

Income Poverty Among Aboriginal Families with Children: Estimates from the 1986 Census

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Publication details:

Working Paper No. 20
SPRC Discussion Paper
0733400493 (ISBN)
1447-8978 (ISSN)

Publication Date:

1990

DOI:

<https://doi.org/10.26190/unsworks/152>

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FAMILIES WITH CHILDREN:
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Russell Ross and Peter Whiteford

No.20

July 1990



Social Policy Research Centre

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P.O. BOX 1 • KENSINGTON • NEW SOUTH WALES • AUSTRALIA • 2033

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**INCOME POVERTY AMONG ABORIGINAL FAMILIES WITH CHILDREN:
ESTIMATES FROM THE 1986 CENSUS**

Russell Ross and Peter Whiteford

**ISSN 1031 9689
ISBN 0 7334 0049 3**

This is a substantially revised and lengthened version of a paper co-authored with Toni Payne, entitled 'Poverty Among Aboriginal Families with Children', which was presented at the National Social Policy Conference, University of New South Wales, July 1989. We gratefully acknowledge the contribution of Toni Payne in the early development of this paper. Marina Paxman provided excellent assistance in the preparation of this version.

ABSTRACT

This paper brings together information from the 1986 Census of Population and Dwellings and the 1986 Income Distribution Survey to estimate poverty rates for Aboriginal families and other families. It also describes the factors associated with income poverty among Aboriginal families.

The analysis in this paper is primarily descriptive and is limited to measuring income poverty using the Henderson poverty line. The main objective is to provide the first estimates of poverty among Aboriginal families with children since the early 1970s. The results confirm that in 1986, the common perception that income poverty rates are much higher among the Aboriginal population than among the non-Aboriginal population, although the gap is less dramatic for sole parent families than it is for two parent families. The major factor associated with this poverty is joblessness, with over half of all Aboriginal families with children having no employed adults. However, poverty is still higher among those Aboriginal families with children in which there is at least one employed adult than it is among comparable non-Aboriginal families with children.

1. INTRODUCTION

The **First Main Report** of the Commission of Inquiry into Poverty (1975) commenced its chapter on Aborigines by noting:

there is no doubt that many Aboriginal people are in poverty.
(1975, p. 258)

Some fifteen years later, this statement remains a truism, if not an understatement. For example, in an analysis of the labour market position of Aboriginal people in non-metropolitan New South Wales, Ross (1988) identified the causes of Aboriginal unemployment as including:

- the concentration of Aborigines in rural areas;
- the loss of access to traditional land, necessitating reliance on the formal economic system;
- the loss of access to traditional formal employment as a result of the decline in agricultural output and the trend to greater mechanisation of farming;
- low levels of inherited economic wealth and a high level of reliance on social security leading to low incomes and a cycle of poverty;
- low levels of access to higher levels of formal education and a low level of educational achievement; and
- low levels of job-related skills.

It was concluded that 'the interactions between these causes are complex but result in an almost certain guarantee of life-long poverty' (Ross, 1988, p. 1). In this context, it may be asked why a further analysis of Aboriginal poverty is of interest, if there is general agreement that poverty among the Aboriginal population is pervasive.

This paper has a number of motivations. Despite the fact that Aboriginal poverty is widely viewed as a serious problem, there has in fact been no assessment of the status of the Aboriginal population in relation to the Henderson poverty line since the Reports commissioned by the Poverty Inquiry in the early and middle 1970s. Since that time, there has been a significant number of studies of trends in 'Henderson poverty' among the general population. These studies have suggested, *inter alia*, that the composition of poverty has changed very significantly since the early 1970s, with the proportion of the

aged in poverty decreasing and poverty among those of workforce age increasing. Given this and the initiatives of successive Australian governments in the area of Aboriginal affairs, it is clearly an interesting question whether these efforts have been rewarded with lower poverty rates and whether the changes in the composition of the population in poverty in the community as a whole are matched by corresponding changes in the Aboriginal community.

Perhaps the most important reason for undertaking a new analysis of poverty among the Aboriginal population arises from the Prime Minister's commitment in the 1987 election campaign to end child poverty by 1990. Whatever one's views about the feasibility of this aim, it should be recognised that the government has had the courage to place poverty centrally on the political agenda in a way reminiscent of the US 'War on Poverty' in the 1960s.

The importance of paying attention to child poverty in the Aboriginal community is emphasised by Choo's recent study, sponsored by the Secretariat of National Aboriginal and Islander Child Care (SNAICC) and published by the Brotherhood of St Laurence. Choo notes:

... it becomes obvious that the Aborigines who are financially poorest are those receiving Social Security pensions and benefits, especially the women, who have the responsibility for the care of the children of the community, including the older people who are not employed or who are on age or invalid pensions. This latter category includes the grandmothers in the communities, who also bear the responsibility for the care of the children. (Choo, 1990, p 57)

Assessment of the impact of the government's initiatives in reducing child poverty (Saunders and Whiteford, 1987; Brownlee and King, 1989) have necessarily been limited to the general population, due to the nature of available data, as discussed below. Nevertheless, the issue of child poverty among Aboriginal families is of particular importance. This is due both to the much higher probable levels of poverty in the Aboriginal community, discussed above, and to the age structure of the Aboriginal population.

Perhaps the major demographic difference between the Aboriginal population and the rest of the community is its age structure. According to figures from the 1986 Census of Population and Dwellings, around 23 per cent of the total population were aged less than 15 years, while 40 per cent of the Aboriginal population were less than 15 years of age (ABS, 1987a, 1987b). Given this combination of underlying vulnerability to poverty and a very high proportion of children, it could be expected that child poverty is potentially a

very major problem among the Aboriginal community. It follows that any analysis of the government's initiatives on child poverty should pay particular attention to Aboriginal children.

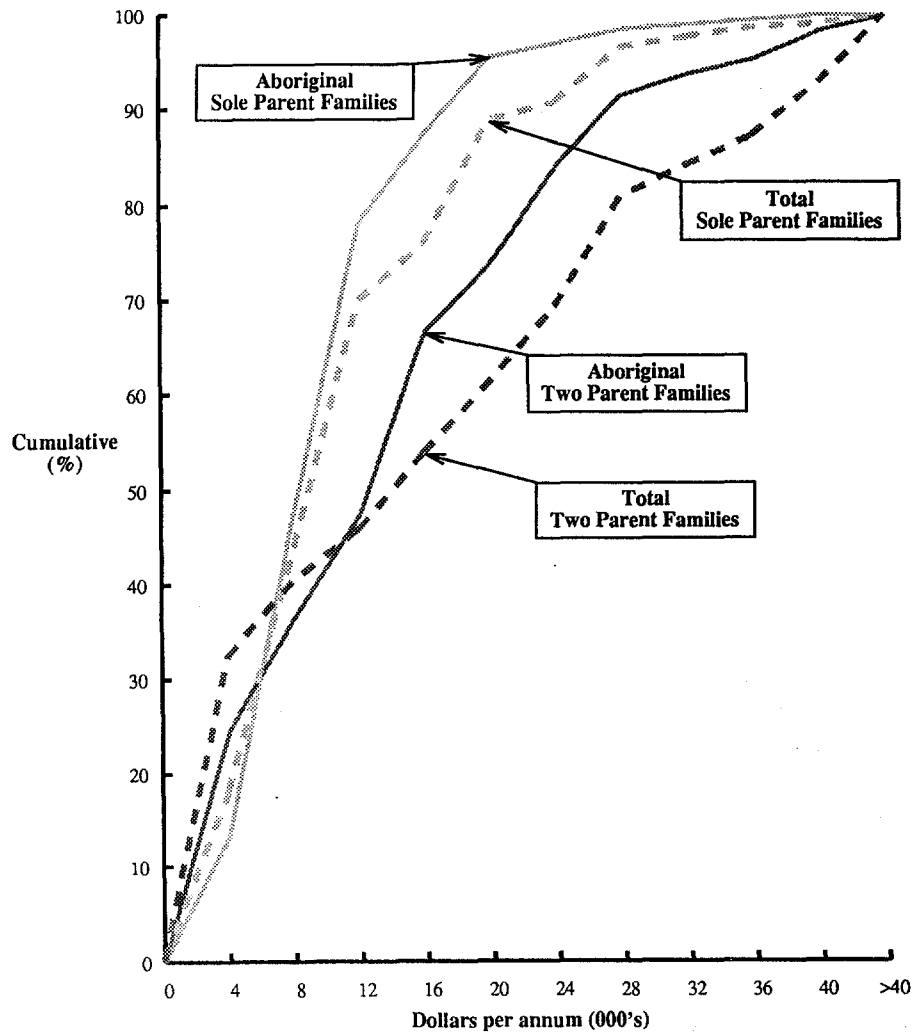
This paper provides new estimates of the proportion of Aboriginal families with children and with incomes below the (before housing costs) Henderson poverty line using data from the 1986 Census of Population and Dwellings and the 1985-86 Income Distribution Survey. The next section of the paper describes the methodology used to estimate numbers in poverty and discusses the limitations of the approach. This is followed by the main results of the analysis, and the conclusion touches on some of their implications.

