINANCIAL SITUATION?

1 Spend more money than we get

2 Just break even most weeks

3 Able to save money most weeks

Q2 WHICH OF THESE STATEMENTS BEST DESCRIBES YOUR HOUSEHOLD'S STANDARD OF LIVING COMPARED TO 2 YEARS AGO?

1 Better that 2 years ago

2 The same as 2 years ago

3 Worse than 2 years ago

4 Not applicable

Q3 WHICH OF THE FOLLOWING DO MEMBERS OF YOUR HOUSEHOLD USUALLY HAVE?

1 A holiday away from home for at least one week a year

2 A night out once a fortnight

3 Friends or family over for a meal once a month

4 A special meal once a week

5 Buy new and not second-hand clothes, most of the time

6 Spend time on leisure or hobby activities

7 No/None

Q5 IS THE REASON THAT YOUR HOUSEHOLD DOESN'T (HAVE) [*item from Q3 above*] BECAUSE YOU DON'T WANT IT, OR YOU CAN'T AFFORD IT, OR SOME OTHER REASON?

1 Don't want it

2 Can't afford it

3 Other reason

[23] Some sequencing questions have been omitted.

Q6 IF ALL OF A SUDDEN YOUR HOUSEHOLD HAD TO GET TWO THOUSAND DOLLARS FOR SOMETHING IMPORTANT, COULD THE MONEY BE OBTAINED WITHIN A WEEK?

1 Yes

2 No

Q7 WHICH OF THE FOLLOWING SOURCES COULD YOUR HOUSEHOLD USE? (More than one response is allowed.)

1 Own savings

2 Loan from bank, building society or credit union

3 Loan from finance company (high interest)

4 Loan on credit card

5 Loan from family or friends

6 Loan from welfare or community organisation

7 Sell something

8 Other sources

Q9 OF THE SOURCES THAT YOU HAVE SELECTED, WHICH ONE WOULD YOUR HOUSEHOLD BE MOST LIKELY TO USE?

1 Own savings

2 Loan from bank, building society or credit union

3 Loan from finance company (high interest)

4 Loan on credit card

5 Loan from family or friends

6 Loan from welfare or community organisation

7 Sell something

8 Other sources

Q10 OVER THE PAST YEAR HAVE ANY OF THE FOLLOWING HAPPENED TO YOUR HOUSEHOLD BECAUSE OF A SHORTAGE OF MONEY? Interviewer: If yes, ask which ones.

