

The Impact of Family Assistance Changes on Patterns of Unemployment Benefit Receipt

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The Impact of Family Assistance Changes on Patterns of Unemployment Benefit Receipt

by
Bruce Bradbury



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**THE IMPACT OF FAMILY ASSISTANCE CHANGES ON
PATTERNS OF UNEMPLOYMENT BENEFIT RECEIPT**

By Bruce Bradbury

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Abstract

The last decade in Australia has seen a major expansion of income support to low income non-pensioner/beneficiary families with children. One of the major goals of this increased support has been to increase the relative financial attractiveness of low wage employment for people with dependent children, and to thus encourage those unemployed with larger families to increase their job search effort. This paper examines this objective by first describing the changes in effective unemployment benefit replacement rates over the 1980s, and then by testing whether these changes have been associated with any changes in the relative unemployment rates of men with different numbers of children. The main conclusion is that these changes have not had any discernible behavioural impact. This may be due to either a small degree of response to financial incentives, or possibly to a lack of knowledge of the income support payments available.

1 Introduction

The last decade in Australia has seen a major expansion in income support to low income non-pensioner/beneficiary families with children. Whilst some near universal¹ family allowance payments have existed since 1941, it was only in the 1980s that supplements of significant size were paid to low income families who were not eligible for a pension or benefit. In 1983, Family Income Supplement (FIS) was introduced and this was then expanded and renamed Family Allowance Supplement (FAS) in December 1987.

These family supplements were introduced to fulfil two major goals. First, to increase the living standards of low income families and to thus alleviate poverty. The FAS program, for example, was introduced as part of the Hawke Government's Family Package aimed at 'eliminating child poverty', and also included significant increases in child related payments to pensioner and beneficiary families with children.

At the same time, these payments were designed to 'provide opportunities and incentives for self-help and the reduction of dependence upon social security payments' (DSS, 1990: 74). Whilst this is only a subsidiary goal of the FAS program, it was clearly to the fore when the Coalition government of 1982 formulated FIS. As Senator Chaney, the Minister for Social Security, stated:

One of the very odd inequities in Australia at the moment is that a man or a woman with a large number of dependent children who is capable of earning only a low wage may well be better off unemployed than employed. (Hansard, 2 December 1982, Senate: 3064)

One of the key goals of the FIS program was thus to increase the disposable incomes of parents in low wage employment relative to their entitlement under unemployment benefit.

The goals of this report are twofold. The first is to describe the impact of these family assistance changes on the relative financial attractiveness of

1 These have been subject to a general income test since 1987.

unemployment benefit (UB) and low wage employment. Replacement rates summarising these relativities are described in Section 2. Whilst these family assistance measures are also available to sole parents, here we restrict attention to couples with children. Further, because married UB recipients are predominantly male, the description focuses upon family incomes when husbands are in low wage employment (and the wife is not employed) compared to when they are receiving UB. Though family assistance payments are only paid to families with children, the paper also describes the situation of childless couples in order to provide a 'control group' unaffected by the family assistance changes.

The second goal of the report is both more important and more ambitious. In Section 3 an examination is made of whether the changing financial incentives described in Section 2 actually had any impact upon the behaviour of low income families. In particular, a test is made of the hypothesis that the decrease in replacement rates associated with the introduction of some of these family assistance measures led to a decrease in the unemployment rate of married men with children relative to the unemployment rate of those without children.

The main conclusion of this examination is that this hypothesis is **not** supported by the data, with no evidence of a behavioural response being found. The paper concludes with a discussion of the possible reasons for this.

2 Replacement Rates Over the 1980s

The most convenient way with which to summarise information on the relative financial attractiveness of income support and wages is through the use of **replacement rates**. These are defined as the disposable income received when unemployed and receiving income support, divided by the disposable income when in employment. The higher the replacement rate, the more is income support able to compensate for the lost income when not employed, and correspondingly, the greater is the relative financial attractiveness of income support. High replacement rates, it is often argued, may encourage the unemployed to reduce their job search effort, or to

become more selective about the employment offers they accept (see for example Keating and Mackie, 1991).²

It should be stressed, however, that the financial factors summarised in the replacement rate are by no means the only factors that might influence the job search effort of the unemployed. The non-cash benefits and disadvantages of employment and unemployment, the effect of current labour market status on longer term incomes, the administrative requirements of income support payments, and the conditions of the labour market are all important factors which might influence job search behaviour. Any estimate of the effect of changing replacement rates on behaviour, must therefore either control for these factors, or assume them to be relatively constant.

It should also be noted that the behavioural responses of **individuals** will not always influence **aggregate** outcomes. For example, if a particular individual rejects a job offer, this may have no impact upon total unemployment benefit expenditure if some other beneficiary is able and willing to fill the job. Nonetheless an individual behavioural response is a prerequisite for an aggregate impact, and so the focus here is confined to individual behavioural responses.

This section begins by describing the trends in the wage income of married males (employed full-time), since the late 1970s. This is then combined with estimates of the effect of income taxes and family transfers to obtain disposable income when employed. Corresponding disposable income when in receipt of income support is then calculated, and these are compared in a series of replacement rate calculations for a range of family types.

2.1 Incomes When Employed

Wages

In many studies of changes in replacement rates over time, the wage variable used has been some index of average wages such as average weekly

² Conceivably, high replacement rates may also encourage some people to choose to **become** unemployed - though this is generally accepted to be less likely than a reduction in job search effort.

earnings (AWE). People leaving unemployment benefit, however, are likely to face lower than average wages.³ One simple approach has been to calculate replacement rates for people receiving some percentage of AWE (e.g. half), to represent the situation of low income earners. Ideally this fraction or fractions should be chosen so as to reflect the actual distribution of wage offers facing the unemployed in particular demographic groups. Even if this can be done, however, the method can give misleading results if the wage distribution changes over the period examined.

In order to capture both these distributional changes over time, and to take account of the changing distribution of wages, this study uses the wage data available from the ABS Labour Force Supplementary Survey, *Weekly Earnings of Employees (Distribution)* (WEED), conducted each August from 1977 to 1990 (Cat. No. 6310.0). Published data from this survey can be used to calculate different percentiles of the wage distribution for married males employed full-time in each of these years.

Though this data is collected from a nationally representative sample of households (the AWE series excludes agriculture) it does suffer from several limitations. The most important of these is that the survey uses an 'any responsible adult' (ARA) methodology, where one person in the household is asked questions about all household members. Table 2.1 suggests that this may lead to a systematic underestimation of wage income.

This table shows different percentiles of the wage distribution for full-time married males in 1986. The top line of the table shows the distribution in the WEED survey of August 1986,⁴ whilst the remainder of the table is derived from the ABS *Income Distribution Survey* (IDS) conducted from September to December in the same year. This latter survey asked each adult in the household their current wage as well as a wide range of other income related questions. Examining the first two lines of Table 2.1, it is clear that the IDS survey recorded a significantly higher wage distribution

3 See Bradbury, Ross and Doyle (1991) for a more detailed discussion.

4 These percentiles were calculated by linear interpolation within the published wage categories.

Table 2.1 Wage Distribution of Full-Time Employed Married Males, 1986

	10	Percentile 25 50 75 (\$ per week)			90
WEED Survey (August)					
Total	277	330	414	537	691
IDS (September-December)					
Total	300	350	440	566	748
No UB Receipt in 1985-86					
Without Dependants	298	342	420	550	700
With Dependants	300	361	456	597	772
TOTAL	300	351	444	572	750
UB Received in 1985-86					
Without Dependants	232	302	350	416	478
With Dependants	275	309	359	450	550
TOTAL	270	308	353	450	528

than the WEED survey. Whilst there was a difference of a few months between the surveys, and they do have minor definitional differences, this does not justify such a large difference.⁵

The most likely explanation is that some of the respondents in the WEED survey may have underestimated their own or other household members' wage incomes - possibly by answering in terms of after-tax rather than gross incomes. This mistake would be less likely to occur in the IDS because of both the individual based survey instrument and the wide range of other questions on income (and income tax) preceding the questions on current wages. Assuming therefore that the IDS data is more accurate, in subsequent calculations in this report all the percentile estimates obtained from the WEED surveys have been adjusted upwards by 5 per cent.

Setting this issue aside, these distributional statistics for the whole population should not necessarily be expected to apply to those who were

5 For example, the IDS collects information on 'usual' rather than 'most recent' pay. ABS officers suggest however that this should cause a (small) bias in the opposite direction to that observed here. It should also be noted that the two surveys have similar differences for other demographic groups.

potentially leaving unemployment benefit. A simple way of illustrating these different wage distributions is shown in the remaining rows of Table 2.1. These show wage distributions disaggregated according to whether or not the person had experienced a spell of unemployment benefit receipt in the previous financial year. The wage distributions of those who had experienced such a spell can thus provide an approximate indication of the wage offer distributions facing unemployment beneficiaries.⁶

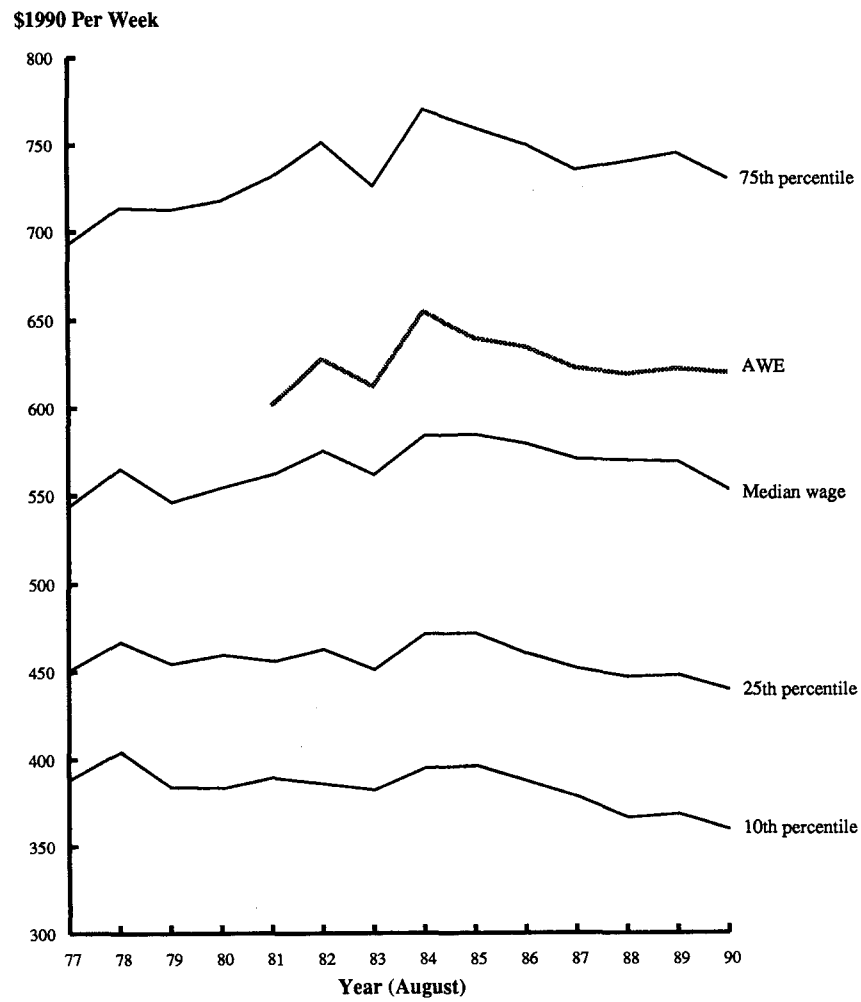
Clearly evident in the table is the lower level of wages of those who experienced unemployment. For example, the overall 10th percentile of \$300 per week is closer to the 25th percentile of the wage distribution of ex-beneficiaries than it is to the 10th percentile. Similarly the overall 25th percentile is close to the ex-beneficiary median and the overall 75th percentile is higher than the beneficiary 90th percentile. Also evident are the generally higher wages of those with dependent children (probably because of their different age distribution).

These results suggest that caution must be used in interpreting overall wage distributions such as those described in Figure 2.1. This figure shows the real levels of the 10th, 25th, median and 75th percentile wage levels for full-time employed married males since 1977. These estimates thus refer to quite different percentiles in the wage offer distribution facing unemployment beneficiaries. Nonetheless, they do permit an examination of income trends across a wide range of the income distribution. For comparison, the AWE series for total earnings for full-time adult males is also included.

A number of points are evident from Figure 2.1. Median real wages increased from August 1977 to 1984, but have steadily decreased since then. The fluctuations in real wages in the early 1980s were greatest for those people at the top of the earning distribution - as is evidenced by the greater fluctuations in AWE and the 75th percentile, than for the lower income levels. Nonetheless, the general peak in 1984 applied for all the wage levels shown.

6 This is only approximate because these wages are for those who actually gained employment, rather than all beneficiaries, and because the 'UB receipt in the previous financial year' criteria may provide a selection biased towards those with longer benefit durations.

Figure 2.1: Real Wage Percentiles for Full-Time Employed Married Men, 1977 to 1990



Note: AWE is for full-time adult males

Hidden by these general patterns, however, has been a steady tendency for the lower income groups to fall behind. This is shown more clearly in Figure 2.2, which shows these same wage percentile levels, but now expressed relative to the median in each year. Since 1977, the 10th percentile of full-time married male wages has steadily fallen from 71 to 65 per cent of median wages.

Disposable Incomes

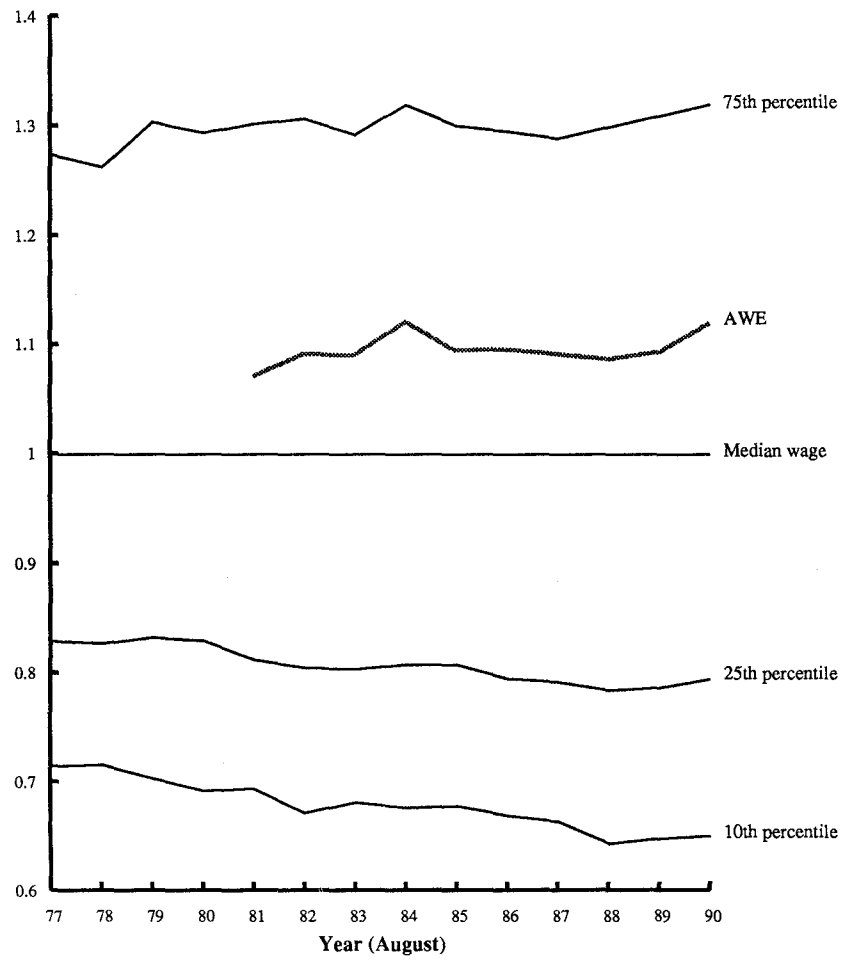
Whilst wages make up the largest component of the incomes of the employed, they are by no means the only factor influencing their disposable incomes. For the calculation of replacement rates in this report, PAYE personal income taxation, government transfers such as family allowance (FA), family income supplement (FIS) and family allowance supplement (FAS) are also taken into account. Though it is well known that the take-up of the latter two payments was often very low, non-take-up is ignored in these calculations - which thus refer to income **entitlements** rather than income necessarily received.

