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Relative living standards and needs of low-paid employees: definition and measurement

Jocelyn Pech
Minimum Wages and Research Branch—Fair Work Australia

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The contents of this paper are the responsibility of the author and the research has been conducted without the involvement of members of the Minimum Wage Panel of Fair Work Australia.

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- Australian Industry Group (Ai Group);
- Australian Council of Social Services (ACOSS);
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Contents

List of figures	
List of tables.....	
List of abbreviations.....	
Executive summary.....	i
1 Introduction	1
2 What are living standards and needs?	3
3 Measuring relative living standards and needs.....	5
3.1 Indicators of living standards.....	5
3.2 Concepts of income.....	6
3.2.1 Private income.....	6
3.2.2 Gross income	6
3.2.3 Disposable income	6
3.2.4 Final income.....	6
3.2.5 Full income.....	7
3.3 Other indicators of living standards.....	10
3.3.1 Expenditure.....	10
3.3.2 Wealth	12
4 Comparing resources across individuals, income units and households	16
4.1 Unit of analysis.....	16
4.2 Equivalence scales.....	17
4.2.1 Implied equivalences from Australian budget standards	21
4.3 Methods of updating data and benchmarks.....	25
5 Common income benchmarks	29
5.1 Henderson poverty lines	29
5.2 Relative poverty lines	31
5.3 Indicative budget standards	33
5.4 Comparing the income benchmarks.....	39
5.4.1 Transparency	39
5.4.2 Currency	40
5.4.3 Sensitivity/comprehensiveness	40
5.4.4 Public visibility/credibility.....	41

5.5	Medium term trends in the value of income benchmarks	41
5.6	Conclusion	44
6	Outcome-based data on living standards	45
6.1	Financial stress.....	48
6.2	Deprivation and social exclusion.....	48
6.3	Qualitative evidence on living standards of low-paid employees	52
7	Whose living standards?.....	54
7.1	Defining and measuring low pay.....	54
7.1.1	Quantitative benchmarks of low pay.....	54
7.1.2	Methodologies for deriving hourly benchmarks from unit record data	58
7.2	Selecting the population of interest	61
7.2.1	Treatment of junior employees	62
7.3	Hypothetical low-paid employee households	63
7.3.1	Assumptions for modelling disposable incomes	63
7.3.2	Recent trends in disposable incomes of selected hypothetical households	64
8	Key reference point(s) for living standards relativities	67
8.1	Households containing low-paid employees.....	67
8.2	Hypothetical low-paid employee households	68
8.2.1	Current disposable income relativities	68
8.2.2	Trends in relativities over time.....	69
8.3	Trends in real living standards over time.....	70
9	Possible data sources	72
9.1	SIH/HES.....	72
9.1.1	2007–08 SIH	72
9.2	HILDA Survey.....	74
9.3	Possible data improvements.....	75
10	Conclusion.....	76
	Bibliography.....	77
	Legislation.....	86
	Appendices.....	87

List of figures

Fig. 4.1: Growth in prices, earnings and disposable income, 1998–99 to 2008–09.....	27
Fig. 5.1: Real (2007–08) value of selected income benchmarks, single full-time employee household, 1997–98 to 2007–08.....	43
Fig. 8.1: Disposable income when unemployed or receiving C14 wage relative to disposable income when receiving AWOTE, single person household and couple plus two children, 2002 to 2010	70

List of tables

Table 3.1 Probability of falling into lowest or highest quintile of household net worth or equivalised household disposable income, selected household characteristics, 2005–06	14
Table 4.1: Equivalence factors from commonly-used equivalence scales, various household types with one or two full-time earners	20
Table 4.2: Comparison of Henderson equivalence scales with scales derived from BSU budget standards, various family types paying private rent	22
Table 4.3: Estimated modest but adequate budget standards for three illustrative household types in private rental accommodation, February 1997 (\$).....	23
Table 4.4: Growth in various indicators of prices, earnings and household income, 1998–99 to 2008–09	26
Table 5.1: Disposable incomes of households with one low-wage earner, compared with updated budget standards, September 2003	38
Table 5.2 Estimated value of common income benchmarks, various family types with one full-time employee, January 2008.....	41
Table 7.1 Benchmarks of low weekly earnings, August 2008 (\$)	56
Table 7.2 Benchmarks of low hourly pay, relative to the FMW, August 2008.....	57
Table 7.3 Disposable incomes of hypothetical households reliant on C14 and C10 classification wages, July 2002 to July 2010	65
Table 7.4 Disposable incomes of hypothetical households reliant on C4 and C2(b) classification wages, July 2002 to July 2010	65
Table 8.1 Weekly disposable incomes of hypothetical households at various award wages and when unemployed, relative to disposable income at AWOTE, August 2010.....	69
Table A.1 Selected recent Australian research into poverty and/or income distribution.....	87
Table B.1 Financial stress indicators, inclusion in ABS household expenditure surveys and HILDA surveys and Bray financial stress category	91
Table B.2 Essentials of life and indicators of deprivation and social inclusion, CUPSE survey	92
Table B.3 Indicators of social exclusion across seven life domains, HILDA survey	94
Table C.1 Selected recent Australian research into circumstances of low-paid employees.....	95
Table D.1: Disposable incomes of hypothetical households reliant on the C14 classification wage, July 2002 to July 2010	98
Table D.2: Disposable incomes of hypothetical households reliant on the C10 classification wage, July 2002 to July 2010	98
Table D.3: Disposable incomes of hypothetical households reliant on the C4 classification wage, July 2002 to July 2010	99
Table D.4: Disposable incomes of hypothetical households reliant on the C2(b) classification wage, July 2002 to July 2010	99

List of abbreviations

ABS	Australian Bureau of Statistics
ACTU	Australian Council of Trade Unions
AFPC	Australian Fair Pay Commission
AIHW	Australian Institute of Health and Welfare
ALCI	Analytical Living Cost Index
ARA	any responsible adult
ASL	Australian Standard of Living (Study)
AWE	average weekly earnings
AWOTE	average weekly ordinary time earnings
BSU	Budget Standards Unit (of the SPRC)
CURF	confidentialised unit record file
CPI	Consumer Price Index
CUPSE	Community Understandings of Poverty and Social Exclusion
DSS	Department of Social Security
EEBTUM	Employee Earnings, Benefits and Trade Union Membership
EEH	Employee Earnings and Hours
EHDl	equivalised household disposable income
FaCS	Commonwealth Department of Family and Community Services
FMW	Federal Minimum Wage
FW Act	<i>Fair Work Act 2009</i>
HDI	household disposable income
HDIPH	household disposable income per head
HES	Household Expenditure Survey
HILDA	Household, Income and Labour Dynamics in Australia
HPL	Henderson Poverty Line
IAESR	Institute of Applied Economic and Social Research
Melbourne Institute	Melbourne Institute of Applied Economic and Social Research
NMW	National Minimum Wage
NOS	National Occupancy Standard
OECD	Organisation for Economic Co-operation and Development
OMIE	owner-manager of incorporated enterprise

POS	Proxy Occupancy Standard
pw	per week
RPL	relative poverty line
SIH	Survey of Income and Housing
SPRC	Social Policy Research Centre
WPI	Wage Price Index

Executive summary

In setting and maintaining a safety net of fair minimum wages, sections 134 and 284 of the *Fair Work Act 2009* (FW Act) require the Minimum Wage Panel to take account of a variety of factors, including 'relative living standards and the needs of the low paid'. This paper describes and contrasts approaches that are typically employed to define and assess living standards and needs, and discusses a range of issues that need to be considered by researchers seeking to analyse the circumstances of low-paid employees.

What are living standards and needs?

Much research into living standards that has been undertaken to date has been concerned with the issue of poverty. It has therefore been dominated by the experiences of people with little or no labour force attachment. Much less attention has been given to the living standards of the population in general or to the situation of workers in particular.

While living standards can be understood to encompass many facets of human well-being, they are usually interpreted more narrowly as relating to material or economic well-being. Material well-being is, however, a product of much more than income—it is determined by all of the resources available to support the consumption of an individual or household, including property and financial assets, household goods and services as well as those provided publicly by governments, time available for home production and the like. Assessments of living standards should ideally take account of as many of these resources as possible.

Needs can be thought of in a concrete sense as the minimum goods and services required to meet specified standards of nutrition, housing, health and so forth. Because they vary more or less systematically between people in different household and other circumstances, this variation is something that needs to be taken account of when measuring and comparing living standards.

Measuring living standards and needs

Because many aspects of living standards cannot be directly observed, research typically relies on one or more indicators of living standards. The most common of these is income, which can be defined in a variety of ways. The definition of income most commonly used in Australian research has been equivalised disposable cash income, although it is possible to supplement this measure by adding the value of publicly provided goods and services (final income) or including the value of various other non-cash resources, such as employer-provided goods and services, owner-occupied housing and/or home production (full income).

Many researchers have recognised the limitations of basing assessments of living standards on cash income alone. The use of additional data and broader concepts is therefore becoming more common, with recent research focusing also on expenditure, assets or wealth, financial stress and/or material deprivation.

Distributional studies based on expenditure have found that, while similar proportions of the population may be classified as either income-poor or expenditure-poor, a much smaller proportion is both income and expenditure poor. In addition, a not insignificant proportion of low-income households can apparently sustain a much higher level of consumption than their reported income would appear to warrant.

Compared to income, wealth is more unequally distributed and distributed very differently relative to age. Among older people in particular, wealth (especially owner-occupied housing) often offsets the effects of low income. As with expenditure, analysis that combines data on wealth and income has found that a much smaller proportion of households have both low income and low wealth than have low income only.

Comparing resources across individuals, income units and households

Research into living standards requires a decision to be made about the unit of analysis—that is, whether resources will be measured at the level of the individual, the income unit, the family or the household. In recent years, most researchers have adopted the household as the unit of analysis on the basis that even if people who are co-resident in a household do not share all of their resources, they are likely to share consumption in a variety of ways.

In order to compare the living standards of different households, a given measure of resources also needs to be adjusted to take account of the likely economies of consumption enjoyed by members of larger households relative to smaller ones. This usually involves the application of an equivalence scale—those most commonly used in recent research are the modified ‘Organisation for Economic Co-operation and Development’ (‘OECD’) scale and the square root of household size.

While most equivalence scales embody a plausible set of relativities, none take account of all the factors most likely to affect living standards. They also vary quite markedly in their implied assumptions about the relative costs of adults and the overall extent of consumption economies with increasing household size. The choice of equivalence scale will therefore have an effect on research findings.

Where contemporary assessments of relative living standards rely on the use of out-of-date data on household circumstances, these data must be updated by the use of one or more indicators of movements in prices, wages or community incomes. In the decade to 2008–09, wages grew faster than prices and household incomes grew faster than wages. Ideally, the choice of indicator for updating should relate conceptually to the measure being updated—for example, it may be appropriate to apply a wage-related inflator to an earnings figure or a price-related inflator to an estimate of household expenditure.

Common income benchmarks

The most common income benchmarks in Australia include: the Henderson poverty lines (HPLs); relative poverty lines based on estimates of median or mean equivalised household disposable income; and indicative budget standards developed by the Budget Standards Unit (BSU) of the Social Policy Research Centre (SPRC) in the 1990s.

The HPLs were first developed in the mid 1960s. Originally based on the minimum income available to a family of four reliant on the basic wage plus child endowment and embodying an equivalence scale adapted from a New York budget standard study, they were the income benchmarks most commonly used in Australian research into the 1990s. Because of growing concern about their applicability to the contemporary Australian situation, they have in recent years been largely replaced in research by various relative poverty lines.

The BSU budget standards represented an attempt to prescribe the minimum income required in order to attain either a ‘modest but adequate’ or ‘low cost’ standard of living, conceptualised as representing, respectively, standards of living around the median and half the median applying in the general community. The standards are based on a large variety of assumptions, derived in some cases from behavioural data and in others from normative judgments. As highly specific representations of the budgets required by a necessarily limited number of household types living in a specific location, they have limited potential to inform research into relative living standards across the Australian community.

Of the three types of income benchmark, relative poverty lines would appear to be the most adaptable for use in research. Because they are derived from an actual distribution of income (or alternative measure of resources), they will automatically vary if a different definition of income, equivalence scale or population is used. However, they should always be used with caution as benchmarks of income adequacy.

Outcome-based data on living standards

Studies of financial stress and hardship have found that while low-income households have a higher incidence of financial stress than higher-income households, many such households appear to suffer little financial stress. The incidence of all forms of financial stress declines consistently with higher levels of household employment.

A number of studies of material deprivation and social exclusion have examined the extent to which these phenomena overlap with each other and with income poverty as conventionally defined. A consistent finding is that the degree of overlap is relatively modest.

Qualitative research into the experience of low-paid workers has confirmed many of the findings from the more extensive quantitative analysis that while some low-paid workers face financial difficulties, many are relatively protected by living with higher-paid workers and those whose employment is intermittent or insecure are the most at risk of poor outcomes.

Whose living standards?

Research into the living standards of low-paid employees requires a number of decisions about how to define and measure low pay. As with benchmarks of low income, definitions of low pay can be derived in a wide variety of ways, whether from published earnings data or directly from the distribution of earnings within a given data source.

In most cases, a definition based on hourly wages would be preferred, since this avoids including in the target population individuals who work relatively low hours for higher rates of pay. The methodology for deriving an hourly rate of pay may need to take account of factors such as data error arising from misreported or mismatched earnings or hours and the payment of casual loadings to employees not eligible for paid leave. Further decisions relates to the treatment of junior employees, including whether to apply the same or a different definition of low pay to their earnings or whether to exclude them from analysis altogether.

Modelling the disposable incomes of hypothetical low-paid households can provide a complementary perspective to that gained from analysis of survey data on low-paid employees. This enables a closer focus on the trends in the financial situation of families that rely on wages paid at particular points in the award classification structure or in the broader distribution of earnings. It also allows for comparisons to be drawn between the incomes of different family types on the same wage and between similar families on different wages.

Such modelling demonstrates that over the period between July 2002 and July 2010, the disposable incomes of a variety of family types receiving typical low wages (those payable to the C14 and C10 classifications) increased by significantly more than living cost inflation. Real increases in disposable income were more modest for hypothetical households earning wages at higher classification points (C4 and C2(b)).

Key reference points for living standards relativities

When analysing the relative living standards of households containing low-paid employees, a decision needs to be made whether to compare those living standards against the population as a whole (including the many households with no-one in paid employment) or a more restricted population such as households with at least one person in the labour force or in employment. While the choice of comparison population will depend to some extent upon the overall aim of the research, it will affect the extent to which low-paid employee households are found to have low relative living standards.

It may be less appropriate to use population benchmarks when assessing the relative living standards of hypothetical low-paid households, since such benchmarks (for example, equivalised household disposable income (EHDI)) are particularly affected by changes in the employment and demographic characteristics of the average household, whereas the characteristics of the hypothetical households are typically held constant over time. However, the disposable incomes of hypothetical low-paid households can be compared with those of other hypothetical households—for example, households with the same composition but receiving higher wages or no wages at all (that is, unemployed).

A comparison of the disposable incomes of low-paid households with those of similar households earning average weekly ordinary time earnings (AWOTE) reveals that the operation of the tax/transfer system significantly reduces the extent of difference, especially for the lowest-paid households and those with dependent children. For example, a couple family with one person earning a C14 wage (equivalent to 45 per cent of AWOTE) and two dependent children has a disposable income more than three-quarters that of a similar family with one person earning AWOTE.

Possible data sources

In Australia there are two primary data sources available for analysis and research into the living standards of low-paid employees. These are the Australian Bureau of Statistics (ABS) Survey of Income and Housing (SIH), conducted every two years and supplemented once every six years by the Household Expenditure Survey (HES), and the Household, Income and Labour Dynamics in Australia (HILDA) Survey, a longitudinal panel survey which collects data annually.

The SIH and HES provide the most richly detailed information on household income, assets and expenditure, including a variety of data not reported in any other data collection. For example, the 2007–08 SIH includes comprehensive data on non-cash employment remuneration and the value of imputed rent for owner-occupiers and people living in free or subsidised rental accommodation. On the other hand, the longitudinal nature of the HILDA Survey enables changes in household living standards to be tracked over time.

Conclusion

This paper has canvassed a range of approaches that can be taken to defining and measuring material living standards. Whatever methodological approach is eventually adopted, it will remain important for research in this area to be as broad-ranging as possible, to provide a range of perspectives on the material living standards experienced by low-paid employees and also on how those living standards change over time.

1 Introduction

In requiring Fair Work Australia to take account of 'relative living standards and the needs of the low paid' when exercising its wage-setting powers, the *Fair Work Act 2009* (FW Act) does not define living standards, needs or the low paid, nor does it specify the key reference points for assessing relativities of living standards.

This paper does not seek to provide a detailed analysis of the living standards or needs of low-paid employees, nor to prescribe how such analysis should be undertaken. Rather it seeks to provide a broad introduction to the topic and to the issues, both definitional and methodological, that need to be considered when undertaking research in this area. It also describes and contrasts approaches that have been taken in previous, primarily Australian, research. Its primary purpose, therefore, is to assist decisions about the content and form of future research.

The paper does not specifically canvass issues that may be regarded as relating to wage-setting policy. Foremost among these is the question of whether wage-setting decisions should have specific regard to the extent to which the living standards of employees are a product of tax and social security policies and/or the impact on living standards of recent changes in those policies. On the other hand, as the analysis of living standards often relies on estimates of household disposable income, such tax and social security policies inevitably form part of the living standards equation.

The first key issue for researchers and analysts is to review what the terms 'living standards' and 'needs' mean. Interpreted broadly, both concepts go beyond material well-being, yet for Fair Work Australia purposes the scope of consideration should arguably be confined to matters capable of being affected by wage-setting decisions. This suggests a primary focus on material well-being.

There is also the issue of how living standards and needs stand in relation to one another. Are needs, like living standards, a relative concept in an advanced and prosperous country such as Australia? Or are varying needs rather an influence on living standards to be taken into account when measuring and comparing living standards across individuals? These issues are discussed briefly in section 2 of this paper.

There are two main approaches to the assessment of living standards. The first relies on an assessment of the resources available to support an individual's living standard, while the second is concerned more with the outcomes that a person may achieve. While both of these are relevant to a consideration of material well-being, wage-setting decisions can be expected to primarily affect resources rather than outcomes per se. For this reason, the paper concentrates primarily on the ways in which resources can be measured, while recognising that outcomes measures can also be informative.

Because living standards and needs are complex concepts that generally cannot be directly observed, the first key research decision is to select one or more variables to represent proxy indicators of living standards (or, more specifically, the resources available to support living standards). While income is the most commonly used indicator, it has been defined and measured in a variety of ways in previous research. Other approaches to the measurement of resources take account of reported expenditure and the value of household wealth. These issues and a range of relevant research are discussed in section 3.

Section 4 canvasses further methodological issues relating to the unit for measurement of living standards, how to make meaningful comparisons between people in different household circumstances, and how to update data and/or benchmarks over time, while section 5 describes and compares the income benchmarks used in Australian research to date. A range of other quantitative and qualitative information that focuses more on achieved living standards and has been used from time to time to supplement or substitute for income-based analysis is considered in section 6.

A second set of issues, discussed in section 7, relates to defining the population of interest. To begin with, studies adopt a definition of low pay. Decisions are made about whether to adopt the same definition for adults and young people and whether hourly rates of pay should be adjusted to take account of casual loadings. Another important question is whether to focus on the living standards of all low-paid employees, however defined, or more narrowly on those who live in low-income (or low-resource) households. Analysis based on the entire population of people receiving low hourly rates of pay will likely yield very different results from one based on a more restricted population.

The final set of issues relates specifically to the focus on relative living standards. In this context decisions are made about what is being compared and about the most appropriate point or points of comparison. For example, the living standards of low-paid employees can be assessed against those of the whole population or against those of households that are in the labour force (that is, employed or unemployed) or, most narrowly, only against households containing employees. A consideration of living standards over time may also be relevant. These issues are discussed in section 8.

Having canvassed this range of methodological issues and choices, section 9 of the paper surveys the relatively limited range of Australian data available for the purpose of assessing living standards and needs.

2 What are living standards and needs?

Much past Australian research into living standards and needs has been concerned with the issue of defining and measuring poverty. Because, as a group, employees are usually found to have a relatively low risk of poor outcomes, however those outcomes are defined, such research has been dominated by the experience of people with little or no labour force attachment, who generally rely on income support payments. There has been less specific attention given to living standards more generally or to the situation of workers in particular. Table A.1 in Appendix A summarises the methodological approaches adopted in a selection of more recent Australian research into the issues of poverty, income distribution and living standards.

In his 1997 Cunningham Lecture, Hancock considered the relationship between minimum wages and the needs of the low paid, in the context of the requirement, included in the *Workplace Relations Act 1996*, that the Australian Industrial Relations Commission take account of the needs of the low paid when setting and adjusting wages. He asked:

[D]oes a regard for the needs of the low paid lead simply to an endeavour to maintain and improve the relative incomes of low-paid workers; or does it imply an attempt to identify needs and the cost of meeting them so as to establish some kind of benchmark of wage adequacy? (Hancock 1998:43)

This remains a central question when interpreting and applying the criterion as specified in the FW Act, although there is now an explicit reference to relative living standards that was absent from the earlier formulation. The first issue for researchers concerned with the living standards and needs of low-paid workers, therefore, is to clearly articulate the concepts that underpin the research, since this will inform subsequent decisions about data sources and research methodology.

At the broadest level, living standards can be understood as one component of human well-being.

[M]ost distributional studies using the poverty paradigm ... are concerned with material living standards rather than broader welfare concepts, such as satisfaction with life, levels of security, social isolation, subjective evaluations of income adequacy, or feelings of stress. (Whiteford 2001:44)

Other terms used in the literature include material well-being (Travers & Richardson 1993) and economic well-being (ABS 2001). A common feature of all these concepts, however, is that they go well beyond cash income.

People's material well-being depends not only on their income, but on the assets they have accumulated. It also depends on the time they have available for productive work in the home, for leisure, and for social activities. (Travers & Richardson 1993:vi)

The standard of living of individuals and families is greatly determined by their command over economic resources ... [These may] be defined to cover those resources that have a monetary (or market) value and it is these that are referred to when considering a person's or family's income, consumption and wealth. These resources include goods and services, tangible and intangible assets, and financial assets and liabilities. (ABS 2001:182-3)

If such a framework is accepted, assessments of the relative living standards of individuals in a variety of circumstances should take account of as many of these factors as possible. In many cases, such an assessment would differ significantly from one based on income alone. Travers and Richardson (1993:vi) illustrated the effect of adopting such a broader definition of resources, when they argued that:

... a couple living in a rented home, who are employed for a combined total of 80 hours a week, for a combined income of \$50 000, are judged to have a much lower standard of living than their neighbours who also earn \$50 000, but own their home outright and are employed for a total of only 40 hours a week.

Conceptually, needs may appear to be more concrete than measures of living standards that are derived in an explicitly relative way (for example, from the distribution of income or expenditure across a given population). It is certainly possible to specify and cost one or more 'baskets' of goods and services that are considered necessary to meet specified standards for nutrition, housing, health and so forth.

[N]eeds can be defined either narrowly to include only basic nutritional, housing and clothing requirements, or more broadly to encompass what is needed to actively participate in society, which would require the inclusion of leisure, transport and a broader range of household goods and personal items. (Saunders et al. 1998:5)

As with living standards in general, needs can also be defined in relative terms. For example, during the 1907 Harvester Case, Justice Higgins considered a variety of evidence about household expenditures. In making his judgment, however, he sought to set a 'fair and reasonable' wage that sat somewhere between what he regarded as a good wage and the living wage that to him represented only a basic standard of living (Hancock 2004). The only comprehensive attempt to construct Australian budget standards (Saunders et al. 1998), likewise defined two standards of living—'modest but adequate' and 'low cost'—as the basis for its standards. These were conceptualised as representing, respectively, the median and half the median standard of living of the Australian population as a whole. Both of these living standards, therefore, are explicitly relative in concept.

While it is clear that relative needs can be expected to increase over time along with community living standards, the concept of basic or minimum needs will also change over time. For example, minimum needs would currently likely encompass standards of housing, transport and household goods that would have represented a comfortable living standard 50 years ago.

In answering the question that he posed at the beginning of his Cunningham Lecture, Hancock (1998:43) argued against attempting to quantify needs and in favour of 'a simple assumption that unmet needs are inversely related to wages'. In doing so, he observed that the assumption of lesser needs was long used as the justification for paying women a lower statutory wage than men and that, in any case, it is not possible to confer a uniform standard of living by paying a uniform wage, given the diversity of workers' circumstances (Hancock 1998:50–4).

This last observation points to one of the key features of the needs concept—that, by definition, needs vary considerably from person to person. It may, therefore, be useful to think of varying needs as a factor to take into account when attempting to measure living standards. From this point of view, understanding how needs may vary more or less systematically between people in different circumstances may be more useful than attempting to specify precisely the needs of a particular individual or type of worker. This is discussed in more detail in Section 4.2 of this paper.

The following discussion does not distinguish precisely between living standards and needs, but summarises and evaluates some of the approaches that have previously been adopted in Australia to measure and benchmark material living standards and needs.

3 Measuring relative living standards and needs

In its conceptual framework for household income, consumption, saving and wealth, the Australian Bureau of Statistics (ABS) (1995:4) defines a household's economic well-being in the following terms:

Economic well-being is determined by all economic resources available to the household. It encompasses the household's access to goods and services through its current income and its capital receipts, whether they are received in cash or in-kind. It also includes the notional dissaving value of the household's net ... worth. Economic well-being can be viewed either from the receipts side i.e. the household's capacity to consume and save, or from the consumption side i.e. the household's actual consumption and its method of financing this consumption.

In this definition, a person's or a household's standard of living depends on a wide range of factors. While personal income is the most important economic resource for many people, other important resources include public and private transfers in cash or in kind; owner-occupied housing and other assets; publicly provided services, such as education, health care, physical and service infrastructure; and leisure and home production. On the expenditure side, some people will have higher than usual expenses, such as for chronic ill-health or disability, that will reduce the standard of living they can achieve from a given level of resources.

3.1 Indicators of living standards

Ideally, an assessment of living standards should take all of the abovementioned factors into account. However, as Whiteford and Henman (1998:108) argued:

The central problem in living standards research is that many aspects of well-being are not directly observable. Research provides indicators of living standards. Cash disposable income is the most widely used living standards indicator, but it remains a proxy measure. Expenditure is also a proxy indicator. Moreover, both measures are partial. Income measures typically ignore the wealth and assets of households. One criterion for assessing living standards indicators, therefore, is whether the indicator chosen is more comprehensive than the available, alternative indicators of living standards.

When variables of interest are not directly observed, values for them must be imputed. This process presents a range of conceptual and methodological challenges, even in cases in which data have been collected specifically for the purpose of analysing living standards. For example, Richardson (1991:10–20) described in some detail a range of possible approaches to deriving a value for the non-market time of adults, using data collected in the 1987 Australian Standard of Living Study.¹

Unlike that study, however, most research into living standards has relied on survey data designed to meet a broad variety of research needs. While it is common for such surveys to collect a range of relevant information, there is no single data source available in Australia that covers all topics of possible relevance to living standards. An issue for assessing the living standards of low-paid employees, in particular, is that few data sources combine detailed information on personal and household characteristics with the reliable measurement of wage rates.

Most research into living standards to date has, therefore, primarily used data on individual and household income, which provide the most readily and regularly available information on economic resources. For example, the Household, Income and Labour Dynamics in Australia (HILDA) Survey and a variety of ABS surveys collect income data on an annual or biennial basis, whereas detailed data on expenditures and other aspects of living standards are collected less frequently. For this reason, the paper first considers the ways in which income can be defined and measured.

¹ The primary challenges in this case were to determine the number of hours per week a person could be assumed to have available for non-market activities and to assign a 'wage' for that work, including cases in which people were either voluntarily or involuntarily jobless and their market wage could not therefore be observed.

3.2 Concepts of income

As the most commonly used indicator of material resources, income can be measured in a number of ways. These include, in ascending order of comprehensiveness: private income; gross income; disposable income; final income; and full income. Each of these measures is discussed in this section.

3.2.1 Private income

Private (market) income is income derived by individuals from economic activity. It includes income from wages and salaries, self-employment, private and occupational pensions and investments. It often includes the value of non-cash remuneration received in lieu of salary (salary sacrifice), but usually does not include other forms of non-cash remuneration, such as free or subsidised housing.

Because many individuals and households have no or very little private income, it is the most unequally distributed measure of income. Private income is not generally used in assessments of living standards, except to illustrate the effect on income distribution of government income transfers and other programs (see for example, Harding, Warren & Lloyd 2006).

3.2.2 Gross income

Gross income is income before taxes are deducted. It is the sum of private income and cash transfers, whether received from government or from private sources. As with private income, gross income is not usually used in assessments of living standards, except when it is not possible to determine the level of tax liabilities. For example, Healy (2008) recently compared trends in the gross value of the Federal Minimum Wage (FMW) with changes in the Henderson Poverty Line (HPL).

3.2.3 Disposable income

Disposable income is total cash income, net of income tax. This is the measure of income that is most commonly used in the analysis of living standards. Disposable income is usually measured at the level of the household and 'equivalised' to take account of the effect of household size and composition. Possible approaches to such equivalisation are discussed in section 4.2 of this paper.

3.2.4 Final income

Final income is a concept developed by the ABS (2007b) that includes the effects of both indirect taxes (for example, the goods and services tax) and indirect benefits derived by households from government-provided services such as health and education.

The decreasing inequality of each of these successive measures of income was illustrated in a study by Harding, Warren and Lloyd (2006:9). This found that in 2001–02, the ratios between the average incomes of the fifth quintile (top 20 per cent) and the first quintile (bottom 20 per cent) of equivalised household income for the Australian population were:

- 73.3 for private income;
- 8.0 for gross income;
- 6.0 for disposable income; and
- 3.8 for final income.