2. METHODOLOGY AND DATA SOURCES

As previously mentioned, there have been no estimates of the number of Aborigines in poverty using the Henderson poverty line since the reports commissioned by the Poverty Inquiry in the early 1970s. This reflects the fact that the income surveys conducted by the Australian Bureau of Statistics are **sample** surveys. The 1985-86 Income Distribution Survey for example, covered about one-sixth of one per cent of the total population; given that the Aboriginal population is a very small group in the total population (about 1.3 per cent), this means that the sample is likely to include very few Aboriginal households and it is therefore not possible to generalise from the survey to the Aboriginal population as a whole.

The Census, in contrast, covers the total population and thus provides the best available basis for analysing the circumstances of Aboriginal families. However, the income data in the Census are very limited, with information only being collected on gross income from all sources in rather broad ranges. Figure 1 shows the cumulative distribution of gross family income for Aboriginal and non-Aboriginal families with children, both sole parent and two parent. It is clear that Aboriginal families tend to have much lower incomes than non-Aboriginal families (apart from sole parents), but by themselves the Census income data cannot be used to estimate poverty rates, since it is necessary to know the precise after-tax incomes of each family or income unit when using the Henderson poverty line. For example, the Henderson poverty line for a sole parent (not in the work force) with one child was \$7,400 in June 1986. The 1985-86 Income Distribution Survey allows us to identify precisely the number of such sole parents with one child and with 1985-86 incomes below this level, but provides no information on

Figure 1: Cumulative Distribution of Family Income for Families with Children (June 1986)



Source: 1986 Census of Population and Housing, Unit Record File

Aboriginality. The 1986 Census of Population and Dwellings only allows identification of the number of Aboriginal sole parents (not in the labour force) with one child, but only indicates whether annual income was in the range \$6,000 to \$9,000. Simple interpolation within this income range is unlikely to give reliable results because of the possibility of 'clustering' of incomes within this range. For example, the maximum rate of income support for a sole parent with one child was around \$6,800 in 1985-86 (Moore and Whiteford, 1986, p. 76). It could be expected that a very high proportion of sole parents would have incomes close to this level, rather than being evenly spread over the income range as simple interpolation would assume.

The solution to this problem adopted in this analysis is to attempt to merge the detailed income data from the Income Distribution Survey with that from the Census in order to provide a sounder basis for estimating precise levels of income, cross-classified by a set of six variables in the Census data. This is possible because the most recent Census and the most recently available Income Distribution Survey were carried out within a few months of each other, the Census in June 1986 and the Income Distribution Survey in September 1986. Results from both collections have since been made available on computer tapes with details at the unit record (individual, income unit, or household level), but with some data suppressed (or perturbed) to maintain confidentiality.¹

The mechanics of the step-by-step procedure by which the Census income data were re-estimated is detailed in the Appendix. In brief, the step-by-step procedure involved the following. All individuals in the Income Distribution Survey were sorted on the basis of a six-way tabulation cross-classified by family type, labour force status, marital status, gender, age and income, with the income category being in \$500 a year increments. This information was then used to allocate to individuals in the Census sample unit record file the income figure which was the weighted average of the incomes of the individuals in the Income Distribution Survey file with the same characteristics in terms of family type, labour force status, marital status, gender and age from the very wide income categories in the Census to the weighted average of the much narrower income ranges from the Income Distribution Survey.

Being thus given a specific gross annual income level, the next step was to apply a model of the personal income tax system for the 1985-86 year, and estimate annual disposable (after-tax) income for all individuals. Annual disposable incomes were then aggregated to 'income unit' incomes, where the income unit used in the Henderson

1. The Census unit record tape contains a sample of 1 per cent of the total population and includes 2,567 individuals living in Aboriginal households.

poverty line is closest to the notion of the nuclear or extended family, e.g. an aged parent and an adult child living together would be treated as two income units. To maintain consistency with the Henderson methodology the analysis excluded all income units containing a person who was self-employed, or a farmer, and also all units which were headed by a 'juvenile' (i.e. a person 15 to 20 years of age, not in full-time education, and neither married nor with children). The final step was to apply the detailed, before housing costs, Henderson poverty lines for each type of income unit and compare the estimated disposable income to the relevant poverty lines.

A number of limitations of this method should be emphasised. The estimated disposable incomes are far more detailed than those that are available on the Census sample tape; nevertheless, the figures are **estimates** and should be recognised as such. In the results that follow, analysis has generally been restricted to families with children, solely because of recent policy concerns with these groups. In addition, many objections could be made to the use of the Henderson poverty line for estimating the proportion of the population in poverty; among the criticisms canvassed in Saunders and Whiteford (1989) are the essentially arbitrary nature of the basic poverty standard, and problems associated with the method of adjusting the poverty line for different family types and for general community income changes over time. Notwithstanding these problems, the Henderson poverty line is the most widely used method of estimating poverty in Australia. Its use therefore has the advantage of providing estimates that are comparable with many other estimates of poverty using alternative data sources and allows comparison with the estimates of poverty among the Aboriginal population made at the time of the Commission of Inquiry into Poverty.

Perhaps the most important issue that arises in relation to the question of estimating poverty among the Aboriginal community and comparing poverty rates with those in the non-Aboriginal community is the question of whether the basic methodology is relevant to the population being studied. One aspect of this question is summarised in the following statement from an earlier study of **The Economic Status of Australian Aborigines**:

In attempting this survey, important qualifications have to be entered. There is, firstly, the problem of 'bias' or 'ethnocentrism'. By this is meant a fear lest value judgements may be implied in a study which examines 'standards of living' and 'socio-economic status' from the viewpoint of one set of cultural assumptions. While seeking to document different economic conditions among various communities of people, it is not implied that economic change, especially socially disruptive change, is necessarily desirable. Secondly, there is the problem of encapsulating in the divisions made in this study the great variety of peoples across a number of State and other boundaries. The divisions have been made for

a number of purposes. But it is important to remember that these demarcations are not rigid. Nor are the people within them homogeneous. (Altman and Nieuwenhuysen, 1979, pp. xiv-xv)

These points are particularly relevant to the use of an income poverty line and the concept of the income unit used in the Henderson measure. The income unit, as noted above, refers to the immediate or nuclear family within which income is assumed to be shared. Thus, an aged relative living with her or his children or a financially independent child living with his or her parents are assumed to benefit only from economies of consumption within the household but not from sharing of income. These assumptions are generally questioned, but may be particularly so in the case of Aboriginal families, especially those with more communal traditions and styles of living. Indeed, Gale and Binnion's (1975) study of poverty among Aboriginal families in Adelaide encompassed 139 income units but only 70 households.

This problem can only be noted, not resolved in any definitive manner. One approach to reducing the significance of this issue is to relate the question of total income poverty for the Aboriginal population as a whole to that for the non-Aboriginal population. That is, rather than attempting to define numbers in poverty as those below the poverty line (or some fraction of the poverty line) the seriousness of poverty could be explored by comparing the total income shared by all of the Aboriginal community with the total income required to be above the poverty line. This would be an extension of the 'poverty gap' measure often advocated as an alternative to the simple 'head count' of numbers in poverty (Saunders and Whiteford, 1987). In further work on this issue, this approach to poverty measurement will be explored.