1 Could not pay electricity. gas or telephone bills on time

2 Could not pay for car registration or insurance on time

3 Pawned or sold something

4 Went without meals

5 Unable to heat my home

6 Sought assistance from welfare/community organisations

7 Sought financial help from friends or family

8 No/None

Appendix C Standard errors

Table 27: Population and standard error estimates

	Households	Multiple hardship		Relative standard errors[24]		
		Households	Rate	Households	Multiple hardship	
	'000	'000	%		Households	Rate
ABS financial stress questions						
Household budget						
Spend more	1 048.9	102.0	9.7%	3.8%	9.7%	8.3%
Break even	3 764.8	115.1	3.1%	1.4%	12.3%	12.2%
Save	2 308.1	5.7	0.2%	2.0%	42.7%	42.5%
Source of emergency money						
Can't raise	1 361.4	169.0	12.4%	2.2%	8.9%	8.0%
Own savings	3 100.4	5.6	0.2%	1.4%	45.7%	45.3%
Bank loan	986.0	6.8	0.7%	2.5%	52.4%	53.7%
Finance company loan	42.7	0.9	2.1%	21.8%	104.3%	106.5%
Credit card	601.9	7.0	1.2%	3.8%	38.4%	37.6%
Loan from family/friends	860.1	23.8	2.8%	4.1%	22.3%	21.3%
Sell something	75.2	8.6	11.4%	11.8%	50.0%	46.8%
Other sources	94.1	1.1	1.1%	10.2%	101.5%	101.9%
Standard of living						
Better	2 004.3	50.4	2.5%	1.9%	13.9%	13.5%
The same	3 042.3	56.9	1.9%	1.7%	12.1%	12.5%
Worse	1 859.0	101.0	5.4%	2.3%	12.3%	11.6%
H'hold composition changed	216.1	14.4	6.6%	7.1%	36.5%	34.8%
Financial support from family/friends						
No	6 414.5	76.1	1.2%	0.4%	11.2%	11.2%
Yes	707.3	146.7	20.7%	4.1%	10.1%	8.0%
Financial support from welfare/community						
No	6 874.6	74.6	1.1%	0.2%	13.2%	13.2%
Yes	247.2	148.2	59.9%	6.3%	8.8%	6.8%
Unable to heat home						
No	6 962.6	113.4	1.6%	0.2%	12.0%	12.0%
Yes	159.2	109.3	68.6%	8.9%	9.8%	5.3%
Missed meals						
No	6 928.9	96.7	1.4%	0.2%	12.9%	12.9%
Yes	193.0	126.1	65.3%	7.8%	9.9%	6.0%
Pawned or sold something						
No	6 819.9	64.9	1.0%	0.3%	14.4%	14.4%
Yes	301.9	157.9	52.3%	7.1%	8.6%	5.3%
Late pay registration/insurance						
No	6 657.9	134.7	2.0%	0.3%	11.0%	11.0%
Yes	463.9	88.0	19.0%	4.6%	10.3%	8.2%
Late pay electricity/gas/phone						
No	5 977.1	40.7	0.7%	0.5%	20.3%	20.1%
Yes	1 144.7	182.0	15.9%	2.8%	8.8%	8.0%

[24] Relative standard errors have been estimated using the ABS group jackknife variance estimator.

	Households	Multiple hardship		Relative standard errors		
		Households	Rate	Households	Multiple hardship	
	'000	'000	%		Households	Rate
ABS financial stress questions (cont)						
Hobbies/Leisure						
Had	5 249.7	107.4	2.0%	1.0%	10.6%	10.5%
Did not want	319.0	3.5	1.1%	7.2%	60.4%	59.6%
Can't afford	647.7	94.2	14.5%	4.7%	13.2%	12.9%
Other reasons	905.4	17.6	1.9%	3.4%	24.7%	24.3%
Why not new clothing						
Had	5 826.4	75.0	1.3%	0.7%	10.4%	10.6%
Did not want	157.4	2.3	1.5%	8.7%	82.6%	82.7%
Can't afford	837.0	136.5	16.3%	3.6%	10.0%	10.6%
Other reasons	301.0	8.9	3.0%	6.7%	37.9%	36.6%
Special meal weekly						
Had	3 458.8	71.3	2.1%	1.6%	13.8%	13.8%
Did not want	1 215.5	17.6	1.5%	2.3%	26.9%	27.5%
Can't afford	829.4	100.8	12.2%	4.4%	11.3%	10.6%
Other reasons	1 618.2	33.0	2.0%	2.8%	20.3%	20.4%
Friends/family over for meal						
Had	4 527.9	104.0	2.3%	1.0%	11.7%	11.8%
Did not want	448.6	11.3	2.5%	4.6%	32.1%	31.1%
Can't afford	376.2	62.1	16.5%	6.1%	14.7%	13.9%
Other reasons	1 769.2	45.3	2.6%	2.5%	18.4%	18.2%
Nights out						
Had	3 546.5	75.6	2.1%	1.1%	14.6%	14.1%
Did not want	1 012.8	13.7	1.4%	2.9%	28.8%	28.2%
Can't afford	1 381.7	121.5	8.8%	2.8%	9.5%	8.9%
Other reasons	1 180.7	11.8	1.0%	3.0%	27.4%	27.0%
Holiday away from home						
Had	3 841.4	44.1	1.1%	1.1%	14.3%	14.4%
Did not want	417.1	2.0	0.5%	5.6%	72.9%	72.6%
Can't afford	1 945.9	170.3	8.7%	1.5%	9.4%	9.3%
Other reasons	917.4	6.4	0.7%	4.5%	36.1%	36.8%
Derived financial stress indicators						
Number of cashflow problems						
0	5 655.5	23.7	0.4%	0.6%	24.8%	24.8%
1	809.9	46.8	5.8%	3.4%	14.6%	14.1%
2	463.1	86.7	18.7%	5.1%	14.1%	11.7%
3	193.3	65.5	33.9%	7.1%	12.9%	10.1%
Number of missing out items						
0	4 390.8	20.1	0.5%	0.8%	31.1%	31.0%
1	1 178.8	28.4	2.4%	3.2%	23.9%	23.6%
2	663.5	42.0	6.3%	4.8%	21.7%	20.2%
3	390.9	42.5	10.9%	6.3%	19.0%	19.0%
4	241.2	28.1	11.6%	8.8%	18.0%	18.0%
5	164.3	36.9	22.4%	10.3%	22.9%	18.1%
6	92.1	24.8	26.9%	12.0%	23.9%	20.2%
Number of hardship items						
0	6 539.2	0.0	0.0%	0.4%	–	–
1	359.9	0.0	0.0%	5.4%	–	–
2	149.9	149.9	100.0%	10.2%	10.2%	–
3	49.8	49.8	100.0%	13.5%	13.5%	–
4	23.1	23.1	100.0%	23.2%	23.2%	–