In other words, at that time the richest fifth of Australians (ranked in terms of equivalent household disposable income) had on average more than 70 times as much private income as the poorest fifth, but only a little less than four times as much final income, after taking account of government transfers, taxes and services.

3.2.5 Full income

While final income is a more comprehensive measure of economic resources than private, gross or disposable income, there are still important aspects of resources that it does not capture. These include: the net value of owner-occupied or subsidised housing and other assets, a range of employer-provided fringe benefits and the value of non-employed time. As the ABS (2001:199) observes, studies incorporating the value of such items 'tend to measure and analyse these elements as components of income rather than consumption, although they belong with both'.

Relatively little Australian research into living standards has employed broader definitions of income than simply cash receipts, net of income tax. However, all such research to date has shown that explicitly recognising the value of major non-cash resources can make a significant difference to the relative ranking of individuals within the population as a whole.

[T]hree forms of in-kind or non-cash income—imputed rent, employer [superannuation] contributions and the social wage—... each contribute to the standard of living of households, but are not reflected in the conventional statistics on household income, in part because of the inherent difficulty in identifying the benefits and estimating their value. If income is defined narrowly to include just cash income, the contribution of these other factors will be missed, leading to a distorted image of how living standards vary, over time and between groups at a point in time. (Saunders 2001:36)

Comparisons of living standards based on partial measures of resources will almost inevitably lead to incorrect ranking of individuals or households, unless the omitted components of resources are exactly proportional to the included components for all households. (Whiteford & Henman 1998:111)

Housing tenure and costs are particularly pertinent to the analysis of the living standards of workers. This is because the prime working-age years (say, between 25 and 50) are commonly associated with higher housing costs than either the earlier or later life stages. Those higher housing costs are usually associated with home purchase² or private rental tenures.

A number of previous Australian studies have attempted to account for the effects of housing tenure and costs on living standards. The first of these was undertaken by Yates (1991) using data from the 1988–89 Household Expenditure Survey (HES). She found that adding imputed rent³ from home ownership to gross income had a substantial effect on household incomes and their distribution.

[T]he 29.9 per cent of households who were owner-purchasers had their income decreased by \$41 per week and the 42.8 per cent who were outright owners had their incomes increased by an average of \$137 per week ... When ... households are re-ranked on the basis of this expanded definition of income, almost 40 per cent ... move to a different income [decile] ranking. (Yates 1991:v–vi)

2 While a proportion of payments for home purchase can be considered investment or savings, rather than costs, these two components are not usually separable in relevant data. In addition, except in cases where individuals are voluntarily making higher than the minimum repayments on their home loans, current outlays for home purchase can be considered pre-committed expenditures that reduce the income available to meet other needs.

3 Imputed rent is an estimate of the value to a housing occupant of owning or purchasing one's property or receiving a rental subsidy (for example, from an employer or public housing authority). It can be thought of as the difference between the costs actually incurred and the rent that a person would pay to rent the same property in the private market.

Saunders and Siminski (2005) examined the effect of including the value of imputed rent from home ownership, home purchase and public rental subsidies in the definition of disposable income. In their study, using data from the 1998–99 HES, they found that:

... the inclusion of imputed rent has an unambiguously equalising impact ... the decile rankings of more than one-half (53 per cent) of all individuals change when imputed rent is included in the income measure. (Saunders & Siminski 2005:11)

This analysis showed that, when imputed rent is included in income, the risk of low income (defined as having equivalent income within the bottom 20 per cent) falls for outright homeowners and public renters and rises for purchasers and private renters. The former two groups are dominated by retirees and income support recipients, respectively, while the majority of people in the workforce would be in the latter two groups. The recent Pension Review Report also noted the significant effect of including housing when assessing poverty rates (using a 50 per cent median household equivalised income measure) among outright homeowners and public renters in the ABS Survey of Income and Housing (SIH) :

When this is taken into account, the aged have low poverty rates. For example, if housing is ignored, the poverty rate for single people aged over 65 years in 2005–06 is estimated at 47.4 per cent, but when housing is taken into account this falls to just 7.0 per cent. (Harmer 2009:35)

Saunders and Siminski (2005) found that among different age groups:

... the inclusion of imputed rent increases the incidence of low-income among all age categories up to the 35–44 age group, leaving it unaffected for the 45–54 year age group, and decreasing it considerably among households aged 55 and over. (Saunders & Siminski 2005:13)

In a parallel study, the same researchers treated housing costs as an offset to income. They compared the risk of low income, both before and after housing costs, faced by households in urban and non-urban locations and found that:

... despite earning higher incomes on average, people in working households in major cities are ... just as likely to be in the lowest income quintile as those living elsewhere, after housing costs have been deducted. (Siminski & Saunders 2004:13)

A further difficulty with assessments of living standards based on cash income alone is that for some the employment component of income is in part a function of individual and household choices about the extent of participation in paid work.

[While] many people have little effective choice over the labour supply they offer ... where labour-supply choice is exercised ... income might be low as a consequence but the standard of living and hence welfare might be high—certainly high enough to make any classification of poverty questionable. (Saunders 1998b:17)

This is particularly relevant for comparisons between households with similar levels of cash income, but derived from different total hours of paid work. Consider, for example, a couple both of whom work full time to earn the same total income as an otherwise similar couple with only one partner in paid work. The first couple is likely to have a lower standard of living than the second in two respects. First, they have fewer hours available to engage in domestic activities and home production and second, to the extent that they 'outsource' these functions (for example, by buying takeaway food or employing a cleaner), they are likely to face higher expenditures against their income than the single-earner couple. For these reasons, a full assessment of household income should arguably contain a component for either the value of adult time not allocated to the labour market or the assessed value of home production.

The Australian Standard of Living (ASL) Study remains the most comprehensive Australian attempt to define and quantify a measure of a household's full income. This study was based on a purpose-designed survey (undertaken in 1987) of almost 1700 Australians aged 20 to 74.

A major purpose of the ASL survey was to learn more about the standard of living than was revealed by just money income. Thus, information was sought on: the stock of household assets from which a flow of services was received ...; items of wealth ...; the amount of adult time that was not committed to employment; assistance given and received between family members outside the household; welfare receipts in kind ...; major health expenses; debt repayments; and so on. (Travers & Richardson 1993:63)

The index of full income constructed from these data took account of household disposable income, plus the estimated values of adult non-employed time, owner-occupied housing and indirect benefits from government provision of services. Further adjustments included the deduction of childcare costs, medical expenses and the repayment of debts other than house mortgage (Richardson 1991, Travers & Richardson 1993:31-4).

When the distribution of full income was compared with that of other income measures (own pre-tax earnings, after-tax family income, equivalent family income), the authors found that the choice of income measure significantly affected people's relative rankings.

[Sixty-six] per cent of people are in a different quintile when ranked by each measure and 21 per cent of people who are below the median on one measure are above the median on the other measure. Seven per cent of people move from the top quintile to the bottom quintile. (Travers & Richardson 1993:36)

Moreover:

Inequalities in the different spheres of material well-being tend to offset each other. Instead of those people with the highest incomes also having the greatest imputed rent, other net assets and time, we find that they may rank quite low on these other dimensions. (Travers & Richardson 1993:37, emphasis in the original)

One finding from this study is particularly relevant for those with an interest in the living standards of low-paid workers.

[T]he use of full income shows people from unskilled backgrounds, single parents, and non-aged single people to be substantially more disadvantaged than their equivalent income would suggest. (Travers & Richardson 1993:39)

Due to the constraints inherent in most publicly available data, no other major studies in Australia have gone as far as the ASL Study in attempting to measure full income. However, the research summarised here suggests the importance of adopting as broad a definition of income as possible in any distributional analysis of living standards that uses income as the key proxy indicator of those living standards.

In recent years, the ABS has formally adopted a more comprehensive approach to measuring income. In line with established international standards for household income statistics, its current conceptual definition of household income is as follows.

Household income consists of all current receipts, whether monetary or in kind, that are received by the household or by individual members of the household, and which are available for, or intended to support, current consumption by the household. (ABS 2009f:74)

While this definition represents an ideal that remains limited 'by data availability and other operational considerations' (ABS 2009f:75), the data from the 2007–08 Survey of Income and Housing (SIH) include

comprehensive coverage of non-cash employee remuneration (both through salary sacrifice and direct provision), as well as estimates of imputed rent from owner-occupied and rent-subsidised dwellings. This could enable, for example, a more contemporary analysis of the distribution of full income within the Australian population.

3.3 Other indicators of living standards

The limitations of basing comparative assessments of living standards solely on measures of cash income have been recognised by many Australian researchers. Saunders and Zhu (2009:23) summarise these limitations thus:

Low-income is neither a necessary nor a sufficient condition for being poor, in the sense of being forced to endure a standard of living that can be described as unacceptable and hence synonymous with poverty. Those who report having low-income may (and often do) have access to resources that allow them to sustain a higher standard of living, while some of those with higher incomes may be in poverty because they have high needs ... or because they are recovering from a financial or other crisis.

While much distributional research is still based on cash disposable income, the use of additional data and broader concepts is becoming more common (For recent examples, see Bray 2001; Hahn & Wilkins 2009; Harding, Warren & Lloyd 2006; Headey 2008; Marks 2007; Saunders 2006; Saunders 2004a; Saunders & Bradbury 2006; Saunders & Hill 2008; Saunders, Hill & Bradbury 2008; Saunders & Naidoo 2009; Saunders, Naidoo & Griffiths 2007; Scutella, Wilkins & Kostenko 2009).

Aside from broadening the definition of income to include the value of different forms of income in kind, as discussed in the previous section of this paper, recent living standards research has been informed by concepts and data relating to: expenditure; assets or wealth; financial stress; and material deprivation. A range of qualitative research has also focused on the lived experience of people with low incomes. Data on expenditure and wealth are relevant to the question of defining and measuring resources and are discussed below, whereas data on financial stress and material deprivation represent outcome-based measures of living standards and are discussed in section 6 of this paper.

3.3.1 Expenditure

According to the ABS (2001:196):

When thinking of a household's consumption of economic resources accountants and economists often value consumption on the basis of people's expenditures on goods and services, and when thinking of owner occupied dwellings or durable goods the value of the service that comes from using those goods.

Many analysts would argue that expenditure data can provide a more direct measure of standard of living than income, since they indicate a person's or household's level of consumption. To the extent that household income fluctuates, expenditure may better indicate the level of a household's 'permanent' or long-term income. And where there are concerns about the accuracy of a household's reported income, the level of its expenditure may be a better proxy for its resources.

However, as Saunders and Bradbury (2006:347) point out:

... even if the conceptual case for preferring consumption over income is accepted, it is important to recognise that the expenditure data themselves are not unproblematic ... Most fundamentally, expenditure is often not a good indicator of consumption. This is most obvious with respect to spending on consumer durables, but also applies to many other goods that are not immediately consumed (such as clothing and non-perishable foods).

Another practical limitation is that data on expenditure are not as readily available as data on income. The comprehensive ABS HES is undertaken only every six years.⁴ In recent years, the HILDA Survey has also begun to collect annually a range of data on household expenditures.

Research has found that the distribution of expenditure differs from the distribution of income, at the level of household and individual.

Inequality in income per capita is much less than is inequality in income per household; and inequality in expenditure per capita is much less than is inequality in income per capita ... Most studies of inequality take account of differences in household size and many also ... take account of differences in the composition of the household ... But the distribution of expenditure per capita is rarely used, let alone equivalent expenditure (Travers & Richardson 1993:106).

Australian studies that have used expenditure data have generally retained a primary focus on income, while using data on expenditure in a complementary way. For example, Saunders (1997:60–1) examined the interactions between income and expenditure poverty using data from the 1993–94 HES, benchmarked against the Henderson poverty lines (HPLs). He found that while around 20 per cent⁵ of households had income, and a similar proportion had expenditure, below the relevant HPL, less than 3 per cent were in what he termed ‘core income poverty’. These were people with both income and expenditure below the poverty line, whose expenditure was equal to or more than their income. Some 8 per cent were in ‘core expenditure poverty’, a group which included those in core income poverty plus people with both income and expenditure below the poverty line, but expenditure less than income. The differences between conventional and core poverty measures were greatest for retired households.

In a later paper, Saunders (2004a:11) replicated his earlier analysis using data from the 1998–99 HES and also explored the possibility of supplementing those combined income and expenditure data with the reported incidence of financial stress. He found that poverty was half as prevalent when defined as income and expenditure poverty plus at least one of six core financial stress indicators as when defined solely in terms of income.

Saunders and Bradbury (2006) extended that earlier work, using the modified ‘OECD’ equivalence scale and relative poverty lines. This confirmed the earlier finding that poverty defined as experiencing both income and expenditure below half the median level was much less prevalent than poverty defined in terms of either income or expenditure.

Headey (2008) and Hahn and Wilkins (2009) covered similar territory using HILDA expenditure data, which are less complete in their coverage than those typically collected by the Australian Bureau of Statistics (ABS)⁶. The latter researchers imputed rent figures from data on the net dwelling value of owner-occupier households, and added these to estimated expenditure on non-durable goods and services to approximate a limited measure of consumption. Expenditure on other consumer durables was ignored, since ‘data ... [on] the value of [durables] purchased in the last year ... [is] a poor guide to consumption of services of durables’ (Hahn & Wilkins 2009:18). The study found that, while low-paid workers⁷ were most concentrated in the middle deciles of equivalised income (over half had income within the third to sixth deciles), they were much more concentrated at the bottom of the expenditure distribution. About half of all low-paid workers reported expenditure within the lowest four deciles of equivalised expenditure (Hahn & Wilkins 2009:29–30).

4 The most recent HES from which data are available was undertaken in 2003–04. Data from the 2009–10 HES will likely become available some time this year (2011)

5 This study was restricted to households containing only one income unit.

6 Hahn and Wilkins (2009:17) report that the HILDA data capture an estimated two-thirds of household expenditure. They cannot therefore be used as a benchmark against reported income to the same extent as ABS expenditure data.

7 Defined as workers earning less than 120 per cent of both the hourly and weekly Federal Minimum Wage (Hahn & Wilkins 2009:14).

Saunders and Bradbury (2006:345–6) further explored the relationship between income and expenditure. After comparing mean income and expenditure across the lowest 30 percentiles of the distribution of equivalised disposable income, they found that expenditure exceeded income in all 30 percentiles. The excess of expenditure over income was most pronounced in the lowest three percentiles, where mean income ranged from negative to just over \$100 a week, but mean expenditure was higher than in any of the subsequent 27 percentiles.

This pattern was consistent with earlier findings by Harding and Greenwell (2002:17–8) and Johnson and Scutella (2004:24–30) that, on average, individuals in the bottom decile or quintile of equivalised income reported expenditure significantly higher than their income. While comparisons of current income and expenditure may often reveal a level of dissaving, such widespread and significant mismatch between the two measures raises questions about the reliability of the income data, at least from earlier income surveys.⁸

A study undertaken by Saunders, Hill and Bradbury (2008:26–30) illustrated a further use of the expenditure data. Here expenditure data were not used explicitly in the definition of poverty, but records showing an anomalous relationship between income and expenditure were excluded in some analyses. The excluded records were for individuals with equivalised income below the poverty line but reporting above–median equivalised expenditure (by definition, households reporting expenditure of at least twice their reported income). About one in five of all individuals with income below the 50 per cent median poverty line fell into this category (Saunders, Hill & Bradbury 2008:29).

Comparing income and expenditure in this way can act as a useful check on the reliability of reported income. However the relative infrequency of expenditure surveys means that this strategy is not available to assist in analysis of data from most income surveys. Because of concerns about the observed expenditure/income mismatch for many households in the bottom income decile and the fact that many of such households have substantial net worth, the ABS (2009f:11) now concentrates its reporting of the circumstances of low-income households on those that fall within the second and third deciles of equivalised household disposable income (that is, between the 10th and 30th percentiles).⁹

3.3.2 Wealth

While expenditure is a proxy indicator for consumption and income a proxy indicator for resources, a fuller picture of household resources can be obtained when information on wealth (also commonly referred to as net worth) is available. There are various reasons for recognising wealth as contributing to a household's resources.

Wealth confers economic security; it enables one to tide over bad times at least for a while. It also enables one to borrow money both to cope with bad times and for investment purposes. Most important, both financial and non-financial assets generate real income, a real flow of benefits. This is plainly just as true for the housing one lives in, or fine paintings on the wall, as for shares or savings accounts which generate direct cash income (Headey, Muffels & Wooden 2004:3).

8 Saunders and Bradbury (2006:345) recognised that '[t]he (mis-)reporting of low income in household income surveys has long been acknowledged as a problem ... [with] the potential to distort estimates of poverty and income distribution' and pointed to recent steps taken by the ABS to improve the quality of its data collection.

9 This practice should not be taken to indicate that there are no low-income people in the lowest decile of the income distribution. The ABS (2009f:11) acknowledges that 'nearly half the people living in households in the lowest income decile ... are likely to have had lower average standards of living than people in households in the second income decile', while Saunders and Bradbury (2006) argue that only the bottom 3 per cent of cases should be considered as having uninformative income data.

The value of a household's net worth ... affects the broader economic power of the household. For example, households with a high level of wealth will find it easier to gain credit for investment or to maximise the choice of timing for different types of consumption. For these reasons, it is important to ascertain, if possible, the value of the household's net worth to give a complete picture of a household's economic well-being (ABS 2001:200–1).

Since the mid 1980s, data on the costs associated with and/or the value of owner-occupied dwellings have been collected by the ABS in conjunction with its income and expenditure surveys. However, more comprehensive data on wealth have been collected only more recently—as part of the 2003–04 HES and the 2005–06 SIH. Wealth data were not collected in the most recent 2007–08 SIH, with the exception of detailed data on housing assets. The ABS (2007d:44) intends to continue to collect comprehensive wealth data in the years in which the HES is run (currently every six years).¹⁰

Owner-occupied housing remains the single most significant component of household wealth in Australia. The ABS (2007d:26) estimated that in 2005–06 the average net value to households of an owner-occupied dwelling was \$236 100, representing about 42 per cent of average household net worth. Money held in superannuation funds represented 15 per cent of household net worth at that time, while the net value of 'other' property contributed an estimated 11 per cent.

Wealth is much more unequally distributed than income. In 2005–06, households in the highest quintile (20 per cent) of net worth had, on average, about 63 times as much wealth as households in the lowest quintile. The comparable ratios for gross household income and equivalised household disposable income were about 10.5 and 4.9 respectively (ABS 2007d:11).

However, wealth is distributed very differently across the population than income, particularly in relation to age. Table 3.1 compares the probability of falling within either the lowest or highest quintile of household net worth or equivalised income, using the relevant ABS data for 2005–06.

For many household characteristics the chances of falling within either the lowest or highest quintile differ significantly between wealth and income. Couples are generally advantaged over single-person households, with single people more likely to have low income and/or net worth (and less likely to be in the top quintile of either distribution) than couples of a similar age. Single parents are the only group with a very high likelihood of falling into the bottom quintile for both wealth and income and a corresponding low likelihood of being in the top quintile of either distribution.

¹⁰ Beyond ABS data collection, HILDA obtained wealth data in waves 2 and 6 (2002 and 2006) and collection is proposed every four subsequent waves (Melbourne Institute 2011). See section 9.2 for further details on asset and debt components captured.

Table 3.1 Probability of falling into lowest or highest quintile of household net worth or equivalised household disposable income, selected household characteristics, 2005–06

Household characteristic	Lowest quintile (%)		Highest quintile (%)	
	Net worth	Income	Net worth	Income
Couple with dependent children	9.6	12.9	24.3	18.1
Single parent with dependent children	49.5	40.4	6.5	4.8
Couple only – reference person aged under 45	24.8	5.1	8.9	46.9
– reference person aged 45–64	5.1	17.7	41.8	31.4
– reference person aged 65 and over	5.0	46.7	27.9	5.8
Single person – aged 25–44	43.0	17.6	2.2*	27.9
– aged 45–64	26.6	41.2	13.2	19.8
– aged 65 and over	18.6	67.1	13.1	3.5
Principal source of income wages and salaries	16.9	4.7	19.8	25.9
Household includes one employed person	25.2	15.0	15.6	13.3
Household includes two or more employed persons	10.9	5.0	27.1	30.1
All households	20.0	20.0	20.0	20.0

*estimate has a relative standard error of 25% to 50% and should be used with caution.

Sources: ABS (2007c); ABS (2007d).

Note: Net worth distribution is for households, equivalised household disposable income distribution is for persons.

The figures clearly illustrate the differing patterns of wealth holdings by age. While younger, childless couples have the lowest incidence of low income and the highest incidence of high income, this situation is largely reversed in regard to wealth. By contrast, older couples without children have the lowest probability of falling into the bottom quintile of net worth and are much more likely than average to have household wealth in the highest quintile. This largely reflects the fact that many people in these age groups are outright homeowners.

Couples aged 45–64 without children living at home are the only group with below-average likelihood of both low income and low wealth and significantly above-average likelihood of both high income and high wealth. As a group they are likely to include significant numbers of dual-earner families, but also couples who have retired early, perhaps with significant assets and/or retirement incomes.

When it comes to employed households, those who receive their principal income from wages and salaries are less likely than average to fall within the lowest quintile of either income or wealth, but only slightly more likely than average to have equivalised income in the top quintile. Having two or more household members employed reduces the likelihood of low income and/or wealth and approximately doubles the likelihood of high income and/or wealth, relative to households with only one earner.

The wealth and income data summarised in Table 3.1 are not entirely comparable, since the distribution of net worth is based on households, while that of equivalised income is based on persons. However, they are consistent with the earlier findings of Yates (1991), Travers and Richardson (1993) and Saunders and Siminski (2005) that income inequalities are mitigated to a significant extent by wealth (particularly from home ownership and among retired people).

Hahn and Wilkins (2009) recently used data from the HILDA Survey to investigate the living standards of low-paid employees. They used a variety of different definitions of low living standards which ranged from those based on equivalised household disposable income only through various combinations of income, expenditure, household net worth and reported financial stress. This analysis found that while 19 per cent of low-paid employees in 2006 had low equivalised household income (below 60 per cent of the median), only 11 per cent of low-paid employees had both low income and low wealth (Hahn and Wilkins 2009:31).

4 Comparing resources across individuals, income units and households

Once a definition of income or resources has been chosen, researchers must adopt a methodology for comparing the living standards of people who live in different family or household situations. This involves two main decisions—one about the unit of analysis (individual, income unit, family or household) and the other about the appropriate equivalence scale to adjust for needs that vary with family or household size. A further practical issue is how to update the values of data collected, or benchmarks derived, at some time in the past.

4.1 Unit of analysis

Comparing people's individual incomes takes no account of the extent to which people share their resources, either within their household or with people who live elsewhere. An assessment based on individual income alone would find that most dependent children and many adults engaged in activities other than full-time paid work have inadequate incomes, despite the fact that they may live in families with relatively high incomes. By contrast, the majority of people in full-time paid work would be judged to be relatively well off if no account were taken of the fact that their incomes may help to support other family or household members.

When living standards are viewed from the consumption side, much day-to-day consumption is shared between people, especially those who live with others. This is most obvious in relation to housing and expenditures incurred at the family or household level (for example, for utilities or purchase of household durables) but, depending on individual behaviour, is likely to extend into other areas such as car-based transport, joint meals and the like.

For these reasons, while it is useful to compare the living standards of people as individuals, it is usual to assess those living standards by reference to the resources or consumption of a wider group. This is known as the unit of analysis or assessment and is usually either the income unit, the family or the household. While it is not uncommon for researchers to use these terms more or less interchangeably, they are distinct from one another in ways that can have important effects on research outcomes.

In much of the earlier Australian research into poverty the unit of analysis was the income unit, defined by the ABS (2001:16) as 'one person or a group of related persons within a household, whose command over income is assumed to be shared ... based, in part, on the concept of dependency'. There are four income unit types—a single person; a couple; a single parent with dependent child(ren); and a couple with dependent child(ren).

One problem with this approach is that dependent children are defined not in terms of actual financial dependency but simply by age and education status—they include all children under the age of 15 and full-time students aged 15 to 24. Thus, an unemployed young person aged 15 to 20 may be fully dependent on parents for financial support, yet is classified as an independent income unit. Research using this approach has tended to find high levels of poverty among single-person income units classified as non-dependent children living at home (Eardley 1998; Harding, Lloyd & Greenwell 2001; Harding & Szukalska 2000; Lloyd, Harding & Payne 2004).

Some research excluded households containing multiple income units from analysis (Saunders 1997; Saunders 1998; Saunders 2004; Saunders 2006). However, this meant that consequent poverty rates were derived from a population that excluded a substantial number of households and an even larger number of individuals. Of the 8.1 million households represented in the most recent SIH, for example, only about 6.8 million (84 per cent) are single-income unit households (ABS 2009e:35). This approach is less than ideal, especially since multiple-income unit households are likely to differ from households containing only one income unit in many ways, some of which may be important for the analysis of income and living standards.

It is possible to conduct analysis on the basis of family units, defined as 'two or more persons ... related by blood, marriage (registered or de facto), adoption, step or fostering' (ABS 2001:16). This implicitly assumes that related people who live together share resources and/or consumption, but that unrelated people do not. However this has not been a common approach in Australia.¹¹

In more recent years, most research on poverty and living standards has used the household as the unit of analysis (Bray 2001; Hahn & Wilkins 2009; Harding & Greenwell 2002; Headey 2008; Headey, Marks & Wooden 2005; Healy & Richardson 2006; Marks 2007; McGuinness, Freebairn & Mavromaras 2007; Payne 2009; Rodgers & Robson 2008; Saunders & Bradbury 2006; Saunders & Hill 2008; Saunders, Hill & Bradbury 2008; Saunders & Naidoo 2009; Saunders & Siminski 2004; Saunders & Siminski 2005; Scutella, Wilkins & Kostenko 2009; Wooden, Wilkins & McGuinness 2007). The ABS (2009d) also publishes data on disposable income that have been measured and equivalised at the household level.

The use of the household as the unit of income is consistent with the majority of research undertaken at the international level (for example, by the Organisation for Economic Co-operation and Development (OECD)). It reflects the practical assumption that even if people who are co-resident in a household do not share all of their resources, they are likely to share consumption in a variety of ways, and to benefit from the economies of scale that arise from that shared consumption.

4.2 Equivalence scales

As research into income and living standards assumes that all members of a household benefit from the total resources available to the household, it also assumes that larger households enjoy more significant economies of consumption than smaller ones. In other words, it is commonly assumed that a household of four people does not require four times the income of a household of one to achieve the same standard of living. Household resources, however defined and measured, are therefore usually 'equivalised' by the application of an equivalence scale, which represents an assessment of the relative needs of households of different sizes.¹²

While researchers generally agree that income must be equivalised in order to enable meaningful comparisons between people living in households of different size and composition, there is no consensus on the most appropriate equivalence scale to use in this process and those in common use vary widely. Much of the following discussion is based on the scales that have been most commonly used in Australian research—the Henderson and 'OECD' equivalence scales and a scale based on the square root of household size.

The difficulty in deriving and applying equivalence scales is that while needs can be assumed to vary more or less systematically in some respects (for example, by household size), in others they are almost infinitely variable. No single equivalence scale can capture this variety in circumstances. Therefore, as Manning (1984:2) observed, any particular scale represents 'at best a spuriously precise measure of an approximate concept', which remains inherently arbitrary at the detailed level.

11 In most cases where researchers have used the term 'family' in presenting their results (for example, Harding, Lloyd & Greenwell 2001; Harding & Szukalska 2000; Leigh 2007; Lloyd, Harding & Payne 2004; Richardson & Harding 1999), the research has been based on income units. The term 'family' may be preferred on the grounds that it is more easily understood than the more technical 'income unit' and/or that the income unit and the family are regularly the same entity.

12 For example, the household's disposable income can be divided by a given equivalence factor and the resultant income assigned to each member of the household. This equivalised income figure represents the income that a person would need as a single adult living alone to achieve the same standard of living.

There are many possible types of equivalence scales. These include scales derived from budget studies; empirically-derived scales based on analyses of actual household expenditures; 'subjective' scales based on asking members of the public the minimum income needed to avoid poverty; and scales based on a simple and transparent formula. The Henderson scale is an example of the first of these types whereas the 'OECD' and square root equivalences are examples of the last type.

While there have been many attempts to derive equivalence scales empirically using data on household expenditures and a variety of methods, none of these analyses has produced a scale that has achieved a level of general acceptance within the broader research community. (For summaries of such research, see Manning (1984), Whiteford (1985) and Gray (2007) for Australia and Citro and Michael (1995) for the United States).

When considering equivalence scales as part of a comprehensive review of US official poverty measures, the Panel on Poverty and Family Assistance recommended 'a set of scale values for which internal consistency is guaranteed by their derivation from a single rule, but for which ultimate support comes from their transparency and plausibility' (Citro & Michael 1995:176). The Panel argued that:

... the general form of the proposed scale satisfies two critical criteria: it recognizes the differences between children and adults and adjusts for scale economies with increasing family size in a consistent manner. In addition, it is easy to explain and implement. Finally, [it] ... acknowledges the inevitable arbitrariness in adjusting poverty thresholds for different family circumstances rather than disguising it in opaque econometric analysis. (Citro & Michael 1995:178)

The simplest scales—for example, the square root of household size—take account only of the size of the household, thus assuming implicitly that adults need the same income as children of any age to achieve the same standard of living. The Henderson Poverty Lines (HPLs), by comparison, embody a relatively complex equivalence scale, which distinguishes between couple and single-parent families, between those who are in and out of the workforce and between housing-related and other costs. This scale is derived from budget standards research undertaken in New York in the mid 1950s and has for many years been widely considered unreliable as a guide to appropriate relativities in present-day Australia (DSS 1995; FaCS 2003; Stanton 1980; Whiteford 1985).

Somewhere between these two approaches lie the 'OECD' equivalence scales, which allocate a different weight to second and subsequent household members on the basis of whether they are below or above the age of 15 years. These equivalence scales have been the most commonly used in Australia in recent years, including by the ABS (2009d:57) to produce estimates of equivalised disposable income data from its household income surveys. However, the OECD does not itself use this scale, preferring instead the square root of household size (OECD 2010).¹³ One criticism of the 'OECD' scale is that it does not allow for additional economies of scale beyond that achieved with the addition of the second adult (Citro & Michael 1995:177).

