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Perceptions of Poverty, Income Adequacy and Living Standards in Australia

by
Peter Saunders and George Matheson

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Foreword

Since its establishment in 1980, the research conducted at the Social Policy Research Centre has reflected the importance of questions relating to poverty, inequality and living standards. These are related and fundamental issues which are of great significance to the study of social policy. The need for this kind of research has increased in recent years, as economic recession and sustained unemployment have forced issues of poverty and inequality onto the centre of the policy agenda.

At its outset, the research reported here was conceived of as a relatively narrow exercise. Its main objective was to apply a well-established methodology utilising survey data to establish a poverty line based on public perceptions of the income levels required in order to make ends meet. This approach - generally referred to in the literature as the consensual poverty line method - has been applied in a number of overseas countries in the last fifteen years, and its application to Australia was urged in an official report on poverty measurement some ten years ago.

In responding to this, and as part of its broader research into poverty, inequality and standards of living, the Social Policy Research Centre funded Dr Elim Papadakis of the University of New England to undertake a survey of attitudes to public and private welfare provision. A condition of that funding was that the survey questionnaire include a series of questions designed to produce data which would allow application of the consensual poverty line methodology to Australia. Analysis of these survey data revealed that the issue of a consensual poverty line could not be dissociated from broader questions of income adequacy and living standards, nor from the factors influencing public perceptions and aspirations relating to them.

The narrower objectives of the research have been fulfilled and the Report presents a set of consensual poverty lines derived from Australian data. The estimated poverty lines suggest that the relationship between family need and family circumstances is quite different to what other poverty lines have implied, although a larger survey would be required before one could have sufficient confidence in this to reject the other approaches. The Report also investigates several aspects of the life circumstances of survey respondents, including the incidence and frequency of periods of financial stress, and identifies factors influencing people's perceptions of minimum income levels.

This latter aspect of the research raises as many questions as it answers, but that is often the hallmark of social research. The work reported here will hopefully prove of interest in its own right, but also prompt others to instigate further investigation of important aspects of poverty, adequacy and living standards.

Peter Saunders
Director

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1 Introduction and Background

1.1 The Poverty Debate

That poverty still exists in wealthy nations like Australia is sufficient to bring into question broader economic achievements as well as the more specific policies aimed at addressing the causes of poverty and alleviating its effects. To deny sections of the community a minimum standard of living is to condone 'poverty amongst affluence', a situation which is both personally humiliating and morally indefensible. Yet all of the available evidence confirms that this continues to be the case, in Australia as well as in other advanced nations. This evidence casts doubt on the overall merits of the socioeconomic system which permits such situations to persist. The seriousness of the issues to which such evidence gives rise also highlights the need for the evidence itself to be reliable and robust.

In the past, social researchers in Australia have devoted considerable effort (and resources) to issues relating to the measurement of poverty. Some have seen the intensity of these efforts as somewhat misplaced, focusing on the minutiae of statistical and methodological concerns and ignoring the real world issues associated with the social and economic conditions which allow poverty to exist and be transmitted from generation to generation. Bryson, for example, cites the views of an (unnamed) Scandinavian social scientist who has; '...suggested that Australia is obsessed with statistics about poverty and poverty lines only because of its limited welfare coverage' (Bryson, 1988: 33). Against this, Townsend and Gordon (1991), pointing to the marked acceleration in public and scientific interest in poverty in the 1980s' note that for 'a number of years Australia has been in the forefront of research investment and technical advance' (Townsend and Gordon, 1991: 36). There is no doubt that something of a gulf has emerged in Australian social research between those concerned with measuring poverty and those who wish to locate poverty within the broader context of social inequality and to understand its causes and consequences. Some in the latter group have argued that the 'measurement fetishism' which is prevalent amongst the former actually serves to diffuse the real issue of poverty and allows policy-makers to avoid confronting the need to address the poverty problem with effective policies. That many of the former group (the 'measurers') are economists, while most of the latter ('the explainers') are sociologists has not always made it easier to define common ground for debating shared issues and concerns.

What needs to be emphasised is that all research on poverty has an inevitable, but nonetheless very important, political dimension. Brian Abel-Smith, one of Britain's foremost poverty researchers has noted, for example, that assembling information on the numbers whose income falls below basic levels of social assistance represents 'a powerful political act' which 'puts the political authorities on the defensive' (Abel-Smith, 1984: 75). He emphasises that research on poverty is always of extreme political sensitivity because of the challenge it puts before those with the power to

change things. To attempt to measure poverty is to embody certain values or ideological positions which will be more acceptable to some political persuasions than to others. As Abel-Smith forcefully yet eloquently summarises things:

> ... research on poverty is not value free. The choice of any tool for measurement is inevitably a matter of social values. These values should be made explicit: research should in my view consciously aim to be relevant to public policy. This puts the poverty researcher in the firing line of politics in its widest sense. Those who cannot face this consequence should choose less emotionally charged areas for their research. (Abel-Smith, 1984: 84-5)

Although many would not put things quite as bluntly as Abel-Smith, the basic proposition he is espousing is now accepted by the great majority of those attempting to develop theories of poverty or conceptualise and measure it. Despite the enormously important contribution of Townsend's concept of relative deprivation as a framework for conceptualising poverty, debate still surrounds Townsend's claim that his relative deprivation method provides an **objective** basis for measuring poverty (Townsend, 1979; Piachaud, 1981). Similarly, Sen's recent claim that there is 'an absolutist core to the problem of poverty' does not mean that there is no longer a need to establish a relativist dimension to the problem of poverty measurement (Sen, 1983). Indeed Sen himself is keen to emphasise this point as it relates to the use of income to assess poverty status. Thus he argues that:

> An absolute approach in the space of capabilities translates into a relative approach in the space of commodities, resources and incomes in dealing with some important capabilities, such as avoiding shame from failure to meet social conventions, participating in social activities, and retaining self-respect. (Sen, 1983: 168; quoted in Sen, 1985: 671)

If we accept then, that we are 'all relativist now', issues of value and ideology inevitable arise in selecting a standard against which to measure poverty.

But this is not to deny that such measurement will also involve a number of complex technical issues. Here we can be more confident that logic and rigourous research can assist in developing better techniques for measuring poverty. But we should not forget the importance of the underlying values on which the whole edifice rests. These need to be made explicit and subjected to scrutiny by others, if necessary within a political context. Neither should the need to improve technique be allowed to detract from the very real issues confronting those condemned to poverty, including understanding the dimensions of their suffering and highlighting the processes which cause it and the consequences that flow from it. As Townsend and Gordon (1991) have recently argued in relation to the work of Atkinson (1987) which established criteria for making unambiguous poverty comparisons independently of where any specific financial poverty line is set:

> Certainly there is much to be said in favour of both formalising poverty statements and establishing the exact upper and lower limits of conclusions which follow from drawing the poverty line at different levels of income. However, this can have the disadvantage of diverting attention from what we believe is the central task - namely to try to settle disagreements about income needs and social needs by investigating the experiences and opinions of people in these situations. (Townsend and Gordon, 1991: 38)

It is difficult to see how questions relating to the causes, consequences or experiences of poverty can be addressed - and along with them the problem of poverty itself - if we are not first able to identify the problem and measure its dimensions. As Isabel Sawhill has recently put it:

> By what standard has progress (against poverty) been measured? In other words, how is poverty defined and measured?.... .... These are central because unless we can agree on a yardstick for measuring change, it will be impossible to say what has happened (Sawhill, 1988: 1074)

It is, of course, also important to locate the study of poverty within the broader canvas of social and economic inequality and the structures, processes, policies and values which underlie it. Rainwater (1990), for example, has recently argued that:

> ... the search for a single socially validated poverty line is not useful. It is not likely that there is a single point at which mere income difficulties translate into serious economic deprivation. Instead it is more useful both for descriptive and policy purposes to examine the continuum of lower incomes and its correlates. (Rainwater, 1990: 1.)

At first glance, the approach being advocated here by Rainwater appears to cut across the conventional arguments for keeping issues of (relative) poverty and income inequality conceptually distinct from each other.

This conventional view rests on the fact that while the existence of relative poverty requires income inequality as a necessary pre-condition, the abolition of poverty does not require the removal of all income inequality. Income redistribution will be necessary, but that can (and would) stop well short of perfect equality before enough resources are redistributed to eradicate relative poverty. Such redistribution may involve an attack on the social institutions which legitimate certain structural forms of inequality, rather than the introduction of redistributive policies within a given institutional structure, but that does not invalidate the need to keep relative poverty and income inequality as distinct phenomena.

The view espoused by Rainwater (and, increasingly, by others in the recent literature) does not, however, contradict this earlier 'conventional wisdom'.

Rainwater (and others) have shifted the focus from poverty to income inequality at the lower end of the income distribution because they acknowledge the practical problems associated with the establishment of any single poverty line which is both theoretically and technically sound as well as receiving wide acceptance as a poverty standard. There is now broad understanding of the anomalies which inevitably result from acceptance of any single poverty line. Thus, Family A with an income $2 below the poverty line is deemed to be in poverty while Family B, whose income is only $3 greater is regarded as not in poverty. Alternatively, a minor change to the assumptions or procedures which shift the poverty line by a few dollars can change the poverty status of either family. Such apparent anomalies have led to several developments, each of which has the intention of placing greater emphasis on 'the continuum of lower incomes' and less on head-count estimates of poverty derived from a single poverty line.

Such developments include the use of indices for measuring poverty which are less sensitive to change in the poverty line than is the 'all or nothing' head-count poverty measure (Sen, 1976; Kakwani, 1980; Foster, Greer and Thorbecke, 1984; Johnson, 1988; Hagenaars, 1990). A simple but useful poverty index which avoids some of the limitations of the head-count measure is the poverty gap, whose increasing use in recent years can be explained by these considerations. A second approach to the issue involves investigating in more detail the sensitivity of head-count poverty measures as the level of the poverty line is varied. This approach - initially proposed by Atkinson (1987) and applied in Australia by Bradbury and Saunders (1990) - assesses the sensitivity question in effect by detailed investigation of the lower end of the income distribution in order to check how many people have incomes close to a given poverty line. The approach allows the extent to which conclusions about comparisons of poverty (over time or across countries) are sensitive to, or not influenced by, variations in the level of the poverty line itself.

Both approaches described above, though proposed and developed by economists, conform to the more recent sociological perspective proposed by Rainwater. They address the same issue in different ways, but are similar in that both place greater emphasis on the entire lower end of the income distribution rather than on the implications of adopting a particular poverty line for the measurement of poverty. It is the entire spectrum of low incomes that matters, not the numbers above or below any specific income level.

Despite these developments, debates over the definition and measurement of poverty continue and it is with these that this Report is primarily concerned. The distinction between absolute and relative poverty, for example, assumes an important dimension in relation to strategies for poverty alleviation. While absolute poverty may be reduced by either economic growth (which raises the living standards of all citizens) or redistributive policies (which favour the poor), relative poverty is independent of the overall standard of living and thus not influenced by the rate of economic growth. The removal of relative poverty, as already emphasised, requires redistributive policies which benefit the poor at the expense of others. This may be

more achievable in political terms when economic growth is positive, but that is not a logical requirement.

This perspective makes it clear why politicians find the concept of relative poverty both awkward and challenging, for it confronts them more starkly with the inevitability of redistribution. That is uncomfortable for politicians because it implies both 'winners' and 'losers' (at least in relative terms) or, in situations of low or no economic growth, a zero-sum solution in which the losers must actually incur a fall in absolute living standards. It is far easier for politicians to avoid these unpleasant possibilities and resort instead to calls for economic growth in order to improve the (absolute) living standards of everyone. These aspects further reinforce the political nature of poverty research and illustrate why the definition of poverty is controversial and hotly contested.

All this having been said, one cannot but have a good deal of sympathy with those who see the recent Australian debate on poverty as having become overly obsessed with narrowly focused technical issues associated with the measurement of poverty. There is certainly something in the point that these developments may have served to detract attention from the broader issues of cause and effect and, in the process, from the very real problems confronting those whose living standards are extremely low. But identifying who these people are and gaining a handle on the magnitude of their financial problems is an important first step in assisting them, even if such an exercise is far removed from their everyday experiences. An important task confronting this work is to clarify the dimensions of poverty and to unravel the impact of alternative technical and value assumptions. If, at the end of the day, we are to convince those with the power to change things that change is indeed required, we will need to support our arguments with research findings that are statistically rigourous as well as morally compelling.

The relevance of the issues just described has increased in the last decade along with the increased seriousness of the problem of poverty itself. There seems little prospect at the current time of a return to the low levels of unemployment experienced in the fifties and sixties. Impose on these longer-term economic prospects an economic cycle which produces short-run recessions like that currently being experienced in Australia, and the serious consequences of unemployment for poverty are all too evident. Increased unemployment has brought with it the problem of long-term unemployment which has condemned an increasing number of citizens to enduring joblessness and to the problems of vanishing personal esteem and increasing social isolation that go along with it. To add to this is the longer-term increased incidence of family breakdown, the financial hardship this creates as two separate households must be paid for and maintained, and the resulting barriers which prevent those left to look after children from participating in the waged labour market.

These developments have combined to produce what some have referred to as a 'new poor' in the eighties, mainly comprising jobless working age families, many of them caring for young children. (Room, Lawson and Laczko, 1989). Increased

homelessness among young people and enforced early retirement among older workers have further added to the groups now at risk of experiencing severe hardship for prolonged periods of time. Economic decline and marital instability have without doubt combined to place far greater sections of the population at risk of poverty now than at any time since the Great Depression. There may yet be little evidence of an emerging underclass in Australian society - a group whose exclusion from employment both causes and reinforces a more widespread exclusion from participation in mainstream social life - but the seeds of such may be currently germinating in the jobless and homeless existences confronting increasing sections of the community.

While some of these developments are reflected in recent estimates of poverty, others have given rise to new concerns about the appropriateness of existing methodologies. In relation to the first, for example, the study by Saunders and Matheson (1991) documents trends in poverty in Australia in the eighties using the Henderson Poverty Line, the measurement framework developed by the Commission of Inquiry into Poverty in the seventies. That study estimates that the poverty rate increased from 9.2 per cent in 1981-82 to 11.8 per cent by 1985-86 and to 12.8 per cent by 1989-90. The total number of income units in poverty is estimated to have risen from 494 thousand in 1981-82 to 774 thousand in 1989-90, an overall increase of 57 per cent, equivalent to an average annual rise of close to 6 per cent a year. This growth in the total numbers in poverty was accompanied by a change in the composition of families in poverty. Single people increased as a proportion of the poor, from 49 per cent in 1981-82 to over 62 per cent in 1989-90, this being largely offset by a decline in the prevalence of poor families with children - mainly in the latter part of the period - from 42 per cent in 1981-82 to 29 per cent by 1989-90 (Saunders and Matheson, 1991, Table 5: 21).

The extent of homelessness among young people alluded to above has been documented in the Human Rights and Equal Opportunity Commission Report *Our Homeless Children: Report of the National Inquiry into Homeless Children.* In a study commissioned as part of that Report, it was estimated that in 1988, 'the extent or range of homelessness among young people in Australia is probably in the vicinity of between 50,000 and 70,000' (Fopp, 1989: 365). The Report generally has served to highlight, among other things, the fact that the data used to estimate poverty in Australia has been derived from surveys of income and expenditure undertaken by the Australian Bureau of Statistics (ABS) which focus on Australian households only and thus shed no light on the plight of the homeless. This illustrates the point that new forms of poverty may require new methods and new data in order to uncover them and document what is happening.

Aside from this, virtually all quantitative estimates of poverty in Australia have to date utilised the broad framework and methodology developed by the Poverty Commission in its Report *Poverty in Australia* released in 1975 (Commission of Inquiry into Poverty, 1975). That approach to the development of a poverty line - referred to as the Henderson Poverty Line (HPL) after the Commission's Chairman Ronald Henderson - has been the subject of much criticism since it was first used to

measure poverty. Those who have used it (including the authors of this Report) have stuck steadfastly with it, in part because of the absence of any alternative, but also because it has permitted trends in poverty over the last two decades to be calculated using the same approach to measurement.

The arguments for continuing to use the Henderson Poverty Line are, however, becoming weaker as time passes. As recently noted by Anthony King:

> ... whilst users of the Henderson Poverty Line have acknowledged the limitations of the measure, the ultimate defence against the critics has always been the point that no-one has yet come up with anything better. With time, this element of the justification for use of the Henderson Poverty Line is becoming increasingly untenable and there now appears to be an urgent need to reformulate the approach to poverty measurement in Australia. (King, 1991: 1)

These concerns are not new. In February 1980, the then Minister for Social Security, Senator Margaret Guilfoyle announced in the Senate that she had requested the then existing Social Welfare Policy Secretariat (SWPS):

> ... to examine the whole issue of alternative approaches to measure a poverty line that would be relevant to Australia in the 1980s.... If we are to read in our newspaper and hear through our media, as we do at such frequent intervals, that certain numbers of people in this country are living below the poverty line, it seems to me that there ought to be some contemporary measurement of what would be an appropriate poverty line below which no person in this country should be allowed to fall. (Quoted in SWPS, 1981: 4)

In response to the Minister's request, SWPS produced its *Report on Poverty Measurement* in 1981. In that Report SWPS discussed a number of alternative approaches to poverty and provided some useful analysis of particular aspects of poverty measurement. In relation to its main aim, however, the SWPS Report was less useful. The Report noted here that:

> The original aim of this study was to develop a poverty line suitable for present day conditions. We have been less successful in achieving this objective. (SWPS, 1981: 205)

Not surprisingly, at the end of the day the Secretariat was unwilling to make the value judgements necessary to convert its useful statistical analysis into a poverty line, an outcome which was both understandable and predictable, yet nonetheless disappointing.

1.2 Two Key Principles

The present study was inspired by two related principles which any poverty standard should embody if it is to be useful for purposes of social monitoring and policy evaluation. The first is the need for the standard to be firmly embedded in relevant aspects of the socioeconomic system within which it is to be used. We refer to this as the principle of **empirical validity**. This means, at the very least, that an Australian poverty standard must be based on Australian conditions. This is not to pre-judge what those conditions should be. There are, however, clear implications which flow from the adoption of a relativist approach, in particular, that the poverty standard should relate to some aspect of the living standards of the Australian population as a whole. To go beyond this to indicate which particular aspect (or aspects) of living standards is (or are) relevant is not necessary at this stage of the argument. Suffice it to say that acceptance of this first principle leaves open the way for a great variety of specific applications.

These will include, for example, approaches which adopt socially determined official minimum standards (as illustrated in the use of the basic wage in the Henderson poverty standard), more explicitly relativist approaches (such as a poverty standard equal to a proportion of average community incomes), or ones which relate to the consumption of, or participation in, goods or activities regarded as normal by the population as a whole. All of which is to say that the derivation of an Australian poverty line depends upon empirical observations of Australian incomes, life conditions and conventions.

Acceptance of this first principle is intended to guarantee empirical validity for the poverty standard. If that standard is to satisfy our second principle, then it must also assume **political validity**. This relates to the broad acceptability of the chosen standard, not just amongst the experts who derive it, but also among the poor themselves and the population at large. If this condition is not met - at least in broad terms - then research findings based on the poverty standard will have little chance of mobilising public concern and thus generating the political support necessary for action. The need for this aspect of the poverty standard was appreciated two decades ago by poverty researchers at the Institute of Applied Economic and Social Research (IAESR) who argued that their standard constituted:

> ... a definition of poverty so austere as, we believe, to make it unchallengeable. No one can seriously argue that those we define as being poor are not so. (Henderson, Harcourt and Harper, 1970: 1)

It is presumably also what Senator Guilfoyle had in mind when asking SWPS to investigate alternative approaches to measuring a poverty line 'relevant to Australia in the 1980s'. In the derivation of a poverty standard, these two principles of empirical relevance and community acceptability are the basic principles that have guided our research.

In undertaking this research, we were also motivated by the concerns expressed by Anthony King. The particular issue addressed here relates to the level at which the basic poverty standard should be set. As already noted, the only existing poverty standard available in Australia is that used by the Poverty Commission. That standard was in fact based on research undertaken in 1966 (in part by Ronald Henderson) at the IAESR at Melbourne University (Henderson, Harcourt and Harper, 1970). The only available Australian poverty standard is thus now over twenty five years old. The nature, extent and significance of the economic and social changes which have taken place in Australia in the last quarter century provide sufficient grounds to re-consider the appropriateness and relevance of the earlier approach. In the process of investigating the relevance of the basic HPL poverty standard, our research also sheds light on several other elements of the HPL methodology, as will become apparent.

In attempting to base a poverty line on these two principles, we have applied a methodology which utilises survey responses to questions asking people to specify the minimum income levels they need to 'make ends meet'. In responding to such questions, people inevitably take into account a range of factors which affect the demands placed upon the income they are receiving. Some of these will reflect aspects of their immediate socioeconomic circumstances - the number of mouths to feed, bodies to clothe and house, and so on - while others will reflect broader contextual factors which determine their attitudes, perceptions and aspirations. In attempting to use survey data to analyse what initially began as a rather narrow question, we were gradually drawn in to consideration of the role of these broader factors and their impact on our more specific concerns. This process has brought home to us the need for poverty research to be firmly embedded in, and dependent upon, the broader social fabric in which values and perceptions are formed and their impact on living standards played out. The title of the Report reflects this broader context of the research, reinforcing the important and immediate interrelationships between perceptions of income, poverty and living standards.

1.3 Overview of the Report

The basic approach to poverty measurement employed in this Report has come to be referred to in the literature as the consensual approach to poverty measurement (Veit-Wilson, 1987; Walker, 1987; Saunders and Bradbury, 1991). As we will explain later, we have some difficulties with this terminology, but we have decided to persist with it in order to avoid undue confusion. The consensual approach to poverty measurement is explained in both general and specific terms in Section 2 of the Report, and its strengths and limitations assessed. The discussion in this section is broad-ranging in order that issues relating to income adequacy and the social meaning of income can also be addressed.

Section 3 describes the survey conducted in order to produce (among other things) a set of data which would allow us to apply the consensual poverty line methodology to Australian data. The survey data are described, comparisons with other data

undertaken as a check on reliability, and the main features of the survey data and the sample itself are set down. After a more detailed analysis of relevant sections of our survey data, the consensual approach to poverty measurement methodology is applied and its outcomes reported in Section 4. The resulting poverty lines are compared with the Henderson Poverty Line approach, and then used to estimate the incidence and structure of poverty using the survey data.

Section 5 begins with an analysis of other elements of minimum living standards and deprivation experienced by our survey respondents. In this section we also investigate in more detail the factors influencing the perceived minimum standards reported by respondents. Several socio-economic characteristics relating to family structure, income, education level, housing situation and political affiliation are shown to correlate with reported minimum income levels. What this analysis points to quite clearly is the importance of the overall **social** context within which people function to their assessment of the financial (or **economic**) assessment of the level of resources required to make ends meet. The implications of these findings are then explored, before our main findings and conclusions are summarised in Section 6.

2 Income Adequacy and the Consensual Poverty Line Methodology

2.1 Introduction

In order to discover whether or not there is a consensus on such questions as minimally adequate income levels, it is first necessary to discover what these levels actually are. This is usually undertaken by a survey in which specific questions relating to minimum income standards are asked of a representative sample of the population. The responses to such questions are, however, subject to different interpretation, in part because respondents are themselves likely to interpret the questions in different ways. People live their lives in specific social and economic contexts, and their actual experiences are likely to influence their perceptions in relation to a whole range of issues including those concerning minimum standards or minimum income levels. In attempting to assess whether there is any consensus on such matters, it is necessary therefore to take account of the influence of these social (or lifestyle) factors.

Only in the most extreme (and for practical purposes, unlikely) event will individuals all agree precisely on such issues. There will always be some diversity of views, which raises the question of where to draw the line between what might be regarded as an acceptable degree of diversity which exists around a clearly identified common consensus and the point which the degree of diversity itself precludes the use of the term consensus to describe the situation. This, as we shall see, is a dividing line that is extremely difficult to establish with any degree of confidence. Yet the existence of **any** diversity in responses means that some method must be used in order to derive a single summary estimate of the responses (the average response for example).

In this Section, we spell out in general terms (in Section 2.3) the methods developed by those who have derived a consensual poverty line from survey responses to specific minimum income questions. Before that, in Section 2.2 we explore more generally the issues of income adequacy and income poverty, building on the discussion in Section 1.1 in a way which leads us into the consensual poverty line methodology. The precise methodology which we ourselves employ later is described in detail in Section 2.4, with emphasis given to the strengths and limitations of the method.

2.2 Income Adequacy and Income Poverty

How much income do people need? Merely posing this question invites at least two obvious comments. Firstly, that what is being asked is far from clear, and secondly, that even if an unambiguous interpretation could be offered, any answer would

necessarily be subjective in the extreme. Yet this is a question which is being implicitly answered every day. A good deal of social policy, and especially income support provision, is predicated upon the assumption that there are minimum standards of living appropriate to any and all members of society, below which nobody should fall, and that at least to some extent it is possible to find money amounts corresponding to these. Any assessment of the adequacy of existing or proposed levels of pensions or benefits is making the claim that there exists some standard whereby these things may be judged, even if this claim rests on little more than intuitive grounds.

The adequacy question assumes particular importance in Australia, where poverty alleviation has always been a major and explicit goal of the social security system. Thus Cass (1986), in making the case for the Social Security Review of which she was Consultant Director, argued in the following terms:

> In choosing a set of first principles on which to base the objectives of the review, I look to poverty research and the perspective which explains powerfully the extent and composition of the population most affected by inadequate income and resources. (Cass, 1986: 12)

In a recent review of social security developments in Australia, Saunders and Whiteford (1991) make reference to an earlier study by McAlister, Ingles and Tune (1981) when noting the longer-run prevalence of this view. Distinguishing between income support and income maintenance, they argue that:

> .. the goal of income maintenance or protection has been performed in Australia through such occupational welfare provisions as the compensation, sick leave and occupational superannuation systems. In contrast, transfer payments.... are flat rate and appear to be designed to provide an adequate but modest standard of living for those with little or no private resources. Their primary role is thus one of income *support* rather than income *maintenance*. This minimum income support system therefore gives priority to the anti-poverty objective. (Saunders and Whiteford, 1991: 129, italics in the original)

The setting of benefit levels undoubtedly reflects fiscal and political constraints as much as, if not more than, ethical and/or scientific considerations relating to adequacy. Nevertheless, it is not unreasonable to suppose that the decisions of those responsible for determining rates of payment incorporate in their political calculations the likelihood of public perceptions of a given income support regime as unreasonably mean, or for that matter, excessively generous. Assuming this to be the case, there presumably must be some basis for making such judgements, however arbitrary or ad hoc they might be. As Townsend and Gordon have observed in the British context:

> The arguments which are put forward politically for the rates of benefit usually draw on scientific attempts to define and measure poverty, and they also draw on the views held by different sections of society about the level of income regarded as minimally adequate to surmount poverty. These two perspectives - scientific and social - often come close together, but sometimes they diverge. (Townsend and Gordon, 1991:35).

The role of social science in this context is generally seen as seeking some broadly acceptable basis upon which critiques of income support arrangements might be grounded; that is, to search for criteria which could enable one to say with reasonable confidence that person X has or does not have sufficient financial resources to meet his or her needs. Of course, this in itself raises a number of questions, both conceptual and practical. As Dubnoff (1985) has succinctly expressed it, to ask 'how much income is enough?' is also to ask 'enough for what?', 'enough for whom?' and 'enough according to whom?'. Indeed, these three topics have, in varying degrees, formed the backbone of much of the social policy literature on poverty, deprivation and (more generally) standards of living. Our focus here is mainly on the first and last of these questions, although our results will also have some bearing on the second.

Regarding the first question, adequacy cannot be assessed in the abstract. To ask how much someone requires is to make some assumption concerning what they might be expected to accomplish with it. Nor is it sufficient to say simply that people require enough to 'satisfy their basic needs', for this is amenable to various interpretations as well. After all, the question of what basic human needs actually are has occupied philosophers for centuries and is still the subject of on-going discussion (Doyal and Gough, 1991). It is therefore necessary to circumscribe the question somewhat.

Typically in the social policy literature, the question of need has been related to that of poverty. There is, of course, a certain circularity in relating need to situations of material poverty and then regarding those in poverty as being 'in need' or having 'unmet needs'. A definition of need is required which is **independent** of the actual circumstances experienced by people if the analysis of need is to provide a useful way of evaluating people's material circumstances for research and policy purposes. In his pioneering work in this area, Bradshaw (1972) distinguishes between four separate definitions of need used by administrators and researchers, viz. normative need, felt need, expressed need and comparative need. This taxonomy has proved to be of enduring value, as a recent evaluation of its strengths and weaknesses by Clayton (1983) indicates. Part of the difficulty surrounding attempts to define need relates to the many different ways in which the term is used, in both everyday usage and scientific analysis (Doyal and Gough, 1991, Chapter 3). In relation to Bradshaw's taxonomy, the concepts of need that have most relevance for our purpose are his concepts of normative need and felt need. As will become apparent the methodology we use relies both on 'expert' input in defining people's circumstances

as well as on people's evaluations of the income they require to attain a particular standard of living. Yet as Bradshaw himself warns:

> felt need is, by itself, an inadequate measure of 'real need'. It is limited by the perceptions of the individual - whether they know there is a service available, as well as a reluctance in certain situations to confess a loss of independence. (Bradshaw, 1972: 64)

This limitation of the concept of felt need is one which should be borne in mind when assessing the results to be presented later.