	Households	Multiple Hardship		Relative Standard Errors		
		Households	Rate	Households	Multiple Hardship	
	'000	'000	%		Households	Rate
Derived financial stress indicators (cont.)						
Some missing out						
No	4 390.9	20.1	0.5%	0.8%	31.1%	31.0%
Yes	2 731.0	202.7	7.4%	1.3%	8.4%	8.4%
Multiple missing out						
No	5 569.7	48.5	0.9%	0.8%	17.5%	17.4%
Yes	1 552.1	174.3	11.2%	2.7%	8.9%	8.8%
Some cashflow problems						
No	5 655.5	23.7	0.4%	0.6%	24.8%	24.8%
Yes	1 466.3	199.0	13.6%	2.2%	8.4%	7.6%
Multiple cashflow problems						
No	6 465.5	70.5	1.1%	0.4%	14.1%	14.1%
Yes	656.4	152.2	23.2%	4.2%	9.8%	7.4%
Some hardship						
No	6 539.2	0.0	0.0%	0.4%	–	–
Yes	582.6	222.7	38.2%	4.4%	7.6%	5.8%
Multiple hardship						
No	6 899.1	0.0	0.0%	0.2%	–	–
Yes	222.7	222.7	100.0%	7.6%	7.6%	–
Population/household characteristics						
State						
New South Wales	2 371.0	65.1	2.7%	0.2%	15.7%	15.7%
Victoria	1 740.3	40.1	2.3%	0.3%	20.9%	21.0%
Queensland	1 337.5	50.5	3.8%	0.2%	16.2%	16.2%
South Australia	605.4	22.0	3.6%	0.2%	23.4%	23.4%
Western Australia	712.5	28.4	4.0%	0.3%	20.0%	20.0%
Tasmania	185.8	10.8	5.8%	0.3%	34.5%	34.4%
Northern Territory	52.4	1.2	2.2%	0.9%	23.8%	23.9%
Australian Capital Territory	116.9	4.7	4.0%	0.7%	32.2%	32.2%
Socioeconomic status of location						
No index assigned	169.3	5.8	3.5%	0.6%	26.1%	26.0%
Lowest decile	687.1	48.9	7.1%	6.6%	19.0%	17.2%
Second decile	719.6	24.3	3.4%	6.0%	19.2%	19.2%
Third decile	720.3	31.8	4.4%	6.7%	19.0%	19.3%
Fourth decile	734.2	23.3	3.2%	5.4%	28.2%	26.3%
Fifth decile	680.0	23.7	3.5%	7.1%	22.5%	23.0%
Sixth decile	714.8	17.4	2.4%	5.4%	35.1%	35.5%
Seventh decile	731.0	16.3	2.2%	5.2%	34.3%	35.7%
Eighth decile	682.4	16.3	2.4%	8.4%	32.6%	31.5%
Ninth decile	678.5	7.3	1.1%	8.7%	41.5%	40.3%
Tenth decile	556.1	5.1	0.9%	4.7%	44.0%	44.2%
Tasmania 9th and 10th decile	48.6	2.6	5.4%	17.4%	69.5%	69.0%
Dependent children in household						
0	4 578.7	103.4	2.3%	0.4%	12.9%	13.0%
1	953.7	42.4	4.4%	2.1%	15.2%	15.3%
2	996.0	44.4	4.5%	1.5%	17.1%	16.7%
3	449.4	19.1	4.2%	4.4%	30.1%	30.2%
4	119.5	8.8	7.4%	8.5%	41.4%	39.3%
5	21.7	4.0	18.2%	22.6%	63.3%	61.6%
6 or more	2.8	0.7	24.0%	46.7%	114.8%	126.1%