In addition, to further simplify calculations, it is assumed that the family receives no other income. This is justified by the focus on changes over time, for which most other income components can be assumed to be reasonably constant.⁷ An important exception to this is the income arising from wives' employment - which has increased significantly over the past decade. The possible impact of this on effective replacement rates is discussed further in Section 2.1.

Because family transfers differ according to both income levels and numbers (and ages) of children, the trends over time are quite complex. In order to maintain a manageable presentation, the results presented here are restricted to a limited number of family types. In all cases it is assumed that there are no dependent children over age 15 in the income unit - and so the impact of the changes in educational payments for families with older children are not incorporated. Since the introduction of FAS in December 1987, rates of family assistance have differed depending upon the age of

⁷ For a description of the replacement rates obtained when this assumption is relaxed, see Bradbury, Ross and Doyle (1991).

Figure 2.2: Wage Percentiles Relative to the Median for Full-Time Employed Married Men, 1977 to 1990



Note: AWE is for full-time adult males

children. In order to describe these changes, replacement rates for the 10 family compositions shown in Table 2.2 are calculated.

Before 1988, the replacement rates for the last three family types were identical to those for the first three. Whilst this does not cover all the possible age combinations, the Appendix table, which shows the distribution of children of different ages, indicates that the most numerically prevalent categories are generally included in these ten family types.

Since 1989, however, it is difficult to describe exactly what impact FAS payments have had on the incomes of persons gaining employment. This is because of the complexity of the income testing arrangements. Whilst FAS is now usually assessed on the basis of income from a previous tax year, special arrangements are made for people whose incomes change significantly (e.g. through gaining employment).⁸ When income increases by a certain amount FAS entitlement is re-assessed on the basis of expected income during the current financial year. This means that the FAS entitlement of a person leaving unemployment benefit for employment may vary depending upon the date during the financial year when they gain employment. If they gain employment at the beginning of the financial year, their entitlement will be assessed on the basis of a full year of wage income. On the other hand, if they gain employment towards the end of the financial year, their entitlement may be assessed on the basis of the **current** financial year's income. If they have been unemployed for most of that year (and hence have a low **annual** income), they will generally receive the full FAS entitlement, irrespective of their wage level. This FAS entitlement will not be reduced until the next January when payments are re-assessed.

Since August is used here as the nominal month for replacement rate calculation, the basic calculations for employment incomes and replacement rates for 1989 and 1990 are based upon the former of these two scenarios - with FAS entitlement assessed on the basis of a full year of wage income. However some results for the latter scenario - where people receive full FAS entitlement irrespective of their wage income - are also presented.

⁸ FAS recipients can also apply to have their payments increased when their incomes fall.

Table 2.2: Family Compositions Considered

Number of Children	Number Aged 13–15
1	1
2	1
3	1
4	1
5	1
6	1
0	0
1	0
2	0
3	0

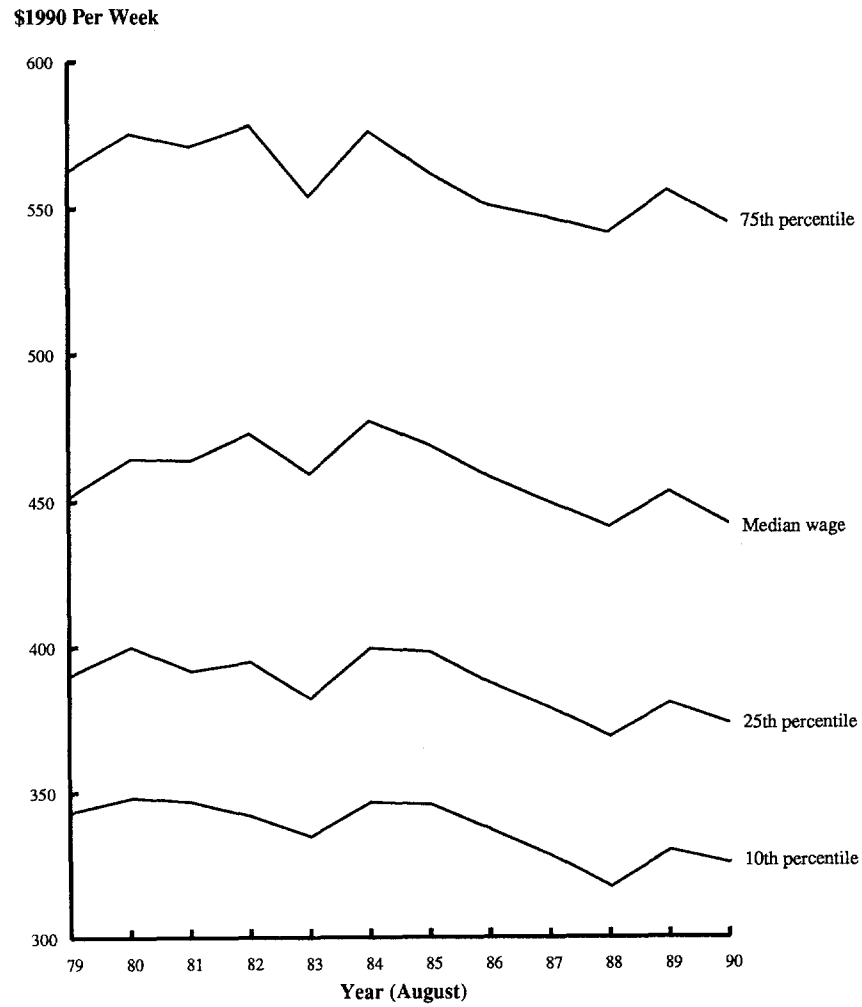
Figures 2.3a to 2.3g show the basic estimates of real family incomes for married men gaining employment at the different wage levels shown in Figure 2.1, and with different numbers of dependent children. Each figure presents the results for a family with a given number of children, and receiving wages at four different levels. It should be remembered that these wage percentiles are for all married men working full-time, not for unemployment leavers only, but they are presented in order to show the impact across a range of wage levels. Since these wages are held constant across the different family types, the disposable incomes differ between family types only because of family transfers and the dependent spouse rebate (which is higher for families with children).⁹

The difference between Figure 2.3a for families with no children and Figure 2.1 reflects the impact of the personal income tax scale and the dependent spouse rebate (DSR). In general the fall in disposable income since the mid 1980s was similar to the fall in real wages - though the trend has been somewhat more erratic due to the combination of 'bracket creep' and the irregular adjustments to the income tax scales.

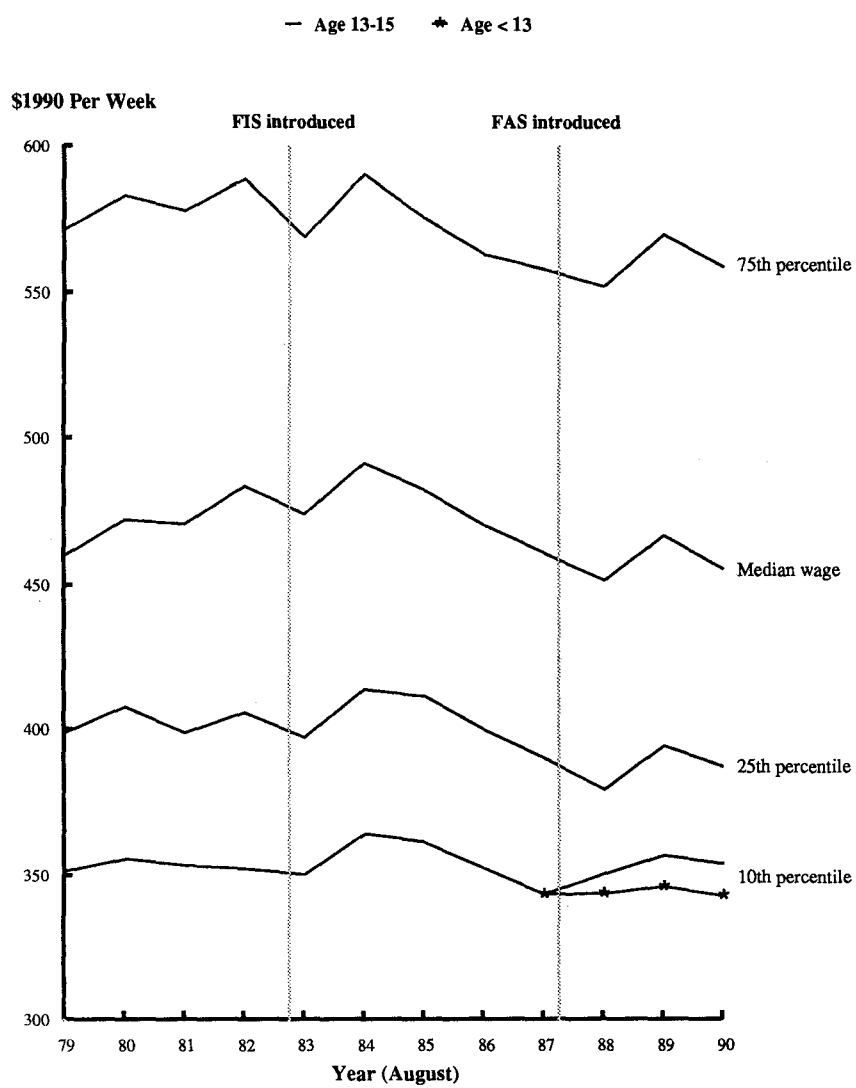
These wage and income tax trends are also reflected in the disposable incomes of families with children. For these families, however, there have also been major changes in family assistance policies over the decade.

⁹ These figures also assume no eligibility for the rent rebate component of FAS.

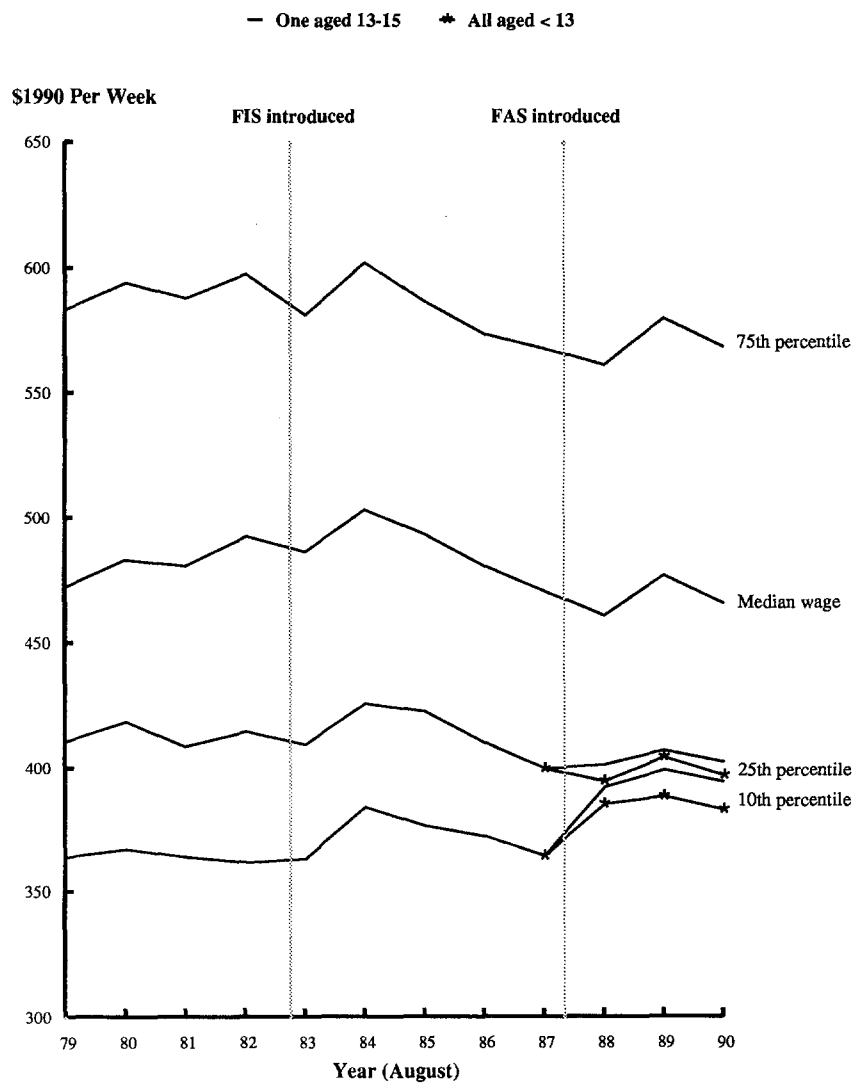
Figure 2.3a: Real Disposable Income When Husband Employed, 1979 to 1990
(No Dependent Children)