Poverty is usually understood as a deficiency in terms of material standards of living - adequate diet, housing, clothing, fuel and so on - although broader issues of social participation and normal functioning as a member of society may also be invoked. Thus Townsend (1979) in defining 'poverty' wrote:

> Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary, or are at least widely encouraged or approved, in the societies to which they belong. (Townsend, 1979: 31)

Such a definition is by no means uncontroversial, however. Some commentators would argue that poverty should be understood altogether more narrowly, as not merely a lack of access to things typically possessed in one's society, but rather deprivation to the point where one's physical survival is at risk. Townsend's main antagonist on this point has been Amartya Sen, who argues that:

> If there is starvation and hunger, then - no matter what the *relative* picture looks like - there clearly is poverty....absolute considerations cannot be inconsequential for conceptualising poverty. (Sen, 1983: 159, italics in the original)

The apparently unresolvable nature of this debate between absolute and relative conceptions of poverty is allayed somewhat by the realisation that perhaps the contenders have rather different phenomena in mind when they refer to 'poverty'. That is, while Sen is characterising the situation of the 'poorest of the poor' in underdeveloped countries, Townsend is dealing with a rather different set of problems facing people in Western societies, where widespread starvation is not a problem, but where social justice considerations do suggest a concern with the circumstances of those living below a socially acceptable standard. In any case, Sen's insistence that there is an 'irreducible absolutist core to the idea of poverty' (Sen, 1983: 159) does not mean that poverty is not relative in relation to actual levels of consumption or ownership of commodities, as he himself makes clear. The most significant and fundamental contribution of Sen's work is the distinction he makes between capabilities and consumption, a distinction which has an important role to

play in clarifying the conception of poverty and understanding its absolute and relative dimensions (Saunders and Whiteford, 1989; Doyal and Gough, 1991).

It is undoubtedly the case that notions of absolute poverty such as might be applied to the underdeveloped world have an obvious appeal for certain politicians in rich countries, eliminating mass hunger being an easier goal than redressing gross social inequities of other kinds. Thus, Joseph and Sumption (1979: 27-8) quote British 'New Right' politician Sir Keith Joseph as saying 'A family is poor if it cannot afford to eat.' The political popularity of absolute poverty measures did not originate with Thatcherism, however, as illustrated by Karl Marx's comments on Gladstone's budget speech of 1863:

> If the working-class has remained 'poor', only 'less poor' in proportion as it produces for the wealthy class 'an intoxicating augmentation of wealth and power', then it has remained relatively just as poor. If the extremes of poverty have not lessened, they have increased, because the extremes of wealth have. (Marx, 1867: 610, quoted from the 1954 edition)

It would be fair to say that most investigators into the nature and causes of poverty in modern advanced capitalist societies have adopted, whether explicitly or not, a conception of poverty as relative to prevailing social conditions. Indeed, Ringen (1988: 353) has gone so far as to argue that 'there never was such a thing as an absolute concept of poverty and no one has argued that there should be', citing the writings of Adam Smith and the early British poverty research of Seebohm Rowntree in support of this claim. In any case, it seems reasonable to assume that usually when researchers talk of poverty in the case of societies such as our own, what is meant is deprivation relative to the socially typical standards of living.

An answer to the question of 'enough for what' then, might be 'enough to stay out of poverty' or alternatively 'enough to attain a level of material and social well-being considered minimally acceptable in the society in which one lives'. There is a little more to it than this, though. We are concerned here with adequacy or inadequacy of **income**, which in the context of social security and income support generally denotes money income. As Titmuss (1958) and others have demonstrated, income in the form of earnings or social security benefits constitutes only one of a number of different ways in which societies institutionalise the distribution of resources. For instance, the availability of subsidised public housing at low rents varies from one place and time to another, and with it the amount of cash income necessary to achieve a given level of welfare with respect to accommodation. More generally, the extent of public provision of essential goods and services has an obvious impact on the amount of money someone requires to get by. Hence, it could be argued that what is really at stake in the determination of how much income people need is the amount of income necessary for the satisfaction of socially-acknowledged minimum living standards, to the extent that these are dependent upon the use of monetary income to purchase commodities in markets (Veit-Wilson, 1987: 184-6).

This assumes a particular importance in the context of Australian political debates in the 1980s. The Hawke Labor Govemment had as a centre-piece of its economic and social policy the Prices and Incomes Accord, in which wage restraint was to be compensated for by improvements in the taxation system and the social wage; improved income support and community services. For example, this period saw the reintroduction of national health insurance in the form of the Medicare scheme, with obvious implications for the demands made on household incomes by expenditures on hospital and medical care. Less tangible, but potentially just as real, is the impact of this degree of public provision on perceptions of people's income needs, whether from the viewpoint of social researchers or for that matter the public at large. Furthermore, the extent to which government policies and the political rhetoric surrounding them shape the general climate of opinion is a complex issue, but one which nevertheless should be borne in mind when considering assessments of income adequacy. The political agenda of the eighties - privatisation, deregulation of financial services, the corporatist incomes policy of the Accord, employment growth and the persistence of unemployment, child poverty and family assistance policies - and the mass media's dissemination of these and other policy debates undoubtedly influenced the language in which people thought about and discussed their financial circumstances, in ways about which it is difficult to do more than speculate.

This discussion raises the more general issue of the relationship between income levels and standards of living. While the two have often been equated in much of the Australian literature (e.g. Bradbury, Doyle and Whiteford, 1990) the relationship between them is in fact complex and raises fundamental theoretical and conceptual issues, as the work of Travers and Richardson (1989) and the recent collection of essays by Sen and others in Sen et al. (1987) illustrates. This is not territory into which we wish to tread, except in relation to one specific aspect. The consensual poverty line methodology which we employ is based on the assumption that people themselves can specify the income levels corresponding to certain specific standards of living. Whether this is in fact the case is, however, somewhat problematic, as Mack and Lansley (1985) argue. They note, in discussing the consensual methodology that:

> .. the attempt to establish a minimum standard through the concept of a minimum income causes problems. First, the questions require not only value judgements but also a *factual* knowledge of conditions in society. A person may have in mind a certain standard of living but, because they lack the experience of living at that standard, wrongly estimate the income needed. The second major problem stems from the relationship between income level and standard of living. As many studies have shown... there can be considerable variations in the standard of living of people on the same income level. ... the point in this context is that different individuals may have in mind the same minimum standard of

> living but, because of different responsibilities, estimate different minimum income levels. (Mack and Lansley, 1985:43, italics in the original)

Again, this is an issue which needs to be kept in sight when assessing our results.

Dubnoff's third question, 'enough according to whom' goes to the heart of this study. We have argued in the Introduction that any poverty line should be both based on empirical observation of the society in which it is to be applied and receive a broad degree of community support as an appropriate standard of adequacy. This implies that the answer to Dubnoff's third question is 'according to the community at large'. Acceptance of this principle does not, however, pre-judge the mechanisms through which this principle is to be operationalised. Some would argue, for example, that in democratic societies, the wishes of the community are expressed through the ballot box and that politicians are elected to express these wishes through legislation enacted in the Parliament. The tenuous nature of this link in particular circumstances is however a weakness of this approach, as is the fact that decisions made in the political arena inevitably also reflect other considerations and constraints.

To accept this view is therefore to implicitly reject an independent assessment of the decisions made by those with political power. As mentioned above, we would not wish to deny that key political actors can influence 'public opinion' on such matters. We would however argue that community views and standards and those of their political representatives are not necessarily the same thing. Furthermore, as Townsend and Gordon emphasise, both perspectives on adequacy - the social **and** the scientific - must be incorporated into the final analysis.

An alternative is therefore to seek community views on specific aspects of societal functioning and to use these directly to calculate acceptable social norms. This is the approach developed for Britain by researchers such as Townsend (1979) and Mack and Lansley (1985), and applied in the Swedish 'level of living' surveys (Ringen, 1985) and discussed in an Australian context by Travers (1986) and Travers and Richardson (1991). It needs to be emphasised, however, that the results of this process do not necessarily imply that the resulting decisions should be implemented. There is a good deal of difference, for example, between what the community might regard as an acceptable minimum standard of adequacy and what it might be prepared to pay in order to ensure that no-one falls below that minimum. The latter will be influenced by a range of factors and pressures facing people at particular times which are not necessarily relevant to the fundamental issues relating to the former. The two decisions are thus distinct and need to be kept so. Our concern here is solely with the former question and its implications for the actual decisions that have emerged through the political process. If there is a great divergence between our findings and the current situation (as reflected, for example, in levels of social security assistance) then the onus is on those with political power to reconsider past decisions or to justify them in terms of the other objectives or constraints with which they have been and are faced.

The purpose of the present study is to investigate one possible solution to these issues, namely the consensual approach to the measurement of poverty and the determination of socially acceptable minimum income levels. In order to demonstrate the distinctive nature of this methodology, it may be instructive to consider first the major schools of thought to which the consensual approach constitutes an alternative, i.e. the existing answers to 'how much according to whom?'

What might perhaps be considered the default approach to questions of poverty and income adequacy consists of employing 'official' poverty standards and equivalences implicit in existing systems of income support. In the British context, for example, poverty has sometimes been defined in terms of eligibility for supplementary benefit, an approach which Veit-Wilson (1987) has criticised as tautological: social security aims to ameliorate poverty, which is itself defined in terms of benefit receipt. This is quite an important criticism if one assumes that the purpose of poverty research and other evaluations of income sufficiency is, as stated earlier, to provide an **independent** standard for assessing the claims to adequacy of existing social security systems. Furthermore, as Kincaid warns:

> Government policy is based on what it thinks can be afforded at any particular time rather than on judgements about the income people need to maintain any kind of decent existence. (Kincaid, 1973: 179)

Not all official poverty standards derive from this kind of circular reasoning, however. The Orshansky poverty line in the United States , for instance, does lay claim to some sort of empirical and theoretical rationale, having its origins in budget studies of American consumers (Orshansky, 1965; see also Ornatti, 1966). In this sense, it is more strictly a variation on the dominant approach to setting poverty standards or income minima, which is based upon the scientific judgements of experts, be they economists, nutritionists or social policy analysts of one kind or another.

Thus Rowntree set as his standard of 'primary poverty' the smallest amount of resources necessary to attain 'merely physical efficiency', while the American budget-studies approach typically began from a notion of a minimally adequate diet for basic physical health. However, as Mack and Lansley note regarding the former, the notion of adequate diet employed by Rowntree constituted 'not the absolute scientific statement he presumed but a level determined by the assumptions and judgements of the day' (Mack and Lansley, 1985: 196; see also Ringen, 1987; 1988). That is to say, we are once again dealing with income inadequacy as a socially **relative** phenomenon, the implication of this being that expert judgements on adequate diet, housing or anything else are at least as normative as they are scientific. The experts make an assessment of what constitutes an adequate standard of living based upon their perceptions of what this would generally be considered to consist of in the society in which they live.

This can be illustrated by reference to the most famous Australian example of expert-determined poverty standards, namely the Henderson Poverty Line (HPL). The HPL has its origins in a study of poverty in Melbourne conducted by Ronald Henderson and his colleagues in the mid-1960s. There being no *a priori* grounds for establishing a poverty standard at one level or another, the expedient was adopted of setting the 'poverty line' for a 'standard family' of two adults and two children at the 1966 basic wage of $31.20 per week, plus child endowment of $1, yielding a rounded amount of $33. Those with less than this amount of income (after adjusting for family size and composition) were considered to be in poverty. This methodology thus embodies several aspects. The standard itself reflects the setting of income minima by the state in the form of the basic wage concept and the level of child endowment (as it was then called). The former originated in the 'Harvester Judgement' of 1907, in which Justice Higgins of the Commonwealth Arbitration Court ruled that wages should be enough to meet 'the normal needs of the average employee regarded as a human being living in a civilised community' (Ward, 1983: 48-9). The relative nature of the Henderson poverty standard was recognised in the updating of the 1966 poverty line by the Poverty Commission in terms of the increase in average weekly earnings over the intervening years.

As noted in the Introduction, Henderson and his fellow researchers for the Melbourne study made it quite explicit that they were attempting to produce a socially-acceptable definition of poverty: '... a definition of poverty so austere as, we believe, to make it unchallengeable. No one can seriously argue that those we define as being poor are not so' (Henderson, Harcourt and Harper, 1970: 1). Assessments of income adequacy such as those involved in the HPL are unquestionably judgements of societal standards and attempts to reflect social norms and values regarding minimally acceptable standards of living. However, they are nonetheless wholly definitions of reality offered by intellectual experts. Given the almost unavoidably arbitrary nature of **any** poverty line or prescribed minimum income, it can be argued that the specific social values and perceptions of those who define them are immaterial. In addition, it is presumably the social role of experts to investigate the nature of social realities and formulate policy recommendations. It is hard to envisage a situation where these things could be done without some degree of specialised knowledge. Nevertheless, there does seem to be a certain irony in basing our understanding of the financial needs of the poor **exclusively** upon the judgements of those who are far from poor themselves.

It is precisely for this reason that increasing interest has been shown in recent years in approaches to the measurement of income adequacy, poverty and social security requirements which reflect in some form the actual opinions of society-at-large. These methodologies comprise what has variously been termed the 'consensual' or the 'attitudinal' approach to dealing with questions of income sufficiency. It is to these that we now turn.

2.3 The Underlying Methodology of the Consensual Approach

The basic values underlying the consensual approach to the study of income adequacy and inadequacy are those of democracy and citizenship (Veit-Wilson, 1987). The idea is, so far as possible, to 'cast aside self-appointed, self-opinionated experts and "let the people decide"' (Piachaud, 1987: 149). Less dramatically, it is argued that it is entirely consistent (some would argue, absolutely essential) with the recognition that acceptable standards of living are artefacts of society to seek the measurement of the former in the views of the general public. If the satisfaction of one's socially acknowledged needs is in fact a precondition for citizenship, and this citizenship is that of a democratic state, then the legitimacy of a prescribed minimum standard of living and the policies adopted to pursue it can only be enhanced by popular endorsement.

Gauging popular sentiments on necessary incomes, financial poverty and social security measures typically proceeds in much the same manner as the measurement of public opinion on anything else; that is, through asking people questions in a social survey. However, exactly what to ask and what to make of the responses is by no means clear cut. Obviously, the first methodological issue lies in what one decides to ask people about. Is it preferable to ask respondents what sums of money people think they need as income or instead to find out from them what they consider the components of a minimally acceptable lifestyle and then assign a cash value to these? Both perspectives have been adopted in the existing research literature, and each has its advocates.

To consider first the approach of asking people what they perceive as necessities, the most notable example is the study conducted in Britain by Mack and Lansley and reported in *Poor Britain* (Mack and Lansley, 1985). The survey instrument included a list of thirty-five goods, services and activities and respondents were asked which of these they would classify as 'necessities'. Items chosen were intended as indicators of 'not only the basic essentials for survival (such as food) but also access, or otherwise, to participating in society and being able to play a social role' (Mack and Lansley, 1985: 50). They therefore ranged from 'meat or fish every other day' and 'beds for everyone in the household' to 'friends/family round for a meal once a month' and 'a hobby or leisure activity'. From these items, Mack and Lansley found 22 which were rated as necessities by a majority of their sample and whose absence was negatively correlated with income (four of these items applied only to adults, and four only to children). They then proceeded to classify as poor anyone who could not afford three or more of them. This was translated into an income level by means of fitting regression equations to the data for low and high income families to see if there was any given point at which the relationship between income and deprivation significantly diverged. Such a cut-off was found at about £70 per week, or 150 per cent of the supplementary benefit rate, a threshold income level similar to that estimated previously by Desai (1981) from the survey data generated by Townsend (1979).

This approach is intuitively appealing, yet it is not without its problems. David Piachaud (1987: 150-1) highlights two of these. Firstly, there is the choice of three specific deprivations as defining the cut-off point. If they are indeed necessities, might not the absence of even one item constitute poverty? Secondly, what is the significance of those people who cannot afford 'necessities', but somehow manage to pay for 'non-necessities', such as cigarettes, or indeed any other consumer good which did not make it onto Mack and Lansley's list in the first place? The latter highlights how this sort of method is plagued by the same difficulty which it sought to escape, namely the tendency for the researcher to demarcate what people might reasonably consider necessities. More broadly it raises the difficult question of **choice**. People may elect to purchase what the theorist considers non-necessities simply because they are more necessary to them personally than the agreed-upon 'necessities' of the experts. The difficulties involved in translating a list of popularly-approved 'necessities' into a poverty criterion, let alone a benchmark for pension and benefit levels, raise concerns over the usefulness of this approach for policy purposes. As well as these conceptual issues, there is also the practical problem of data collection. Respondents need to be asked a good many questions to facilitate the construction of this poverty index.

The alternative to such methods within the consensual perspective consists of asking people directly about the adequacy or inadequacy of given income levels. To some extent, this gets around the problem of trying to decide upon a definition of 'necessities'. The issue becomes one of how much **money** people need to purchase the requirements for a basically decent standard of living, the actual components of this expenditure being nobody's business but their own. Theoretically this might be seen as preferable, not merely because it solves certain technical difficulties relating amongst other things to the impact of different personal preferences on actual choices, but more importantly because of the social values it implies. As Atkinson (1989) puts it, this method embodies a conception of:

> ... poverty as concerned with the *right to a minimum level of resources*. On this basis, families are entitled, as citizens, to a minimum income, the disposal of which is a matter for them. This approach may be more appealing to those who see concern for poverty as based on a notion as to what constitutes a good society. (Atkinson, 1989: 12, italics in the original)

The method does, however, suffer from the problem noted earlier that the relationship between income and standard of living will reflect people's factual knowledge of societal conditions, as well as the extent of their current responsibilities.

The idea of asking members of the public what they think constitutes an adequate income has long been a staple of public opinion polling. In the United States, for example, a common question in the Gallup Poll from 1946 onward was:

> *What is the smallest amount of money a family of four (husband, wife, two children) needs to get along in this community?*

An important point to note here is that the precise wording of questions such as this is crucial to the interpretation of the responses given. In this example, the respondent is taken to have some idea of what it means to 'get along'. Indeed, making sense of the poll's results presupposes that there is some sort of common cultural understanding of this term across the surveyed population. The respondent is also provided with certain parameters within which the assessment must be made, in this case by the qualifying description 'in this community'. Consequently, one might expect that, for instance, the type of 'community' (i.e. city, small town, rural area) in which respondents live would bear a relationship to their opinion of the incomes needed to 'get along'. Empirical analysis of such data tends to support this (Rainwater, 1974: 52-9).

Perhaps more interestingly from the point of view of trying to establish a socially relevant standard of income adequacy is the pattern in which answers to such survey questions vary over time. Utilising the above Gallup Poll question, Lee Rainwater found for the United States that between 1946 and 1969 the average amount specified increased by approximately fifty per cent in real terms, yet stayed at about the same proportion of both per family disposable personal income and average weekly take-home pay of non-agricultural workers (Rainwater, 1974: 52-3). Although this finding was challenged in a paper by Kilpatrick (1973), a recent updated study by Rainwater (1990) utilising US Gallup Poll data for the 1979-86 period confirms his earlier finding using a range of alternative statistical tests of the data.

In an exercise which in retrospect is an interesting precursor to the consensual poverty methodology line discussed later, Rainwater in his earlier study investigated the relationship between the response to the 'getting along' question and the actual income level of respondents. He found a positive and statistically significant relationship between the two variables. Having estimated this relationship he then proceeded to pose the following question:

> If this equation describes the relationship between the income of respondents and the amount they think necessary for the family of four to get along, what is the amount at which the respondent's income is equal to the get-along amount? That is, what is the income of respondents who according to this formula should on the average tell interviewers that their income is just sufficient for a family of four? (Rainwater, 1974: 55-6)

On solving his estimated equation, Rainwater found the answer to be equal to 66.7 per cent of median family income, an amount which he then argued is that at which respondents would, on average, say that their income is the 'minimum necessary' for a family of four. Rainwater is careful not to equate this level with a poverty line

income level, but the close correspondence between the two is evident in the terminology he employs.

In his more recent paper, Rainwater is even more careful in distinguishing his results from those relating to poverty as such. He argues there that:

> .. a correct approach to the study of poverty, or low income, or economic deprivation, must proceed from a sociologically grounded understanding of the interpenetration of material and social well-being in modern societies... (and that)... the search for a single socially validated poverty line is not useful. It is not likely that there is a single point at which mere income difficulties translate into serious economic deprivation. Instead, it is more useful both for descriptive and policy purposes to examine the continuum of lower incomes and its correlates. (Rainwater, 1990: 1)

Here Rainwater is reinforcing the recent trend in poverty research to focus on 'the continuum of lower incomes' which has already been highlighted in the Introduction. Rainwater also emphasises that the data derived from questions such as those posed in the Gallup Poll have only limited direct relevance to poverty as such. Rather, such data can be used as:

> ... a shortcut to testing ideas that are developed from the sociological perspective on living standards. The views people offer in surveys, then, are taken not as defining poverty but as indexes of the patterns of social behaviour relevant to understanding the effects of low income. (Rainwater, 1990: 3)

While we see much of value in Rainwater's view that poverty research should be 'sociologically grounded' we will nonetheless utilise the term poverty more narrowly in this Report in describing some of our results in order to conform with others who have used the consensual methodology. Our results are, however, best seen as exploratory in the sense that they represent the first attempt to apply the approach to Australian data. We will, however, also present later results which adopt a broader perspective on social attitudes to minimum standards and dimensions of economic deprivation.

Aspects of Rainwater's earlier analysis have recently been replicated for Australia by Saunders and Bradbury (1991). Their data were derived from the responses to the following Morgan Gallup Poll minimum income question (MMIQ):

> *In your opinion, what is the smallest amount a family of four - two parents and two children - need a week to keep in health and live decently - the smallest amount for all expenses including rent?*

The average response to this question for the period 1945 to 1988 is shown in current prices in Table 2.1, and illustrated in Figure 2.1 after adjusting for increases in consumer prices. More detailed statistical analysis of the data revealed that the average response moved in line over the period with measures of overall average community income levels such as household disposable income per capita and private final consumption expenditure per capita (Saunders and Bradbury, 1991, Table 2).

Using the detailed responses to the MMIQ from the July 1987 Roy Morgan Research Centre Cost of Living Survey, Saunders and Bradbury then investigated the relationship between the responses to the MMIQ 'health and decency' question and the actual income level of respondents. Like Rainwater, they found a positive and significant (log-linear) relationship between the two variables. The estimated relationship was then used to calculate the income level at which the survey response to the 'health and decency' question and the respondent's own income were equal. The result was an amount of $333 a week in July 1987, equivalent to 155 per cent of the household disposable income per capita figure of $214.4 a week in the September quarter of that year.

Opinion poll questions of the type analysed by Rainwater and Saunders and Bradbury would seem to have several advantages in providing the basis for a measure of socially acknowledged income minima. Firstly, the method and its results are straightforward and can be reasonably readily understood by the non-specialist. Also, it can be established, as we have seen, that the income standard derived in this way is a distinctly socially relative one. Furthermore, with respect to satisfying the democratic criterion, the input of the expert is limited. Certainly, the researcher chooses the wording of the survey question and develops the statistical methodology for its analysis, but even this is available for public scrutiny and possible criticism.

Nevertheless, such a strategy has definite limitations. For a start, in so far as we confine ourselves to existing opinion poll data, the actual questions asked are a given and the analysis is limited to one sort of family. This later aspect can be seen as casting doubt on the responses of some of those whose actual family circumstances are greatly different from those of the family specified in the survey question. Thus, it can be argued that single people or couples without children have little basis in their own experience on which to respond in an informed way to the survey question. Similarly, elderly respondents may be unable to judge this issue for families with children currently, even if they once had children of their own.

Of course, it is possible to get around these difficulties by collecting one's own data. Rainwater, for instance, undertook his own survey in which he presented respondents with a series of hypothetical families and asked them to offer an estimate of how much each would need to attain a given living standard, be it 'getting along', 'comfortable', 'in poverty', and so on (Rainwater, 1974, Chapter 5). Yet there is a more stubborn problem faced by this approach. Whether those

Table 2.1: Average Response to the Morgan Gallup Poll Minimum Income Question, 1945 to 1988

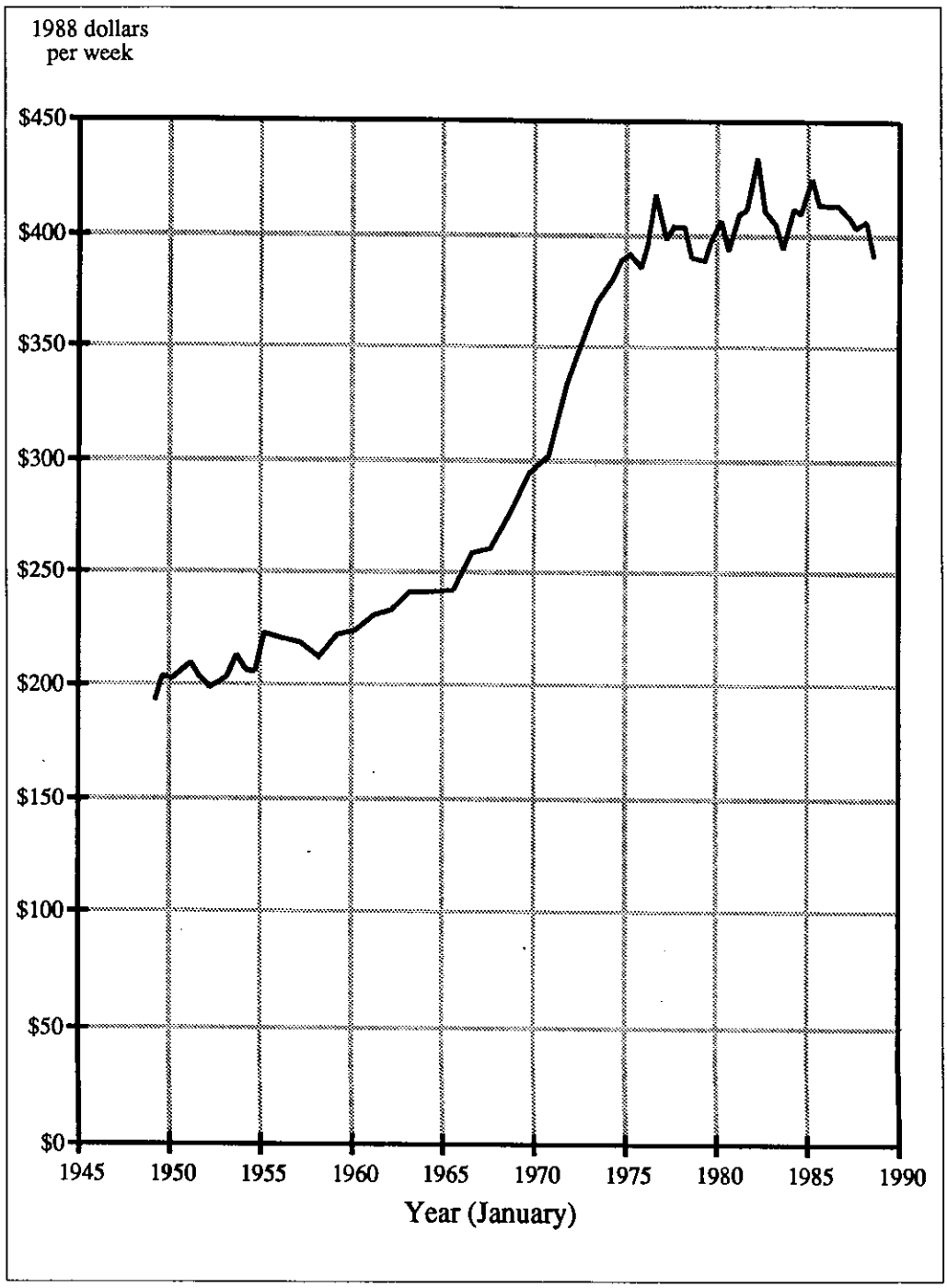
Year	Month	Response ($/week)	Year	Month	Response ($/week)	Year	Month	Response ($/week)
1945	Feb.	12.80	1963	Feb.	37.80	1979	April	183.00
1946	Feb.	13.00	1964	Feb.	38.20	1979	July	191.00
1949	Feb.	14.90	1965	July	40.60	1980	Feb.	206.00
1949	July	16.40	1966	July	44.60	1980	July	209.60
1950	Feb.	16.90	1967	July	46.80	1981	Feb.	227.00
1951	Feb.	20.00	1968	Aug.	50.70	1981	July	238.00
1951	Aug.	21.60	1969	Aug.	55.40	1982	Feb.	266.00
1952	Feb.	23.30	1970	Oct.	60.20	1982	July	267.00
1952	Aug.	25.00	1971	Oct.	71.20	1983	Feb.	277.00
1953	Feb.	25.70	1973	May	87.00	1983	July	280.00
1953	Aug.	27.30	1974	Feb.	98.00	1984	Feb.	298.00
1954	Feb.	26.50	1974	Aug.	110.00	1984	July	301.00
1954	Aug.	26.40	1975	Feb.	119.00	1985	Feb.	321.00
1955	Feb.	28.80	1975	July	123.00	1985	July	327.00
1956	Feb.	29.60	1975	Oct.	129.00	1986	Feb.	341.00
1957	Feb.	30.90	1976	Feb.	137.00	1986	July	356.00
1958	Feb.	30.50	1976	July	151.00	1987	Feb.	369.00
1959	Feb.	32.50	1977	Feb.	156.00	1987	July	376.00
1960	Feb.	33.50	1977	July	165.00	1988	Feb.	392.00
1961	Feb.	36.00	1978	Feb.	171.00	1988	July	391.00
1962	Feb.	36.40	1978	July	172.00			

Source: Saunders and Bradbury, 1991, Table 1 : 57

surveyed are estimating the income needs of a single 'typical' family or a variety of hypothetical family types, they are in both cases dealing with idealised cases, or more plainly, with somebody other than the respondents themselves. Thus the problem lies in expecting respondents to estimate an appropriate income for someone whose circumstances and/or preferences may be completely unlike their own. They have to judge what a given income level would mean for someone else. In economic parlance, the difficulty is one of interpersonal welfare comparisons (Bradbury, 1989a).

The empirical techniques which have been developed to deal with this problem are based upon a quite simple principle. Instead of asking what people think **someone else** needs, the consensual poverty line approach involved asking them instead to indicate how much income they think **they themselves** would need to attain a particular standard of living. This approach is the one which we are adopting. It is therefore appropriate to explore it in some detail, including a consideration of its strengths as well as its limitations.