It can also be noted that while the assumptions about income-sharing implicit in the Henderson poverty line may not be particularly relevant to the Aboriginal population, the likely much higher incidence of Aboriginal poverty may mean that this issue may provide a less distorted picture of poverty in this group than may initially be thought. That is, in the technical measurement of poverty, use of a poverty line which does not allow for income-sharing between households will have less of an effect on estimates of poverty, when poverty is experienced by a very high proportion of the population rather than by a fairly small minority. Despite these points, the limitations of the underlying concepts should be remembered. As noted previously by Altman and Nieuwenhuysen (1979), it is also important to bear in mind the diversity of Aboriginal circumstances.

A further, very serious limitation of the approach adopted in this paper is the question of whether the most important aspects of Aboriginal child poverty can be truly represented through use of an income-based relative poverty line. The general need to take a much

broader approach to the consideration of the meaning of poverty has been advocated by Edgar (1989) and Harris (1989), among others. As argued by Choo (1990), from an Aboriginal consciousness, there are many levels of child poverty that must be taken into account, particularly when considering possible policy responses. The first level referred to by Choo (1990, p 32) is the poverty that is broader than material poverty although inclusive of it. This deprivation is the consequence of loss of cultural continuity and identity as a result of dislocation from the spiritual and economic base of the Aboriginal people - the land. The second level of poverty is the absolute material disadvantage experienced by many Aboriginal families as the absence of the basic requirements of food, water and shelter which Choo argues is comparable with the poverty in some Third World countries. Finally, in addition to this material poverty there is the relative poverty which Aboriginal children share with many non-Aboriginal children, which is the absence of decent standards of diet, clothing, housing and health care, and the inability to participate in the activities commonly accepted by other Australians.

The Henderson poverty line is a relative standard, which is implicitly based on the assumption that the relative poverty experienced by non-Aboriginal families is commensurable with the absolute deprivation and dispossession experienced by Aboriginal families. Put another way, use of the Henderson poverty line may appear to imply that poverty in the non-Aboriginal community is very like poverty in the Aboriginal population, except that a much higher proportion of Aboriginals are affected. Without detracting from the seriousness of poverty in the non-Aboriginal community, this would clearly be a complete misunderstanding of the nature of Aboriginal poverty. Consideration of the statistics on Aboriginal health and life expectancy and rates of imprisonment, for example, show that the degree of poverty affecting Aboriginals is entirely of a different order than the poverty experienced by the rest of the population.

While use of an income-based relative poverty line cannot adequately capture these fundamental features of much Aboriginal deprivation, we believe that the approach adopted here does provide a useful basis for comparing aspects of the economic circumstance of Aboriginal and non-Aboriginal families. The provision of income transfers and supplements through the social security system is the main method used by all welfare states to alleviate poverty. The description and analysis given below may assist in identifying priorities for further assistance through what is the major instrument of welfare state provision. Perhaps more importantly, the analysis assists in recognition of the limitations of this approach.

3. RESULTS OF THE ANALYSIS

By way of background, Table 1 shows earlier estimates of poverty among Aborigines and the Australian population as a whole at the time of the Poverty Inquiry in the early 1970s. It can be seen that 12.5 per cent of the total population had incomes below the Henderson poverty line in 1973, and a further 8.1 per cent had incomes between 100 and 120 per cent of the poverty line (or were 'rather poor' to use the words of the **First Main Report** of the Commission of Inquiry), giving a total of 20.6 per cent of income units below 120 per cent of the Henderson poverty line. The proportion of Aboriginal income units in poverty was much higher, with between 22 and 58 per cent below the poverty line and 55 to 77 per cent below 120 per cent of the poverty line. The varying proportions below 100 per cent of the poverty line and between 100 and 120 per cent suggest some sensitivity to the exact poverty line and its closeness to rates of social security payments. The total numbers below 120 per cent of the poverty line are much more stable, with the exception of the much higher poverty estimate for Perth in late 1974. Overall, these results suggest that the proportion of the Aboriginal population with incomes below 120 per cent of the Henderson poverty line in the early 1970s was between 2.5 and 4 times that of the population as a whole.

In turning to the situation at the time of the 1986 Census, Table 2 shows the income unit structure of the population with children. A notable feature of this comparison is the much higher proportion of Aboriginal families with children in sole parent income units, with 36.8 per cent of Aboriginal families with children being sole parents compared to 18.9 per cent of the non-Aboriginal population. The proportion of sole parent families with children in the non-Aboriginal population shown in this table is higher than the figure usually given for the general population (around 15 per cent) because of the exclusion of the self-employed², very few of whom are either sole parents or Aborigines. The bracketed figures given in Table 2 show the proportion of two-parent and single parent families by number of children. It is apparent from these figures that there are a significantly higher proportion of large families among the Aboriginal community than the non-Aboriginal community, with 16.6 per cent of Aboriginal couples with children having four or more children compared to 6.4 per cent of non-Aboriginal couples. For sole parents with three or more children, the corresponding proportions were 19.0 per cent and 13.8 per cent, respectively.

2. In common with most previous studies using the Henderson poverty line, income units in which there was a self-employed person were excluded from the analysis, because of the possibility that measured income may not necessarily be an accurate indicator of living standards for this group.

TABLE 1: ESTIMATES OF POVERTY AMONG ABORIGINES AND THE AUSTRALIAN POPULATION - 1973 AND 1974

Survey	Weekly Income of Income Units in Relation to the Henderson Poverty Line:		
	Below the poverty line (%)	100 to 120 per cent of poverty line (%)	Total poor (%)
Australian population			
National Income Survey, August 1973	12.5	8.1	20.6
Aborigines			
Brisbane, May 1973	48.0	7.0	55.0
Adelaide, late 1973	22.3	33.1	55.4
Adelaide, late 1974	32.5	22.5	55.0
Perth, late 1974	58.3	18.3	76.7

Source: Altman and Nieuwenhuysen, 1979, p. 167.

TABLE 2: INCOME UNIT STRUCTURE OF THE POPULATION WITH CHILDREN, 1986

Income Unit Type	Aboriginal Families (%)		Non-Aboriginal Families (%)	
Couple with:				
one child	19.8	(31.3)	27.2	(33.5)
two children	20.6	(32.6)	34.0	(41.8)
three children	12.3	(19.5)	14.9	(18.3)
four or more children	10.5	(16.6)	5.2	(6.4)
		(100.0)		(100.0)
Sole parent with:				
one child	18.0	(48.9)	10.1	(53.7)
two children	11.8	(32.1)	6.1	(32.5)
three or more children	7.0	(19.0)	2.6	(13.8)
		(100.0)		(100.0)
Total (%)	100.0		100.0	
Number	373		15,037	

Source: 1986 Census of Population and Dwellings, unit record tape.

Note: The bracketed figures are the proportion of couple and sole parent families by number of children.

Table 3 gives details of the employment status of adults in Aboriginal and non-Aboriginal families with children. The table shows much higher proportions of Aboriginal families than non-Aboriginal families with adults not in some form of employment. Roughly 30 to 40 per cent of Aboriginal couples with children had neither adult in employment at the time of the 1986 Census compared to between 8 and 20 per cent of non-Aboriginal couples with children. The proportion of non-Aboriginal couples with both adults employed was also much higher, with Aboriginal couples being roughly half as likely to have both parents in some form of employment. Both Aboriginal and non-Aboriginal sole parents were far more likely again to be jobless; while between 60 and 70 per cent of non-Aboriginal sole parents were not in employment, the rate of joblessness among Aboriginal sole parents consistently exceeded 80 per cent.

Table 4 shows the Henderson poverty lines for different types of income units in the June quarter of 1986, i.e. at the time the Census was taken. Most previous analysis with the Henderson Poverty Line has used annual income and poverty lines corresponding to financial year income. However, the income question in the census was 'what is the gross income (including pensions and/or allowances) that the person usually receives each week from all sources?' (This was asked in respect of all individuals 15 years and over). While the income ranges given in the census questionnaire were expressed in both weekly and annual terms, this wording seems more likely to produce answers relevant to current rather than annual income. Consequently, it was considered that the June quarter poverty line would be more appropriate than the financial year average.

