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MODELLING POVERTY TRAPS FOR YOUNG PART-TIME WORKERS IN AUSTRALIA

Brian Dollery and Michael Fletcher

Although much is known about the incidence of unemployment in Australia over the recent past, the causes of unemployment remain controversial. Various explanations have been advanced, some of which focus on the unemployment benefits system. The present study examines the problem of high effective marginal tax rates faced by young social security recipients wishing to engage in part-time employment, and the resultant emergence of so-called "poverty traps". We examine budget constraints for unemployed eighteen year olds, both singles and couples, for part-time employment in four low income occupations; namely, brickie's labourer, public service clerk, stationhand and sales assistant. The results indicate that pervasive disincentive effects exist for young people seeking low wage employment.

Persistent and widespread unemployment has come to characterise contemporary Australian society and pose great challenges for the income support system in particular and the welfare state in general. The Hawke Government was particularly concerned with ensuring unemployment benefits were provided to only the "truly deserving" unemployed; that is, those who satisfied the income, asset and willingness to work tests, all of which were considerably strengthened under Hawke.¹

Targeting benefits via a strict means test or an income test implies a withdrawal taper which, when combined with the tax system, produces very high effective marginal tax rates (EMTR) for social security recipients over certain ranges of private income. Consequently, the unemployed may be only slightly better off, or even worse off, from taking on part-time work. This is the so-called "poverty trap". For groups such as sole parents and spouses of the unemployed this problem is particularly pervasive, given the amount of income-tested payments they receive and their preference for part-time work. In addition, part-time workers as a whole are now a much more significant component of the labour force. Concerns for income support policy have hence switched from how to fund the increasing levels of unemployment to the problem of work disincentives. Increased income targeting and changing work patterns have spawned a growing body of empirical work. The present paper seeks to make a modest contribution to the literature on poverty traps in Australia. More specifically, the paper applies the familiar analytical concept of budget constraints to the problem of poverty traps for eighteen year old workers in four defined part-time occupations.

The paper itself is sub-divided into six main parts. Section one focuses on the concepts of EMTRs and poverty traps and their significance given the current emphasis on income targeting in the Australian social security system. Section two sets out the budget constraint

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methodology employed to analyse the labour-leisure choice facing unemployed people and section three uses this methodology to examine the budget constraints for unemployed single eighteen year olds choosing various amounts of part-time work in four low-skilled occupations. A discussion of the results of this exercise is provided in section four and section five examines the hypothesised incentives and disincentives in terms of available data from actual labour markets. The paper concludes with some brief comments on the policy implications of the analysis.

Poverty Traps and Effective Marginal Tax Rates

A poverty trap is defined by Gallagher *et al.* (1991, p. 28) as "a circumstance which makes it difficult or impossible for low income people to escape poverty or dependency on social security by increasing their earnings". This situation arises because any extra income is taxed away, not only through normal income tax, but also through withdrawal of unemployment benefits. A combination of means testing and taxation make it difficult for unemployed people to significantly raise their standards of living through part-time work.

High EMTRs are frequently used to indicate poverty traps. The EMTR represents the true loss in private income taking into account that the unemployed pay income tax and lose some benefit. Disposable income, rather than private income, is thus the fundamental measure of wellbeing for those on social security. Disposable income is defined by Gallagher and Ryan (1992, p. 4) as equal to private income + cash benefits + non-cash benefits + private transfers - direct taxes. The slope of a disposable income function is defined as the marginal gain, where:

Marginal gain =
$$\frac{\text{change in disposable income (DY)}}{\text{change in private income (PY)}}$$

= $\frac{\Delta DY}{\Delta PY}$

The EMTR can therefore be defined as:

EMTR = 1 - m arginal gain

$$= 1 - \frac{\Delta DY}{\Delta PY}$$

A 1988 EPAC study into income support disincentives found that EMTRs frequently reached levels of over 60 per cent for unemployment beneficiaries and sometimes exceeded 100 per cent beyond the income test free areas. However, EMTRs are not necessarily poverty traps. The distinction between the two concepts is important. A Department of Social Security (DSS) survey undertaken in December 1990 (Puniard and Harrington, 1993)², found a lack of awareness of the parameters of the income test and free areas or the size and effect of EMTRs in

general. Respondents also lacked knowledge of the various allowances built into the system to assist the transition to work. However, individuals' lack of perception regarding poverty traps does not necessarily undermine their existence or significance since the poverty trap itself still exists despite its effects not being apparent. Therefore the awareness issue is not as critical as it would appear at first glance.