Figure 2.1: Average Response to the Morgan Minimum Income Question, 1949 to 1988



Source: Saunders and Bradbury, 1991, Figure 1: 59.

2.4 The Consensual Poverty Line Approach

The methodology employed in Section 4 to derive a consensual poverty line for Australia draws upon the specific approach developed initially by a group of researchers based at Leyden University in the Netherlands. The method was first outlined and applied in an important contribution by Goedhart, Halberstadt, Kapteyn and van Praag (1977). It has subsequently been refined and applied to the measurement of poverty in the Netherlands (Hagenaars, 1986; Hagenaars and de Vos, 1988), eight EEC countries (van Praag, Hagenaars and van Weeren, 1982), the United States (Danziger, van der Gaag, Taussig and Smolensky, 1984; Colasanto, Kapteyn and van der Gaag, 1984) and Ireland (Callan, Nolan, Whelan, Hannan and Creighton, 1989) as well as (in restricted form) for Australia by Saunders and Bradbury (1991). It has been subject to scrutiny by Kapteyn, Kooreman and Willemse (1988), and Hagenaars (1986). In an Australian context, the consensual poverty line approach has been discussed by SWPS (1981) and Saunders and Bradbury (1991), as well as by Saunders and Whiteford (1989) and Gourlay (1990). Our aim here is to summarise the main features of the specific form of the approach which we use later in a way which is self-contained but designed to minimise the overlap with other accounts already available in the literature.

The first point to note is that there is not one but two different approaches to what has been called the consensual poverty line method. Both were developed by Goedhart and his colleagues in their pathbreaking work referred to above. These two methods build upon different survey questions, although both share the same general approach. The two specific applications are distinguished by the specific questions generating the survey data each uses. The first question is termed the *Income Evaluation Question* (IEQ) while the second is called the *Minimum Income Question* (MIQ).

Our empirical analysis in Section 4 adopts only the second approach, that based on the MIQ. However, although we have not followed the methods based on the IEQ, a brief description of this method is in order.[1] The IEQ is designed to obtain information on the monetary income levels attached by respondents to certain economic welfare values associated with such descriptions as 'very bad', 'bad', and 'inadequate' levels of income. A welfare function of income is then assumed for each respondent which relates income to the levels of welfare (or well-being) associated with each income level by each respondent. By making assumptions about the functional form of each individual's welfare function of income, it is possible to estimate, for each respondent, certain key parameters of their welfare function. One of these key parameters is the mean of the welfare function for each respondent. Having derived this parameter, the method then allows a relationship to be estimated which derives the income levels corresponding to different welfare

1 Readers wishing to have a more complete and formalised account are referred to Goedhart et al. (1977) and Hagenaars (1986).

evaluations for different categories of respondents (classified by family size, for example).

This is then used to derive a set of poverty lines for each category of respondents by selecting a welfare level which is assumed to correspond to the poverty line (e.g. one corresponding to a 'very bad' income level). However, the approach is not restricted to the use of a single welfare level, but can be used to derive the income levels associated with different specified criteria, inadequate, modest, comfortable, and so on, depending upon the precise wording of the IEQ itself. The sensitivity of the resulting poverty line income to these different welfare evaluations can thus also be assessed using the method. As noted earlier, we have not applied the consensual method based on the IEQ, although we will explore aspects of its use later as a means of refining the second approach based on the MIQ. Here we will follow the procedures employed in the recent study for Ireland undertaken by Callan et al. (1989), but we will leave the details to be explained later.

The second consensual poverty line approach, based on responses to the MIQ, is more straightforward and more readily comprehended than that based on the IEQ. The MIQ is usually worded with the intention of deriving the income level which each respondent regards as the minimum necessary to 'make ends meet' given their existing circumstances. The MIQ thus takes the following generalised form:

> *In your opinion what is the very lowest income that your household would have to have just to make ends meet?*

To explain the consensual poverty line approach, let Y* represent each respondent's answer to the MIQ and Y their actual income level. Furthermore, let FS represent the family size of each respondent, defined simply for the moment as equal to the number of family members. We then assume the following general relationship between these three variables:

$$Y^* = F(Y, FS) \tag{2.1}$$

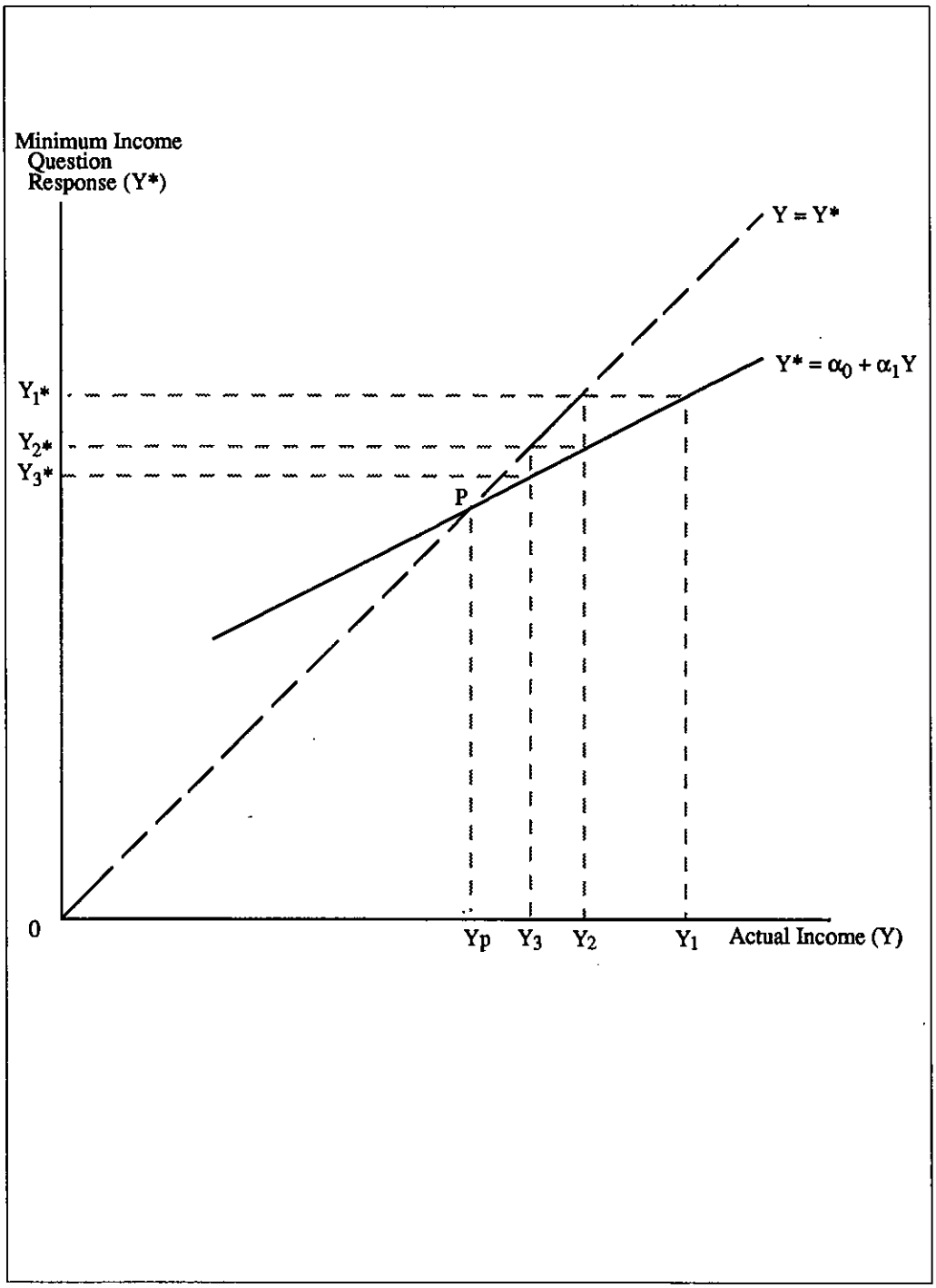
In equation (2.1), we would expect to find a positive relation between Y* and both arguments of the function F(.). This means that the minimum income level increases with actual income and with family size. If we assume further (for the moment) that the function in (2.1) is linear, then it can be written in the following form:

$$Y^* = \alpha_0 + \alpha_1.Y + \alpha_2.FS \tag{2.2}$$

where α_0, α_1 and α_2 are parameters which will be estimated from the survey responses to the MIQ and information relating to the family size of respondents.

How then, is the consensual poverty line derived once the relationship (2.2) has been estimated? The answer can be explained with the help of Figure 2.2 which is drawn for ease of exposition for respondents of a given family size (indicated in Figure 2.2 by setting $FS = F_1$). Consider a respondent with actual income equal to Y_1. On

Figure 2.2: Derivation of the Consensual Poverty Line for a Family of a Specific Size ($FS = F_1$)



average (as indicated by the estimated relationship $Y^* = \alpha_0 + \alpha_1 Y$ in Figure 2.2) they will indicate their minimum income level to be equal to Y_1^*. Assume now that their actual income were to fall to Y1* (shown in Figure 2.2 with the assistance of the 45° diagonal line, along which Y = Y* by definition). Their minimum income level would then also decline on average to Y_2^*, because of the positive relationship between Y* and Y. If their actual income were then to fall to Y_2^* ($=Y_3$), their minimum income level would decline again to Y_3^*, and so on. Goedhart et al. (1977) proposed that the consensual poverty line be set at the income level corresponding to the intersection of the two lines shown in Figure 2.2, i.e. at the income level Yp.

What the method implicitly does when setting the consensual poverty line at the intersection of the two lines in Figure 2.2 is to apportion greater emphasis to the views of those whose incomes are closest to the poverty line itself. Those whose incomes are well above the poverty line have an influence to the extent that they affect the precise form of the estimated equation (2.2), but their influence on the size of the key coefficients α_0, α_1 and α_2 (and hence on the estimated poverty lines) will be less than that of those whose MIQ response and actual incomes are closer to the intersection point P in Figure 2.2.

The interpretation of this approach is then clear, because Yp corresponds to the income level at which, on average, respondents would indicate that their current income level is just sufficient for them to 'make ends meet'. In terms of equation (2.2), the poverty line for this family type is obtained by setting $Y = Y^*(=Yp)$ and solving for Yp. The poverty line can thus readily be seen to be derived from the following formula:

$$Yp = \alpha_0/(1 - \alpha_1) + \alpha_2 F_1/(1 - \alpha_1) \qquad (2.3)$$

which can be calculated directly once α_0, α_1 and α_2 in equation (2.2) have been estimated from the survey data. To estimate the poverty lines for other family types (F_2, F_3 etc.) we simply replace F_1 in (2.3) by F_2 and F_3 and so on, in turn to produce each poverty line. In general terms, if Yp_i is the income poverty line for the *i*th family type (F_i), the method produces the following set of poverty lines, one for each of the *i* family types:

$$Yp_i = (\alpha_0 + \alpha_2 F_i)/(1 - \alpha_1) \qquad (F_i = F_1, F_2, F_3 \ldots) \qquad (2.4)$$

From these, it is then possible to estimate a set of equivalence scales which show how the needs of different families vary according to their family circumstances (reflected in this case simply by family size). We assume here that each of the different family types has the same standard of living at their own particular poverty line, from which it follows directly that the ratio of the different poverty lines derived using (2.4) gives the equivalence scales which allow family living standards to be placed on the same metric.

Thus, for example, the consensual poverty lines for family types F_1 and F_2, respectively, are equal to:

$$Y_1 = (\alpha_0 + \alpha_2 F_1)/(1 - \alpha_1) \quad (2.5)$$

$$Y_2 = (\alpha_0 + \alpha_2 F_2)/(1 - \alpha_1) \quad (2.6)$$

From this it follows that the equivalence scale $E(F_1, F_2)$ which expresses the relative needs of the two family types is derived from:[2]

$$Y_1/Y_2 = (\alpha_0 + \alpha_2 F_1)/(\alpha_0 + \alpha_2 F_2) \quad (2.7)$$

The approach to the derivation of a consensual poverty line based on the MIQ thus provides a set of poverty lines and implied equivalence scales which are based on community views regarding minimum income levels derived from responses to the MIQ. It is an elegant, yet simple and informative approach. However, lest one is lead into thinking too highly of the underlying method, several limitations of the approach deserve to be emphasised.

The first, important, point to note is that the survey respondents' implicit assessment of the adequacy of their current income level in allowing them to 'make ends meet' is **not** the criterion used to establish their poverty status, as noted in the Appendix to Saunders and Bradbury (1991). Consider, for example, a respondent whose response to the MIQ is an income level (Y*) which is above their actual income level (Y); i.e. $Y^* > Y$. This respondent is implicitly indicating that their current income level is not enough for them to 'make ends meet' - they are in a sense in poverty according to their own assessment of the income level they require to 'make ends meet' in their current circumstances, even though they have not indicated as such directly. Yet there is no guarantee that they will be defined as poor using the consensual poverty line approach described above. It is quite possible for $Y^* > Y$ yet for $Y > Yp$ at the same time.

Similarly, it is possible for the opposite to occur, i.e. for respondents to indicate implicitly that their current income is above that required for them 'to make ends meet', yet for the consensual approach to result in them being classified as poor. In this case we would have $Y^* < Y < Yp$. This criticism of the methodology, noted by Saunders and Bradbury (1991) and again recently by Jamrozik (1991), means that it is important to distinguish between the **consensual** approach to poverty measurement and a more direct **subjective** assessment of their **income adequacy** which depends upon a simple comparison between actual and 'making ends meet' income levels.[3] This is a serious objection to the consensual methodology which

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2 Note that the equivalence relativity does not depend upon the value of the slope parameter on the income variable (α_1) in equation (2.2). This is not a general result, but is so for the linear form of the function F(.) in equation (2.1).

3 We use the expression **subjective income adequacy** here to distinguish it from the kind of **subjective** assessment of **poverty status** used recently by Townsend and Gordon (1991). Their study asks respondents directly whether or not their circumstances are such that they consider themselves to be in poverty, unlike our method which is derived from responses which do not directly seek respondents' views as to whether or not they regard themselves as poor, only on their (implicit) views as to the adequacy of their existing incomes. It should

should be borne in mind when assessing the results in Section 4. We will, at that time, make comparisons between the results derived from the consensual approach and those produced by an alternative method.

It should also be apparent by now that the precise wording of the MIQ will have an important bearing on the responses it provokes (Y*), hence on the form of the estimated relationship (2.2) and thereby on the consensual poverty lines derived from (2.4). It is at this point, as noted earlier, that writers such as Piachaud have questioned whether the method really does manage to avoid expert input and instead 'let the people decide'. Clearly, in providing an answer to the generalised form of the MIQ shown above, each respondent will make certain assumptions regarding which aspects of their existing circumstances they take as given in estimating the income required to make ends meet. It is likely that they will take their existing family structure as given, for example, but what of their housing costs? Or what if they have just purchased a new car on credit and have a monthly repayment to meet? Will they assume their MIQ response to be conditioned by this aspect of their current circumstances?

There is no unambiguous way of answering such questions, although some of them are addressed in establishing the precise formulation of equation (2.1). However, because there may be other important factors omitted from the equation, one would expect a considerable amount of variability to be left in the MIQ responses even after relationship (2.2) (or a more refined version thereof) has been estimated. There is a difficult balance to be arrived at here in specifying the form of the MIQ. On the one hand, one wants as far as possible to minimise the distortions arising from respondents taking account of what might be regarded for current purposes as extraneous factors. On the other hand, to be too directive in choosing the wording of the MIQ is to risk pre-judging the issue by allowing expert input to dominate over the genuine views of respondents. There is no way to satisfactorily resolve this difficulty without compromising the entire approach. Most studies have chosen to word the MIQ in a form quite close to that already shown and thus to avoid claims of leading respondents unduly. It is nonetheless important to remember that the way in which the MIQ is worded is likely to influence the responses it induces and hence the consensual poverty lines it produces.

A further set of issues are inherent in the consensual approach as outlined above, but give less cause for concern. These relate to the more specific and technical assumptions built into the application of the method. It is necessary to make certain assumptions before the method can be operationalised, but it is important to make these explicit, to try alternatives and, where possible, to subject each alternative to investigation as to its statistical validity. For example, in going from the general relationship shown in equation (2.1) to the specific functional form shown in equation (2.2), assumptions about the form of the functional relationship itself are

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be noted that under the subjective approach used by Townsend and Gordon, there is no such thing as 'a poverty line', poverty status being determined on a different basis for each respondent according to their subjective evaluation of the adequacy of current income.

made. Some of these are clear, but others are less obvious. It is clear for example that the functional relationship between the independent variables Y and FS and the dependent variable Y* is assumed to be linear in equation (2.2). This is an assumption that can be relatively easily tested by estimating alternative functional forms of equation (2.1) and selecting that which performs best according to a set of pre-determined statistical criteria.

An alternative functional form which previous research has tended to favour over the linear form shown in equation (2.2) is the following log-linear formulation:

$$\log Y^* = \alpha_0 + \alpha_1.\log Y + \alpha_2.\log FS \qquad (2.8)$$

or a mixed logarithmic and linear formulation as follows:

$$\text{Log } Y^* = \alpha_0 + \alpha_1.\log Y + \alpha_2.FS \qquad (2.9)$$

It is readily straightforward to estimate and compare the alternative formulations (2.2), (2.8) and (2.9) and this will be done later.

A second feature of (2.2) is that the relationship between Y* and Y - as expressed by the single parameter α_1 in this instance - is independent of the family size variable, FS. This means that the slope of the Y*-Y relationship is not influenced by family size. An alternative possibility would be that the slope of the Y*-Y relationship is dependent upon family size. This possibility could be captured in two straightforward ways; firstly by specifying a different simple (linear) Y*-Y relationship for each family type; or secondly by introducing a model in which the slope parameter α_1 varies with family size. The first approach is equivalent to estimating the following relationship separately for each family type:

$$Y^* = \alpha_0{}^i + \alpha_1{}^i Y^* \qquad (FS = FS_i;\ i = 1, 2...m) \qquad (2.10)$$

where the superscripts *i* refer to the *i*th family type. The second approach involves estimating the following relationship:

$$Y^* = \alpha_0 + (\alpha_1 + \alpha_1{}^*D_i)Y + \alpha_2 D_i \qquad (2.11)$$

where D_i (i = 1,2...m) are a series of dummy variables, each of which is set equal to 1 for a particular family type and equal to zero for all other family types. The slope parameter $\alpha_1{}^*$ in (2.11) estimates the strength of the interaction between family type and the Y*-Y relationship. If there is no such interaction, then $\alpha_1{}^* = 0$, a proposition which will readily be revealed by the data and which can be judged against conventional statistical criteria.[4] Alternative formulations (2.10) and (2.11) are, it is apparent, very similar and only one need be used in practice. We prefer

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4 Note that if $\alpha_1{}^* = 0$ in equation (2.11) then this equation can be written in the form $Y^* = (\alpha_1 + \alpha_2 D_i) + \alpha_1 Y_1$ which is equivalent to equation (2.2).

formulation (2.11) because it more readily permits statistical testing of the hypothesis under consideration (i.e. that $\alpha_1^* = 0$), although we later report results based on both approaches.

The final comment about the formulation (2.2) is that the only non-income variable in the equation is family size, measured by the number of family members. An obvious improvement to this would be to acknowledge - as all of the existing equivalence scale research confirms - that adults add more to family needs than children, by including the number of adults (A) and the number of children (C) separately into the model. This produces the following relationship:[5]

$$Y^* = \alpha_0 + \alpha_1 Y + \alpha_2 A + \alpha_3 C \qquad (2.12)$$

It is relatively straightforward now to test whether or not the coefficients α_2 and α_3 in (2.12) are equal. If the equality of the coefficients is rejected then formulation (2.12) is preferable to (2.2). If not, then (2.12) reduces to (2.2) which can then be used with more confidence.[6]

This last discussion leads on to the more general issue of whether or not other variables in addition to family size should enter equation (2.2). Recall that this equation will be used to derive poverty lines and that it thus incorporates a view about how needs change with family size and other determining characteristics. Furthermore, much of what we currently know about relative need indicates that variables other than family size are important - the Henderson Poverty Line, for example, indicates that need is assumed to vary not only with family composition, but also with the age of family members, their gender and workforce status and the total number of people living in their household.

A more sophisticated equation than (2.2) (or (2.12)) will be required to establish whether similar features are implicit in our survey data, along the lines proposed in a recent paper by de Vos and Garner (1989). Again, this issue will be explored in greater detail later with the use of the following generalised version of (2.2):

$$Y^* = \alpha_0 + \alpha_1 Y + \alpha_2 FS + \Sigma\alpha_{2+i} Z_i \qquad (2.13)$$

where Zi is a vector of relevant variables, the precise definition of each one being left for later. We will, however, give specific attention to the issue of whether, and if so, how, responses to the MIQ (and hence the consensual poverty lines) vary according to the age of the respondent.

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5 Clearly, equation (2.12) could also take the mixed logarithmic formulation $\log Y^* = \alpha_0 + \alpha_1 \log Y + \alpha_2 A + \alpha_3 C$.

6 If the hypotheses H_0: $\alpha_2 = \alpha_3$ cannot be rejected, then (2.12) becomes $Y^* = \alpha_0 + \alpha_1 Y + \alpha_2 (A + C) = \alpha_0 + \alpha_1 Y + \alpha_2 FS$, or equation (2.2).

2.5 Summary

In this section we have explained the consensual poverty line methodology and noted both the strengths and several weaknesses of the general approach. It is certainly an exaggeration to claim that the methodology as applied to date fully reflects the goals of citizenship and democracy which are seen by some as giving the method its underlying rationale and validity. Similarly, the expectations of those who claim that the method in effect allows the influence of experts on the construction of a poverty standard to be over-ridden by 'letting the people decide' have also been seen to be unrealised in practice (as well as in theory). Put bluntly, the consensual approach still requires experts to design the sampling methods and interpret the results, as well as (most significantly) to decide upon the actual wording of the Minimum Income Question itself. As experts ourselves, we make no apology for this. Rather, we see the method as allowing the influence of experts like ourselves to be diluted somewhat, while allowing the views and perceptions of others - including those currently living close to the edge, struggling to make ends meet - to have an influence on where the poverty standard is to be set.

It is difficult to see how to go much beyond this, by dispensing entirely with the views (and research expertise) of 'the experts'. The consensual poverty line method may thus not go as far down the democratic road as some would wish, but for us its great strength is that it allows us to construct an alternative poverty standard which is grounded in the everyday experiences of Australian people, particularly those living in, or close to, poverty. This, combined with the method's obvious advantages in terms of taking community views seriously, means that the resulting poverty standard satisfies both of the key principles enumerated in the Introduction. We turn now to a discussion of our survey data before turning to our analysis of these data and what they imply for the reliability of the methods, the levels at which consensual poverty lines are to be set, and the relevance of existing poverty standards.

3 The Survey

The survey which produced the data analysed in this Report was not undertaken specifically for current purposes. The survey was undertaken by Dr Elim Papadakis of the University of New England as part of a study of community attitudes to public and private welfare in Australia. Part of that study was funded by the Social Welfare Research Centre (as it was then called), and additional questions were added for the specific purposes of this research. Readers who are interested in the results from Dr Papadakis' broader survey can find his results summarised and analysed in the report *Attitudes to State and Public Welfare: Analysis of Results from a National Survey* published as Report No. 88 in the Social Policy Research Centre Reports and Proceedings series in December 1990. That report contains a description of the survey methods and sample characteristics which forms the basis of the description and analysis contained in Section 3.1 below. This is followed in Section 3.2 by a more detailed description of those sections of the questionnaire of particular relevance to this research.

3.1 Sampling Method, Response Rates and Data Description

The survey took the form of a self-administered questionnaire mailed to a national sample selected from the electoral rolls. A systematic random sample of 3507 electors was drawn in April 1988 by the Australian Electoral Office for all Australian States and Territories except South Australia, for which the sample was selected at the offices of the South Australian Electoral Commission. Follow-ups to the initial mail-out in April took the form of a reminder/thank-you postcard sent on 15 August and additional copies of the questionnaire sent with covering letters to non-respondents on 29 August and 30 September, the latter being sent by certified mail. Respondents' specific queries and concerns regarding the survey were dealt with by telephone. The final responses were received in January 1989. Of the original 3507 questionnaires mailed out, 1814 responses were received, there were 1129 refusals and 564 'non-contacts'.

In understanding some of the reasons for refusal or non-contact, it is useful to quote Papadakis himself at some length:

> The majority of refusals cannot be broken down into specific categories since these people did not respond to any of the mail-outs. However, 228 people wrote in to point out that they were not interested or that the survey was not relevant to their needs (N = 17) or that they were too old to participate (N = 26). Sixteen people wrote in to complain that the survey was an invasion of privacy, 15 only partly completed a few pages of the questionnaire and 20 wrote in to say they had no time. A small but significant proportion of people were no longer living at the addresses listed on the records of the electoral register.

> A large number of envelopes (N = 461) (including the final round of mailouts by certified mail) were returned to sender because the person was no longer living at the address. We ensured that no person was counted twice in arriving at this total. A further 21 potential respondents were overseas or away from their home address during the survey. Twenty people could not read English or had great difficulty comprehending it. Messages were sent in by friends, relatives and neighbours. There were obviously others in this category who simply did not reply to the survey. A further 39 people were unable to complete the questionnaire due to ill-health. They were either in hospital or seriously ill at home and/or disabled (for instance, blind or deaf). Messages were usually sent by friends, relatives or neighbours. Another 23 people wrote in to say that they were unable to cope with the questionnaire because of old age and general poor health. (Papadakis, 1990: 6)

In constructing a usable sample, the non-contact category was subtracted from the total sample to give an effective target sample of 2943. Expressing the actual number of responses (1814) as a proportion of the effective sample (2943) total gives an overall response rate of 62 percent. Given the length (28 pages) and complexity of the questionnaire, this may be judged a quite respectable rate for a postal survey of this kind (see de Vaus, 1990: 101; Miller, 1977: 73-83).

For present purposes, however, not all of the 1814 responses could be used in our analysis, primarily because of missing data for key items of interest. In particular, questions concerning respondents' incomes and living standards tended to have a greater frequency of complete or partial non-response than other sections of the questionnaire. The extent and consequences of this incompleteness can be judged from what follows. Excluding respondents who did not answer those (income) questions of central relevance to our study further reduced the effective sample from 1814 to 1394. This sample was reduced once more to exclude respondents residing in multi-family households. The reason for this latter exclusion relates to the need to ensure consistency in coverage of our income and family composition variables and is explained further later. Excluding multi-family households caused a further reduction in the sample to 1094, this being the size of our final effective working sample.

The Papadakis report referred to earlier incorporates several tests for the representativeness of the sample made on the basis of comparisons with data from the *1986 Census of Population and Housing*. The reader may refer to that report for details of the composition of the full sample by State, age, gender and marital status. It was found that there was no significant regional bias in the sample, although the other factors mentioned did give rise to some cause for concern. Consequently, we

begin checking the correspondence between the sample and the population with an investigation of their composition in terms of age, gender and family type.[7]

It should be noted that instead of the Census, we chose to compare the data against population estimates from the *1988-89 Household Expenditure Survey* (HES), conducted by the Australian Bureau of Statistics. Such estimates might well be argued to lack the authority of Census results. However, they do have certain advantages for present purposes. Firstly, they offer a reasonably well-grounded set of population figures for a time period corresponding more closely to that of our survey. More importantly, much of the analysis for this Report necessarily involves close examination of data on people's incomes, an area covered in only the most general terms in the Census but in much more detail by the HES. Certainly, there are limitations to the comparability of the two data sets, largely arising from the different sampling methods and units of analysis employed (individual electors in the case of our survey and households in the case of the HES). We would nevertheless argue that the comparison is the most valid possible, given the extent to which appropriate official statistics are available.[8]

To begin with the demographics, Table 3.1 presents a comparison of the age and gender breakdown of the sample with the equivalent for the adult population estimated from the HES. It can be seen that both the young and the elderly are under-represented in the sample. Persons aged under 25 are fewer than might be expected, this being especially pronounced in the case of the 18 to 20 year old age group, which in the survey comprises less than half of its proportion of the population according to the HES. At the other end of the scale, there is also an undersampling of the population aged 65 and over, the exception being the very oldest age groups (i.e. 85 years plus), where the numbers are probably too small for much to be inferred from this anyway. The under-representation of the aged is possibly an effect of the research methodology. As mentioned above, a number of non-respondents gave old age or associated poor health as the reason for their inability to complete what was a lengthy and complex questionnaire. It is quite conceivable that the personal household interview approach of an official body such as the ABS would have a greater degree of success in enumerating the aged than a postal survey such as the present one.

Turning to the gender breakdown of the sample, there is an evident bias towards females, both overall and within most age brackets. One possible explanation for this has recently been provided by Papadakis (1991), who notes that in addition to the general bias towards women, married women are also over-represented in the

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7 The cross-checks reported below are based on our final working sample of 1094. Use of cross-checks based upon the full effective sample of 1394 produces very similar results to those reported.

8 It should be noted that the HES data had not been released in time for Papadakis to use for his comparisons, even if he had wished to.

