Evaluation of Policy Options to Encourage Welfare to Work

Hielke Buddelmeyer, John Freebairn and Guyonne Kalb

MELBOURNE INSTITUTE
of Applied Economic and Social Research

Evaluation of Policy Options to Encourage Welfare to Work *

Hielke Buddelmeyer, John Freebairn and Guyonne Kalb
Melbourne Institute of Applied Economic and Social Research
The University of Melbourne

Abstract

This paper compares five alternative policy options with the January 2006 tax and social security system. Each option is designed to cost a similar amount of 5 billion dollars to the government at the current level of labour supply. The five options are: reducing the lowest income tax rate, increasing the tax-free threshold, increasing the low income tax offset, decreasing all taper rates on own and partner's income for a number of allowances, and introducing an Earned Income Tax Credit. The criteria for comparison are the labour supply responses, the expected budgetary cost to the government after taking into account labour supply responses, the number of winners and losers from the policy change, the effects on the distribution of effective marginal tax rates, and the effect on the number of jobless households. From the results, it is clear that the option to reduce taper rates is dominated by the other options on all criteria. The other four options each have their advantages and disadvantages; no option scores best on all criteria.

1. Introduction

This paper evaluates policy change options to the taxation and social security systems aimed at encouraging work, and at reducing welfare dependency, where the options are made comparable to each other with regard to the additional expenditure they would require. Such an evaluation is relevant for several reasons. First, Australia is in the fortunate circumstance of having projected budget surpluses in excess of $10 billion in each of the next two years (Australian Government Treasury, 2005). There is pressure to spend at least some of this budget surplus, but the question is how it can be spent most effectively so that it will have a positive effect on the Australian economy. Second, 20 per cent of the working-age population in Australia is at least partly dependent on welfare payments. Work is often seen as the best option for many individuals in this group. Even if the jobs initially are of low quality and wage rates, many of them provide on-the-job training and improve an individual's human capital, so that they may lead to higher-paying jobs in the future. Third, compared to other countries with a similar background to Australia, such as New Zealand, the US and the UK, Australia has low workforce participation rates. Fourth, there are concerns about the number of children growing up in jobless households, about one in six to seven children, and future decreases in participation rates due to an ageing population, which could result in increased dependency ratios (Productivity Commission, 2005; Australian Government Treasury, 2002). Finally, there is a concern regarding the work-disincentive effects of the high level of effective marginal tax rates (EMTR) facing many low-wage workers as a result of the interaction between the system of income tax and means-tested social security allowances and pensions.

We have chosen five policy options, that seem promising alternatives to address the above issues. Each option has an annual cost of $5 billion at the current level of labour supply. The policy changes are variations in rates relative to the income tax and social security system of January 2006. First, the lowest income tax rate of 15 per cent could be reduced to 11 per cent. Second, the tax-free threshold could be raised from $6000 to $10000 per year, or third, the low income tax offset could be increased from $235 to $1400 per year. A fourth alternative is to decrease all taper rates on own and partner's income for NewStart Allowances, Partner Allowances, Youth Allowances and Parenting Payments to 32 per cent. Introduction of an Earned Income Tax Credit of $47 per week is a potential fifth approach. All five options

increase in-work incomes. It is outside the scope of this paper to consider policy options that involve changes in the tax base or a tightening of social security eligibility or other conditions related to payment recipiency.

The performance and comparative merits of the alternatives can then be rated on a number of criteria. First, the expected budgetary cost. If a policy is effective, additional labour force participants are expected to enter the labour market and existing participants are expected to increase their hours, reducing the cost of a policy to the government after taking into account these labour supply responses. Second, the actual labour supply responses are of interest in themselves. That is, changes at the extensive and intensive margin (changed labour force participation and changed hours worked, respectively), and total hours worked are important measures of the success of a policy option. Third, an analysis of winners and losers from a policy change needs to be taken into account when evaluating a range of policy options. Two other criteria are the effects on the distribution of EMTRs, determining the work incentives, and the effect on the number of jobless households. The alternative policies are compared relative to the actual income tax and social security system of January 2006.

The structure of the paper is as follows. A brief introduction to the Melbourne Institute Tax and Transfer Simulator (MITTS), which is used to perform the analysis in this paper, is given in Section 2. Section 3 describes the proposed policy options in more detail. A static analysis of the policy options, assuming no behavioural changes in labour supply, is presented in Section 4. Allowing for labour supply responses, the results are expected to change. These results are discussed in Section 5. The final section summarises and concludes.

2. The MITTS model: a brief description[1]

The Melbourne Institute Tax and Transfer Simulator (MITTS) is a behavioural tax microsimulation model. It provides for a detailed examination of the potential effects of policy changes to the tax and transfer system on individuals. In this paper, individuals are categorised by demographic type and income levels. The household demographic categories are single male, single female, married male, married female and sole parent, and household

---

[1] For further details of the MITTS model, see Creedy et al. (2002, 2004).

income is categorised by income quintiles. MITTS calculates the effects of the policy options as changes in net incomes, changes in EMTRs, changes in desired labour supply (hours of work and workforce participation), and changes in the numbers of jobless households for the different demographic and income categories of households. The results for individuals can be weighted and aggregated to represent population level results on changes in government revenue and expenditure.

For the comparative assessment of the policy change options, the base case situation is calibrated to be close to the actual January 2006 situation. The initial detailed sample of households represents the Australian population in 2000/2001 from the ABS Household Income Survey (ABS, 2003). For the nominal income measures, wage rates are updated with the average wage index and other incomes are updated with the consumer price index (CPI), using ABS sources (ABS, 2006a; 2006b). [2] The January 2006 social security and income tax systems are used as the base case policy scenario[3].