In addition, while social security recipients incur EMTRs exceeding 100 per cent, reasonably high EMTRs can be calculated over a whole range of incomes. Sampford (1991) made this point explicitly and calculated EMTRs above the highest marginal tax rate (39%) for the majority of low income earners, not just unemployment beneficiaries. The fact that low income earners continue to work and do not give up the jobs to go on the dole illustrates that high EMTRs do not necessarily always evoke a behavioural response. Nevertheless, there may be wider social consequences of high EMTRs for social security recipients. In particular, the unemployed may seek other forms of payment for part-time work, facilitating the creation of "black markets". An apposite example is cash-in-hand babysitting.

Quite clearly other factors besides disposable income influence an individual's decision to take up part-time work. Some of these may augment the negative effects of EMTRs, such as one-off and ongoing costs of unemployment; notably child care for sole parents, ill-health of a family member, the value placed on home production and the desire to raise children. Similarly, there are various non-monetary gains from employment including a desire to remain active, welfare independent and in touch with workforce skills. Institutional constraints are also evident. For instance, the Australian social security system has various activity test requirements; under some circumstances the Department of Social Security may view part-time work as incompatible with job search (Saunders, 1994). Another problem when interpreting the effect of EMTRs on workforce participation rates is that employers might not offer employment to particular individuals despite their willingness to work. This is referred to as the scarring effect suffered by the long-tern unemployed. Various studies (Puniard and Harrington (1993), Australian Bureau of Statistics Persons not in the Labour Force (1992), and Crompton (1987)) suggest these factors have a significant influence on a person's decision to take up part-time work. The precise value and impact of many of these influences are difficult to determine. However, we should not let this deter our efforts at modelling behaviour in response to high EMTRs because disposable income is at the very least a major consideration for unemployed people deciding to undertake part-time employment.

Methodology

The conventional analysis of disincentives in an income support system revolves around replacement rates and the question of whether an employed person would be financially better off in a full-time job compared with being on unemployment payments. In the present context we are interested in exploring an alternative option open to the unemployed; namely, choosing a particular number of hours of part-time work. A full-time wage earner when making the

decision to work an extra hour focusses on the increase in their disposable income. The story is more complex for an unemployed person because in calculating their disposable incomes they need also consider by how much their benefits will reduce.

High EMTRs imply individuals must forego a large amount of leisure for a small increase in income. Budget constraints are a graphical tool which show the trade-off between leisure and dollars where leisure is assumed to have a value equivalent to the wage rate of the worker. Travers and Richardson (1993) employed this same definition. Defining leisure in this way is not entirely adequate for the "leisure abundant" unemployed. This qualification notwithstanding, leisure certainly has some positive value. Moreover, its value is likely to be quite high in Australia because of the attractive climate and many opportunities for leisure.

Other factors besides disposable income obviously also determine an individuals preferences for part-time work. Many of these are not really quantifiable thereby clouding the poverty trap issue. Deaton and Muellbauer (1980, p.3) regard the part played by preferences in determining individual behaviour to be overstated. Further they assert that 'much of the analysis of voluntary and involuntary unemployment hinges on constraints (and not preferences) consumers are assumed to face in the labour market' (Deaton and Muellbauer, 1980, p.8). Budget constraints are a familiar device in labour economics, and can shed light on the poverty trap problem. A poverty trap is a dip in an individual's budget constraint. It is important to stress that each individual's budget constraint is different according to their amount and composition of unearned income, number of dependents and eligibility for special benefits. Thus the labour-leisure choice analysed on an individual, rather than aggregate, basis provides a more accurate portrayal of disincentive effects. Budget constraints drawn in this paper use actual, rather than average, weekly earnings.

The four occupations studied and their part-time hourly rates of pay are as follows: Brickie's labourer \$13.64/hr, Clerk (in public service) \$8.06/hr, Stationhand \$6.22/hr, Sales assistant \$7.12/hr. These rates were obtained from the NSW Department of Industrial Relations, Employment, Training and Further Education. All rates are for eighteen-year olds, except Brickie's labourers where age does not affect the award rate (which may explain why Brickie's labourers have a much higher wage). The other three occupations wage rates are relatively low in comparison with the average wage. Average weekly total earnings for all employees in May 1994 was \$530.50, or \$13.26 per hour assuming a 40-hour week (ABS, May, 1994).