**Figure 2.3b: Real Disposable Income When Husband Employed, 1979 to 1990
(One Child)**



**Figure 2.3c: Real Disposable Income When Husband Employed, 1979 to 1990
(Two Children)**



**Figure 2.3d: Real Disposable Income When Husband Employed, 1979 to 1990
(Three Children)**

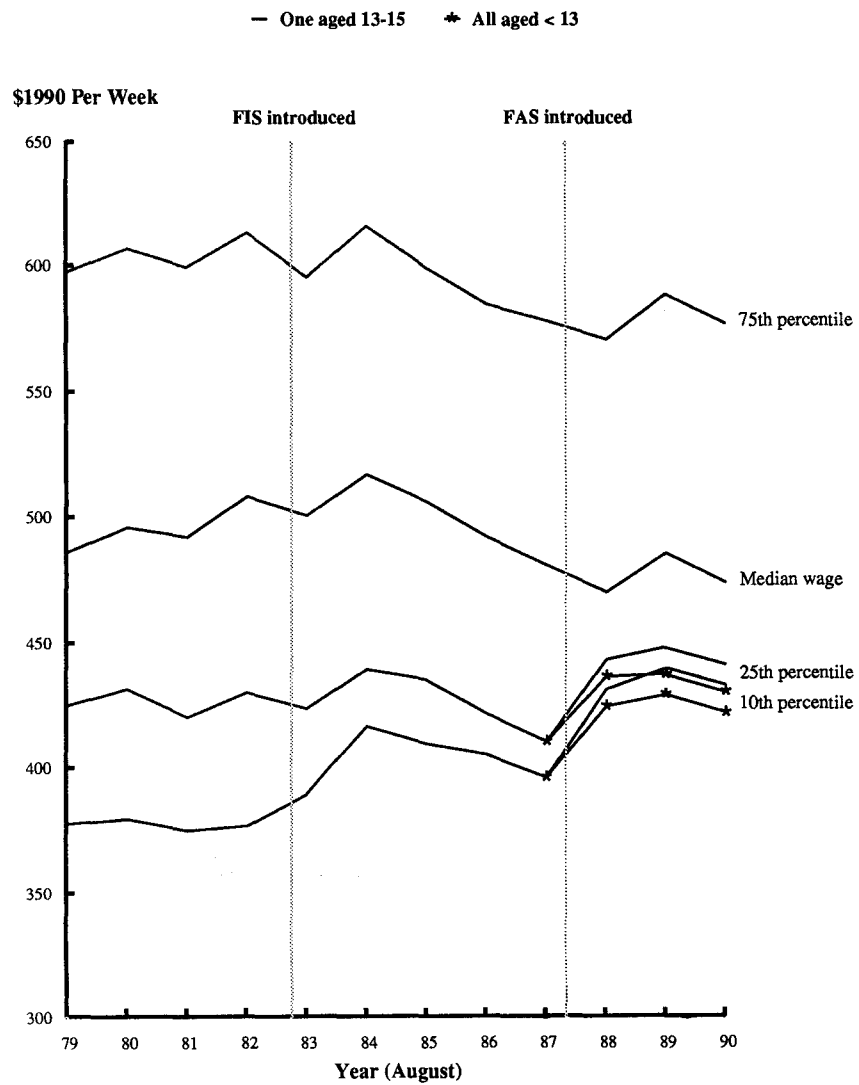


Figure 2.3e: Real Disposable Income When Husband Employed, 1979 to 1990
(Four Children)

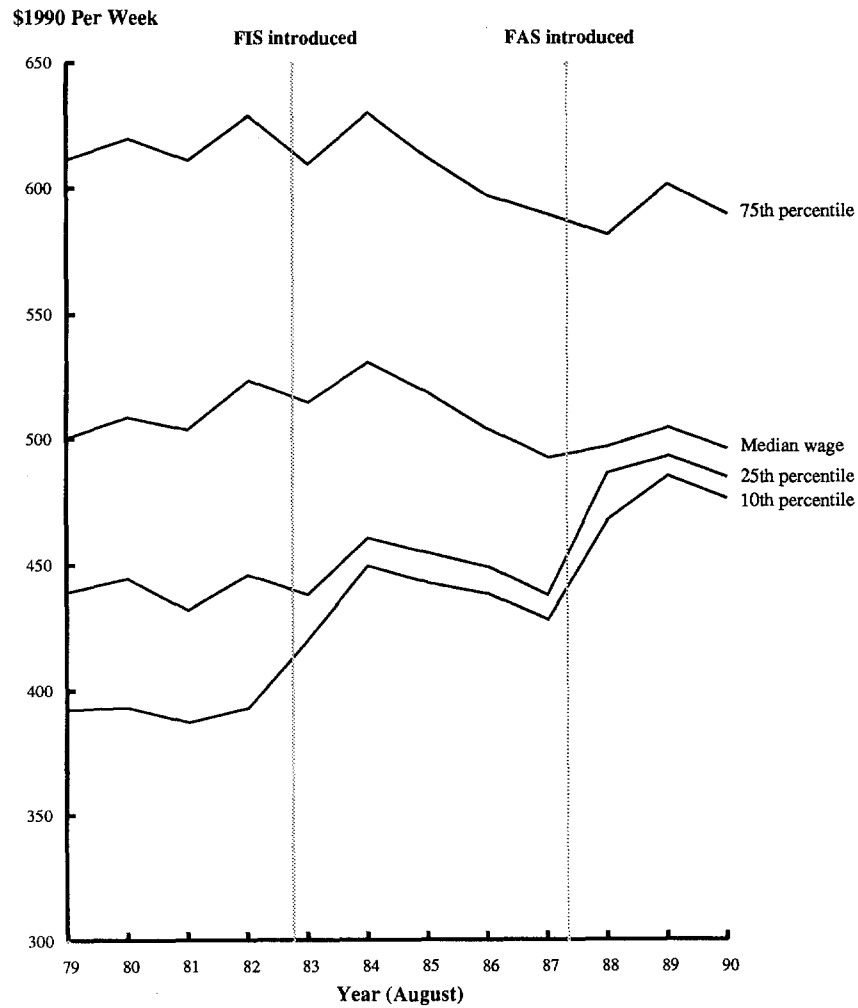


Figure 2.3f: Real Disposable Income When Husband Employed, 1979 to 1990
(Five Children)

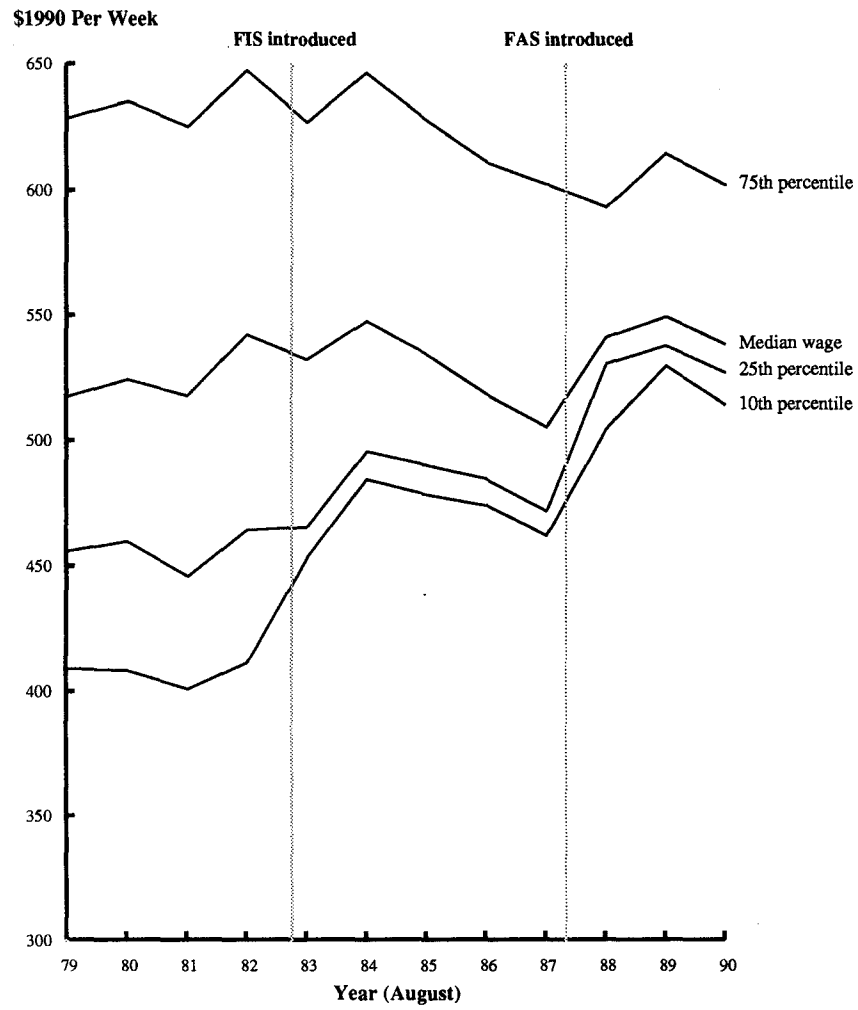
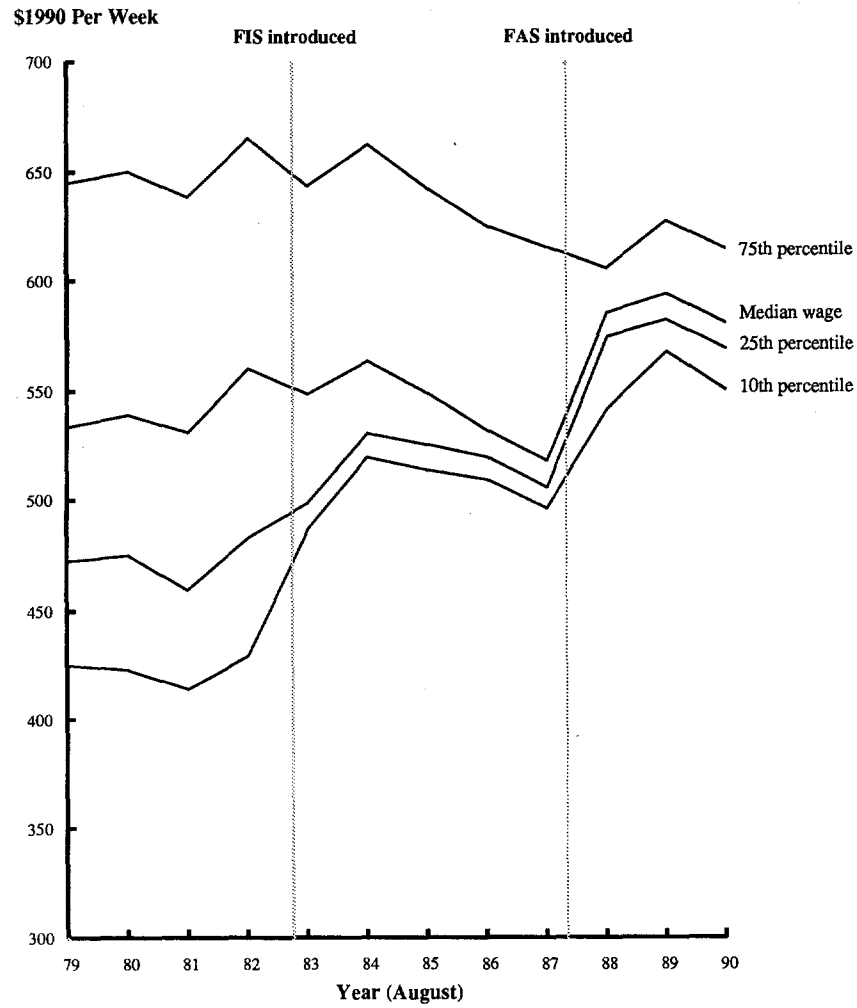


Figure 2.3g: Real Disposable Income When Husband Employed, 1979 to 1990
(Six Children)



These have tended to moderate the fall in income for the larger families with low wage incomes.

For families with six children, for example, there was a dramatic increase in the disposable income entitlements of those at the bottom of the wage distribution (Figure 2.3g). Where the husband was receiving wages at the 10th percentile, real disposable income increased by 33 per cent between 1981 and 1990. For these very large families, the introduction of FAS in 1987 extended these income increases up to families with median married male wages. As will be shown in the next section, these disposable income increases led to large falls in the unemployment benefit replacement rates faced by these families.

The other side of these favourable replacement rate trends, however, is also shown in these figures. Whilst decreasing unemployment benefit replacement rates, increases in income tested family transfers also had the effect of significantly increasing the effective marginal tax rates on additional earnings in these families (e.g. when the husband gains a higher paid job, or when the wife commences part-time work). Taking families with four children as an example (Figure 2.3e), in 1982 a family with the husband receiving a median wage had a disposable income 33 per cent higher than a family where the husband was receiving a wage at the 10th percentile. After the introduction of FIS, this difference fell to 23 per cent, and by 1988 after FAS was introduced it fell to 4 per cent. This was in spite of a slight widening of the gap between these wage levels (Figure 2.2).

This trade-off between reducing unemployment replacement rates and increasing effective marginal tax rates is an inevitable consequence of the tight targeting of these family assistance payments. However it should be noted that the combination of income thresholds at which FAS entitlement is reassessed, and previous financial year income tests, mean that changes to FAS payments will often not take place for some time after income increases - so that in present value terms the disposable income difference would be greater than that described in the previous paragraph (and hence the disincentive to increase incomes would be less). Moreover, these calculations, like all those in this report, assume that people actually take up their entitlement to family assistance. As will be discussed further in Section 3, take-up has in fact been quite low relative to other pensions and benefits (though it has been improving). For those unaware or choosing not

to take up their entitlements, these disposable income patterns would be of little relevance.

For smaller families, both the disposable income and effective marginal tax changes were much more muted. In these families significant increases in family assistance were confined to those families with the lowest wage incomes. Indeed, at wage levels higher than those shown in these figures (or when family incomes were high because of both spouses working) the introduction of means testing for family allowances in November 1987 meant a decrease in family transfers for many households.

For families with one child (Figure 2.3b) even those at the 10th percentile of married male wages had incomes above the threshold required to receive any FIS payments. They did however receive family allowances, and were eligible for an additional dependent spouse rebate (DSR), which is why their incomes are different from childless couples in Figure 2.3a. (For example, the DSR for families with children increased significantly in 1983-84). However it was not until the introduction of FAS that these families received additional child-related payments.

FAS payments were (and still are) distinguished on the basis of the ages of the children. To show this effect, Figures 2.3b, 2.3c and 2.3d show two disposable income calculations after 1987. The lines with asterisk markings describe the incomes of families with all children aged under 13, whilst the plain line describes the situation for families with one child aged 13-15. Where families of both composition received no FAS these are identical, and only the latter line is shown. For families with four or more children (Figures 2.3e to 2.3g) calculations are only undertaken for families with one child aged 13-15.

As noted above, these income trends assume that FAS entitlement in 1989 and 1990 was assessed on the basis of current incomes. If full entitlement is assumed, then higher disposable incomes than those shown in the figures would be available to many persons leaving unemployment benefit (at least for some months). For example families with two children would not have received any FAS payments had entitlement been assessed on the basis of a full year of a median wage income. If the husband had just left a long spell of unemployment towards the end of the financial year however, their initial employment income could have been up to \$65 per week higher than shown

in Figure 2.3c (assuming one child aged 13-15). It should, however, be noted that this situation would only rarely occur, with entitlement usually much lower (and only for a limited period of time). Even more important, the regulations surrounding these payments are so complex that few unemployed would be likely to be aware of their entitlements when employed. This issue of awareness is discussed further in Section 3.

Another important factor which is not captured in Figures 2.3a to 2.3g is additional payments for families renting in the private rental market. Since December 1987 low income families have been able to claim rental assistance (subject to the FAS income test) on the same basis as beneficiaries with children. In 1990 this meant an additional payment of up to \$30 per week for families with one or two children, and \$35 per week for larger families.