Labour supply responses, both at the extensive margin as leaving or entering the workforce and at the intensive margin by changing hours of work for those working, and changes in aggregate hours offered for work, are predicted using a discrete hours choice household utility maximising model. Only *financial* incentives are studied within MITTS. Individuals who are self-employed, over 65, a full-time student or disabled are left at their observed labour supply. This group is expected to behave differently from the other individuals of working age and to be less responsive to changes in financial incentives. The household utility function is specified as a quadratic function of household income and of leisure for each of the adult household members, with the parameters varying according to family category, number and ages of children, age and education level. These parameters have been

---

[2] See Table 3 "Average Weekly Earnings, total earnings, original" and Table 1b "Quarterly Consumer Price Index" respectively to obtain the relevant indices.

[3] See publications from the Commonwealth Department of Family and Community Services (2006) for details on the social security system. For DVA payments see publications by the Department of Veterans' Affairs (2004).

estimated using econometric techniques applied to observed behaviour in the same unit record ABS data that underpin the MITTS model.[4] A stochastic error term added to the estimated utility functions reflects a combination of the effects of omitted determinants of utility and errors in decisions. The budget constraint for each household reflects their going wage rate(s) and the details of the tax and social security systems each household faces. For those not working, an imputed wage from an estimated wage regression on age, education, household type and other variables is used in the budget constraint.[5] In many cases, significant portions of the budget constraint are convex. For a given realisation of the utility function error term, MITTS then chooses a level of labour supply from a set of discrete hours of work per week ranging from 0, being non-participation, 5, 10 through to 50 hours a week that maximises utility subject to the budget constraint. In effect, for each household category, a probability distribution of participation, of hours of work for those participating, and of total hours supplied could be computed. Based on the assumption that the observed hours of work are the optimal hours, a calibration of predicted hours to observed hours is carried out in the base run of the simulation. Only those utility function error terms that place an individual at the observed hours in the optimisation-of-utility step are selected and saved for the prediction of post-change labour supply. As a result, the starting point of every simulation is from the observed labour supply values.[6]

Then, for the policy change scenarios, the only changes made to the utility maximisation problem for each household is to change the budget constraint to reflect the changes in the taxation and/or social security systems. For the non-behavioural, or snapshot, picture, these policy changes to the budget constraint only have income effects measured as changes in disposable income, which we report as winners and losers and by dollars per week. However in addition, EMTRs have changed which together with the net income changes influence labour supply. To obtain the behavioural responses through changes in participation and in hours of work offered, MITTS re-computes the utility maximisation problem with the

---

[4] Kalb (2002) provides a detailed description of the labour supply model underlying MITTS.

[5] Kalb and Scutella (2002) discuss the wage and labour force participation model used to impute unobserved wages.

[6] A more detailed description of the simulation approach taken can be found in Creedy and Kalb (2005).

changed budget constraint, using the saved error terms. We report the effects of changes in the average or expected labour supply responses as households are faced with these changes in their budget constraint.

The pattern of responsiveness across different household categories in workforce participation and labour supply decisions to changes in their budget constraints, brought about by changes in the tax and social security systems they face, is similar to estimates reported in the literature of the elasticities of labour supply with respect to wage changes by household demographic type and income levels. The discrete labour supply choice models underlying MITTS do not readily generate explicit labour supply elasticities because changes in probability distributions over the discrete options are generated in response to policy changes. Further, the transformation from a wage change to a change in disposable income, both average and marginal, is a complex and variable function because of the effects of taxation and the withdrawal of social security benefits. However, point estimates based on the mean or expected responses, derived using the probability distributions over the discrete hours points, can be compared.[7]

In MITTS, the estimated utility functions in conjunction with the budget constraints vary widely across household demographic categories and within each category by household income levels, and by individual and household characteristics. This clearly demonstrates the importance of allowing for heterogeneous responses in understanding the effect of policy changes. Labour response rates to changes in the taxation and social security systems are largest for sole parent households, especially those on lower incomes, and for married women, again especially at lower income quintiles, when compared with single men and women and with married men.[8] In general, the labour supply responses to changes in the budget constraints are smaller at higher income levels suggesting that the substitution and income effects roughly offset each other, whereas the substitution effects dominate at lower income levels.

---

[7] Elasticities by demographic groups and income quintiles are presented in Buddelmeyer, Freebairn and Kalb (2006).

[8] These patterns are clearly shown in Buddelmeyer, Freebairn and Kalb (2006).

3.   Description of the policy options in detail

All options have in common that the cost before taking into account any behavioural responses is 5 billion dollars a year. This implies there needs to be a trade off between the average gain in household income, conditional on benefiting from the policy change, and the number of families that benefit. Using graphs relating disposable income to gross income, this section provides a more detailed description of the five policy options. It discusses the amount of additional income available; the gross income range that would be affected by the changes, highlighting the different distributional impacts of the policy options; and it indicates areas of increases and decreases in the EMTR.

The first option of decreasing the lowest income tax rate from 15 per cent to 11 per cent applies to all taxpayers. As can be seen in Figure 1, the increase in net income increases with gross income up to $21,600 to an extra $624 net income per annum at the maximum, and remains at this level for individuals earning more than $21,600. The EMTR falls by four percentage points for those with gross incomes between $6,000 and $21,600, and thereafter remains unchanged.