The motivation behind investigating disincentives for eighteen-year olds requires justification. Firstly, this group, upon leaving school, must make a decision between the unemployment benefit and very low wage rates. Starting wages can be below the unemployment benefit and rent assistance in some instances. Part-time wages rates are also low so that high EMTRs extend over a wide range of private income or hours worked.³ Secondly, school leavers in general have little savings and without assistance from their parents may well be discouraged by the costs of searching for and taking up employment. Thirdly,

school leavers typically have already established some attachment to part-time work so in the absence of full-time work they are likely to continue or increase part-time employment. Available statistics support this view. Figures for December 1993 indicate that of the employed persons aged 15-19, 257 400 are full-time employed and 320 2000 part-time employed (ABS, 1993, p.22). This is the only cohort where the number of part-time workers exceeds full-time workers. Finally, the size and extent of poverty traps for young workers are especially problematic because it is obviously undesirable for this group to be encouraged into the long-term unemployment pool. One theory purporting to explain the phenomenon of long-term unemployment is that employers use length of unemployment as a screening device to determine worker quality. Thus, if a school leaver starts off their working life with an extended period on unemployment benefit because they see little gain in the current period from working, then they may in fact never get a job.

Deaton and Muellbauer (1980) argued that even without a detailed knowledge of preferences we can get some idea of what amounts of income and leisure an individual will choose by observing kinks in their budget constraints. The kinks reflect the EMTRs on disposable income.



Figure 1. Kinks in Budget Constraints

EMTRs of greater than 100 per cent produce a dip in the individual's budget constraint. Here unemployment beneficiaries are made worse off in terms of disposable income by taking on additional work. Clearly no rational individual would partake in extra work if this were to place them in such a tax position, unless there were other offsetting benefits (such as the prospect of higher wages in future). EMTRs of 100 per cent are represented by a flat disposable income line or budget constraint. Thus part-time work is being undertaken, but no increase in disposable income is forthcoming. If leisure is assumed to have a positive value then welfare is

actually decreasing. The ascending sections in the budget constraints are where EMTR is 100 per cent. Under these circumstances working brings about a positive return in terms of disposable income. The superimposition of convex indifference curves would illustrate the levels of part-time work that individuals might choose. Rational unemployment beneficiaries would choose amounts of part-time work which maximise their welfare. This would occur along the ascending sections of budget constraints; therefore the majority of part-time workers would be expected to be in the income or leisure range corresponding to these ascending areas. Similarly, convex indifference curves show that no rational individual would be expected to find welfare maximisation.⁴

This type of analysis assumes workers are free to choose their number of hours. Obviously this is often not the case. However, this caveat does not affect the primary objective of our methodology which is to establish at what levels of income and leisure disincentive effects apply and to demonstrate that these levels vary with different individuals. Two additional qualifications should be made. Firstly, the analysis assumes individuals want to work but are discouraged by the income support system: of course, some people may not want to work at all! And secondly, no attempt is made to incorporate the positive effect of earnings credits on part-time workers' disposable incomes because of the complications involved. Thus the disincentive effects may be slightly overstated.

Results

Tables 1 and 2 below provide a summary of the effects that means testing benefits and the introduction of income taxes have on the disposable incomes of unemployed persons at various levels of private income. Disposable income is defined as follows:

Disposable Income = Private Income + Cash Benefits + Non Cash Benefits + Private Transfers - Direct Taxes

The EMTR is then defined in the usual manner:

$$EMTR = 1 - \frac{Change in Diposable Income}{Change in Private Income}$$

Tables 1 and 2 were calculated using information on rebates provided in *Tax Pack '94* and the rules and regulations pertaining to various benefits for the unemployed as supplied by the Department of Social Security (DSS)⁵. The amounts of weekly private income chosen in the tables thus reflect the beginning and end of various benefits, rebates and tax scales.

Table 1: Single Adult JSA Recipient,No Children, Paying Private Rent of \$120.00pw,Rates at June 1994

Weekly Private	Weekly	Effective Marginal	Comments
Income (\$)	Disposable Income (\$)	Tax Rate (%)	
0	178	0	
9	187	0	Start paying tax
9	187	33	
45	212	33	Allowance threshold
45	212	66	
84	225	66	End allowance rebate
84	225	60	
85	225	60	Allowance threshold 2
85	225	76	
202	253	76	Medicare threshold
202	253	82	
262	264	82	End Medicare shade-in
262	264	110	
262	264	110	End base allowance
262	264	91	
311	268	91	End Rent Assistance
311	268	21	
398	337	21	3rd tax bracket
398	337	41	End Low Income
470	379	41	Rebate (LIR)
470	379	37	
692	519	37	4th tax bracket
692	519	40	
731	542	40	5th tax bracket
731	542	46	
962	668	46	6th tax bracket
962	668	48	
1000	668	48	

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Table 2: Allowee Couple aged 18 - June 1994, Rates at June 1994No Children, Paying Private Rent of \$150.00 pw,100% of Private Income to Head