	Households	Multiple hardship		Relative standard errors		
		Households	Rate	Households	Multiple hardship	
	'000	'000	%		Households	Rate
Population/household characteristics (cont.)						
Country of birth (Summary)						
Australia	5 136.5	173.5	3.4%	0.9%	8.0%	7.8%
NW Europe	796.2	15.9	2.0%	4.0%	25.0%	24.4%
Other	1 189.1	33.3	2.8%	3.1%	20.9%	21.0%
Country of birth						
Australia	5 136.5	173.6	3.4%	0.9%	8.0%	7.8%
Other Oceania and Antarctica	191.4	9.7	5.1%	8.3%	38.2%	36.3%
North-West Europe	796.2	15.9	2.0%	4.0%	25.0%	24.4%
Southern and Eastern Europe	404.1	5.3	1.3%	4.8%	47.1%	46.2%
North Africa and Middle East	94.9	5.2	5.4%	14.3%	51.1%	54.8%
South-East Asia	195.8	5.1	2.6%	7.9%	46.1%	43.0%
North-East Asia	102.0	0.0	0.0%	11.1%	–	–
Southern and Central Asia	59.2	1.1	1.9%	16.9%	101.4%	103.8%
Americas	68.3	4.0	5.9%	14.5%	61.0%	58.4%
Sub-Saharan Africa;	73.4	2.9	3.9%	12.9%	70.7%	71.3%
Educational achievement						
Year 12 or equivalent	3 747.2	56.4	1.5%	1.1%	15.1%	15.2%
Without	3 374.7	166.4	4.9%	1.2%	7.9%	7.7%
Age						
Under 25 years	494.3	26.4	5.3%	3.6%	26.2%	25.7%
25–34 years	1 506.6	73.3	4.9%	2.2%	13.9%	14.0%
35–44 years	1 649.1	67.2	4.1%	2.0%	17.3%	16.7%
45–54 years	1 300.2	32.2	2.5%	2.2%	18.4%	17.6%
55–64 years	868.1	14.6	1.7%	2.6%	30.1%	29.5%
65–74 years	785.3	7.9	1.0%	2.4%	46.0%	46.5%
75 years and over	518.3	1.2	0.2%	4.8%	88.3%	88.0%
Gender						
Male	4 409.1	98.4	2.2%	0.8%	10.9%	10.6%
Female	2 712.7	124.3	4.6%	1.3%	9.4%	9.2%
Family/Household type						
Group	269.9	8.4	3.1%	5.0%	37.6%	36.1%
Elderly single	886.9	13.5	1.5%	3.0%	35.7%	35.6%
Other single	771.1	52.2	6.8%	3.6%	17.5%	17.9%
Young single	62.8	6.5	10.4%	15.4%	49.2%	47.6%
Sole parent dependent children	460.5	67.7	14.7%	2.9%	12.1%	11.3%
Other family non-dep. children	400.9	11.3	2.8%	5.9%	35.0%	36.2%
Other family depend. children	71.5	0.7	0.9%	9.3%	114.8%	116.3%
Elderly couple	963.8	1.2	0.1%	2.3%	101.4%	101.5%
Other couple	790.2	8.4	1.1%	2.8%	31.7%	31.7%
Couple non-depend children	433.1	1.8	0.4%	4.2%	103.8%	104.0%
Couple dependent children	2 011.2	51.0	2.5%	1.1%	17.8%	17.5%
Housing tenure						
Owner - no mortgage	2 820.6	10.4	0.4%	1.3%	32.8%	32.8%
Owner- with mortgage	2 118.9	23.8	1.1%	1.9%	29.8%	29.2%
Public housing	389.1	48.1	12.4%	6.0%	13.9%	12.5%
Private rent	1 620.8	135.6	8.4%	2.4%	10.0%	9.7%
Other	172.4	4.9	2.8%	8.0%	57.0%	57.3%
Disability						
Severe	423.1	23.2	5.5%	5.5%	23.8%	21.8%
Moderate	557.1	37.7	6.8%	3.4%	19.8%	19.3%
Work/School	560.6	47.2	8.4%	4.4%	15.5%	15.9%
No restriction	2 102.5	59.2	2.8%	2.2%	12.6%	12.6%
No disability	3 478.5	55.5	1.6%	1.2%	15.8%	16.0%