The poverty lines differ for different types of families and by the labour force status of the head of the income unit. Poverty can be calculated on the basis of income before or after housing costs. This analysis only measured poverty before housing costs had been paid, because information on actual housing expenses was not available on the Census unit record file. The Henderson methodology also provides poverty lines that differ with the age and sex of children and adults; no account was taken of these factors in the analysis. However, the poverty lines also differ depending on whether income units live separately or shared accommodation, and this difference was incorporated into the estimates of poverty.

Apart from the caveats mentioned earlier in regard to the use of the Henderson poverty lines, it should be noted that the poverty line for a particular period can change over time. This is because the poverty lines are adjusted in accordance with movements in household disposable income per capita (HDIPC); household disposable income is derived from the national accounts and is subject to retrospective adjustment as the

**TABLE 3: EMPLOYMENT STATUS OF ADULTS IN INCOME UNIT,
ABORIGINAL AND NON-ABORIGINAL FAMILIES, 1986**

Income Unit Type	Aboriginal Families			Non-Aboriginal Families		
	Number of Adults Employed					
	Two	One	None	Two	One	None
<hr/>						
Couple with:						
one child	29.7	33.8	36.5	45.6	43.0	11.4
two children	22.1	39.0	39.0	46.5	45.6	7.9
three children	23.9	47.8	28.3	39.6	50.6	9.8
four or more children	17.9	41.0	41.0	30.3	50.1	19.5
Sole parent with:						
one child		17.9	82.1		42.8	57.2
two children		18.2	81.8		38.4	61.6
three or more children		19.3	80.8		28.5	71.5

Source: 1986 Census of Population and Dwellings, unit record tape.

TABLE 4: HENDERSON POVERTY LINES, JUNE 1986
(Dollars Per Year)

Income Unit Type	Employment Status of Head	
	In Workforce	Not in Workforce
Couple with:		
one child	\$10,900	\$9,600
two children	\$12,700	\$11,400
three children	\$14,500	\$13,200
four children	\$16,400	\$15,100
five children	\$18,100	\$16,800
Sole parent with:		
one child	\$8,700	\$7,400
two children	\$10,500	\$9,200
three children	\$12,300	\$11,100
four children	\$14,200	\$12,900

Note: Figures are in 1986 dollars. They are rounded to nearest \$100 per year, and include housing costs.

Source: Derived from Social Policy Research Unit, *Newsletter*, No. 15, February 1989.

national accounts are revised. As is shown in Edwards and Whiteford (1988), these adjustments can be quite large and can potentially increase or decrease estimates of poverty to a significant extent.³ In the analysis that follows, estimates are given of the number of income units below 80 per cent, 100 per cent, and 120 per cent of the poverty line, so that the results will indicate to some extent the degree of sensitivity to the exact level of the poverty line.

Table 5 and Figures 2A and 2B give the main results of the analysis, showing the proportion of Aboriginal and non-Aboriginal families with children below differing levels of the poverty line. The results show that approximately 43 per cent of Aboriginal families with children had incomes below 100 per cent of the Henderson poverty line in 1986 compared with 15 per cent of non-Aboriginal families with children. For couples with children, poverty rates were between two and three times as high for Aborigines as for non-Aborigines and while poverty rates increased dramatically with the number of children in the family, the rate of increase for non-Aborigines was greater than for Aborigines. Virtually half of all Aboriginal children are in families with incomes below the poverty line compared to around 18 per cent of non-Aboriginal children.

Among Aborigines and non-Aborigines alike, poverty rates for sole parents are generally far higher than among couples with children, even though poverty among Aboriginal sole parents is between 10 and 25 percentage points higher than among non-Aboriginal sole parents. One possible explanation for this pattern is that sole parenthood is so strongly associated with poverty that Aboriginality becomes less significant than it is for couples. This may reflect the degree of reliance of sole parents upon the social security system, suggesting a higher level of reliance upon transfers for Aboriginal sole parents.

The results for those with incomes below 120 per cent of the poverty line are of interest for a number of reasons. It can be seen that 63.5 per cent, or nearly two in three, Aboriginal families with children are in circumstances of 'near poverty'. Among Aboriginal sole parents with two or more children, 'near poverty' is close to universal, although it should be noted that it is nearly as pervasive among non-Aboriginal sole parents with three or more children. As poverty rates increase with the size of the family, the proportion of Aboriginal children in poverty is even higher than the proportion of Aboriginal families in poverty - more than two-thirds (67.9%) of Aboriginal children are in families with incomes below 120 per cent of the poverty line.

3. The poverty lines shown in Table 4 are derived from estimates of June quarter 1986 HDIPC published in February 1989. While the HDIPC estimate for the June quarter 1986 has since been revised, the size of the revision is not large.

**TABLE 5: PROPORTION OF INCOME UNITS BELOW THE HENDERSON
POVERTY LINE, 1986
(%)**

Income Unit Type	Income below 80 percent of Poverty Line		Income below 100 percent of Poverty Line		Income below 120 percent of Poverty Line	
	Aboriginal	Non- Aboriginal	Aboriginal	Non- Aboriginal	Aboriginal	Non- Aboriginal
Couple with:						
one child	6.8	2.4	12.2	3.6	33.8	13.6
two children	5.2	1.9	27.3	8.0	44.2	12.8
three children	19.6	2.4	50.0	14.2	67.4	33.8
four or more children	30.8	16.7	48.7	25.1	71.8	47.6
Sole parent with:						
one child	34.3	14.2	46.3	25.8	77.6	58.1
two children	15.9	13.5	77.3	51.0	95.5	73.5
three or more children	34.6	40.8	92.3	82.1	96.2	86.2
All families with children (percentage)	18.5	5.8	43.2	15.0	63.5	28.2
Proportion of Children (percentage)	20.4	7.0	49.9	18.0	67.9	31.5

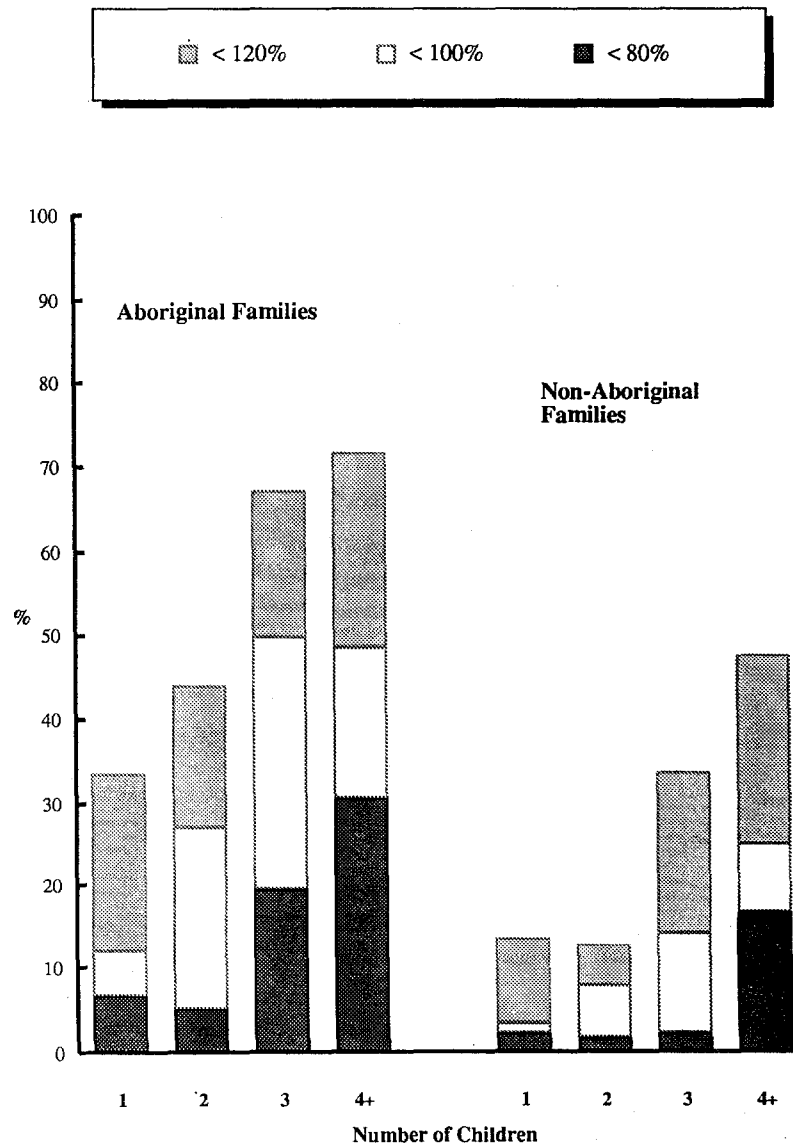
Source: Estimated from 1986 Census of Population and Dwellings, unit record tape.