Weekly Private	Weekly	Effective	Comments
lncome (\$)	Disposable	Marginal	
	Income (\$)	Tax Rate (%)	
0.00	273.60	0.00	
8.87	282.47	0.00	Head across 2nd ordinary tax bracket,
8.88	282.48	32.50	begins withdrawal of allowee rebate
37.47	301.78	32.5	End of allowee rebate
37.48	301.78	20.00	
55.00	315.80	20.00	Beginning reduction of base allowance at 1st taper
55.01	315.80	60.00	
95.00	331.80	60.00	Beginning reduction of base allowance at 2nd taper
95.01	331.80	100.00	
316.50	331.80	100.00	End of base allowance,
316.51	331.80	120.00	begin reduction of Rent Assistance
348.60	325.38	120.00	End of Rent Assistance
348.61	325.39	20.00	
398.07	364.96	20.00	Head across 3rd ordinary tax bracket,
398.08	364.96	39.54	begins withdrawal of low income rebate
410.89	372.71	39.54	Medicare levy shade-in at married threshold
410.90	372.72	59.50	
441.81	385.23	59.50	End of medicare levy shade-in, full medicare levy
441.82	385.24	40.90	
470.19	402.01	40.90	End of Low Income Rebate
470.20	402.01	36.90	
692.30	542.16	36.90	Head across 4th ordinary tax bracket
692.31	542.16	39.90	
730.76	565.27	39.90	Head across of 5th ordinary tax bracket
730.77	565.28	45.53	
961.53	690.97	45.53	Head across 6th ordinary tax bracket
961.54	690.98	48.40	
1000.00	710.83	48.40	

The information derived from Tables 1 and 2 provides the disposable incomes of single adults and an eighteen year old allowee couple with no children. To construct the budget constraints, private income is divided by the various wage rates to determine the number of leisure hours foregone at each level of private and disposable income. EMTRs vary for singles and couples. In addition, the four wage rates for the four different occupations are different so that the tradeoff between labour and leisure is unique in each individual's budget constraint. The steeper the private income line the higher the wage rate as less hours of leisure need to be foregone for an increase in income. Each disposable income line (budget constraint) begins at a full week's leisure (168 hours) with an income corresponding to the appropriate unemployment benefit level. On the basis of this information it is possible to construct budget constraint for singles and couples, with one person employed as brickie's labourer, clerk, farmhand or salesperson in each case. The relevant diagrams are set out in Appendix 1.

Table 3 below summarises the ascending sections, troughs and flat sections of the eight budget constraints contained in Appendix 1. Ascending areas are represented by the "willing to work" column, flat sections by the "unlikely to work" column (if leisure is valued, welfare is decreasing) and the "definitely won't work" column or poverty trap is represented by the small dip or trough areas. Even though Deaton and Muellbauer (1980) illustrate a poverty trap as a depression in the budget constraint, in fact the flat areas can also be termed poverty traps since the definition of a poverty trap is consistent with the idea of working for no gain.

Table 3: Interpreting the Budget Constraints.

Single Unemployed Choosing Part-time Work by Income and Hours per	Week.

		Willing to work	Unlikely to work	Definitely won't work
	Income Range	\$0-\$45.00/ \$311.00+	\$262.00-\$311.00	\$263.00
Occupation	Brickie @\$13.64/hr	0-3.3hrs / 22.8+hrs	19.2-22.8hrs	19.28hrs
	Clerk @\$8.06/hr	0.5.58hrs/ 38.59+	32.51-38.59hrs	32.63hrs
	Stationhand@\$6.22/hr	0-7.23hrs/ 50+hrs	42.12+hrs	42.28hrs
	Sales @ \$7.125/hr	0-6.23hrs/ 43.65+hrs	36.31+hrs	36.45hrs

Couple Unemployed, Head earning, Choosing Part-time Work by Income and Hours per Week.

		Willing to work	Unlikely to work	Definitely won't work
	Income Range	\$0-\$55.00/ \$311.00+	\$95.00- \$316.50.00	\$316.00-\$348.60
Occupation	Brickie @\$13.64/hr Clerk @\$8.06/hr Stationhand@\$6.22/hr Sales @ \$7.125/hr	0-4.03hrs/ 25.56+hrs 0-6.82hrs/ 43.18+hrs 0-8.84hrs/ 55.95+hrs 0-7.62hrs/ 48.84+hrs	6.96-23.2hrs 11.79-39.26hrs 15.27+hrs 13.16+hrs	23.20+hrs 39.27+hrs 50.89+hrs 44.42+hrs