Figure 1 Decreasing the lowest income tax rate from 15 per cent to 11 per cent
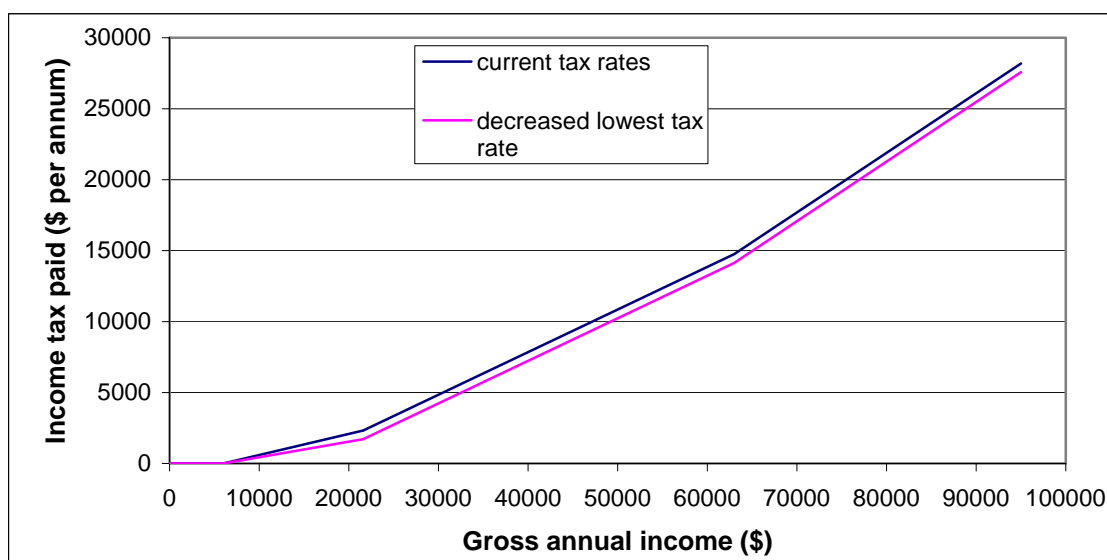
Second, if the tax-free threshold is raised from $6,000 to $10,000 per annum, everyone earning more than $6,000 will have a higher net income due to this change. Those earning $10,000 or more benefit most as is clear from Figure 2. Their increase in net income of $600 per annum is slightly lower than in the first option. In option 2, those earning between $10,000 and $21,000 are somewhat better off under this policy change than under the change described in option 1. Those with incomes between $6,000 and $10,000 experience a fall in the EMTR of 15 percentage points, with no changes for those with incomes over $10,000.

Figure 2 An increase in the tax-free threshold from $6,000 to $10,000 per annum
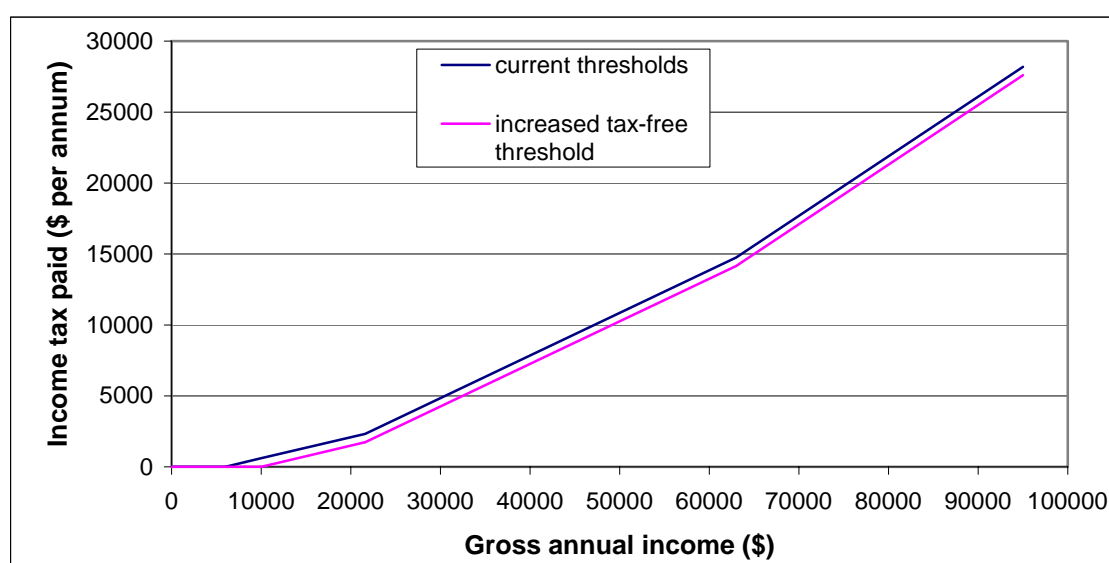
A third option is an increase in the low income tax offset (LITO) to $1400 from $235 per year (see Figure 3). The income tax reduction is targeted towards low- to middle-income groups, without providing tax relief to higher-income earners. Those earning over $56,600 do not benefit from this change. As a result, more can be given to individuals with lower incomes, in particular those earning less than $21,600 per annum. In effect, the tax-free threshold is raised to $15,333 annual income, reducing the EMTR by 15 percentage points from $6,000 to this point. The effective tax rate for income above $21,600 is raised from 30 per cent to 34 per cent as the LITO is withdrawn at 4 cents per extra dollar of income. Relative to the base case, the EMTR is raised by four percentage points over the income range from $27,475 to $56,600 under this option.