Table 3.1: Comparison of the Age and Gender Composition of the Sample with Population Estimates from the 1988-89 Household Expenditure Survey

	The Sample					
	Females:		Males:		Persons:	
	(N)	(%)	(N)	(%)	(N)	(%)
18-20 years	2	0.2	3	0.3	5	0.5
21-24 years	22	2.0	7	0.6	29	2.7
25-29 years	82	7.6	42	3.9	124	11.4
30-34 years	85	7.8	47	4.3	132	12.2
35-39 years	84	7.8	71	6.6	155	14.3
40-44 years	82	7.6	79	7.3	161	14.9
45-49 years	50	4.6	45	4.2	95	8.8
50-54 years	54	5.0	44	4.1	98	9.0
55-59 years	33	3.0	44	4.1	77	7.1
60-64 years	50	4.6	48	4.4	98	9.0
65-69 years	23	2.1	23	2.1	46	4.2
70-74 years	10	0.9	16	1.5	26	2.4
75-79 years	12	1.1	12	1.1	24	2.2
80-84 years	6	0.6	2	0.2	8	0.7
85 years or older	3	0.3	2	0.2	5	0.5
Total	**598**	**55.2**	**485**	**44.8**	**1083**	**100.0**

	The Adult Population					
	Females:		Males:		Persons:	
	('000)	(%)	('000)	(%)	('000)	(%)
18-20 years	314.0	3.0	355.4	3.4	669.4	6.3
21-24 years	444.7	4.2	400.6	3.8	845.3	8.0
25-29 years	623.3	5.9	624.1	5.9	1247.5	11.8
30-34 years	602.4	5.7	583.4	5.5	1185.8	11.2
35-39 years	635.1	6.0	575.6	5.4	1210.7	11.4
40-44 years	516.3	4.9	617.6	5.8	1133.9	10.7
45-49 years	404.9	3.8	394.7	3.7	799.6	7.5
50-54 years	357.0	3.4	361.7	3.4	718.7	6.8
55-59 years	315.4	3.0	304.8	2.9	620.2	5.9
60-64 years	381.7	3.6	324.7	3.1	706.3	6.7
65-69 years	291.7	2.8	267.5	2.5	559.3	5.3
70-74 years	240.7	2.3	194.6	1.8	435.4	4.1
75-79 years	171.0	1.6	120.6	1.1	291.6	2.8
80-84 years	66.5	0.6	58.1	0.5	124.6	1.2
85 years or older	31.9	0.3	20.3	0.2	52.3	0.5
Total	**5396.6**	**50.9**	**5203.8**	**49.1**	**10600.4**	**100.0**

Sources: Survey data and **Household Expenditure Survey, 1988-89**, unit record file.

sample relative to single women. He then points out that such biases are not evident in similarly designed surveys dealing with a wide range of social and political topics. However, the cover of the questionnaire used in this survey indicated that it covered attitudes to health care, education and pensions, a feature which Papadakis uses to explain the differential response rates on the grounds that women more than men identified with the theme of the study. This is a plausible explanation, although one which must remain essentially conjectural until further evidence is available.

Table 3.2 looks at the representativeness of the sample in terms of labour force status and (where appropriate) current occupation. With respect to the former, the sample is reasonably representative, the most noticeable disparity lying in the proportion currently in self-employment: 6.3 per cent in the sample as opposed to the HES figure of 9.0 per cent. The distribution by occupational categories presents a rather different picture, however. Utilising for the purposes of classification the eight 'major groups' of the Australian Standard Classification of Occupations (ASCO) yields a distribution of respondents quite distinct from the corresponding HES-based population estimates. With the exception of clerks, who comprise a similar proportion of both sample and population, the survey data show a marked skew towards managerial, professional and other white-collar occupations and away from manual or blue-collar ones, including trades. Again, this is at least partly to be expected. Traditionally, those segments of society with less formal education, along with the old and those with limited language skills have been less likely than their more communicatively able counterparts to be willing survey participants, a difficulty exacerbated by the postal questionnaire method (de Vaus, 1990: 100). Nevertheless, this particular bias should be borne in mind when summarising respondents' appraisals of standards of living, as it is quite possible that people's perceptions of such things are influenced by their occupational background and the 'cultural capital' which goes with it.

The investigation of poverty and inequality, particularly within the context of the Australian social security system, often deals not so much with individuals as with families. In addition, a person's material welfare is generally a function not only of their individual resources but also the household circumstances within which they find themselves. Consequently, Table 3.3 compares sample and HES data with regard to the distribution of respondent households by the number of household members and also by family composition. The most obvious problem of the present survey on both counts can be seen in the disproportionately low number of single person households in the sample. These comprise over a fifth of households in the population, yet only 9.7 per cent of those in our survey data. The reasons for this under-representation are subject to conjecture, yet it is possible that again age is a relevant factor. According to the HES, people aged 65 or over make up only about 14 per cent of the adult population and yet nearly 38 per cent of people living alone.

The under-representation of single person units in the sample mirrors similar features of other surveys of this type. The most famous of these is *The Australian Survey of Consumer Expenditures and Finances* conducted in two waves by a team

Table 3.2: Comparison of the Labour Force Status and Current Occupation of the Sample with Population Estimates from the 1988-89 Household Expenditure Survey

	Current Labour Force Status			
	The Sample		HES 1988-89 (Adult Persons)	
Labour Force Status	N	%	'000	%
Full-time Wage or Salary Earner	453	43.1	4477	42.2
Part-time Wage or Salary Earner	132	12.5	1174	11.1
Self-employed	66	6.3	953	9.0
Unemployed	25	2.4	341	3.2
Not in the Labour Force	376	35.7	3656	34.5
Total	1052	100.0	10600	100.0

	Occupation (Currently Employed Only)			
	The Sample		HES 1988-89 (Adult Persons)	
Occupational Group	N	%	'000	%
Managers and Administrators	109	17.1	762	11.5
Professionals	112	17.5	840	12.7
Para-professionals	68	10.6	440	6.7
Tradespersons	64	10.0	1050	15.9
Clerks	120	18.8	1207	18.3
Salespersons and Related	64	10.0	829	12.6
Plant and Machine Operators	47	7.4	550	8.3
Labourers and Related	55	8.6	927	14.0
Total	639	100.0	6604	100.0

Sources: As for Table 3.1.

of researchers at Macquarie and Queensland Universities during the 1966-68 period. That survey produced the first national data on household incomes and expenditures in Australia, pre-dating the surveys introduced subsequently by ABS. Data from the Macquarie Survey (as it became known) were used to provide the first analysis of many aspects of the socioeconomic circumstances of the Australian population, including the distribution of income (Podder, 1972; Podder and Kakwani, 1975), the economic circumstances of the poor (Podder, 1978) and the incidence of taxation (Bentley, Collins and Drane, 1974).

Table 3.3: Comparison of Size and Composition of Respondents' Households with Population Estimates from the 1988-89 Household Expenditure Survey

Household Size

Number of Persons	The Sample		HES 1988-89 (Households)	
	N	%	'000	%
One	106	9.7	1101	23.2
Two	324	29.6	1371	28.9
Three	196	17.9	738	15.6
Four	281	25.7	935	19.7
Five	139	12.7	438	9.2
Six	40	3.7	134	2.8
Seven or more	8	0.8	21	0.5
Total	1094	100.0	4738	100.0

Household Composition

Type of Household	The Sample		HES 1988-89 (Households)	
	N	%	'000	%
Single Person	106	9.7	1101	23.2
Childless Couple	295	27.0	1256	26.5
Couple with Children	637	58.2	2134	45.0
Sole Parent	56	5.1	247	5.2
Total	1094	100.0	4738	100.0

Sources: See Table 3.1.

Further analysis of the Macquarie data revealed, however, that there was a serious under-representation of single person households. Ingles (1981), for example, shows that such households comprised only 9 per cent of the Macquarie sample, compared with 15 per cent of the population according to data from the *1975-76 Household Expenditure Survey* (Ingles, 1981: 20). Furthermore, because single person households tend to have low incomes and expenditure patterns unlike larger households, this feature of the Macquarie data caused many of the results derived from the data to be distorted. This was noted by both Podder (1972) and Ingles (1981) and was later echoed by Stark (1977) who argued that the

under-representation of single person households (and larger households) in the Macquarie data, in conjunction with several substantial reporting errors, caused this data source to be one which 'scores very low in terms of reliability' (Stark, 1977: 6). The fact that this under-representation of single person households has occurred in sample surveys before is not, of course, reason to dismiss its implications for the analysis and results derived from our survey. Rather, it alerts us to the need to better address this issue in future surveys (if that is possible) and as yet another factor to be taken note of when assessing our results.

As the main concern of this study is with people's cash incomes, it is appropriate to conclude this examination of the survey sample's representativeness with an overview of respondents' reported financial circumstances. In Table 3.4, the magnitude, distribution and sources of the family incomes of the sample are compared with equivalent data taken from the 1988-89 HES, this comparison taking 'family income' to mean the combined gross income of the respondent and his or her spouse in the case of the survey and the gross incomes of income units in the case of HES.[9]

The table tells a fairly clear story. Firstly, although there are a modest number of very low incomes, the majority of the sample have higher gross incomes than the population at large, as well as a somewhat more even distribution of gross income. By way of illustration, for all but the lowest decile of the income distribution, the sample mean incomes are higher, while the second to eighth deciles each enjoy a larger share of total income than the corresponding strata of HES income units. The overall mean and median weekly incomes of our sample are significantly greater than those derived from the official survey.[10] On the subject of income composition, there is also a degree of apparent unrepresentativeness in the survey. When compared with the population, survey respondents receive a greater proportion of their income from wages and salaries and lower proportions from both government pensions and benefits and self-employment. The former would be at least partly explained by the under-representation of the aged in the sample, and the latter is no doubt at least partly explicable by the relative lack of self-employed respondents in our survey, as noted earlier.

It is evident, then, that the sample possesses a number of biases, some more pronounced than others. Briefly, there is some distortion in favour of women, white-collar wage and salary earners, the more affluent, people aged 'in the prime of life' and those living with others rather than alone. Nevertheless, the foregoing tables reveal a good degree of representativeness in many aspects of the sample, and

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9 'Income unit' is an ABS concept representing a theoretically basic social unit of shared income and expenditure. Income units can be married couples (with or without dependent children), sole parents or single persons.

10 To some extent, this is likely to reflect the sample's under-representation of single person households.

Table 3.4: Comparison of Income Data from the Survey with the 1988-89 Household Expenditure Survey

	Gross Family Income per Week			
	The Sample (Respondent and Spouse)		HES 1988-89 (Income Units)	
Gross weekly income ($)	N	%	'000	%
1 – 99	14	1.3	258	3.7
100 – 199	78	7.1	1310	18.8
200 – 299	125	11.4	1112	15.9
300 – 399	105	9.6	880	12.6
400 – 499	115	10.5	784	11.2
500 – 599	124	11.3	598	8.6
600 – 699	118	10.8	476	6.8
700 – 799	102	9.3	371	5.3
800 – 899	78	7.1	296	4.2
900 – 999	63	5.8	260	3.7
1000 plus	172	15.7	642	9.0
Mean income	650		493	
Median income	584		391	

	Shares of Gross Family Income by Decile			
	The Sample (Respondent and Spouse)		HES 1988-89 (Income Units)	
Decile	income share (%)	mean income	income share (%)	mean income
Lowest	2.2	144	1.9	94
Second	3.8	247	3.0	147
Third	5.4	353	4.3	210
Fourth	6.9	446	5.5	272
Fifth	8.4	545	7.1	352
Sixth	9.8	635	8.7	431
Seventh	11.2	727	10.8	531
Eighth	13.1	850	13.4	662
Ninth	15.7	1023	17.3	853
Highest	23.5	1531	28.0	1381
Gini Coefficient	0.33		0.41	

	Composition of Gross Family Income	
	The Sample (Respondent and Spouse)	HES 1988-89 (Income Units)
Income Source	%	%
Wages and Salary	80.1	72.0
Own Business	6.4	9.7
Property	4.9	6.2
Superannuation	1.8	1.3
Government Benefits	5.7	9.8
Other	1.3	1.0

Sources: See Table 3.1.

where differences exist they tend to be in areas where others (including the ABS itself) have had difficulty ensuring a completely unbiased sample. Overall, we must admit to regarding the representativeness of our sample as more of a reason for satisfaction than dissatisfaction with the quality of our data.

The real issue however is whether or not the sample biases we have noted constitute a serious problem, and what, if anything, should be done about it. Elim Papadakis dealt with age, gender and marital status biases via the creation of a set of post-hoc weights based upon small area data from the Census (Papadakis, 1990: 6). We decided not to pursue such a strategy, however, for reasons related to the difference in intent between the two projects.[11] The tabulation of public opinion items on a representative basis is less a concern of the present study than the investigation of certain statistical relationships among aspects of people's economic and social circumstances and their evaluation of incomes and living standards. Consequently, provided there is at least a reasonable representation of different social groups, a slightly skewed sample is less of a problem than it might seem. What this **does** imply, however, is the need for careful application of quantitative techniques. For example, simply taking the mean response to a question evaluating income levels is likely to be even more misleading than usual. This in turn raises the final issue for this section, namely the questions employed to evaluate income levels and to construct our consensual poverty lines.

3.2 The Minimum Income Question

The survey questionnaire included a number of questions covering respondents' perceptions of income adequacy and income poverty for themselves and people in similar circumstances, as well as a series of questions relating to the occurrence of material deprivation experienced by respondents. In order that these key questions might produce the most considered response, they appeared in the questionnaire immediately following a series of questions requesting details of the actual incomes of respondents.

The most important question for present purposes was the Minimum Income Question (MIQ), described in general terms in Section 2. In choosing the precise wording of this question, we followed as closely as possible the wording used by other researchers. This was partly to incorporate the experience that others have gained in relation to the MIQ wording issue, but also in order that our results for Australia can be more readily compared with those for other countries. With these considerations in mind, the Minimum Income Question was posed in the following form:

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11 An illustrative discussion of the impact of weighting the sample on our results is provided in Section 4.3.

> *In your opinion, what would be the very lowest net weekly income (that is, income after tax but before payment of any bills) that your household would have to have to just make ends meet?*

Answers to this question constitute the main criterion variable for the analyses in the following section. We investigate the correlates and predictors of people's assessments of how much they need to 'make ends meet', and in the process derive a consensual poverty line, against which the adequacy of existing incomes may be assessed. Some basic information relating to the MIQ responses is, however, warranted at this stage.

Table 3.5 summarises the responses to the survey Minimum Income Question for our working sample, while Figure 3.1 shows the distribution of responses, both before and after excluding the zero responses. In deriving the first two columns of Table 3.5, it should be emphasised that unfortunately a zero response was assigned at the time of initial data analysis to all who either answered zero to the MIQ or did not answer the question at all (these were responses coded as blanks in the data set, which might indicate either). Because of our inability to distinguish these two forms of response, we excluded all such responses for the purposes of this and all subsequent analysis. This left the distribution of responses to the MIQ shown in the final column of Table 3.5 and as illustrated in the lower pane of Figure 3.1. Around three quarters (74.8 per cent) of responses fell within the range from $200 to $499 a week. Responses that fell outside this range were retained, except in the specific instances described in detail later. After excluding zero responses, the mean response to the MIQ was $350.50 a week and the median response $300 a week. Not surprisingly, given the nature of the MIQ, many respondents rounded their answer to the nearest $50 a week. This is illustrated by the fact that the median response shown in Table 3.5 remained at $300 even after the 93 zero cases were excluded from the sample.

The tendency for responses to the MIQ to be rounded to $50 or so was also apparent in the US Gallup Poll data analysed by Rainwater (1990). Given the inherent complexity of the MIQ itself, such a tendency is to be expected and does not, of itself, give any cause for concern. It does imply, however, as Rainwater notes, that the arithmetic mean is a preferable measure of central tendency than the median, because the latter will tend to 'ratchet up' suddenly as the responses themselves ratchet up to a higher level.

Although there is, as noted, a fair degree of bunching of MIQ responses indicated in Figure 3.1, there is also some variability, particularly as indicated in the skewness of the responses in the upper income levels. Table 3.5 implies, for example, that, after excluding zero responses or non-responses, around 17 per cent of respondents provided a MIQ response which exceeded the sample mean by at least 50 per cent. This variability in MIQ responses is of more than just statistical interest. Because such variability exists, the very description of the method we are using in terms of a

Table 3.5: The Distribution of Responses to the Minimum Income Question (MIQ)

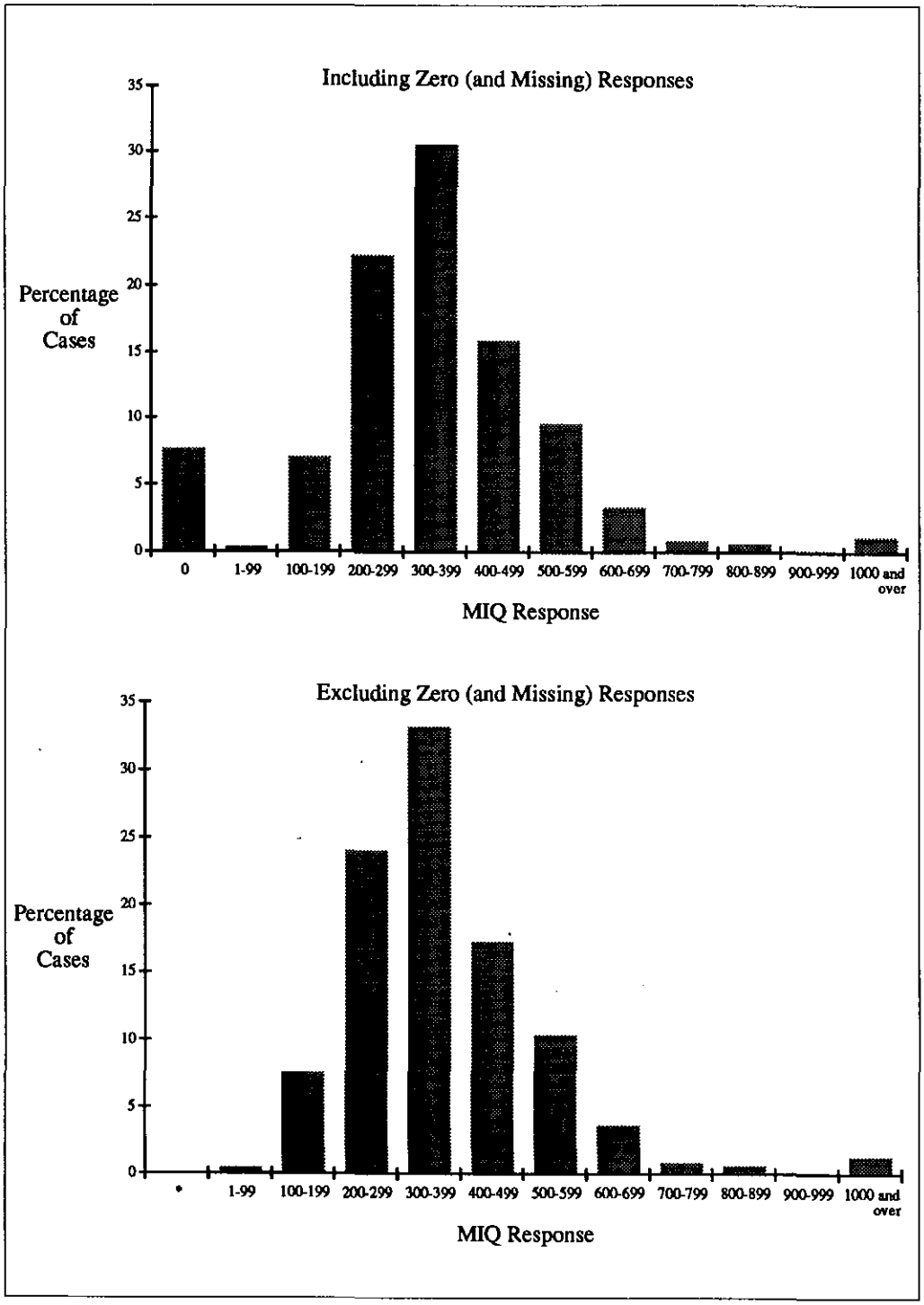
MIQ Response ($ a week)	Including Zero Responses: Number	Percentage	Excluding Zero Responses:
0[a]	93	7.8	-
1 - 99	5	0.4	0.5
100 - 199	83	7.0	7.6
200 - 299	265	22.3	24.2
300 - 399	361	30.4	33.0
400 - 499	192	16.2	17.6
500 - 599	114	9.6	10.4
600 - 699	40	3.4	3.7
700 - 799	10	0.8	0.9
800 - 899	8	0.7	0.7
900 - 999	2	0.2	0.2
1000 and over	14	1.2	1.3
Total	**1187**	**100.0**	**100.0**
Mean Response	$323.10		$350.50
Median Response	$300.00		$300.00

Note: a) Zero includes missing values.

'consensual' approach is brought into question. Certainly, the use of the term 'consensual' seems at odds with the variability displayed in Table 3.5 and Figure 3.1. Instead, what the survey data seem to indicate is that, far from any consensus on 'making ends meet' minimum income levels, a significant proportion disagree quite markedly with the majority. It is mainly for this reason that we regard the description of this method as the 'consensual approach to poverty measurement' to be something of a misnomer.

It is, of course, true that some of the variation in the data will disappear as other characteristics of the respondents are allowed for in the analysis. But, as subsequent analyses will reveal, the degree of variation always remains substantial, even after allowance for such factors as the respondent's family type, age, income level, and so on. Despite our misgivings, we have continued to describe our method as consensual, mainly to allow our work to be located in the mainstream poverty literature, as well as to avoid unnecessary confusion. We do, however, wish to urge those who continue to adopt this method to come up with a name which is less easily misunderstood. We see much merit in the use of the term 'attitudinal approach' to describe the method, because this more clearly indicates that it is the attitudes of respondents which are ultimately decisive, whether or not they reflect any underlying consensus. We also favour giving emphasis to the importance of

Figure 3.1: The Distribution of Responses to the Minimum Income Question ($ per week)



perceptions held in the community generally on issues relating to poverty, income adequacy and living standards - hence the title of this Report.[12]

Finally, as an aid to further appreciating the MIQ responses, Figure 3.2 shows a scatterplot of the relationship between the MIQ response and the respondent's actual average weekly net income over the twelve months prior to the survey.[13] As will become apparent later, the relationship shown in Figure 3.2 forms a central part of our analysis. However, all that is important to highlight at this stage are some general features of the responses shown. First, the point noted earlier about the tendency for respondents to round their MIQ responses is clearly evident. A similar tendency is not apparent in the data on actual net income as this variable is constructed from several different responses and involves the use of a simple tax imputation procedure, as described in Appendix One.

The second notable feature of Figure 3.2 is that there is a clear positive relationship between actual income and the MIQ response. This aspect will be developed and explored in greater detail later. Finally, it is also clear that although there is a tendency for the two income variables to be positively related, it is apparent that this association is by no means a perfect one. There is considerable variation in the MIQ responses remaining even after the association with actual income is allowed for. Consideration of the various factors associated with the pattern of MIQ responses is an important element of the analysis described in subsequent sections.

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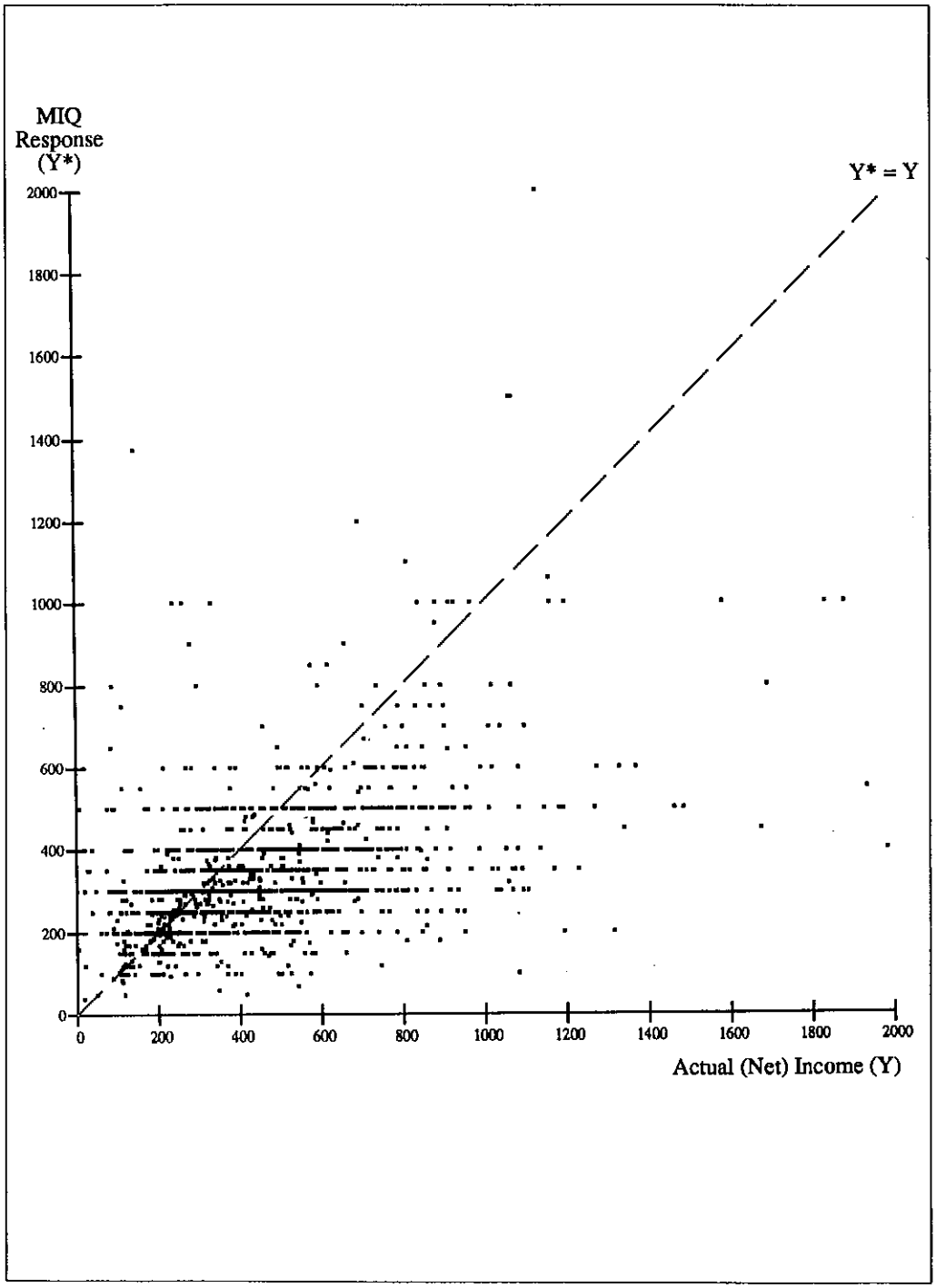
12 Because the survey questions do not refer explicitly to the issue of poverty, we cannot refer to our results as having relevance to specific perceptions of poverty, as opposed to more general perceptions relating to other aspects of income adequacy and living standards.

13 The methods used to estimate net weekly income are described in Appendix One. It should be noted that Figure 3.2 excludes a single outlying observation in order to optimise on the scales selected for presentation.

Figure 3.2: The Relationship between Actual Income and Response to the Mimimum Income Question ($ per week)



4 The Consensual Poverty Line Approach: Results

4.1 The Relationship Between the MIQ Response, Actual Income and Family Size

The first step in our analysis is to use our survey data to estimate the basic relationship between the MIQ response and actual income shown in equation (2.1) and illustrated in Figure 2.2. The main characteristics of the survey and our survey data have been described in general terms in Section 3, while our key concepts of income and the unit of analysis are explained in greater detail in Appendix One. Here we report our consensual poverty line results using the estimated relationship between the MIQ response (Y*), the actual income level of the respondent and their spouse (Y) and a variable which, for the moment, measures the size of the respondent's family (FS).

For the reasons explained in Appendix One, our analysis is restricted to single family households only. This left us with a potential sample of 1414, although our effective working sample of 1094 is less than this because not all respondents to the survey completed all of the specific questions used in the analysis. Our initial aim was to test for a limited number of alternative functional forms of the basic relationship between Y* and Y, and to investigate how particular family size and family structure variables enter into this relationship. Restricting ourselves to the kinds of possibilities uncovered by other researchers in the area, we focused on eight models, organised into three groups which vary according to the range of variables included. Within each of the three groups, specific models vary only according to the functional form of the assumed relationship. Our eight basic models were:

$$Y^* = \alpha_0 + \alpha_1 Y \tag{4.1}$$

$$\log Y^* = \alpha_0 + \alpha_1 \log Y \tag{4.2}$$

$$Y^* = \alpha_0 + \alpha_1 Y + \alpha_2 FS \tag{4.3}$$

$$\log Y^* = \alpha_0 + \alpha_1 \log Y + \alpha_2 FS \tag{4.4}$$

$$\log Y^* = \alpha_0 + \alpha_1 \log Y + \alpha_2 \log FS \tag{4.5}$$

$$Y^* = \alpha_0 + \alpha_1 Y + \alpha_2 ADTS + \alpha_3 CHDN \tag{4.6}$$

$$\log Y^* = \alpha_0 + \alpha_1 \log Y + \alpha_2 ADTS + \alpha_3 CHDN \tag{4.7}$$

$$\log Y^* = \alpha_0 + \alpha_1 \log Y + \alpha_2 \log ADTS + \alpha_3 \log CHDN \tag{4.8}$$

where:[14]

Y* = response (in dollars per week) to the Minimum Income Question (MIQ);

Y = actual combined weekly net income of the respondent and spouse;

FS = total number of family members (single family households only);

ADTS = number of adult family members; and

CHDN = number of children.

Equation numbers (4.2), (4.4), (4.5), (4.7) and (4.8) incorporate the logarithm of some or all of these variables, although it should be noted that equation (4.8) could only be estimated for those families with children (i.e. where CHDN>0), because the logarithm of CHDN is not defined when CHDN = 0.

These basic equations have been specified in order to test certain propositions on which later analysis will build. Thus, comparisons to determine whether a linear or log-linear formulation is more appropriate can be undertaken on the basis of comparisons of the estimates of equations (4.1) and (4.2), (4.3) and (4.4) , or (4.6) and (4.7). Comparisons of (4.4) with (4.5) and (4.7) with (4.8) indicate whether the family size variable enters the model in a linear or logarithmic form. Finally, comparisons of (4.3) with (4.6), (4.4) with (4.7) and (4.5) with (4.8) will reveal whether total family size is the appropriate variable, or whether better results are produced when the numbers of adults and children are entered separately. This last issue is of considerable significance, as it obviously bears on the important question of whether or not respondents' answers to the MIQ imply that the needs of adults differ from the needs of children.