Discussion of Results

In the "willing to work" column of Table 3 for both singles and couples, ascending sections are seen to occur within the income test free areas. This level of income is reached in very few hours for brickies (3.3 hours for single brickies and 4.03 hours for a couple whose primary wage earner is a brickie). The lower wage rate occupations take considerably longer (7.23 hours for a single stationhand and 8.84 hours for a couple). This is perhaps not clearly evident from the graphs in Appendix 1. A second ascending section occurs at a high level of private income. The explanation is that at this level the individuals are no longer receiving meanstested payments so that their EMTRs fall to levels applying to full-time workers. It should be noted these second ascending areas occur at very high income levels (\$311 +) and all the occupations analysed have full-time wage rates below this amount. Moreover, it is unlikely that large numbers of 18 year olds in any occupation would be earning this weekly wage. Therefore budget constraint analysis suggests that the current income targeted social security system provides strong incentives for part-time workers to demand only a small amount of parttime work to stay within the income test free areas. More importantly, they might reject more part-time hours because of the incentives to earn small amounts of private income in the income support system.

The "unlikely to work" column shows some striking differences in the flat areas of the budget constraints. Flat areas for singles occur at relatively high levels of private income so that individuals are only seriously affected at high levels of part-time work. The existence of high effective tax rates for single recipients at relatively high levels of private income (\$262.00 +) may not be an entirely coincidental result of government policy since this wage level is above that for many 18-year olds employed full-time in a similar position. Clearly widespread support for people on high private incomes also receiving welfare payments does not exist. Thus high EMTRs are justified in this income range to encourage full-time work.

However, a problem arises for unemployed couples. Budget constraints 1.5 to 1.6 in Appendix 1 illustrate that couples have much flatter disposable incomes. The existence of these significant areas implies even more people wishing to be located along the ascending areas within the income test free areas.⁶ For all occupations, the heads of couples are unlikely to work for the majority of part-time hours available. Brickies, because of their higher wage rate, are slightly better off. Couples with the head working part-time as a brickie have a larger flat section compared to single brickies, but this increase is significantly less compared to lower wage occupations. Thus, it can be clearly seen that with low wage rates high EMTRs extend over a wide range of incomes, particularly for couples.

As anticipated, dips in the budget constraints are small. For singles they occur at a single income level so that they are likely to be avoided. In the case of couples, the dips extend over a small income range (\$316.51 - \$348.60). This implies a large number of part-time hours worked by the head and, as a result, only brickies, with their higher wage rate, are affected.

The budget constraint methodology employed here demonstrates that strong disincentive effects exist for part-time work, particularly for couples, a result which supports the notion that many people on unemployment benefits may reject part-time work. This hypothesis is further underpinned by the empirical evidence of Whiteford *et al* (1989) who identified large numbers of unemployed beneficiaries within the income test-free areas. This result explains why spouses of unemployed persons have such low participation rates compared to spouses of employed persons. Whiteford (1987) provides a table adopted from ABS data which gives an excellent indication of the disincentive effects facing women with unemployed husbands.

	Unemployment Rate (%)			Labour Force Participation Rate (%)			
	All married women	Women with unemployed husbands	Sole parents	All married women	Women with unemployed husbands	Sole parents	
1974	3.0	25.0	-	40.3	37.5		
1976	3.6	14.0	-	40.8	27.5	-	
1977	4.2	30.0	-	41.8	32.3	-	
1980	4.4	41.9	11.5	43.0	30.2	42.8	
1981	4.3	38.0	8.8	42.4	31.7	41.2	
1982	5.1	32.5	11.1	42.6	31.7	39.3	
1983	7.1	45.2	17.3	42.7	32.7	38.8	
1984	5.8	46.3	15.9	43.8	32.2	40.5	
1985	5.5	46.0	13.3	45.1	28.3	40.8	
1986	5.5	51.3	13.5	48.1	31.0	45.2	

Table 4: Unemployment Rates and Labour Force ParticipationRates of Women, 1974 to 1977 and 1980 to 1986.

Source: ABS, *Labour Force Status and Other Characteristics of Families, Australia*, Cat. No. 6224.0.

Both columns for the unemployment rates and participation rates in Table 4 are of interest for poverty trap analysis. The first column illustrates the high unemployment rates for women with unemployed husbands; their unemployment rates increased from six to nine times that of the average rate between 1982 and 1986 (Whiteford, 1987, p. 349). The second column indicates that while labour force participation has been increasing for married women in general, the same is not true for women with unemployed husbands. Bradbury (1993, p.16) provides further evidence estimating that by 1989, 62 per cent of married women with unemployed husbands were themselves employed, yet only 20 per cent of women with unemployed husbands worked. Scherer (1978) as found in Whiteford *et al* (1989) compared the participation rates of married women in Australia and the United States and concluded that the far lower participation rate of women with unemployed husbands in Australia was due to the disincentive effects of the social security system in Australia and the joint income test in particular. Similarly, Bradbury (1993) concludes the most likely explanation for low participation rates is the effect of high EMTRs on unemployed couples.⁷

Finally, it should be noted that the budget constraints for brickie's remained fairly constant between income units. The flat section becomes only marginally larger for couples compared to their lower income counterparts. This result illustrates the importance of studying low income occupations rather than average weekly earnings which is conventional in the analysis of poverty traps. The negative impact of work disincentives is likely to be strongest for the lowest salary/wage earners.