Part of the explanation for these results may be inferred from the results in Table 6, which describes the relationship between poverty rates and the employment status of adults. Probably the most important point to note about this table relates to the difference in poverty rates between those families (either couples or sole parents) where no parent is employed, those where one parent is employed, and those where both parents are employed. Previous analysis suggests that poverty rates are low among income units containing fully employed wage and salary earners (Bradbury, Encel, James and Vipond, 1988). This conclusion is supported by the current study in regard to non-Aboriginal families, but not for Aboriginal families. Broadly speaking, where there are no adults employed, Aboriginality does not appear to make a significant difference to poverty rates; indeed, for couples, poverty rates are slightly higher for non-Aboriginal families than for Aboriginal families. For sole parents, poverty rates among the non-employed are higher for Aboriginals than for non-Aboriginals. This may possibly reflect greater access to unearned income (e.g. maintenance) among the non-Aboriginal sole parent population. These results are clearly explicable in terms of the reliance on the social security system that such families must experience, irrespective of their origin. However, where there is either one or both adults employed, Aboriginal families appear significantly disadvantaged compared to non-Aboriginal families. This may reflect a number of factors, including the differences between full-time and part-time labour force participation (and/or full-year and part-year participation), and differences in wage rates. Which of these factors is more significant is a subject that would reward further study.

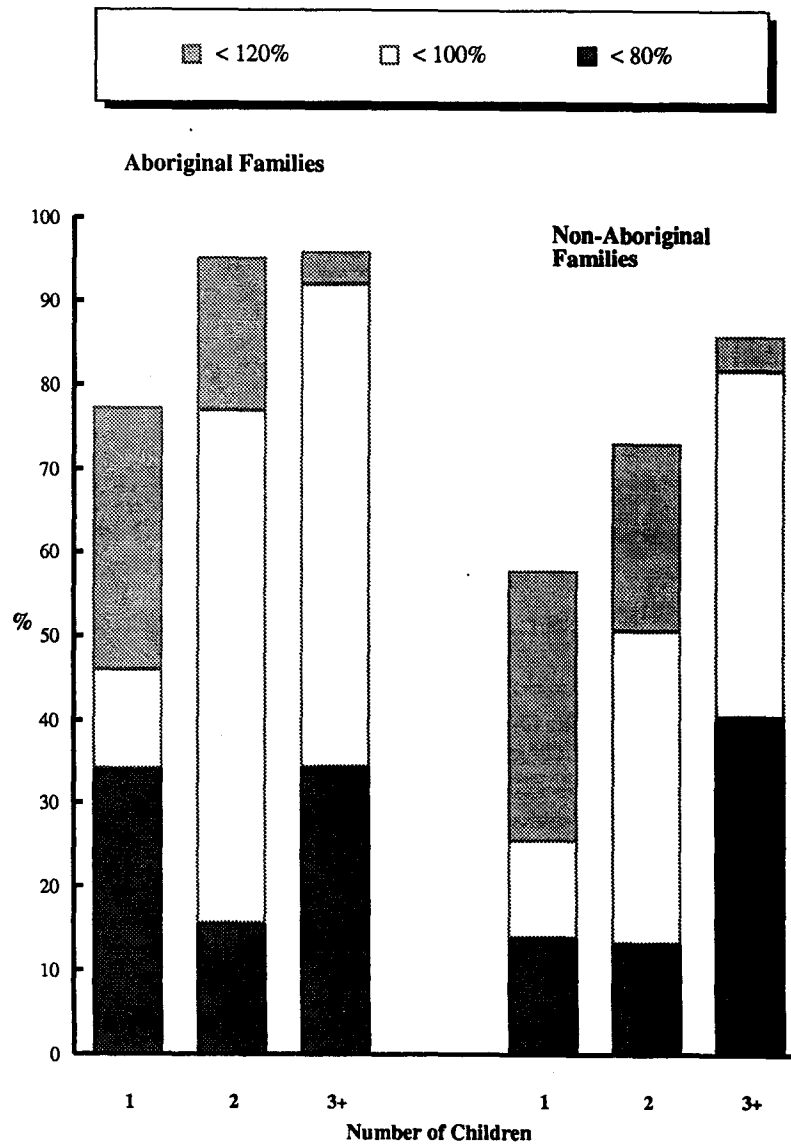
Table 7 compares estimates of poverty among the Aboriginal population with children in Brisbane in 1973 and metropolitan Australia in 1986. These estimates should be treated with caution, as they compare poverty rates in a single urban population in 1973 with the national metropolitan population in 1986. This may mean that the differences apparent in the estimates may reflect the differing nature of the populations in addition to any changes over time.

Nevertheless, the total poverty rate among families with children in 1986 was significantly below that in 1973 (43 per cent and 67 per cent respectively), although the proportion below 120 per cent of the poverty line appears to have declined less (from 75 to 60 per cent). Among sole parents, the proportion below 100 per cent of the poverty line is somewhat lower in 1986 than in 1973, but the proportion below 120 per cent of the poverty line is virtually unchanged. Among couples with children, the proportion below 100 per cent of the Henderson poverty line in 1986 was less than half of that in 1973. Once again, there appears to be a greater degree of concentration just above the

Figure 2a: Proportion of Income Units Below the Poverty Line,
Two Parent Families, 1986



**Figure 2b: Proportion of Income Units Below the Poverty Line,
Sole Parent Families, 1986**



**TABLE 6: ESTIMATES OF POVERTY AMONG ABORIGINAL AND
NON-ABORIGINAL FAMILIES WITH CHILDREN, BY EMPLOYMENT
STATUS OF ADULTS, 1986
(%)**

Type of Family by Employment Status of Adults	Aboriginal Families			Non-Aboriginal Families		
	Poverty Rate by Percentage of Poverty Line					
	80	100	120	80	100	120
1. Couple with children, both adults employed	1.8	8.8	17.5	0.7	1.7	3.5
2. Couple with children, one adult employed	6.5	23.7	45.2	0.9	5.5	20.0
3. Couple with children, no adults employed	26.7	52.3	76.7	23.4	54.1	78.4
4. Sole parent, employed	8.0	28.0	56.0	6.4	14.7	26.2
5. Sole parent, not employed	33.0	73.2	93.8	25.0	59.4	93.5

Source: Estimated from 1986 Census of Population and Dwellings, unit record tape.

**TABLE 7: PROPORTION OF ABORIGINAL AND NON-ABORIGINAL
INCOME UNITS IN POVERTY BY INCOME UNIT TYPE, BRISBANE 1973
AND MAJOR METROPOLITAN CITIES, AUSTRALIA 1986
(%)**

Survey	Income unit-type		
	Sole Parent	Couple, with children	Total
Aborigines Brisbane 1973			
Less than 100 per cent of poverty line	79.0	62.0	66.7
Less than 120 per cent of poverty line	89.0	70.0	75.2
Aborigines All Major Urban Areas Australia 1986			
Less than 100 per cent of poverty line	66.0	24.6	42.6
Less than 120 per cent of poverty line	87.2	39.3	60.2
Non-Aborigines All Major Urban Areas Australia 1986			
Less than 100 per cent of poverty line	38.9	7.7	13.6
Less than 120 per cent of poverty line	63.9	16.5	25.5

Source: For 1973 results, Brown, Hirschfeld and Smith (1974) and for 1986 results, estimated from **1986 Census of Population and Dwellings**, unit record tape.

poverty line in 1986, but the total population of these family types below 120 per cent of the poverty line still appears to be significantly less in 1986 than in 1973 (39 and 70 per cent respectively). In addition, it might be noted that the figures for both Aboriginal and non-Aboriginal poverty in the major metropolitan areas in 1986 are lower than the Australian total, implying that child poverty in other parts of Australia is somewhat higher.