There are some logical links between the choices of unit of assessment, equivalence scale and income benchmark. The Henderson equivalence scales, for example, were originally derived from budget standards research and implicitly apply to households containing one income unit only. This may be why multiple-income unit households were excluded in some poverty research using the HPLs (Saunders 1997; Saunders 1998; Saunders 2004; Saunders 2006).

13 The original 'OECD' equivalence scale was proposed by the OECD in 1982 for possible use in countries without a scale of their own. It allocated a value of 1 for the first adult (aged 15 or older), 0.7 for each other adult and 0.5 for each child under 15. The modified 'OECD' equivalence scale, adopted by the Statistical Office of the European Union in the late 1990s, allocates values of 0.5 and 0.3, respectively, to household members in the latter two categories (OECD 2010).

On the other hand, scales such as the 'OECD' equivalence scales and the square root of household size can be used for households of any size and composition since they largely do not distinguish between individuals with different characteristics (except for dividing household members into those above and below the age of 15 in the case of the 'OECD' scales). As can be seen in the summary Table A.1 of Appendix A, the use of Henderson equivalences has declined over time along with the choice of the HPLs as an income benchmark. Recent research has tended instead to use either the modified 'OECD' equivalence scale (Bray 2001; Hahn & Wilkins 2009; Harding, Warren & Lloyd 2006; Headey 2008; Headey, Marks & Wooden 2005; Lloyd, Harding & Payne 2004; Marks 2007; Payne 2009; Rodgers & Robson 2008; Saunders & Bradbury 2006; Saunders & Hill 2008; Saunders & Naidoo 2009; Scutella, Wilkins & Kostenko 2009; Wooden, Wilkins & McGuinness 2007) or the square root of household or, less commonly, income unit size (Healy & Richardson 2006; Leigh 2007; McGuinness, Freebairn & Mavromaras 2007; Pappas 2001; Saunders 2004; Saunders 2006).

A number of studies have compared results derived using a variety of equivalence scales and/or poverty lines, in order to demonstrate the sensitivity of those results to particular methodological choices. This approach was taken by Harding and Szukalska (2000), Harding, Lloyd and Greenwell (2001) and Saunders, Hill and Bradbury (2008).

The most recent of these studies estimated the extent and characteristics of income poverty in 2003–04 using a variety of different approaches, including: three poverty lines (50 and 60 per cent of median equivalised disposable income and the HPL); two equivalence scales (modified 'OECD' and Henderson); and a number of exclusions of potentially anomalous data. The choice of poverty line and equivalence scale most obviously affected the estimates of poverty rates, which ranged from 8.4 per cent to 20.4 per cent for the population as a whole. But the choice of equivalence scale also affected the likelihood of poverty among different demographic groups. For example, when the modified 'OECD' equivalence scale and the 50 per cent median poverty line were used, adults were more likely than children to be in poverty, while analysis based on the HPL yielded the reverse result (Saunders, Hill & Bradbury 2008:4).

Table 4.1 compares the equivalence factors for households of different size and composition from the three most commonly used equivalence scales, for a variety of households with one or two full-time earners and using a single-adult household as the base case. The Whiteford geometric mean equivalence scale,¹⁴ which represents the average of scales that had been derived in Australian research up to the mid 1980s (Whiteford 1985:109), is also included for comparative purposes.

The equivalence factor for a particular family or household type varies quite widely between different equivalence scales. As shown in Table 4.1, the Henderson equivalence scale varies with the number of adults and children in the household as well as the number of workforce participants although, in this simplified form, it does not vary with the age of the children.¹⁵ By contrast, the modified 'OECD' scale distinguishes only between those over and under 15 years of age and takes no account of labour force status. Finally, the square root scale is concerned only with household size—it allocates the same equivalence factors to a household of four adults, a couple with two children of any age and a single parent with three children.

The greatest variation between the scales is in relation to workforce participation. The Henderson scale returns the highest equivalence values for dual-earner households, but the lowest for households with one or no earners (the latter are not shown in the table, but are considerably lower than for households with one earner). With few exceptions, the modified 'OECD' equivalence factors are higher than those derived from the square root of household size, with the size of the difference depending on the ages of household members.

14 Whiteford (1985:130) suggested the use of his geometric mean scale on the ground that using an average of all the discredited approaches was preferable to a single discredited scale. However, his suggestion was never widely adopted by the Australian research community (see Mitchell and Harding (1993) for one exception).

15 There is a detailed Henderson equivalence scale which varies with the sex and age of household members. However, it is not used in the calculation of the HPLs published quarterly by the Melbourne Institute of Applied Economic and Social Research (Johnson 1987:51) and has not been widely used in research.

Table 4.1: Equivalence factors from commonly-used equivalence scales, various household types with one or two full-time earners

Household type	Equivalence scale			
	Simplified Henderson	Modified 'OECD'	Square root of household size	Whiteford geometric mean
Households with one full-time earner				
Single adult	1.0	1.0	1.0	1.0
Couple, no children	1.338	1.5	1.414	1.64
Single parent, one child aged 0–14	1.284	1.3	1.414	1.44
Couple, one child aged 0–14	1.608	1.8	1.732	1.90
Couple, one child aged 15–20	1.608	2.0	1.732	1.90
Single parent, two children aged 0–14	1.554	1.6	1.732	1.66
Couple, two children aged 0–14	1.878	2.1	2.0	2.13
Couple, two children aged 15–20	1.878	2.5	2.0	2.13
Single parent, three children aged 0–14	1.824	1.9	2.0	1.92
Households with two full-time earners				
Couple, no children	1.581	1.5	1.414	1.64
Couple, one child aged 0–14	1.851	1.8	1.732	1.90
Couple, one child aged 15–20	1.851	2.0	1.732	1.90
Couple, two children aged 0–14	2.122	2.1	2.0	2.13
Couple, two children aged 15–20	2.122	2.5	2.0	2.13

Sources: Johnson (1987); OECD (2010); Whiteford (1985).

Note: Henderson equivalences are before housing costs.

It is interesting to note that the Whiteford geometric mean equivalence scale generally returns higher values than all of the equivalence scales currently in use. However, since it is based on research undertaken as far back as the 1960s it is not clear how applicable it may be to current circumstances.¹⁶

¹⁶ Gray (2007) undertook a similar meta-analysis of equivalence scale studies published from 1985 onwards. While this was limited to equivalence scales for two-parent families with children, it found that post-1985 studies generated average equivalence factors for such families that were somewhat higher than those derived earlier by Whiteford (1985).

The information in Table 4.1 illustrates clearly how the choice of equivalence scale can make a difference to research results. Take the case of a single-earner household containing a couple with two young adult children still living at home (or equally, a shared household of four adults). Members of this household will have an equivalent income that is 25 per cent higher using the square root of household size or 33 per cent higher using the simplified Henderson equivalence scale than their equivalent income using the modified 'OECD' equivalence scale. Such large differences have the potential to significantly affect where such a household is ranked in the overall distribution of equivalised income.

In his exhaustive review of equivalence scale theory and research from Australia and overseas, Whiteford suggested three criteria for assessing the validity of equivalence scales. The first of these is theoretical validity, which means that the scales are correct, or at least not obviously incorrect—'equivalence scales should be plausible, generally rising with the size of the household but showing economies of scale' (Whiteford 1985:128).

All of the three equivalence scales summarised in Table 4.1 would appear to meet this criterion in a general sense. The Henderson equivalences (especially in their detailed form) recognise the differential effects of household size, age, gender and family status and demonstrate rising economies of scale with family size. While the other two scales are essentially artificial, they nevertheless contain values that appear plausible, at least where the main difference between families or households is size.

Whiteford's second criterion was empirical validity—that 'scales should be relevant to the country in which they are used' (Whiteford 1985:129) and consistent, for example, with observed patterns of expenditure. Whiteford cited analysis by Manning (1984) that showed substantial differences between the expenditure patterns of Australians and those of people living in New York in the 1950s, which form the basis of the Henderson relativities. However, the modified 'OECD' and square root scales must also be judged to fail this test, since their values are derived in the first case apparently by a rough 'rule of thumb' and in the second by a simple, albeit easily applied, mathematical formula.

Whiteford (1985:129) called his third test 'consensual validity, which can be thought of as public acceptability'. He argued that equivalence scales derived from budget studies are the most likely to meet this criterion, since their derivation is transparent and most likely to be understood by the layperson, whereas those based on economic theory and technically sophisticated methodology are 'more likely to be considered suspect' (Whiteford 1985:129). It is difficult to judge which of the scales presented here would be likely to be most publicly acceptable, although it is clear that the Henderson equivalence scale has largely fallen into disuse, while the two alternatives appear to be used about equally in recent research.

Whiteford's (1985:130) conclusion that 'no set of equivalence scales presently in use in Australia can be said to combine theoretical, empirical and consensual validity' would probably still stand today.

4.2.1 Implied equivalences from Australian budget standards

In the late 1990s the Budget Standards Unit (BSU) at the Social Policy Research Centre (SPRC) developed a set of indicative budget standards (Saunders et al. 1998), which are described in more detail in section 5.3 of this paper. It is possible to derive a set of equivalence scales from those budget standards and a selection of these is compared in Table 4.2 with Henderson equivalences for similar family types.

Table 4.2: Comparison of Henderson equivalence scales with scales derived from BSU budget standards, various family types paying private rent

Family type	Henderson equivalences	BSU equivalences	
		Low cost	Modest but adequate
One-earner households			
Single person	1.000	1.000	1.000
Couple, no children	1.338	1.299	1.254
Single parent, daughter aged 6	1.284	na	1.358
Couple, daughter aged 6	1.608	1.593	1.605
Couple, son aged 14 & daughter aged 6	1.878	1.985	1.923
Two earner couple households			
No children	1.581	na	1.342
Son aged 14	1.851	na	1.749
Daughter aged 6	1.851	na	1.707
Son aged 14, daughter aged 6	2.122	na	2.136
Son aged 14, daughters aged 6 & 3	2.392	na	2.554
Sons aged 14 & 10, daughters aged 6 & 3	2.662	na	2.829

na = not available (no budget standard for this family type).

Sources: Johnson (1987); Saunders (2004b); Saunders et al. (1998).

Notes: BSU equivalences are calculated relative to the average budget standards for a single man and a single woman (Saunders 2004b:29).

A feature of Table 4.2 is that for some family types the equivalences derived from the BSU budget standards are quite similar to those from the Henderson scale, while for other family types they diverge significantly. The equivalences for couples without children are the most striking in this regard, with the BSU budget standards implying that a two-earner couple without children requires only about one-third more income than a single worker living alone, and less than a single parent with a young school-age daughter, to achieve an equivalent standard of living.

As with all budget standards research, the budgets developed by the BSU and therefore the implicit equivalence scales contained within them stem from the many decisions about what to include in the baskets of goods and services that underlie the budgets for each household type. This means that the implied equivalences can best be understood by 'unpacking' the budgets and their underlying assumptions. Table 4.3 summarises, by commodity group, the original budget standards costs for a single person, a childless couple and a single parent with a six-year-old child, at the modest but adequate standard.

Table 4.3: Estimated modest but adequate budget standards for three illustrative household types in private rental accommodation, February 1997, (\$)

Commodity group	Single woman (35)	Couple (35 & 40)	Single parent (35) + girl (6)
Housing	140.23	140.23	169.67
Energy	7.80	10.72	10.13
Food	50.71	111.67	81.01
Clothing & footwear	23.97	42.20	37.75
Household goods & services	30.00	37.05	75.69
Health	4.36	10.77	7.25
Transport	75.77	85.40	77.83
Leisure	28.15	43.72	36.08
Personal care	22.45	32.04	24.36
Total	383.44	513.80	519.77

Source: Saunders et al. (1998:440). Notes: Ages of household members appear in brackets. All adults are assumed to be in full-time employment.

In some respects the proposed consumption relativities between household types appear plausible. Many differences between the single woman and the couple stem from assumed gender-based differences in consumption (for example, that men need to eat more than women, but generally spend less on clothing and personal care). With the exception of rent and household goods and services (which includes costs of education and child care), the needs of a single parent and a young child fall somewhere between those of the one-adult and two-adult households. However, the assumptions made by the BSU in relation to housing and transport bear further examination, as they are the main drivers of the low relativity between the childless couple and the single person.

In relation to housing, the study states that housing costs for private renters were determined by applying the Canadian National Occupancy Standard (NOS) to household type (Saunders et al. 1998:116–7). This standard is commonly used to specify *minimum* standards for the allocation of public housing and as a benchmark against which to measure overcrowding and underutilisation. It specifies that:

Suitable housing has enough bedrooms for the size and make-up of resident households ... Enough bedrooms based on NOS requirements means one bedroom for each cohabiting adult couple ... [while a] household of one individual can occupy a bachelor unit (i.e. a unit with no bedroom). (Canada Mortgage and Housing Corporation 2010)

Other standards are of course possible. For example, the City of Kingston, Ontario (2010) specifies in its Local Social Housing Occupancy Standards a minimum property size for a couple (30.6 m²) that is double the standard for one person (15.3 m²). The Australian Institute of Health and Welfare (AIHW) has also developed a Proxy Occupancy Standard (POS) that has been used 'to assess the extent of overcrowding in Commonwealth State Housing Agreement data collections for State Owned and Managed Indigenous Housing, public housing and community housing' (AIHW 2007:442). The POS specifies a standard of one bedroom for a single adult and two bedrooms for a couple with no children.

Data on actual housing costs also show that couples spend more on rent than single people. For example, in 2007–08, the mean rents paid to private landlords were \$216 a week for single-person households, compared with \$266 a week for couple-only households. Median rents showed a similar difference—\$200 a week for single people versus \$250 a week for couples (ABS 2009g:39, 43).

All of this suggests that a couple without children would likely need to rent a somewhat larger dwelling than a single person in order to achieve an equivalent standard of living. The budget standards assumption that a couple without children rents exactly the same one-bedroom accommodation as a single person is therefore one key reason that the derived equivalence for a couple relative to a single person is so low. If the couple was allocated the same two-bedroom accommodation as a single parent with one child, for example, their budget standard would increase to \$543.24 and the ratio between the couple and single standards would increase to 1.417, a figure almost identical to that derived from the square root of household size (shown in Table 4.1).

In the indicative budget standards, the estimated transport costs for a two-earner couple household were only slightly above those for a single woman. This stemmed from the assumption that both members of the couple travelled to work together by car (Saunders et al. 1998:348).

Data from the 2006 Census of Population and Housing suggest that while the majority of employed men and women (68 and 63 per cent, respectively) travel to work solely by car, only small proportions (5 per cent of employed men and 7 per cent of employed women) do so as a passenger (ABS 2008a). Figures for employed people living in Sydney (ABS 2008b) show even lower proportions travelling to work solely by car—62 per cent of employed men (4 per cent as a passenger) and 55 per cent of employed women (7 per cent as a passenger). It seems likely therefore that the majority of employed couples travel to work independently and/or combine car travel with some other form of travel, such as public transport.

While the study assumed that the couple's work-related trip is somewhat longer than that of the single woman to account for them working at different locations (Saunders et al. 1998:354), there are alternative plausible assumptions, which are arguably more consistent with the census data—for example, that the couple owns and uses two cars or that one travels to work by public transport. Either of these assumptions would have resulted in a higher transport budget for this couple household¹⁷ and a higher equivalence factor.

The preceding discussion indicates the pitfalls of using equivalence scales derived from such detailed assumptions about household behaviour and expenditure patterns to analyse the distribution of income among all Australian households. While it is possible to substitute other assumptions and thereby to derive alternative budgets and equivalence scales, doubt must remain about their applicability across the Australian population. This conclusion applies as much, if not more, to the Henderson equivalences as to those derived from the BSU budget standards.

This leaves the researcher with something of a dilemma. While equivalence scales derived from budget standards (Henderson, BSU) are transparent and can theoretically allow for many of the important differences between households that can affect living standards, this very level of detail makes them less useful for broad application.

17 The budget standards for couples with wives working part time allowed for higher transport costs than for a couple both working full time. This is because the wife was assumed to rely on public transport during periods when her husband was at work and she was not (Saunders et al. 1998:347,367).

By contrast, the simpler scales provide a plausible set of relativities and are easy to apply, but have not been systematically validated. Nor do they recognise some significant factors that are likely to affect relative living standards, such as the costs of engaging in paid work.¹⁸ They may therefore be more useful for analysing incomes across households with relatively similar characteristics (for example, all working-age households with one income earner) than for comparing the living standards of households with widely varying characteristics (such as working households against retired households).

On the other hand, given that these simple equivalence scales are largely arbitrary, it would be possible to construct an entirely new scale that allows, albeit it just as arbitrarily, for certain additional costs. For example, the modified 'OECD' scale could be modified further to take some account of employment status, by increasing the equivalence weights given to employed adults by a consistent factor (say 0.1 or 0.2). This would arguably allow for more appropriate comparisons between households with differing levels of employment. Alternatively, additional expenditures associated with working could be deducted from disposable income before it is equivalised. While this approach may be theoretically preferable, most available data do not allow for precise identification of such outlays, except in cases where it can be assumed that the whole of an expenditure class is work related.¹⁹

Simple scales may also suit cases in which the definition of income has been adjusted to take account of income in kind. For example, if household income were increased to take account of the value of home production, this would have the effect of partially compensating for differences in well-being between households in which all adults work and those in which one or more adults do not. In such a case, a simple equivalence scale may well be more appropriate than one which implicitly assumes that employed adults need more income than non-employed adults to attain the same standard of living.

4.3 Methods of updating data and benchmarks

While it is possible to derive a variety of measures and benchmarks of living standards from a variety of data sources, these are usually particular to a point in time, and in some cases, also to a location. Many relevant data are collected only infrequently or irregularly and are subject to further delays before being made available for analysis. In order to analyse and compare living standards at current wage levels, any chosen benchmark, or the data from which it is derived, must therefore be updated to take account of likely changes in their value over time.

This usually involves applying an adjustment factor derived from some readily available statistical indicator of relevant trends across the population as a whole, or some defined sub-population. This factor is then used either as an inflator to adjust older figures upwards, or as a deflator to adjust current figures downwards. Ideally, the mechanism for updating data or benchmarks should relate conceptually to the measure being updated. Thus it may be appropriate to apply a wage-related inflator to an earnings figure or a price-related inflator to an estimate of household expenditure.

¹⁸ Conceptually, the direct costs of work are those additional costs incurred because of a person's job, including items such as childcare and work-related transport and clothing. While the costs of work are difficult to measure and vary significantly between individuals, on average people in paid work can be expected to face higher direct costs than otherwise similar people outside the paid workforce.

¹⁹ For example, it may be relatively safe to assume that expenditures on childcare are for the purpose of allowing parents to engage in paid employment. In other cases (most importantly, transport), it is not possible to separate costs associated with work from those incurred for other reasons.

The more complex the measure of living standards, the more difficult it is likely to be to find a suitable adjustment factor. Take, for example, the most widely used measure of living standards—equivalised household disposable income. For an individual, this depends on how many people in the household are employed; how many hours they work; the hourly wages they earn; the level of taxes paid and income transfers received; and finally, the size and composition of the household. Over any given period, any or all of these things may change, so that simply inflating a household's income to take account of changes in either wages or prices is unlikely to be a particularly accurate reflection of the changes in its equivalent income.

Table 4.4 compares the changes in six of the more readily available indicators of prices, earnings and household incomes over the period 1998–99 to 2008–09. These include two measures of changes in prices—the Consumer Price Index (CPI) and the Analytical Living Cost Index (ALCI) for employee households;²⁰ the Wage Price Index (WPI); two indicators of average earnings—average weekly earnings (AWE) of all employees and average weekly ordinary time earnings (AWOTE) of adult full-time employees; and estimated household disposable income per head (HDIPH).

Each of these indicators increased quite differently over the decade to 2008–09. Prices increased the most slowly (by 37 per cent using the CPI and 40 per cent using the ALCI). Wage growth as measured by the WPI was somewhat higher at 44 per cent, while the selected measures of actual earnings (AWE and AWOTE) grew by considerably more. Finally, HDIPH increased by about two-thirds, 30 percentage points higher than the growth in the CPI.

Table 4.4: Growth in various indicators of prices, earnings and household income, 1998–99 to 2008–09

Indicator	Value		Increase (%)
	1998–99	2008–09	
Consumer Price Index	100.7	137.6	36.6
Analytical Living Cost Index, employee households	100.5	140.8	40.1
Wage Price Index	69.6	100.0	43.7
Average weekly earnings, all employees (\$pw)	605.10	913.00	50.9
Average weekly ordinary time earnings, adult full-time employees (\$pw)	740.80	1165.80	57.4
Household disposable income per head (\$pw)	385.90	642.60	66.5

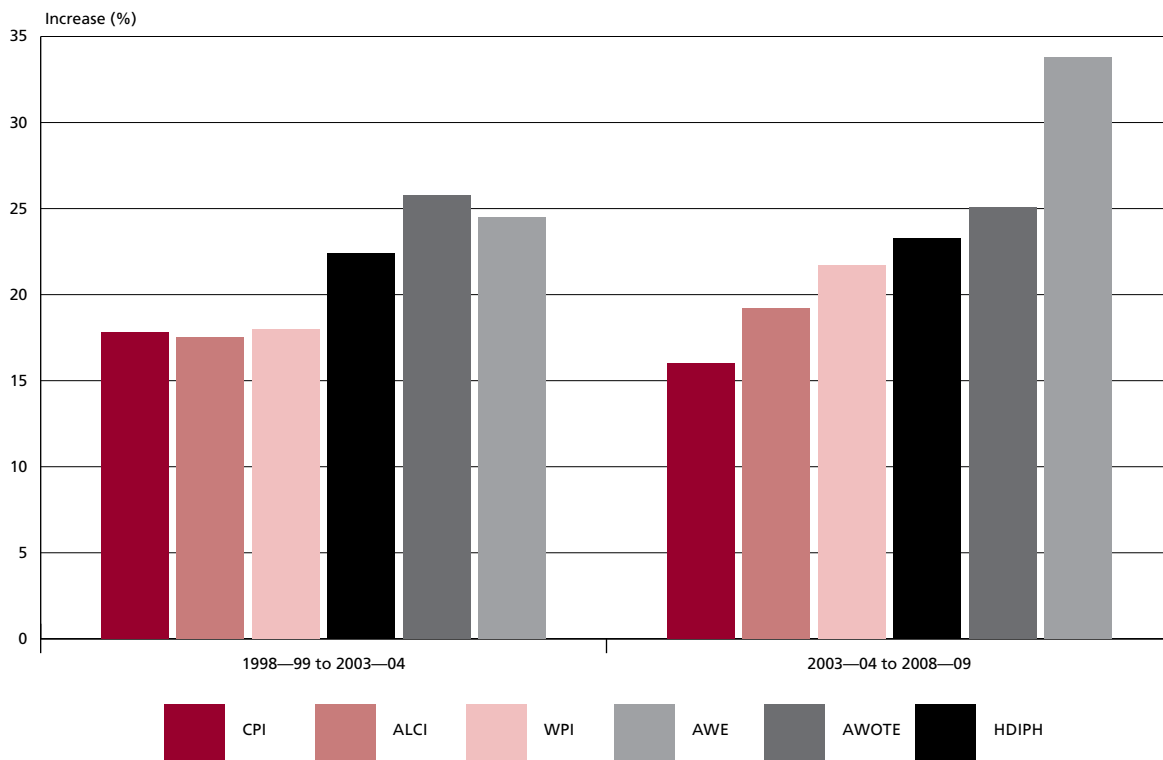
Sources: ABS (2010a); ABS (2010b); ABS (2009h); Melbourne Institute (2010).

Notes: All figures are annual averages.

²⁰ The CPI measures changes in prices for the household sector as a whole, while the ALCIs are the ABS' conceptually preferred measures for assessing the effect of price changes on household out-of-pocket living expenses. The CPI is constructed on an acquisitions basis (ie the prices of items that households actually acquire during a period), whereas the ALCIs are constructed on an outlays basis (ie the prices of items for which payments are made). One major difference is the treatment of owner-occupied housing, with the CPI capturing house prices and the ALCI capturing the effect of mortgage interest rates (ABS 2009i).

Figure 4.1 shows how the growth in the indicators varied between the first and second halves of the decade. Between 1998–99 and 2003–04 all of the three price-based indicators grew by similar proportions (around 18 per cent). The three earnings and income indicators grew more quickly, with AWOTE showing the strongest growth. From 2003–04 to 2008–09, by contrast, there was a clear gradation in growth rates from the price-based indicators through those for wages and earnings and, finally, household income. During this period, estimated HDIPH grew more than twice as fast as the CPI and over one-third faster than any other indicator.

Figure 4.1: Growth in prices, earnings and disposable income, 1998–99 to 2008–09



Sources: ABS (2010a), ABS (2010b); ABS (2009h), Melbourne Institute (2010).

This last indicator of community living standards, HDIPH, is used to update the value of the Henderson Poverty Lines (HPLs). The value of the HDIPH is calculated quarterly by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute) from ABS estimates of aggregate household disposable income and population and the HPLs are adjusted in line with movements in its value. The Australian Fair Pay Commission (AFPC) also used HDIPH to adjust poverty lines derived from the distribution of equivalent household disposable income, when monitoring the relative value of the disposable incomes of low-paid employee households (see, for example, AFPC 2009:56).

This may suggest that HDIPH is an appropriate indicator for the purposes of updating income benchmarks based on household disposable income. However, its use is not entirely unproblematic. One of its main drawbacks is that it is derived from figures that are frequently adjusted retrospectively when the ABS publishes revised estimates of the Australian population and household disposable income.

Other concerns about the validity of HDIPH as an adjustment mechanism relate to the fact that it is a per capita measure, rather than equalised for household size (FaCS 2003:82; Manning 1982:11) and that the National Accounts definition of household income upon which it is based is inconsistent with definitions of income reflected in ABS household income data (FaCS 2003:82). While these criticisms have some force, it remains a possible indicator for use in adjusting figures for household disposable income.

Ultimately, the choice of indicator will be particular to the research questions being asked. If the main concern is whether the purchasing power of household income is being maintained, then a simple adjustment using one of the price-based indices (CPI or ALCI) may be most appropriate, since these measure how much income would need to increase to enable purchase of the same basket of goods and services.

In a similar fashion, the WPI measures the changing value of a fixed 'basket' of wages, so it may be an appropriate indicator to use when assessing the relative value of a particular wage (for example, the national minimum wage) over time. Comparisons against movements in average earnings, however, are not so straightforward since the community average (whether mean or median) is derived from a population with changing composition. For example, the increasing skill profile of the workforce is one of the reasons why average earnings commonly increase faster than the WPI, as shown in Table 4.4 and Figure 4.1.

A similar issue exists for analysis of household disposable income, in that the composition of mean and median household disposable income is also changing over time. This issue is discussed further in section 5.2 of this paper.

5 Common income benchmarks

As mentioned earlier, the majority of Australian research into relative living standards to date has consisted of comparing the equivalent income of individuals against some income benchmark or set of benchmarks. The most common Australian benchmarks for this purpose are:

- the Henderson poverty line (HPL);
- one or more relative poverty lines based on estimates of equivalised household disposable income (EHDl); and
- indicative budget standards developed by the Budget Standards Unit (BSU) at the Social Policy Research Centre (SPRC) in the mid 1990s.

Of these, the HPL was the most commonly used benchmark into the 1990s. In recent years most Australian research into poverty and living standards has employed one or more of the relative poverty lines, though varying approaches have been taken to equivalising household income. The BSU budget standards have not generally been used for research covering the entire population, but have had some use in more specific applications—for example, in deriving indicative estimates of the cost of children (Henman 2007; Henman 2001; Saunders 2000) or of income requirements in retirement (Saunders, Patulny & Lee 2004). A summary of the benchmarks used in recent Australian research can be found in Table A.1 of Appendix A.

5.1 Henderson poverty lines²¹

The Henderson poverty lines (HPLs) were first developed in 1964 as part of a study of poverty in Melbourne undertaken by a group of researchers from the Institute of Applied Economic and Social Research (IAESR) led by Professor Ronald Henderson. The basic poverty line was set for a reference family of two adults (one employed) and two children and consisted of the sum of the then basic wage plus child endowment—that is, the minimum income available to a family with one worker receiving exactly the basic wage. After payment of income tax, this was equivalent at that time to \$33 a week or 56.5 per cent of seasonally adjusted average weekly earnings (AWE) per employed male unit (Manning 1982:2).²²

Poverty lines for income units of other sizes and compositions were derived by applying a set of equivalence scales adapted from a budget standard study undertaken in New York in 1954. The equivalence score for each household type consisted of a value per household member (working head, non-working head, working spouse, non-working spouse or dependent child) plus a household-based component for housing and various ancillaries (fuel, power, etc) that vary with family size. Implicitly, the poverty lines apply only to single family (income unit) households.

21 The following description of the Henderson poverty lines is drawn largely from Manning (1982) and Johnson (1987).

22 Until the September quarter 1981, Australian Bureau of Statistics (ABS) data on earnings were derived from payroll tax returns which did not distinguish between the wages and salaries paid to male and female employees. Average weekly earnings were therefore 'calculated in terms of male units, i.e. total male employees plus a proportion of female employees...derived from the estimated ratio of female to male average earnings' (ABS 1981:1). These ratios varied across the states and territories, with a weighted average of around 66 per cent (ABS 1981:1).

Beginning with the September quarter 1973 the IAESR (now the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute)) published regular quarterly updates of the HPLs. Until the end of 1980 the lines were updated for movements in seasonally adjusted AWE to maintain the original relativity with that measure. However, this methodology was subject to criticism, mainly on the grounds that it was inappropriate to adjust an 'after-tax' poverty line by changes in 'before-tax' earnings and also that AWE was too narrow a measure of income to apply to a set of poverty lines which related to the population as a whole. As a consequence, from 1981 onwards, the HPLs have been adjusted according to changes in estimated household disposable income per head (HDIPH), an indicator considered conceptually more appropriate.