Participation rates indicate that married women with unemployed husbands do react to high EMTRs. In the next section further behavioural evidence is examined in an attempt to substantiate the ranges over which incentive and disincentive effects apply as calculated in Table 3. Whilst existence of poverty traps for the unemployed has long been understood, efficient public policy requires the identification of the exact magnitude and location of these work disincentives.

Does the Available Data Support These Results ?

The most comprehensive data available for assessing the number of beneficiaries within the areas identified by the budget constraint analysis is unpublished social security data found in Whiteford *et al* (1989, p.14). Unfortunately, this data for 1987 is not entirely suitable given the evolving nature of the social security system. Table 5 below reproduces this data.

Non-benefit income:	Single benefic- iaries	Sole parents	Couples no children	Couples one child	Couples two children	Couples three + children	Total
1. Zero							
Number ('000)	315.3	3.7	28.4	20.7	22.9	24.5	416.4
Percentage	86.9	86.0	58.4	73.3	71.2	76.3	81.7
2. Less than free area							
Number ('000)	30.2	0.5	10.1	3.6	4.2	3.4	51.8
Percentage	8.3	11.6	20.7	12.8	12.9	10.7	10.5
3. In 50% taper range						2017	1010
Number ('000)	9.5	0.5	4.7	1.4	1.8	1.4	19.1
Percentage	2.7	11.6	9.6	5.2	5.6	4.5	3.8
4. In 100% taper range							
Number ('000)	7.8	0.1	5.6	2.2	3.1	2.5	21.3
Percentage	2.2	2.3	11.1	7.9	9.1	7.4	4.0
5. Over 100% withdrawal ^(a)							
Number ('000)	-	-	0.1	0.2	0.4	0.4	1.1
Percentage	-	-	0.3	0.7	1.1	1.2	0.2
6. Total Number ('000)	362.9	4.3	48.7	28.2	32.2	32.0	509.3
Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 5: Summary Distribution of Unemployment Beneficiaries by TotalNon-benefit Income by Beneficiary Category - August 1987.

Note: (a) These figures refer to those with private incomes over \$220 per week, when only those with private incomes of \$237 per week and over would face EMTRs of over 100 per cent. Consequently, these numbers would be overestimates of the numbers affected by EMTRs over 100 per cent.

Source: Unpublished data from the Department of Social Security.

In Table 5 we find no single beneficiaries in row 5, the "definitely won't work" level of private income where EMTRs exceed 100 per cent. In 1987 this was at \$237.00 + private income per week. By 1994 this level had increased and is also limited to a single amount of \$262.00 rather

than a range of income. This change, in the main, reflects an extra \$30.00 free area for singles. Couples also had an increase of \$50.00 for each member. The larger dips in the budget constraints of couples means that more beneficiaries are caught in the 100 per cent + EMTR ranges. This explains the existence of a small number of couples, approximately 1100, in these "definitely won't work" areas. The dips noticeably widen with the addition of children. Similarly, the data in Table 5 shows that more people are found in this range as family size increases.

Looking at the percentage figure for the 100 per cent taper range (which roughly equates to the "unlikely to work" section of the budget constraints), it is obvious that again couples incur higher EMTRs relative to singles. The large flat section identified for couples implies high EMTRs exist over a wide range of income. Therefore, we would expect greater numbers of couples to face high EMTRs because the head must work extremely long hours to jump the range of income over which they apply. Observing the data we find 7, 800 singles and 13,400 couples within the "unlikely to work" zone.

Undoubtedly the most striking feature of Table 5 is the high percentage of beneficiaries located within the free or willing to work areas of private income (315, 300 singles and 96, 500 couples). The data thus supports the main conclusion of our budget constraints simulations; that is, the majority of unemployment recipients will be located in free areas, represented by the initial ascending areas in the budget constraints. Moreover, it can be strongly hypothesised that the reason for this is the disincentive or poverty trap effect of income targeting.