Figure 3 Increasing the Low Income Tax Offset from $235 to $1400 per annum
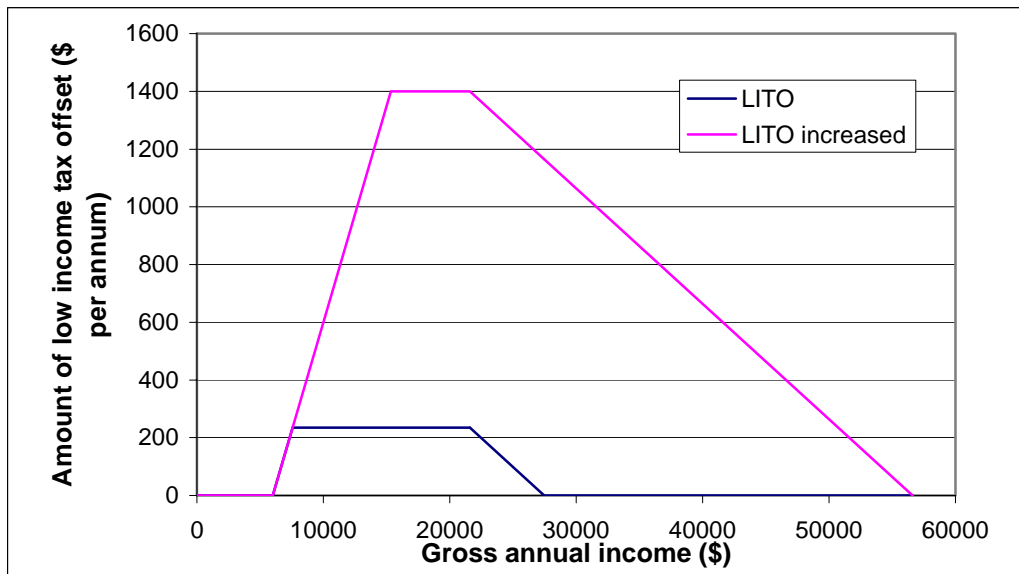
A fourth policy option is to decrease all taper rates on NewStart Allowances, Partner Allowances, Youth Allowances and Parenting Payments to 32 per cent for own and partner's incomes. This targets the income gains to low-income households who combine employment with social security payments. Taking the example of a single person on NewStart as presented in Figure 4, those earning between $1612 and $31,398 per year would be better off under this option. Those earning around $15,760 benefit most with an additional $4962 of annual net income. This option is clearly more targeted than the increased LITO option. Individuals earning up to $27,649 would be better off under this reduced taper rate option.

In the simulation, we do not restrict eligibility of income support payments based on working hours. Therefore, applying a taper rate of 32 per cent, a full-time worker at a low wage rate would still receive NewStart payments under this policy change. In terms of changes to the EMTR, those with low incomes, for example between $1612 and $15,760 for a single person on NewStart, experience a sharp fall in the EMTR of as much as 38 percentage points. However, those with middle incomes are now drawn into the much extended social security withdrawal income range. Those earning between $15,760 and $31,398 face an increase in their EMTR of 32 percentage points.

Figure 4 Reduced taper rates for a single person
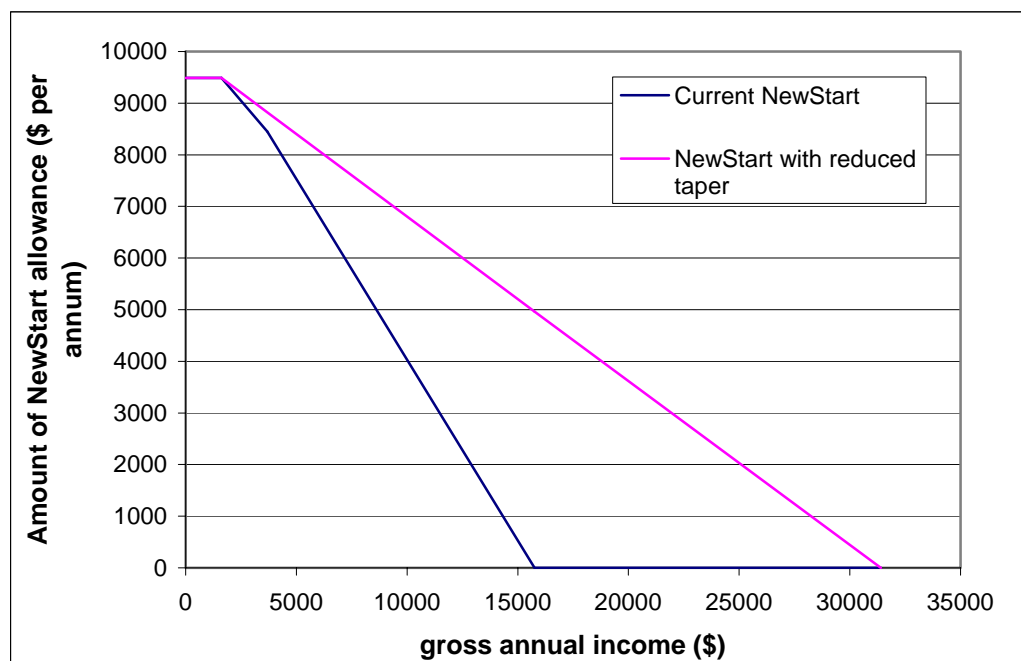
The introduction of an Earned Income Tax Credit (EITC) of $47 per week is a potential fifth approach, which provides additional net income from the first dollar of income earned. For families with children, EITC is added to the Family Tax Benefit part A (FTB-A) and withdrawn at the same rate of 20 per cent as FTB-A, but only after all FTB-A has been withdrawn. Individuals in families without children are also eligible for $47 EITC per week which is withdrawn at 20 per cent as soon as household income is over the income threshold for FTB-A, given that they have no FTB-A to be withdrawn first.

By way of illustration, the amount of family payment and EITC at each level of gross income for a household with one child under twelve years of age is shown in Figure 5. This approach is clearly more targeted than the first three options, with a maximum additional net income of $2,444 per year paid to households earning annual income in the range of $33,361 to $45,479 (for households with one child). Only those earning over $54,700 and $54,580 are better off under option 2 and option 1 respectively. Only individuals earning between about $14,790 and $15,902 would be better off under option 3 than under this option. The reduced taper option is more generous to individuals earning between about $2,718 and $25,443, but everyone else is better off under the EITC option. Relative to the current taxation and social

security system, the EITC option reduces the EMTR over the phase in period by 7.3 percentage points, but it adds 20 percentage points during the phase out period for upper middle-income households.