The HPLs were widely used in Australian research into poverty throughout the 1980s and 1990s, although growing concerns were expressed about their applicability to the Australian situation. Criticisms centred primarily upon the equivalence scales used to derive the poverty lines (DSS 1995; Southwell & Holbert 1994; Stanton 1980; Whiteford 1985) and the validity of using HDIPH to update them. The latter concern was summarised by the Commonwealth Department of Family and Community Services (FaCS) in its submission to the Senate inquiry into poverty and financial hardship.

[T]he National Accounts concept of [household disposable income (HDI)] includes some concepts of income that do not reflect the resources directly available to households for spending ... [such as] the value of employer superannuation contributions, superannuation earnings and the imputed value of rent on owner-occupied housing. A further distortion is the use of a per capita estimate of HDI which does not take account of the falling size of households. Applying the rate of change in this aggregate (which in essence uses an equivalence value of one for each person) to a fixed household structure, which uses an equivalence scale that gives lesser weight to additional persons, will overestimate the rate of growth in the HPL (FaCS 2003:82).

Some researchers were concerned that the use of HDIPH as an updating mechanism had led to inflated estimates of poverty, since that indicator (and hence the HPLs) had increased more strongly than actual equivalent household disposable income, especially during the 1980s, but also during the 1990s (FaCS 2003; Saunders 2006; Saunders 2004a; Saunders & Matheson 1991; Southwell & Holbert 1994; Whiteford 1997). This had the apparently paradoxical effect of increasing measured poverty at a time when the economy was growing strongly and the government had made substantial real improvements to the level of income transfers, particularly for families with children.

Partly as a result of these concerns, a number of studies since the mid 1990s explicitly supplemented HPL-based analysis with the use of alternative benchmarks or other relevant data, such as household expenditures or indicators of financial hardship (Saunders 2006; Saunders 2004; Saunders 1998a; Saunders 1997). Other analyses (Harding, Lloyd & Greenwell 2001; Harding & Szukalska 2000; Saunders & Hill 2008; Saunders, Hill & Bradbury 2008) used poverty lines derived directly from the equivalent income distribution as their primary benchmarks, while providing supplementary analysis using the HPLs. While the HPLs are still updated quarterly by the Melbourne Institute and used occasionally as a general income benchmark (AFPC 2009; AFPC 2008; AFPC 2007; AFPC 2006; Healy 2008), their use in research on income distribution and poverty is now uncommon.

5.2 Relative poverty lines

Since 2000, most Australian research into income distribution and poverty has used income benchmarks derived from the distribution of EHDl. The most commonly used, in ascending order of value, are: 50 per cent of median EHDl; 50 per cent of mean EHDl; and 60 per cent of median EHDl. These income benchmarks are usually referred to as relative poverty lines (RPLs).²³

Poverty lines for particular household types can be derived from published ABS figures on mean or median EHDl, by multiplying the chosen indicator by the relevant modified 'OECD' equivalence factor. Alternatively, benchmarks can be derived directly from unit record data, a process that allows the analyst to choose, or vary, the unit of analysis and/or the equivalence scale and also to discard anomalous records that may unduly bias results.²⁴

Most recent research based on RPLs has used 'Organisation for Economic Co-operation and Development' ('OECD') equivalence scales to equalise income between households or income units (Bray 2001; Hahn & Wilkins 2009; Headey 2008; Headey, Marks & Wooden 2005; Marks 2007; Payne 2009; Rodgers & Robson 2008; Saunders & Bradbury 2006; Saunders, Hill & Bradbury 2008). However, there is no reason why other equivalence scales cannot be used and this has been done on occasion (Harding, Lloyd & Greenwell 2001; Harding & Szukalska 2000; Saunders & Hill 2008; Saunders, Hill & Bradbury 2008).

Most research into relative poverty uses a poverty line set as a proportion of median EHDl. This can be thought of as comparing each person's equivalent income against the income of the average, or middle, person in the overall income distribution. The median income is less likely to be affected by changes in the incomes at either end of the distribution and is thus considered to be a more stable indicator, especially for tracking changes over time. Mean income, by contrast, is the average of the income of all people in a given population. It is typically higher than the median income because the shape of the income distribution is usually skewed towards lower incomes with a long upper tail. The value of the mean is therefore influenced more heavily by very high incomes, and researchers with a particular concern about the level of inequality (as opposed to poverty) may choose a mean-based poverty line for this reason (Harding, Lloyd & Greenwell 2001:2).

One of the complications of using an RPL as a benchmark to assess the value of current incomes is that it is invariably based on relatively 'old' data. The Australian Bureau of Statistics (ABS) Survey of Income and Housing (SIH) are carried out every two years, over the course of a financial year. In the case of the most recent 2007–08 survey, the data were collected between August 2007 and June 2008. Statistics from the survey were first published in August 2009 (ABS 2009d) and the confidentialised unit record file (CURF) was made available to researchers at around the same time (ABS 2009e). These data are the only available ABS data on household incomes until information from the 2009–10 SIH are released in mid to late 2011.

The age of income data is not a particular concern for research confined to analysing the income distribution at that particular point in time. However, it is more problematic when attempting to compare disposable incomes in a later period (for example, for specific types of household receiving specific current wages) with the earlier income benchmark. In order to do this, the poverty line benchmarks need to be adjusted to take account of likely changes over time.

23 The Henderson poverty line (HPL) can be described as partly relative in that it is indexed in line with movements in community living standards. However, in this paper, the term is used to refer only to poverty lines derived explicitly by reference to average (median or mean) incomes among the population as a whole, or some subset of it.

24 For example, it is not uncommon for researchers to exclude from analysis records of self-employed individuals, or households who report negative income.

There are two possible approaches to this. The first is to 'age' the unit record data to take account of likely changes in household incomes. For example, Harding and Szukalska based their report on the extent and characteristics of financial disadvantage in 1999 on data from 1997–98 that had been aged in this way. They cautioned, however, that:

... the ageing undertaken was relatively limited, as we did not reweight the dataset to account for demographic and labour force change between 1997-98 and 1999. In particular, this mean[t] that no account [was] taken of the fall in the unemployment rate ... The static ageing consisted of simply increasing various income components by known changes in income ... derived from sources such as the national accounts, ABS survey data, and administrative data (Harding & Szukalska 2000:30).

This points to the main drawback of this approach to updating. Because it is very difficult to estimate the incidence of changes in labour force participation at the household level, ageing of data is usually limited to those variables for which reliable estimates of the rate of change can be obtained. When the employment to population ratio rises, as in the late 1990s, the average number of household members in employment also tends to rise. Thus the total earnings of households are likely to be underestimated on average if they are simply adjusted by the overall growth in individual wages or earnings. However, the net effect of this underestimation on estimates of poverty or financial hardship is ambiguous. While an underestimate of equivalised household income would produce underestimated poverty line benchmarks, thus artificially lowering measured poverty, the proportion of households with low incomes because of little or no workforce participation would likely be overestimated, thus potentially exaggerating poverty.

The second, simpler approach to updating is simply to inflate the benchmark by some indicator of the change in its real value. For example, in its 2008 decision, the Australian Fair Pay Commission (AFPC) (2008:67) compared the estimated disposable incomes of households with one or more workers earning a variety of low wage rates against a set of poverty lines derived from 2005–06 ABS data and updated by movements in HDIPH, as estimated by the Melbourne Institute.²⁵

In the end, artificial updating of income benchmarks derived from household income distribution can only go so far. Between 2005–06 and 2007–08 (the dates of the two most recent ABS income surveys), the various indicators of prices and earnings summarised in Table 4.4 and Figure 4.1 increased by between 6 and 9 per cent, while HDIPH increased by around 12 per cent. By contrast, both median and mean EHDI increased by more than 20 per cent over the period. The ABS (2009d:6) explained this result thus:

A major contributor ... was the strong rise in wage and salary incomes (up 28%). After adjusting for the change in scope of the measures [i.e. broadening the measurement of employee income], a 22% increase remains, and is associated with the numbers of employees rising 8% (while the number of households rose only 2%), and with rising average wages and salaries.

This very large increase in household income over a very short period highlights the susceptibility of relative disposable income benchmarks to significant labour force and demographic changes. Perhaps the most critical influence on average (median or mean) equivalised household income is the total hours that household members spend in paid work. Even if everything else (real wages, taxes and income transfers and household size and composition) were to have stayed the same over the past several decades, average household disposable income would have risen more or less continuously because of this factor alone.

25 In this case, disposable incomes were also compared against the HPLs. Despite its drawbacks, HDIPH may have been chosen as the inflator in this case to maintain some consistency between the two sets of benchmarks.

Against such a long-term trend of increasing average household incomes, the disposable incomes of households with fixed labour supply (for example, households with one full-time wage earner) could be expected to fall relative to the average over time. This suggests that, while there may be value in mapping the equivalised household disposable incomes of all (low) wage earners against the incomes of the population as a whole, other comparators may be needed for evaluating trends in the disposable incomes of particular kinds of families.

5.3 Indicative budget standards

The final set of income benchmarks sometimes used in Australia is the indicative budget standards developed in the late 1990s by the BSU (Saunders et al. 1998). This research had been commissioned by the Department of Social Security (DSS) as part of a larger Adequacy Project, which aimed to explore a range of approaches to benchmarking an adequate standard of living (Nicolaou 1998).

The budget standards approach was one of a range of prescriptive and descriptive approaches to measuring living standards adequacy canvassed in a 1995 DSS discussion paper. This paper described prescriptive approaches as those which 'seek to define a particular level of cash income which, for a particular income unit, [provides] outcomes, or the opportunity for achieving outcomes ... consistent with some community notion of adequacy' (DSS 1995:40). Descriptive approaches, on the other hand, were those that focused primarily on 'the characteristics of those achieving comparatively poor outcomes, thereby allowing conclusions to be drawn regarding the adequacy (or otherwise) of income levels' (DSS 1995:40).

The budget standards approach to defining an adequate income may be considered the most prescriptive of prescriptive approaches, since it:

... represents what is needed, in terms of the consumption of goods and services, by a specific type of household, living in a specific place at a specific time, to achieve and maintain a specific standard of living. Thus it involves specifying in great detail the identity and nature of all of the goods and services that appear in the typical household basket in order for it to be able to attain—and maintain—the specified standard of living (Saunders 1998c:58).

The development of the budget standards was a resource-intensive process. The research took two years and resulted in a report of well over 600 pages, which lists six authors and three support staff (Saunders et al. 1998). The report outlines in great detail both the conceptual underpinnings of the budget standards approach and the specific methodologies used to develop the budgets. These covered each of nine areas of expenditure, two different living standards and 12 different family types, with varying levels of labour force attachment and differing housing tenures. In total, there were 26 budgets estimated at the 'modest but adequate' living standard and 20 at the 'low cost' standard.

The goods and services contained in each budget were determined in a variety of ways. For many items a rough 'ownership rule' was applied, such that goods, services and activities were included in the modest but adequate budget if they were owned, used or undertaken by at least 50 per cent of households. The corresponding proportion for the low cost budgets was 75 per cent (Saunders et al. 1998:68). Many of the budgets included normative elements and judgments related to the study's location in the Hurstville local government area of Sydney. Thus, the housing budget for renters was constructed according to a minimum occupancy standard, while the housing budget for home owners and purchasers took account of the likely type of owner-occupied housing in the location (Saunders et al. 1998:113–29).

Normative judgements also entered into the construction of the food, health and leisure budgets, which were adjusted to reflect a 'healthy' lifestyle rather than simply that typically enjoyed by Australian households. For example, the budgets did not include tobacco and made only limited allowance for consumption of alcoholic beverages (Saunders et al. 1998:38–90).²⁶ Each component budget therefore involved a different mix of normative and behavioural inputs.

It is possible to locate the component budgets on a continuous spectrum that begins at one end with those that are heavily normatively based, stretching to the other extreme which is virtually entirely behavioural. On such a continuum, the food budget would fall furthest to the normative end, with the health budget close to it, followed by the housing budget. At the other extreme lies the energy budget, that has been derived virtually entirely from behavioural data (Saunders et al. 1998:79).

The budgets varied from 'real life' experience in other ways. For example, they made little allowance for substitution. Choice between items was allowed to some extent within component budgets, but not between them.

Full incorporation of substitutability both within and between the main budget areas would involve abandoning the normative budget standards framework in favour of the conventional positivist neoclassical economic analysis of consumer behaviour which allows for complete flexibility of choices within available constraints (Saunders et al. 1998:73).

Households were also assumed never to consume or to sell second-hand items, nor to 'shop around' or take regular advantage of sale prices. All items were priced at major national retailers (such as Woolworths, Target, IKEA), on the basis that this would most easily enable budgets to be replicated in different locations (Saunders et al. 1998:82–7).

While many of these decisions are defensible on practical grounds, they are likely to have biased the standards upwards to some degree, probably more so for the low cost than for the modest but adequate budgets. In the end, the researchers repeatedly stressed the normative basis of the standards and warned that 'the budgets are indicative only and to claim more than this for them would be to fail to fully appreciate some of the limits of the methods used to derive them' (Saunders et al. 1998:17).

A key requirement of budget standards is that they represent the income required to attain a specified standard of living, which is comparable (or equivalent) across the full range of households for which budgets are developed. In this research the modest but adequate standard was conceptualised as falling 'somewhere around the median standard of living experienced in the Australian community as a whole', while the low cost standard represented 'a standard of living which may require frugal and careful management of resources but would still allow social and economic participation consistent with community standards' (Saunders et al. 1998:iv). The low cost standard was further considered to correspond 'to a standard of living which is achievable at about one-half of the median standard in the community' (Saunders et al. 1998:v).

To judge whether they meet these conceptual criteria, it is necessary to compare the budget standards against some median living standard. The BSU researchers considered a variety of approaches to this validation, including comparisons with benchmarks based on median equivalised household disposable income. As they observed, however:

²⁶ Many of these normative requirements, as well as the conceptual basis for the standards and the composition of the 12 household types, had been specified by DSS in its original statement of requirements for the research consultancy (Saunders et al. 1998:99–101).

The main problem with this approach is that it contains an implicit circularity because it relies on the use of an equivalence scale which embodies an estimate of how household needs vary with household size and composition, when one of the goals of developing budget standards is to estimate relative household needs in order to produce an equivalence scale (Saunders et al. 1998:448).

On the other hand, comparing household-specific budgets against median expenditures of households with similar characteristics (and potentially adjusting them towards those medians) would run the risk that 'the standards will reproduce the living standards differences between groups that currently exist' (Saunders et al. 1998:446).

In the end, the researchers compared their budget standards against a variety of benchmarks, such as the mean, median and quintile distribution of expenditures of households with similar characteristics. This showed that, for some family types (a single working-age woman and couples with no or one child) both budget standards fell below the median expenditures of similar households. For the remaining family types, the modest but adequate budgets exceeded median expenditures by factors of up to one-half and in a number of cases (aged singles and couples, and single parents with two children) even the low cost budget was higher than the median expenditures of households of the relevant type (Saunders et al. 1998:456–64). While these results may seem to confirm that certain family types are more prone to low living standards, they provide limited verification that the indicative budget standards broadly represented living standards at either the median or half-median standard of living in the community at large.

Further analysis reported by Saunders (1998b:19–24) showed that, when the distribution of household expenditure (including housing costs) was analysed against the budget standards, some 29 per cent of all households (36 per cent of private renter households) had expenditures below the low cost standard and 54 per cent of all households (62 per cent of private renter households) had expenditures below the modest but adequate standard. Among household types, only non-aged couples without children and couples with one young child were less likely to have expenditures below the modest but adequate budget than above it.²⁷ By contrast, only 12 per cent of households recorded below half-median expenditure (equivalised by the square root of household size) and would therefore have been considered to suffer relative expenditure poverty. This casts doubt on whether the budget standards, especially the low cost standard, accurately represented the living standards for which they were originally conceived.

27 Strictly speaking, this part of the analysis related only to households of broadly comparable composition to those represented by the standards, rather than the whole population. The standards used were those applicable to private renter households only.

A further concern relates to whether the budgets derived for each household type did in fact represent the same standard of living across household types. A closer examination of the budget assumptions reveals that, in the area of housing in particular, the budgets were unlikely to confer a uniform standard of consumption. The allocation of the same housing to couples and single people, discussed in section 4.2.1, was one instance of this, but there were also major differences in the size and standard of housing assigned to renters and home owner/purchasers. For example, under the modest but adequate standard, renters were assumed to occupy a medium-density unit of minimum acceptable size, while purchasers and outright owners were usually assumed to occupy a dwelling with one additional bedroom, and most often a detached house.²⁸ Differences within the low cost budgets were fewer, except for aged households, in which outright owners were assumed to occupy a three-bedroom house and renters to occupy one-bedroom pensioner housing (Saunders et al. 1998:119–29). While these assumptions reflected a combination of normative assumptions and the realities of the housing market in the budget standards location, it is difficult to accept that the budgets for renters represented the same standard of living as those for owner/purchasers.

In addition to the issue of the comparability of housing standards between renters and purchasers, Whiteford and Henman (1998) raised concerns about the methodology used to derive the housing costs of home owners, most specifically the inclusion of capital repayments in the housing costs of purchasers and the non-recognition of capital gains for both owners and purchasers. They concluded that:

... the overall budgets for homeowners and purchasers cannot be directly compared with those for renters. The long-term living standards of those owning or purchasing a home are at a different level from those who are renting [and] ... the differences in expenditure on housing cannot be interpreted as differences in needs (Whiteford & Henman 1998:136).

The BSU researchers recognised the difficulties involved in specifying and costing the housing budgets for home owners and purchasers. They recommended therefore that 'the housing standards for private renter households are preferable for use as a benchmark for the housing component of the budget standards' (Saunders et al. 1998:85).

As with all income benchmarks, budget standards need to be updated over time if they are to remain relevant and contemporary. This poses particular challenges, since the standards are conceptually based on community consumption norms that are changing. While it seems sensible to update the standards in the short term simply by reference to changes in consumer prices or household living costs, this is not an adequate long-term strategy. The longer the period since its initial formulation, the greater the likelihood that a price-indexed standard will have fallen relative to average community living standards. In order to continue to represent community norms, the budgets need to be completely reformulated on a fairly regular basis, a process that would involve considerable effort and expenditure.

The original study recommended that simple Consumer Price Index (CPI) based adjustment would suffice for no longer than five years, that individual items should be repriced at least every five years and that the budgets should be reformulated at least every seven to 10 years (Saunders et al. 1998:627–8). Thirteen years after the production of the original standards, no such large-scale updating has eventuated.

²⁸ This means, for example, that a single home purchaser is assumed to occupy a two-bedroom unit, while a private renter couple without children is assumed to occupy a one-bedroom unit.

The final issue for people wishing to use the indicative budget standards to benchmark the living standards of low-paid employees is to determine which standard is the more appropriate for this purpose. In the only report on budget standards specifically for working families, prepared for the Australian Council of Trade Unions (ACTU) in the context of the 2004 Minimum Wage Case, Saunders (2004b:i) concluded that:

While the arguments are not clear-cut, the SPRC low cost standard is too low for use in setting minimum wages and the modest but adequate standard is probably too high. In general, which precise point is chosen on the continuum that separates the two standards involves judgments to be made.

Saunders' conclusion that the low cost standard was too low for minimum-wage employee households stemmed from his conviction that the primary purpose of the low cost standards was to inform the levels of income support payments.

[I]f the low cost budget is the basis for setting income support payments, then a standard set somewhat above that level is appropriate for minimum wages, since considerations of both fairness and incentive suggest that even the lowest wage income should exceed social security benefits (Saunders 2004:5).

Whatever may have been the original motivation behind the commissioning of the low cost budget standards, the Australian Government has never adopted them as a benchmark for social security payments. At the time of their development, with the sole exception of that for an age pensioner couple, all of the low cost budgets were at least nine per cent, and some up to almost 50 per cent, higher than the social security payments available to comparable households (Saunders et al. 1998:493). In other words, most working households with disposable incomes equivalent to the low cost standards would have had incomes that exceeded social security benefits.

One practical difficulty with using the low cost standards to benchmark the disposable incomes of low-wage employee households is that almost all of the original low cost standards were for non-employed households. The exceptions were two versions of the low cost budget for a couple with a six-year-old daughter, which included a husband employed full time and a wife who was either unemployed or not in the labour force.

Saunders (2004b) extended the original BSU analysis to produce budget standard estimates as at September 2003 for another three household types, each with one person employed full time: a single person; a couple without children; and a couple with two children. These budget standards built on previous work by Henman (2001) by making appropriate adjustments to the budgets of the most similar of the original BSU households, which were then updated for increases in the CPI between February 1997 and September 2003. All households were assumed to be renting privately.

Of the budget standards produced in this later study, all of the low cost standards and also the modest but adequate standard for a couple without children were estimated to fall within the lowest quintile of expenditure for employed households of a similar type. The remainder of the modest but adequate standards fell within the second quintile of such expenditures. As a proportion of the relevant median expenditures, the standards ranged from 51 per cent (low cost, childless couple) to 84 per cent (modest but adequate, couple with two children) (Saunders 2004b:40).

These updated budget standards are compared in Table 5.1 with Fair Work Australia estimates of the then disposable incomes of households with one full-time worker earning a wage at either the C14 or the C10 classification.²⁹ This shows that all of the illustrative families had incomes between the updated low cost and modest but adequate standards, although for a couple with two children and receiving a C14 wage the margin above the low cost standard was quite small.

While the disposable incomes of the other three family types cleared the low cost standard by \$27 to \$48 a week at the C14 wage, only the single-person household approached the modest but adequate standard when earning the C10 wage. This is because the other household types would have been receiving part-rate income support and/or family tax benefits, which result in high effective marginal tax rates on additional income. Although the C10 wage at that point was around \$94 a week higher than the C14 wage, the differences in disposable income for the three couple households were all less than \$8 a week.

Table 5.1: Disposable incomes of households with one low-wage earner, compared with updated budget standards, September 2003

Household type	Low cost budget standard (\$pw)	Household disposable income (\$pw)		Modest but adequate budget standard (\$pw)
		@ C14 wage	@ C10 wage	
Single person	357.00	383.97	445.02	451.30
Couple, no children	463.80	500.91	507.04	565.80
Couple + 1 child (6)	568.70	616.68	624.40	724.30
Couple + 2 children	708.70	710.93	718.65	867.90

Sources: Saunders (2004b), FWA modelling. Notes: Single person standards are the average of those for a man and a woman. Where eligible, households are assumed to be receiving all relevant income transfers (Newstart Allowance, Parenting Payment and/or Family Tax Benefits) and to be paying private rent sufficient to attract maximum Rent Assistance. Children aged 6 and 14. Tax and transfer parameters as at September 2003. C14 wage = \$448.40 pw. C10 wage = \$542.20 pw.

As part of his 2004 research, Saunders also examined median and first quartile rental costs in various regions across Australia, and compared these to the original budget standard estimates updated by the CPI. He concluded that:

In all cases, the maximum price is more than double the lowest price and the locality in which the SPRC budgets apply (the Hurstville [Local Government Area] in the Middle Sydney region) is at the upper end of the range. (Saunders 2004b:16)

[T]here are considerable regional variations in market rents ... If the original SPRC methodology was re applied to September 2003, housing costs for those living in a two-bedroom unit paying the median rent (i.e. at the modest but adequate standard) would vary from \$105 below those in the Middle suburbs of Sydney to \$110 above them. For the low cost budgets, the corresponding range would be from \$80 below to \$90 above. (Saunders 2004b:17)

²⁹ These classifications, which are commonly used as benchmarks of low wages, are from the Manufacturing and Associated Industries and Occupations Award 2010 and predecessor federal awards. The C14 classification is for the lowest level of unskilled employee and is equivalent to the National Minimum Wage. The C10 classification represents the lowest level of skilled employee or tradesperson.

Saunders (2004b:17) noted that housing costs are not the only costs that may vary significantly by location. While some of these differences may partly offset those associated with housing, he cited his own analysis as showing that:

... variations in some non-housing costs (e.g. the cost of a standard basket of groceries) do not in general offset the strong regional variations in housing costs but ... taking full account of all price variations in a budget standards framework would involve a complete re-pricing of the Sydney budgets in other locations, rather than just a replacement of the housing costs component as some have suggested.

At the very least, this suggests that use of budget standards as a benchmark for employee household incomes must be tempered by an appreciation that many low-paid workers may actually face very different (lower or higher) housing costs than those assumed in the standards. This suggests that further research into the housing costs actually incurred by low-paid employee households would be helpful.

5.4 Comparing the income benchmarks

A sound and effective income benchmark should be:

- conceptually and methodologically transparent;
- current;
- sensitive to, and comprehensive in its treatment of, factors affecting the standard of living; and
- publicly visible and credible (AFPC 2008:65).

The three main types of income benchmark so far canvassed in this section can be considered against these criteria.

5.4.1 Transparency

Conceptual and methodological transparency means that the benchmark is derived in such a way that an ordinary person can understand it. The more simple and transparent a benchmark's derivation, the simpler it should also be to adjust to accommodate differing assumptions.

Budget standards are probably the most conceptually simple of benchmarks, in that they represent the amount of expenditure that households of varying composition require to achieve a particular standard of living. However, the apparent simplicity of the budget standards hides a large number of individual assumptions, only some of which are based on observed consumption patterns. In addition, the detailed nature of their specification means that they cannot easily be used to judge the relative standard of living of other types of household, or trends and patterns across the broader population. While it is possible to derive alternative standards using different assumptions and/or for different household types or locations, each new standard so derived remains specific rather than general in its application.

RPLs are also fairly transparent. They are usually derived using a simple equivalence formula from data relating to a clearly specified population. On the other hand, the choice of specific benchmark is arbitrary and will not necessarily coincide with community perceptions of the minimum income needs of households or the extent of financial hardship. One advantage of RPLs is that they are quite adaptable to sensitivity analysis—that is, systematic analysis of the effects of varying the benchmarks themselves and/or the methodology for their derivation.

At their inception, the HPLs represented a simple concept—for the benchmark family of a single-earner couple with two children, the very minimum income that was attainable at that time from the combination of a full-time job and family assistance. However, the equivalence scales used to derive poverty lines for different family types, while based on a budget standards approach, do not stem from an assessment of Australian living standards and their applicability to Australia may therefore be questioned. In addition, the indicator used to update the lines is a relatively opaque concept and subject to a variety of methodological criticisms.

5.4.2 Currency

Currency refers to the usefulness of a given indicator to represent contemporary, or at least recent, living standards. This is most important in relation to assessments based on the disposable incomes of households receiving current wage rates. If current incomes are compared with income benchmarks that do not accurately reflect recent economic and workforce trends there is a danger that their relative value will be over- or under-estimated.

The HPLs may be judged to perform best in terms of currency, since they are updated on a quarterly basis by the Melbourne Institute, with only a short time lag. However, as previously discussed, the indicator used to update them is subject to significant revision over time and suffers from inconsistencies with standard definitions of disposable income.

As discussed earlier, there are two possible approaches to updating RPLs. They can either be simply updated using one of a variety of possible indicators of changes in value, or the base data from which they are derived can be updated to reflect likely changes in the value of its components. While either methodology will yield a defensible result, there is a limit to which this can reflect all of the demographic, societal and economic changes that are likely to bear on income distribution.

Finally, the budget standards are both the simplest and the most problematic benchmarks to update. The value of the baskets of goods and services that comprise the standards can be easily updated to reflect likely changes in their aggregate prices. However, it is not possible to reflect real improvements in community standards and long-term shifts in consumption behaviour without periodically re-deriving the entire budgets from scratch.

5.4.3 Sensitivity/comprehensiveness

There are two areas in which an income benchmark can be seen to reflect the major influences on relative living standards. One of these is in the definition of income that it reflects and the other is in the sensitivity of its equivalence scale to a range of relevant factors, such as housing tenure and labour force status.

Both the HPLs and the budget standards are best viewed simply as indicators of cash disposable income. Neither is designed for comparison against a more comprehensive measure of resources. While each can take account of differences relating to housing tenure, they do this in relatively unsophisticated ways. The only way to account for differing housing tenure in the HPLs is to deduct housing costs from income and then compare the adjusted figures with a set of 'after housing' lines. The budget standards vary significantly by housing tenure, but these differences reflect very broad-brush assumptions (for example, about the size and term of mortgages) that cannot capture the variety of housing costs actually experienced. And while both sets of benchmarks are apparently sensitive to the differing needs of employed and non-employed people, the resultant relativities derive from highly specific assumptions about employment-related behaviours and costs.

RPLs are generally derived using a simple definition of cash disposable income and an equivalence scale that allows primarily for the effect of household size. However, because they are drawn from an actual distribution of income, they will automatically vary if a different definition of household income, equivalence scale or population is used. They are thus quite adaptable to a wide range of research methodologies.

5.4.4 Public visibility/credibility

While the HPLs enjoyed a measure of public familiarity between the 1970s and the 1990s, they have fallen into relative disuse in recent years, to be replaced by research using RPLs. However, it is not clear whether members of the general public, as opposed to the research and policy communities, have a high level of awareness of the specific methodologies employed in such analyses. It may be that the credibility of one income benchmark or another rests fundamentally on the extent to which the benchmark itself accords with common perceptions of minimum income needs, or the public agrees with the extent of poverty or financial hardship revealed in the relevant research.

5.5 Medium-term trends in the value of income benchmarks

The paper now considers how the various income benchmarks compare with each other in dollar terms. Table 5.2 compares the estimated value of various benchmarks for four family types in January 2008—the mid point of 2007–08, when the latest ABS income survey data were collected.