Several caveats exist which weaken these conclusions. Whiteford's data is not ideal as it reflects the social security system in 1987. Moreover, the budget constraint method deliberately studied individuals with low rates of part-time pay on the assumption that an even greater proportion of beneficiaries would be found in the free or willing to work area. In addition, the budget constraint methodology was able to identify specific numbers of hours where we would expect rational part-time workers to work if they were maximising their budgets according to leisure and income. Unfortunately, published ABS data is not as specific.⁸

Concluding Remarks

The budget constraint method employed in the present context clearly illustrates that disincentive effects are pervasive for young people and those on low wages. From the analysis it can be seen that rational individuals will avoid taking up large quantities of part-time work, preferring small amounts which allow them to stay within the income test free areas. This point is illustrated by the initial ascending sections identified in the budget constraints.

For any amount of part-time work there is very little gain in terms of dollars for leisure foregone. The ABS defines part-time employment as 35 hours or less per week. Observing the budget constraints in Appendix 1 (excluding brickies), we find a relatively flat disposable income line over the entire part-time work period. Couples have a flat disposable income line into and beyond full-time hours. If leisure is valued at all, then people will be reluctant to take

up part-time or even full-time work at low wage rates. This result has serious implications for policy since, whether people perceive EMTRs or not, there is little doubt they recognise their disposable income remains relatively unchanged after a week's work. Thus, while there may be many factors influencing the decision to work (work ethic, cost of working, desire to care for children, etc.) which can cloud the poverty trap issue, undoubtedly EMTRs impact on income is still significant.⁹ Few people will work if they are made worse off by doing so, a situation which does exist in our income + targeted system (as illustrated by the depressions found in individuals' budget constraints). A lot of anecdotal evidence also exists regarding the disincentive effects of the income support system. Nearly everyone has a neighbour or friend who maintain they are probably better off on the dole than in employment.

The analysis presented in this paper has some bearing on the 1994 Working Nation White Paper on Unemployment The aim of the new policy contained in this document is to ensure people, and couples in particular, gain financially from working more, and therefore help reduce their dependence on the social security system. The government is thus looking at alleviating poverty traps, although the White Paper is careful not to use the expression itself. It introduces two significant changes affecting the labour-leisure choice modelled in this paper. Firstly, changes are made to the income test. The 100 per cent withdrawal rate will be modified to 70 per cent, thereby addressing the problem of EMTRs exceeding or equalling 100 per cent. Moreover, the income test for couples is changed so that the spouse's income test only applies where a partner has sufficient income to preclude them from getting an allowance, currently \$231.00 a week. The literature is clear on the consequences of easing the means test or equivalently increasing free areas. High EMTRs are not eliminated but pushed further along the income scale into the realm of full-time earnings; thus part-time work is encouraged at the expense of full-time work. However, the results of the present paper provide support for this change because under the current system extremely high and inequitable EMTRs exist for couples, in the main due to the joint means test.

The budget constraint method employed here demonstrated that high EMTRs exist over a wide range of incomes, especially low wage earners. Unfortunately, there are no easy solutions to high EMTRs since they are an inherent problem for general revenue financed social support systems. With only limited funds available for redistribution, optimal social policy seeks to satisfy two goals. Firstly, to ensure rates do not exceed 100 per cent, and secondly, to limit their influence to narrow income ranges so that social security recipients can easily jump them. Our budget constraint methodology shows that EMTRs cannot be jumped by low income earners, even through full-time work. To this extent at least reducing the 100 per cent rate satisfies the first of these policy requirements.

A far more significant and radical change for individuals on unemployment benefits choosing between various levels of part-time work is the introduction of the Jobs Compact. Essentially the unemployed will be forced to take up subsidised jobs or lose their benefit. The system is much more active than in the past, with tougher penalties and case management to ensure these penalties are carried through. Under the Jobs Compact people will not have the luxury of choosing between labour and leisure. A further option open to the government which would have the same impact on the labour-leisure choice would be to limit the duration of unemployment benefits. While the Jobs Compact change will make discussion of poverty traps redundant to some extent, it still does not address the regressive effects of higher EMTRs for low income people, and beneficiaries in particular. Clearly this is an even more problematic issue. Policy makers must now be careful that by dramatically increasing the numbers of people in low wage subsidised jobs they do not create a class of "working poor" in Australia.