Wives' Earnings

In considering these disposable income trends it is important to remember that they describe family types of rather restricted characteristics. Of particular importance is the exclusion of wives' earnings from family incomes. From a short-term perspective, this may be quite reasonable, as it is usually the husband who first gains employment after a family has been receiving unemployment benefit (Bradbury, Ross and Doyle, 1991, Table 3.2). However this may be considered to be an interim step for many families, with an ultimate objective of both husband and wife finding employment.

The inclusion of the potential earnings of wives in the calculation of incomes when employed would have two effects. First, it would lead to a significant increase in potential incomes in employment, and a corresponding reduction in replacement rates. Second, because married women's employment has increased significantly since the early 1980s, the inclusion of wives' earnings would lead to a reduction in average replacement rates over time.

Over the 1980s, the growth in employment has generally been greater for married women with dependants than those without. For example, between 1982 and 1990 the employment rates of married women with dependent children (and with a husband in the labour force) rose by 15 percentage

points whilst that for married women without dependants rose by only 12 percentage points.¹⁰ The corresponding estimates for full-time employment were 6.4 and 5.9 percentage points respectively. This would suggest that any fall in effective replacement rates might be slightly greater for families with children than for those without. This would reinforce the trends in replacement rates described below.

2.2 Incomes When Unemployed

In contrast to wages, income support for adult unemployment beneficiaries has generally increased in real terms since the late 1970s.¹¹ Figure 2.4 shows trends in the real levels of unemployment benefit (including FA) for married beneficiaries with different numbers of beneficiaries.

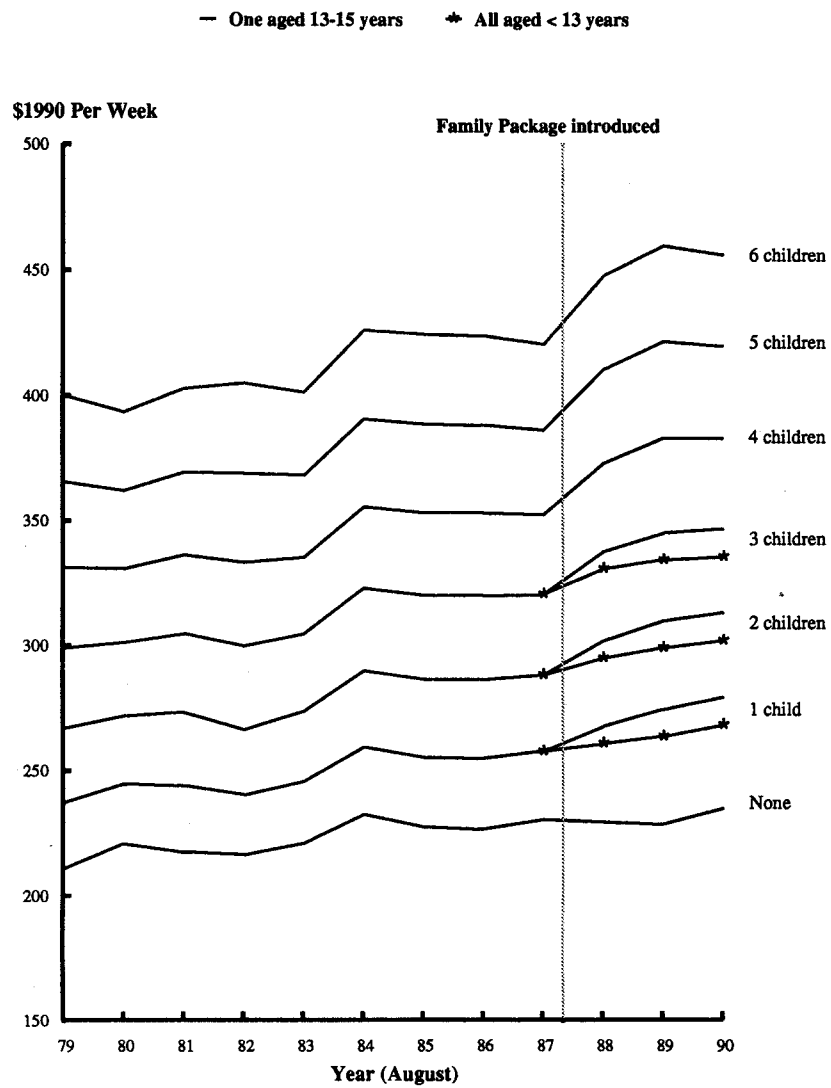
The most notable increases in real payments were in 1984 and 1988. The former of these benefit increases is slightly exaggerated in Figure 2.4, as it partly reflects the deflationary impact of the introduction of Medicare on the CPI (which is used as the price index here). Since unemployment beneficiaries were eligible for free health care this increase in 'real' incomes did not really reflect a rise in living standards. Nonetheless there were also a series of increases in additional benefit for children after 1983 - with the basic rate of \$10 per week per child increased by \$2 in November 1983, with further \$2 increases in 1984 and 1985.

The substantial increases in benefit in the last few years of the decade were largely restricted to those families with children, and were a result of the introduction of the Commonwealth Government's 'Family Package', whereby family allowances and additional benefit for children were substantially increased. As in Figures 2.3b to 2.3d, two lines are drawn for the years since 1987 (for families with less than four children) to describe the variation in payments for families with children of different ages.

10 Source: ABS Cat No. 6224.0. The restriction to women with husbands in the labour force is made in order to exclude the aged population.

11 It should be noted that the trend for the younger unemployed has been quite different - with significant real decreases in payments for most youth.

Figure 2.4: Real Incomes When Receiving UB, by Number of Children, 1979 to 1990



In addition to the basic rates of payment shown here, eligibility for rent assistance (for those renting in the private rental market) was also introduced in 1986 for those unemployed for six months or more. This waiting period was abolished for those with children in December 1987.

At the same time as real benefits have increased, there have been significant changes in the administration of unemployment benefit eligibility. These have included increased waiting periods, assets tests, as well as increased job search requirements. In general these have applied in a similar fashion to all adult beneficiaries, though regulation changes for those aged under 21 have varied according to the presence of dependants.

2.3 Replacement Rates

Figures 2.5a to 2.5g show the replacement rates defined as the unemployment incomes shown in Figure 2.4 divided by the incomes when employed shown in Figures 2.3a to 2.3g. These replacement rates thus refer to married couple families where the husband finds employment at the given aggregate wage percentile and where there are no children aged over 15, and where there is no family income other than the wage of the husband, family transfers and unemployment benefit when unemployed (and no eligibility for rent assistance).

All the influences on income trends described above will be incorporated into these replacement rate calculations. For married men without children, for example, Figure 2.5a shows a steady increase in replacement rates - particularly for those on the lowest wages. This is a reflection of the significant falls in real wages for this group, together with the small real increase in unemployment benefits. Even for those with wages at the 10th percentile, however, the replacement rate was still significantly below 75 per cent at the end of the decade.

Figures 2.5b to 2.5g show replacement rate trends for families with different numbers of dependants, and so add the changing patterns of family transfers to the results shown in Figure 2.5a. Whilst the pattern for families with one child is not very different from the pattern for those with none, even when there are only two children, significant differences are apparent - particularly for those receiving the lowest wages. For men on a 10th

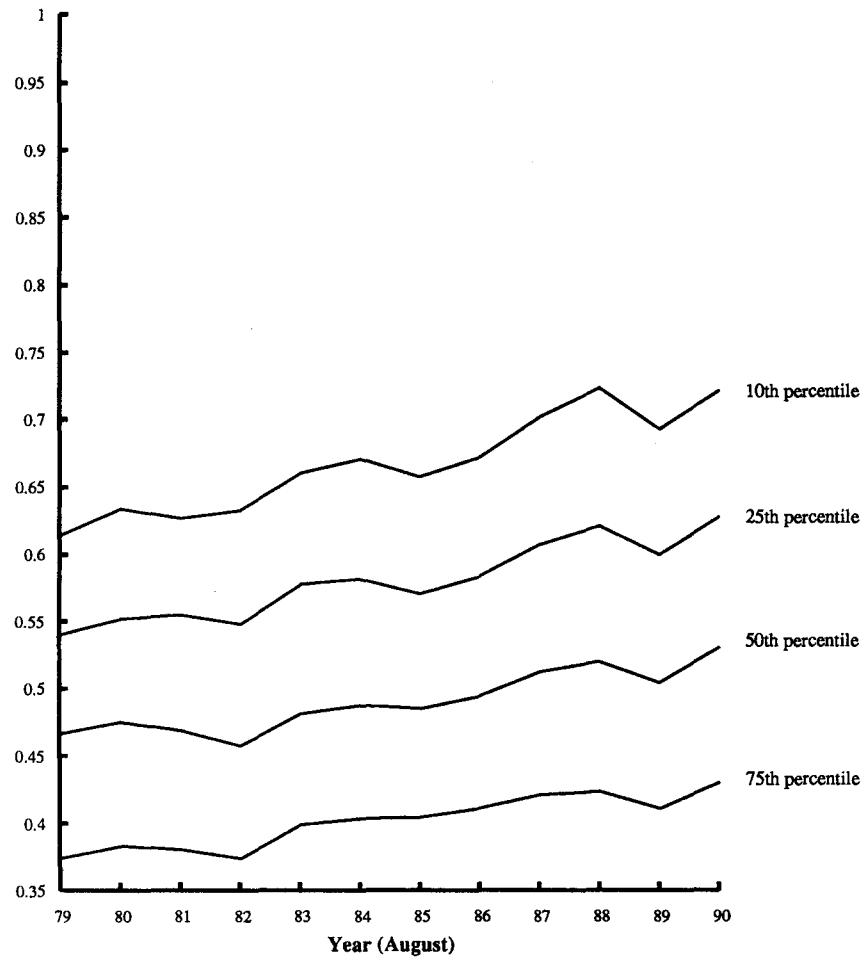
Figure 2.5a: Replacement Rates, 1979 to 1990 (No Dependent Children)

Figure 2.5b: Replacement Rates, 1979 to 1990 (One Child)

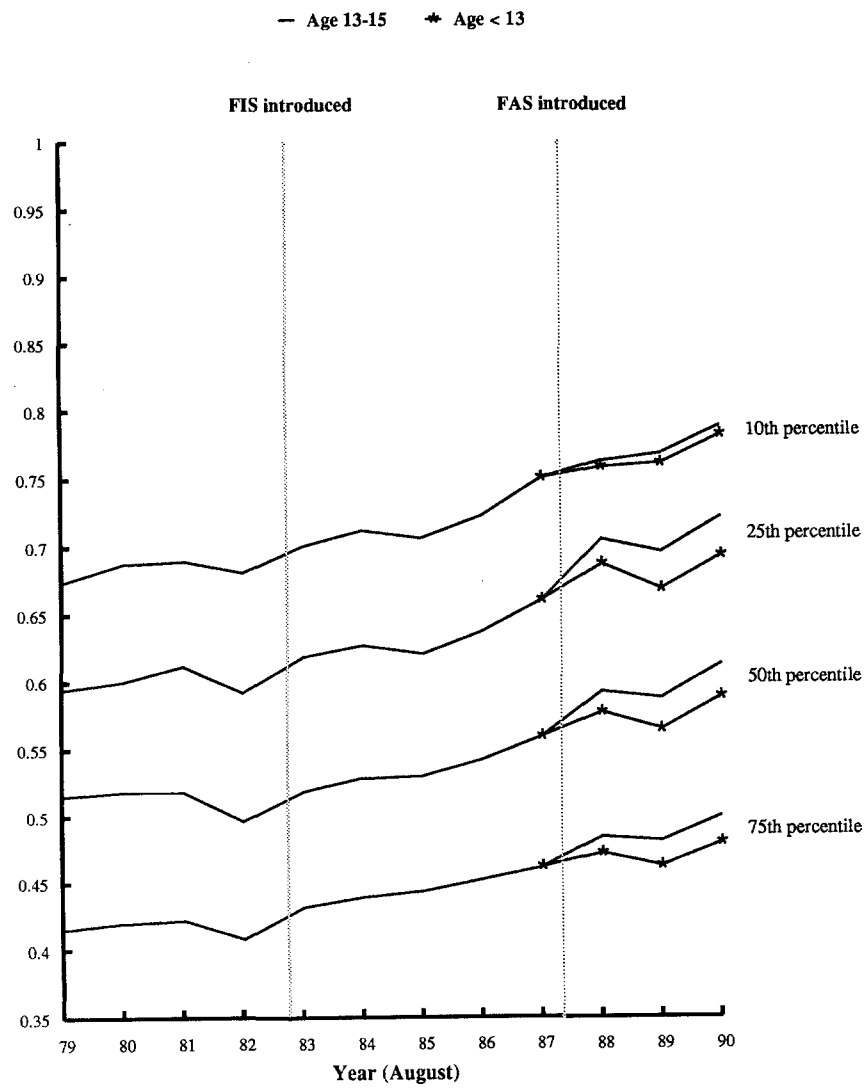


Figure 2.5c: Replacement Rates, 1979 to 1990 (Two Children)

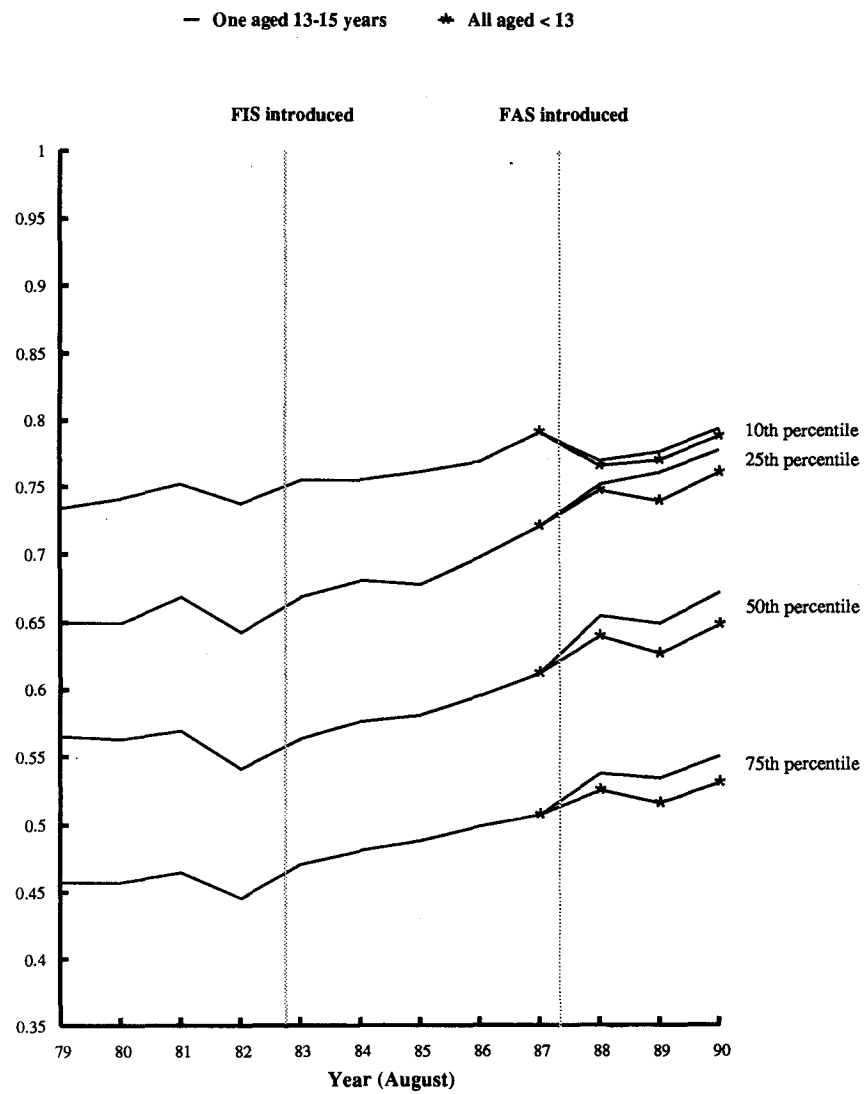


Figure 2.5d: Replacement Rates, 1979 to 1990 (Three Children)