Table 5.2 Estimated value of common income benchmarks, various family types with one full-time employee, January 2008

Income benchmark	Single person	Single parent, one child (6)	Couple, no children	Couple, two children (6 & 14)
50% median EHDI	346.00	449.80	519.00	726.60
Henderson poverty line	365.96	469.82	489.55	687.38
50% mean EHDI	405.50	527.15	608.25	851.55
Low cost budget standard	413.64	569.55	537.39	821.14
60% median EHDI	415.20	539.76	622.80	871.92

Sources: ABS (2009d); ABS (2009h); Melbourne Institute (2010); Saunders (2004b); Saunders et al. (1998).

Notes: EHDI = equivalised household disposable income. Ages of children are shown in brackets.

The figures for the three RPLs have been obtained by multiplying the ABS (2009d:16) figures for mean or median equivalised income by the appropriate 'OECD' equivalence factor³⁰ for each family type. The HPL measures have been calculated from the most recently published poverty lines and estimates of HDIPH (Melbourne Institute 2010a). The low cost budget standards for the single person and the two couple families have been derived by inflating Saunders' (2004b) September 2003 estimates by the relevant change in the ABS (2009h) Analytical Living Cost Index (ALCI) for employee households.

³⁰ This is the equivalence scale used by the ABS to derive median EHDI in the first place.

Of the figures contained in Table 5.2, the low cost budget standard for a single parent with a six-year-old child should be regarded as indicative only. Since there were no original low cost standards for single parents in paid work, this figure has been estimated by adding to the low cost budget standard for this family type the derived 'costs of work' of a full-time employed mother at the modest but adequate standard. These costs were originally estimated at \$45 a week (Saunders et al. 1998:608), but their primary component of child care (\$34 a week) would likely overestimate the net child care costs faced by a low-income single parent at that time.³¹ On the other hand, a working single parent would have incurred additional transport costs that were not allowed for in the second-earner's costs, because of the assumptions discussed earlier. The February 1997 standard derived in this way was then inflated by a combination of movements in the CPI and the ALCI, so as to be consistent with the other three budget standards.

The income benchmarks included in Table 5.2 have been placed in the order of their ranked value for a single-person household. For this household type, the HPL falls somewhere between the 50 per cent median and 50 per cent mean poverty lines, while the low cost budget standard is just below the estimate of 60 per cent median EHDl.

However, the relative ranking of the benchmarks differs for the other household types. For the single-parent family, while the differences between the first three benchmarks are not dissimilar to those for a single person, the indicative low cost budget standard for a single parent is about \$30 a week higher than even the 60 per cent median poverty line. For the childless couple family, the HPL is well below the 50 per cent median poverty line and the low cost budget standard is substantially lower than even the 50 per cent mean poverty line. A similar ranking applies for the 'two plus two' family, although here the difference between the budget standard and the 50 per cent mean poverty line is not so large. Since the benchmarks reflect three different equivalence scales, the differences in rankings for each family type result primarily from the weights for additional household members within each of those scales.

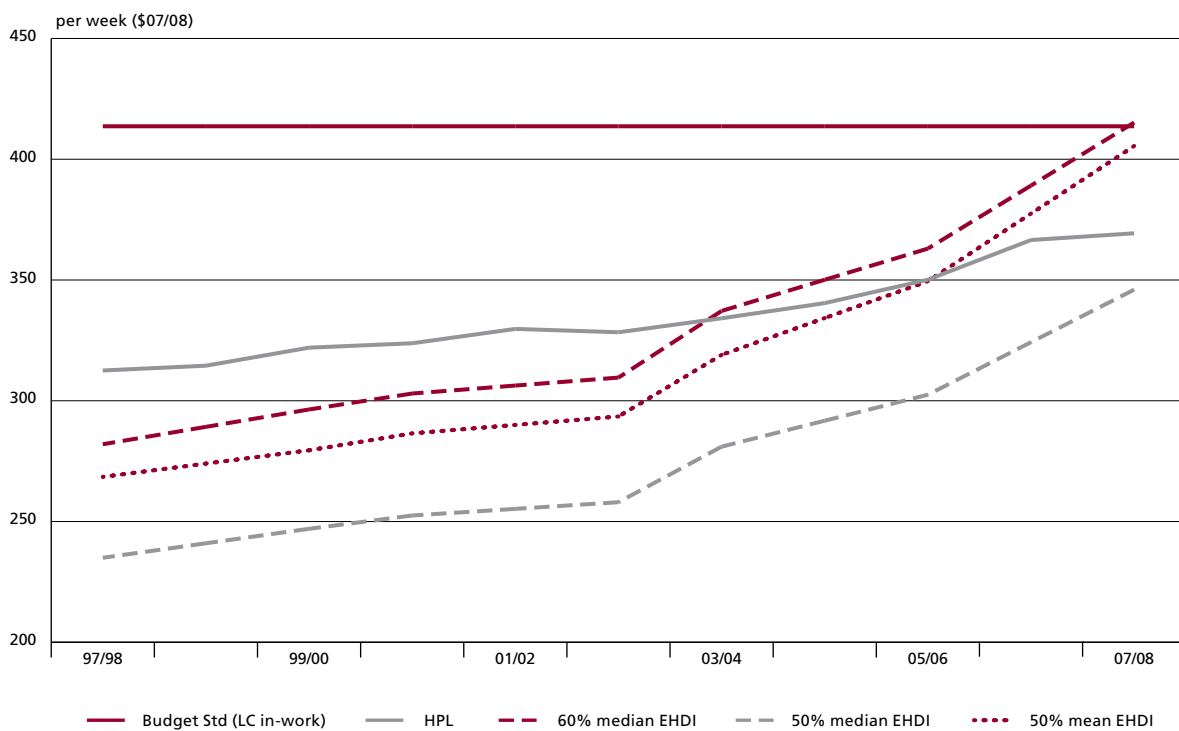
This analysis, while not exhaustive, shows how the choice of income benchmark (and its associated equivalence scale) will give varying results for a particular type of family. Moreover, the relationship between different benchmarks is by no means fixed—it can vary considerably over time. This is illustrated in Figure 5.1, which charts the real value of the five income benchmarks for a single-person household over the period 1997–98 to 2007–08. The budget standard is a straight line since it remains at the level (in 2007–08 prices) originally calculated by Saunders (2004b), while the four poverty lines have increased along with household incomes.

Figure 5.1 highlights the high initial value of the low cost budget standard relative to contemporary poverty line measures. More than 10 years later, it was only just equivalent to 60 per cent of median EHDl, and still about 20 per cent higher than the 50 per cent median income that it was originally intended to approximate.

31 At the time of the formulation of the budget standards, Australian childcare subsidies were means-tested on family income. A low-income single parent using the same child care as a mother in a two-income household would therefore have been required to pay lower net fees.

The other interesting feature of Figure 5.1 is the changing relationship between the HPL and the three RPLs. In 1997–98 the HPL was still higher than any of the RPLs, continuing the pattern that had been observed by poverty researchers during the 1980s and 1990s. That relativity was roughly maintained until about 2003–04, when equivalised household disposable income as measured in ABS income surveys began to increase much faster than HDIPH as estimated by the Melbourne Institute. Some of the increase in the former measure is likely due both to changes in the definition of employee income and to recent improvements in the quality of income data collected by the ABS (2009d:60–4). The ABS estimates that changes to the definition of income alone resulted in a \$42 a week (5.5 per cent) higher mean EHDI in 2007–08 than would have been derived using the previous definition. While the ABS has attempted to recompile income estimates from previous surveys with the new definition, this has been only partly possible, and then only back to 2003–04.

Figure 5.1: Real (2007–08) value of selected income benchmarks, single full-time employee household, 1997–98 to 2007–08



Sources: ABS (2009d); ABS (2009g); Melbourne Institute (2010); Saunders (2004b).

Finally, to the extent that increases in EHDI since 2003–04 have been driven by real increases in average household employment and earnings, this trend may have been reversed in the recent economic downturn. Between December 2007 and March 2010 the proportion of working-age Australians in full-time work fell by 3.2 percentage points, a trend only partly offset by a one percentage point increase in the proportion working part time (FWA 2010a:2).

5.6 Conclusion

This section of the paper has briefly described the most common income benchmarks employed in Australia to date for the purpose of analysing relative living standards, as proxied by disposable income. All have some advantages, but also disadvantages. All rely on arbitrary judgments of one kind or another—none can claim complete objective validity.

The decline in the use of the HPL in research can be taken as evidence of a decline in its credibility, at least within the research community. The indicative budget standards that some may have seen as having potential to replace the Henderson lines must also be regarded as less credible, especially when compared with benchmarks derived from the actual distribution of household incomes. They may have value as a comparator with the incomes of households with identical characteristics, but they are not, nor could they be, designed to be used as a general benchmark across the population. In addition, they are very difficult to keep up to date.

As a class of income benchmarks, RPLs would seem to offer the most potential for research and policy analysis. While the most readily available of such lines rely on a relatively crude equivalence scale and a simple measure of cash disposable income, researchers are always free to use alternative equivalence scales and/or definitions of income to derive new benchmarks. In particular, RPLs may be more useful than other benchmarks both for tracking trends in income distribution over time and for comparing different populations, including across countries. This may explain why they have come to be the most common form of income benchmark used in Australia. However, because they are an artefact of the income distribution rather than reflecting a considered judgment about minimum income needs, they must always be treated with some caution as benchmarks of income adequacy.

6 Outcome-based data on living standards

To this point the paper has focused primarily on data and methodologies that can be used to measure resources and/or consumption as proxies for material living standards. These have the advantage of allowing the construction of concrete benchmarks against which to compare the circumstances of people in particular situations. However, a limitation of such approaches is that they focus on measurement of inputs, rather than the outcomes that may provide more direct evidence of living standards. Saunders (2008:10) has recently argued that:

Once the focus is shifted from resources onto living standards outcomes, many of the problems identified [with resource-based poverty analysis] disappear. Thus, there is no longer any need to make an equivalence assumption about relative family needs, because the ability of resources to meet needs will be revealed by the living standards indicators directly ... [and] the range of indicators can be chosen to reflect a broader range of factors that contribute to living standards than just income (or full income), paving the way for the broader perspective that is necessary to fully understand the complexities of poverty and social disadvantage.

Concerns such as these have led to the development and greater use of data focusing on outcomes, such as the experience of financial stress or material deprivation. While it is difficult, if not impossible, to use such data independently to construct income benchmarks, they can be used in a variety of ways either to refine definitions of financial disadvantage or simply to complement analysis based primarily on measures of resources and/or consumption. Alternatively, they can be used on their own as a primary measure of living standards.

6.1 Financial stress

The 1987 Australian Standard of Living (ASL) Study survey first collected information on the extent to which households had experienced financial stress, as evidenced by items such as getting behind in the payment of bills, receiving financial help from relatives or welfare agencies or being unable to raise \$1500 in a week in the event of an emergency (Travers & Richardson 1991:6).

Drawing in part on this earlier work, the Australian Bureau of Statistics (ABS) developed a series of 15 questions to measure the incidence of financial stress and material deprivation in the 1998–99 HES. A smaller set of similar questions has also been included in the self-completion questionnaire for each wave of the Household, Income and Labour Dynamics in Australia (HILDA) Survey. Table B.1 in Appendix B summarises the financial stress items included in each of these surveys.

In the earliest analysis of the relevant Household Expenditure Survey (HES) data, McColl, Pietsch and Gatenby (2001:19) found that just over half of all households reported at least one indicator of financial stress.³² The most common were the inability to afford an annual holiday away from home (27 per cent of households), inability to afford a night out once a fortnight and inability to raise \$2000 in a week for something important (reported by 20 and 19 per cent of households respectively). Seventeen per cent of households reported only one indicator, with a further 21 per cent reporting between two and four (moderate stress), and 13 per cent reporting five or more (higher stress).

³² Strictly speaking, there were two kinds of indicators collected in the HES. Six deprivation indicators described a series of items that people reported being unable to afford due to lack of money, while the remainder measured various kinds of financial stress (McColl, Pietsch & Gatenby 2001:15, 17). However, in most subsequent research and analysis the indicators have been collectively referred to as financial stress indicators.

McColl, Pietsch and Gatenby (2001:23) found an inverse relationship between equivalised household disposable income and the incidence of both moderate and higher stress. Nevertheless, almost half of the households in the lowest income quintile reported no or only one indicator of stress, while about one in 10 of the households in the highest income quintile reported two or more indicators. About three-quarters of the households reporting higher levels of stress were in the lowest two income quintiles.

The incidence of household financial stress differed significantly by principal source of income. Households reliant on superannuation or investment income reported the lowest levels of financial stress, followed by self-employed households and those reliant on wages and salaries, respectively. Households mainly reliant on government pensions and benefits reported above-average incidence of both moderate and higher stress (McColl, Pietsch & Gatenby 2001:24).

This early analysis, which simply weighted each indicator equally, did not distinguish between different types or severity of financial stress. Bray's (2001) more comprehensive analysis identified the indicators as falling into three main factor groups—'missing out', 'cashflow problems' and 'hardship'. The allocation of the HES indicators to each of these categories is also summarised in Table B.1.

Missing out items were those commonly regarded as indicating material deprivation (for example, the inability to afford a special meal once a week, new rather than second-hand clothing or an annual holiday away from home). Cashflow problems included being unable to pay important bills on time or having to seek financial assistance from family or friends. The final group of indicators, indicating more severe levels of hardship, included having gone without a meal or heating because of lack of money, having sought help from a community or welfare organisation and needing to pawn or sell something.

Bray (2001:19–23) found that almost four in 10 households reported at least one instance of missing out, one in five reported some cashflow problems, but only one in 12 reported at least one hardship indicator. Moreover, the incidence of the hardship indicators was much more highly concentrated in lower-income households, compared with a more gradual decline across the income distribution in the incidence of missing out and cashflow problems.

Households were further characterised as experiencing either some (one or more) or multiple (at least two) indicators of missing out, cashflow or hardship problems. While relatively large numbers of households (44 per cent) experienced at least one indicator of stress,³³ multiple indicators were reported by fewer households. Consistent with the earlier analysis, multiple missing out was relatively common (about 22 per cent of households), with smaller numbers (nine and three per cent, respectively) reporting multiple cashflow problems and multiple hardship. Only 1.6 per cent of households reported multiple indicators in all three domains (Bray 2001:24–5).

Households whose main source of income was wages and salaries consistently recorded below-average rates of missing out, cashflow problems and hardship. Differences were most marked in the cases of some and multiple hardship, experienced by 4.8 and 1.4 per cent, respectively, of wage and salary households, compared with 8.2 and 3.1 per cent of all households (Bray 2001:40).

³³ This is a lower incidence of financial stress than reported by McColl, Pietsch and Gatenby because Bray excluded from his analysis responses to two questions that had been included in the earlier reporting—whether a household could raise \$2000 in a week, and whether it usually spent more money than it received.

More detailed analysis against employment characteristics revealed that the incidence of all forms of financial stress declined consistently with higher levels of household employment. Households with at least one full-time or two part-time employees had below-average levels of both some and multiple hardship. By contrast, the incidence of both missing out and experiencing cashflow problems was notably below average only in those households with two or more employees, at least one of whom worked full time. However, compared with working-age households in which no-one worked, even one part-time job significantly reduced the likelihood of the household experiencing all forms and levels of financial stress (Bray 2001:44–6).

Consistent with those findings, the rate of multiple hardship was above average in households whose members worked less than 35 hours a week in total and also where the average hourly wage rate for the household as a whole was between \$7.50 and \$9.99.³⁴ Households earning just above this band, between \$10 and \$12.49 an hour, reported multiple hardship at about the average rate. 'Labourers and other workers' was the only occupation group whose incidence of multiple hardship was (just) above the average (Bray 2001:46–8).

Bray also examined the extent of overlap between households experiencing financial hardship and those that would be classified as poor in conventional income-based analysis. Classifying the population into lower and higher income groups using each of the three most common relative poverty lines (50 per cent of mean, and 50 and 60 per cent of median, equivalised household income), he found that:

Very few, at most one in six of the households identified as having low incomes under the ... [various income poverty] 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 (Bray 2001:51).

Researchers from the Social Policy Research Centre (SPRC) have undertaken a number of analyses that explore the effect of using financial stress and deprivation data to augment income-based definitions of poverty (Saunders 2004a; Saunders 2006; Saunders & Bradbury 2006; Saunders & Hill 2008). These have all confirmed the general finding that estimates of poverty are substantially lower if such indicators are included in the definition of poverty. Hahn and Wilkins (2009:31–3) also found that including financial stress in the definition of low living standards (whether based primarily on income or on some combination of income, wealth and expenditure) significantly reduced the incidence of such living standards. Their estimates for 2006 across a range of definitions ranged from 1.6 per cent (household income, wealth and expenditure all below 60 per cent of median plus financial stress) to 5.2 per cent (household income below 75 per cent of median plus financial stress).

A final perspective on these issues was provided by Marks (2007), who investigated the links between income poverty, financial stress and subjective poverty, also using data from the HILDA Survey. Whereas income poverty and the experience of financial stress may be regarded as relatively objective measures (even if subject to varying degrees of error), subjective poverty is the state of regarding oneself as poor or very poor.³⁵ Marks found that while approximately 15 and 18 per cent of Australian households were in income poverty before and after housing costs, respectively, and a similar proportion experienced at least two indicators of financial stress, only about 5 per cent judged themselves to be poor. Moreover, only two-thirds of those in subjective poverty had experienced financial stress (Marks 2007:vii–xiii).

34 Between April 1998 and March 1999, when most of the HES data were collected, the C14/federal minimum wage was \$373.40 a week, or just below \$10 an hour.

35 In the HILDA Survey, people are asked to assess their current standard of living against a six-point scale—prosperous; very comfortable; reasonably comfortable; just getting along; poor; or very poor.

These findings point to the potential advantages of using data on financial stress and hardship to supplement other data on financial resources or consumption. In particular, they serve as a useful reminder that living standards are not simply the product of income received and/or expenditure incurred. Financial stress data can also illuminate problems with the reliability of income or expenditure data—for example, by supporting earlier findings that many households with very low recorded incomes can apparently sustain higher standards of living than those incomes would suggest. Finally, by pinpointing groups in the community with relatively high or low levels of financial hardship (such as single-parent families in the first case and retired households in the second) they can act as a ‘reality check’ on some of the assumptions underlying conventional analyses of living standards, such as the relativities embodied in equivalence scales.

6.2 Deprivation and social exclusion

In recent years, the SPRC has been engaged in ongoing research to develop ‘an integrated conceptual and empirical framework for identifying poverty, deprivation and other dimensions of inequality, and using it to derive a set of new social monitoring instruments and policy evaluation tools’ (SPRC 2009). This has included the development of indicators of both deprivation and social exclusion, and research into the interaction between these and more conventional income-based poverty measurement.

According to Saunders, Naidoo and Griffiths (2007:17), poverty, deprivation and social exclusion are distinct, if overlapping, concepts:

Poverty has been defined as lacking the adequate economic resources required to achieve an acceptable standard of living. Deprivation exists where there is an enforced lack of socially perceived necessities, or essentials. Social exclusion occurs when people do not participate in the key activities in the society in which they live.

Much of the research undertaken to date (Saunders 2008; Saunders, Naidoo & Griffiths 2007; Saunders & Naidoo 2009) has been based on data collected in 2006 from around 2700 respondents to the Community Understandings of Poverty and Social Exclusion (CUPSE) survey. The primary purpose of this mail survey was to collect information on community attitudes to the ‘essentials of life’, defined as ‘things that no one in Australia should have to go without’ (Saunders, Naidoo & Griffiths 2007:33). People were asked whether they regarded each of 61 items³⁶ as essential, whether they themselves had that item and, if they did not, whether this was because they did not want it or could not afford it. Of the original 61 items, about half were regarded as essential by at least 90 per cent of the population and another quarter were regarded as essential by between 50 and 90 per cent.

One interesting feature of the results ... concerns the relative ranking of items that people possess (‘having’) compared with those items that relate to different forms of participation (‘doing’) or to people’s sense of self-respect and identity (‘being’). Many of the items that represent ‘things’ such as consumer durables or electronic gadgets appear towards the bottom of the ranking of essentials, whereas items that reflect access to basic services, different forms of participation, indicators of security (broadly defined) and those that contribute to one’s sense of status or identity feature at the top of the list.

This aspect of the essentials of life ranking suggests that possessing material goods is a less important determinant of people’s standard of living than is often assumed (mainly by economists). People appear to place more weight on their ability to function in society, to access key services when they need them, to have a sense of status and identity, and to connect socially with others (Saunders, Naidoo & Griffiths 2007:36).

36 The list of items spanned a range of possessions, activities, services and capacities. They included 25 ‘everyday items’ representing overall living conditions and another six groupings of items representing living standard domains: accommodation and housing; location and transport; health and health care; social and community participation; care and support; and employment, education and skills (Saunders, Naidoo & Griffiths 2007:29–35).

Responses to the community survey were used to develop two sets of indicators, the first to measure deprivation and the second to measure social exclusion. Individual items were included if they were regarded as essential by at least 50 per cent of survey respondents. The final list included items either identical or conceptually similar to those previously developed by the ABS to measure financial stress. The full list of indicators is summarised in Table B.2 of Appendix B.

Saunders, Naidoo and Griffiths (2007) used data from the CUPSE survey and from a companion questionnaire administered to almost 700 clients of various welfare agencies³⁷ to investigate the dimensions of deprivation and exclusion within the Australian community in general and among disadvantaged welfare clients in particular.³⁸

In the study, deprivation was measured in relation to a list of 26 items, indicated in Table B.2. As McColl, Pietsch and Gatenby (2001) had found in their analysis of financial stress, it was relatively common for individuals to report an inability to afford at least one item on the list of essentials. Almost 40 per cent of the community sample and about double the proportion of the welfare client sample lacked at least one item on the list, while 11 per cent of the community sample and almost half of the client sample lacked at least five. Mean deprivation scores were 1.38 for the community sample and 5.40 for the client sample (Saunders, Naidoo & Griffiths 2007:55).

Other findings from the community sample were consistent with the earlier financial stress research. Single people and families with children suffered higher levels of deprivation than couples and those without children. The mean deprivation score for people whose main activity was employment was 1.15, less than one-third the mean score of 3.66 for people who were unemployed, but higher than the mean score of 0.81 for retired people. Those households with wages, salaries or interest as their main source of income had about half the average level of deprivation of households relying on social security payments (Saunders, Naidoo & Griffiths 2007:56–58). The items most likely to be reported as lacking were: a week's holiday away from home once a year (24 per cent of households); up to \$500 in savings for an emergency (20 per cent); dental treatment if needed (15 per cent); and home contents insurance (11 per cent) (Saunders, Naidoo & Griffiths 2007:49).

Saunders, Naidoo and Griffiths (2007:65–80) also analysed the incidence of social exclusion in three domains. Disengagement was defined as lack of participation in social and community activities, service exclusion as lack of adequate access to key services, and economic exclusion as restricted access to economic resources. Many of the indicators contributing to the indices of disengagement and service exclusion came from the list of essentials of life, while the economic exclusion index contained a number of items similar to the financial stress indicators discussed earlier. Table B.2 details the indicators used in the construction of the three indices.

The concept of social exclusion employed in this study differed in one important respect from that of deprivation. While the indicators of social exclusion drew largely on the same base data, they were defined solely in terms of those items, services and activities that people did not have or undertake, rather than those they could not afford. The drawback of this approach, acknowledged by the authors, is that by disregarding the role of personal choice it risked identifying as excluded people who simply did not conform with 'standard' community patterns of activity or behaviour.

37 The Left Out and Missing Out research project, of which the CUPSE survey was part, was funded through an Australian Research Council Linkage research grant. It represented a collaboration between the SPRC, the Australian Council of Social Service and three agencies delivering welfare services—Anglicare, Brotherhood of St Laurence and Mission Australia. Welfare client participants were drawn from people accessing the services of those agencies (Saunders, Naidoo & Griffiths 2007:19–26).

38 In interpreting findings from the study it is worth bearing in mind that, while responses from the community sample could be weighted to approximate those of the general population, the welfare client group was not representative of low-income or otherwise disadvantaged Australians since it was drawn exclusively from people who had sought assistance from one of the participating welfare organisations.

This can be illustrated with a simple example, using the lack of an annual holiday away from home, an item that was included in both the deprivation and disengagement indices. While only 24 per cent of the community sample was judged to be deprived because of the lack of such a holiday, the proportion considered excluded was almost twice as high at 44 per cent (Saunders, Naidoo & Griffiths 2007:49, 71). In other words about one in five people said they did not have an annual holiday because they did not want one rather than because they could not afford one.

The study found that nine in 10 respondents to the community survey reported at least one indicator of exclusion, more than half reported three or more and about one-quarter reported at least six. Within each domain, rates of service exclusion were higher than for either disengagement or economic exclusion (Saunders, Naidoo & Griffiths 2007:78).

Used on their own, indicators of deprivation and social exclusion specified in this way suffer from some of the weaknesses previously identified in relation to the development of budget standards. Because they rely upon normatively prescribed patterns of behaviour, they may take insufficient account of the choices that people make as part of everyday life, including the choices that enable people to optimise their standard of living within the constraints of their income.

In addition, knowing that people go without things because they cannot 'afford' them does not answer the question of whether that lack of affordability stems from insufficient income to cover life's necessities or because people have, for whatever reason, prioritised other consumption ahead of such necessities. Hancock (1998:55) expressed it thus:

Going without things because you do not have enough money to buy them necessarily means that you lack opportunities which are open to those who have more. Does the rhetoric of exclusion advance the debate beyond that truism? In my opinion, it does not. 'Exclusion' is a fancy form of 'going without'. What you go without may, indeed, include forms of social participation, such as club membership and sending your children on school excursions, but the choice to endure these, rather than other, deprivations is yours.

In the final part of their study Saunders, Naidoo and Griffiths (2007:81–6) examined the extent of overlap between income poverty, deprivation and social exclusion. In order to do this, they defined income poverty as having income below half the median equivalised gross household income, deprivation as experiencing three or more deprivation conditions and exclusion as experiencing at least seven exclusion indicators. Under these definitions, an estimated 18 per cent of people were income-poor, 19 per cent were deprived and 18 per cent were excluded. However, only 5 per cent experienced all three and an additional 12 per cent experienced two forms of disadvantage. Seventeen per cent experienced only one form of disadvantage.

The extent of overlap between deprivation and exclusion was much greater than the overlap of either of those conditions with income poverty. This is not surprising since both deprivation and exclusion indices drew on the same base data, resulting in a degree of double counting. Moreover, more than half the people judged to be income-poor were neither deprived nor excluded.

The overlap between income poverty and deprivation ('consistent poverty') was further examined by Saunders and Naidoo (2009) using a variety of different deprivation definitions and income benchmarks.³⁹ They confirmed low rates of both poverty and deprivation among households primarily reliant on market income (wages, salaries, interest dividends and superannuation). In addition, they showed that when common poverty lines are used, no more than half the poor population is also deprived and concluded that:

The deprivation approach provides a sharper differentiation between those who can and cannot afford essential items than whether income is above or below a poverty line. It also affects the profile of those identified as disadvantaged, with older people appearing to fare better and many working-age individuals and families ... faring worse than is implied by conventional income poverty estimates (Saunders & Naidoo 2009:430–1).

Researchers at the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute) (Scutella, Wilkins & Kostenko 2009), in collaboration with the Brotherhood of St Laurence, have recently produced summary measures of social exclusion and poverty using data from the HILDA Survey. This study built in part on previous work by Headey (2006) which had explored the possibility of assessing poverty and disadvantage within a framework of capabilities, functionings and well-being outcomes.

The more recent paper defined levels of social exclusion using indicators across seven domains,⁴⁰ summarised in Table B.3 in Appendix B. It found that, in each year between 2001 and 2007, between 20 and 30 per cent of the Australian population experienced at least marginal exclusion, with 4 to 6 per cent experiencing deep exclusion⁴¹ and less than one per cent very deep exclusion (Scutella, Wilkins & Kostenko 2009:30–31).

When comparing rates of income poverty and social exclusion, the researchers found that while rates of marginal exclusion were always higher than the rates of poverty, the correlation between the two was positive, as expected, but low, indicating that '[t]he two measures are thus likely to carry different information' (Scutella, Wilkins & Kostenko 2009:46). When the composition of the 'worst off' income quintile was compared with that of the 'worst off' exclusion quintile, the findings were consistent with much of the research previously examined in this paper:

Persons 65 and over represent a much larger share of the poorest 20 per cent than they do of the most 'excluded' ... Correspondingly, couple and single [parent] families with children represent a larger share of the most 'excluded' than they do of the poor and outright home owners a smaller share of the most excluded. Our measure of exclusion also captures a larger share of persons with a long-term health condition than an income measure does.

The difference in the age composition of the worst-off is much starker in [the years] when information on household wealth is taken into account. This highlights the importance of taking wealth into consideration when identifying disadvantaged groups in society (Scutella, Wilkins & Kostenko 2009:47).

39 Definitions of deprivation included: at least four of the essentials with 50 per cent community support; at least two of the essentials with at least 90 per cent community support; and versions of these weighted according to the actual degree of community support for each item. Income benchmarks included 50, 60, 70 and 80 per cent of median equivalised household income.

40 The seven domains were: material resources; employment; education and skills; health; social; community; and personal safety. Each included a number of different indicators, which summed to a maximum value of 1 for each domain. For example, the material resources domain included indicators of low income, low net worth, low consumption and financial hardship. Each of these items contributed either zero or 0.25 to the total score for that domain.

41 Exclusion sum-scores were derived by summing scores across the domains. Marginal exclusion was defined as a sum-score of at least 1, deep exclusion as a sum-score of at least 2 and very deep exclusion as a sum-score of at least 3.

6.3 Qualitative evidence on living standards of low-paid employees

There have been relatively few qualitative studies undertaken into the living standards and needs of low-paid workers in Australia. As with the quantitative research conducted in this area, most projects in this field have focused on people who are unemployed or outside the labour market, or those in intermittent or insecure employment (see for example, Saunders & Sutherland 2006).