Notes

- 1. The Hawke Government's social security reforms were able to achieve the remarkable result of decreased numbers of unemployment benefit recipients, whilst increasing the real, average benefit level (see Saunders, 1990). However, the much publicised "crackdown" on the work test would appear to have made little contribution to the decreased numbers of unemployment beneficiaries because fewer than 0.5 per cent of all reasons for termination of benefits involved failure to comply with work test requirements of actively seeking work (Watts, 1988, p. 4).
- 2. The survey was conducted in the Brisbane metropolitan area and involved 214 sole parents and unemployment beneficiaries. The results are not representative of sole parents and unemployment beneficiaries in general.
- 3. Part-time wage rates obviously exceed hourly wage in full-time employment in the same occupation since part-timers do not qualify for four weeks paid holiday a year. Full-time wage rates for 18-year olds are as follows: Bricklayer \$184.70/week or \$4.6175/r assuming a 40 hour week, Clerk \$228/week or \$5.70/hr, Stationhand \$211.50/week or \$5.2875/hr, Sales assistant \$274.25/week or \$6.86/hr. The maximum unemployment benefit with rent assistance for a single beneficiary is \$154.95/week.
- 4. Indifference curves can reasonably be assumed to be convex with respect to the origin since both commodities (income and leisure) are normal goods. Accordingly, there can be no tangency point with an indifference curve in the dip areas as here the slope of the budget constraint is positive. An indifference curve is drawn on the first budget constraint. Succeeding budget constraints do not feature indifference curves as the budget constraint analysis emphasises the effect of constraints, rather than preferences, on particular individual's behaviour.
- 5. See Fletcher (1994), appendices 1, 2, 3, 4, 5, 6, 7, 8 and 9 for a detailed explanation of the information on which these calculations were based.
- 6. A standard deviation of part-time specifies 35 hours or less hours worked a week. The significance of extending the budget constraints beyond this point is that high EMTRs can be seen to operate well into the realms of full-time work.

- 7. Alternatively, unemployed married couples working part-time may be encouraged to split up because of the disincentive effect of higher EMTRs. While studies show economies of scale for working couples (see Saunders, 1993) increase their welfare relative to singles, the effect of the joint income test is such that unemployed couples working part-time are worse off relative to singles.
- 8. Unpublished data is available, at a substantial cost, with numbers of part-time workers by occupation, age, marital status and hours worked. This is the appropriate detail required to accurately determine the extent of poverty traps (the flat areas and dips) identified in this paper since disincentives vary with the characteristics of the part-time worker. A recommendation for future policy analysis is that this data be published and made readily available. Used in conjunction with the budget constraint method analysts should be able to more precisely determine the extent of poverty traps, and thus implement the correct policies to address them.
- 9. Numerous other non-tax, non-social security factors affect EMTRs. For instance, unemployed people get concessions on items such as municipal council rates, electricity bills, motor vehicle registrations, cinema admissions, etc. If an unemployed person begins working, these ancillary benefits disappear and accordingly EMTRs rise.

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Appendix 1

Figure 1.1 Single Adult JSA Recipient, Paying Rent of \$120.00 per week, Private Casual Earnings as a Brickie Labourer @ \$13.64/hr, Various Hours



Figure 1.2: Single Adult JSA Recipient, Paying Rent of \$120.00 per week, Private Casual Earnings as a Clerk @ \$8.06/hr, Various Hours





Figure 1.3: Single Adult JSA Recipient, Paying Rent of \$120 per week, Private Casual Earnings as a Farmhand @ \$6.22/hr, Various Hours

1.4: Single Adult JSA Recipient, Paying Rent of \$120.00 per week, Private Casual Earnings as a Salesperson @ \$7.215/hr, Various Hour



Figure 1.5: Allowee Couple Aged 18, No Children, Paying Rent of \$150 per week, Private Casual Earnings to Head as a Brickies Labourer @ \$13.64/hour, Various Hours



Figure 1.6: Allowee Couple Aged 18, No Children, Paying Rent of \$150 per week, Private Casual Earnings to Head as a Clerk @ \$8.06/hr, Various Hours



Figure 1.7: Allowee Couple Aged 18, No Children, Paying Rent of \$150 per week, Private Casual Earnings to Head as a Farmhand @ \$6.22/hour, Various Hours



Figure 1.8: Allowee Couple Aged 18, No Children, Paying Rent of \$150 per week, Private Casual Earnings to Head as a Salesperson @ \$7.215/hr, Various Hours



Tables 1 and 2 calculated disposable incomes of beneficiaries at various levels of private income. To construct the budget constraints private income is divided by the various wage rates to determine the number of leisure hours foregone at each level of private and disposable income. EMTRs vary for singles and couples. In addition, the four wage rates are different so that the tradeoff between labour and leisure is unique in each individual's budget constraint. The steeper the private income line the higher the wage rate as less hours of leisure need to be foregone for an increase in income. Each disposable income line (budget constraint) begins at a full week's leisure (168 hours) with an income corresponding to the appropriate unemployment benefit level.

Table 3 summarises the ascending sections, throughs and flat sections of the budget constraints 1.1 - 1.8. Ascending areas are represented by the "willing to work" column, flat sections by the "unlikely to work" column (if leisure is valued, welfare is decreasing) and the "definitely won't work" column or poverty trap is represented by the small dip in trough areas.



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