	Households	Multiple hardship		Relative standard errors		
		Households	Rate	Households	Multiple hardship	
	'000	'000	%		Households	Rate
Low income - 60% median income						
Above	5 551.1	109.8	2.0%	0.6%	8.9%	9.0%
Below	1 570.7	112.9	7.2%	2.0%	11.5%	10.9%
Low income - 50% median income						
Above	6 398.0	165.6	2.6%	0.4%	8.0%	8.2%
Below	723.8	57.1	7.9%	3.3%	13.2%	12.3%
Low income - 50% mean income						
Above	5 673.8	118.6	2.1%	0.6%	9.7%	9.8%
Below	1 448.0	104.1	7.2%	2.4%	11.1%	10.4%
Income and source of income						
Net income quintile						
1 (Lowest)	1 426.7	103.2	7.2%	2.4%	11.0%	10.2%
2	1 422.7	67.5	4.7%	2.8%	15.8%	15.7%
3	1 423.8	31.7	2.2%	2.9%	21.3%	20.8%
4	1 424.9	17.0	1.2%	2.6%	27.9%	27.6%
5 (Highest)	1 423.7	3.3	0.2%	2.0%	59.5%	59.7%
Summary main source of income						
Wage and salaries	4 075.4	57.7	1.4%	0.8%	11.3%	11.3%
Self employed	422.2	9.0	2.1%	5.7%	35.8%	36.1%
Superannuation/investments	577.8	4.3	0.7%	3.2%	57.6%	57.5%
Pensions/benefits	1 951.9	151.7	7.8%	1.4%	9.1%	9.1%
Other	94.6	0.0	0.0%	11.2%	–	–
Detailed main source of income						
Wage & salary	4 045.3	54.9	1.4%	0.8%	11.3%	11.3%
Age pension	862.7	8.8	1.0%	2.2%	51.2%	51.5%
Self-employed	419.4	9.0	2.2%	5.7%	35.8%	36.2%
Investments	298.1	0.0	0.0%	6.9%	–	
Disability Support Pension	260.0	36.0	13.9%	7.6%	16.9%	17.5%
Superannuation	231.3	0.0	0.0%	8.2%		
Parent Pay—Single	230.8	46.1	20.0%	4.5%	15.8%	16.1%
Newstart	208.5	36.8	17.7%	7.1%	28.1%	25.5%
DVA	115.7	3.3	2.8%	11.7%	65.2%	66.1%
Negative or zero income	86.9	0.0	0.0%	12.8%	–	–
Parent Pay—Other	71.7	4.8	6.7%	10.8%	65.1%	64.0%
Not else classified	37.5	0.0	0.0%	18.4%	–	–
Mature Age Allowance	35.4	0.0	0.0%	19.7%	–	–
Overseas Benefit	33.1	0.0	0.0%	22.0%	–	–
Wife/Carer	28.2	1.4	4.8%	26.2%	92.7%	98.9%
Widow Allowance	27.7	2.4	8.7%	19.6%	69.2%	72.6%
Youth Allowance	27.3	2.2	8.0%	17.0%	74.7%	77.8%
Austudy	26.9	4.5	16.9%	24.4%	80.5%	80.4%
Compensation	21.8	2.3	10.7%	25.1%	63.0%	62.1%
Family Allowance	18.1	4.8	26.2%	27.8%	51.2%	46.6%
Sickness Allowance	11.0	3.4	30.8%	30.4%	55.2%	53.2%
Maintenance	10.9	2.0	18.2%	32.9%	103.5%	105.8%
Other Pension or Benefit	7.3	0.0	0.0%	36.5%	–	–
Scholarship	6.2	0.0	0.0%	39.8%	–	–