The introduction of the *Workplace Relations (Work Choices) Amendment Act 2005* prompted a wave of research into the impact of the new regulations on low-paid workers, most notably women, including effects on living standards and employee well-being. A number of academic researchers undertook this research in parallel across five states and the Australian Capital Territory (Baird, Cooper & Oliver 2007; Charlesworth & McDonald 2007; Ellem et al. 2007; Elton et al. 2007; Elton & Pocock 2007; McDonald, Whitehouse & Bailey 2007). Around the same time, researchers involved in the collaborative Living Low Paid project undertook interviews and focus group studies with low-paid workers in the cleaning, child care and luxury hotel sectors (Masterman-Smith & Pocock 2008).

The AFPC also commissioned focus groups and interviews with minimum-wage earners to inform its wage-setting decisions and monitor their effects (Southwell et al. 2007; Southwell et al. 2008; Southwell et al. 2009).

The low-wage workers participating in this range of research cannot be considered representative of all low-paid workers. However, the research provides a useful perspective on the circumstances faced by some workers who are most reliant on low wages and often in a precarious position in the labour market. Key themes emerging from this body of research are largely consistent with the picture obtained from the quantitative research and are summarised below.

Many low-paid workers reported difficulties in meeting their financial obligations. Increasing living costs were a major theme in all of the studies (although the definition of 'living costs' varied between studies and participants). Some reported difficulties in obtaining decent food and clothing, maintaining contact with family and friends or servicing debt (Masterman-Smith et al. 2008; Southwell et al. 2007; Southwell et al. 2008; Southwell et al. 2009).

Some workers reported onerous costs of working—for example, if they needed a car to get to work. Many avoided formal centre-based childcare as it is perceived as being too expensive; preferring to rely on family or friends (Masterman-Smith et al. 2008). Workers who were also receiving income support payments were often particularly sensitive to the effect of concession cards on their costs of work and feared the financial impact of losing those concessions if they were to move off income support, even where that was because of more secure and higher-paid employment (Southwell et al. 2007; Southwell et al. 2008; Southwell et al. 2009).

The qualitative research also confirmed that for some low-paid workers, living in a higher-income household can have a protective effect. This appeared to be more the case for younger workers who were relatively new entrants to the labour market (Masterman-Smith et al. 2008). However, cases were also reported in which higher-income members did not share their earnings with the lower-paid workers in their household (Masterman-Smith et al. 2008).

All of the research confirmed that the workers at greatest risk of financial difficulty were those in intermittent or transitory employment. Reductions in hours or wages posed a threat to living standards (Elton et al. 2007; Baird, Cooper & Oliver 2007; Masterman-Smith et al. 2008), while underpayment and non-compliance with minimum wage laws compounded financial hardship for some workers (Elton et al. 2007).

Wynhausen (2005) provided a complementary account of her experiences during a nine-month leave from her job as a journalist to experience life as a minimum-wage worker. Throughout this time, she undertook (mainly casual) work as a factory hand, checkout operator, kitchen hand, cleaner, hotel employee and aged-care worker. Her observations generally corresponded with many of the opinions articulated in the focus-group and case-study research—that low-paid jobs involve considerable uncertainty and reduced discretionary income.

Wynhausen did however draw an important distinction between the living standards of low-paid Australians and those in countries such as the United States. In her epilogue, she concluded that low-paid Australians are insulated from poverty to a great extent as long as they work full time (Wynhausen 2005:235). Her conclusion that those existing in 'the zone of intermittent employment' are at far greater risk of financial hardship is consistent with the quantitative research discussed earlier in this section.

7 Whose living standards?

A major issue for research into the living standards of low-paid employees is how to define the population of interest. A useful approach may be to identify people affected either directly or indirectly by the wage-setting decisions of Fair Work Australia—that is, people paid minimum award rates of pay and those whose rates of pay under an enterprise agreement are linked to minimum award rates of pay.

However, there is no data set available that both adequately identifies the jurisdictional coverage of employees and provides sufficient information about their living arrangements and household circumstances to enable an analysis of their living standards. This means that any research that seeks to describe and analyse the living standards of low-paid employees must necessarily focus on a population of low-paid employees as a whole (however defined), only some of whom will be affected by the decisions of Fair Work Australia.

7.1 Defining and measuring low pay

Defining and measuring low pay is not an exact science. As the Minimum Wage Panel observed in its inaugural minimum wage decision (Fair Work Australia 2010b:58–9):

[237] There is no consensus among the parties and other commentators with respect to a definition of the low paid. Because there is a continuous distribution of wages, there is no wage threshold just below which people are clearly low paid and just above which people are clearly not low paid. Rather, the lower the wage, the more “low paid” is the employee. People earning above or near median earnings are clearly not low paid in an absolute sense. In considering relative living standards and the needs of the low paid, we have focussed mainly on those receiving less than two-thirds of median adult ordinary-time earnings (currently about \$700 per week) and its equivalent hourly rate (about \$18.50). We have also had regard in particular to those paid at the C10 rate, in recognition of past practice, on the C14 rate, which is equivalent to the minimum wage, and on those whose full-time equivalent wages put them in the bottom quintile of the wage distribution. Employees on award wages that are above these rates can be considered to be low paid in a different sense. The comparison here is between the award rate and the bargained rate for similar work.

All of these definitions, or variants thereof, have been used in Australian research into the characteristics and circumstances of low-paid employees. A fourth approach, more commonly used in qualitative than in quantitative analyses, simply identifies people as low paid if they work in lower-paid and/or lower-skilled industries or occupations. Table C.1 in Appendix C summarises definitions and methodologies employed in a variety of such research undertaken since 1998.

7.1.1 Quantitative benchmarks of low pay

As indicated above, low-paid employment can be defined in a wide variety of ways. For example, a benchmark of low pay may be set as a specified percentage of the National Minimum Wage (NMW), currently \$569.90 a week or \$15 an hour, based on a 38-hour week. Much of the research undertaken on behalf of the Australian Fair Pay Commission (AFPC) over the period 2005 to 2009 (for example, McGuinness, Freebairn & Mavromaras 2007; Dockery, Seymour & Ong 2010; Hahn & Wilkins 2009) defined low pay as an hourly rate of pay equal to or less than a specified percentage (say, 110 or 120 per cent) of the then Federal Minimum Wage (FMW).

Another common practice, particularly in international and cross-national research, is to set a low pay benchmark relative to average earnings (for example, two-thirds of median earnings). This has not been a particularly common practice in Australian research, perhaps because this benchmark is generally quite close to, and sometimes even below, the NMW and its predecessors (Watson 2010:17). A weekly earnings benchmark of this kind can be derived from published data on mean or median earnings (ABS 2009a; ABS 2009b). Derivation of an hourly benchmark from published data is more difficult, since it requires reliable information on the hours (paid for or worked) that are associated with the earnings figure. Hourly wage benchmarks are therefore more usually derived directly from unit record data, a practice that allows for closer definition of the population, or sub-populations, of interest.

Finally, low-paid employees can be defined simply by their position in the distribution of weekly or hourly earnings. This involves simply dividing the wage distribution into appropriate quantiles (most commonly deciles or quintiles) and defining all those with wages within the lowest of such quantiles as low-paid. Such an approach is commonly used to produce indicators of earnings dispersion or inequality, but is less common in research on living standards.

Each of the methods suggested above can be used to produce a precise, if arbitrary, benchmark against which to compare the wages of individuals. Table 7.1 summarises a range of indicators of low weekly earnings as at August 2008, derived from published data collected in three different ABS surveys.

Two of the relevant surveys—the Average Weekly Earnings (AWE) and Employee Earnings and Hours (EEH) surveys—collect data from employers, while the third—the Employee Earnings, Benefits and Trade Union Membership (EEBTUM) survey—covers employees within households. As is apparent from the table, each survey can be used to derive a variety of statistical indicators of low weekly earnings, but the availability of indicators differs between surveys. Only one indicator (two-thirds of mean total earnings of all employees) can be derived from, and compared across, all three surveys. Of the other benchmarks canvassed here, most can be compared across at least two surveys (usually the EEH and EEBTUM surveys), but with few exceptions the results differ quite substantially depending on the selected data source.

With the exception of some of the indicators derived from the earnings of all employees (a population that includes part-time and junior employees), all of the weekly earnings benchmarks in Table 7.1 are well in excess of the then Federal Minimum Wage (FMW) (\$522.12 a week) and most are considerably higher than 120 per cent of the FMW (\$626.54 a week). In most cases, indicators derived from the employer-based EEH survey are higher than those from the employee-based EEBTUM survey. In the three instances where indicators can be compared across the two employer-based surveys, the EEH figures are consistently higher than those derived from the AWE survey by around \$40 a week.

Because the weekly FMW represents the base rate of pay for an adult employed full time at that time, the earnings indicators that are conceptually most comparable with the FMW are those that relate to the ordinary time earnings of adult full-time employees. In August 2008, these ranged from \$754 to \$801 a week (or about 44 to 53 per cent above the FMW).

Table 7.1 Benchmarks of low weekly earnings, August 2008 (\$)

Benchmark	AWE	EEH	EEBTUM
All employees			
20th percentile of earnings (P20)	na	413	444
2/3 median total earnings	na	555	533
2/3 mean total earnings	599	639	632
All full-time employees			
P20	na	757	698
2/3 median total earnings	na	709	667
2/3 mean total earnings	na	825	773
Full-time adult employees			
P20	na	770	719
2/3 median total earnings	na	720	675
2/3 mean ordinary time earnings	763	801	na
2/3 mean total earnings	797	838	na
Full-time adult non-managerial employees			
P20	na	770	709
2/3 median total earnings	na	705	662
2/3 mean ordinary time earnings	na	754	na
2/3 mean total earnings	na	796	na

na = not available

Sources: ABS (2008c); ABS (2009a); ABS (2009b).

Notes: AWE = Survey of Average Weekly Earnings. EEH = Survey of Employee Earnings and Hours. EEBTUM = Survey of Employee Earnings, Benefits and Trade Union Membership. EEBTUM figures relate to main job only. Some EEBTUM figures derived from grouped data.

The benchmarks summarised in Table 7.1 are only indicative and there are many other possibilities. For example, a different percentage factor could be applied to the chosen indicator of average earnings or the lowest decile of earnings may be chosen rather than the lowest quintile. Benchmarks can also be derived directly from unit record data, especially where such data forms the basis of the research in question.

The primary drawback of using weekly earnings benchmarks is that they are benchmarks of low earnings, rather than low rates of pay. While it is entirely possible for someone who works few hours for a high hourly pay rate to have low weekly earnings, it is somewhat problematic to regard such people as low-paid, since in most cases they could increase their earnings simply by working longer hours. On the other hand, there are people whose weekly earnings are not especially low, but who work very long hours to earn their income. Some of these will have an effective hourly rate of pay near, or even lower than, specified minimum hourly wages.

Most researchers have tended to define low pay in terms of the hourly rate of pay rather than weekly earnings, though occasionally the definition may include low weekly earnings as a supplementary criterion (see for example, Hahn & Wilkins 2009). However, while the hourly rate of pay is conceptually superior to weekly earnings as an indicator of low pay, it presents greater challenges in terms of its derivation and interpretation. First among these is that most datasets with information on earnings contain information only on total, rather than hourly, earnings. Hourly pay rates must therefore be derived using information on the hours that people usually work or, less commonly, the hours they are paid for.

These data also vary from survey to survey. For example, while the Australian Bureau of Statistics (ABS) collects information on both ordinary time and total earnings in its AWE survey, it does not collect any information on hours worked or paid for. In the biennial EEH survey, both ordinary time and total earnings can be matched with the number of hours for which those earnings were paid, but the ABS does not publish any data on the distribution of hourly wage rates.⁴² This means that benchmarks can be derived from mean hourly rates of pay, but not from those at other points of the distribution, such as the median or 20th percentile.

Table 7.2 Benchmarks of low hourly pay, relative to the FMW, August 2008

Benchmark	\$ph	% of FMW
Survey-based benchmarks		
2/3 mean total earnings, full-time adult non-managerial employees	20.10	146
2/3 mean ordinary time earnings, full-time adult non-managerial employees	19.80	144
2/3 mean total earnings, all non-managerial employees	18.90	138
Wage-based benchmarks		
C10 metal industry classification	16.21	118
FMW (C14 metal industry classification)	13.74	100

Sources: ABS (2009b); AFPC (2007); *Metal, Engineering and Associated Industries Award 1998*.

Notes: Survey-based benchmarks rounded to nearest 10 cents.

Table 7.2 summarises a number of hourly earnings benchmarks derived from published EEH data. Two are derived from average total earnings and hours and will thus be affected to some extent by higher hourly rates of pay for overtime hours. However the fact that the ordinary-time benchmark is only slightly lower than that for total earnings indicates that this effect is relatively minor. Of the three survey-based benchmarks, the third should perhaps be preferred as a comparator for award wages since the population upon which it is based includes part-time workers.

As with the weekly benchmarks reported earlier, all of the survey-based benchmarks of low hourly pay are considerably higher than both the national minimum wage and that payable to employees at the C10 classification.

⁴² While the ABS does not publish a distribution of hourly pay rates in its EEH publication, it may provide those data to users on request. A distribution of hourly pay rates can also be derived from the confidentialised unit record file (CURF), currently available only for the 2006 survey.

7.1.2 Methodologies for deriving hourly benchmarks from unit record data

While a variety of possible low-wage benchmarks can be derived from published data on wages, it is relatively uncommon for researchers to simply adopt one of these as their definition. Since most quantitative research involves the use of unit record data, the more common practice is to derive a low-wage benchmark directly from those data. While this theoretically involves dividing an earnings figure by an hours figure for each record, this is a process that can present a number of challenges.

The first issue of concern is the potential for mismatch between the data on earnings and hours worked. While only the employer-based EEH survey collects data on hours paid for, some of the household-based surveys do not even collect earnings and hours data on a consistent basis. For example, the Survey of Income and Housing (SIH) collects most recent income from all jobs (and the questionnaire also includes items on average hours worked per week, but these are not available in the Confidentialised Unit Record File (CURF) but the hours are collected as usual hours for the main and second job.⁴³

Even when earnings and hours are reported on an apparently consistent basis (for example, usual earnings and usual hours worked), the questions to collect these data are typically not grouped together in the relevant survey questionnaire. Questions on earnings are most often in the part of the questionnaire dealing with income, while questions on hours worked are grouped with other questions relating to employment characteristics. This would appear to increase the prospect of mismatch between any individual's earnings and their hours worked, which may be heightened in cases when the employment is variable or intermittent.

Where a survey dataset contains information on both earnings and hours worked, the first step in defining a low-wage benchmark is usually to derive a distribution of hourly wages. This requires a number of methodological decisions. Foremost among these are: how to deal with grouped or truncated data; how to deal with cases of very low earnings relative to hours or very high hours relative to earnings; and whether, and if so how, to adjust the earnings of casual employees to take account of the payment of casual wage loadings.

On the first of these issues, not all datasets provide fully continuous values for both earnings and hours. For example, some ABS CURFs truncate the variables for hours worked or paid for at both ends of the distribution, such that the lowest value is '1 to 5 hours' and the highest '60 hours and over' (ABS 2008d, ABS 2009c). Others (for example, ABS 2006) contain grouped data for 50 hours and above. If data like these are to be used to determine an hourly rate of pay, a decision needs to be made about what to do with such records.

Higher bands of hours can be dealt with relatively simply by 'topcoding' them to a fixed value. This can be justified by the fact that hours worked in excess of 60 are unlikely to be remunerated at an hourly overtime rate and also that a degree of reporting error is likely. Wooden, Wilkins and McGuinness (2007:298) claim that the tendency for survey data to overstate hours of work at the upper end of the distribution is:

... in part, the result of over-reporting, a phenomenon that is especially likely in societies where long hours of work are seen as a 'badge of courage'. It could also arise as a result of other measurement problems, including the inclusion of time that we would not generally consider to be work (e.g., meal-breaks, time on-call, and commuting time) ...

43 The potential mismatch would be exacerbated in using the basic SIH CURF in which usual hours are provided in categorical form at two-hour intervals (although this is not the case for the expanded CURF).

Topcoding of hours has not been a particular common practice in Australian research. When it has been employed, the most common practice has been to cap working hours at 50 (Eardley 1998; Harding et al. 2006; Healy 2010; Healy & Richardson 2006), although occasionally lower figures have been used (Dockery, Seymour & Ong 2010; Richardson 1998; Richardson & Harding 1999).

Buddelmeyer, Lee and Wooden (2010:33) considered capping working hours for the purpose of defining a low-pay threshold set at two-thirds of the median hourly wage, but found that '[e]xperimentation with different caps ... suggested that a cap made little difference to the estimated threshold'. While topcoding hours of work may make little difference to the median of the hourly wage distribution, since this would require its use to move substantial numbers of people from below the median to above it, it may have a greater effect on the number of people whose earnings fall below a chosen benchmark.

The treatment of grouped hours data at the bottom of the distribution is somewhat more problematic, since a person who reports working one to five hours and earning \$60, for example, could have an actual hourly pay rate that ranges from \$12 (very low) to \$60 (very high). One approach to dealing with grouped data (see, for example, Eardley 1998; Richardson 1998) is simply to assume that everyone in the group has worked the same number of hours, but this implies a high degree of inaccuracy, at least at the level of the individual record. Alternatively, if the group is relatively small, they could be deleted from the population under analysis.

All survey datasets also have records containing data that appear implausible. These include cases in which earnings are zero or very low despite substantial reported hours of work and others in which the number of hours worked appears implausibly high. For example, in the 2008 EEH survey, about one per cent of adult full-time employees were reported as earning less than \$400 a week and a further one per cent as earning between \$400 and \$500 a week (ABS 2009b:19). The numbers derived from the EEBTUM survey appear even larger, with 1.8 per cent of full-time employees aged 20 and over earning less than \$400 and a similar proportion earning between \$400 and \$500 a week (ABS 2009a:43).⁴⁴

Very low weekly earnings are apparently just as prevalent among people working long hours as they are among those working shorter hours. Of employees who reported being paid for 45 hours a week or more in August 2008, some 2.3 per cent reported earning less than \$400 a week and an additional one per cent between \$400 and \$500 a week (ABS 2009a:22).

This conjunction of low earnings and long hours will produce a significant minority of employees with very low hourly earnings. It is not clear to what extent this is a result of data error, although it is worth bearing in mind that the household-based EEBTUM survey collects data using the 'any responsible adult' (ARA) method. This means that data on all household members may be collected from one person, as long as that person does not indicate that he or she is unable to supply relevant information about a particular individual. While the ABS (2007a:para 17.12) states that ARA interviewing 'is only used for collecting information on topics where other members of the household are likely to be able to answer the question', it is widely used in the Labour Force Survey and its supplementary surveys (ABS 2007a:para 21.0.11). Moreover, the ABS (2007:para 17.105) uses the proportion of ARA interviews within a given survey collection as an indicator of non-sampling error.

44 These two populations are not strictly comparable. The EEH adult population includes employees under the age of 21 who are being paid an adult (non-junior) rate of pay, whereas a small proportion of the EEBTUM population may be receiving junior pay rates.

As noted earlier, one approach to reducing the extent of implausibly low rates of hourly pay is to topcode hours worked. Records that are considered implausible and therefore likely to be inaccurate can also be disregarded. For example, Leigh (2007:435) ignored records of workers apparently earning less than half the hourly FMW, on the ground that they were 'likely to involve misreported hours or earnings'. While Richardson (1998:558) argued against such an approach as 'a dubious practice [that] makes it rather unlikely that expectations will be disconfirmed by the data', she nevertheless disregarded records that returned an hourly wage rate of less than \$1 (relative to a minimum-wage benchmark of \$7.30).

A third issue to be considered when deriving hourly wages is whether to adjust the wages of casual employees (usually defined as those who are not entitled to paid sick or annual leave) for presumed payment of a casual loading. This has been done from time to time in Australian research (Bolton & Wheatley 2010; Dunlop 2000; Healy 2010) on the ground that:

This premium should not be regarded as an additional wage but merely a compensation for loss of entitlements ... The casual employee ... must take leave without pay when ill and for holidays whereas the permanent employee can draw on sick leave and annual leave benefits (Dunlop 2000:12).

Buddelmeyer, Lee and Wooden (2010:33) explicitly rejected such an approach, arguing that:

... the casual pay loading is conceptually no different than the pay loading (implicit or explicit) that is attached to any job as compensation for some undesirable characteristic ... [such as] underground miners attract a pay loading to compensate for dangerous working conditions.

However, the casual loading can also be thought of as primarily a mechanism to ensure that casual and permanent staff receive approximately the same total remuneration over a longer period (say, one year) if they exhibit the same patterns of absence from work.⁴⁵ Not to apply a casual earnings discount would have the effect of placing two workers doing identical jobs for the same base rate of pay in two fundamentally different positions within the overall distribution of earnings. Moreover, the worker in what many would regard as the more disadvantageous position would be judged the better paid.

Regardless of the theoretical merits of discounting the pay of casual employees, the extent to which this can be done varies between data sources. For example, the data set that contains the most detailed breakdown of employee remuneration, that from the SIH, does not identify casual employees in any way. While other surveys identify employees who are not entitled to paid sick or holiday leave and a smaller number ask employees whether they receive a casual loading, none contains information on the precise loading applied. Dunlop (2000) and Healy (2010) both assumed receipt of a 20 per cent loading; while Bolton and Wheatley (2010) assumed a loading set at 25 per cent.⁴⁶

One final point to be made is that, while it may be appropriate to discount casual earnings for the purpose of determining whether an employee occupies a low-paid job, it does not follow that such a discount should necessarily be applied for the purpose of measuring an employee's income. This is because current income, and any analysis of living standards based entirely or partly on it, is by definition a point-in-time measure and considerations such as a person's longer-term earnings do not enter into its measurement. While it is evident, for example, that a casual employee may have no greater earnings over the course of a year than an otherwise similar permanent employee, this will ultimately depend on the proportion of the year that each spends in employment.

45 On the other hand, some casual loadings (say, 20 or 25 per cent) arguably compensate for more than simply the forgone earnings associated with paid leave and public holidays. Few, if any, permanent jobs would allow an employee to be regularly absent for 20 to 25 per cent of the year on full pay.

46 The average across the employee population probably lies somewhere between these two figures and will gradually increase towards 25 per cent, as the standard 25 per cent loading in modern awards is phased in over the period to 2014. The Minimum Wage Panel (Fair Work Australia 2010b:87) also recently increased the casual loading for award/agreement free employees from 20 to 21 per cent, consistent with those phasing-in arrangements.

7.2 Selecting the population of interest

Once a definition of low-paid employee has been adopted, further questions arise. What is the most relevant population for analysis—the whole population of people receiving low pay, or some sub-set such as low-paid employees who live in households with low economic resources? Should young people under the age of 21, who may be receiving age-related wages, be included, and if so, should they be subject to the same definition of low pay as adults?

As discussed in section 3.3 of this paper, a person's standard of living can best be assessed at the level of the household, after making appropriate adjustments to account for that household's size, composition and other relevant characteristics. In cases where low-paid employees live with other people earning moderate to high wages, their living standards, both at a point in time and over time, will depend in large part on the financial resources of those other household members.

Previous research has consistently found that many employees with low hourly wages live in middle-income to higher-income households. Healy and Richardson (2006) found that around 60 per cent of adult employees earning hourly wages up to about \$2 above the FMW were in the middle (third to seventh) deciles of the adult distribution of equivalised household disposable income.

Using a slightly different definition of low pay, McGuinness, Freebairn and Mavromaras (2007) similarly found that low-paid full-time adult workers were overrepresented in the third to sixth deciles of household income, though this was not the case for low-paid part-time workers, of whom over 40 per cent were in the lowest three deciles. In this analysis, around one quarter of low-paid full-time employees and 15 per cent of low-paid part-time employees were found to be in households with income in the highest three deciles.

These findings are largely consistent with earlier work by Richardson (1998) and Richardson and Harding (1999) based on the equivalised disposable income of income units rather than households. Richardson and Harding (1998:138–9) also found indications that, among low-paid prime-age employees with children, men were overrepresented in the lowest four deciles of household income but women were not.⁴⁷

Hahn and Wilkins (2009:9) confirmed that approximately half of low-paid employees were to be found in the middle four deciles of the household income distribution, but found that they were relatively more concentrated in the lower part of the distributions of wealth and consumption expenditure. These researchers found that a relatively small proportion of low-paid employees could be categorised as having low living standards, where that was defined as having both equivalised household disposable income and wealth below either 60 or 75 per cent of the median of each respective distribution. About one in 10 low-paid employees had both income and wealth below 60 per cent of the population median, while around one in five fell below a 75 per cent threshold.

When research is concerned with exploring the link between low wages and living standards, it may be appropriate to focus on the population of low-paid employees that relies primarily on those wages, either alone or in combination with income transfers. In such research it may also be useful to distinguish between the circumstances of low-paid full-time and part-time employees, since the living standards of the latter are perhaps influenced more by the number of hours they work than by the hourly wage they receive. Hahn and Wilkins (2009:39–43) found that the majority of low-paid employees with low living standards were either the sole earner in their household or lived in a household with little labour market engagement (that is, primarily dependent upon government benefits for income).

⁴⁷ The authors caution, however, that this finding is based on only a small number of survey observations.

The link between low living standards and minimal labour force attachment is consistent with the findings of a recent review by the OECD (2009:167) that, in most countries, the majority of the working poor are people who work less than half the year (in full-time equivalent terms). This review also found that, of 29 OECD countries in the mid-2000s, Australia had one of the lowest rates of poverty among working households and one of the highest rates of poverty among working-age jobless households (OECD 2009:176–80).

7.2.1 Treatment of junior employees

When considering the circumstances of young low-paid employees, the primary decision is whether to include them in the analysis on the same basis as adults. Since many young people under the age of 21 receive a rate of pay that is discounted on the basis of their age, they are much more likely than adult employees to fall within any given definition of low pay. Because young employees also differ quite systematically from adult low-paid employees in a number of ways (for example, in their rate of participation in education and their living arrangements), it is important for research to be designed in such a way as to ensure that the inclusion of young people does not unduly bias its overall findings.

Australian research has taken three different approaches to this issue, which have tended to vary according to the focus of the research. In some cases, analysis was simply restricted to employees aged 21 and older, sometimes with the additional restriction that they not be engaged in full-time education. Some of this research (Buddelmeyer, Lee & Wooden 2010; Dunlop 2000; Watson 2008; Watson & Buchanan 2001; Wooden, Wilkins & McGuinness 2007) was concerned with labour market transitions, in which exclusion of junior workers and students could be justified on the basis that they were 'likely to be still making career and education choices ... that may have a significant bearing on their future labour market experiences' (Dunlop 2000:3). In other cases (Healy & Richardson 2006; McGuinness, Freebairn & Mavromaras 2007), the focus was in part on the situation of people being paid less than statutory minimum wages and junior employees were excluded because it was not possible to determine with any accuracy where their wages sat in relation to such statutory minima.⁴⁸

Richardson (1998) and Richardson and Harding (1999) included young people in their analysis but applied a lower minimum wage benchmark to employees under the age of 21. In the first case, the junior wage benchmark of \$5 per hour was about two-thirds the lower benchmark of \$7.30 and a little over half the upper adult benchmark of \$9.50 per hour (Richardson 1998:557–8). In the second case, the junior benchmark was set at about 60 per cent of the adult benchmark (Richardson & Harding 1999:126–7). These benchmarks can be regarded as conservative, since junior employees may be paid anywhere between 40 and 100 per cent of the relevant adult wage, dependent on the award covering their employment and their age. Such low benchmarks would likely have had the practical effect of excluding the majority of employees under the age of 21 from the relevant definition of low wages.

The final approach to the inclusion of junior employees is to treat them no differently from adult employees. The approach reflects a view that the definition of low pay should not vary with the characteristics of the person receiving it. However, because low-paid young people may differ significantly from low-paid adults in many important ways, it is useful if this is reflected in the research design. For example, Hahn and Wilkins (2009) presented many of their research findings separately for adult and junior employees, thus highlighting the differences between the two populations.

48 Under the wage-setting arrangements in force since 1996, junior employees have not been covered either by the previous Federal Minimum Wage or by the current National Minimum Wage. However, the majority would have been covered by age-related minimum wage rates as prescribed in a relevant award.

Hahn and Wilkins (2009:34–5) found that, in each of the six years from 2001 to 2006, around three-quarters of employees under the age of 21 met their definition of low-paid, compared with 15 to 17 per cent of adult employees. Of those who were low paid, similar proportions of both adult and junior employees were classified as poor, using a variety of definitions encompassing income, wealth and expenditure. However, low-paid junior employees were considerably less likely than their adult counterparts to report financial stress (Hahn & Wilkins 2009:36).

7.3 Hypothetical low-paid employee households

One of the challenges in analysing changes in the living standards of low-paid employees over time is that wages are only one of many factors that influence the standard of living. It can be difficult therefore to assess the extent to which changes in the living standards of low-paid employees have been associated with the wages received, rather than with other social and economic trends.

One approach that seeks to avoid this issue is to model the disposable incomes of one or more hypothetical wage-earning households. This enables a closer focus on the financial situation of families that rely on wages paid for specific award classifications or at particular points in the earnings distribution. It also allows for comparisons to be drawn between different family types on the same wage and between similar families on different wages.

Modelling household incomes in this way can reveal overall trends in those incomes over time. It can also highlight the relative contributions of wages and income transfers to disposable income for particular family types and enable changes in income to be disaggregated into their component parts. For example, the 2007 AFPC wage-setting decision included analysis of the relative contributions to increases in household disposable income of tax cuts, increases in transfer payments and net wage rises (AFPC 2007:66).

As this form of modelling essentially holds all family characteristics constant, including the employment characteristics of any earners, it cannot be taken to represent the changing circumstances of any particular family.

7.3.1 Assumptions for modelling disposable incomes

In simple terms, the disposable income of a family or household comprises wages and any other private income received, less income tax liabilities, plus any income transfers received from government. Accurate modelling of disposable incomes therefore requires comprehensive understanding of the interactions between wages, income taxes and the social security system. It also involves making a number of assumptions about the factors that may affect disposable income. These include:

- the size and composition of the family;
- the ages of any children;
- the family's housing tenure;
- the labour force status of family members; and
- the hours worked and wages earned by any employed family members.