The specific null hypotheses which we wish to test once these equations have been estimated, along with the implication of each, are described below:

Hypothesis I: H_0: $\alpha_1 = 0$ vs. H_1: $\alpha_1 > 0$. Rejection of H_0 in favour of H_1 indicates a positive relationship between Y* and Y, i.e. that the income level required to 'make ends meet' varies positively with actual income.

Hypothesis II: H_0: $\alpha_2 = 0$ vs. H_1: $\alpha_2 > 0$. Rejection of H_0 in favour of H_1 indicates that the income level required to 'make ends meet' varies positively with family size.

Hypothesis III: H_0: $\alpha_2 = \alpha_3$ vs. H_1: $\alpha_2 \neq \alpha_3$ in equations (4.6) and (4.7). Rejection of H_0 will indicate that the needs of adults and children differ, at least as they affect the income required to 'make ends meet'.

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14 For more information on how these variables are derived, see Appendix One.

It should be noted that if H_0 in Hypothesis III cannot be rejected, then equations (4.6) and (4.7) reduce to equations (4.3) and (4.4), respectively. Furthermore if H_0 in Hypothesis II cannot be rejected, then equations (4.3) and (4.4) reduce to equations (4.1) and (4.2), respectively. Our series of basic equations is thus designed to permit these simple hypotheses to be tested and is hierarchical, in the sense that non-rejection of a null hypothesis leads to the preference of the preceding equation(s).

The estimates of equations (4.1) to (4.8) are shown in Table 4.1. (The equivalent results based on an expanded sample which includes multiple-family households are presented in Appendix Two.) The results in Table 4.1 all indicate a positive and significant coefficient on the income variable. Hypothesis I is thus clearly rejected. Furthermore, the size of the coefficient on income shows remarkable stability across the different formulations shown in Table 4.1, despite the different functional forms employed. This is important, as the relationship between Y* and Y is clearly central to the whole consensual line approach. Table 4.1 also clearly implies rejection of Hypothesis II, the family size variable (FS) being highly significant in equations (4.3), (4.4) and (4.5). On the basis of these three equations, the choice between alternative functional forms is difficult. The linear model (4.3) performs best overall, at least as assessed using the adjusted R^2, although the family size variable performs better when entered into either of the two logarithmic models, (4.4) or (4.5). When the numbers of adults and children are entered separately, there is a clear indication that equation (4.7) performs best overall. All independent variables are statistically significant in this equation, unlike in equations (4.6) and (4.8) where the family variables do not perform well.

Our preferred model is thus that shown in equation (4.7), although it remains to test Hypotheses III, i.e. to test statistically whether or not the coefficients on variables ADTS and CHDN are equal. The null hypothesis to be tested involves a linear restriction on the coefficients α_2 and α_3 in equation (4.7) which, if the restriction is satisfied, reduces to equation (4.4). The restriction can be readily tested using an F-test, as explained, for example, in Huang (1970: 119-21). Application of this test produced an estimated F-statistic equal to 2.28. This is less than the critical F-value, which is equal to 3.84. On strictly statistical grounds therefore, Hypothesis III cannot be rejected, in which case we can impose the restriction $\alpha_2 = \alpha_3$ in equation (4.7), which then reduces to equation (4.4), (because FS = ADTS + CHDN by definition). However, we decided not to follow the dictates of purely statistical reasoning here, but to continue to use equation (4.7) rather than equation (4.4). Although we have attempted throughout to be rigourous in our use of statistical methodology, we view these statistical techniques as an aid to, rather than the ultimate determinant of, our final conclusions.

The main reason for this is the greater interest for, and relevance to, recent policy discussions of the results derived from equation (4.7). These relate to the fact that much discussion has taken place recently in Australia about the needs of children and child poverty. By continuing to use equation (4.7), we are able to distinguish

Table 4.1: Estimates of Basic Consensual Poverty Line Models for Single Family Households

Equation Number[a]	Dependent Variable	Independent Variables[b] Intercept	Income (Y)	Family Size (FS)	Number of Adults (ADTS)	Number of Children (CHDN)	Sample Size	$\bar{R}^2$	F
(4.1)	Y*	191.74** (21.3)	0.32** (20.0)				1094	0.267	399.0
(4.2)	log Y*	3.77** (35.3)	0.33** (18.7)				1094	0.243	351.2
(4.3)	Y*	156.98** (12.89)	0.30** (18.81)	13.23** (4.21)			1094	0.278	211.4
(4.4)	log Y*	3.79** (35.87)	0.30** (16.81)	0.04** (5.31)			1094	0.261	194.1
(4.5)	log Y*	3.84** (36.20)	0.30** (16.14)	0.14** (5.73)			1094	0.264	197.2
(4.6)	Y*	160.72** (7.15)	0.30** (18.02)		10.73 (0.83)	13.53** (3.88)	1094	0.277	140.8
(4.7)	log Y*	3.76** (35.06)	0.29** (15.30)		0.10** (2.74)	0.04** (4.23)	1094	0.262	130.3
(4.8)[c]	log Y*	4.03** (25.38)	0.28** (10.07)		0.11 (1.39)	0.03 (1.15)	693	0.164	46.4

Notes: a) The actual equations are shown in the main text.
b) T-statistics are shown in brackets:**(*) indicates statistical significance of the coefficients on the independent variables at the one (five) per cent level.
c) Equation (4.8) is estimated for families with children only.

between the needs of children and adults, rather than equate them as is implied by equation (4.4). We were further convinced to pursue this path by the fact that the relative size of the coefficients α_2 and α_3 in equation (4.7) lends a certain plausibility to them (an issue which will be explored in more detail later). What needs to be kept firmly in mind, however, is the fact that our failure to reject Hypothesis III means that subsequent results based on equation (4.7) have a fairly substantial standard error attached to them. For this reason, we will therefore derive consensual poverty lines in the following section based both upon our preferred equation (4.7) in Table 4.1 and on equation (4.4) which, on statistical grounds at

least, cannot be rejected in favour of equation (4.7). The limitations of using equation (4.4) will shortly become apparent.

Before proceeding, an alternative approach to the relationship between family size and composition and the MIQ response was investigated. This involved specifying a series of zero-one dummy variables, one for each family type, and then including each of these into the model containing the two income variables. This is a more flexible formulation than that used so far, as it allows, for example, for the influence of additional children on family needs to vary with the number of children in a more complex way than is permitted by our earlier equations. To test this possibility, we defined the following family type dummy variables:[15]

F_1 = one adult, no children

F_2 = two adults, no children

F_3 = two adults, one child

F_4 = two adults, two children

F_5 = two adults, three children

F_6 = two adults, four children

F_7 = sole parent, one child

F_8 = sole parent, two children

F_9 = sole parent, three children

Each dummy variable assumes a value equal to one for that family type and zero otherwise. Our estimating equation then took the following form:[16]

$$\log Y^* = \alpha_0 + \alpha_1 \log Y + \alpha_2 F_2 + \alpha_3 F_3 + \alpha_4 F_4 + \alpha_5 F_5 + \alpha_6 F_6 + \alpha_7 F_7 + \alpha_8 F_8 + \alpha_9 F_9 \quad (4.9)$$

Equation (4.9) can then be used directly to derive the basic relationship for each family type. Thus, for example, for family type 1, $F_1 = 1$, while $F_2 = F_3 = F_4 = F_5 = F_6 = F_7 = F_8 = F_9 = 0$, in which case we have from (4.9):

$$\log Y^* = \alpha_0 + \alpha_1 \log Y \quad (4.10)$$

from which the consensual poverty line for family type F_1 can be calculated by setting $Y^* = Y(=Yp)$ and then solving for Yp. Similarly for family type F_2, $F_2 = 1$ while $F_1 = F_3 = F_4 = F_5 = F_6 = F_7 = F_8 = F_9 = 0$, which means from (4.9) that:

$$\log Y^* = (\alpha_0 + \alpha_2) + \alpha_1 \log Y \quad (4.11)$$

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15 Couples with more than four children and sole parents with more than three children were excluded because of the very small numbers of cases involved.

16 Note that family type F_1 is used here as the benchmark.

from which the consensual poverty line for family type F_2 can be calculated, and so on.

Our estimation of equation (4.9) produced the following result:[17]

$$\begin{aligned}\log Y = {} & 3.84^{**} + 0.29^{**}\log Y + 0.10^{*}F_2 + 0.18^{**}F_3 + 0.22^{**}F_4 + 0.19^{**}F_5 + \\ & \quad (35.00) \quad (15.10) \quad (2.40) \quad (3.80) \quad (4.95) \quad (3.72) \\ & 0.31^{**}F_6 + 0.16^{*}F_7 + 0.08F_8 + 0.19F_9 \qquad (4.12) \\ & \quad (4.43) \quad (2.01) \quad (0.82) \quad (1.41)\end{aligned}$$

(Sample size = 1085; $\bar{R}^2 = 0.263$; F = 43.9)

These results have several appealing features. First, the very stable and statistically significant relationship between Y* and Y which was revealed in Table 4.1 remains unaltered. Second, most of the family type dummy variables are statistically significant, particularly those which relate to couples. Third, the pattern of coefficients on the family type dummy variables is as one would expect, at least for couples; the estimated coefficients increase steadily as the number of children increases, apart from the peculiar result for couples with three children, where the estimated coefficient on F_5 is lower than that on F_4, implying that costs decrease with the addition of the third child. The fact that the coefficients on successive (couple) family size variables increase at a declining rate indicates that there are economies of scale in family size, or that overall costs per person fall as family size increases.

The most disappointing aspects of the results are, however, those which apply to sole parent families (i.e. dummy variables F_7, F_8 and F_9). While the first of these is significant, variables F_8 and F_9 are not, and their associated coefficients exhibit no coherent pattern. These latter results no doubt in part reflect the small numbers of sole parent families in our sample and the variety in their circumstances.[18] Although disappointing, this feature of these results is one which has been commonly encountered in previous research on family needs. Although of great policy interest, the relatively small incidence of sole parent families in the population as a whole means that it is very difficult to obtain samples of sole parent families of sufficient size to produce statistically robust results in random samples drawn from the population as a whole without making the size of the sample so large as to be prohibitively expensive.

This tendency to implicitly downplay results for sole parents is also evident in the empirical research into equivalence scales, where estimates for sole parent families

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17 As in Table 4.1, t-statistics are shown in brackets. For other information, see the Notes to Table 4.1.

18 Our total working sample contains only 29, 17 and 8 families in family types F_7, F_8 and F_9, respectively.

are noticeable mainly by their absence. In his survey of the equivalence scale literature Whiteford (1985) found that of the sixty scales he reviewed only nine included scales for sole parents and in four of these nine, no account was taken of household composition, only of household size. In a more recent study Whiteford (1991) again points to this 'gap in the equivalence scale literature', one reason for which reflects the fact that when much of the research was undertaken, '... the number of sole parents in the population (and in social surveys) was fewer and reliable estimates (were) more difficult to make' (Whiteford, 1991: 66). The importance of deriving more reliable estimates of how the needs of sole parent families vary with their circumstances has grown in recent years and this is an issue to which further attention should be directed in future research on poverty and need.

Finally, we explored one further variation on equation (4.9). As it stands the equation assumes that the relationship between Y* and Y, as reflected in the slope coefficient on the variable log Y, is independent of family type. In order to explore the validity of this assumption, we defined the following series of slope coefficient dummy variables (SD) for each family type:

$$SD_i = F_i \log Y \qquad (i = 2,3,....9) \tag{4.13}$$

where SD_i = log Y for family type i and $SD_i = 0$ otherwise. We then estimated a regression model which included log Y, the eight family type dummy variables defined in (4.9) and the eight slope coefficient dummy variables defined in (4.13), i.e.

$$\log Y^* = \alpha_0 + \alpha_1 \log Y + \sum_{i=2}^{i=9} \alpha_i F_i + \sum_{j=2}^{j=9} \beta_j . SD_j \tag{4.14}$$

This equation implies, to take family type F_2 as an example, that for this family type we have the following relationship:

$$\log Y^* = (\alpha_0 + \alpha_2) + (\alpha_1 + \beta_2)\log Y \tag{4.15}$$

Similarly, for family type F_3 we would have:

$$\log Y^* = (\alpha_0 + \alpha_3) + (\alpha_1 + \beta_3)\log Y \tag{4.16}$$

and so on. Note how both the intercept and the slope coefficient now vary according to family type.

The results from our estimation of equation (4.14) were not encouraging. Only two of the eight slope coefficient dummy variables were statistically significant (at the five per cent level), while a number of the family type coefficients were adversely affected, as was the basic slope coefficient α_1 (although it remained highly significant). We thus concluded that there was nothing to sustain the formulation (4.14) as being preferable to (4.9) and thus dispensed with further analysis based on the slope coefficient dummy variables approach.

We were still left with deciding whether the formulation in (4.9) is preferable to the simpler model shown in equation (4.7) of Table 4.1. The choice between the two is by no means straightforward. Both have almost identical explanatory power and, with the exception of the sole parent family type dummy variables in (4.9), each model results in statistically robust coefficient estimates. It is tempting to reject (4.9) because of the unsatisfactory results produced for sole parent families. However, this feature of the results is concealed rather than corrected by the results in Table 4.1, simply because the estimates for sole parent families are not subject to separate statistical testing. We have therefore decided to proceed for the moment with both sets of results, in order to check for the sensitivity of our consensual poverty lines to the formulation of the underlying statistical model, and to alert readers to the statistical concerns that arise over our results for sole parent families. Before proceeding to use our estimated equations to derive a set of consensual poverty lines, however, we considered the role of age in influencing the response to the minimum income question.

4.2 Age Effects

Thus far we have investigated the impact of family size and composition on responses to the MIQ. We turn now to an investigation of the role (if any) of age. Much of the equivalence scale literature indicates that both the existence and age of family members affect family needs and hence poverty lines (Whiteford, 1985). The impact of the age of children on needs has been apparent in much of the equivalence scale literature (Whiteford, 1985, Table 5.4: 111) and has been officially recognised in Australia in recent years by the payment of different rates of family allowance supplement according to the age of the qualifying child. In addition, the detailed equivalence scales underlying the HPL (and many other scales) show the needs of adults to vary with their age, although this feature has not been incorporated into social security payment relativities. The existence of this evidence thus suggests that an investigation into the role of age in our research is also worth pursuing.

Unfortunately, we were severely limited in this exercise by the amount of detail available to us on the ages of family members. The only information we actually had relates to the age of the respondents themselves and we were therefore restricted to experimenting with this variable. We were, however, able to explore several different formulations of the model which provided some offset to the lack of age data. Given that our analysis so far has revealed equation (4.7) to be the preferred formulation of our basic model, we explored the role of age by including alternative age variables into this equation. We tried the following different formulations for the age variable:

(i) AGE (Age of respondent, in years)

(ii) AGE and $(AGE)^2$ (A non-linear formulation)

(iii) PENSAGE (A zero-one dummy variable, equal to one if the respondent was at age pension age or older, and zero otherwise) [19]

(iv) |44-AGE| (The absolute difference between 44 and the age of the respondent)

The first formulation is straightforward and requires no explanation. The second formulation includes the quadratic term ($(AGE)^2$) to allow for a non-linear relationship between the MIQ response and age, specifically one in which the effects of age may increase initially and then decline. Formulation three distinguishes age solely according to whether or not the respondent is above or below the age of eligibility for the age pension. We felt that a less exact formulation of the age variable was possibly more appropriate than the two previous ones, in both of which needs are assumed to vary continuously with age. Formulation four was inspired by the recent study by Rainwater (1990) in which he argued that the relationship with age looked more like an inverted triangle - rising linearly to a peak and then declining linearly - than would be captured by the second quadratic formulation. In the US data analysed by Rainwater, the peak occurred at an age of 43 years. Rather than choose a similar peak for Australia, we instead estimated a model using the quadratic formulation shown in (ii) and then calculated from that the point at which the implied peak occurred. The answer was, amazingly 44 years, almost identical to the pattern discovered in the US data by Rainwater. Formulation four thus utilises the absolute value of the difference between 44 and the respondent's age, to allow for an effect which initially increases with age and then declines once the peak age of 44 is passed.

Our results including each of the four age formulations into the basic equation (4.7) are shown in Table 4.2. The linear formulation (i) is seen to be unsatisfactory, with the coefficient on the variable AGE not statistically significant. However, in all three other formulations, the age variables are significant and do not reduce the significance of the other variables in the model, the main effects being a slight decline in the size of the coefficients on the Income (Y) and Number of Children (CHDN) variables.[20] Choosing between these three formulations is not easy. All three have very similar statistical properties, both in terms of the significance of

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19 The age of eligibility for the age pension in Australia is 60 years for females, and 65 years for males.

20 Differentiating the quadratic formulation (ii) in order to derive the age at which the peak effect occurs produces:

$$\frac{\delta \log Y^*}{\delta \log AGE} = 0.017 - 0.000376\ AGE$$

Setting this equal to zero and solving for AGE gives AGE = 0.017/0.000376 = 44.1 (after allowing for rounding of the coefficient estimates). This explains formulation (iv) of the age variable described earlier.

Table 4.2: Inclusion of Alternative Age Effects Into the Basic Model[a]

(Dependent Variable: Log Y*)

Equation Number	Intercept	Income (logY)	Number of Adults (ADTS)	Number Children (CHDN)	AGE	$(AGE)^2$	PENSAGE	|44-AGE|	N	$\bar{R}^2$	F
(i)	3.88**	0.28**	0.10**	0.03**	-0.001				1084	.262	97.4
	(29.2)	(13.9)	(2.9)	(3.5)	(1.5)						
(ii)	3.58**	0.27**	0.10**	0.02**	0.017**	-0.0002**			1084	.271	81.6
	(23.4)	(13.3)	(2.7)	(2.3)	(3.4)	(3.7)					
(iii)	3.91**	0.27**	0.10**	0.03**			-0.124**		1084	.269	100.7
	(33.6)	(13.6)	(2.9)	(2.8)			(3.4)				
(iv)	3.99**	0.27**	0.10**	0.02*				-0.006**	1084	.271	102.0
	(32.6)	(13.5)	(2.9)	(1.9)				(4.0)			

Notes: a) See Notes to Table 4.1.

individual coefficients and the performance of the equation as a whole. On balance, however, we prefer the less precise formulation (iii), partly because we do not think it reasonable to have too much confidence in our equations which imply that needs vary continuously with age, and partly because the data on age refer to the respondent only, with no information available on the ages of other family members.

Formulation (iii) is also somewhat of an improvement over our preferred equation (4.7) in Table 4.1. It is interesting to note that the results in Table 4.2 show that, in statistical terms, the effect of the age variable PENSAGE is stronger and more important than that of either of the family composition variables ADTS and CHDN. This itself is sufficient reason to continue with a formulation similar to that in Table 4.2 in which the age variable appears explicitly..

Acceptance of the role of the age variable in the model led us to re-consider the dummy variable approach discussed previously in the context of the simpler models. In this case, we defined eleven dummy variables, distinguishing for single adults and childless couples between whether or not the respondent was above or below age pension age.[21] The dummy variables were defined as follows:[22]

21 There are a relatively small number of families in the sample where the respondent was above pension age but where there were dependent children also. These families were excluded for this part of the analysis.

22 Note that the (age) status of the family is defined according to the age of the respondent.

F_1 = Single aged adult
F_2 = Single non-aged adult
F_3 = Aged couple
F_4 = Non-aged couple
F_5 = Non-aged couple, one child
F_6 = Non-aged couple, two children
F_7 = Non-aged couple, three children
F_8 = Non-aged couple, four children
F_9 = Non-aged sole parent, one child
F_{10} = Non-aged sole parent, two children
F_{11} = Non-aged sole parent, three children

Again, each dummy variable assumes a value equal to one for that family type and zero otherwise. Using in this case an aged single person family as the benchmark, our estimated equation was as follows:

$$\begin{aligned}\log Y^* = {} & \underset{(31.1)}{3.80^{**}} + \underset{(13.5)}{0.28^{**}\log Y} + \underset{(2.2)}{0.17^{**}F_2} + \underset{(2.0)}{0.14^{**}F_3} + \underset{(3.8)}{0.26^{**}F_4} + \\ & \underset{(4.3)}{0.30^{**}F_5} + \underset{(5.1)}{0.34^{**}F_6} + \underset{(4.3)}{0.31^{**}F_7} + \underset{(5.0)}{0.43^{**}F_8} + \underset{(3.0)}{0.31^{**}F_9} + \\ & \underset{(1.6)}{0.18F_{10}} + \underset{(2.1)}{0.30^{*}F_{11}} \end{aligned} \qquad (4.17)$$

($N = 1049$; $\bar{R}^2 = 0.267$; $F = 35.7$)

As was the case earlier, the results in equation (4.17) are quite satisfactory - again with the exception of the peculiar result for couples with three children (variable F_7) - both in terms of the statistical significance of individual coefficients and the overall performance of the equation. The other main exception again occurs in the case of sole parent families, where the small sample sizes do not allow statistically robust results to be produced.[23] With this caveat, we will use the results shown in equation (4.17) to derive consensual poverty lines for each family type using the method described earlier. It is to the consensual poverty lines implied by our results that we now turn.

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23 Further experimentation with a more complex model in which the slope coefficient on the income variable in (4.17) was assumed to vary with family type produced no support for this hypothesis and are thus not reported.

4.3 Consensual Poverty Lines

As explained in Section 2.4, the consensual poverty line (CPL) is derived by setting $Y^* = Y$ in the estimated relationships and solving to obtain the resultant income level. That income level - equivalent to the level Yp in Figure 2.2 - is then equal to the consensual poverty line for each family type. In order to assess the sensitivity of our results to the precise equations used to derive them, we have calculated consensual poverty lines based on an extension of equation (4.4) in Table 4.1 which incorporates the age variable PENSAGE, as well as estimated equation (iii) in Table 4.2 and the dummy variable approach based on the estimation of equation (4.17). The three sets of consensual poverty lines are shown in Table 4.3, which also includes the average of the three estimates for each family type and, in the final column, the ratio of the highest to the lowest poverty line derived from each of the three methods.

The three methods produce broadly similar poverty lines for each family type. The ratios of the highest to lowest estimates in the last column do indicate, however, the kinds of margins of error which result from the use of different estimating equations. These tend to be small for couple families with less than three children and for single non-aged people, but are larger for aged single people, for larger families and sole parents. This no doubt reflects the smaller samples in these latter cases as well as the greater variety in their circumstances. The consequence is less well determined statistical estimates and increased sensitivity to the results derived from any single set of estimates. But what is most important to conclude from these ratios is that the CPL methodology can produce a **range** of poverty lines, depending on how the method is specifically applied. The margins of difference shown in the last column of Table 4.3 are a reflection of the inability of the methodology to produce 'a' set of poverty lines, and should be borne in mind when assessing results to be presented later.

On the basis of the average estimates shown in the fourth column in Table 4.3, the consensual poverty line for a single non-aged adult is $252.90 a week. This increases by just under $30 a week to $281.30 for a non-aged couple, and then increases further by around $15 a week for each child in couple families (although the estimate for three child families is somewhat below that implied by this general pattern). For sole parent families, our estimates - particularly those based on Method 3, but also by implication those based on the first two methods - are not statistically robust as explained earlier. Nonetheless, the average results indicate that the first child in sole parent families causes the poverty line to increase by around $26 a week compared with that for non-aged single adults. For sole parents with more than one child our estimates are particularly unreliable, but Methods 1 and 2 suggest that each additional child leads to an increase of between $10 and $15 a week in the consensual poverty line.

Comparison of the results in Table 4.3 for the effects of age reveal that the poverty line of aged single adults is between $40 and $50 a week (or 15 per cent to 20 per

Table 4.3: Consensual Poverty Lines by Family Type[a]

Family Type	($ per week) Method 1	Method 2	Method 3	Average[b]	Ratio of Highest to Lowest Esimate
Single adult					
Non-aged	262.40	249.00	247.40	252.90	1.06
Aged	223.00	210.00	195.80	209.60	1.14
Couple, no children					
Non-aged	275.80	286.40	281.80	281.30	1.04
Aged	234.30	241.60	238.50	238.10	1.03
Couple, one child	289.80	297.40	296.70	294.60	1.03
Couple, two children	304.60	308.80	315.40	309.60	1.04
Couple, three children	320.10	320.70	299.70	313.50	1.07
Couple, four children	336.40	333.00	356.40	341.90	1.07
Sole parent, one child	275.80	258.60	301.20	278.50	1.16
Sole parent, two children	289.80	268.50	250.30[c]	269.50	1.16
Sole parent, three children	304.60	278.80	297.30[c]	293.60	1.09

Notes: a) Method 1 is derived from an extension of equation (4.4) in Table 4.1 with the variable PENSAGE included.
Method 2 is derived from equation (iii) in Table 4.2.
Method 3 is derived from equation (4.17) in the main text.
All estimates have been rounded to the nearest 10 cents.
b) Arithmetic mean of results from Methods 1,2 and 3.
c) These estimates are derived from statistically insignificant coefficient estimates (one per cent level of significance).

cent) below that of non-aged single adults. The average figure indicates a differential of $43 a week, or 17 per cent. For couples, the issue is a little more complicated because the age status of the couple is determined by the age status of the survey respondent. Nonetheless, the CPL of aged couples is between $40 and $45 a week (or around 15 per cent) below that of non-aged couples, whichever of the three Methods is used. Again therefore, the consensual poverty lines reveal that being above or below pension age appears to have a larger effect on need than the presence of a second adult in the family, and of the first child (and possibly the first two children) in families with children.

The pattern of poverty lines across different family types shows relatively little variation. Thus, the average estimates in Table 4.3 imply that the poverty line for a couple with four children is only 21.5 per cent higher than that for a non-aged childless couple, and only 35.2 per cent above that for a non-aged single adult. This relatively flat profile of the CPLs according to family size is a feature which virtually all other studies using the consensual poverty line methodology have produced, as reviews of the literature by Whiteford (1985) and Buhmann et al. (1988) have noted, and as Rainwater's recent results have further illustrated

(Rainwater, 1990).[24] An alternative way of interpreting this finding is to note that the CPL estimates imply that there are considerable economies of scale resulting from the existence of additional family members. Thus, while Table 4.3 does not quite indicate that 'two can live as cheaply as one' they do imply that this is not too far from the truth.

Reference was made (in Section 3.1) to the fact that we have analysed our data in unweighted form rather than using population-based weights to construct a weighted sample which duplicates the true population structure. It is appropriate at this stage of the analysis to present some results which illustrate how much difference the use of weights would make to the regression estimates and, as a consequence, to the consensual poverty lines derived from them.

We thus re-estimated equation (iii) in Table 4.2 using weighted data in which the sample responses for each family size were given a weight equal to the ratio of the proportion of families of that size in the population as a whole to its proportion of our sample. (This procedure implies, for example, that if a particular family size represents say 5 per cent of our sample but 10 per cent of the population, it would be given a weight of 10 ÷ 5 = 2.) This weighting procedure thus in effect gives increased emphasis to the one-person households, which are under-represented in the sample, and correspondingly less emphasis to over-represented family types. Re-estimating equation (iii) in Table 4.2 on the weighted sample constructed in this way produced the following result:

$$\begin{array}{lllllll} \log Y^* = 3.99^{**} & + 0.25^{**}\log Y & + 0.12^{**}ADTS & + 0.03^{**}CHDN & - 0.144^{**}PENSAGE & & \\ \quad (39.3) & \quad (13.9) & \quad (4.0) & \quad (2.6) & \quad (4.5) & \quad (4.18) & \end{array}$$

$(N = 1083;\ \bar{R}^2 = 0.32;\ F = 128.1)$

A comparison with the estimates shown in equation (iii) of Table 4.2 indicates that the estimates change only slightly when account is taken of sample weighting.

We then used the weighted regression results in equation (4.18) to estimate consensual poverty lines corresponding to those shown in column 2 (Method 2) of Table 4.3. The previous (Table 4.3) and revised (weighted) consensual poverty lines were then compared. For completeness these are shown in Table 4.4.

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24 To quote Rainwater:

> I conclude that children are cheap. The family equivalence scales implied by a wide range of polls suggest that the scales used in most social programs and in much research seriously overestimate the marginal social costs of additional family members. (Rainwater, 1990: 1)
>
> Aside from querying the use of the term 'marginal social costs' in this context, our results agree with the substance of Rainwater's claim.

Table 4.4: Consensual Poverty Lines by Family Type: Weighted and Unweighted Samples

Family Type	Consensual Poverty Line		Difference	
	Unweighted	Weighted	($)	(%)
Single adult				
Non-aged	249.00	247.00	2.00	0.80
Aged	210.00	203.50	6.50	3.10
Couple, no children				
Non-aged	286.40	290.70	4.30	1.50
Aged	241.60	239.50	2.10	0.90
Couple, one child	297.40	301.90	4.50	1.50
Couple, two children	308.80	313.60	4.80	1.60
Couple, three children	320.70	325.70	5.00	1.60
Couple, four children	333.00	338.20	5.20	1.60
Sole parent, one child	258.60	256.50	2.10	0.80
Sole parent, two children	268.50	266.40	2.10	0.80
Sole parent, three children	278.80	276.70	2.10	0.80

The differences in the two sets of estimates are clearly small, being less than 2 per cent in all cases except the single aged (where weighting the sample will have had most effect). The magnitude of these differences can be seen to be much smaller than those resulting from application of the three different consensual poverty line methods employed to produce the results in Table 4.3 itself. For this reason, we do not regard any biases resulting from our decision not to re-weight our sample as being of quantitative significance given the margins of error which apply in any case to the results produced from any particular application of the consensual methodology. We therefore proceed henceforth to use our unweighted sample, and do so with increased confidence that this will not induce any marked biases in our results.