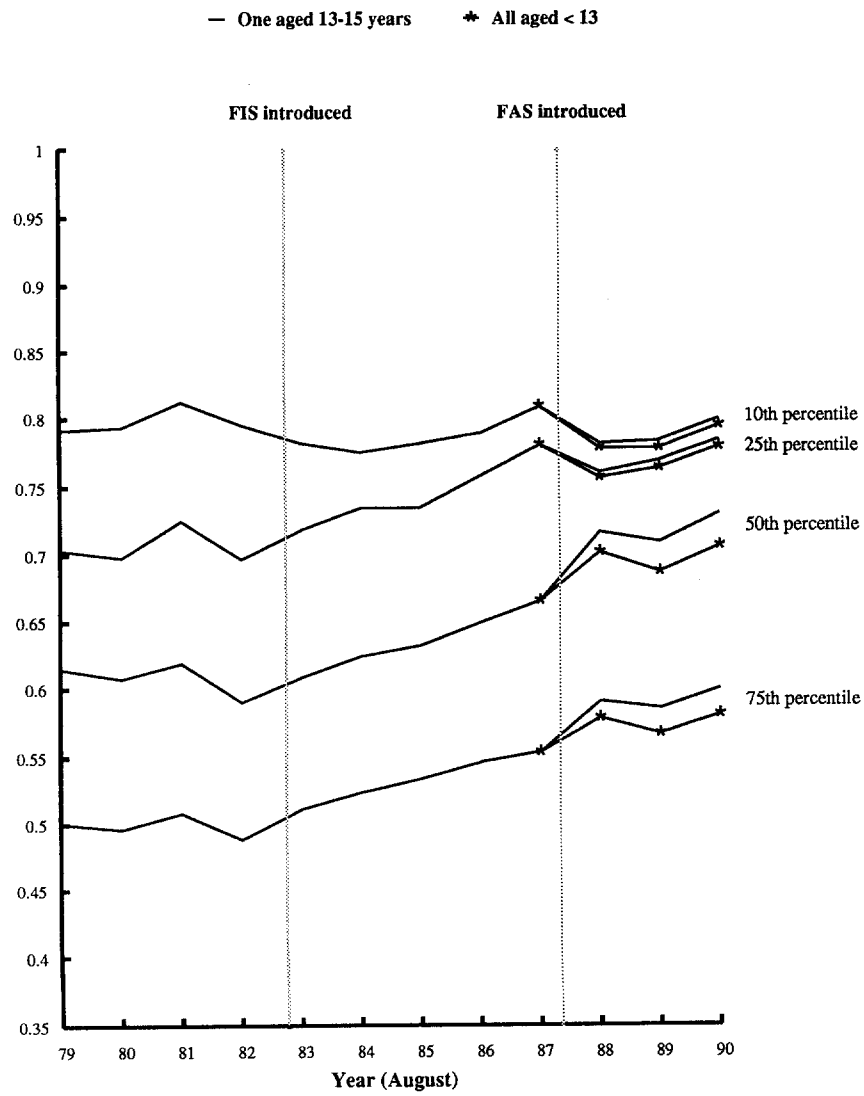


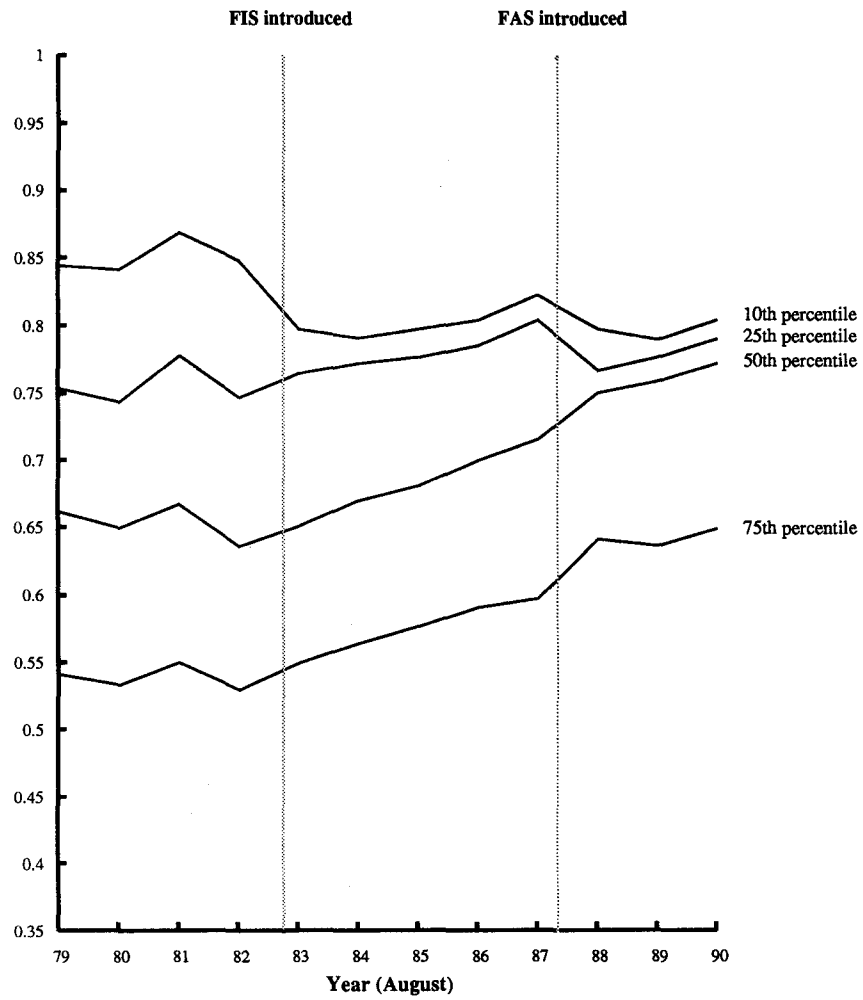
Figure 2.5e: Replacement Rates, 1979 to 1990 (Four Children)

Figure 2.5f: Replacement Rates, 1979 to 1990 (Five Children)

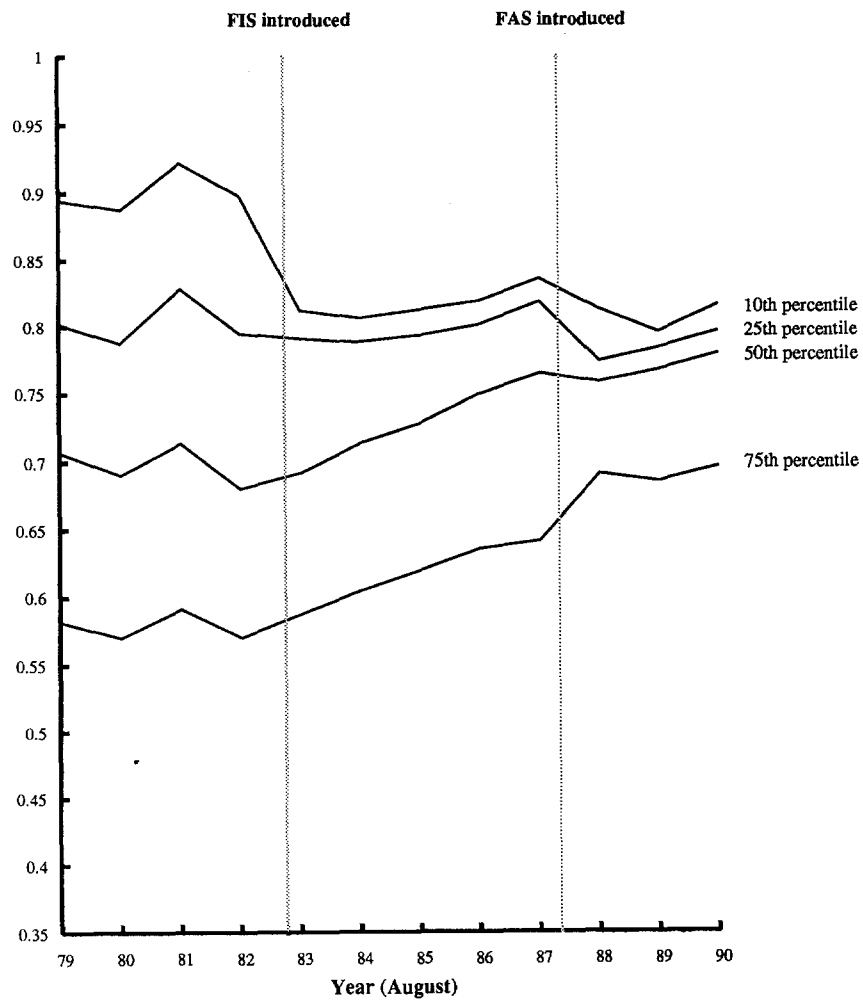
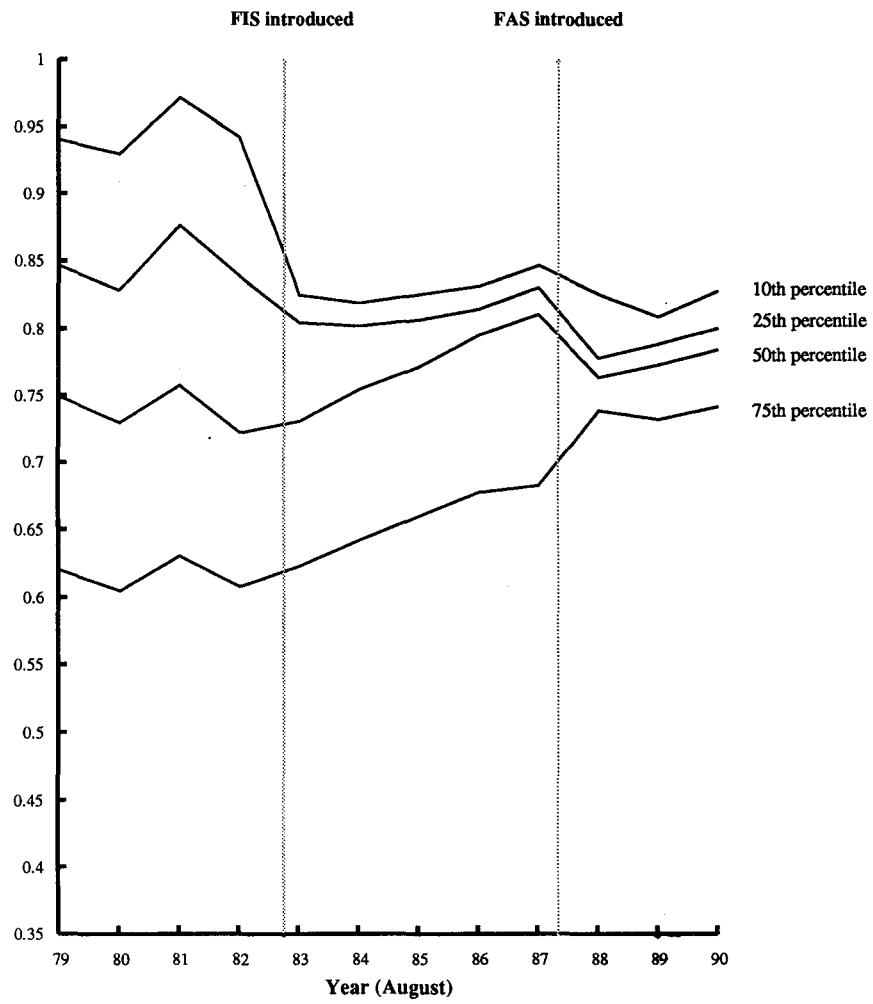


Figure 2.5g: Replacement Rates, 1979 to 1990 (Six Children)



percentile wage, replacement rates were significantly higher when they had two children (Figure 2.5c) than when they were childless (Figure 2.5a). But over the decade the increase in replacement rates was much less for men with two children - with a significant convergence towards the replacement rate of men without children.

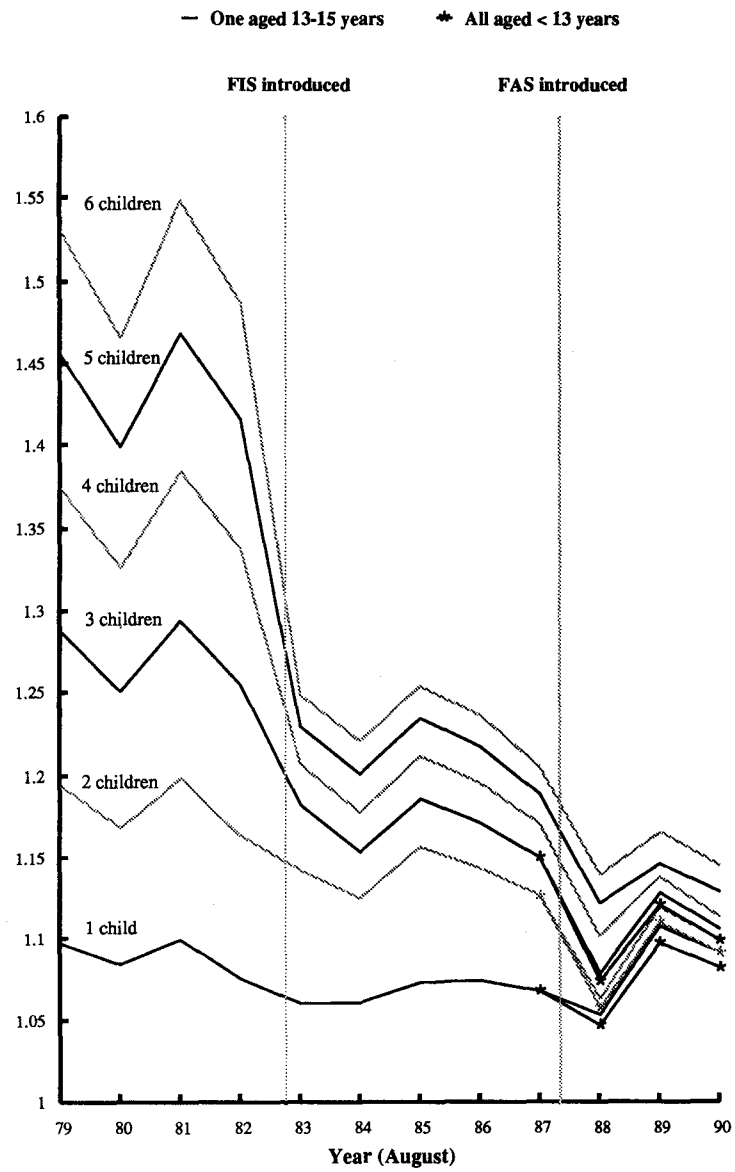
For those with three children, replacement rates actually fell slightly for those at the 10th percentile whilst for larger families the fall was even more dramatic. Men with a wage at the 10th percentile and with six children, for example, faced replacement rates of around 95 per cent in the early 1980s. As was noted in the introduction, this was a major rationale for the introduction of the FIS scheme in 1983. As Figure 2.5g shows, FIS did indeed lead to a large fall in the replacement rate for these families.