In combination, these factors determine a family's income from employment as well as their eligibility for a range of income transfers, such as unemployment, parenting and family payments and rental assistance.

As an illustration of this approach, the following section reports the results of disposable income modelling for eight hypothetical families in July 2002 and July 2010. The range of families includes those with one or two full-time earners and with or without children aged 6 to 12 years. The modelling assumes that families take advantage of all available income transfers.⁴⁹ All households are assumed to be renting their accommodation, and paying sufficient rent to be eligible for maximum Rent Assistance. Their tax liabilities include both the relevant rate of income tax and Medicare Levy (where applicable). Estimates of weekly disposable income represent the weekly equivalent of annual disposable income. The latter is calculated on the assumption that current income, including relevant income transfers, is maintained for a full financial year.

Employees in these households are assumed to receive one of four indicative minimum wage rates—those payable for the C14, C10, C4 and C2(b) classifications in the *Metal, Engineering and Associated Industries Award 1998* and Pay Scale Summaries derived from this award, and from 2010, in the *Manufacturing and Associated Industries and Occupations Award 2010*. Wages have been adjusted in accordance with the increases to these minimum wage rates awarded between 2002 and 2010 and the tax and transfer parameters are those applicable at July of the relevant year. Appendix D includes a more detailed set of figures showing disposable incomes on an annual basis over this period.

It would also be possible to incorporate in such modelling assumptions about certain kinds of expenditure, for example costs incurred for housing, childcare or work-related transport. However these costs are extremely variable across families of similar size and composition and their inclusion would therefore involve a number of arbitrary assumptions similar to those involved in the creation of budget standards. In this case, no assumptions have been made about household expenditures, except to assume that the (unspecified) rent paid attracts maximum Rent Assistance.

7.3.2 Recent trends in disposable incomes of selected hypothetical households

Between July 2002 and July 2010, the cost of living as measured by the Analytical Living Cost Index (ALCI) for employee households increased by 29.4 per cent (ABS 2010e). Table 7.3 shows that over the same period, the disposable incomes of households receiving a full-time wage at either the C14 or C10 level increased by substantially more than this—between 39 per cent and 50 per cent. Much of this real increase in disposable incomes was apparently due to income tax cuts and improvements in income transfers, since over this period the C14 wage increased by 32 per cent and the C10 wage by 26 per cent.

⁴⁹ Depending on the level of wages and family composition, these transfers may include Parenting Payment or Newstart Allowance for a non-working partner, Family Tax Benefits and/or Rent Assistance.

Table 7.3 Disposable incomes of hypothetical households reliant on C14 and C10 classification wages, July 2002 to July 2010

	@C14 wage			@C10 wage		
	July 2002 (\$pw)	July 2010 (\$pw)	Increase (%)	July 2002 (\$pw)	July 2010 (\$pw)	Increase (%)
Households with one full-time earner						
Single person	366.70	522.00	42.4	429.40	596.80	39.0
Pensioner single parent, one child	596.90	857.40	43.6	621.50	887.10	42.7
Non-pensioner single parent, one child	527.60	745.60	41.3	589.70	820.90	39.2
Couple without children	487.30	701.50	44.0	494.30	731.40	48.0
Couple, two children	643.60	941.10	46.2	655.00	963.60	47.1
Households with two full-time earners						
Couple without children	733.40	1044.00	42.4	858.80	1193.60	39.0
Couple, two children	832.30	1244.60	49.5	901.60	1356.70	50.5

Sources: FWA modelling; *Metal, Engineering and Associated Industries Award 1998*; Pay Scale Summaries derived from *Metal, Engineering and Associated Industries Award 1998—Part I*; *Manufacturing and Associated Industries and Occupations Award 2010*.

Notes: C14 wage = \$431.40 pw in July 2002, \$569.90 in July 2010. C10 wage = \$525.20 pw in July 2002, \$663.60 pw in July 2010. Disposable incomes are rounded to the nearest 10 cents.

Of the family types shown here, only two—the single person and the two-earner couple without children—are wholly reliant on wages, and these family types had among the smallest increases in disposable income. By contrast, the other family types are eligible for various income transfers and in most cases have had larger increases in disposable income. Table 7.3 also demonstrates that the impact of changes in taxes and transfers is not uniform across the wage spectrum. While some family types had a larger percentage increase in disposable income at the C14 than at the C10 wage as may be expected, the single-earner couple without children and both couples with children had a higher increase at the C10 wage.

Table 7.4 Disposable incomes of hypothetical households reliant on C4 and C2(b) classification wages, July 2002 to July 2010

	@C4 wage			@C2(b) wage		
	July 2002 (\$pw)	July 2010 (\$pw)	Increase (%)	July 2002 (\$pw)	July 2010 (\$pw)	Increase (%)
Households with one full-time earner						
Single person	528.00	690.20	30.7	598.10	754.90	26.2
Pensioner single parent, one child	659.50	925.50	40.3	698.90	963.90	37.9
Non-pensioner single parent, one child	659.50	905.20	37.3	698.90	963.90	37.9
Couple without children	555.60	755.20	35.9	625.70	798.80	27.7
Couple, two children	722.80	1002.50	38.7	762.30	1058.00	38.8
Households with two full-time earners						
Couple without children	1056.00	1380.30	30.7	1196.20	1509.70	26.2
Couple, two children	1096.80	1490.10	35.9	1236.90	1588.80	28.4

Sources: FWA modelling; *Metal, Engineering and Associated Industries Award 1998*; Pay Scale Summaries derived from *Metal, Engineering and Associated Industries Award 1998—Part I*; *Manufacturing and Associated Industries and Occupations Award 2010*.

Notes: C4 wage = \$669.20 pw in July 2002, \$797.20 in July 2010. C2(b) wage = \$771.50 pw in July 2002, \$897.50 pw in July 2010. Disposable incomes are rounded to the nearest 10 cents.

Whereas C14 wages increased by slightly more than ALCI inflation between July 2002 and 2010 (29 per cent), and C10 wages by slightly less, those payable at the C4 and C2(b) classifications increased by only 19 and 16 per cent, respectively. Nevertheless, it is apparent from Table 7.4 that the disposable incomes of families receiving C4 wages have also increased in real terms. However, among the households reliant on C2(b) wages, only the single-parent households and single-earner couple with two children experienced real increases in their disposable income.

The results shown above are intended to illustrate the approach of modelling the disposable income of hypothetical low-wage households. A wide variety of results could be obtained for other types of hypothetical low-wage households and using other assumptions.

8 Key reference point(s) for living standards relativities

The references in sections 134 and 284 of the *Fair Work Act 2009* to '*relative living standards and the needs of the low paid*' (italics added) implies that choices need to be made regarding the reference point or points for comparing living standards. This section considers some of the possible reference points for assessing the relative living standards of: a) households with low-paid employees; and b) the hypothetical low-paid employee household types discussed in section 7.3.

8.1 Households containing low-paid employees

Analysis of relative living standards for households containing low-paid employees may seek to locate those households within the overall distribution of living standards (however those living standards are defined). A simple, and relatively common, approach is to determine what percentage of households containing low-paid employees is located within each decile of the distribution of equivalised household income or resources. Alternatively, analysis may seek to determine the extent to which low-paid employee households fall below some chosen benchmark of living standards, as discussed in sections 5 and 6 of this paper.

Regardless of which method is chosen, the key issue is whether to compare the circumstances of low-paid employee households with those of the whole population (including the many households in which no-one is employed), or whether to compare them only to a smaller subset of the population, such as households with at least one person in the labour force, or even households in which at least one person is employed. Healy and Richardson (2006:20–4) illustrated this issue when they showed the relative position of employees earning below and slightly above the Federal Minimum Wage (FMW) in four different household income distributions. These were: all people (including children)⁵⁰; people aged 21 years and over; adults (i.e. people aged 21 years and over) in the labour force; and adult employees (i.e. excluding employers, own account workers, and contributing family members).

Healy and Richardson found that the 'clearest result to emerge from ... the analysis is that the answer to the question, "are FMW workers in low-income households?" depends critically on the group against whom FMW workers are compared' (Healy & Richardson 2006:24). Many retired and elderly individuals, who are neither working nor looking for work, have lower than average incomes. As may be expected, omitting those people from the income distribution had an adverse effect on the relative income positions of low-paid employees, while omitting unemployed people as well tended to further concentrate 'FMW workers' in the lower deciles of the income distribution.

Ultimately, the most appropriate basis for comparison will depend upon the aim of the analysis. If the concern is to identify the extent of 'working poverty', then low-paid households must be compared with the population as a whole. Excluding non-working households in such a case would defeat the purpose of exploring the effects of employment on living standards, although it is worth noting that a broad definition of resources or living standards would be preferred for such an analysis, so as not to bias unduly the comparison between working households and relatively asset-rich retirees. On the other hand, if the concern is to investigate where low-paid households sit relative to other households of a more similar type then more restricted populations may be appropriate.

⁵⁰ Household income was not equivalised in this distribution.

When the analysis involves determining the extent to which households containing low-paid employees fall below some chosen benchmark of living standards, the result will vary considerably with the choice of benchmark. Hahn and Wilkins illustrated this in their multidimensional study of living standards (2008:31–9). The simplest benchmarks they adopted were less than either 60 or 75 per cent of median equivalised household disposable income, while other benchmarks combined income with wealth, consumption expenditure and financial stress. Using benchmarks based on 75 per cent of median equivalised income, wealth and consumption expenditure, they found that in 2006, 28 per cent of low-paid employees had low household income, 21 per cent had both low income and low wealth and 13 per cent had low income, wealth and consumption expenditure (Hahn & Wilkins 2009:32).

8.2 Hypothetical low-paid employee households

The choice of comparators for hypothetical low-paid employee households is more complex. Hypothetical households generally have characteristics that are fixed over time. However many potential comparators, such as the mean or median household in a given population, have characteristics that have changed and will continue to change over time. For example, while households in the middle quintile of equivalised household disposable income contained the same number of people on average in 2000–01 and 2007–08, the average number of employed people in such households increased from 1.3 to 1.6 over that period (ABS 2003; ABS 2009d). This suggests that comparisons of changes in hypothetical incomes against changes in population-derived benchmarks are likely to be somewhat misleading, unless the circumstances of the hypothetical households are also adjusted to mirror the changes taking place in average households.

This problem can be avoided by comparing the disposable incomes of hypothetical low-paid households with those of other hypothetical households whose characteristics are similarly fixed. For example, the disposable incomes of households receiving a particular rate of low pay (say, C14 or C10 wage) could be compared with those of households of the same size and composition, but with earnings equivalent to other wage classifications or statistically-derived indicators, such as average weekly ordinary time earnings (AWOTE) or the median earnings of adult full-time non-managerial employees.

Disposable incomes of hypothetical low-paid households can also be compared with those of similar families in which no-one is employed. Since the disposable incomes of the latter have in recent times been indexed largely in line with movements in prices, change in these relativities can indicate the extent to which households reliant on low wages are able to maintain their purchasing power over time. They also provide a perspective on trends in the financial incentives for unemployed households to move into low-paid employment.

8.2.1 Current disposable income relativities

Table 8.1 compares the July 2010 disposable incomes of two household types—a single person and a single-earner couple with two children aged 6 to 12—at various levels of award wages and when unemployed, against the income of the same household type where one person earns a wage equivalent to AWOTE. This demonstrates a number of key points about the relative disposable incomes of low-paid employee households.

The first of these is the progressivity of Australia's tax/transfer system. While the National Minimum Wage (NMW) is only around 45 per cent of AWOTE, the difference between disposable incomes at the two wage points is much smaller. Compared to disposable income when earning AWOTE, a single person on the NMW has a disposable income 53 per cent as large, while a single-earner couple with two children has a disposable income more than three-quarters that of a similar household with one person earning AWOTE.

Table 8.1 Weekly disposable incomes of hypothetical households at various award wages and when unemployed, relative to disposable income at AWOTE, August 2010

Wage indicator/ award classification	Wage rate		Disposable income (DI)			
	\$pw	% of AWOTE	Single person		Couple, two children	
			\$pw	% of DI @ AWOTE	\$pw	% of DI @ AWOTE
AWOTE	1257.20	100.0	986.90	100.0	1218.40	100.0
C2(b)	897.50	71.4	754.90	76.5	1058.00	86.8
C4	797.20	63.4	690.20	69.9	1002.50	82.3
C10	663.60	52.8	596.80	60.5	963.60	79.1
C14 (NMW)	569.90	45.3	522.00	52.9	941.10	77.2

Sources: FWA modelling; ABS (2010c); *Manufacturing and Associated Industries and Occupations Award 2010*.

Notes: Households contain one full-time employee earning the relevant wage. Children are aged 6-12. Household pays sufficient private rent to qualify for maximum Rent Assistance where applicable. Disposable incomes are rounded to the nearest 10 cents.

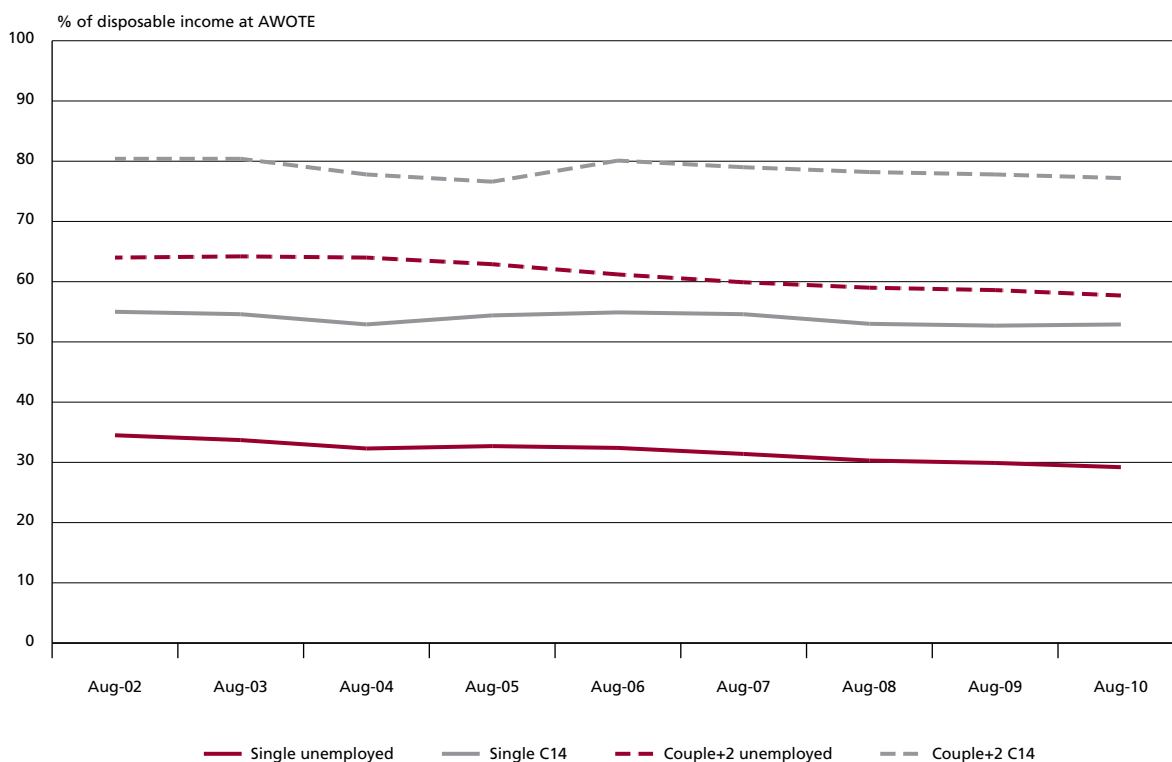
Table 8.1 also highlights the substantial contribution of income transfers to the disposable incomes of lower-paid employee households with children. At the level of the NMW, a couple with two children has an income about \$420 a week (80 per cent) higher than a single childless person, whereas at AWOTE this difference has reduced to around \$230 a week (24 per cent).

8.2.2 Trends in relativities over time

Figure 8.1 charts the changes in the disposable incomes of unemployed and households and those with a single earner receiving a C14 wage relative to the disposable income provided by AWOTE over the period 2002 to 2010, for two family types—a single person and a couple with two children. This shows that, relative to households with a single earner receiving AWOTE, the incomes of unemployed households have declined quite substantially (by about 15 per cent for a single person and 10 per cent for a couple with two children). This reflects the fact that, apart from some ad hoc increases to family assistance, social security payments have generally moved only in line with prices, which have increased by substantially less than average wages.

The general trend for households receiving a C14 wage was also downward, although the changes were much less marked (a relative loss of around 4 per cent for both household types). This is a reminder of the fact that, whereas the employment characteristics of the hypothetical households are fixed and therefore subject only to changes in minimum award wages, average earnings are affected by compositional change in the economy more generally and will therefore tend to grow somewhat faster than award wages.

Figure 8.1: Disposable income when unemployed or receiving C14 wage relative to disposable income when receiving AWOTE, single person household and couple plus two children, 2002 to 2010



Sources: ABS (2010c); FWA modelling; *Metal, Engineering and Associated Industries Award 1998*; Pay Scale Summaries derived from *Metal, Engineering and Associated Industries Award 1998—Part I; Manufacturing and Associated Industries and Occupations Award 2010*.

Notes: AWOTE for full-time adults, seasonally adjusted = \$871.10 pw in August 2002, \$919.10 in August 2003, \$950.50 in August 2004, \$1007.40 in August 2005, \$1035.10 in August 2006, \$1091.20 in August 2007, \$1142.70 in August 2008, \$1202.50 in August 2009 and \$1257.20 in August 2010. (For C14 rates, refer to Table 10). Tax/transfer parameters as at July in each year. Children aged 6–12. Households pay sufficient private rent to receive maximum rent assistance, where applicable. Disposable income includes all available income transfers.

8.3 Trends in real living standards over time

The final and simplest approach to analysing relative living standards is simply to focus on the living standards of a particular type of worker at one point in time relative to the living standards of such a worker at a previous point in time. This is easily done in relation to the disposable incomes of hypothetical workers with fixed characteristics, as illustrated in section 7.3.2. This analysis shows that a range of family types receiving a range of minimum wages would have experienced significant improvements in their real disposable incomes over the period 2002 to 2010, largely due to improvements in the tax and transfer systems.

Population-wide assessments of changes in relative living standards over time are likely to be problematic, especially where cross-sectional data are used. This is because of the difficulty in holding employee characteristics constant over any given period of analysis. It would be possible, for example, to choose a group of employees receiving wages in the lowest decile of the wage distribution of full-time adult employees and to compare their living standards at two or more points in time. However, there would likely be changes in the composition of this group over the period that may influence living standards, but may prove difficult to fully control for in the analysis.

Alternatively, it may be possible to use longitudinal data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey to examine how living standards change over time for low-paid employees whose employment and family circumstances remain relatively constant.

9 Possible data sources

This section of the paper describes the key features of the main Australian data sources for assessing the living standards and needs of low-paid employees. As mentioned earlier, there is no single data source in Australia that covers all topics of possible relevance to living standards, and few data sources combine detailed information on personal and household characteristics with the reliable measurement of wage rates.

There are two primary Australian sources of publicly available data relevant to this topic. These are the Australian Bureau of Statistics (ABS) Survey of Income and Housing (SIH) and its companion Household Expenditure Survey (HES) and the longitudinal Household, Income and Labour Dynamics in Australia (HILDA) Survey.

This section does not cover those data sources mentioned elsewhere in this paper that include little to no information on personal and household characteristics, including those sources that could be used to update measures of living standards (see section 4.3), and those that could be used solely to derive benchmarks of low pay (see section 7).

9.1 SIH/HES

From 2003–04 onwards the SIH is conducted every two years, and is integrated with the HES whenever the HES is run (currently every six years). Data from the 2009–10 SIH/HES will likely become available some time in 2011.

The SIH collects detailed information about the income, wealth, and personal and household characteristics of persons aged 15 years and over living in private dwellings in Australia. Comprehensive information on wealth is not collected in every survey—for example, only data on housing assets were collected for the 2007–08 survey. When the SIH is run concurrently with the HES a large number of the households in the SIH sample are selected to participate also in the HES, which collects detailed information about expenditure and the experience of financial stress. This enables analysis of living standards to draw on comprehensive data on income, wealth, expenditure and financial stress. In 2003–04, the final SIH sample comprised over 11 000 households, of which almost 7000 were included in the final HES sample.

The SIH and HES include information at the household level, the income unit level, and the individual level. The most detailed information on expenditure is available at the household level, while detailed information in relation to income, demographics and wealth is also available at the individual level. Some information in relation to income and demographics is available at the income unit level.

9.1.1 2007–08 SIH

The most current SIH data relate to the 2007–08 financial year. They were collected between August 2007 and June 2008 from over 9300 households, including 11 500 income units and around 18 300 individuals aged 15 and over. These data are available in the form of a confidentialised unit record file (CURF) and are described in detail in an accompanying technical manual (ABS 2009e) and user guide (ABS 2009f).

Of all available datasets, the 2007–08 SIH (ABS 2009e) provides the most comprehensive data on cash income. This includes income from employment; superannuation, allocated pensions and all forms of investments; government transfer payments; and financial support received from family members living elsewhere. The dataset also includes data on disposable income, equivalised at the household level. And while current income data are reported on a weekly basis, many items are also available on an annual (previous financial year) basis.

When employee income includes elements of salary sacrifice, individual values are recorded against the most common categories of salary sacrifice (for example, child care and superannuation). In addition to this comprehensive treatment of cash remuneration, the SIH also provides information on the value of non-cash employee remuneration (for example, the provision of a car or housing). This enables a much fuller accounting of employee remuneration than is available from other datasets.

While the SIH is more comprehensive than other data sources in its treatment of income, it has a number of relatively minor drawbacks in terms of the identification of low-paid employees. For example, it does not distinguish between ordinary employees and those characterised in other ABS collections as owner-managers of incorporated enterprises (OMIEs)⁵¹, although it is possible that some of the latter may be identified through their report of income from their own business.

In addition, while employee income is reported on a current basis, hours of employment are those usually worked. While the ABS (2009f:5) advises that 'current income is generally based on their most recent payment, as long as that payment is usual', it is not entirely clear how the figure is derived in cases when it is not. To the extent that there remains a mismatch between current income and usual hours, this may make it more difficult to accurately identify employees that meet a chosen definition of low hourly pay. Finally, casual employees are not identified in any way, so it is not possible to allow for payment of a casual loading when applying such a definition.

On the housing side, the 2007–08 SIH provides data on housing type and tenure, housing costs, and the value of owner-occupied dwellings and any outstanding loans. These have enabled the inclusion in the CURF of derived variables for imputed rent (both gross and net), for owner-occupied dwellings and for other housing tenures, such as public housing.

Gross imputed rent is the market value of the rental equivalent, and has been estimated using hedonic regression. Net imputed rent for owner occupiers has been derived by subtracting the housing costs normally paid by landlords (ie rates, mortgage interest, insurance, repairs and maintenance) from gross imputed rent (ABS 2009e:20).

Together with the comprehensive reporting of non-cash employee remuneration, the availability of estimates of imputed rent means that researchers can choose to include this variable in the calculation of household disposable income.

The final group of 2007–08 SIH variables of interest to analysts of living standards relates to the type and cost of childcare used by households containing children aged 0–12. It would therefore be possible to take account of childcare expenditures in deriving net disposable income figures.

In summary, while the dataset from the 2007–08 SIH does not enable quite as clear an identification of low-paid employees as some other data sources, this disadvantage is clearly outweighed by the depth and breadth of data available on income and certain relevant expenditures.

51 While OMIEs are technically employees of their own incorporated business, many people would consider them to fall more properly within the broader category of self-employed. Many ABS labour force collections now distinguish them from ordinary employees, thereby enabling their exclusion from analysis focusing on the circumstances of employees if that is considered appropriate.

9.2 HILDA Survey

The HILDA Survey commenced in 2001 and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute) on behalf of the Australian Government. It collects extensive data at both the household and individual level around economic and subjective well-being, labour market dynamics and family dynamics. Data from Wave 9 of the survey was released in December 2010 (Melbourne Institute 2010c).

The HILDA Survey is a longitudinal panel survey in which the sample of responding households included in Wave 1 form the basis of the panel for an indefinite period. Data are collected annually from household members aged 15 and over and the sample is extended to include new children born or adopted into the households, and any other new household members resulting from changes in household composition.⁵² The HILDA Survey is designed to be nationally representative of the Australian population in 2001 (though persons in non-private dwellings such as prisons, some persons in remote areas and homeless persons were excluded from the initial sample) and is considered to have remained broadly representative over time (Melbourne Institute 2010b). Wave 1 comprised almost 14 000 respondents in around 7700 households. In Wave 8, the most recent wave available, there were 12 800 respondents in 7100 households, including over 8000 people interviewed in all eight waves (Melbourne Institute 2010b, 2010d).

Income data are collected at the individual level, including employees' weekly earnings data (usual and most recent pay, both in main job and all jobs) and income derived from transfers. Usual hours worked per week (and average hours worked per week over four weeks for those employees who indicate their hours vary) are collected, enabling the derivation of hourly earnings variables. While employee income conceptually includes salary sacrificed, it is possible that the value of salary sacrifice is under-reported in the survey as the questionnaires contain no specific prompts to ensure that amounts of salary sacrificed have been included by respondents in their reported earnings. The HILDA Survey does however capture some forms of non-cash remuneration, such as the value of rent-free accommodation. While the data do not allow as full an accounting of household income as is possible using the SIH, they have nevertheless been widely used to derive estimates of equalised household disposable income.

Household net worth can be established using data collected periodically at an individual level on assets (including owner-occupied housing and other property, superannuation, bank accounts and trust funds, investments and business assets) and liabilities (including home debt, credit card debt, personal debt, Higher Education Contribution Scheme debt and business debt). These data were collected in Waves 2, 6 and 10).

Consumption of goods and services at the household level have been collected since Wave 6 (and collected on an 'experimental' basis in Wave 5). However a number of components of consumption are not captured, for example services delivered by consumer durables not purchased in the survey year (Hahn & Wilkins 2008:17).

Responses to a number of financial stress indicators are collected in each wave, although not as extensive a list as is collected through the HES (see Appendix B, Table B.1 for the full list). In addition, as mentioned in section 5.4, researchers have used the HILDA Survey to produce summary measures of social exclusion (see Table B.3).

52 These new household members remain in the sample as long as they remain in the same household. The two exceptions are those that have a child with an existing permanent sample member and immigrants who arrived after Wave 1, in both these circumstances the individual becomes a permanent sample member.

In Wave 8 a question to determine the industrial instrument by which an individual's pay is set was included for the first time, on the basis that this should enable award-reliant workers and their households to be identified. However due to some concerns about the quality of the responses for this question, it may be excluded from Wave 10 onwards.⁵³

While the data from the HILDA Survey are generally not as comprehensive as those available from the SIH, and especially from the combination of the SIH and the HES, they are more frequently available. More importantly, they are the only possible data source that enables an assessment of changes in the living standards of individuals and households over time.

9.3 Possible data improvements

Since most research into the circumstances of low-paid employees requires the accurate identification of such employees, there are a number of important data requirements to enable this.

First, it is essential to be able to identify employees who are owner-operators of incorporated enterprises, so as to be able to exclude such individuals from analysis of the circumstances of employees whose wages may be affected by wage-setting decisions. While this is now standard practice in the majority of ABS collections, this is not the case for the most recent SIH.

Most important, as discussed in section 7.1.2 of this paper, it is essential to have consistent measurement of earnings and hours worked or paid for (or both) to enable reliable estimates of hourly rates of pay. This may involve reducing the potential for mismatch between the two variables. For example, survey questionnaires could routinely accompany questions on most recent or usual earnings with an additional question along the lines of "How many hours work was that for?" This would link the data on earnings and hours worked much more clearly and thereby help to improve the accuracy of derived hourly rates of pay, although it may remain difficult for some salaried employees to nominate their precise number of work hours.

Alternatively, hourly rates of pay could be collected directly. Survey respondents, given warning, could be required to present their most recent payslip for reference when the survey is conducted. This would provide perhaps the greatest gains in accuracy for groups of employees paid by the hour, however methodological decisions may still have to be made to account for individual workers receiving a range of pay rates in the same job due to variable penalty loadings. (See Nelms, Nicholson and Wheatley (2011) for a more comprehensive range of possible data improvements with respect to capturing low-paid employees).

⁵³ This was indicated in the *HILDA* news email, 11 March 2010.

10 Conclusion

Under the *Fair Work Act 2009*, the minimum wages objective and the modern awards objective require Fair Work Australia to take into account a range of factors including 'relative living standards and the needs of the low paid' (FW Act ss. 134 and 284).

The concepts of living standards and needs can both be understood as encapsulating something more than material well-being.

This paper has outlined and compared a range of approaches that have previously been taken in Australia to defining and measuring living standards. Such research requires a number of key methodological decisions, including whether to focus narrowly on cash disposable income or to broaden the analysis to take account of other resources such as the value of public and private goods and services and/or outcomes-based information such as the experience of financial hardship or material deprivation.

In most cases income remains a primary focus, not least because data on income are the most readily available, especially for the analysis of trends over time. Income itself can be narrowly or broadly defined, and recent data sources provide the scope for research that takes account of a wide range of income and related variables, such as the value of non-cash employment remuneration and imputed rent from owner-occupied or subsidised housing.

When living standards are expressed in terms of income (however defined), the research has also variously taken account of the ways in which needs vary between individuals in different household, employment and other relevant circumstances. This is conventionally done through application of an equivalence scale, although those in common use have a range of limitations.

Whatever the methodological choices made by researchers, the resultant proxy measures of living standards remain largely indicative, as it is not possible to allow for every individual characteristic or circumstance that may affect a person's standard of living. It may be useful, therefore, to supplement such measures with information on financial and other outcomes, where relevant data exist.