The apparent fall in the proportion of Aboriginal couples with children in poverty is difficult to explain, particularly since unemployment among couples with children appears much higher in 1986 than in 1973. For example, in 1973 seventeen per cent of Aboriginal fathers were unemployed (Brown, Hirschfeld and Smith, 1975, p.28), while in 1986 between 30 and 40 per cent of Aboriginal couples with children had neither adult employed (see Table 3). However, it appears that take-up of social welfare payments was very low in the Brisbane study in 1973, with only 1 per cent of the total sample (including those without children) being in receipt of unemployment benefit, although 7 per cent of the total sample appeared to be eligible (Brown, Hirschfeld and Smith, 1975, p.58). While it is not possible to identify source of income from the 1986 Census data, it seems likely that actual take-up of benefit has increased.

A further factor that may be associated with the apparent decline in poverty among Aboriginal couples with children is the very substantial increase in pension and benefit levels (for those in receipt of payment) since 1973. The Brisbane survey was conducted just after the first increase in unemployment benefits introduced by the Whitlam government; between 1972-73 and 1985-86 the level of unemployment benefit and family allowances for a couple with two children, for example, was increased by 45 per cent in real terms (Moore and Whiteford, 1986, p.92). Overall, therefore it may be that the significant increases in the level of benefits combined with an apparent very substantial increase in the take-up of benefits may have led to a fall in poverty, even though the level of unemployment may have increased.

In summary, therefore, these estimates suggest that there has been a significant decline in poverty rates among Aboriginal families with children since 1973. Poverty appears to have declined among couples with children, while poverty among sole parent income units remains extremely high, with nearly 9 in 10 Aboriginal sole parents with incomes

below 120 per cent of the poverty line in both years.⁴ In addition, 28 per cent of the Aboriginal families with children were sole parents in Brisbane in 1973 compared to around 37 per cent in 1986. Given the consistently high poverty rate among sole parent families, this factor would tend to offset the apparent decline in poverty among two parent families.

4. CONCLUSION

The analysis in this paper has been primarily descriptive. Its main objective has been to provide the first estimates of the proportion of the Aboriginal population with children and with incomes below the Henderson poverty line since the reports of the Commission of Inquiry into Poverty in the early 1970s. As may have been expected, the results suggest that poverty rates are much higher among Aboriginal families than among non-Aboriginal families with children, with more than 40 per cent of Aboriginal families with children living on or below the Henderson poverty line and nearly two-thirds being 'poor' or 'rather poor'. These poverty rates are generally two to three times as high as for the non-Aboriginal population.

On the basis of the earlier tables, it can be estimated that while the Aboriginal population accounted for only 1.3 per cent of the total population in 1986, Aboriginal children accounted for 2.7 per cent of all children, and 7.1 per cent of children in poverty. Nearly half of all Aboriginal children are in families with incomes below the poverty line, and two-thirds are in poverty or near poverty. The development of further approaches to reduce child poverty should therefore pay particular attention to improving the circumstances of Aboriginal families with children.

Vulnerability to poverty in Aboriginal families with children seems to be associated with a number of factors. There is a far higher proportion of children in the Aboriginal population than the population as a whole, and the proportion of Aboriginal children who are in sole parent families or in large families is much higher than in the non-Aboriginal population. The most important factor, however, appears to be the employment status of adults; where no adults in a family are employed then the poverty rates are similar (and very high) for both Aborigines and non-Aborigines. This suggests that the much higher

4. It should be noted, however, that because the Henderson poverty line is adjusted in line with movements in HDIPC, its real value has risen over time, being nearly 15 per cent higher in real terms (i.e. after allowing for inflation) in 1985-86 than in 1973-74. This suggests that while relative poverty remains very high among the Aboriginal population, absolute living standards may have improved.

rates of poverty among Aboriginal families can be related back to the fact that joblessness is much higher in this group, with more than 50 per cent of Aboriginal families with children not containing an employed adult, compared to less than 20 per cent of non-Aboriginal families.

While joblessness would therefore appear to be the most significant factor associated with Aboriginal poverty, poverty rates for Aboriginal families with children remain high even where there is an adult in employment. Possible explanations for this include greater labour force participation among non-Aboriginal families, either because of greater likelihood of two earner families or of the greater prevalence of full-time rather than part-time labour force participation. Another possible explanation is that wage rates for employed Aborigines are lower than for employed non-Aborigines. Finally, some tentative evidence suggested that overall poverty rates may have declined significantly among the Aboriginal population since the early 1970s, particularly among couples with children. Aboriginal sole parents, however, appear to have remained overwhelmingly in poverty.

The limitations of this analysis should be emphasised once again. The methodology used to derive income data from the 1985-86 Income Distribution Survey to adjust the less detailed data in the 1986 Census of Population and Dwellings must be regarded as somewhat experimental and the results are more approximate estimates than those usually derived in work of this sort. Nevertheless, the methodology is of particular interest as a means of improving the usefulness and applicability of Census income data. The other main limitation arises from the basic concepts underlying the Henderson poverty line and whether the Henderson assumptions about income sharing units are relevant to the Aboriginal population. The finding that income poverty is so much higher among the Aboriginal population may suggest, however, that this problem would not affect the magnitude of the disadvantage experienced by Aboriginal families.

It should also be emphasised that the estimates presented in this paper refer to 1986. There have been many changes since that time, including a substantial reduction in unemployment and the introduction of the Government's 'family package' in December 1987. Given the very high rate of poverty among Aboriginal families with children, it could be expected that many will have benefited significantly from the increases in family payments announced since that time. Whether the number of Aboriginal families below the Henderson poverty line has fallen significantly since 1986 cannot be said with precision, but it is likely that the poverty gap has been reduced. Given the questions surrounding the relevance of an income poverty line, it might also be suggested that the

poverty gap may be a far more useful approach to measuring Aboriginal poverty than the simple head count used in this paper.

In addition, the estimates of poverty given here suggest that while improvements in income support may mean that many Aboriginal families move above the poverty line, they could still remain 'rather poor', i.e. below 120 per cent of poverty line. These improvements in family payments remain very important and a heartening indication of government commitment to address the problem of child poverty. Nevertheless, the estimates in this paper suggest that low income is a symptom of poverty rather than a fundamental cause, and it is (lack of) employment that must be addressed if poverty is to be reduced and not just alleviated.

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APPENDIX: DESCRIPTION OF THE STEP-BY-STEP PROCEDURE FOR RE-ESTIMATING INCOMES ON THE CENSUS FILE USING THE INCOME DISTRIBUTION SURVEY DATA

The exercise carried out here utilises information from the unit record files on magnetic tapes for two data bases collected by the Australian Bureau of Statistics in 1986; the 1986 Census of Population and Dwellings (conducted in June), and the 1986 Income Distribution Survey (conducted in September). Tables A1 and A2 compare the relevant information from the two sources. There are two unit record files available from the 1986 Census of Population and Dwellings but only on one of them is it possible to identify Aboriginality; this file is the Households Sample File (Section of State).^{A1} The unit record file from the 1986 Census of Population and Dwellings includes, for a 1-in-100 sample of the whole population, detailed information such as family composition, gender, marital status, labour force status, age, income, and Aboriginality on 156,302 individuals in 59,599 families, of whom 2,567 individuals lived in 758 self-reported Aboriginal households.^{A2} The unit record file from the 1986 Income Distribution Survey contains the same type of information for a nationwide sample of 17,714 individuals in 8,867 families, except that Aboriginality cannot be identified.

For the purpose of this study, the key difference between the two files is that the Census of Population and Dwellings file identifies Aborigines but has very limited income data, while the Income Distribution Survey file has very detailed income data but does not identify Aboriginality. By making use of the very detailed information on incomes in the Income Distribution Survey file, it is possible to improve the usefulness of income information on the Census of Population and Dwellings file by re-estimating gross annual income. This has been done by the following three part procedure.

Part 1 estimates detailed annual gross personal incomes on the Census of Population and Dwellings file using the income information from the Income Distribution Survey. **Part 2** then estimates net disposable income, using the personal income tax scale, standard deductions, allowances and rebates, applicable for the 1985-86 taxation year. Finally,

A1. The other 1986 Census of Population and Dwellings unit record file, on which Aboriginality is not identified, is the Household Sample File (State/Territory).