As noted earlier, the CPL relativities for different family types indicate how family needs vary with family size. This issue is usually explored with the use of family equivalence scales, which express the relative income levels required by families of different types in order for them to attain the same standard of living (Whiteford, 1985). Since the CPLs shown in Table 4.3 are based on the assumption that families with this income level have the same standard of living (at least in terms of disposable income) equivalence scales can be derived directly by calculating the ratio of the consensual poverty lines for different family types. Such scales do, however, estimate only **relative** family needs and it is therefore necessary to select a particular family type as a benchmark against which to express the relative need of other families. Using a single non-aged adult as the benchmark family type, the CPL

estimates in Table 4.3 imply the equivalence scales shown in Table 4.5. The use of a single non-aged adult as the benchmark has the advantage that the equivalence scales for other families can be readily interpreted in terms of the number of 'equivalent (non-aged) adults' they contain. Thus an equivalence scale value of 1.30 for a particular family, for example, implies that in terms of need, this family is equivalent to 1.30 equivalent non-aged adults.

These results make the flat equivalence profile with respect to family size more apparent. Our average estimates imply that the needs of non-aged couples are only 11 per cent above the needs of single non-aged adults, that the additional needs of the first child is about 17 per cent of the needs of the single non-aged adult, while each additional child causes family needs to rise by an even smaller percentage of the needs of a single non-aged adult. Again, our estimates for sole parent families should be treated with considerable caution, as explained earlier. Need tends to decline more with age than they increase with family size. The equivalence scales in Table 4.5 indicate that the needs of single aged people are 17 per cent below their non-elderly counterparts, while those of elderly couples are around 15 per cent below those of non-elderly couples.

If the relative rates of social security assistance were to conform to the patterns shown in Table 4.5, it is clear that the structure of payments would differ markedly from that existing currently. Not only would child-related payments like family allowance and/or family allowance supplement be lower (relative to adult payments), but the age pension would also be below payments made to non-elderly adults.[25] Having made these observations, it is important to emphasise that we are not advocating a change in payment relativities so that they conform to the patterns shown in Table 4.5. To do this would require far more confidence in our results than we (or anyone else) can have at this stage.

It is important to emphasise, for example, that the equivalence scales in Table 4.5 allow for family needs to vary according to the number of family members, whether they are adults or children and whether they are aged or not. There are, however, good reasons to expect need to vary according to other characteristics of the family and its individual members, reasons which are borne out by much of the empirical evidence on equivalence scales (Whiteford, 1985; McClements, 1978). Thus, for example, the equivalence scales implicit in the poverty lines used in Australia by the Commission of Inquiry into Poverty and embodied in the Henderson Poverty Line (HPL) imply that need also varies according to the gender and workforce status of family members, as well as with the housing circumstances of the family. (Commission of Inquiry into Poverty, 1975, Volume I, Appendix F). Such variations, to the extent that they are present in our survey data, will cause the equivalence scale estimates in Table 4.5 to be somewhat distorted if the omitted

25 This statement refers strictly to total payments rather than to just the base rate of pension. Thus, for example, it is consistent with the payment of lower rates of housing assistance to the elderly rather than a reduction of the base rate of pension.

Table 4.5: Equivalence Scales Derived from the Consensual Poverty Lines[a]

Family Type	Method 1	Method 2	Method 3	Average[b]
Single adult				
Non-aged	1.00	1.00	1.00	1.00
Aged	0.85	0.84	0.79	0.83
Childless couple				
Non-aged	1.05	1.15	1.14	1.11
Aged	0.89	0.97	0.96	0.94
Couple, one child	1.10	1.19	1.20	1.17
Couple, two children	1.16	1.24	1.27	1.22
Couple, three children	1.22	1.29	1.21	1.24
Couple, four children	1.28	1.34	1.44	1.35
Sole parent, one child	1.05	1.04	1.22	1.10
Sole parent, two children	1.10	1.08	1.01[c]	1.06
Sole parent, three children	1.16	1.12	1.20[c]	1.16

Notes: a) See Notes to Table 4.3.
b) Geometric mean of results from Methods 1, 2 and 3.
c) See Note (c) to Table 4.3.

Source: Table 4.3.

factors vary systematically across family types. This is likely to be the case for factors like workforce status and housing circumstances which are likely to vary over the life cycle, as the family types shown in Table 4.5 are also likely to be at different stages of the family life cycle. This issue is not explored further at this stage, although it is taken up in Section 5.

We now move on to compare our consensual poverty lines and implied equivalence scales with other estimates commonly used in Australia, and with relevant aspects of the Australian social security system. In making these comparisons, it needs to be remembered that we cannot pin-point accurately the precise time period to which our key survey responses apply. Responses to the MIQ relate to the period during which the survey was conducted (i.e. between April and September 1988) while information on actual income relates to the year before completion of the survey. In what follows, we make comparisons with the HPL averaged over calendar year 1988 and with social security payment rates prevailing on 30 June 1988. This may involve a certain degree of inaccuracy in specific cases, but is unlikely to materially affect our more general conclusions, particularly when it is remembered that the CPL estimates are themselves subject to the usual margins of error associated with all sampling estimates.

Table 4.6 compares the average CPL estimates shown in Table 4.3 with the simplified Henderson Poverty Line for calender year 1988. It should be noted that the CPL estimates for sole parents with two or three children shown in Table 4.3 have been replaced by alternatives derived from the more reliable estimates of the costs of children in couple families.[26] We also compare the CPL equivalence scales (amended for sole parent families as described in footnote 26) with those implicit in the simplified version of the Henderson Poverty Line. What is revealed here are very marked differences between many aspects of the level and structure of the two sets of poverty lines. The essential difference that emerges is that the CPL estimates imply a far higher cost for the first adult than the HPL, and considerably lower incremental costs for the second adult and for children. The differences for single adults and childless couples are particularly striking: the CPL for a single non-aged adult is 67 per cent higher than the corresponding HPL, while the implied incremental CPL for the second adult in a non-aged couple ($28.40 = $281.30 - 252.90) is only 37.3 per cent of the corresponding HPL figure ($76.20 = $227.30 - $151.10). In relation to the costs of children, the CPL figures are also well below their HPL counterparts. When expressed relative to the costs of a single non-aged adult using the equivalence scales in Table 4.6, the CPL child costs are equal to approximately 7 per cent per child of the single non-aged adult costs. The corresponding HPL figure is closer to 30 per cent.

These differences reflect the very flat profile of the CPL estimates across different family types noted earlier. Because the CPL estimates imply higher costs for the first adult and lower costs for the second adult and for children, the CPL is well above the HPL for small families but below it for large families. It is interesting to note that for the HPL reference family - two adults and two children - these offsetting tendencies virtually offset each other, leading to similar poverty line estimates - $309.60 using the consensual approach compared with $315.70 using the Henderson approach.[27] That is, however, more of a coincidence that an indication of any underlying similarity in the two sets of poverty lines.

Interestingly, although the two sets of equivalence scales differ considerably according to what they imply for the effect of increased family size on need, they are much more similar in their estimates of the impact of age, at least in so far as the simplified Henderson equivalence scales reflect this. Both sets of scales indicate that the needs of single aged adults are around 15 per cent below those of non-aged single people, with a slightly larger differential applying for couples.

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26 What we did was add to the CPL for a sole parent with one child shown in Table 4.3 the implied costs of second and third children estimated from the results for couple families.

27 This feature of our results was noted in our presentation of the paper 'Is the Poverty Line Too High?' to the 1991 National Social Policy Conference held in July 1991. We were, however, careful to note at the time that this congruence was not repeated for other family types.

Table 4.6: Comparisons of the Consensual Poverty Lines and Equivalence Scales with the Simplified Henderson Poverty Line, 1988

Family Type	Poverty Lines ($ per week): Consensual (1)	Henderson[b] (2)	Ratio (3)=(1)÷(2)	Equivalence Scales: Consensual (4)	Henderson (5)	Ratio (6)=(4)÷(5)
Single adult						
Non-aged	252.90	151.10	1.67	1.00	1.00	1.00
Aged	209.60	131.40	1.60	0.83	0.87	0.95
Couple, no children						
Non-aged	281.30	227.30	1.24	1.11	1.50	0.74
Aged	238.10	185.30	1.28	0.94	1.23	0.76
Couple, one child	294.60	272.20	1.08	1.17	1.80	0.65
Couple, two children	309.60	315.70	0.98	1.22	2.09	0.58
Couple, three children	313.50	361.10	0.87	1.24	2.39	0.52
Couple, four children	341.90	398.00	0.86	1.35	2.63	0.51
Sole parent, one child	278.50	190.30	1.46	1.10	1.26	0.87
Sole parent, two children	293.50[a]	235.90	1.24	1.16	1.57	0.74
Sole parent, three children	297.40[a]	269.90	1.10	1.17	1.78	0.66

Notes: a) These estimates differ from those in Table 4.3 for the reasons described in the text. They were calculated as explained in footnote 23.

b) The simplified Henderson poverty lines (and equivalence scales) refer to calendar year 1988. They are based on an estimate of $230.90 for household disposable income per capita (Source: NIEIR **Newsletter No. 16**, April 1989). These poverty lines have been estimated as weighted averages based on the workforce status of the head of each family type in our sample.

What are we to make of the differences shown in Table 4.6? Several points about the methods used to derive each set of poverty lines need to be highlighted before any firm conclusions can be drawn. The Henderson poverty lines are based on a combination of three elements. First, the Henderson poverty standard for a two adult, two child reference family, which was set (in 1966) at an income equal to the basic wage plus child endowment; second, the Henderson equivalence scales, which are derived from analysis of the actual expenditure patterns of New York households in 1954 - these being seen as the most relevant set of scales available at the time; and third, an index (more accurately, two indices) used to update the poverty line over time as community incomes have changed.[28] These three elements point to the very significant differences between data, methodology and values underlying the Henderson Poverty Line and those embodied in the Consensual Poverty Line.

In light of these differences, it is perhaps no surprise that the two methods produce such different results. If we were to accept the consensual poverty line methodology

28 These three components of the Henderson Poverty Line are described and analysed in more detail in Saunders and Whiteford (1987; 1989).

as producing a poverty line based on community perceptions of minimum income adequacy, then Table 4.6 indicates that the Henderson poverty line can no longer be (if indeed it ever was) regarded as receiving broad community endorsement. Against this we have already noted that there are good reasons for believing that the consensual approach is not without its own problems of method and interpretation. We would certainly not wish to argue that the Henderson line should be rejected and replaced by the consensual poverty lines shown in Table 4.6. We would need to be far more confident about the interpretation of the MIQ responses and about the reliability of the estimates underlying the consensual poverty lines before we would go that far. For the moment, we prefer to note that the differences are substantial and see the evidence in Table 4.6 as one more piece in what is undoubtably a large and complex jigsaw puzzle.

Before moving on, it is useful to compare the consensual poverty lines in Table 4.6 with those produced in a recent Australian study using similar methods. That study analysed responses to a question broadly similar to the MIQ used here which was included in the regular consumer surveys undertaken as part of the Morgan Gallup Poll (MGP) (Saunders and Bradbury, 1991). The precise wording of the MGP minimum income question differs from the MIQ used in our survey, but Saunders and Bradbury applied the Leyden methodology (see Section 2.4 above) in order to derive a consensual poverty line for one particular family type, comprised of two adults and two children.[29] Applying the consensual methodology to the MGP data for families of four, Saunders and Bradbury estimated a consensual poverty line (in July 1987) equal to $333 a week. Unfortunately, because the MGP minimum income question referred specifically to the circumstances of only a single family type, the authors were unable to derive a set of consensual equivalence scales for different family types. The single estimate of $333 a week is somewhat above our average estimate of $309.60 (Table 4.6), but not so far above it as to cast serious doubt on the reliability of the estimates. Indeed, given the differences in survey technique, timing and question wording, the difference of less than 8 per cent between the two estimates is small enough to provide some reassurance on the issue of reliability.[30]

Table 4.7 compares the average consensual poverty line estimates shown in Table 4.6 with levels of social security payments prevailing at 30 June 1988. For all family types, the consensual poverty line exceeds the level of social security

29 The MGP minimum income question took the following form:

In your opinion, what is the smallest amount a family of four - two parents and two children - need a week to keep in health and live decently - the smallest amount for all expenses including rent?

Further details of the sampling procedures and analysis of how the responses have changed over time are provided in Saunders and Bradbury (1991).

30 For a discussion of how differences in the wording of the MIQ can influence the interpretation of results, see Bradbury (1989a).

Table 4.7: Comparison of Consensual Poverty Lines with Social Security Payments at 30 June 1988

Family Type	Consensual Poverty Line ($ per week)	Social Security Payments[a] ($ per week)	Ratio
Single adult			
Non-aged	252.90	112.10	2.26
Aged	209.60	120.10	1.75
Couple, no children			
Non-aged	281.30	200.10	1.41
Aged	238.10	200.10	1.19
Couple, one child	294.60	227.80	1.29
Couple, two children	309.60	257.90	1.20
Couple, three children	313.50	289.70	1.08
Couple, four children	341.90	321.40	1.06
Sole parent, one child	278.50	159.80	1.74
Sole parent, two children	293.50	189.90	1.55
Sole parent, three children	297.40	221.70	1.34

Notes: a) Payment rates refer to age pension in the case of the aged, to supporting parent's benefit in the case of sole parents, and to adult unemployment benefit in all other cases. Additional pension/benefit for children and family allowance are included. Children are assumed to be under 13 years of age. Rent assistance is not included.

Sources: Table 4.6 and Department of Social Security, **Annual Report 1987-88.**

assistance, although the proportionate difference declines as family size increases. This pattern reflects two offsetting tendencies. First, the consensual poverty line for single non-aged adults is far in excess of the adult rate of unemployment benefit, exceeding it by a factor of 2.26. This is, however, offset by the fact that the incremental needs associated with additional family members are much lower according to the consensual poverty lines than is implied by the social security payment relativities. As a consequence, the two series merge closely for couples with three or more children where the consensual poverty line is only 8 per cent above the level of social security payments. A similar pattern emerges within sole parent families as the number of children increases.

Tables 4.6 and 4.7 thus indicate that the consensual poverty line relativities show much less variation with family size than either the conventional Henderson poverty line or the structure of social security payments.[31] One way of illustrating the differences shown in Table 4.7 is to compare the costs of children as implied by the consensual poverty lines with the estimates embodied in the family package

31 For a comparison of the Henderson poverty line relativities and those implied in the social security system, see Saunders and Whiteford (1987: 44-53).

introduced by the Commonwealth Government in late 1987. Those relativities set the level of financial support for children aged under 13 at 15 per cent of the married rate of pension and at 20 per cent of the married rate for older (dependent) children. In contrast, the consensual poverty line relativities imply that the needs of the first child (assumed to be aged under 13) in couple families is equivalent to only 5 per cent of the needs of childless couples, with successive other children adding similar amounts to family needs. In other words, if we are to accept the consensual poverty line estimates at face value, then this would suggest that both the level and structure of social security payments are well out of line, as already noted. This is a significant finding, one which needs further evaluation in order to assess whether our results are sufficiently robust to sustain it.

4.4 Comparisons with Alternative Consensual Approaches

As a final check on the reliability of our consensual poverty line estimates, we compare them with two alternative approaches which share a similar methodology but differ in their detailed application. This exercise is undertaken as a further check on the sensitivity of our consensual results to the use of the precise approach used to derive them. As noted previously, the approach we have used so far is designed to give greater weight or emphasis to the MIQ responses of those whose actual incomes are closest to the poverty line. The precise extent to which such increased weighting is reflected in the regression approach is, however, unclear. As noted in a recent survey of the consensual method:

> ... the poverty lines do *not* represent an unweighted democratic consensus as to the minimum necessary level of income. The use of a fixed point from a regression of the perceived poverty line on actual income... implies a rather complex weighting structure: it is claimed that those with incomes well above or well below the poverty line are given less weight, apparently because they 'misperceive' the poverty line... there may not in fact be a social consensus on minimum needs. (Callen and Nolan, 1991: 252, italics in the original)

We have already noted in Section 3.2 that the great variation in responses to the MIQ casts doubt on there being any real underlying consensus regarding minimally adequate income levels. Because of this, the method used to weight individual responses in order to obtain 'the' consensual poverty line has the potential to make a great difference to the specific results obtained. The results already presented in Table 4.3 show how the use of different regression models can influence the intersection point and hence the estimated consensual poverty line, even within a given methodological framework. Experimentation with alternative weighting procedures is another important way of checking on the significance of this issue and the sensitivity of results to it.

We used the MIQ responses to estimate two alternative sets of consensual poverty lines. Our first method involved simply taking the mean response to the MIQ for

each of our specified family types.[32] In order to adjust for the disproportionate influence of outlying observations, we first applied the method to our entire working sample, and then re-applied the method after excluding those responses (within each family category) which were more than two standard deviations away from the mean for each family type. After making these exclusions, this method thus gives an equal weight to each (non-outlying) response and defines the poverty line as the unweighted mean of remaining responses. We refer to the resulting estimates as the Mean Minimum Income Level (MMIL) for each type of family.

Our second method follows that originally proposed and applied to Belgian data by Deleeck (1989) and used subsequently by Callan et al. (1989) in their Irish study. We follow their terminology and refer to the results of this method as the Sociovital Minimum Income Level (SMIL). The SMIL again uses a specific procedure to exclude certain responses in order that the views of those respondents who are closest to the poverty line are given greater weight in producing the estimated consensual poverty lines. In order to apply the method, reliance was placed not only on responses to the MIQ described earlier, but also on responses to the following question:

> *Thinking of your household's current total weekly income, is the household able to make ends meet....*
>
> | | |
> |---|---|
> | *With great difficulty* | *1* |
> | *With some difficulty* | *2* |
> | *With a little difficulty* | *3* |
> | *Fairly easily* | *4* |
> | *Easily* | *5* |
> | *Very easily* | *6* |

The Sociovital Minimum Income Level method then proceeds as follows. First, only those respondents who answered '2' (i.e. that they were making ends meet with some difficulty) to the above question were considered. For this sub-set of respondents, the **lower** of their actual income and their response to the MIQ was then calculated. The mean of the resulting income levels was then calculated for each family type. Finally, all responses which differed from the calculated mean by more than two standard deviations (within each family type) were excluded and the means were re-calculated. The resulting mean incomes then correspond to the Sociovital Minimum Income Level for each family type.

Table 4.8 compares our earlier consensual poverty lines with the results produced by each of the two alternative methods. What is immediately apparent is that the three

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32 A somewhat similar approach to this has recently been used by Townsend and Gordon (1991) in their analysis of subjective poverty in Greater London and Islington. Rainwater's comments on the rationale for using the mean as a measure of central tendency are also of relevance here (Rainwater, 1991).

Table 4.8: Comparison of Three Alternative Consensual Poverty Line Approaches

Family Type	Consensual Poverty Line ($ a week)	(Relativities)	Mean Minimum Income Level ($ a week)	(Relativities)	Sociovital Minimum Income Level ($ a week)	(Relativities)
Single adult						
Non-aged	252.90	1.00	257.50	1.00	204.30	1.00
Aged	209.60	0.83	193.30	0.75	140.70	0.69
Couple, no children						
Non-aged	281.30	1.11	341.20	1.33	319.70	1.56
Aged	238.10	0.94	265.30	1.03	204.20	1.00
Couple, one child	294.60	1.17	348.50	1.35	315.50	1.54
Couple, two children	309.60	1.22	366.70	1.42	344.90	1.69
Couple, three children	313.50	1.24	359.40	1.40	336.10	1.65
Couple, four children	341.90	1.35	402.50	1.56	383.40[a]	1.88[a]
Sole parent, one child	278.50	1.10	292.60	1.14[a]	323.60[a]	1.58[a]
Sole parent, two children	293.50	1.16	252.50	0.98[a]	190.40[a]	0.93[a]
Sole parent, three children	297.40	1.17	259.10	1.01[a]	210.10[a]	1.03[a]

Note: a) Estimates based on a sample of fewer than 30 observations.

different consensual poverty line methods produce quite different results, even when applied to the same body of survey data. The different ways of combining the survey MIQ responses are clearly of considerable significance for both the level and structure of the resulting consensual poverty lines. As compared with our earlier results, the two alternative methods produce a different structure of poverty line relativities.[33]

Although the sample size is again too small to allow any definite conclusions to be drawn for sole parent families, both alternative consensual methods show family needs to increase more with family size than the original estimates. The increase in the two adult - one adult relativity is particularly striking for both aged and non-aged people. Beyond this the three methods suggest broadly similar patterns for couples with children relative to childless couples.[34] Where the results from the three methods thus diverge most is in relation to the implied poverty lines and relativities for aged and non-aged single adults and childless couples. There are great

33 The Irish Study referred to earlier also found that the sociovital minimum income level approach produced different results to the conventional consensual poverty line method (Callan et al. Table 6.2: 88).

34 Setting the poverty line for non-aged childless couples equal to 1.00, the relativities for couples with one, two, three and four children implied by the three sets of estimates in Table 4.8 are 1.05, 1.10, 1.12 and 1.22 (consensual approach) 1.02, 1.07, 1.05 and 1.17 (mean minimum income level approach) and 0.99, 1.08, 1.06 and 1.21 (sociovital minimum income level approach).

differences here, both in relation to the single adult poverty line and in relation to the two adult - one adult relativity. These estimates are all derived from methods which either exclude or pay less weight to outlying observations in the sample.

One explanation for these differences may lie in the under-representation of single person households in the sample that was noted in Section 3.1, where it was also noted that the aged are generally also under-represented in the sample. Although the sample contains a large number of childless couples (see Table 3.3), there is still the likelihood that the unreliability of the estimates for single adults is the cause of the differences shown for the single person/childless couple relativities in Table 4.8.

In summary, the differences shown in Table 4.8 give rise to considerable cause for concern over the reliability of any one set of consensual poverty line estimates. The methods used to derive the consensual poverty lines clearly have an important bearing on the final outcome. Having made this point, we will continue to use the consensual poverty lines shown in the first column of Table 4.8 (and earlier tables), as the method used to derive these is that which has been most commonly employed in the consensual poverty line literature. Our reservations based on Table 4.8 should not, however, be lost from sight, and we will return to this point later.

4.5 The Extent of Consensual Poverty in Australia, 1988

This section estimates the extent of poverty in Australia in 1988 from our survey data using as a poverty standard the consensual poverty lines described in the previous section. It is important to emphasise at this point that the results which follow are to be viewed as notional and experimental, and as a consequence subject to the appropriate degree of caution. Rather more robust data and further refinement of the method would be required before such consensual poverty estimates could be used as an authoritative basis for social criticism and/or policy development.

Bearing this caveat in mind, Table 4.9 shows the poverty rates among our sample, using the mean consensual poverty lines shown in Table 4.6 to determine poverty status. Families are defined as being in poverty if net family income (defined as explained in Appendix One) is below the relevant consensual poverty line. These estimates indicate that 215 families or 20.5 per cent of the sample were in poverty in 1988 according to the consensual poverty line approach. Amongst families, the incidence of poverty is highest for sole parents, single adults (non-aged and aged) and aged couples. It is lowest among couples with two or three children, reflecting the flat profile of family need according to number of children exhibited by our consensual poverty lines, discussed earlier. The poverty rate for couples with two children (10.4 per cent) compares with the estimated poverty rate for such families of 18 per cent estimated from responses to the Morgan Gallup Poll minimum income equation produced by Saunders and Bradbury (1991).

It has already been noted that a family's poverty status, calculated using the consensual poverty line methodology will not necessarily correspond to whether or

Table 4.9: Estimates of Consensual Poverty, Australia 1988

Family Type	Total Sample Size	Number in Poverty	Consensual Poverty Rate (%)
Single adult			
Non-aged	67	23	34.3
Aged	38	25	65.8
Couple, no children			
Non-aged	195	31	15.9
Aged	95	37	38.9
Couple, one child	163	24	14.7
Couple, two children	270	28	10.4
Couple, three children	138	13	9.4
Couple, four children	40	10	25.0
Sole parent, one child	20	9	45.0
Sole parent, two children	15	9	60.0
Sole parent, three children	8	6	75.0
All families	**1049**	**215**	**20.5**

not respondents' actual income falls short of the income level required to 'make ends meet'. In order to investigate this issue in more depth, we estimated each family's subjective income (in)adequacy status by comparing their actual income with their response to the 'making ends meet' minimum income question. Families were defined as being prone to subjective income inadequacy if their actual net income was below their stated 'making ends meet' minimum income level. We use the term subjective income inadequacy to describe such situations rather than subjective poverty because families were not asked directly whether or not they felt that their current income was such that, in their own assessment, they were in poverty. The results are nonetheless of interest because they highlight the difference between what the (expert-initiated) consensual methodology implies about the adequacy of people's income levels and how people themselves evaluate their income in terms of permitting them to make ends meet.

Table 4.10 contains the results. Overall, slightly less than three quarters of all families estimated to be in consensual poverty had incomes below what they thought was the minimum necessary for them to 'make ends meet'. In general terms, the overlap between consensual poverty and subjective income inadequacy is greatest for single adults and sole parents - the groups with highest consensual poverty rates. Although this gives some reassurance to our estimates, the fact that more than a quarter of those in consensual poverty regard their income as sufficient to 'make ends meet' is a cause for some concern. Given that the consensual methodology seeks to reflect community perceptions, it might be seen as problematic to define

Table 4.10: The Relationship Between Consensual Poverty and Subjective Income Inadequacy[a]

			In Consensual Poverty and:		
	Consensual Poverty Rate	Subjective Income Inadequacy	Subjectively Inadequate Income	Subjectively Adequate Income	Adjusted Consensual Poverty Rate[b]
Single adult					
Non-aged	34.3	35.8	78.3	21.7	26.9
Aged	65.8	57.9	84.0	16.0	55.3
Couple, no children					
Non-aged	15.9	17.9	67.7	32.3	10.8
Aged	38.9	40.0	59.5	40.5	23.2
Couple, one child	14.7	20.2	83.3	16.7	12.3
Couple, two children	10.4	15.6	71.4	28.6	7.4
Couple, three children	9.4	16.7	53.8	46.2	5.1
Couple, four children	25.0	27.5	70.0	30.0	17.5
Sole parent, one child	45.0	50.0	77.8	22.2	35.0
Sole parent, two children	60.0	46.7	66.7	33.3	40.0
Sole parent, three children	75.0	75.0	66.7	33.3	50.0
All families	**20.5**	**23.9**	**71.2**	**28.8**	**14.6**

Notes: a) All expressed as percentage of relevant sample.
b) The adjusted consensual poverty rate is based on families who are both in consensual poverty and experiencing subjective income inadequacy.

families as being in poverty when our evidence implies that they themselves do not regard their income as not sufficient to allow them to 'make ends meet'. For this reason, we defined an adjusted consensual poverty rate, which comprises those families who are **both** in consensual poverty and subjectively in financial difficulty. The resulting poverty rates are shown in the final column of Table 4.10.[35]

These adjusted poverty estimates indicate that the overall poverty rate is 14.6 per cent. Sole parent families continue to have the highest poverty rates (between 35 per cent and 50 per cent) followed again by single aged adults. The pattern of poverty among couple families is much the same as it was using the unadjusted consensual poverty line approach. Our finding that 28.6 per cent of couples with two children in consensual poverty were apparently not subjectively in financial difficulty compares with the corresponding figure of 21 per cent derived by Saunders and Bradbury

35 The figures in the last column of Table 4.10 are the product of the percentages in the first and third columns of the table.

(1991). Overall, we have more confidence in the adjusted poverty rates shown in the final column of Table 4.10 than in our unadjusted figures. The adjusted figures are, of course, lower, but what is more significant is that the broad pattern of poverty among Australian families is similar whether the adjusted or unadjusted figures are used.

Table 4.11 compares the adjusted poverty rates from Table 4.10 with poverty estimates recently derived using the Henderson Poverty Line methodology. The later estimates refer to financial year 1989-90 and are derived from a data set updated from the 1986 Income Distribution Survey using microanalytic simulation techniques.[36] In interpreting these results, the earlier discussion of the differences between the levels and patterns of the consensual and Henderson poverty lines should be borne in mind. So too should the very substantial differences in data coverage and quality on which the two sets of estimates are based, as well as the fact that the consensual estimates are based on an unweighted sample while the Henderson estimates are derived from a weighted sample. In light of these differences in time, method, weighting and data, combined with the divergence between the consensual and Henderson poverty lines already noted (Table 4.6), it should not be surprising if the two sets of estimates diverge considerably.

Table 4.11 indicates that this is indeed the case, at least in some regards. The adjusted consensual approach produces a higher overall poverty rate, though not implausibly higher given the factors just alluded to. Both sets of estimates indicate that the incidence of poverty is highest among sole parent families, followed by single aged adults. Couples (with and without children) have the lowest poverty rates, although consensual poverty declines with family size while Henderson poverty increases with the number of children. The greatest differences between the two sets of poverty estimates occur for single adults, childless couples and couples with one child. These reflect the poverty line comparisons shown in Table 4.6, which indicate that the consensual poverty line for single adults is well above the Henderson poverty line while the variations in need to reflect a second adult and the first child (and subsequent children) are much lower. These tendencies offset each other as the number of children increases, which helps to explain why the poverty estimates in Table 4.11 converge as family size increases.

In summary, the different poverty rates shown in Table 4.11 largely reflect the different poverty lines on which they are based. This is further reinforced by differences in the timing, scope and quality of the income data on which the estimates are based. What is perhaps most significant about the results is the similarities they imply for the groups at greatest risk of poverty in Australia at the end of the eighties. Both estimates confirm that sole parents are the most disadvantaged group and that many single aged adults are also in poverty. In

36 The method is described in detail in Saunders and Matheson (1991), to which interested readers are referred.

Table 4.11: Comparison of Adjusted Consensual Poverty Rates in 1988 with Estimated Henderson Poverty in 1989-90[a]

Family Type	Adjusted Consensual Poverty Rate	Henderson Poverty Rate[b]
Single adult		
Non-aged	26.9	12.6
Aged	55.3	28.3
Couple, no children		
Non-aged	10.8	3.9
Aged	23.2	4.9
Couple, one child	12.3	4.0
Couple, two children	7.4	6.3
Couple, three children	5.1	13.8
Couple, four children	17.5	17.3
Sole parent, one child	35.0	36.1
Sole parent, two children	40.0	49.3
Sole parent, three children	50.0	70.1
All families	**14.6**	**12.8**

Notes: a) All numbers are percentages.
b) The Henderson estimates are based on an income unit definition rather than a family.