Quite different patterns of budget constraint changes are represented by the five policy options. All five policy change options increase or do not reduce disposable incomes for anyone, but the number of winners and the magnitude of income gains vary by family type and income level across the policy options. While the EMTR is reduced or does not change with the lower tax rate and higher tax-free threshold options, the other three options reduce the EMTR for some, and particularly at low income levels, but increase the EMTR for others, especially middle- or high-income households. As a result, there is a complex mix of changes in income effects and substitution effects on workforce participation and hours of work decisions. The next section analyses and compares the changes in EMTRs and the average gain in net income.

Figure 5 Introduction of $47 EITC per week added to Family Tax Benefit part A
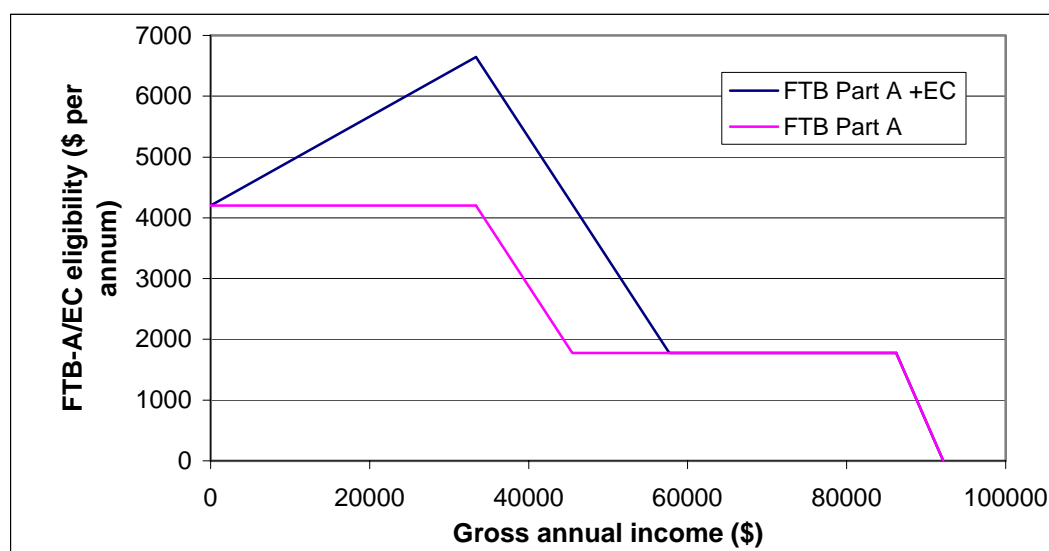
4. Results under the Assumption of Fixed Labour Supply

This section provides a comparison of the different options, assuming none of the households changes their behaviour due to the policy changes. This section compares the proportion of households who gain and the average gain, conditional on being a beneficiary of the policy

change, by family type and family income quintile. In addition, average changes to EMTRs are displayed by family type and by family income quintile.

4.1. Distribution of gains from the policy changes

The top section of Table 1 displays the percentage of families that gain from the policy changes by family income quintile. For those families gaining income within a quintile, the average gain in net weekly family income is computed and presented in each second column of the table. For example, compared with the current system (at January 2006), the option to reduce the lowest tax rate from 15 to 11 per cent benefits 17.81 per cent of all households in the lowest income quintile, and for those who gain the average weekly gain is $5.83. Due to the nature of the policy options there are no losers, only winners and non-winners. Since the policy alternatives only increase in-work incomes, at least one member of a household needs to be in work for the household to benefit.

When comparing the overall percentage of families that gain, reducing the lowest tax rate and increasing the tax-free income threshold are the two most successful options benefiting 69 and 67 per cent of families, respectively. In contrast, introducing an EITC or reducing the tapers on NewStart Allowances, Partner Allowances, Youth Allowances, and Parenting Payments only benefit 30 and 21 per cent of families, respectively. However, given that each of the policy changes cost 5 billion dollars, the smaller number of families that gain under these targeted changes gain much more on average compared to the average gain of the larger number of families that are winners under a change reducing the lowest income tax rate or lifting the tax-free threshold.

Breaking down the percentage of winners by family type, couples with dependents have the highest percentage of winners under each policy change. This is because couples with dependents have a high labour force participation rate where at least one adult is employed. Only under the option that reduces selected taper rates are singles with dependents more likely to benefit than couples with dependents.

Table 1 Per cent winners and average conditional $ gain in net weekly household income by weekly household income quintile and family type

Quin-tile	Upper bound	Reduce lowest rate		Increase TFT		Increase LITO		Reduce Tapers		Introduce EITC	
		% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win
1	$321	17.81	5.83	17.27	9.37	17.81	15.79	13.04	31.93	14.41	14.72
2	$510	42.29	10.59	40.26	11.13	42.29	20.46	25.13	44.13	32.22	33.17
3	$737	83.81	11.34	78.51	11.86	83.81	15.70	38.63	53.97	60.24	28.65
4	$1128	99.05	14.78	98.87	14.76	67.72	20.01	28.17	56.53	34.72	42.04
5	unbounded	100.00	20.94	100.00	20.43	66.37	17.80	0.12	33.08	10.00	45.43
Total		68.60		66.99		55.60		21.02		30.32	

		Reduce lowest rate		Increase TFT		Increase LITO		Reduce Tapers		Introduce EITC	
		% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win
Couples		69.27	18.23	67.20	18.71	58.62	21.08	19.89	62.69	11.64	29.46
Couple /w Dep		92.20	17.80	92.14	17.93	71.11	20.10	23.63	74.87	41.23	41.93
Singles		60.57	10.98	59.56	11.16	49.35	14.89	19.12	33.38	34.34	27.72
Singles /w Dep		46.82	10.03	38.29	10.64	38.46	15.11	29.43	24.55	37.63	32.41
Total		68.60		66.99		55.60		21.02		30.32	