The introduction of FAS, on the other hand, was accompanied by increases in benefit rates, and so had less impact upon replacement rates. For large families with slightly higher incomes (at the 25th and 50th percentile), however, the higher income test threshold of the FAS scheme meant a much greater level of income support was received when employed, and so their replacement rates fell after 1987. The increase in replacement rate in 1988 for those at the 75th percentile in Figure 2.5g reflects the fact that families at this level of income were ineligible for FAS, whilst unemployment benefits had increased. This assumes that FAS entitlement was assessed on a current basis, though as noted above some families would have been eligible to continue to receive full FAS for some period after gaining employment whatever their wage level.

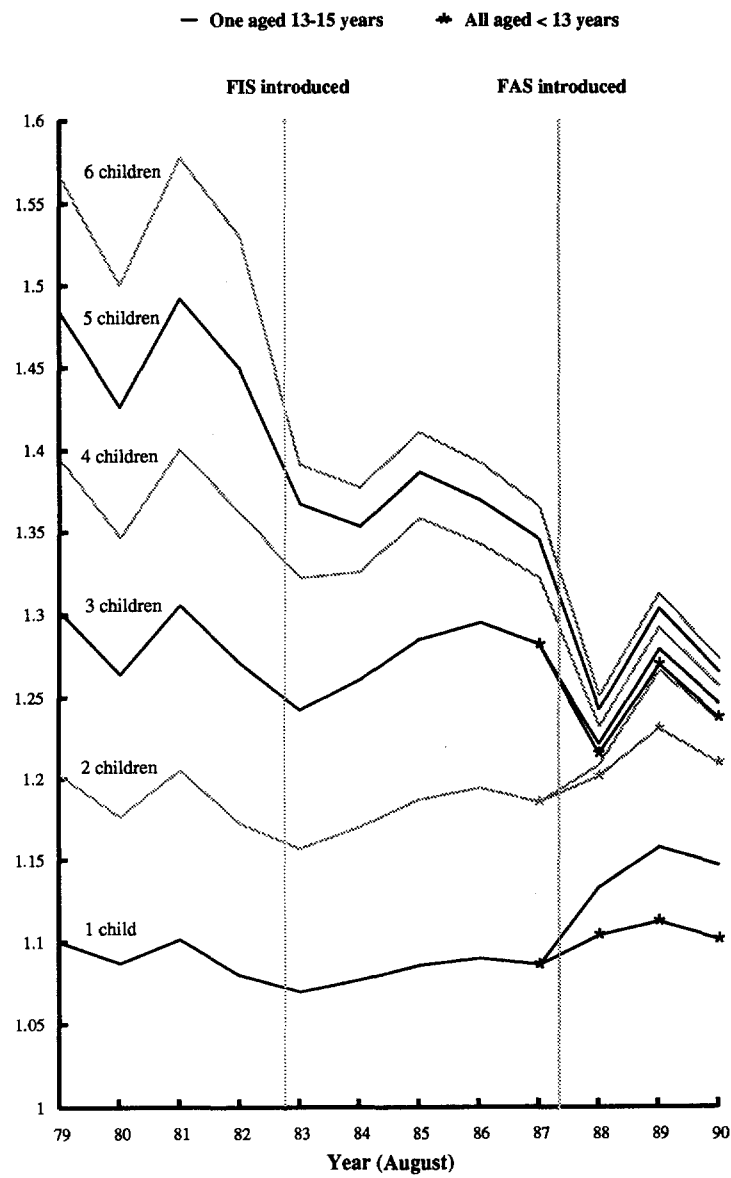
2.4 Relative Replacement Rates

One way of bringing into clearer focus the effect of changing rates of family assistance on replacement rates is to more specifically compare the replacement rates of families with children and those of families without children. This is done in Figures 2.6a to 2.6d where relative replacement rates are presented. Figure 2.6a thus shows the trends in the ratio of the replacement rates of families with different numbers of children who receive a wage at the 10th percentile, divided by the replacement rate for married men without children receiving the same wage.

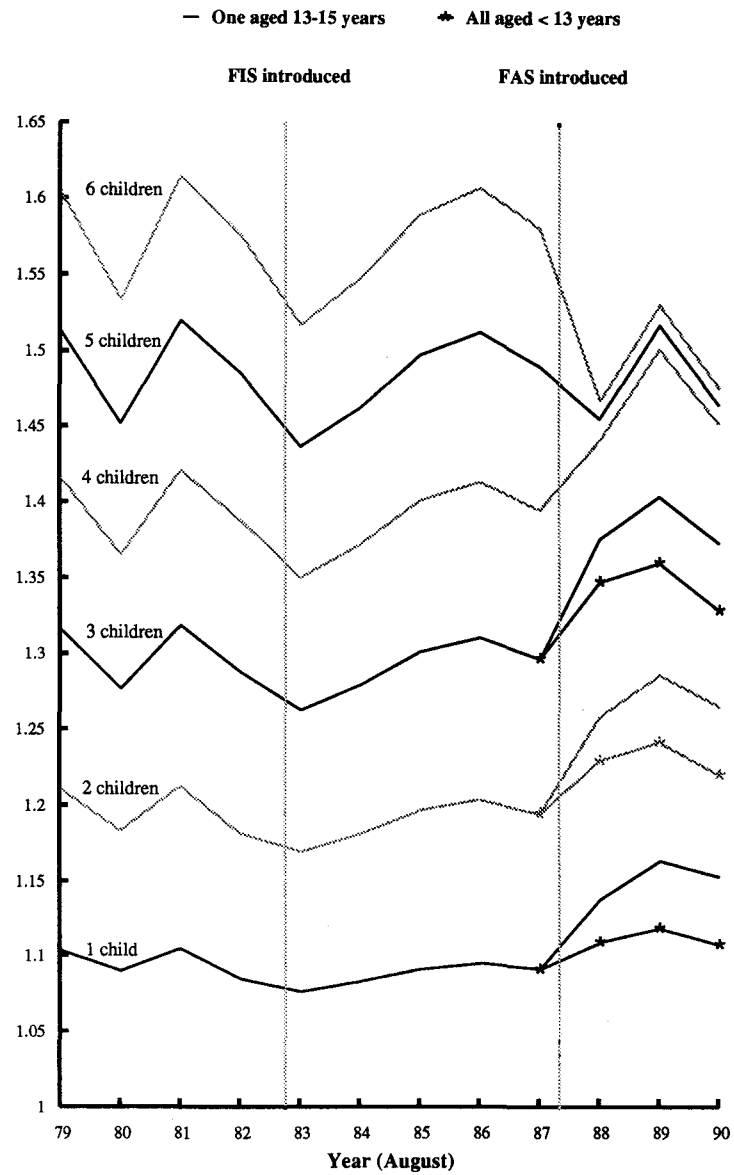
**Figure 2.6a: Relative Replacement Rates for Wage at 10th Percentile,
by Number of Children, 1979 to 1990**



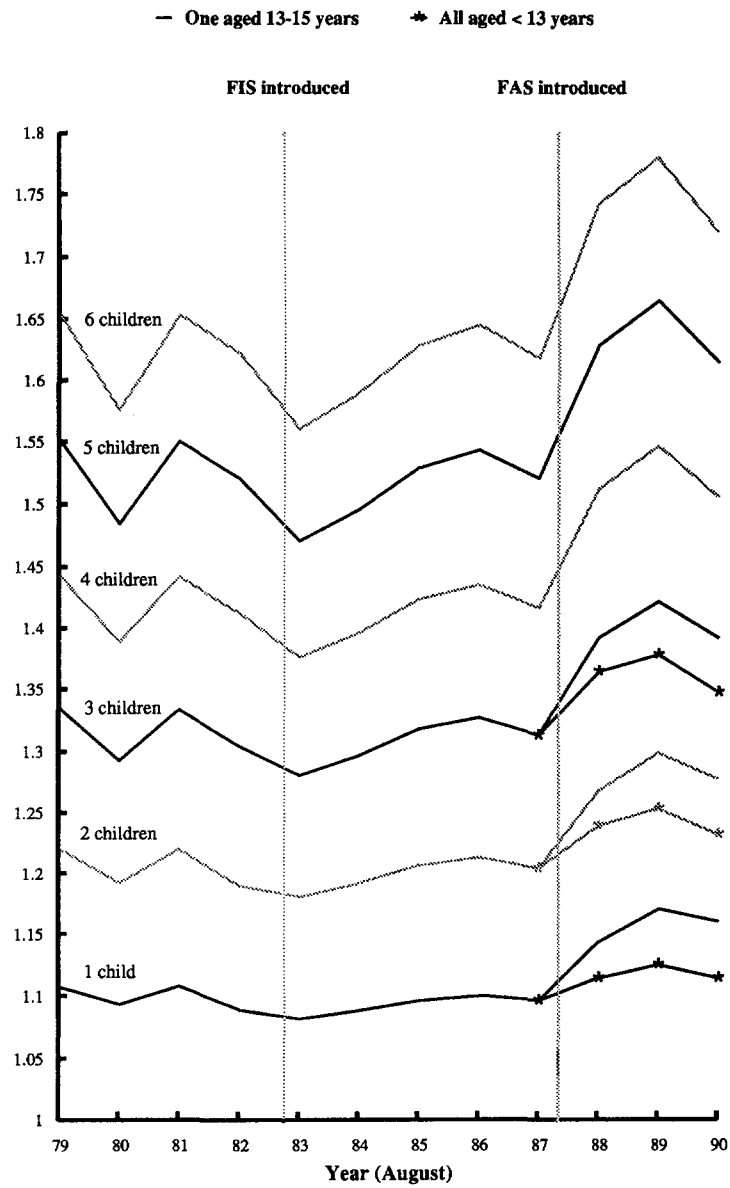
**Figure 2.6b: Relative Replacement Rates for Wage at 25th Percentile,
by Number of Children, 1979 to 1990**



**Figure 2.6c: Relative Replacement Rates for Wage at 50th Percentile,
by Number of Children, 1979 to 1990**



**Figure 2.6d: Relative Replacement Rates for Wage at 75th Percentile,
by Number of Children, 1979 to 1990**



Whilst replacement rates for families with children have remained significantly above those for childless couples over the whole period, the reduction in this divergence for those with low wages is dramatic. For families with six children, for example, the introduction of FIS saw the relative replacement rate drop from around one and a half to one and a quarter (Figure 2.6a). By the end of the decade, replacement rates for families with six children and at the 10th percentile of wages were only 15 per cent higher than those of childless couples.

At higher wage levels the effect is less dramatic. At the 25th wage percentile relative replacement rates were lower in 1990 than in 1982 for families with three or more children - though they were higher for those with smaller families (Figure 2.6b).

At median earnings, replacement rates were unaffected by the introduction of FIS, though the increase in the dependent spouse rebate for families with children in 1983 led to a general fall in their replacement rates relative to families with no children (Figure 2.6c). With the introduction of FAS in December 1987, relative replacement rates increased for smaller families receiving median wages. This is because their income was too high to receive FAS payments but additional unemployment benefit for children was increased at the same time. Median wage families with four or more children received some FAS, and for those with six children, this was sufficient to lower their replacement rates relative to those of men without children.

Finally, with wages at the 75th percentile, no families were eligible for FIS or FAS, and so the variations in relative replacement rates largely reflect the increases in Dependent Spouse Rebate in 1983 together with the increases in additional benefit for families with children.

3 Behavioural Responses

Whilst family assistance changes did lead to major changes in replacement rates over the 1980s for some family types and at some income levels, a key question is whether these changes had any impact on behaviour. In other words, did the decreases in replacement rates that occurred for some family

types lead to an increase in the job search (or job retention) effort of men in these families?

Clearly the major demographic and labour market changes of the 1980s mean that we cannot answer this question simply by examining the trends in unemployment rates for those family types which experienced changes in replacement rates. Instead it is necessary to examine the way in which changes in unemployment rates differed between different demographic groups, and to see if these patterns are consistent with the replacement rate patterns shown in the previous section. For example, married men without dependants can be used as a 'control group' unaffected by the family assistance changes. The empirical question then becomes whether the trends in relative replacement rates shown in Figures 2.6a to 2.6d are reflected in the relative unemployment rates of men with different numbers of children.

3.1 Awareness of Financial Incentives

There are many reasons, however, why one might expect to find no empirical relationship between replacement rates and behaviour. Most fundamentally, it may be the case that immediate financial incentives are relatively unimportant factors in decisions about job search effort and unemployment exit (or unemployment entry). For example, job search decisions may be made much more in terms of longer term returns (such the increments to human capital available from employment) than from the short-term calculations of relative advantage described in the previous section. Moreover, if unemployment is predominantly involuntary, then variations in labour demand across demographic groups and time may be so great as to swamp any impact of varying job search effort.¹²

One further explanation that needs to be considered in the case of family assistance payments, however, is that the unemployed may have had very little knowledge of the financial outcomes associated with different

12 However, even if the cause of unemployment is insufficient aggregate demand it does not follow that the analysis here would find no behavioural response. Whilst variations in job search effort across different groups may not influence aggregate unemployment, it may still change the distribution of employment between these groups.

behaviour. In particular, the take-up of entitlements to family assistance payments has often been quite low, suggesting a general lack of awareness of the FIS and FAS programs. One estimate of the take-up of the FIS scheme, for example, concluded that take-up was extremely poor. Using data from the 1986 Income Distribution Survey, it was estimated that only 13.6 per cent of apparently eligible families were receiving FIS at the time of the survey. Among wage and salary earner couples the take-up rate was considerably higher but still only just over 27 per cent (Whiteford and Doyle, 1991).