A2. On the Census file, the ABS identifies an Aboriginal household as a household in which there is at least one Aborigine or Torres Strait Islander; see ABS (1986,1). An Aboriginal family and an Aboriginal income unit are defined here to include all families and income units in these Aboriginal households. Of the 2,539 individuals in these households, 1,823 were Aborigines, 198 were Torres Strait Islanders, and 518 were neither.

TABLE A1: INFORMATION IN THE DATA SOURCES

	CPH86 ⁺	IDS86 [☆]
Aboriginality	Yes	No
Gross Annual Income		
total from all sources	Yes	Yes
separately for each source	No	Yes
actual dollars	No	Yes
categorical only	Yes	No
Labour Force Status	Yes	Yes
Gender	Yes	Yes
Marital Status	Yes	Yes
Age (5 year groups)	Yes	Yes
Family Composition	Yes	Yes

Notes: The amount of detail available for each variable is listed in Table A2.

⁺ 1986 Census of Population and Dwellings, unit record file.

[☆] 1986 Income Distribution Survey, unit record file.

TABLE A2: CLASSIFICATIONS AVAILABLE FOR EACH VARIABLE IN THE SIX-WAY CROSS-TABULATIONS

	CPH86 ⁺	IDS86 [☆]
Aboriginality	Aborigine Torres Strait Islander Other	No information given
Gross Annual Income (1985/86 financial year)		
	0 - 4,000	Actual dollar amounts
	4,001 - 6,000	are on the unit record
	6,001 - 9,000	file, here they have been
	9,001 -15,000	categorised into \$500
	15,001 -22,000	increments up to
	22,001 -32,000	\$40,000, above which there
	32,001 -40,000	is then an open ended category
	40,001 -upwards	
Net Income	No	Yes
Labour Force Status (in survey week)	Employed FT Employed PT --- Unemployed, want FT Unemployed, want PT Not in Labour Force ---	Employed FT Employed PT Employed, hours not stated Unemployed --- Not in Labour Force Not Stated
Gender	Male Female	Male Female
Marital Status	Never Married Married (i.e. living with spouse) Separated Divorced Widowed	Never Married Married (i.e. living with spouse) Separated, Divorced or Widowed (grouped together)
Age (5 year groups, re-grouped to)	15-24 25-64 65 and over	15-24 25-64 65 and over

**TABLE A2: CLASSIFICATIONS AVAILABLE FOR EACH VARIABLE IN THE
SIX-WAY CROSS-TABULATIONS
(Continued)**

	CPH86 [‡]	IDS86 [☆]
Family Composition	sole parent with dependent children only	sole parent with dependent children only
	sole parent with dependent children and other family members	sole parent with dependent children and other family members
	married couple only	married couple only
	married couple with dependent children only	married couple with dependent children only
	married couple with dependent children and other family members	married couple with dependent children and other family members
	married couple, no dependent children but other family members	married couple, no dependent children but other family members
	related adults not covered in any of the above family types	---
	group household or lone person household	group household or lone person household

Notes: The available classifications listed above are defined for persons aged fifteen or over; i.e. classifications for children aged under fifteen have been omitted.
[‡] 1986 Census of Population and Dwellings, unit record file.
[☆] 1986 Income Distribution Survey, unit record file.

Part 3 derives family disposable income using the family types consistent with the 'income units' used in the Henderson poverty study. It is these income unit disposable incomes which are then compared in Section 3 of the text to the appropriate (before housing costs) Henderson poverty lines.

Part 1: Re-estimation of the Census measure of Gross Annual Personal Income using Income Distribution Survey data

Part 1 is the lynchpin for this whole procedure. The object of the exercise is to modify the income information on the Census file, in which there are only eight distinct income ranges (see Table A1), in a scientifically valid and useful way. This is done in such a way that each individual in a particular cell has the same income value as all other individuals in that same cell, but that the income values in different cells have different values. The income value for a Census of Population and Dwellings cell is to be based on the distribution of incomes of the corresponding individuals on the Income Distribution Survey file. That is, the income value for a Census cell is derived as the weighted average of the actual incomes of similar people (similar in that they would be in the same cell) from the IDS86 file.

For example, the re-estimation of the income of a fifteen to twenty-four year old Aboriginal male who, at the time of the 1986 Census, was married with one dependent child and was employed part-time and had a recorded gross annual income in the range \$6,001 to \$9,000 in the previous twelve months involved the following. First, the average income of all fifteen to twenty-four year old males who, at the time of the 1986 Income Distribution Survey, were married with one dependent child and were employed part-time and in the 1985-86 financial year had gross annual incomes of between \$6,001 and \$9,000 was calculated. This figure was then assigned to all individuals on the Census file with the relevant characteristics. More specifically, the procedure involved the following three steps:

First, the Census file (CPH86 hereafter) was used to construct a six-way tabulation based on the following variables: family composition, labour force status, marital status, gender, age, and the income range in the eight step income classification. Potentially, there are 4,608 cells,^{A3} and therefore there could be 4,608 different income values rather than the eight actually on the CPH86 file.

A3. $4,608 = 8$ (income classifications) * 3 (marital status values) * 2 (gender values) * 3 (age group values) * 4 (labour force values) * 8 (family type values).

Second, the same six-way tabulation was constructed for the Income Distribution Survey (IDS86 hereafter) file, with one modification. The information on gross income was categorised into \$500 increments. The top category was open ended starting at \$40,000, i.e. coinciding with the upper CPH86 range.^{A4}

Third, the average income for each CPH86 income category was calculated based on the corresponding IDS86 income ranges. For example,

CPH86 income category	relevant IDS86 ranges
\$4,001 - \$6,000	\$4,001 - \$4,500 \$4,501 - \$5,000 \$5,001 - \$5,500, and \$5,501 - \$6,000
and	
\$15,001 - \$22,000	\$15,001 - \$15,500 \$15,501 - \$16,000 \$16,001 - \$16,500 \$16,501 - \$17,000 \$17,001 - \$17,500 \$17,501 - \$18,000 \$18,001 - \$18,500 \$18,501 - \$19,000 \$19,001 - \$19,500 \$19,501 - \$20,000 \$20,001 - \$21,500, and \$21,501 - \$22,000.

All individuals in an IDS86 range were assigned an income equal to the mid-point of their IDS86 income range; e.g. \$4,750 for the \$4,501 - \$5,000 IDS86 range, \$17,250 for the \$17,001 to \$17,500 IDS86 range, and so on. For the \$40,000+ group the value of \$40,000 was used for the reasons explained in footnote A4.

For each of the cells derived from the six-way tabulation, the weighted average income for the relevant CPH86 cell was calculated as follows. The aggregate gross income of all individuals in the CPH86 cell was obtained by adding up the individual gross incomes within each of the corresponding IDS86 cells. The weighted average income for the corresponding IDS86 cells was then calculated by dividing the aggregate gross income

A4. The emphasis here is on measuring the incidence of poverty, and as the Henderson poverty lines (measured in 1986 dollars) for all family types fall well below gross incomes of \$40,000, it was decided not to apply the procedure described here to individuals with incomes in excess of \$40,000, i.e. their incomes were set to \$40,000 irrespective of the actual income recorded on the IDS86 file.

figure by the total number of individuals within those cells. This figure (i.e. the weighted average income figure) represented the average gross income of individuals in the CPH86 cell, based on the distribution of incomes within that range as indicated by the IDS86 data for individuals in the corresponding IDS cell.

This weighted average income figure, the formula for which is shown in Table A3, was calculated for each non-empty cell in the original (CPH86) six-way tabulation. This procedure results in a more accurate picture of individual income levels than would have been obtained if every person in each CPH86 category was assigned the mid-point dollar income figure; i.e. a procedure which would have resulted in only eight distinct values for annual income - i.e. the corresponding eight values itemised in Table A2.

The six-way cross-tabulation procedure results in potentially 4,608 different values for annual income rather than the eight actually recorded on the CPH86 unit record file; i.e. in this six-way tabulation, there are 4,608 cells. As there were only 1,649 working age Aborigines on the CPH86 file, many of these cells were empty. In fact, there were only 1,142 non-empty cells with the remaining 3,466 cells being empty. For example, there were very few Aboriginal income units headed by persons in the age group 65+, and many of the higher income categories were empty.