Sources: Table 4.10 and Saunders and Matheson (1991), Table 5.

contrast, the presence of a second adult in the family greatly reduces the vulnerability to poverty, whether or not children are present. That our consensual poverty estimates are consistent with these aspects of previous research on poverty in Australia suggests that the evidence discussed in this section is robust, of interest and relevance and should not be dismissed lightly.

5 Deprivation, Perceptions of Income Adequacy and Living Standards

5.1 Deprivation

The analysis in Section 4 concluded with an examination of the poverty status of survey respondents, as assessed primarily, and directly and indirectly, on their response to the minimum income ('making ends meet') question. We turn now to an assessment of other aspects of the survey responses which relate to the material living standards of respondents. The specific issues on which we focus initially relate to the existence of situations in which respondents had, over the course of the year prior to the survey, had difficulty 'making ends meet' or had had to go without basic goods and services. We begin by spelling out in detail the precise wording of the questions on which we now focus our attention.

Immediately following the Minimum Income Question, respondents were asked to indicate 'Yes' or 'No' to the following series of questions:

- *Have there been times during the last year when your income was not enough for your family to make ends meet?*

- *Have there been times during the last year when you didn't have enough money to buy the food your family needed?*

- *Have there been times during the last year when you didn't have enough money to buy the clothing your family needed?*

- *Have there been times during the last year when you didn't have enough money to pay for medical bills or health care?*

For convenience, we will refer to these four questions collectively as the 'going without' questions. Following the 'going without' questions, respondents with children were then asked the following questions:

- *Have there been times during the last year when your children have had to go without basic items because you didn't have enough money?*

and

- *If your children have had to go without, has this happened:*

  Only very rarely
  Occasionally
  Quite often
  More often than not
  More or less all the time

Before turning to the responses, several features of these questions should be emphasised. Firstly, the questions seek subjective information, in that they leave it to the respondent to interpret what is meant by such terms as how much of the specified items was needed and what constitutes the basic items needed by their children. Second, the first set of questions were designed to relate to goods and services which comprise some of the most elemental and important items of family budgets, viz. food, clothing and health care (but excluding housing). We took the view that if family resources were sufficiently stretched to prevent adequate purchase of these basic consumer items, then there could be little disputing the fact that the family was experiencing material deprivation.[37] Finally, with the exception of the last question, respondents were asked whether or not they had experienced material deprivation at any time over the course of the previous year. Only the last question attempted to identify the frequency of such events, rather than their actual occurrence. By posing these questions so that they relate to experience over the previous twelve months, the intention was to get a handle on those groups who are living on the margin and confronting the risk of deprivation, if not actual deprivation, at any particular point in time.

The first of these supplementary questions, when assessed in conjunction with the MIQ described earlier, was intended to pursue this issue more thoroughly because the two responses together will shed some light on the numbers unable to 'make ends meet' over a period of time rather than just at the time of the survey. This in turn will allow us to investigate the permanence and/or transitory nature of situations where families are not able to 'make ends meet', an aspect of poverty research which has to date been accorded little or no attention in Australia.[38]

Table 5.1 summarises the responses to the 'going without' questions for each of the family types considered previously. Looking first at each aspect of 'going without' in turn, almost 40 per cent of the sample indicated that they had been unable to 'make ends meet' at some time during the previous year. This compares with the 23.9 per cent of respondents whose actual income was less than what was needed

37 For a discussion of the concept of deprivation and its relation to poverty, see Townsend (1987) and Townsend, Corrigan and Kowarzik (1987).

38 For a review of recent research for the United States on the issue of temporary and permanent poverty, see Ruggles (1990), as well as the earlier classic study by Duncan (1984).

Table 5.1: Material Deprivation: The Incidence of Families Going Without Basic Consumer Items[a]

Family Type	Not Enough Money Over the Last Year to: Make Ends Meet	Buy Food	Buy Clothing	Pay for Health Care	Buy Basic Items for Children	Children Have Had to Go Without at least Quite Often
Single adult						
Non-aged	39.7	14.3	30.2	17.5	na	na
Aged	22.9	2.9	17.1	5.7	na	na
Couple, no children						
Non-aged	31.2	5.3	17.5	12.7	na	na
Aged	17.6	4.4	11.0	3.3	na	na
Couple, 1 child	32.3	7.6	17.7	8.9	5.0	2.9
Couple, 2 children	47.9	14.3	33.6	20.4	14.3	5.4
Couple, 3 children	49.6	10.9	34.3	24.8	21.6	6.7
Couple, 4 children	47.5	20.0	47.5	27.5	28.2	17.9
Sole parent, 1 child	65.0	15.0	45.0	20.0	31.3	18.8
Sole parent, 2 children	60.0	33.3	53.3	40.0	33.3	20.0
Sole parent, 3 children	62.5	25.0	75.0	37.5	75.0	62.5
All families	**39.2**	**10.5**	**26.8**	**16.3**	**16.4**	**7.4**

Note: a) All expressed in percentages.

na = not applicable.

currently to 'make ends meet' at the time of the survey (Table 4.10). Comparison of those experiencing this form of financial hardship over the last year (Table 5.1, Column 1) with those experiencing it at the time of the survey (Table 4.10, Column 2) indicates that couples with children had had far greater financial problems over the longer-term perspective than at the time of the survey.

The fact that the financial circumstances of couples with children may have improved by the time of the survey could in part reflect the improved family assistance payments which were introduced as part of the family package at the end of 1987 (Saunders and Whiteford, 1987; Brownlee and King, 1989). But it is also likely to reflect the fact that some couple families may have experienced unemployment over the previous twelve months, during which time they had difficulties making ends meet, yet were back in employment by the time of the survey. For all other groups, the percentages in Tables 4.10 and 5.1 are broadly similar. The results in Table 5.1 thus show the incidence of problems coping with financial stress - families experiencing trouble making ends meet - is more evenly

and widely dispersed in the community than financial poverty - having an inadequate income level when judged by some external standard.

The remainder of Table 5.1 indicates that, over the course of the previous year, around 10 per cent of the sample had experienced situations where they had not had enough money to buy food, 27 per cent could not pay for the clothing they needed and over 16 per cent could not pay for their medical bills or health care. Furthermore, 16 per cent of families with children had had to deny their children basic items because of shortages of money at some time, while 7 per cent indicated that their children had had to go without 'quite often'. These figures are all alarmingly high. One in ten of our sample claimed that they could not always afford to buy the food their family needed, while the high figure for health care is also cause for concern, given that Medicare is intended to provide adequate basic health care irrespective of the financial circumstances of the sick.

As between the different family types, responses to the different 'going without' questions reveal a similar pattern. Sole parents with two or three children are more likely to have to go without than all other groups, confirming again their perilous situation. Single adults no longer appear to fare as badly as they do on earlier comparisons. Among the non-aged, their incidence of 'going without' is close to the average for all families, while the aged in this category fare rather better than average. Sole parents with one child also seem, on some indicators at least, to be relatively less disadvantaged than previous indicators suggested. However, what may be happening here is that these parents have been forced to be extremely careful with their budgeting for basic essentials (food; health care) but miss out as a consequence with added items such as clothing. Overall, there remains little doubt that many in this group have to struggle continuously to make ends meet.

Couples with two or more children now appear worse off than our previous indicators suggested. Their incidences of not being able to 'make ends meet' and 'going without' are generally well above the average for all families. There is also a clear pattern for financial hardship overall to increase among couples with the number of children. The figures in the last column of Table 5.1 point to many children having to go without basic items because their parent(s) say they cannot afford them which is further cause for concern. It is possible that the December 1987 Family Package may not be fully reflected in these figures and that will certainly have eased the financial stress on many families with children. Even so, the fact that any children whatever are forced to miss out on basic items in a nation as rich as Australia is a telling indictment of the (lack of) priority which has been accorded to families with children in the past.

5.2 The Dynamics of Financial Stress

We turn now to an investigation of two aspects of our survey data which have some bearing on the dynamics of financial stress. As noted earlier, this is an issue which has been virtually ignored in previous Australian poverty and related research. The main reason for this has been the lack of panel or longitudinal data which permit the

financial circumstances of families to be tracked over time. Instead, Australian poverty research has had to rely exclusively on income surveys which provide a snapshot picture of family financial circumstances at a point in time or, more accurately, the average situation over a period of time (usually the previous year). Using such data to estimate poverty among different family types can give a misleading impression of the extent to which poverty is permanent rather than of a more transitory nature.

In reality, families increase and decrease in size as their members age, children grow up and leave to form their own families, while adult members separate and re-constitute as relationships change. Thus, real families actually move among the various family categories as time proceeds and they live out their life cycle. From this perspective, conventional snapshot poverty rates show the risk of poverty as people move through the different stages of their life cycle. For some, of course, unexpected events like unemployment or (in many instances) sole parenthood will greatly increase the risk of financial difficulties which may lead to poverty, but even these are not permanent circumstances. To say this is not to downplay the seriousness of such situations while they are actually being experienced. It is little comfort to those struggling to make ends meet to know that (on average and in all likelihood) they will be more financially secure in two or three years time. The severe consequences of inadequate financial resources need to be alleviated while it is actually being experienced. That after all, is what the social security system is designed to achieve and why financial assistance is provided primarily on the basis of current financial circumstances.

Having said this, however, understanding the dynamics of financial stress is important not only for an appreciation of its longer-run social consequences, but also because it has important implications for policy. It is important to know, for example, whether a poverty rate of (say) 10 per cent represents a situation where one tenth of the population is condemned to long-term financial distress (with all the harmful effects that entails), or whether it represents a situation where the entire population has a one-in-ten chance of being poor at any particular point in time. Both situations are consistent with a snapshot poverty rate of 10 per cent, yet they both imply quite different poverty dynamics. Measuring the dynamics by the size of the movements in and out of poverty (rather than by the size of the pool of poverty at any point in time), the first situation will indicate almost no movement, while the second will show very large flows into and out of poverty.[39] The appropriate policy response will be quite different when the dynamics are rapid and poverty is of a

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39 If $P_t(P_{t-1})$ is the size of the poverty population at time t(t-1), and $NI_{t-1,t}$ and $NO_{t-1,t}$ are the flows into and out of poverty between (t-1) and (t), then by definition:

$$P_t \equiv P_{t-1} + NI_{t-1,t} - NO_{t-1,t}$$

The difference between P_t and P_{t-1} thus indicates only the net inflow (i.e. $NI_{t-1,t} - NO_{t-1,t}$) and not the size of the separate gross flows (i.e. $NI_{t-1,t}$ and $NO_{t-1,t}$).

mainly short-term nature than when poverty is a permanent condition for those experiencing it.

Important though this issue is, our survey data can only provide some tentative insight into it. That, however, is useful as a first look at the problem. In Table 5.2 we compare our subjective income inadequacy rates described earlier - which indicate those whose current income was below the income level required to make ends meet - with evidence on the occurence of financial difficulties, based on responses to the question which asked whether or not respondents had enough money to make ends meet at any time over the last year. It needs to be emphasised that the first (subjective income inadequacy) measure is derived from an estimate of average actual weekly income over the last twelve months and so is not strictly a measure of current financial stress. Nonetheless, a comparison of the average situation over the last year with the incidence of actual occurrences of not being able to make ends meet sheds some light on the dynamics of the situation.

What would we expect such patterns of responses to look like? First, we would anticipate the percentages in the second column to be at least as large as those in the first column. All of those who have not been able to make ends meet on average over the last year should have been unable to do so on specific occasions, while others who could on average make ends meet will have been unable to do so on specific occasions. The figures in Table 5.2 generally confirm this, except for aged persons (singles and couples) and sole parents with three children. In the latter case, the numbers involved are very small (only eight cases in total) and this may explain the unusual result (which corresponds to only one family). This explanation does not apply in the case of the elderly, where the sample sizes are much greater, and suggests a particular note of caution should be applied generally to our results for this group.

The final column in Table 5.2 shows the numbers of families that fall within both of the first two columns, expressed as a percentage of those in the second column. In terms of the dynamics of financial stress, it is these latter percentages that are of most interest. To see why, consider two extreme situations. The first extreme is where there is a permanent underclass, a group who are constantly unable to make ends meet, with the remainder of the population never finding themselves in this situation. In this case, the percentages in the first two columns of Table 5.2 would be identical (being close to 100 per cent for the former group and closer to zero for the latter group) and those in the final column would be close to 100 per cent for all families. The other situation is where there is a core of permanent (i.e. annual) poor unable to make ends meet over the year, but also a large group of transitory poor who experience difficulties on occasion. In the extreme, this latter group of transitory poor would encompass the entire population, in which case the size of the permanently poor core group would be zero. In this second case, the percentages in the second column of Table 5.2 would be equal to 100 per cent while those in the final column would be equal to those in the first column.

Table 5.2: Comparison of Subjective Income Inadequacy and the Inability to 'Make Ends Meet' Over the Previous Year

Family Type	(1) Subjective (Annual) Income Inadequacy (%)	(2) Not Able to Make Ends Meet Sometime Over the Last Year (%)	(3) Families Experiencing Both (1) and (2), Expressed as a Percentage of (2) (%)
Single adult			
Non-aged	33.8	41.5	48.1
Aged	59.5	21.6	62.5
Couple, no children			
Non-aged	17.7	30.7	30.5
Aged	39.4	19.1	61.1
Couple, one child	20.0	31.9	37.3
Couple, two children	15.7	47.9	21.9
Couple, three children	16.7	50.0	17.4
Couple, four children	27.5	47.5	21.1
Sole parent, one child	50.0	65.0	53.8
Sole parent, two children	46.7	60.0	66.7
Sole parent, three children	75.0	62.5	60.0
All families	**23.7**	**39.2**	**31.0**

Note: a) The percentages in column 1 differ slightly from the subjective income inadequacy rates shown in Table 4.10 because the current sample includes only those respondents who answered both of the relevant questions.

The actual percentages shown in Table 5.2, not surprisingly, do not correspond to either of the extreme situations described above. Overall, for all families the incidence of temporary financial stress (Table 5.2, Column 2) is more than half as big again as the annual subjective income inadequacy rate, but the percentages in the third column suggest that the situation lies somewhere between the two extremes outlined earlier. Some more interesting patterns are, however, revealed once one looks at differences between family types. Generally, the percentages for sole parent families correspond most closely to the first extreme in which there is a group of 'permanently' poor and a distinct second group who are rarely unable to make ends meet. The most likely fact which distinguishes these two sub-groups is whether or not the sole parent in the family is working. If they are working, they can make ends meet virtually all of the time, whereas joblessness implies continual financial difficulty and on-going deprivation.

In relation to couples with two or more children, the figures in Table 5.2 are more consistent with the second extreme described earlier. Many families in these circumstances experience difficulties making ends meet from time to time, but for most of them these occur only temporarily. Again, whether family members are

working or not will still be an important factor, but this does not give rise to the sharp and more enduring divisions seen to occur for sole parents, possibly because there are two adults who can seek work if things become difficult financially. The remaining groups do not correspond particularly closely to either extreme. Unemployment will again create financial problems when it is being experienced, but the absence of children or the existence of only one (possibly young) child puts less pressure on family resources so that being able to cope is even then somewhat less of a problem.

Overall, this analysis reinforces our earlier findings. Those groups with the highest poverty rates overall - i.e. sole parent families - are also those where poverty appears to be more permanent and financial stress more enduring. Couple families, in contrast, are less susceptible to financial difficulty and, when they experience it, tend to do so for shorter periods. Our suspicion is that these patterns reflect joblessness, whether imposed by labour market conditions, retirement or, in the case of sole parents, by workforce barriers relating to the presence of young children. To be unemployed with no employed adult partner to rely on for financial support is to be forced to go without and to constantly have to struggle to make ends meet. Even in 1988 when unemployment was relatively low, it seems that many Australian families were in this situation, not temporarily but for extended periods of time.

5.3 Perceptions of Income Adequacy and Living Standards

Our analysis in Sections 4.2 and 4.3 which underlies the consensual poverty lines is based on a simple model relating the MIQ responses to actual income levels, to family size and composition and to age variables. The consensual poverty line methodology then controls for the relationship between the MIQ response (Y*) and actual income (Y) in order to derive poverty lines dependent upon total family size, or the number of adults and children in the family, and the age of the respondent. This approach is consistent with much poverty line (and equivalence scale) research which incorporates family size and composition and age variables into the determination of (relative) family needs for the purposes of poverty analysis.

Although some economists have argued that decisions which affect family size (e.g. the decision to have children) are a matter of personal choice and should thus not influence poverty as defined as an **enforced** circumstance (nor, by implication, higher levels of financial assistance for larger families), this is not a commonly held view within the social policy literature. The more prevalent view within social policy (which we share) recognises the needs of children as individuals in their own right (Bradbury, 1989b). On this view, family needs do increase with the number (and age) of children and poverty research and income support (and other social policies) should take account of this.

It is, however, true that the MIQ responses exhibit very considerable variation (see Figure 3.2) and further that much of this variation remains even after the influence of actual income, age and the family variables are taken into account. The regression equations presented in Table 4.1 only explain less than 30 per cent of the variation in

the MIQ responses shown in Figure 3.2. Our aim in this Section is thus to introduce additional variables into our earlier regression models to see whether we can explain a greater proportion of the variance in the MIQ responses in our sample, to identify which additional variables assist in this process and to explore some of the implications of such an extension to our earlier models.[40]

In undertaking this exercise, we were guided by a recent comparative study undertaken by de Vos and Garner (1989). Utilising survey data for the Netherlands and the United States, de Vos and Garner investigated the relationship between survey responses to a minimum income question, and actual income, household composition and a range of additional explanatory variables. The specific variables investigated in their study were the age and sex of respondents, their workforce status, education, race, locational region, the degree of urbanisation, fixed expenditures (e.g. housing costs), ownership of liquid assets and changes in income.[41] The authors found a number of these additional variables were significantly related to the MIQ responses, specifically workforce status, education and age (in the United States) and workforce status, age and sex (in the Netherlands). In light of these results, some further investigation of our Australian data is warranted.

The survey on which our analysis is based allowed us to specify a number of additional variables for inclusion in our basic regression model. The variables we experimented with relate to the level of education of respondents, their labour force status, their housing situation and their political affiliation, in addition to their income, age and the number of adults and children in the family. The full range of variables we considered are defined in Table 5.3. The first four variables (income, number of adults, number of children, and age of respondent) are those used in our earlier analysis. Four additional variables (education, labour force status, housing situation and political affiliation) are indicated and explained in Table 5.3. For each of these additional variables, a dummy variable was defined so that, for example, in the case of labour force status, there were in fact seven separate dummy variables of which the first (LFS1) was equal to one if the respondent was working part-time for pay and zero otherwise, and so on. For each set of dummy variables, the variable marked with an asterisk (*) in Table 5.3 was set as the benchmark against which the others were compared. This means that our benchmark respondent was working full-time for pay, owned their house outright and was a Labor voter. The dependent variable used in the model was, as before, the logarithm of the minimum income response (MIQ).

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40 The exercise thus involves expanding the range of variables included in the vector Z_i shown in equation (2.13).

41 Note that some of these variables (e.g. sex, age, workforce status, region, urbanisation and housing costs) have been included in conventional poverty lines used in countries like Australia and the United States.

Table 5.3: Explanatory Variables Used in the Extended Regression Analysis

Circumstance	Variable Name	Description
1. Actual Income	LOGINC	Logarithm of annual net income in previous year.
2. Family Composition		
- Number of Adults	ADTS	Number of adults in the family.
- Number of Children	CHDN	Number of children in the family.
3. Age	PENSAGE	A zero-one dummy variable, equal to one if respondent is aged at least 60 (female) or 65 (male)
4. Education	EDUC	Number of years of post-secondary school tertiary education. (Full-year equivalent for part-time study).
5. Labour Force Status	LFS	Labour force status of respondent last week. Either: - Working full-time for pay(*). - Working part-time for pay (LFS1) - With job but not at work due to illness, etc. (LFS2). - Unemployed (LFS3). - Retired (LFS4) - At school or university (LFS5) - Keeping house (LFS6) - Other (LFS7)
6. Housing Situation	HSG	Current housing situation. Either: - Mortgage or loan (HSG1) - Owned outright(*) - Housing Commission (HSG2) - Privately rented (HSG3) - Other (HSG4)
7. Political Affiliation	PTAF	Respondents usual federal political affiliation. Either: - Liberal or National Party (PTAF1) - Labor(*) - Australian Democrat or Nuclear Disarmament Party (PTAF2) - Other (PTAF3)

Note: *) Variables used to define the benchmark in the actual regressions.

Before commencing the analysis, we checked the partial correlation matrix of our independent explanatory variables in order to assess whether our regression estimates were likely to be affected by multicollinearity problems. This gave rise to no great cause for concern. The only correlation coefficient in excess of 0.4 was that between PENSAGE and LFS5 (respondent currently at school or university), where it was equal to 0.62. Our sample size for analysis was 950 observations, with the decline in our working sample resulting from non-response to some of our explanatory variable questions. The model was estimated using the stepwise regression procedure of the SPSS statistical package. This procedure enters explanatory variables into the model sequentially, beginning with the most highly significant and stopping when all statistically significant variables have been included in the model. The results of the exercise are presented in Table 5.4.

In terms of the overall performance of the model, the explanatory power is still low though somewhat higher than in the basic models estimated earlier. Encouragingly, the four variables included in the basic model (LOGINC, ADTS, CHDN and PENSAGE) remain important in the extended model and the income variable continues to be the single most important explanatory variable. As compared with the basic model, the coefficients on the logarithm of actual income, the number of adults and the number of children and the age variable all remain stable in size and significance. This implies that the consensual poverty lines estimated earlier from the basic model would not change markedly if they were derived instead from the extended regression model. This is again an encouraging finding for the consensual poverty line methodology.

The results in Table 5.4 are as interesting in some respects for the variables not included as they are for those that are. Thus, none of the seven labour force status variables appears in the estimated model, implying that none of them has a significant impact on the MIQ response. This means, for example, that the MIQ response of unemployed respondents (or those working in the home) is, on statistical grounds, no different on average from that of full-time workers (all other things being equal). Recalling that our benchmark respondent is a full-time employee, Labor voter who owns their home outright, our results show that mortgagees (HSG1) and private renters (HSG3) both need more income to make ends meet (other things constant). The fact that the coefficient for mortgagees (0.117) exceeds that for private renters (0.083) indicates that the former need higher income levels in order to make ends meet, this presumably reflecting the high level of interest rates in existence at the time of the survey. The significance of the political affiliation variable (PTAF1) implies that Liberal or National Party voters require higher incomes to make ends meet than Labor Voters. Finally, the significance of the coefficient on the years of education variable (EDUC) implies that the income required to make ends meet rises steadily with each successive year of post-secondary education.

In summary then, the results in Table 5.4 indicate that a number of factors other than income, family circumstances and age have a significant impact on the 'making ends

Table 5.4: Results From the Extended Regression Model[a]

(Dependent Variable: Logarithm of MIQ response)

Independent Variable	Description	Coefficient Estimate[b]	Beta Value	T-statistic
INTERCEPT	Constant Term	3.836**	-	(30.0)
LOGINC	Logarithm of Actual Income	0.258**	0.369	(11.4)
HSG1	Mortgage or Loan on House	0.117**	0.136	(4.5)
PENSAGE	Above Age Pension Age	-0.085*	-0.071	(-2.2)
PTAF1	Liberal or National Party Voter	0.080**	0.094	(3.5)
EDUC	Years of Education	0.020**	0.106	(3.8)
ADTS	Number of Adults	0.125**	0.101	(3.3)
CHDN	Number of Children	0.026**	0.077	(2.6)
HSG3	Private Renter	0.083*	0.058	(2.0)

($N = 950$; $\bar{R}^2 = 0.323$; $F = 57.7$)

Notes: (a) The procedure used is explained in the text.
(b) ** (*): Statistically significant at the one (five) per cent level.

meet' income levels provided by respondents, in particular the housing situation, level of education and political affiliation of respondents. The first of these (housing) can be understood directly in terms of the costs associated with particular housing arrangements. Because housing costs, be they mortgage repayments or rent, have a first claim on family budgets, where these costs are high they have a positive impact on the income required to allow families to meet their other needs. In relation to the effect of the education and political affiliation variables, a different kind of explanation applies. Here, we attribute our results to providing an indication that life style factors (influenced by the level of education and reflected in political affiliation) have an influence on how people perceive their living standards and on the incomes they feel they need in order to meet their needs. This is a significant finding confirming our belief that the ways in which money income is perceived and how money income is evaluated is not a purely economic phenomenon in the conventional sense, but is also affected by the social context within which people lead their lives and the culture and values which develop within that context.

The significance of the education variable in Table 5.4 conforms with the results for the United States produced by de Vos and Garner (1989). Their study did not, however, find a significant education effect in the Netherlands. They offer two explanations for the role of the education variable in determining perceptions of minimum income levels. The first is that more highly educated people (at a given income level) will have invested more in their education and thus require more income to achieve a given level of welfare, if only to allow them to re-pay debts incurred while undergoing education. The second explanation they offer is that there is a reference group effect. More highly educated people tend to mix with similar highly educated groups who also tend to have higher incomes. As a consequence, they feel that they need higher incomes in order to live up to the standards of the reference groups with which they associate in their everyday lives.

Of these two explanations, we favour the second. The first seems to have little relevance in Australia where higher education (in the years prior to the survey) was very largely publicly funded and did not require the accumulation of debt in order to pursue post-secondary studies. On the other hand, how people lead their lives, the culture and values which underpin it, and the groups with whom they associate combine to place a social dimension on how people perceive money income and how they regard the relationship between the level of income and the well-being or living standards associated with it.

Similar factors may well be at work in the intriguing finding that perceived minimum income needs vary with political affiliation. However, here we are dealing with that aspect of culture which extends beyond one's immediate social milieu to values concerning how society generally does or should work. As such, if political allegiance is taken to correspond, however roughly, to particular sets of values and beliefs, then it might follow that the lower income requirements of the Labor voter reflect a willingness to depend upon state-provided services, whereas the political conservative in similar circumstances would prefer 'cash in hand' in order to allocate expenditure according to their own preferences, especially when the latter extend to private schools, hospitals, and so on. This may be making unwarranted assumptions concerning the degree of congruence between professed ideology and actual behaviour, of course. Nevertheless, mainstream political debates of the 1980s did emphasise such distinctions. For example, one of the central 'selling points' of the Coalition parties' unsuccessful campaign in the July 1987 election (the election which, incidentally, featured in the survey questionnaire immediately prior to the political affiliation question) involved the abolition of Medicare in favour of increasing disposable incomes through tax cuts.

An alternative explanation for our finding might revolve around the relationship between political allegiance and long-term economic aspirations. That is, those with an interest in individual self-advancement, expressed in conservative political identification, might be more eager for reasons of career or social acceptability to adopt a lifestyle 'beyond their means' than those with a more solidaristic attitude to increasing living standards. In short, the question of why a person's politics should make a difference to their perceived income needs, all other things being equal, is an

interesting one, and each of these admittedly speculative interpretations merits much more investigation than the present exercise permits. However, we feel we can reasonably cite the political affiliation results, together with the effects of education, as instances of the ways in which perceptions of an adequate income for oneself are shaped by cultural identities and their concomitant reference groups in ways which go far beyond the effects of immediate material and personal circumstances.

One general aspect of these extended results requires comment before their specific implications are discussed in detail. Recalling the method used to derive a consensual poverty line from the basic models estimated earlier, application of that method to the extended results in Table 5.4 would produce some rather strange poverty lines. The resulting poverty lines (derived, as before by setting $Y = Y^*$ and solving for the poverty line income level, Yp) would now depend not only on the number of adults and children in the family and age, but also on housing status, education and political affiliation. The inclusion of housing status (as a proxy for housing costs) is generally consistent with many other poverty lines, but to have a higher poverty line for more highly educated people, or for Liberal/National voters as compared with Labor voters is, to say the least, somewhat bizarre. We would certainly not wish to be seen as endorsing such a proposal. But there is an important issue here relating to which of the variables shown in Table 5.4 are to be regarded as legitimate to include as determinants of the poverty line and which are not. What is it, in other words which distinguishes between variables like family size which are seen as affecting need and thus are legitimate determinants of the poverty line, and variables like education or political affiliation which influence minimum income levels (according to Table 5.4) yet which very few would argue should be incorporated into poverty lines, social security payment levels, and so on?

One way of comprehending the distinction between what are in effect two separate classes of variables in our extended model is to consider whether or not each variable is the result of a **choice** freely entered into by people. Although this distinction is not always as clear cut as it might first appear, it provides a basis for deciding which variables should, and which should not, enter into the determination of the consensual poverty line. The fundamental principle to be followed here is simply that those variables which are the outcome of the choice of respondents should not enter into the poverty line calculations, only those variables over which people have no choice. Adherence to this principle would imply that education, political affiliation and, to a certain extent, housing situation (though not necessarily housing costs) - all of which reflect individual choice - should not influence the poverty line, while age clearly should.

The family size variables are less easy to classify as these tend to reflect individual choices made in the past (e.g. the decision to enter into a relationship, to separate, or to have children). On this basis, therefore, the family structure variables should also be excluded if the principle of choice is strictly adhered to. However, even though family size and structure decisions were in most instances the outcome of past choices by individuals, once these had been made they have implications for others who have their own rights as individuals to be considered. This has been the

perspective which social policy has taken in such situations. These considerations thus provide a case for over-ruling the principle of choice in relation to family size and membership in the current context and allowing these variables to be reflected in measures of need and hence in poverty lines.