With the introduction of the FAS scheme, the higher levels of payment and greater publicity has meant that public awareness and hence the take-up rate has been significantly higher than that attained for FIS. Bradbury, Doyle and Whiteford (1990), for example, estimated a take-up rate of 58 per cent in expenditure terms in 1989-90 and the Department of Social Security has estimated that take-up had reached 90 per cent (also in expenditure terms) by 1991.¹³

Nonetheless, a survey conducted for the Department of Social Security in 1989 suggests that for unemployment beneficiaries with children, awareness of the FAS scheme may have been particularly low. This survey found evidence of large flows between unemployment and FAS receipt with 30 per cent of families currently receiving FAS having received a pension or benefit in the previous two years (in two thirds of these cases UB was received). However, of those parents currently receiving a pension or benefit, only 53 per cent of men and 62 per cent of women were aware of the existence of the FAS scheme.¹⁴

When this information is combined with the complexity of the entitlement rules described earlier, it might suggest that any change in replacement rates due to family assistance changes could only have a negligible impact upon job search behaviour. However whilst this clearly suggests a greater role for publicity campaigns, it would be premature to jump to any conclusions

13 The differences between these two estimates are unlikely to be mainly due to the different years, but rather are a reflection of the difficulty of making accurate estimates of take-up.

14 Source: unpublished tables from DSS. The basic survey results are described in Department of Social Security (1990).

about behavioural impacts. Quite possibly unemployment benefit recipients might learn of the impacts of FAS (or FIS) payments indirectly, for example through friends' expressions of how well off they are after they gain employment. In any event, over half of the pensioners/beneficiaries were aware of the FAS program. Though this proportion was almost certainly even lower for FIS, it does not entirely preclude some behavioural response.

3.2 Hypotheses

Given that men without children experienced the same labour market conditions but did not receive any family assistance payments, they are the natural control group to use for the examination of any such behavioural changes. The empirical question is thus whether the relative unemployment rates of men with children relative to those of men without children changed in response to the changes in relative replacement rate.

Figures 2.6a to 2.6d clearly show, however, that these relative replacement rates vary significantly with the likely wage that an unemployed person might receive. Comparing 1986 with 1982, Figures 2.6c and 2.6d indicate that at higher wages the relative replacement rates were largely unchanged. At the 25th percentile of wages relative replacement rates fell for very large families, but were again unchanged for those with four children or fewer. At the 10th percentile, however, some very large changes between the two years are apparent, with dramatic falls in the relative replacement rate for large families, and some falls for all families with more than two children.

If it is assumed that replacement rates are likely to have a greater effect on unemployment exit than entry, it is necessary to re-interpret these wage percentiles. As Table 2.1 indicated, people leaving unemployment are likely to be facing lower wages than average. For example, the median wage for those who had received UB was close to the overall 25th percentile, and significantly more than 10 per cent of the UB leavers would have received wages below the overall 10th percentile. This means that we should place greater weight on the lower wages than might be apparent from the percentile descriptions.

Overall, this comparison suggests that if these changes in replacement rates were important, we might expect a fall in the relative probability of UB

receipt between 1982 and 1986, particularly in families with three or more children. When cases are disaggregated by predicted wage one might expect little change in relative probabilities of UB receipt among those with high incomes, but a significant fall in the probability of UB receipt for those with low predicted wages.

The comparison of 1982 and 1986 with 1990 is however, more complicated, as the introduction of FAS was accompanied by significant increases in additional pensions and benefits. Thus in some cases replacement rates rose, whilst in other cases they fell.

For men with 75th percentile wages, replacement rates actually rose after 1987, particularly for the largest families. At median wages, this continued to be the case for families with less than five children. At the 25th percentile replacement rates fell for those with three or more children, but rose for smaller families, whilst at the 10th percentile replacement rates fell after 1986 for all families with two or more children.

In addition, the additional publicity associated with FAS, and the higher take-up rate might mean a greater perception of decreased relative replacement rates than these figures would indicate. Similarly, the possibility of receiving a non income-tested FAS after leaving unemployment would lead to lower relative replacement rates than those shown here - though it is unlikely that many unemployed men would be aware of this.

Overall therefore, the effect of replacement changes on behaviour between 1986 and 1990 is likely to be mixed. Taking into account the lower likely wages of UB recipients and the points in the previous paragraph, it would seem that, on balance, an expected behavioural response might be a fall in the relative unemployment rates of those in large families, but possibly an increase in the relative unemployment rates of those with only one or two children. Disaggregating by predicted wage, one might expect a clearer indication of falls in relative unemployment probabilities among low wage workers.

3.3 Observed Unemployment and UB Receipt Patterns

Administrative Statistics

Since a key policy issue is the impact of these changes upon the patterns of receipt of income support payments, an obvious place to start is by examining the trends in benefit receipt over the past decade.

Table 3.1 shows the number of married male UB recipients with different numbers of dependent children in November 1982, 1986 and 1990. These dates cover the pre-FIS, FIS and FAS periods of family assistance respectively and also correspond to the dates of the major income surveys conducted by the ABS (see below).

Table 3.1 does indeed show a decrease in the proportion of unemployment beneficiaries with children over this period. Of married male unemployment beneficiaries, 67.3 per cent had children in 1982. By 1986 this had fallen to 66.1 per cent, whilst by 1990 only 62.2 per cent had children. However this does not necessarily mean that the propensities of families of different size to receive UB has changed. Two important additional factors influencing the trend shown in the table are the changing demographic composition of the population and the altered administration of unemployment benefit after the restructuring of youth payments in 1988. The latter meant that, along with the expansion of educational allowances to children from low income families, unemployment beneficiaries no longer received additional payments for their dependent children aged over 15 who were receiving AUSTUDY. This consequently led to a reduction in the proportion of beneficiaries with children.

Income Survey Data

The change in the proportion of beneficiaries with children between 1982 and 1986 on the other hand, can be explained largely in terms of the decrease in the proportion of couples with children. Table 3.2 shows the family type distribution of married males aged 21 to 64 who were either employed full-time, unemployed or receiving unemployment benefit in the

Table 3.1: Married Male UB Recipients By Number of Dependent Children, November 1982, 1986 and 1990

Year	No. of Children						Total
	0	1	2	3	4	5+	
1982							
N(000)	41.7	27.0	29.8	17.3	7.3	4.4	127.6
%	32.7	21.2	23.4	13.5	5.8	3.5	100.0
1986							
N(000)	45.9	26.7	31.4	18.4	8.1	4.6	135.1
%	33.9	19.8	23.3	13.6	5.9	3.4	100.0
1990							
N(000)	50.0	26.3	28.7	16.6	7.0	3.5	132.1
%	37.8	19.9	21.8	12.6	5.3	2.6	100.0

Source: Department of Social Security, *Quarterly Survey of Unemployment Benefit Recipients*, various years.

Table 3.2: Married Males Aged 21-64 Who Were Either Unemployed, Receiving UB or Employed Full-Time, By Number of Dependent Children Aged Under 21

Year	No. of Children					Total
	0	1	2	3	4+	
1982						
%	33.6	20.2	28.5	13.2	4.5	100.0
1986						
%	34.8	20.4	27.7	12.5	4.6	100.0
1990						
%	37.9	20.3	26.1	11.8	3.9	100.0

Source: ABS 1982, 1986 and 1990 *Income Distribution Survey*, Unit Record Files.

corresponding years.¹⁵ This has been calculated from the unit record files of the *1982 Income and Housing Survey* conducted from September to November 1982, the *1986 Income Distribution Survey* conducted from September to December 1986, and the *1990 Income and Housing Amenities Survey* conducted from October to December 1990.¹⁶

Between 1982 and 1986, the proportion of this wider group of married men with children rose by 1.2 percentage points - a similar amount to that of unemployment beneficiaries (0.8 percentage points). Even more significantly, the proportion of unemployment beneficiaries with four or more children remained constant at 9.3 per cent. Though this was a higher proportion than the proportion of the population in the two years (4.5 or 4.6 per cent) it certainly did not fall.¹⁷ These results therefore suggest that there was no behavioural response to the changed replacement rates between 1982 and 1986 - though they can tell us little about changes after the introduction of FAS.

However, the data shown in Tables 3.1 and 3.2 are collected at a high level of aggregation, and may hide important variations within population sub-groups. Unemployment rates, for example, vary significantly with age and education level and these could conceivably have varied between the different demographic sub-groups so as to mask any behavioural change. Most importantly, the patterns of replacement change, and the consequent behavioural hypotheses summarised above suggest that quite different responses should be evident for men with different wage outcomes. Ideally

15 The age range for the population was 20 to 64 in 1982.

16 Table 3.2 (and subsequent tables) refers to those cases in the current income scope of the respective surveys. The population of married men who were either employed full-time, unemployed or receiving unemployment benefits, has been chosen to represent the population of all men potentially available to receive unemployment benefit. The full-time self-employed are included because of different self-employment definitions in the different years. Part-time workers and people not in the labour force are excluded from the analysis because the focus is on the choice between full-time work and unemployment.

17 The higher proportion may partly reflect the wider definition of dependant in the UB statistics, but also reflects higher unemployment rates among men with large families (see below). This **may** in turn be a response to the generally higher replacement rates for large families, but there are many other potential explanations.

one would like to examine changes in unemployment probabilities separately for men with high and low wage levels.

Whilst it is obviously difficult to know what the likely wage levels of unemployed men might be, it is possible to use known characteristics such as age and education level to at least make some broad distinctions across potential wage levels. To do this, it is necessary to turn to a richer source of data that includes this information for both the employed and unemployed population. The three ABS income surveys utilised in Table 3.2 are used here to provide estimates of the changing pattern of unemployment and beneficiary rates between 1982, 1986 and 1990. As well as covering the whole population, these surveys are very similar in methodology and variable definitions.

As for Table 3.2, the population for the analysis is married males, aged 21 to 64, whose income unit was in the current scope of the survey and who were either receiving unemployment benefit, unemployed or who were employed full-time at the time of the survey.¹⁸ Two dependent variables are considered: the unemployment rate (defined as the number of unemployed men divided by the number who were either unemployed or full-time employed) and the UB rate (defined as the number of unemployment beneficiaries divided by the number of men who were either beneficiaries or full-time employed).¹⁹ The former of these variables is of most interest for labour market policy, whilst the second is of more direct interest to income support policy. Though there is significant overlap between these two variables this is by no means complete. In 1986, for example, only 73 per

18 Ideally, this analysis could be restricted to families where the wife is not working as this is the family type for which the replacement rate calculations have been made. However, as is noted in Section 2.1, the effect of changes in wives' employment patterns has been to reinforce the replacement rate trends described here.

19 In the 1982 and 1986 surveys, the questionnaire design implied that full-time workers were assumed to be not receiving UB. This was not the case in 1990 where there were a significant number of men who were both full-time employed and receiving UB. This might occur, for example when a person has just begun a job, or possibly where they have taken a temporary job and had their benefit suspended rather than cancelled. For consistency with the earlier surveys, such men were counted here as not receiving benefit. It should also be noted that the definition of unemployment also varied slightly between surveys. The 1986 survey, only classified people who were looking for work as unemployed if they were available to start work in the reference week, whilst the 1990 survey did not apply this test.

cent of the unemployed in the sample were beneficiaries, and only 77 per cent of the beneficiaries were unemployed. The main reasons for these divergences are that UB is subject to a waiting period and an income test (e.g. on spouse's income) so that the unemployed do not always receive UB, and that beneficiaries may work part-time, or may be classified by the ABS as out of the work force rather than unemployed.

Table 3.3 shows the unemployment and UB rates obtained for these three years for men with different numbers of dependent children.²⁰ In all years there is a clear tendency for both the unemployment and UB rate to generally increase with family size. In 1990, for example, men with four children had an unemployment rate of 10.1 per cent, compared to 5.5 per cent for men without children. This **could** be a result of the higher replacement rates facing these larger families, but may equally be a reflection of variations in fertility patterns across social class, educational and age groups.

The key question here, however is whether this relationship between unemployment and family size has changed over time in response to the replacement rate changes shown in the previous section. As in Table 3.1, Table 3.3 shows no evidence that this has been the case. In 1986, for example, the bottom two panels of the table show an overall unemployment rate for married men 7 per cent higher than in 1982, and a UB rate 16 per cent higher. Though the unemployment rate for families with 1, 2 or 3 children actually fell (and the UB rate fell for those with 1 or 2 children), for the largest families the unemployment (and UB) rate **increased** at a faster rate than the overall average. Whilst this result could simply be a reflection of the small size of the sample (only about 190 men had four or more children in the 1986 sample) it is for this largest family type that the behavioural change hypothesis predicts the greatest relative fall in unemployment rates.

20 Dependent children are here defined as children under 15, or full-time student children aged under 21. These rates are calculated using the case weights provided by the ABS. The pattern is very similar in the unweighted data (as used in the logistic regression below). Also a very similar pattern of unemployment rates applies when disaggregated by the number of children aged under 16 (for whom the FAS related replacement rates calculated in Section 2 apply).

Table 3.3: Unemployment and UB Rates of Married Men with Different Numbers of Children, 1982, 1986 and 1990

Year	No. of Children (under 21)					Total
	0	1	2	3	4+	
Unemployment Rate (%)						
1982	3.8	4.2	4.2	5.3	7.8	4.4
1986	4.6	4.1	4.1	5.2	9.6	4.7
1990	5.5	5.6	5.5	6.1	10.1	5.8
UB Rate (%)						
1982	2.9	3.9	3.8	4.4	7.1	3.7
1986	4.6	3.3	3.2	5.4	10.5	4.3
1990	3.6	5.1	4.2	4.9	10.4	4.5
Unemployment Rate Relative to 1982						
1986	1.21	0.98	0.98	0.98	1.23	1.07
1990	1.45	1.33	1.31	1.15	1.29	1.32
UB Rate Relative to 1982						
1986	1.59	0.85	0.84	1.23	1.48	1.16
1990	1.24	1.31	1.11	1.11	1.46	1.22

Source: ABS 1982, 1986 and 1990 *Income Distribution Survey*, Unit Record Files.

Between 1986 and 1990, on the other hand, the unemployment and UB rates rose proportionately slower in the largest family size, suggesting that the low rates in 1982 may be a statistical aberration. Nonetheless, there is certainly no evidence of a relative fall in unemployment or UB rates for larger families.

Interactions with Expected Wages

To ascertain whether this lack of relationship applies also to men with lower expected wage levels, a more sophisticated analysis is required. Whilst it is not possible to know with any precision the likely wages of different unemployed people, it is possible to estimate their expected wage on the basis of a range of known characteristics. This is done here by estimating an ordinary least squares wage equation for the full-time employed men in

each of the three surveys - with this wage equation then used to estimate a predicted wage for each man in the sample.

The independent variables used for these regressions are age (a cubic polynomial), state (dummy variables) and education level (dummy variables). These variables only give a weak prediction of likely wages, and so this predicted wage variable should essentially be considered as a variable which summarises the regional, age and educational factors which influence male wage levels.²¹

The trends in replacement rates shown in Section 2 of this report suggest that even if there is no change in the average relationship between family size and unemployment, such a change might be expected among those men with large families but with the lowest expected wages. In general, men with the lowest expected wages might be anticipated to have the highest unemployment rates. This could reflect their higher replacement rates, but more fundamentally is a result of their lack of human capital which makes them susceptible to both unemployment and lower wages. This, together with the unemployment/family type relationship described above, means that we would generally expect low wage men in large families to have the highest unemployment rates. Given the change in replacement rates, the formal hypothesis to be tested is thus that after 1982, unemployment rates for these men fell relative to those with smaller families or with higher wages.