However, the procedure did not automatically result in an amended gross income figure for all persons in the CPH86 file, as is shown in Table A4. Four main types of problem were encountered. First, the six way tabulation could not be directly applied to the two labour force classifications "employed, hours not stated" and "labour force status not stated" in the IDS86 file, as these classifications did not exist in the CPH86 file. For the former classification, the weighted income figure used was the combined figure for full-time and part-time employees with the other five characteristics; i.e. a five-way cross-tabulation using only employed persons was used. For the latter, the 'labour force status not stated', the figure used was based on a five-way cross-tabulation ignoring the labour force information entirely.

**TABLE A3: FORMULA FOR ESTIMATING WEIGHTED AVERAGE
INCOME FOR EACH CELL**

Denoting the weighted average income for a cell by X_{flaims} , then

$$X_{flaims} = \frac{\sum_t n_t y_t}{\sum_t n_t}$$

where

- f = 1 if married couple only
 2 if married couple with dependent child(ren)
 3 if married couple with dependent child(ren) and other family members¹
 4 if married couple with other family members only
 5 if sole parent with dependent child(ren)
 6 if sole parent with dependent child(ren) and other family members
 7 if related adults not covered in any of the above categories²
 8 if group household or lone person household

- l = 1 if employed full-time
 2 if employed part-time
 3 if unemployed
 4 if otherwise

- a = 1 if 15-24 years old
 2 if 25-64 years old
 3 if 65 and over

- i = 1 if annual income in range \$0 to \$4,000
 2 if annual income in range \$4,001 to \$6,000
 3 if annual income in range \$6,001 to \$9,000
 4 if annual income in range \$9,001 to \$15,000
 5 if annual income in range \$15,001 to \$22,000
 6 if annual income in range \$22,001 to \$32,000
 7 if annual income in range \$32,001 to \$40,000
 8 if annual income in range \$40,001 and higher

- m = 1 if never married
 2 if married (living with spouse)
 3 if separated, divorced or widowed

- s = 1 if female
 2 if male

and

- y_t = mid-point of relevant IDS86 income range
 n_t = number of individuals in relevant IDS86 income range
 T = number of IDS86 income ranges in relevant CPH86 income category
 (see 'i' above)

- Notes:** 1. Other Family Members includes non-dependent children, ancestors, and other blood or marriage relatives of the family 'head' or spouse (if present).
 2. Covers all blood or marriage relatives living together in a family in which no 'head' can be ascertained.

Second, the treatment of individuals in the CPH86 family type 'related adults' (a category not on the IDS86 file) was that these people were regarded as being in the 'one person' family type; i.e. they were given the same figure as corresponding individuals in the 'one person' category. Third, some non-empty cells in the CPH86 cross-tabulation were in fact empty in the IDS86 cross-tabulation. Where ever this occurred, information on a five-way tabulation was used. If this was not possible, the individual was simply assigned the mid-point of their CPH86 income range. Finally, the procedure could not be applied to those individuals whose incomes were 'not stated' on the CPH86 file. These individuals were omitted from the study completely.

Part 2: Estimating Annual Personal Disposable Income

The next step was to estimate disposable (i.e. after income tax) income. This was necessary as the Henderson poverty line is based on disposable income, not gross income. Thus, it was necessary to estimate income tax liabilities. This was done using the income tax scales for the 1985-86 financial year. It was assumed that individuals were only able to claim standard deductions and rebates, and so the gross income figure derived in the previous section could be taken as the individual's taxable income.

As the CPH86 income categories were for gross annual income from all sources and there was no information on the Census file to indicate what was the person's main source of income, three assumptions were made about the source(s) of income. First, income recipients who were employed at the time of the Census were assumed to receive all their income from earnings. Second, income earners with dependants and/or a spouse were assigned the standard deductions, i.e. no attempts were made to estimate any non-standard deductions or rebates. Third, for all individuals not in employment, it was assumed that they were social security recipients and that their income was entirely from social security payments. It is believed that the impact of these assumptions about the relationship between gross income and taxable income will result in an overestimate of disposable income for some individuals. For example, the impact of the assumption that all persons outside the labour force will be solely in receipt of social security payments is to understate the income taxation liabilities of persons not receiving social security. This occurs because persons whose sole source of income is social security payments do

TABLE A4: OUTCOME OF INCOME MODIFICATION PROCEDURES

Number of Individuals in Aboriginal households♦	1,677
Number of incomes modified by the 6-way procedure	984
Number of incomes modified by a 5-way procedure	261
Number of incomes modified by a 4-way procedure	17
Number of incomes assigned the simple mid-point (because the relevant IDS86 cell was empty)	67
Number of incomes 'Not Stated' on CPH86	310
Number of incomes not re-estimated, person self employed	10
Number of incomes not re-estimated, person institutionalised	28

♦ Excludes 862 individuals aged less than 15.

not pay any income tax because of the availability of special tax rebate. As some individuals will have their disposable income overestimated, the procedure adopted here will result in an under-enumeration of poverty, and the resulting estimates of poverty will be conservative.

The net impact of this procedure for estimating disposable incomes is uncertain. It is believed that any bias in the first step is random. By assigning all individuals in the same cell to have the same gross income, some individuals' incomes will be overestimated while others' incomes will be underestimated. However, the procedure utilises a weighted averaging calculation and therefore at the cell level these biases will cancel out. In any event, for the task of estimating the incidence of poverty, these biases are only important for individuals within families whose disposable income is 'near' the poverty line. That is, based on these estimates, some families may be classified as just above the poverty line when in fact their true disposable income is just below the relevant poverty line, and conversely some families may be classified as just below the poverty line when in fact their true disposable income is just above the relevant poverty line. Again, these biases will cancel out at the level of aggregation presented in the estimates of the incidence of poverty presented in Tables 5 to 7 in the text.

Part 3: Estimating Annual Income Unit Disposable Income

Finally, disposable income was obtained for all income units by aggregating the individual disposable incomes of all persons aged fifteen and over in the income unit. To ensure consistency with the Henderson poverty line methodology, the notion of the 'income unit' was used. Table A5 itemises the 'income unit' categories used, and indicates the number of income units in each category. For those family types which included non-core members, e.g. married couples with other adults, the 'other adult' members were treated as a separate income unit, i.e. they were treated as one person income units.

This step could not be applied to any income unit on the CPH86 file in which one, or more, individuals had their income 'not stated'. One hundred and four income units had to be omitted from the study for this reason. Further, if, in married couple families, one spouse was temporarily absent on Census night, that individual's income was not recorded on the CPH86 file, and therefore, the income unit's total disposable income could not be estimated; this resulted in a further three income units being omitted from the study.

TABLE A5: DEFINITIONS OF INCOME UNITS USED IN THIS ANALYSIS

Category	Income Unit Type
1	A married couple, at least one of whom is employed, with no children (46)
2	A married couple, at least one of whom is employed, with one child (47)
3	A married couple, at least one of whom is employed, with two children (47)
4	A married couple, at least one of whom is employed, with three children (33)
5	A married couple, at least one of whom is employed, with four children (16)
6	A married couple, at least one of whom is employed, with five or more children (7)
7	An employed sole parent with one child (12)
8	An employed sole parent with two children (8)
9	An employed sole parent with three children (3)
10	An employed sole parent with four or more children (2)
11	One person, who is employed* (94)
12	A married couple, neither of whom is employed, with no children (36)
13	A married couple, neither of whom is employed, with one child (27)
14	A married couple, neither of whom is employed, with two children (30)
15	A married couple, neither of whom is employed, with three children (13)
16	A married couple, neither of whom is employed, with four children (11)
17	A married couple, neither of whom is employed, with five or more children (5)
18	A sole parent, not employed, with one child (55)
19	A sole parent, not employed, with two children (36)
20	A sole parent, not employed, with three children (10)
21	A sole parent, not employed, with four or more children (11)
22	One person, who is not employed* (237)

Notes: Numbers in brackets are the number of units in the income category. Excluded from the table are all income units in which there are any of the following: self-employed individuals; farmers; individuals with incomes 'not stated'; (for married couples only) a temporarily absent spouse; or a juvenile head.

* Categories 11 and 22 include; adult family members such as non-dependent children and ancestors who are living with a core family; related adults such as adult siblings living together in a household which has no core family; individuals who are non family member; persons in a group household; and a lone person households.

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