	Households	Multiple Hardship		Relative Standard Errors		
		Households	Rate	Households	Multiple Hardship	
	'000	'000	%		Households	Rate
Labour market characteristics						
Employment arrangements						
No employment	986.7	125.6	12.7%	2.5%	10.2%	9.3%
Retired only	1 218.6	11.6	0.9%	1.3%	40.6%	40.6%
2 or more part-time employed	133.5	2.1	1.6%	8.6%	81.9%	83.2%
1 Part-time employed	503.5	30.0	6.0%	5.4%	22.8%	22.4%
2 or more full-time employed	1 505.5	8.4	0.6%	2.1%	38.4%	38.1%
1 Full-time & 1 part-time employed	1 031.6	11.4	1.1%	2.5%	32.8%	33.3%
1 Full-time employed	1 742.4	33.7	1.9%	2.1%	20.1%	19.8%
Combined family/labour market (a)						
Retired couple	708.0	0.0	0.0%	2.9%	–	–
Retired single	672.4	10.2	1.5%	3.2%	44.6%	44.8%
Retired other	34.8	1.3	3.9%	17.2%	101.5%	103.2%
Single unemployed	92.0	25.0	27.1%	11.7%	29.6%	31.8%
Single not employed	193.6	16.3	8.4%	7.7%	25.4%	25.2%
Single employed	762.7	20.8	2.7%	3.5%	25.5%	25.2%
Couple unemployed	132.8	14.3	10.8%	7.1%	35.0%	34.2%
Couple not employed	189.8	14.1	7.4%	7.0%	29.8%	30.6%
Couple 1 employed	1 170.2	27.2	2.3%	2.4%	24.1%	24.0%
Couple 2 employed	2 160.4	9.2	0.4%	1.5%	38.0%	37.5%
Sole parent not/un-employed	341.5	58.7	17.2%	5.3%	13.4%	12.1%
Sole p in h'hold with other employed	144.8	7.1	4.9%	11.3%	44.4%	42.1%
Sole parent employed	219.2	9.2	4.2%	6.9%	31.2%	30.3%
Other no/un-employed	33.0	1.7	5.1%	17.1%	77.0%	81.0%
Other employed	266.4	7.8	2.9%	5.1%	37.2%	36.8%
Occupation						
Not employed	2 369.6	145.7	6.1%	1.2%	8.7%	8.5%
Manager/administrator	411.6	6.9	1.7%	4.6%	46.1%	46.0%
Professional	1 024.8	6.3	0.6%	3.0%	45.0%	44.7%
Associate professional	642.0	5.3	0.8%	3.6%	46.5%	45.8%
Tradespersons and related	738.0	11.0	1.5%	3.9%	43.4%	43.2%
Advanced clerical and service	148.0	1.3	0.9%	10.4%	80.7%	82.5%
Intermediate clerical/sales/service	615.0	13.8	2.3%	3.7%	28.4%	28.9%
Intermediate production & transport	503.8	13.0	2.6%	4.9%	35.4%	33.3%
Elementary clerical/sales/service	269.6	6.1	2.3%	5.5%	48.5%	49.0%
Labourer and related	399.5	13.3	3.3%	5.4%	36.3%	34.9%
Hours Per Week in All Jobs						
None	2 195.5	135.8	6.2%	1.3%	9.4%	9.2%
Under 5	44.7	5.8	13.0%	14.6%	48.1%	45.6%
5–14	153.5	8.3	5.4%	8.3%	49.3%	47.5%
15–34	336.9	18.8	5.6%	7.0%	25.3%	25.7%
35–44	1 010.3	12.1	1.2%	2.9%	35.2%	35.4%
45 or more	3 381.0	41.9	1.2%	1.0%	17.9%	17.9%
Average Hourly Earnings Rate						
No hours worked	2 195.5	135.8	6.2%	1.3%	9.4%	9.2%
Negative or zero income	106.3	1.5	1.4%	9.2%	69.1%	68.9%
Under $7.50	460.2	12.3	2.7%	5.0%	30.8%	31.2%
$7.50–9.99	336.6	14.1	4.2%	6.6%	28.6%	26.3%
$10–12.49	705.5	22.3	3.2%	3.4%	21.7%	22.8%
$12.50–14.99	872.0	22.6	2.6%	3.4%	23.7%	24.0%
$15–19	1 304.7	10.5	0.8%	2.8%	37.8%	37.8%
$20–24	582.2	1.9	0.3%	4.8%	60.7%	60.7%
$25–29	285.2	0.7	0.2%	5.7%	103.8%	104.5%
$30–34	107.9	0.0	0.0%	12.4%	–	–
$35 and over	165.9	1.2	0.7%	10.2%	101.0%	101.2%