Couples

Quin-tile	Upper bound	Reduce lowest rate		Increase TFT		Increase LITO		Reduce Tapers		Introduce EITC	
		% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win	%	Avg win
1	$433	5.19	4.35	5.19	8.51	5.19	10.64	4.48	23.38	0.71	10.02
2	$645	45.52	10.66	43.63	13.05	45.52	21.37	38.44	82.79	32.31	29.44
3	$960	95.53	14.68	87.06	15.98	90.59	23.11	49.65	56.89	23.76	29.00
4	$1376	100.00	20.97	100.00	20.48	80.90	26.67	6.84	17.67	0.94	42.45
5	unbounded	100.00	23.05	100.00	22.30	70.82	12.69	0.00		0.47	56.74
Total		69.27		67.20		58.62		19.89		11.64	

Couple /w Dep

Quin-tile	Upper bound	Reduce lowest rate		Increase TFT		Increase LITO		Reduce Tapers		Introduce EITC	
		% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win
1	$764		10.97	62.33	12.47	62.60	20.35	58.73	78.98	49.03	34.43
2	$1011		14.37	98.34	15.03	91.41	19.86	55.96	70.29	78.39	44.94
3	$1248		18.34	100.00	18.30	66.85	27.38	3.59	78.98	58.29	43.71
4	$1553		20.70	100.00	20.34	78.12	18.96	0.00		18.84	40.42
5	unbounded		21.97	100.00	21.40	56.63	13.17	0.00		1.66	75.17
Total		92.20		92.14		71.11		23.63		41.23	

Singles

Quin-tile	Upper bound	Reduce lowest rate		Increase TFT		Increase LITO		Reduce Tapers		Introduce EITC	
		% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win
1	$246		3.36	18.36	7.27	19.27	8.44	15.27	16.93	16.91	10.50
2	$307		6.89	15.13	10.41	15.43	19.59	11.62	39.09	11.72	16.71
3	$490		10.92	66.15	11.23	70.03	21.28	36.56	48.11	57.11	32.95
4	$681		11.86	99.10	11.40	99.22	14.77	33.20	19.95	86.43	28.55
5	unbounded		11.99	100.00	11.54	43.93	4.84	0.00		1.03	30.96
Total		60.57		59.56		49.35		19.12		34.34	

Singles /w Dep

Quin-tile	Upper bound	Reduce lowest rate		Increase TFT		Increase LITO		Reduce Tapers		Introduce EITC	
		% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win	% winner	Avg win
1	$410		8.90	14.29	10.40	15.13	19.40	11.76	55.75	10.92	20.70
2	$495		8.10	2.50	11.54	4.17	14.77	4.17	18.27	6.67	10.28
3	$614		6.86	12.61	9.14	34.45	16.82	34.45	8.57	39.50	20.71
4	$769		9.33	62.50	9.56	80.00	17.60	69.17	22.99	69.17	35.79
5	unbounded		11.93	99.17	11.53	58.33	9.62	27.50	36.03	61.67	40.51
Total		46.82		38.29		38.46		29.43		37.63	

4.2.   Impact of the policy changes on the distribution of EMTRs

It is difficult to substantially reduce EMTRs for everyone without spending much more than 5 billion dollars. Reducing the lowest income tax rate and increasing the tax-free threshold only reduce EMTRs for 12 and 3.5 per cent of working-age individuals, respectively, and in the former case only by 4 percentage points on average. These two options reduce EMTRs for some individuals and do not increase EMTRs for anyone[9]. By contrast, the other three policy changes clearly redistribute the burden of EMTRs. Increasing the LITO lengthens the income range over which the offset is tapered out compared to the current offset. Therefore, EMTRs will increase for families that were previously not eligible for the offset because their income was too high, but who have become eligible after the increase in the LITO. This option has the highest percentage of individuals who experience an increase in EMTR. Similarly, due to the reduction in selected taper rates, more families have become eligible for the corresponding transfer payments and are now experiencing higher EMTRs because these payments are being withdrawn over a longer income span. Introducing a new transfer that is tapered out, such as the EITC, also increases EMTRs over part of the income range.

Table 2 displays the percentage of working-age individuals who experience an increase or decrease in EMTR. The top section of the table displays this information for all working-age individuals combined. It also displays the average percentage point reduction or increase conditional on experiencing a reduction or increase, and the total average change of EMTRs for all working-age individuals. For example, compared with the current system, an increase in the LITO reduces the EMTR for 6.04 per cent of working-age individuals, and for these people the EMTR falls by an average of 12.25 percentage points. However, it also increases the EMTR for 35.78 per cent of working-age individuals, and for these people the EMTR increases by an average of 3.97 percentage points.

---

[9] There is a small fraction of families who experience an increase in EMTRs due to a reduction in the lowest income tax rate or an increase in the tax-free threshold. These are caused by very specific interactions, such as for instance between the tax-free threshold and the pensioner rebate. It is beyond the scope of this study to investigate these interactions in-depth.