It may also be useful to supplement information on the circumstances of actual low-paid employees, derived from large-scale public datasets, with an examination of trends in the disposable incomes of hypothetical households that rely on the wages paid for specific award classifications or at specific points in the wage distribution. By excluding the influence of social and labour market trends, this approach can enable a closer focus on the impact of wage increases on disposable income, often in combination with changes in the tax and transfer systems.

One thing is clear—there is no single, or simple, picture that can be drawn of the living standards of low-paid employees in Australia. Broad-ranging research in this area would provide a range of perspectives both on the material living standards experienced by low-paid employees and also on how those living standards change over time.

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Legislation

Fair Work Act 2009 (Cth)

Workplace Relations Act 1996 (Cth)

Workplace Relations (Work Choices) Amendment Act 2005 (Cth)

Table A.1 Selected recent Australian research into poverty and/or income distribution

Author(s)	Year	Primary indicator of living standards	Other indicators	Data source(s)	Income benchmarks, poverty line(s)	Unit of analysis	Equivalence scale
Yates	1991	Gross household income (incl estimates of imputed rent from owner-occupied housing)	None	HES 1988–89	Not applicable (distribution only)	Household	None
Saunders & Matheson	1991	Equivalised disposable cash income	None	ABS income surveys 1981 82 & 1985–86, microsimulated data 1989–90	HPL	Income unit	Henderson
Richardson; Travers & Richardson	1991	Full income (incl income in kind from non-employed time, home ownership, consumer durables, etc)	Indicators of hardship and relative affluence	ASL survey 1987	Not applicable (distribution only)	Household	Henderson
Travers & Richardson	1993	Full income	Indicators of hardship and relative affluence	ASL survey 1987	Bottom decile and quintile of full income	Household	Henderson
Mitchell & Harding	1993	Equivalised disposable cash income	None	ABS income surveys 1981–82 to 1989–90	40/50/60% median EHD; poverty gap measures	Household	OECD, Whiteford
Harding	1994	Market, gross and equivalised gross income	None	ABS income surveys 1981–82 and 1989–90 plus synthetic 1993 data	Not applicable (distribution only)	Income unit	Whiteford
Travers & Richardson	1995	Full income	None	ASL survey 1987	Not applicable (distribution only)	Household	Henderson
Saunders	1997	Equivalised disposable cash income	Expenditure	HES 1993–94	HPL; 90% HPL; 110% HPL; exploratory benchmarks combining income/ expenditure	Income unit/ household	Henderson
Harding	1997	Equivalised disposable cash income	None	1981-82 IDS, HES 1993–94	Not applicable (distribution only)	Household	Henderson
Eardley	1998	Equivalised disposable cash income	None	ABS income surveys 1981–82 to 1995–96	HPL; 110% HPL	Income unit	Henderson

Author(s)	Year	Primary indicator of living standards	Other indicators	Data source(s)	Income benchmarks, poverty line(s)	Unit of analysis	Equivalence scale
Richardson	1998	Equivalised disposable cash income	None	SIHC 1989–90	Not applicable (distribution only)	Income unit	OECD
Saunders	1998	Equivalised household expenditure	Equivalised disposable cash income	HES 1993–94	SPRC Budget standards	Income unit/ household	SqR
Richardson & Harding	1999	Equivalised disposable cash income	None	ABS income surveys 1986 & 1994–95	Not applicable (distribution only)	Income unit	OECD
Harding & Szukalska	2000	Equivalised disposable cash income (before & after housing costs)	None	ABS income surveys 1981–82 & 1997–98	50% mean EHDl; 50% median EHDl; HPL	Income unit	Henderson; OECD
Bray	2001	Financial stress	Equivalised disposable cash income	HES 1998–99	50% mean EHDl; 50% median EHDl; 60% median EHDl	Household	OECD
Harding, Lloyd & Greenwell	2001	Equivalised disposable cash income (before & after housing costs)	None	ABS income surveys 1990 to 1999–2000	50% mean EHDl; 50% median EHDl; HPL	Income unit	Henderson (modified); OECD; SqR
Pappas	2001	Equivalised market and disposable cash income	None	ABS income surveys 1986 to 1995–96	Not applicable (distribution only)	Income unit	SqR
Harding & Greenwell	2002	Equivalised disposable income and expenditure	None	ABS income surveys 1990 to 1997–98; HES 1988–89 to 1998–99	Not applicable (distribution only)	Household	SqR
Lloyd, Harding & Payne	2004	Equivalised disposable cash income	None	SIHC 2000–01	50% median EHDl	Income unit	OECD
Saunders	2004	Equivalised disposable cash income	Expenditure, indicators of deprivation	HES 1993–94	Amended HPL (SqR equivalence)	Income unit/ household	SqR
Siminski & Saunders	2004	Equivalised disposable cash income (before & after housing costs)	None	HES 1998–99	Not applicable (distribution only)	Household	Henderson
Headey, Marks & Wooden	2005	Equivalised disposable cash income	None	HILDA Survey waves 1 to 3 (2001 to 2003)	50% median EHDl	Household	OECD
Saunders & Siminski	2005	Equivalised disposable cash income (with and without net imputed rent)	None	HES 1993–94 & 1998–99	Not applicable (distribution only)	Household	OECD; Henderson

Author(s)	Year	Primary indicator of living standards	Other indicators	Data source(s)	Income benchmarks, poverty line(s)	Unit of analysis	Equivalence scale
Harding, Warren & Lloyd	2006	Cash income—original, gross, disposable, post-tax, final (incl indirect taxes and government benefits)	None	SIHC 2001–02	Not applicable (distribution only)	Household	OECD
Healy & Richardson	2006	Equivalised disposable cash income	None	HILDA Survey wave 4 (2004)	Not applicable (distribution only)	Household	SqR
Saunders	2006	Equivalised disposable cash income	Indicators of financial stress	HES 1998–99	Amended HPL; 80% HPL, 50% median EHDl	Income unit/ household	SqR
Saunders & Bradbury	2006	Equivalised disposable cash income	Expenditure, financial stress, self-assessed living standards	ABS income surveys 1993–94 to 2002–03; HES 1998–99; HILDA Survey waves 1 to 3 (2001 to 2003)	50% median EHDl	Household	OECD
Leigh	2007	Equivalised disposable cash income	None	ABS income surveys 1994–95 to 2002–03	Not applicable (distribution only)	Income unit	SqR
Marks	2007	Equivalised disposable cash income (before & after housing costs)	Subjective well-being, financial stress	HILDA Survey waves 1 and 2 (2001 and 2002)	50% median EHDl	Household	OECD
McGuinness, Freebairn & Mavromaras	2007	Equivalised disposable cash income	None	HILDA Survey wave 4 (2004)	Not applicable (distribution only)	Household	SqR
Saunders, Naidoo & Griffiths	2007	Indices of deprivation and social exclusion	Equivalised gross income	CUPSE survey	50% median equivalised gross household income	Household	OECD
Wooden, Wilkins & McGuinness	2007	Equivalised disposable cash income	None	HILDA Survey waves 1 to 5 (2001 to 2005)	Not applicable (distribution only)	Household	OECD
Headey	2008	Equivalised disposable income and consumption	Net worth	HILDA Survey waves 5 and 6 (2005 and 2006)	Combinations of 50/60% median equivalised income & consumption, net worth <\$200,000	Household	OECD
Rodgers & Robson	2008	Equivalised disposable cash income	None	HILDA Survey waves 1 to 5 (2001 to 2005)	50% median EHDl	Household	OECD

Author(s)	Year	Primary indicator of living standards	Other indicators	Data source(s)	Income benchmarks, poverty line(s)	Unit of analysis	Equivalence scale
Saunders & Hill	2008	Equivalised disposable cash income	Expenditure, wealth, financial stress	HES 1993–94 to 2003–04	50% median EHDl; 60% median EHDl; HPL	Household	OECD; Henderson
Saunders, Hill & Bradbury	2008	Equivalised disposable cash income	Expenditure, wealth, financial stress	HES 1993–94 to 2003–04; SIH 2003–04 & 2005–06	50% median EHDl; 60% median EHDl; HPL	Household	OECD; Henderson
Hahn & Wilkins	2009	Equivalised disposable income, net wealth and expenditure	Financial stress indicators	HILDA Survey waves 1 to 6 (2001 to 2006)	Combinations of 60/75% median income, wealth and expenditure	Household	OECD
Payne	2009	Equivalised disposable cash income	None	SIH 2005–06	50% median EHDl	Household	OECD
Saunders & Naidoo	2009	Various indices of deprivation	Equivalised disposable cash income	CUPSE survey	50% median EHDl; 60/70/80% median EHDl	Household	OECD
Scutella, Wilkins & Kostenko	2009	Various indices of social exclusion	Equivalised income/wealth/expenditure; financial stress	HILDA Survey waves 1 to 7 (2001 to 2007)	60% median equivalised household income/wealth/expenditure	Household	OECD

Notes: ABS = Australian Bureau of Statistics; ASL = Australian Standard of Living; CUPSE = Community Understandings of Poverty and Social Exclusion; EHDl = equivalised household disposable income; HES = Household Expenditure Survey; HILDA = Household, Income and Labour Dynamics in Australia; HPL = Henderson poverty line; IDS = Income Distribution Survey; OECD = Organisation for Economic Co-operation and Development; SIH = Survey of Income and Housing; SIHC = Survey of Income and Housing Costs; SPRC = Social Policy Research Centre; SqR = square root.

Table B.1 Financial stress indicators, inclusion in ABS Household Expenditure Surveys and HILDA Survey and Bray financial stress category

Indicator	Whether included in		Bray financial stress category
	HES	HILDA	
In the last 12 months, spent more money than received/ usually spend more than income	Yes	Yes	
Unable to raise \$2000 in a week for something important	Yes	Yes	
Could not pay electricity, gas or telephone bills on time	Yes	Yes	Cash flow problem
Could not pay car registration or insurance on time	Yes		Cash flow problem
Could not pay the mortgage or rent on time		Yes	
Pawned or sold something	Yes	Yes	Hardship
Went without meals	Yes	Yes	Hardship
Could not afford to heat home	Yes	Yes	Hardship
Sought assistance from welfare/community organisation	Yes	Yes	Hardship
Sought financial help from friends or family	Yes	Yes	Cash flow problem
Could not afford holiday for at least one week a year	Yes		Missing out
Could not afford a night out once a fortnight	Yes		Missing out
Could not afford friends or family over for a meal once a month	Yes		Missing out
Could not afford a special meal once a week	Yes		Missing out
Could only afford second hand clothes most of the time	Yes		Missing out
Could not afford leisure or hobby activities	Yes		Missing out

Sources: Bray (2001); Freidin, Watson & Wooden (2002); McColl, Pietsch & Gatenby (2001).

Table B.2 Essentials of life and indicators of deprivation and social inclusion, CUPSE survey

Item	% of community support	Included in	
		Deprivation index	Social exclusion indices
Essentials of life			
Medical treatment, if needed	99.9	X	S
Warm clothes and bedding if it is cold	99.8	X	
Substantial meal at least once a day	99.6	X	
Ability to buy medicines prescribed by a doctor	99.3	X	
Access to a local doctor or hospital	99.3		S
Disability support services, if needed	98.9		S
Dental treatment, if needed	98.5	X	S
To be treated with respect by other people	98.5		
Aged care for frail older people	98.0		S
To be accepted by others for who you are	97.9		
Ability to speak and read English	97.8		
Streets that are safe to walk in at night	97.7		
Access to mental health services, if needed	97.2		S
Decent and secure home	97.3	X	
Safe outdoor space for children to play at or near home	96.1		
Supportive family relationships	95.0		
Children can participate in school activities and outings	94.7	X	D
Yearly dental check-up for children	94.3	X	
Someone to look after you if you are sick and need help	93.2		
Good budgeting skills	92.4		
Local park or play area for children	92.1		
Hobby or leisure activity for children	92.5	X	D
Regular social contact with other people	92.5	X	
Good public transport	92.1		
Access to a bulk-billing doctor	91.7		S
Secure locks on doors and windows	91.6	X	
Roof and gutters that do not leak	91.5	X	
Damp and mould-free walls and floors	90.7		
Access to a bank or building society	90.2		S
Furniture in reasonable condition	89.3	X	
Up to date schoolbooks and new school clothes	88.5	X	
Public telephone	88.5		

Item	% of community support	Included in	
		Deprivation index	Social exclusion indices
Heating in at least one room of the house	87.4	X	
Child care for working parents	86.5		S
Someone to give advice about an important decision	85.4		
Separate bed for each child	84.0	X	
Telephone	81.1	X	
Up to \$500 in savings for an emergency	81.1	X	
Washing machine	79.4	X	
Home contents insurance	75.1	X	
Presents for family and friends at least once a year	71.6	X	
Computer skills	68.7	X	
Attended school to at least year 12 or equivalent	63.4		
Comprehensive motor vehicle insurance	60.2	X	
Week's holiday away from home once a year	52.9	X	D
Television	50.9	X	
Additional social exclusion indicators			
Did not participate in any community activities in last 12 months (L12M)			D
Does not have a social life			D
Couldn't attend important event L12M because of lack of transport			D
Could not go out with friends and pay own way L12M			D
Unable to attend wedding or funeral L12M			D
Couldn't keep up with utilities payments L12M			S
Does not have \$500 in savings for an emergency			E
Had to pawn or sell something or borrow money L12M			E
Could not raise \$2000 in a week			E
Does not have more than \$50,000 in assets			E
Has not spent \$100 on special treat for self L12M			E
Does not have enough to get by on			E
Currently unemployed or looking for work			E
Lives in a jobless household			E

Notes: D = disengagement; E = economic exclusion; S = service exclusion
Source: Saunders, Naidoo & Griffiths (2007)

Table B.3 Indicators of social exclusion across seven life domains, HILDA Survey

Indicator	Definition	Availability (waves)
Material resources domain		
Low income	<60% of equivalised household disposable income	All
Low net worth	<60% of equivalised household net worth	2 & 6
Low consumption expenditure	<60% of equivalised household consumption expenditure	6 to 7
Financial hardship	Three or more financial stress indicators	All
Employment domain		
Long-term unemployed	Currently unemployed and unemployed last 12 mths	All
Unemployed	Not employed, available for work, looked for work last 4 wks	All
Underemployed (or unemployed)	Works part-time and wants to work more hours	All
Marginally attached (or underemployed or unemployed)	Not employed, available for work, wants work but not looking because of discouragement	All
Lives in a jobless household	Working-age household member, none employed	All
Education and skills domain		
Low literacy	Self-assessed	7
Low numeracy	Self-assessed	7
Poor English proficiency	Other language at home and does not speak English (well)	All
Low formal education	Not studying full-time and completed less than Year 12	All
Little work experience	<3 years total in paid employment	All
Health domain		
Poor general health	<50 on SF-36 general health subscale (max score 100)	All
Poor physical health	<50 on SF-36 physical health subscale (max score 100)	All
Poor mental health	<50 on SF-36 mental health subscale (max score 100)	All
Long-term health condition	Self-reported disability likely to last 6 mths or longer	All
Disabled child in household	Report of primary carer	All
Social domain		
Little social support	<30 on multi-item scale (max score 70)	All
Infrequent social activity	Get together with friends/relatives less than once a month	1 to 6
Community domain		
Low neighbourhood quality	<20 on multi-item scale (max score 50)	1 to 4, 6
Low satisfaction with neighbourhood	<5 on 0–10 scale	All
Low satisfaction with feeling part of community	<5 on 0–10 scale	All
Low civic participation—membership	Not member of sporting, hobby or community club/organisation	All
Low civic participation—activity	Not working or studying, no volunteer activity in typical week	All
Personal safety domain		
Victim of violence	Self-report (last 12 months)	2 to 7
Victim of property crime	Self-report (last 12 months)	2 to 7
Low subjective safety	<5 on 0–10 scale	All

Source: Scutella, Wilkins & Kostenko (2009).

Table C.1 Selected recent Australian research into circumstances of low-paid employees

Author(s)	Year	Primary research focus	Data source(s)	Population(s)	Hours topcode	Definition(s) of low pay
Eardley	1998	Trends in 'working poverty'	ABS income surveys 1981–82 to & 1995–96	Employees	50 pw	2/3 median hourly earnings - \$5.33 ph (81–82) to \$8.80 ph (95–96)
Richardson	1998	Personal, job and family characteristics; income distribution	ABS income survey 1989–90	Employees	40 pw	\$1 to \$9.50 ph (adult)/\$5 ph (junior); alternative cut-offs \$8.50 & \$7.30 (adults)
Richardson & Harding	1999	Personal, job and family characteristics; income distribution; aggregate and distributional effects of simulated wage cut	ABS income surveys 1986 & 1994–95	Employees	40 pw	Up to \$6.70 ph (adult)/\$4 ph (junior) (1986); Up to \$10 ph (adult)/\$6 ph (junior) (94–95)
Mitchell	1999	Personal, job and family characteristics; links between work history and low pay	NLC survey	Employees aged 18–54	na	Less than \$400 pw
Dunlop	2000	Incidence of low pay; determinants of low pay and labour force transitions	SEUP 1995–97	Employees aged 21–59	None	Up to \$10 ph (Sep 95), indexed by AWE to \$10.76 ph (Sep 97) #
Dunlop	2001	Characteristics of low-paid workers and jobs; transitions from low pay; determinants of earnings mobility	SEUP 1995–97	Employees aged 20–59	None	Up to \$10 ph (Sep 95), indexed by AWE to \$10.76 ph (Sep 97) #
Watson & Buchanan	2001	Incidence by industry and occupation; labour market dynamics; labour force and job characteristics of couples	Census 1981; STE 1993; HES 1988–89	Adult employees	ns	More than \$1 ph (81) or \$2 ph (93) and less than 2/3 median hourly earnings
Harding et al.	2006	Effective tax rates; effects of wage rises on disposable income	STINMOD 2006–07	Employees aged 15–64	50 pw	Less than \$15.50 ph
Healy & Richardson	2006	Size and characteristics of FMW workforce; household circumstances	HILDA Survey wave 4 (2004)	Adult employees	50 pw	FMW (up to \$12.50 ph) Above FMW (\$12.51–14.50 ph)
Elton et al. (summary of 6 State/Territory reports)	2007	Qualitative—effect of WorkChoices on pay and conditions	In-depth interviews	(Female) employees	na	Employed in minimum wage-reliant industry or occupation

Author(s)	Year	Primary research focus	Data source(s)	Population(s)	Hours topcode	Definition(s) of low pay
Leigh	2007	Demographic and family characteristics; family income distribution; effect of minimum wage rise	ABS income surveys 1994–95 to 2002–03	Employees	None	Sub-minimum – 50-100% C14/FMW Near minimum – 100–120% C14/FMW
McGuinness, Freebairn & Mavromaras	2007	Minimum wage coverage; job, individual and household characteristics; income distribution; labour market histories	HILDA Survey wave 4 (2004); SEEH 2004	Adult employees	None	Below FMW (<\$11.79 ph) Around FMW (\$11.79–13.15 ph)
Wooden, Wilkins & McGuinness	2007	Household income distribution; effects of wage increases; longitudinal growth in wages and annual earnings	HILDA Survey waves 1 to 5 (2001 to 2005)	Adult employees	None	Bottom 10% or 20% of hourly earnings
Southwell et al.	2007, 2008	Qualitative—employee views about wages, working life, quality of life, etc	Focus groups	Employees	na	Less than \$18.42 ph/\$700 pw/\$36,400 pa
Perkins & Scutella	2008	Labour force transitions, patterns of job retention and advancement	HILDA Survey waves 1 to 5 (2001 to 2005)	People aged 15–64 and not f/t students	None	Less than 2/3 of median hourly earnings for each calendar year—\$10.57 ph (2001) to \$12.58 ph (2005)
Watson	2008	Transitions between low paid employment and unemployment	HILDA Survey waves 1 to 6 (2001 to 2006)	Working-age adults (21–64)	None	Bottom quintile of hourly earnings
Hahn & Wilkins	2009	Living standards (income, wealth, consumption expenditure, financial stress)	HILDA Survey waves 1 to 6 (2001 to 2006)	All and adult employees	None	Hourly and weekly wage less than 120% of FMW
Bolton & Wheatley	2010	Hourly ordinary time wages and wage distribution; occupational status	SEEH 2006	Adult & junior employees	None	Reliant on minimum award wages #
Buddelmeyer, Lee & Wooden	2010	Transitions into and out of low-paid employment	HILDA Survey waves 1 to 7 (2001 to 2007)	Adults (21+) not f/t students	None	Less than 2/3 of median hourly earnings

Author(s)	Year	Primary research focus	Data source(s)	Population(s)	Hours topcode	Definition(s) of low pay
Dockery, Seymour & Ong	2010	Characteristics; work incentives; various indicators of well-being; comparisons with non-employed; labour force transitions	HILDA Survey waves 1 to 7 (2001 to 2007)	Adult employees	38 pw	Up to 110% of FMW
Healy	2010	Size, characteristics and predictors of below-FMW and near-FMW employment	SET 2005	Employees	50 pw	Below-FMW (<\$12.30 ph); near-FMW (\$12.30–\$13.99 ph) #
Watson	2010	Transitions into and out of minimum wage jobs, earnings mobility	HILDA Survey waves 1 to 8 (2001 to 2008)	All and adult employees	None	FMW (plus hourly rates rounded up and down to nearest 50 cents); bottom earnings quintile

Notes: # earnings of casual employees adjusted for assumed casual loading; na = not applicable; ns = not specified. ABS = Australian Bureau of Statistics; HES = Household Expenditure Survey; HILDA = Household, Income and Labour Dynamics in Australia; NLC = Negotiating the Life Course; SEEH = Survey of Employee Earnings and Hours; SET = Survey of Education and Training; SEUP = Survey of Employment and Unemployment Patterns; STE = Survey of Training and Education; STINMOD = Static Incomes Model.

Table D.1: Disposable incomes of hypothetical households reliant on the C14 classification wage, July 2002 to July 2010

	July 02 (\$pw)	July 03 (\$pw)	July 04 (\$pw)	July 05 (\$pw)	July 06 (\$pw)	July 07 (\$pw)	July 08 (\$pw)	July 09 (\$pw)	July 10 (\$pw)
Households with one full-time earner									
Single person	366.70	384.00	396.20	413.20	432.70	459.10	476.40	497.30	522.00
Pensioner single parent, one child	596.90	633.90	643.40	668.50	702.40	749.90	785.10	815.20	857.40
Non-pensioner single parent, one child	527.60	561.20	577.80	605.50	630.10	663.20	687.30	716.00	745.60
Couple without children	487.30	497.80	505.70	522.60	592.00	619.40	643.10	679.40	701.50
Couple, two children (not receiving Newstart Allowance)	—	—	—	—	712.90	748.80	776.10	808.20	839.70
Couple, two children	643.60	689.70	710.20	737.10	815.50	848.70	880.90	914.70	941.10
Households with two full-time earners									
Couple without children	733.40	768.00	792.50	826.40	865.40	918.30	952.70	994.70	1044.00
Couple, two children	832.30	890.60	943.80	979.80	1050.30	1104.80	1148.30	1196.60	1244.60

Source: FWA modelling; *Metal, Engineering and Associated Industries Award 1998*; Pay Scale Summaries derived from *Metal, Engineering and Associated Industries Award 1998—Part I*; *Manufacturing and Associated Industries and Occupations Award 2010*.

Note: C14 = \$431.40 per week in July 2002, \$448.40 in July 2003, \$467.40 in July 2004, \$484.40 in July 2005, \$484.50 in July 2006, \$511.86 in July 2007, \$522.12 in July 2008 and \$543.78 in July 2009, \$569.90 in July 2010. Disposable incomes are rounded to the nearest 10 cents. Prior to the introduction of Welfare to Work changes in 2006 that required Parenting Payment (Partnered) recipients with children 6 years and over to look for work in order to receive income support, the households comprising a couple with two children received the same disposable income.

Table D.2: Disposable incomes of hypothetical households reliant on the C10 classification wage, July 2002 to July 2010

	July 02 (\$pw)	July 03 (\$pw)	July 04 (\$pw)	July 05 (\$pw)	July 06 (\$pw)	July 07 (\$pw)	July 08 (\$pw)	July 09 (\$pw)	July 10 (\$pw)
Households with one full-time earner									
Single person	429.40	445.00	458.00	475.70	493.10	532.00	553.20	573.30	596.80
Pensioner single parent, one child	621.50	658.80	666.80	691.70	729.00	775.60	815.90	844.00	887.10
Non-pensioner single parent, one child	589.70	623.70	638.80	666.40	691.90	737.50	765.50	792.70	820.90
Couple without children	494.30	503.30	513.90	531.70	601.50	646.90	674.50	711.00	731.40
Couple, two children (not receiving Newstart Allowance)	—	—	—	—	774.70	823.10	854.30	885.50	915.90
Couple, two children	655.00	700.50	719.60	749.90	826.40	870.70	907.20	939.90	963.60
Households with two full-time earners									
Couple without children	858.80	890.00	916.10	951.40	986.30	1064.10	1106.30	1146.50	1193.60
Couple, two children	901.60	956.60	1030.00	1067.40	1133.80	1213.10	1264.40	1311.10	1356.70

Source: FWA modelling; *Metal, Engineering and Associated Industries Award 1998*; Pay Scale Summaries derived from *Metal, Engineering and Associated Industries Award 1998—Part I*; *Manufacturing and Associated Industries and Occupations Award 2010*.

Note: C10 = \$525.20 per week in July 2002, \$542.20 in July 2003, \$561.20 in July 2004, \$578.20 in July 2005, \$578.20 in July 2006, \$605.72 per week in July 2007, \$615.98 in July 2008 and \$637.64 in July 2009, \$663.60 in July 2010. Disposable incomes are rounded to the nearest 10 cents. Prior to the introduction of Welfare to Work changes in 2006 that required Parenting Payment (Partnered) recipients with children 6 years and over to look for work in order to receive income support, the households comprising a couple with two children received the same disposable income.

Table D.3: Disposable incomes of hypothetical households reliant on the C4 classification wage, July 2002 to July 2010

	July 02 (\$pw)	July 03 (\$pw)	July 04 (\$pw)	July 05 (\$pw)	July 06 (\$pw)	July 07 (\$pw)	July 08 (\$pw)	July 09 (\$pw)	July 10 (\$pw)
Households with one full-time earner									
Single person	528.00	543.70	556.70	574.30	586.00	621.50	645.10	664.90	690.20
Pensioner single parent, one child	659.50	691.60	715.20	743.30	776.10	817.90	855.00	884.70	925.50
Non-pensioner single parent, one child	659.50	691.60	715.20	743.30	776.10	817.90	848.20	875.40	905.20
Couple without children	555.70	572.30	586.20	605.30	628.70	673.30	705.40	734.60	755.20
Couple, two children (not receiving Newstart Allowance)	—	—	—	—	861.90	906.70	941.60	970.30	1002.50
Couple, two children	722.80	768.40	793.70	823.80	861.90	906.70	941.60	970.30	1002.50
Households with two full-time earners									
Couple without children	1056.00	1087.30	1113.40	1148.60	1172.00	1243.00	1290.20	1329.70	1380.30
Couple, two children	1096.80	1152.30	1179.90	1216.80	1262.10	1336.70	1395.00	1440.90	1490.10

Source: FWA modelling; *Metal, Engineering and Associated Industries Award 1998*; Pay Scale Summaries derived from *Metal, Engineering and Associated Industries Award 1998—Part I; Manufacturing and Associated Industries and Occupations Award 2010*.

Note: C4 = \$669.20 per week in July 2002, \$686.20 in July 2003, \$705.20 in July 2004, \$722.20 in July 2005, \$722.20 in July 2006, \$744.42 in July 2007, \$749.74 in July 2008 and \$771.40 in July 2009, \$797.20 in July 2010. Disposable incomes are rounded to the nearest 10 cents. Prior to the introduction of Welfare to Work changes in 2006 that required Parenting Payment (Partnered) recipients with children 6 years and over to look for work in order to receive income support, the households comprising a couple with two children received the same disposable income.

Table D.4: Disposable incomes of hypothetical households reliant on the C2(b) classification wage, July 2002 to July 2010

	July 02 (\$pw)	July 03 (\$pw)	July 04 (\$pw)	July 05 (\$pw)	July 06 (\$pw)	July 07 (\$pw)	July 08 (\$pw)	July 09 (\$pw)	July 10 (\$pw)
Households with one full-time earner									
Single person	598.10	612.40	625.40	643.00	652.80	686.00	709.60	729.30	754.90
Pensioner single parent, one child	698.90	730.30	763.90	792.00	832.30	872.50	906.40	935.50	963.90
Non-pensioner single parent, one child	698.90	730.30	763.90	792.00	832.30	872.50	906.40	935.50	963.90
Couple without children	625.70	641.00	654.90	674.00	684.70	726.30	751.10	772.50	798.80
Couple, two children (not receiving Newstart Allowance)	—	—	—	—	915.10	958.00	995.30	1027.60	1058.00
Couple, two children	762.30	807.10	842.40	872.50	915.10	958.00	995.30	1027.60	1058.00
Households with two full-time earners									
Couple without children	1196.20	1224.70	1250.80	1286.10	1305.70	1371.90	1419.20	1458.60	1509.70
Couple, two children	1236.90	1289.80	1317.30	1354.20	1375.80	1444.40	1493.80	1536.10	1588.80

Source: FWA modelling; *Metal, Engineering and Associated Industries Award 1998*; Pay Scale Summaries derived from *Metal, Engineering and Associated Industries Award 1998—Part I; Manufacturing and Associated Industries and Occupations Award 2010*.

Note: C2(b) = \$771.50 per week in July 2002, \$786.50 in July 2003, \$805.50 in July 2004, \$822.50 in July 2005, \$822.50 in July 2006, \$844.36 in July 2007, \$849.68 in July 2008 and \$871.34 in July 2009, \$897.50 in July 2010. Disposable incomes are rounded to the nearest 10 cents. Prior to the introduction of Welfare to Work changes in 2006 that required Parenting Payment (Partnered) recipients with children 6 years and over to look for work in order to receive income support, the households comprising a couple with two children received the same disposable income.