	Households	Multiple Hardship		Relative Standard Errors		
		Households	Rate	Households	Multiple Hardship	
	'000	'000	%		Households	Rate
Labour market characteristics (cont.)						
Duration of unemployment						
Not applicable	6 476.2	150.9	2.3%	0.1%	9.4%	9.4%
Under 4 weeks	49.6	7.2	14.5%	15.1%	52.6%	50.7%
4–12 weeks	224.2	21.7	9.7%	6.1%	22.0%	20.8%
13–25 weeks	85.9	8.0	9.4%	13.6%	39.1%	40.0%
26–51 weeks	88.0	8.8	10.0%	12.0%	43.9%	40.4%
1 Year and over	197.9	26.2	13.2%	5.8%	30.0%	29.5%

= Estimate with Relative Standard Error of 25–50%, use with caution
= Estimate with Relative Standard Error greater than 50%, unreliable for most uses

(a) This structure uses a number of different definitions to those used in other parts of the paper; this largely relates to the treatment of the household unit, with the primary unit being used in this case for descriptive purposes, hence sole parents living with other people are separately identified, while retired households take into account the primary unit only.

Appendix D Factor analysis of ABS financial stress indicators

The purpose of the use of Factor Analysis (FA) was to identify whether it was possible to reduce the large set of ABS financial stress variables into a smaller set of uncorrelated components that could identify different and distinct components of stress and hence be used in a simplified, but more perceptive, analysis.

While a statistical technique, factor analysis is a procedure that does not offer a unique solution, but rather blends statistical results with judgements as to the adequacy and meaning of possible solutions.

As it seeks to identify hypothetical latent variables that account for the correlations between sets of observed variables, it requires a conceptual as well as a statistical solution. That is, factors identified in the analysis must be composed of variables that not only have a statistical relationship with the other variables in the factor, but also can be considered as an indicator, or product, of the same underlying concept.

In this analysis, the variables produced by ABS are predominantly dichotomous. That is, households either recorded or did not record a particular outcome. While in general terms this sort of variable can be considered as inappropriate for factor analysis, their use in analysis such as that undertaken in this paper, which primarily seeks to identify clusterings of variables, is generally considered to be valid. 'If the researcher's goal is to seek clustering patterns, the use of factor analysis may be justified' (Kim & Mueller 1978).

Exclusion of variables

After initial exploratory analysis, three out of the 16 variables used by ABS were excluded. These were the capacity to raise funds in an emergency, the household's comparative standard of living, and whether or not the household generally spent more than it received. This step was taken for two reasons. The first was that these variables did not generally load substantially on any of the factors formed by the other variables, even when a wide range of models were tested. The second, and possibly underlying reason for the first, was that the questions tended to have quite a different conceptual basis to the other questions. That is, while the other questions tended to ask about specific incidents, these three were more general or hypothetical. Specifically:

- The question on the household's capacity to raise money was significantly different to the others in the survey in that it related to a capacity to cope with a hypothetical situation, in contrast to the other questions, which asked about actual outcomes.

  In addition, there are aspects of the question that suggest that no simple interpretations could be put on the result. In particular, much of the useful information to do with this question was contained in the follow-up question, which asked which sources households would use—for example, whether they could simply draw upon their own savings, or if they would use high-interest consumer credit. This information is, however, not easily transformed into a suitable variable.