Table 2 Changes in EMTRs for working-age individuals by family type and weekly household income quintile (upper bounds in parentheses) for policy options

EMTR goes:	Reduce lowest rate in %	pp chg	Increase TFT in %	pp chg	Increase LITO in %	pp chg	Reduce Tapers in %	pp chg	Introduce EITC in %	pp chg
Down	11.61	-3.98	3.48	-11.10	6.04	-12.25	7.46	-21.87	29.15	-7.30
Unchange	88.18		96.08		58.18		77.19		56.45	
Up	0.21	3.03	0.44	4.08	35.78	3.97	15.34	22.15	14.40	17.65
Total		-0.46		-0.37		0.66		1.78		0.43

Percentage of working-age persons that experience their EMTR going up or down

Quintile	Reduce lowest rate down	up	Increase TFT down	up	Increase LITO down	up	Reduce Tapers down	up	Introduce EITC down	up
Married males										
1 ($685)	20.04	1.07	8.71	2.46	15.35	13.60	19.15	14.96	61.65	16.65
2 ($964)	11.94	0.48	1.82	0.37	5.03	65.35	11.45	57.14	16.83	14.32
3 ($1219)	2.14	0.00	0.42	0.00	1.43	66.40	0.00	9.71	3.78	20.57
4 ($1540)	1.01	0.00	0.00	0.00	0.19	47.04	0.00	0.00	0.47	5.94
5 (no bound)	0.51	0.00	0.64	0.00	0.51	13.09	0.00	0.00	0.11	0.07
Total	7.23	0.32	2.39	0.59	4.61	40.38	6.23	16.06	16.47	11.43
Married females										
1 ($646)	14.95	1.26	6.64	2.41	11.83	6.26	18.32	10.46	76.14	15.20
2 ($935)	21.30	0.35	6.94	0.70	13.96	14.18	23.47	43.35	43.94	11.20
3 ($1203)	19.59	0.00	3.54	0.00	6.51	35.46	2.93	9.35	12.67	20.72
4 ($1522)	14.27	0.00	2.68	0.00	5.57	53.26	0.00	0.00	1.85	7.62
5 (no bound)	5.39	0.00	1.44	0.00	2.33	39.49	0.00	0.00	0.24	0.07
Total	15.01	0.33	4.25	0.64	8.03	29.52	8.97	12.39	26.98	10.89
Single males										
1 ($246)	13.27		6.34	0.00	13.27	0.00	4.74	5.84	100.00	0.00
2 ($398)	45.20		7.74	0.74	12.33	0.23	16.01	13.27	100.00	0.00
3 ($576)	0.56		0.00	0.00	0.00	78.31	0.00	58.68	8.00	85.85
4 ($769)	0.31		0.00	0.00	0.31	99.26	0.00	7.26	0.12	21.23
5 (no bound)	0.00		0.00	0.00	0.00	19.05	0.00	0.00	0.00	0.25
Total	12.15		2.83	0.16	5.19	39.55	4.25	16.78	40.56	21.89
Single females										
1 ($246)	22.98		17.53	0.00	22.98	0.00	17.38	6.13	100.00	0.00
2 ($356)	37.19		3.78	0.55	8.09	0.55	13.77	11.40	100.00	0.00
3 ($522)	6.86		1.33	0.00	2.16	53.14	0.00	64.71	43.81	54.61
4 ($682)	0.00		0.00	0.00	0.00	99.69	0.00	25.15	0.55	68.08
5 (no bound)	0.00		0.00	0.00	0.00	47.97	0.00	0.00	0.00	1.07
Total	14.06		4.13	0.13	6.23	39.53	6.20	21.35	49.21	24.07
Sole parents										
1 ($412)	10.82		3.06		2.70	0.00	5.94	6.80	91.54	8.46
2 ($497)	2.32		0.00		2.32	0.54	3.08	2.69	93.58	3.40
3 ($615)	12.48		3.01		11.45	8.08	26.60	8.44	49.75	4.74
4 ($770)	15.92		23.11		4.87	62.02	51.63	19.38	16.93	18.52
5 (no bound)	1.82		0.56		1.26	62.62	13.25	15.34	10.37	9.42
Total	8.84		5.97		4.55	25.31	19.94	10.34	55.03	8.83

The table shows that average overall changes to EMTRs are small at 1.78 percentage points or less. Reducing the lowest income tax rate and increasing the tax-free threshold reduce EMTRs on average, whereas the other three options increase them. Increasing the tax-free threshold on average reduces EMTRs by 11.10 percentage points, but only for less than 4 per cent of all working-age individuals. Reducing selected taper rates reduces EMTRs by approximately 22 percentage points for 7 per cent of all working-age individuals, but almost twice as many experience an increase in EMTR of a similar magnitude. Finally, the introduction of an EITC reduces EMTRs by 7.30 percentage points on average for almost a third of all working-age individuals. However, this comes at the expense of 14.4 per cent of working-age individuals who experience an increase in EMTR of more than 17 percentage points on average. The remainder of Table 2 breaks down the percentage of individuals who experience increases or decreases in EMTR by family type and household income quintile. There are clear differences in the effects of the different policy options by both family type and household income quintile. For example, the group with the highest percentage benefiting from a reduction in taper rates through a reduced EMTR are the sole parents. Married women have the highest percentage benefiting from an increase in the LITO.

4.3. *EMTRs for hypothetical households in selected employment options*

In Section 4.2, the EMTR is measured over an additional dollar of income, but here we examine net income changes between non-participation and part-time work (20 hours per week), and between part-time and full-time work (40 hours per week), relative to gross income changes. These employment options are realistic choices that families and individuals would face when making labour supply decisions. Three types of families are distinguished: a single person; a single parent with one dependent child under 13; and a couple with two dependent children under 13. In addition, five wage levels are distinguished: the federal minimum wage of $12.75 per hour (a low wage); an hourly wage of $25 for the head and $20 for the spouse (an average wage); and an hourly wage of $50 for the head and $40 for the spouse (a high wage).

Low-wage sole parents, under the current tax and social security systems, have relatively low EMTRs when moving from non-work to part-time work, at 37 per cent (Table 3). When moving from part-time to full-time work, the EMTR nearly doubles to 69 per cent. Reducing selected tapers or introducing an EITC decrease the EMTR from non-employment to part-

time employment by 5 percentage points or more. The LITO does not help to reduce the EMTR when moving from part-time to full-time employment whereas the EITC reduces it from 69 to 65 per cent. For an average-wage sole parent this is still the case, although both options increase the EMTR of moving from part-time to full-time employment from 53 to 57 per cent. For a high-wage sole parent there are no substantial effects on EMTRs due to the policy changes.