The most straight-forward way of testing this hypothesis is with the use of a logistic regression model which predicts unemployment or UB status on the basis of both numbers of dependants, predicted wage, year of observation and interactions of these variables. More specifically, the following model is estimated (separately for unemployment and UB probabilities)

$$\begin{aligned} \log(p/(1-p)) = L = & \beta_0 + \beta_1.y86 + \beta_2.y90 + \beta_3.deps + \beta_4.wage + \beta_5.deps.wage + \\ & \beta_6.y86.deps + \beta_7.y90.deps + \beta_8.y86.wage + \beta_9.y90.wage + \\ & \beta_{10}.y86.deps.wage + \beta_{11}.y90.deps.wage \end{aligned}$$

where p is either the probability of unemployment or UB receipt, $y86$ and $y90$ take the value 1 in the respective years and zero otherwise, $deps$ is the

21 The dependent variable was $\log(\text{wage})$, and the R^2 for the equation was 0.19, 0.16 and 0.18 in the three years.

number of dependent children aged under 16, wage is the log predicted wage²², and the β s are parameters to be estimated. Only children under 16 are counted in order to maintain a close compatibility with the results described in Section 2.

The full specification of interaction terms in the equation permits the relationship between family size and unemployment rates to vary with both wage level, as well as over time. The maximum likelihood estimates of this equation applied to both unemployment and UB rates are presented in Table 3.4.²³

The β estimates shown in this table indicate the effect of each characteristic on the 'log-odds' of being either unemployed or receiving benefit. These parameters have asymptotic normal distributions, and hence where β is more than twice its standard error (s.e.) the parameter can be considered significant at the 5 per cent level. An alternative, and more easily interpreted, way of describing these results is shown in Table 3.5. This table shows the estimated unemployment and UB rates for men in two family sizes and at two income levels in each year—thus covering the full specification of interactions shown in Table 3.4.

As expected, these tables show both unemployment and UB rates increasing with numbers of dependent children and decreasing with predicted wage. Each additional child, for example, is associated with an increase in the log odds of unemployment of 7.16 (Table 3.4). For men with median wages (defined as in Figure 2.1) the fitted unemployment rate in 1982 rises from 3.6 per cent for those with no children, up to 8.4 per cent for those with four children, whilst at a 10th percentile wage the unemployment rate for men with no children is 8.9 per cent and 61.3 per cent for those with four children (Table 3.5).

Of primary interest, however, is whether these relationships have changed over time. For this it is necessary to examine the interactions of family size

22 Wage is entered in log form so as to abstract from inflation. A general multiplicative increase in wages will then show up in the constant term of the equations rather than in the wage parameter.

23 The SAS logistic procedure was used (SAS Institute, 1989).

Table 3.4: Logistic Regression Estimates for Unemployment and UB Probabilities.

	Dependent Variable			
	<i>Unemployment</i>		<i>UB Receipt</i>	
	β	$\beta/s.e.$	β	$\beta/s.e.$
Constant	10.69	2.4	20.25	3.7
y86	10.75	1.4	9.38	1.1
y90	9.12	1.6	18.10	2.5
deps	7.16	2.6	5.35	1.7
wage	-2.41	-3.2	-4.11	-4.3
deps.wage	-1.20	-2.6	-0.87	-1.6
y86.deps	-2.16	-0.5	-4.74	-1.0
y90.deps	-1.13	-0.3	-4.48	-1.1
y86.wage	-1.66	-1.3	-1.33	-0.9
y90.wage	-1.20	-1.3	-2.54	-2.1
y86.deps.wage	0.41	0.5	0.81	1.0
y90.deps.wage	0.26	0.4	0.78	1.1
Number of Cases				
1982	7,600		7,629	
1986	4,023		4,012	
1990	7,063		6,969	
Mean Probability				
1982	0.044		0.038	
1986	0.048		0.045	
1990	0.059		0.047	

and predicted wages with the y86 and y90 variables. For the most part these are individually not statistically significant, with the only exception being the y90.wage interaction for UB receipt. As a group however, these interaction parameters are marginally significant for the unemployment model, though not for the UB model.²⁴

The positive (but non-significant) values for the y86.deps.wage and y90.deps.wage variables do however seem to provide some weak support for the behavioural response hypothesis. This is because these estimates suggest a weaker relationship between wages and unemployment (and UB) rates in large families in 1986 and 1990 than in 1982. The patterns of

24 $\Delta 2\log\text{-likelihood} = 12.2$ and 6.6 respectively, c.f. $\chi^2_{6,0.1} = 10.6$ and $\chi^2_{6,0.05} = 12.6$

Table 3.5: Predicted Unemployment and UB Rates in Selected Circumstances

	<i>Unemployment</i>		<i>UB Receipt</i>	
	<i>p</i> %	95% Confidence Interval	<i>p</i> %	95% Confidence Interval
<i>Wage at 10th Percentile</i>				
No children				
1982	8.9	5.1– 15.1	12.6	6.6– 22.6
1986	16.0	8.5– 27.9	22.2	12.0– 37.3
1990	19.1	13.4– 26.6	31.6	21.3– 44.1
Four children				
1982	61.3	33.6– 83.2	64.8	34.4– 86.6
1986	59.1	28.2– 84.2	44.0	18.5– 73.2
1990	65.7	45.8– 81.3	63.3	41.8– 80.5
<i>Wage at 50th Percentile</i>				
No children				
1982	3.6	3.1– 4.3	2.8	2.3– 3.3
1986	3.6	2.8– 4.5	3.1	2.4– 4.0
1990	4.8	4.1– 5.6	2.6	2.1– 3.2
Four children				
1982	8.4	6.8– 10.4	8.4	6.7– 10.5
1986	7.3	5.3– 10.0	7.4	5.4– 10.1
1990	7.5	5.8– 9.7	7.8	5.9– 10.3

Notes: Derived from the estimates in Table 3.4. The 10th percentile wages were \$221, \$291 and \$360 in the three respective years, whilst the median wages were \$328, \$435 and \$553.

replacement rates described in Section 2 would suggest a hypothesis that after 1982 the reduction in replacement rates for low wage men in large families led to their unemployment rates being generally lower relative to those men in other situations. It is interesting therefore to examine the fitted unemployment and UB probabilities in Table 3.5 for men with 10th percentile wages and with four children. Two comparisons suggest themselves. First with men at the same wage level but with no children, and second, with those with the same number of children, but with median expected wages.

Whilst there is no clear choice for using any particular method of comparison, the simplest way is to compare the ratios of unemployment

probabilities in the pairs of family types in each of the years. Comparing low wage men with four and with no children, it is indeed apparent that their unemployment rate has become more similar (though the change is not statistically significant). In 1982, men (at the 10th percentile) with four children were almost seven times more likely to be unemployed than men with no children ($61.3/8.9=6.9$). In 1986 and 1990 however, this ratio dropped to under four. A similar pattern holds for UB receipt.²⁵

In contrast, however, we do not find that the unemployment patterns of low wage men with four children became more like median wage men with four children - despite the convergence of their replacement rates. In 1982 men with the lower wages had unemployment rates 7.3 times those with median wages. In 1986 and 1990, however, this was higher, at over eight times. For UB receipt the ratio was 7.7, 6.0 and 8.1 in the three years.

What do these contrasting results mean? The simplest interpretation of these patterns is that it has been among men with **no** children that the main changes occurred. That is, in 1986 and 1990 the variation in unemployment rates with wage level for men with no children was greater than in 1982 (the parameters for y86.wage and y90.wage are negative). Compared to the other years, therefore, 1982 was unusual in that low wage men with no children had relatively low unemployment (and UB) rates. This is the reason why low wage men with many children had relatively high unemployment rates in 1982.

In summary therefore, the logistic regression results also do not support the behavioural response hypothesis. The interactions of unemployment and benefit receipt with time are both only marginally statistically significant and do not fit with the hypothesised relationships. This conclusion however, cannot be definitive. The estimation of predicted wages is only relatively crude, and can best be interpreted as a summary variable indicating those men with age, educational and locational characteristics likely to result in lower wage levels.

25 Similar patterns for unemployment and UB receipt do not provide any reinforcement of these conclusions in a statistical sense, as these two variables are highly correlated.

Ideally a prediction equation of this type should also directly include these same (and other) demographic characteristics in case they also have changed over time. However the definition of the predicted wage described above means that such variables are strongly collinear with the predicted wage variable, and so such a model does not yield statistically significant relationships.

4 Summary and Conclusion

In Section 2 of this report a range of calculations of unemployment benefit replacement rates were undertaken for married men. The main conclusions of these calculations were as follows.

- For married men without children, replacement rates have steadily increased since 1979. This is primarily because of falls in real wages (particularly for those at the bottom of the wage distribution), but also because of some increases in unemployment benefit payments. Even for married men with wages at the 10th percentile, however, the replacement rate was still significantly below 75 per cent at the end of the decade.
 - Whilst the trend in replacement rates over the 1980s is little different from the above for families with one child, even when there are only two children significant differences are apparent - particularly for those receiving the lowest wages. For men on a 10th percentile wage, replacement rates were significantly higher when they had two children than when they were childless. But over the decade the increase in replacement rates was much less for low wage families with two children compared to those with none - so that by 1990 their replacement rate was only slightly above that of the latter group.
 - For families with three children, replacement rates actually fell slightly for those at the 10th percentile whilst for larger families the fall was more dramatic. Men with a wage at the 10th percentile and with six children, for example, faced replacement rates of around 95 per cent in the early 1980s. These were dramatically reduced (to around 85 per cent) with the introduction of FIS in 1983.
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- The introduction of FAS, on the other hand, was accompanied by increases in benefit rates, and so had less impact upon replacement rates. For families with six children but with slightly higher incomes (at the 25th and 50th percentile) however, the higher income test threshold of the FAS scheme meant a much greater level of income support was received when employed, and so their replacement rates fell after 1987. For men with 75th percentile wages replacement rates actually increased with the introduction of FAS, as their income was too high to receive FAS, but UB rates had increased.
- These calculations of the impact of FAS assume that FAS entitlement was assessed on a current basis. This is likely to be an underestimate of FAS entitlement as the financial year income test means that some people gaining employment may receive full FAS payments for a period after leaving unemployment, even though their wage may be quite high.
- Whilst the introduction of FIS and FAS may have significantly increased the financial attractiveness of low wage employment for men in large families, the tight targeting of these family transfers has also meant an increase in the effective marginal tax rates for further income increases. Thus in 1982 families with four children with a husband on median wage had a disposable income 33 per cent higher than a family where the husband was receiving a wage at the 10th percentile. After the introduction of FIS this difference fell to 23 per cent, whilst by 1988 when FAS was introduced it had fallen to 4 per cent. It should be noted though that the annual income assessment basis of FAS means that in present value terms the effective marginal tax rates would be significantly less than this last estimate implies.

Given that some family types experienced major changes in replacement rates, did this lead to any change in job seeking (or retention) behaviour? In particular, did the unemployment and UB receipt rates of those family types whose replacement rates had fallen most, fall relative to those of families unaffected by the changes? This question was examined in Section 3.

An examination of DSS administrative statistics on numbers of beneficiaries with different numbers of children, and of ABS income survey data in 1982,

1986 and 1990 suggests that there were **no** discernible changes in these relative unemployment or benefit receipt rates.

However the most dramatic changes in replacement rates were confined to those with low expected wages. Hence a more sophisticated analysis was undertaken to test for a change in the unemployment patterns of those men likely to have low wages. This was done by developing a simple prediction model for wages based upon age, state and educational qualifications, and examining the relationship between numbers of dependants and predicted wage in the three ABS income surveys (in 1982, 1986 and 1990). This analysis also, however, found no evidence of the hypothesised behavioural changes.

Because of the limited nature of the data available, it would not be appropriate to assert that this analysis conclusively denies the existence of any such response. In particular the data is not particularly suited to accurately identifying the labour market trends of men with very low wages and very large families. It does seem safe to assert, nonetheless, that any behavioural response to these changes that does exist could only be very small in magnitude and/or confined to a very small section of the population.

What reasons might be advanced for such a weak or non-existent behavioural response? Three main explanations stand out.

- The first is that the financial incentives as described in the replacement rate calculations in Section 2 simply are not important in influencing the job search (or job retention) behaviour of unemployed men.
- A weaker variation of this argument is that the effect of these financial incentives is only relatively weak, and is swamped by variations in other factors such as the non-cash and long term financial returns from employment and labour market demand.
- Finally, a lack of knowledge by the unemployed about family transfers may have made the calculations described here irrelevant for many families.

Any policy response to the results contained in this report would clearly vary depending upon which of these explanations was afforded priority.

Given the relatively low cost of providing information to the unemployed, however, there would seem to be strong grounds for acting in this direction.

In this regard the proposed integration of the FAS and beneficiary child payments systems over the next few years will be of great importance. After January 1993, FAS and additional benefit for children will be the same payment, and so it will become more obvious to unemployment beneficiaries that there is a separate payment for children which they may continue to apply for when they gain employment. It would be interesting to repeat the analysis of the previous section after these changes have been implemented.

Nonetheless, there are still other policy changes that may assist in smoothing the transition from UB to family assistance. The current (and proposed) regulations for assessing the level of FAS entitlement after leaving UB are complicated, and unlikely to be understood even by those beneficiaries who may be aware of the existence of FAS. This uncertainty may of itself create a disincentive to leave the security of unemployment benefit. There may thus be grounds for implementing a simpler transition scheme from UB to FAS entitlement - possibly involving an extended period of non-income tested FAS eligibility for those people leaving unemployment benefit.

Appendix

Table A: Unemployment Beneficiary Families: Ages of Dependent Children, 1986.

All Beneficiaries with Dependants

No. Aged < 16	<i>No. aged 13 - 15</i>				<i>TOTAL</i>
	0	1	2	3	
1	19852	1810	-	-	21662
2	21598	2159	1906	-	25663
3	11556	4133	1311	-	17000
4	3903	4746	-	-	8649
5	-	584	234	-	818
6	606	813	-	-	1419
>6	466	-	-	491	957
<i>TOTAL</i>	<i>57981</i>	<i>14245</i>	<i>3451</i>	<i>491</i>	<i>76168</i>

Beneficiaries with Dependants All Aged Under 16

No. Aged < 16	<i>No. Aged 13 - 15</i>				<i>TOTAL</i>
	0	1	2	3	
1	17166	1559	-	-	18725
2	21598	738	444	-	22780
3	10596	3386	1093	-	15075
4	3903	4746	-	-	8649
5	-	584	234	-	818
6	606	813	-	-	1419
>6	466	-	-	491	957
<i>TOTAL</i>	<i>54335</i>	<i>11826</i>	<i>1771</i>	<i>491</i>	<i>68423</i>

Source: ABS, 1986 Income Distribution Survey, Unit Record File.

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