A further issue is that the reason why some households may have responded positively that they could raise such money was that they had needed to in the past, and while this may have been very high-cost financing, they now have the knowledge that such funds are available. In contrast, a household that had never been placed in such a position in the past may have simply responded that they couldn't, as a result of their ignorance of what was available.

- With regard to the question relating to the change in living standards of the household over the previous year, the question was simply comparative to the household's own earlier state, and does not inform an understanding of their current outcomes relative to other households.
- The question on usual weekly financial outcomes, while being more general than most of the other questions in the survey, also differed in that there were three possible responses, ranging from saving to breaking even and spending more. While a number of codings were tried, as with the two other excluded variables, the results of analysis were generally poor.

Factor analysis

Initial analysis of the data was undertaken using principal components analysis. This differs from factor analysis in that it seeks only to explain the total variation in the observed variables and produce 'real' factors derived from the data, rather than estimating 'hypothetical' factors that are assumed to define the variables.

While, as noted below, the solutions produced by the two techniques in this study are essentially the same, the use of factor analysis in the final analysis was based on two criteria. Firstly, factor analysis is of value in situations where there may be measurement error. This is likely to occur in this data where a single person is asked to report on the experience of a household over a historical time period. Secondly, in the analysis the factors are considered not just as descriptive outcomes, but rather as distinct and different conceptual structures.

For the final analysis, the Maximum Likelihood Estimate routine of the SAS Proc Factor procedure was used. While using the criterion of eigenvalues greater than 1 produced 2 factors and a satisfactory factor structure, the initial Principal Components Analysis, as well as an examination of the Scree Plot, suggested that three factors may be more appropriate. This was confirmed in the comparison of the two and three model solutions, which produced marked reductions in the value of Akaike's Information Criteria (1 374 to 489) and Schwarz's Bayesian Measure (1 011 to 202).

Applying an orthogonal transformation under varimax produced a clear separation of the variables into the three factors. Use of Comrey and Lee's criterion (Tabachnick & Fidell 1996) of loadings of greater than 0.45 being 'fair' as a cut-off produced a clean factor structure with all variables loading at this level or better, and each into a single factor. Even reducing the cut-off to the lower point for 'poor' loadings, only one cross-loading occurred. This was that of financial help from family or friends onto factor three.

The factor structure identified in this analysis, in terms of those variables that loaded at 0.45 or higher, was identical with that derived from the varimax rotated initial Principal Components Analysis.

As described in the text, the factor structure derived from the model would appear to have a sound conceptual basis, with:

- the first factor representing the ways in which households constrain their activities in accordance with budgetary limitations;
- the second factor concerning mechanisms of coping with budgetary shortfalls, either through delaying payments or seeking financial assistance from family or friends; and
- the third factor identifying a real failure in household outcomes, with either reliance on 'last resort' access to emergency financial aid or selling/pawning an item, or being unable to purchase a meal or heating.

Table 28: Factor analysis, rotated factor pattern

SAS Proc Factor, method =maximum likelihood, rotation = varimax

	Factor 1	Factor 2	Factor 3
Can't afford night out once a fortnight	0.6546	0.1466	0.0530
Can't afford special meal once a week	0.6276	0.0820	0.1387
Can't afford leisure/hobby activities	0.5798	0.1126	0.1313
Can't afford new clothes (Usually buy 2nd hand)	0.5350	0.1806	0.2339
Can't afford week's holiday away from home each year	0.5311	0.2165	0.1063
Can't afford friends/family over for meal once a month	0.5178	0.0436	0.1609
Could not pay gas/electricity/telephone on time	0.2419	0.7055	0.2317
Could not pay registration/insurance on time	0.1063	0.5598	0.1379
Sought financial help from friends /family	0.1575	0.4728	0.3155
Went without meals	0.1479	0.1446	0.5496
Unable to heat home	0.1265	0.0836	0.5395
Sought assistance from welfare/community	0.1761	0.2629	0.4701
Pawned or sold something	0.1162	0.3054	0.4513
Proportion of variance explained	0.276	0.199	0.156

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