With these thoughts in mind, we now return to a consideration of the results in Table 5.4. In order to illustrate the results in a more illuminating way, we show in Table 5.5 what they imply for the average income levels required to make ends meet for a number of hypothetical family types chosen with different characteristics and levels of actual income.[42] The hypothetical families have been chosen in order that the impacts of the different factors included in the regression model can be evaluated and compared. In relation to the income levels, the first column of Table 5.5 assumes that social security assistance is the only form of income received. The remaining three columns assume that the gross income of each family (assumed to contain only a single income earner) is equal to average weekly earnings (AWE) and multiples thereof.[43]

The actual income levels used to produce Table 5.5 vary, both across and within family types, because it is net (or disposable) income which enters into the regression model. Net income was calculated using the tax imputation model described in Appendix One, which means that differing family circumstances (e.g. the presence or absence of a dependent spouse) will cause net income to differ for different family types on the same level of gross income. Similarly, where the family is assumed to be renting privately, the first column is constructed on the assumption that they are in receipt of rent assistance in addition to the basic rate of pension or benefit and other relevant supplementary payments and allowances. Thus, aside from rent assistance, the pension/benefit incomes which underlie Table 5.5 are identical to those shown earlier in Table 4.7.

The impact of income changes for any specific family type can be assessed by comparing successive column entries within any row in Table 5.5, while the impact of family circumstance changes is shown by comparisons of the relevant figures within any column. The family types have been chosen so that the impact of each of the main family circumstance variables can be readily assessed. Thus, for example, the impact of tertiary education can be derived from comparison of the second and first, or tenth and ninth, or thirteenth and twelfth entries in each column, and likewise for the other factors identified in describing the family types shown in the tables. The top left hand entry in Table 5.5 ($196.80) is the lowest value of all with comparisons across the rows and down the columns, indicating how higher incomes, more education, more family members (adults or children), different housing status

42 The entries in Table 5.5 were derived by first estimating the net income corresponding to each gross income figure and then using this and the other variable values specified in the table to predict the minimum income level from the regression model in Table 5.4.

43 The annualised AWE figure used to construct Table 5.5 was $416.60 a week (in 1988).

Table 5.5: Estimated Income Levels Required to Make Ends Meet for Different Family Types[a]

Family Situation	Gross Annual Income Level ($ per week) In Receipt of Pension or Benefit[b]	AWE[c]	2 x AWE[c]	4 x AWE[c]
Non-aged single adult (Private renter)				
- Labor voter; no post-secondary education	196.80	254.60	293.30	339.40
- Labour voter; three year university degree	209.00	270.40	311.50	360.50
- Liberal/National Party voter; three year university degree	226.40	292.90	337.40	390.40
Aged single adult (Outright owner)				
- Labor voter; no post-secondary education	169.20	215.30	248.00	287.00
- Liberal/National Party voter; no post-secondary education	183.20	233.20	268.60	310.80
Couple, no children (Three year university degree)				
- Labor voter; private renter	272.40	310.10	355.40	410.00
- Labor voter; mortgagee	278.20	320.80	367.70	424.10
- Liberal/National voter; mortgagee	301.30	347.40	398.20	459.40
Couple, two children (Mortgageè)				
- Labor voter; no post-secondary education	294.90	319.30	365.60	421.40
- Labor voter; three year TAFE course	313.20	339.20	388.30	447.60
- Liberal voter; three year university degree	339.20	367.30	420.60	484.80
Sole parent, one child (Labor voter)				
- Private renter; no post-secondary education	221.70	264.40	303.20	349.80
- Private render; three year CAE course	235.40	280.90	322.00	371.60
- Mortgagee; three year CAE course	238.00	290.50	333.10	384.30

Notes: a) The estimates shown in the body of the table are derived from the estimated regression model in Table 5.3. All estimates have been rounded to the nearest ten cents.

b) Pension and benefit levels are taken from Table 4.7, amended to include the receipt of rent assistance where relevant.

c) AWE = average weekly earnings (all employees) in 1988, annualised series, expressed in after-tax terms using the tax imputation model described in Appendix One.

and different political affiliations change this basic minimum income figure. In fact, all of the changes from this baseline amount tend to be small relative to the baseline figure itself. This reflects the fact that the estimated slope coefficients in the underlying regression model (Table 5.4) - which show the marginal impact of the identified variables - are small in size relative to the estimated intercept - which determines the baseline minimum income amount.

Because of the complications described above with its construction, it can be argued that Table 5.5 is somewhat misleading, in that the actual (net) income levels used in the regression model to generate the estimates presented in the body of the table, do not correspond to the (gross) incomes indicated in the column headings. In part because of this, but also in order that the predicted minimum income levels can be compared with the actual (net) income levels which underlie them, we show in Table 5.6 the ratio of the two for each family type-gross income combination presented in Table 5.5.

Turning first to the minimum income predictions in Table 5.5, and picking out some of the more typical cases provides a useful first overview of our results. Thus, for example, a young single adult who votes Labor, left school at sixteen, rents privately and who is on unemployment benefit indicates that they need $196.80 a week (in 1988) in order to make ends meet. As Table 5.6 shows, the actual benefit which they would have been receiving at the time was slightly less than two thirds (62 per cent) of this amount. Similarly, a young childless couple, Labor voters, university-educated, still saving to buy their own house and renting privately, but with an income equal to twice average weekly earnings required $355.40 a week in order to make ends meet (Table 5.5), an amount which was exceeded by their actual net income by 67 per cent (Table 5.6). Finally, a couple with two children on average weekly earnings, with no tertiary education, but already on a mortgage, needed $319.30 a week in order to make ends meet (Table 5.5). Again, their actual net income was bigger than this, but only marginally so, exceeding the 'making ends meet' amount by only 10 per cent as indicated in Table 5.6.

The fact that the entries in the first column of Table 5.6 are all less than one implies that the levels of pension or benefit prevailing in 1988 were not seen as sufficiently high to allow recipients to make ends meet, this being the case for all of the family situations described in the table. Even for families on average weekly earnings, particularly couples, Table 5.6 indicates that their net incomes were such as to exceed what they needed to make ends meet by only around 10 per cent, sometimes less. In most cases, a doubling of gross income from AWE to twice AWE causes the ratio of net income to the 'making ends meet' minimum income level to rise by around 50 per cent. A further doubling of gross income to four times AWE causes the ratio of actual to 'making ends meet' income to increase again by around a further 50 per cent. This damped effect on minimum income levels arises as a result of two factors: first, the progressive nature of the personal income tax system means that net income rises proportionately less than gross income; second, the model itself indicates that the 'making ends meet' income level increases as net income rises.

Table 5.6: Ratio of Actual Disposable Income to the Estimated Income Level Required to Make Ends Meet for Different Family Types

Family Situation	Gross Annual Income Level: In Receipt of Pension or Benefit	AWE[c]	2 x AWE[c]	4 x AWE[c]
Non-aged single adult (Private renter)				
- Labor voter; no post-secondary education	0.62	1.30	1.96	2.94
- Labour voter; three year university degree	0.58	1.22	1.85	2.78
- Liberal/National Party voter; three year university degree	0.54	1.14	1.69	2.56
Aged single adult (Outright owner)				
- Labor voter; no post-secondary education	0.77	1.54	2.33	3.57
- Liberal/National Party voter; no post-secondary education	0.71	1.43	2.13	3.23
Couple, no children (Three year university degree)				
- Labor voter; private renter	0.77	1.12	1.67	2.50
- Labor voter; mortgagee	0.72	1.09	1.61	2.44
- Liberal/National voter; mortgagee	0.66	1.00	1.49	2.22
Couple, two children (Mortgagee)				
- Labor voter; no post-secondary education	0.88	1.10	1.61	2.44
- Labor voter; three year TAFE course	0.83	1.03	1.54	2.33
- Liberal voter; three year university degree	0.76	0.95	1.41	2.13
Sole parent, one child (Labor voter)				
- Private renter; no post-secondary education	0.79	1.32	1.96	2.94
- Private render; three year CAE course	0.74	1.23	1.82	2.78
- Mortgagee; three year CAE course	0.67	1.19	1.75	2.70

Notes and Sources: Table 5.5 and main text.

These two factors combine to produce the result that the proportionate rise in the ratio of actual net income to the 'making ends meet' income level is well below the proportionate rise in gross income which initiated the change.

Taking for each variable the approximate average of their implied impact across the different family situations shown in Table 5.5 produces a set of effects which still tends to increase with the level of actual income. These averages imply that three years of tertiary education cause the 'making ends meet' minimum income level to increase by between $15 a week (for someone on social security assistance) and $23 a week (for someone with an income equal to four times AWE). Having a mortgage (as compared with renting privately) causes a much smaller rise in the 'making ends meet' income level, the effect ranging between $3 a week and $14 a week at the same two income levels. Finally, Liberal/National Party voters indicate that their 'making ends meet' income level is between $22 a week and $32 a week more than Labor voters, again at the same two income levels. In general then, the impact of political affiliation is greater than that of either housing costs or education.

These estimates can be compared with the impact of additional children on what the family as a whole needs in order to 'make ends meet'. Comparison of the figures in the seventh and tenth (or eighth and eleventh) rows of Table 5.5 indicates, for example, the impact on the MIQ response of two children for families with given income and education levels and in given housing situations. The two sets of comparisons produce very similar results for families with a given income level, but in this case the average impact does not decline uniformly as income rises. The largest difference occurs for those receiving social security assistance ($35 to $38 a week) while the lowest (around $20 a week) occurs for families on incomes of between average weekly earnings and twice that amount. Thus for low income families, it is the presence of children which has the biggest single impact on the 'making ends meet' income level, followed by political affiliation, level of education and housing circumstances. For higher income families, the magnitudes of the impact of the number of children and political affiliation are now similar, with the latter tending to be the greater of the two, but both effects still exceed that of education and housing by a considerable margin.

Among the more interesting implications of these results is the fact that increasing levels of actual income cause the income levels required to 'make ends meet' also to increase. As already noted, a doubling of gross income leads to a rise in the ratio of (net) income to the 'making ends meet' income level of only around 50 per cent. This may help to explain why increases in income levels in the community generally - associated for example with sustained periods of economic growth - do not lead to increased satisfaction and perceived higher living standards among recipients to the degree often anticipated. The incomes required to 'make ends meet' depend upon a myriad of social factors as well as actual income, which causes the ratio of actual to minimum income levels to rise proportionately much less than the rise in actual income itself. Herein then, lies one possible explanation for the apparent paradox whereby many people feel that they were 'worse off' in 1990 than they were in 1983 despite the fact that both aggregate National Account statistics and more detailed microeconomic analysis pointed clearly to the fact that real disposable incomes had risen over the period (Bradbury, Doyle and Whiteford, 1990; Saunders and Matheson, 1991; Bradbury and Doyle, 1992).

If we interpret living standards to mean not just the real purchasing power of existing (cash) income levels but also take into account the broader social aspirations of income recipients (as encapsulated, for example, in the responses to our 'making ends meet' question) then one can begin to see how movements in real disposable incomes and in perceived standards of living may diverge. In extreme circumstances, it would be possible that such a line of reasoning could produce situations where perceptions of the social adequacy of income levels actually declined while economic measures of real disposable incomes showed a clear increase. The reference group effect on perceptions of income adequacy discussed earlier may be of relevance in this context. As all incomes in the community rise, so do the incomes and life styles of reference groups and thus of the incomes people require to replicate (and participate in) these life styles. Increased real incomes may thus bring no increase in people's perceptions of their standard of living. Such factors may thus explain why the recent 'living standards debate' in Australia has been so confused (and confusing) whilst appearing to contradict what the main economic indicators were showing had actually occurred to real incomes.

One final implication of this line of reasoning is perhaps worth noting. The above arguments suggest that the population as a whole may feel that their standard of living (or well-being) increases less than their real incomes as a consequence of, for example, economic growth, or that people anticipate the effects of economic growth and adjust their aspirations accordingly. This suggests that politicians who promise (and deliver) real economic growth are likely to find that the electorate is less appreciative of their efforts than might be implied from the underlying statistics. Furthermore, if, in order to produce economic growth, the government has to introduce policies which inflict social or economic harm on some groups in the short-run, they may find ex-post that electors place more weight on these harmful effects than they do on the benefits associated with the higher real incomes which result. Political promises to raise the rate of economic growth may thus have the balance tipped against them in terms of electoral popularity, a point which politicians themselves might do well to dwell upon.

This line of reasoning thus suggests that economic growth - at least if it is anticipated - is unlikely to be as electorally popular as previously thought. In contrast, unanticipated economic growth is likely to prove very popular for the same reasons. The problem for politicians in all this is obvious: in order to get elected to office, they must convince voters that they can produce sustained economic growth, yet if the voters believe them, the actual effects of growth on living standards will fall short of voters' upwardly revised aspirations. Put the other way, the most popular government policies *ex post* on economic growth may be those least likely *ex ante* to secure office for the political parties proposing them!

Let us turn finally to what our results imply for the effects of policies which are designed not to **raise** the overall level of income but rather to **redistribute** a given level of income within the community. Here we make use of the counterpart to the argument just developed in relation to the social perceptions of increases in income levels by combining them with the symmetrical effects of decreases in real income.

If we again use the ratio of actual to 'making ends meet' minimum income as an indicator of perceived living standards, then just as a doubling of actual income leads to a less than doubling of perceived living standards, so a halving of actual income should lead to a fall in perceived living standards by less than half.

This line of argument implies that a transfer of income from high to low income people may not be the straightforward 'zero-sum game' it is normally thought to be.[44] Indeed, if the proportionate increase in the living standards of the gainers from redistribution increase less than in proportion to their real incomes, while the reverse happens for the losers from the change, then pure monetary redistribution is almost certain to be a 'non-zero-sum game' and may in fact be a 'negative sum game'. This is, however, a highly conjectural line of argument and must be qualified by several factors.

First, our survey data were generated during a period when real incomes were rising (and had been so for several years) so that we cannot be sure that the effects we have observed for income increases would be replicated if real incomes fell. This suggests that the relationship between actual income and the 'making ends meet' income level may not be symmetrical in an upwards and downwards direction. Added to this is the fact that the pattern of perceived gains and losses from redistribution will depend upon how our measure of living standards (implied in Tables 5.5 and 5.6) varies with income itself. Finally, the skewed nature of the income distribution means that pure redistributive income transfers (which are revenue neutral) will have larger proportionate effects on the incomes of high income earners than low income earners: a five per cent cut in the incomes of the rich is likely, for example, to fund a less than five per cent increase of the far larger group of low to modest income earners.

These factors mean that the above arguments about community perceptions of the effects on living standards of income redistribution policies (and economic growth policies for that matter) are simplistic and need further refinement. That is not our intention here. Rather, we wish to highlight some of the lines of thinking that the results presented in this Section lead into. What is of more significance for us is that we have identified that the minimum incomes required by people in order to 'make ends meet' are determined by a range of factors, some of which objectively reflect need and others which capture social and life style influences. Community perceptions of the living standards associated with money incomes are thus complex and certainly not entirely economic or monetary. That in itself should serve to warn against the usefulness of continuing to analyse the **social** consequences of policies for economic growth poverty and income redistribution in narrow **economic** terms.

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44 For simplicity we ignore any incentive effects which accompany the transfer, focusing only on the direct income effects of the change.

6 Summary and Conclusions

The main objective of the research underlying this Report was to consider the appropriateness of what has been termed the consensual poverty line approach to the development of an alternative poverty standard for Australia. The essence of the consensual poverty line approach involves deriving a poverty line from individual responses to questions concerning the minimum income levels that people in different circumstances say they require in order to 'make ends meet'. By seeking community views on this issue, the consensual approach has the advantage that it can produce a poverty standard based on the actual perceptions of minimum levels of adequacy in the community. Furthermore, the approach also appears to downplay the role of experts (many of whom have relatively high incomes) in setting standards by which the economic status of low income people are assessed. Finally, the approach is consistent with the broader principles of citizenship, participation and democracy on which most of welfare state intervention and social policy more generally are based.

Like others who have considered the consensual approach, however, many of these advantages of the consensual approach are more apparent than real. The care taken in wording the key minimum income question (MIQ) and the level of sophistication and expertise involved in designing and undertaking the survey, as well as in the analysis of its results, show clearly that expert input can still have a very significant impact on the results. Our results in Section 4 bear this out, showing that the level of the consensual poverty line is sensitive to the specific methods used to derive it. We do not see this as necessarily undesirable, but it does undermine claims that the approach is equivalent to 'letting the people decide' a poverty standard for themselves. Furthermore, our analysis reveals that there is not a single consensual approach but a range, each of which incorporates different analytical procedures which have important bearings on the results.

The consensual approach is nonetheless worthy of exploration to see whether or not it has the potential to provide an alternative poverty standard for Australia. Concern over the appropriateness of the existing poverty standard - the Henderson Poverty Line - has been expressed for at least a decade, and the relevance to conditions in the nineties of a standard developed over twenty five years ago needs to be constantly questioned and reviewed. We have argued in the Introduction that any poverty standard should satisfy two key principles, that it is based on actual conditions prevailing in the society in which it is to be applied, and that it should receive broad endorsement as an appropriate standard in that community. Neither condition can be said with any confidence to be satisfied by the Henderson Poverty Line in the nineties.

Poverty research is inevitably political and most agree that it embodies value positions which will always be open to challenge. The emotive nature of the concept of poverty will always guarantee that to be the case. But while controversial, there is

a need for a poverty standard against which to judge the living circumstances of those on lowest incomes and to assess how these are changing over time. This seems even more pressing in a country like Australia, where income support policies have always emphasised poverty alleviation (as opposed to income maintenance) as an over-riding objective.

Yet past failures (in Australia and elsewhere) to derive a robust and relevant poverty standard are beginning to see a change in emphasis among researchers, away from consideration of an 'all or nothing' poverty standard and towards different methods of analysis which focus on the continuum of incomes at the lower end of the income distribution. This trend is being reinforced by the focus on measures of living standards which are multi-dimensional social constructs rather than the use of money income which has dominated much poverty research in the past. We have a good deal of sympathy with both developments, even though the main aim of this research has been more narrowly focused on the conventional approach. We have, however, tried to investigate our data in ways which shed light on other aspects of living standards as well as considering the relevance of the consensual approach itself.

The data used in our research was produced by a national postal survey of Australian electors undertaken in 1988. The sample of over 1800 respondents was shown in Section 3 to be broadly representative of the population as a whole, its main limitation being the under-representation of single people generally, and elderly single people in particular. This is a feature which previous surveys of this kind have encountered in Australia. The bulk of our analysis focused on an effective working sample of just under 1100 respondents who provided responses to certain key questions in a form which was amenable to analysis and where ambiguities in the responses were absent. The responses of this working sample to the key minimum income question are presented in Table 3.5 and illustrated in Figure 3.1. A glance at these indicates straight away that there does not appear to be any consensus about the income levels required to 'make ends meet'. The average response, after excluding zeros, was just over $350 a week, although over a quarter or the responses differed from this amount by more than $150 a week. This diversity of response leads us to regard the term 'consensual' itself as something of a misnomer, as it implies a degree of agreement on minimum income levels which the data themselves do not support.

However, in responding to the minimum income question, people are asked to take their own circumstances into account. These will inevitably differ within the population and this explains a good deal fo the diversity in the MIQ responses. Indeed, the consensual poverty line methodology proceeds by identifying some of the circumstances which cause these differences and allowing for these by deriving a different poverty line for families in different circumstances. Our attempt to undertake this exercise is reported in Section 4.

What our analysis reveals (in Tables 4.1 and 4.2) is that responses to the minimum income question vary systematically with the actual income of respondents, with the number of adults and children in their family, and with the age of the respondent.

Consensual poverty lines are then derived from these estimated relationships by calculating the income level at which respondents will, on average, indicate that their current income is just sufficient for them to make ends meet. This income level is then defined as the consensual poverty line. These poverty lines will differ according to family size and age. However, selecting the 'best' underlying relationships - and hence choosing the 'best' consensual poverty line - on the basis of conventional statistical criteria is not easy. Because of this we estimated not one, but three sets of consensual poverty lines which are shown in Table 4.3. For some groups, the three methods produce similar results, but not for all.

Sole parent families in particular are a group where we had problems deriving a set of poverty lines in which we could have confidence. This partly reflects the relatively small number of sole parent families in our sample and the variety in their circumstances, which together resulted in our estimates having large standard errors. An important point to emphasise more generally, however, is that different applications of the consensual methodology produce different poverty lines and these vary by around 5 per cent in most cases, but sometimes by more than 10 per cent. These then are the kinds of margins of error that need to be placed on any particular consensual poverty line estimate.

Analysis of our consensual poverty lines showed them to be markedly different from the Henderson Poverty Line as well as from the level and structure of social security payments. Essentially, the consensual poverty lines are very high for the first adult member in the family, but vary much less with additional family members than the Henderson line or social security payments. This finding is consistent with similar research undertaken in a range of overseas countries. We did, however, find that the effects of age on family need appear to be more similar to the effects implicit in the Henderson Poverty Line.

Using our estimated consensual poverty lines to estimate the incidence of poverty in Australia in 1988, we found an overall poverty rate of 20.5 per cent. The risk of poverty is greatest among sole parent families and single elderly people, both of whom have poverty rates in excess of 50 per cent (Table 4.9). If, however, we adjust these estimates in light of other information collected in the survey the overall poverty rate falls to 14.6 per cent, although sole parents and the single aged remain as the two groups with highest poverty rates (Table 4.10). These latter estimates conform broadly with the level and structure of poverty as estimated using the Henderson Poverty Line (Table 4.11).

Despite these similarities, however, our conclusion is that the consensual poverty lines we have estimated do not represent a viable alternative to the Henderson line, at least at this stage. The differences between the two lines, combined with the margins of error on our estimates lead us to conclude that any further work on the consensual approach would require, as a minimum, a considerably larger sample in order that sampling error can be minimised.

We turned finally, in Section 5, to consider what our survey data implied for the broader issues of deprivation and living standards. Our analysis of deprivation among Australian families focused (admittedly somewhat narrowly) on the frequency of instances of families having to go without basic items such as food, clothing and health care. Over a period of a year, significant proportions of families reported having experienced these dimensions of deprivation (Table 5.1). Perhaps of most concern was the finding that more than 16 per cent of families with children had experienced not being able to buy basic items for their children, more than 7 per cent indicating that this had occurred quite often.

Our analysis of the dynamics of financial stress, while somewhat simplistic, revealed that certain sections of the community are living on the margins of poverty most of the time. Sole parent families again stand out as a group living 'on the edge' almost continuously, unless they are in employment (Table 5.2). For other groups of working age families, the risk of poverty is of a more temporary nature, tending to be associated with periods of joblessness. It needs to be noted, however, that the rise in long-term unemployment is serving to translate what was once temporary hardship into more permanent poverty and deprivation.

Our analysis of the determinants of responses to the minimum income question produced perhaps our most fascinating findings (Table 5.3). Here we found a systematic relation not only with actual income, family size and age (as in our earlier analysis) but also that the income needed to 'make ends meet' varied with housing circumstances, level of education and political affiliation. Whilst the first of these additional factors can be explained in straightforward cost terms, the latter show quite clearly the impact of social and life style factors on perceptions of minimum income levels. Our illustration of these results in Tables 5.4 and 5.5 show how the ratio of actual income to minimum income perceptions changes less than in proportion to actual (gross) incomes.

Using this ratio as an indicator of living standards, we illustrated with some examples how the undue focus on **real incomes** that normally dominates debate may give rise to quite misleading conclusions about community perceptions of the effects on **living standards** of policies for economic growth and income redistribution. As with much of the analysis in this Report, this aspect of our work is best seen as exploratory. Nonetheless, its consequences for the role of social and life style factors in addition to purely economic considerations in understanding the effects of income changes seem to be important for all distributional and living standard issues, not just those relating to poverty and low income. As in many other areas of public policy, there is a need for narrowly focused economic analysis to be broadened to take account of the social fabric within which people actually live their lives.

Appendix One

This Appendix describes the definition and derivation of the net income variable used in the statistical analysis in the main Report and the criteria and constraints involved in selecting the basic unit of analysis.

The Income Variable

The survey questionnaire requested information on the income of each respondent and his or her spouse. Respondents were asked to indicate separately their (and their spouse's) income in the previous twelve months in the form of wages and salaries; own business; government social security pensions or benefits; other age pension or superannuation; interest, dividends or rent; and other regular sources of income (including scholarships and family allowance). In some instances, (e.g. income from own business; interest, dividends or rent) an annual figure was requested, while in others (e.g. government cash benefits) an average weekly figure was requested.

The first step in constructing our income variable was to convert all of these responses to an average weekly amount and then to a total annual income figure. A difficulty arose here because for those who received both wages and salaries and government cash benefits during the course of the previous year, total annual income from the latter was not directly calculable because of lack of knowledge of the number of weeks for which benefits had been received. In calculating annual income in these instances, we assumed that the average weekly figure for government benefit income had been averaged over the year as a whole by respondents and did not refer to the average weekly income received while on benefit. It should be emphasised that this assumption is entirely consistent with the way in which this question is worded. Despite this consistency, there was some concern about the procedure used in instances where income in the form of both wages and salaries and government benefits had been received in the previous twelve months. However, further investigation revealed that only 6.5 per cent of our total of 1589 usable respondents were in this position, and only 3.0 per cent of spouses. Restricting the sample to include only those who provided a positive figure in response to the Minimum Income Question reduced the sample of respondents to 1429. Of these 6.8 per cent indicated that they had received both wage and salary income and government benefits over the last twelve months, as had 3.4 per cent of spouses. Thus although we have some concern that the income variable for these people may be overstated, the proportion of the sample affected is not sufficiently large to give rise to undue cause for concern.

Once the annual income of respondent and spouse had been estimated in this way, a tax imputation model was applied in order to estimate tax liability and hence net or disposable income. The tax model assumed that taxable income was equal to 97 per cent of gross annual income; account was taken of the dependent spouse rebate,

varied according to whether there were children present or not and after making allowance for any income of the spouse. In calculating disposable income, the income tax scales applying in 1988 were used because the timing of the questionnaire meant that the annual income reported referred to calendar year 1988. Finally, once annual disposable income had been calculated this was converted back to a weekly figure so that it could be directly compared with replies to the Minimum Income Question which were provided in terms of net weekly income. Further discussion of the characteristics of the actual and minimum income variables is provided in Section 3 of the main report.

The Unit of Analysis

Problems arose in selecting a unit of analysis which could be applied consistently across the major variables of interest in the analysis. The three main variables of relevance in this context were actual income (Y), the response to the Minimum Income Question (MIQ) (Y*) and family size (and composition, FS). As just explained, the survey questions relating to actual income relate to the income of respondent and spouse only. Information was not sought on the incomes of other household members. In contrast, the MIQ referred to 'the very lowest net weekly income ... that your **household** would have to have to just make ends meet' (emphasis added). There is thus a disjuncture between the actual and minimum income responses, if each is treated literally, unless attention is restricted solely to single family households.

The survey question relating to family structure in fact requested information on the people living in the same house as the respondent. In providing their responses, respondents were asked to provide information on the number of household members and the nature of their familial relationship with them. This allowed us to construct samples on both a family unit and household unit basis. (We were forced to assume here, and through the report, that all children living with the respondent were dependent children, in the sense in which the tax and social security systems use that term). Unfortunately, 5.3 per cent of the total sample were multiple adult households while further 16.8 per cent of the sample were other households (i.e. those comprising family and non-family members living together). Thus of the total of 1814 households in the sample, 22.1 per cent (or 400) of them were multiple family households.

We were thus faced with the following problem: should we restrict our analysis to only single family households, in which case we could be certain that responses to the actual income, minimum income and household (equals family) structure questions were all on a consistent basis; alternatively, should we use the larger sample of households and accept the fact that our responses were not provided on a consistent basis. The major problem with the second approach as we see it is that the actual and minimum income questions are not provided for the same group, actual income referring to the respondent and spouse only, and the minimum income

level referring to the household as a whole. We could, of course, assume that in responding to the MIQ, respondents considered only their direct **family** circumstances and not, as the MIQ requested, those relating to the **household** as a whole. This seems not implausible, particularly as the MIQ immediately followed the questions relating to the actual income of family members only.

However, if we accept this interpretation, then both the actual and minimum income responses are on a family basis and the family is the obviously appropriate unit of analysis. In other words, we end up following the first approach even by beginning to follow the second approach.

We thus followed the first approach and restricted our analysis of responses to the MIQ to those respondents living in single family households. Even though this restricted our sample size by some 22 per cent, we felt that the consistency of approach and interpretation thereby afforded was worth it. (We do, however, report our initial results for the extended sample, including multiple family households, in Appendix Two in order that readers can judge for themselves what impact this decision has had on our results.)

Appendix Two

The estimates in the following table correspond to those shown in Table 4.1 when the sample is expanded to include both single and multiple family households.

Table A2.1: Estimates of Basic Consensual Poverty Line Models for All Households

Equation Number[a]	Dependent Variable	Independent Variables[b] Intercept	Income (Y)	Family Size (FS)	Number of Adults (ADTS)	Number of Children (CHDN)	Sample Size	$\bar{R}^2$	F
(1)	Y*	184.02** (22.24)	0.35** (22.63)				1394	0.268	512.2
(2)	log Y*	4.13** (44.11)	0.27** (17.28)				1394	0.176	298.7
(3)	Y*	136.18** (11.62	0.34** (21.93)	16.09** (5.70)			1394	0.285	278.2
(4)	log Y*	4.06** (43.70)	0.25** (16.37)	0.05** (6.96)			1394	0.203	178.6
(5)	log Y*	4.09** (44.32)	0.25** (15.82)	0.17** (7.50)			1394	0.208	183.4
(6)	Y	119.76** (7.99)	0.34** (22.01)		24.92** (4.32)	13.30** (4.11)	1394	0.286	186.7
(7)	log Y*	4.02** (40.85)	0.26** (16.38)		0.06** (4.28)	0.05** (5.57)	1394	0.203	119.4
(8)[c]	log Y*	4.39** (32.92)	0.22** (10.17)		0.15** (2.67)	0.03 (1.14)	807	0.125	39.4

Notes:
a) The actual equations are shown in the main text.
b) T-statistics are shown in brackest: **(*) indicates statistical significance of the coefficients on the independent variables at the one (five) per cent level.
c) Equation (8) is estimated for families with children only.

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