Table 3   EMTRs for realistic employment options for different hourly wage rates and policy options: Sole parent with one child under 13 (in percentages)

| | Policy options: | | | | | |
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Hourly wage: $12.75						
EMTR from 0 to 20 hours	37	35	37	28	34	32
EMTR from 20 to 40 hours	69	68	66	70	65	65
Hourly wage: $25						
EMTR from 0 to 20 hours	53	51	51	49	50	48
EMTR from 20 to 40 hours	53	52	52	57	56	57
Hourly wage: $50						
EMTR from 0 to 20 hours	53	52	52	53	53	52
EMTR from 20 to 40 hours	49	49	49	49	49	49

Low-wage single persons under current policy have a high EMTR for moving from non-employment into part-time employment, of 69 per cent (Table 4). Reducing the taper rate on NewStart is most effective in reducing this to 44 per cent. However, as a consequence, the EMTR for moving from part-time into full-time employment increases from the current 42 per cent to 54 per cent. The LITO and EITC are better options to reduce the EMTR from non-employment to part-time employment to 60 and 64 per cent respectively. Only the EITC reduces the EMTR from part-time to full-time employment from 42 to 37 per cent. For an average-wage single person, the LITO and the EITC are equally effective policies, although both slightly increase the EMTR of moving from part-time to full-time employment from a low 34 per cent to 38 per cent. For a high-wage single person, there are no substantial changes to EMTRs.

Table 5 shows that low-wage couples, under current policy, experience relatively high EMTRs from non-employment to part-time employment (67 per cent), from part-time to full-time employment (82 per cent) and from non-employment to full-time employment (74 per

cent). The policy change of reducing selected tapers is most effective at reducing these to 41 per cent, 75 per cent, and 58 per cent respectively. This is done at the small cost of increasing the EMTR of taking up a part-time job for the spouse from 48 to 53 per cent. The introduction of an EITC would reduce the EMTRs for the head by less, but would not increase the EMTR of a low-wage earning spouse. Similar to high-wage sole parents and singles, high-wage couples with two dependent children do not experience substantial changes to their EMTR under the different policy options.

Table 4 EMTRs for realistic employment options for different hourly wage rates and policy options: Single person (in percentages)

| | Policy options: | | | | | |
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Hourly wage: $12.75						
EMTR from 0 to 20 hours	69	66	64	60	44	64
EMTR from 20 to 40 hours	42	40	42	42	54	37
Hourly wage: $25						
EMTR from 0 to 20 hours	56	53	53	51	49	51
EMTR from 20 to 40 hours	34	34	34	38	41	38
Hourly wage: $50						
EMTR from 0 to 20 hours	45	44	44	44	45	45
EMTR from 20 to 40 hours	43	43	43	43	43	43

The difference between reducing selected tapers and introducing an EITC is most pronounced for an average-wage couple (Table 5). Reducing selected taper rates greatly reduces the EMTR from non-employment to part-time employment for the head, bringing it down from 74 to 58 per cent. However, as a result the EMTR from moving from part-time to full-time employment is increased from 57 to 73 per cent. In contrast, the EITC reduces the non-employment to part-time employment EMTR for the head by 5 percentage points only to 69 per cent, but at the same time, the EMTR from part-time to full-time employment is reduced slightly as well. However, the spouse's EMTR for taking up part-time employment is increased by 8 percentage points, although this is from a relatively low base of 32 per cent.

Table 5 EMTRs for realistic employment options for different hourly wage rates and policy options: Couple with two children under 13 (in percentages)

	Policy options:					
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Hourly wage Head and Partner: 12.75						
EMTR from 0 to 20 hours single earner	67	64	62	58	41	62
EMTR from 20 to 40 hours single earner	82	80	82	81	75	77
EMTR from 0 to 20 hours secondary earner with head at 40 hours	48	46	43	41	53	43
EMTR from 20 to 40 hours secondary earner with head at 40 hours	57	54	57	54	46	52
Hourly wage Head: $25; Hourly wage Partner: $20						
EMTR from 0 to 20 hours single earner	74	71	71	69	58	69
EMTR from 20 to 40 hours single earner	57	57	57	60	73	55
EMTR from 0 to 20 hours secondary earner with head at 40 hours	32	30	30	27	32	40
EMTR from 20 to 40 hours secondary earner with head at 40 hours	38	38	38	41	38	38
Hourly wage Head: $50; Hourly wage Partner: $40						
EMTR from 0 to 20 hours single earner	65	64	64	65	65	62
EMTR from 20 to 40 hours single earner	53	53	53	53	53	56
EMTR from 0 to 20 hours secondary earner with head at 40 hours	31	29	29	29	31	31
EMTR from 20 to 40 hours secondary earner with head at 40 hours	38	38	38	40	38	38

5.   Results when Allowing for Labour Supply Responses

This section provides a comparison of the policy options, allowing households to change their labour supply behaviour in response to the changes in disposable income and EMTR associated with the different policy options relative to the current (January 2006) tax and social security system. When discussing employment and average hours of work, it is assumed that individuals can change their hours to the desired level.

First, the labour force participation effects are compared in Table 6, both in absolute numbers and in percentages of the relevant population by family type. The total increase in employment is highest for the change involving an increase in the LITO, with an increase in

workforce participation of 61,649 persons or of 0.41 per cent, followed by the EITC option. Reducing taper rates is expected to decrease the number of individuals in employment.

However, breaking the changes down by family type, different patterns are observed. For single-adult households and married men, the EITC option appears to be most effective in terms of encouraging labour market entry, and only for married women is the LITO option the most effective in this respect. However, the LITO option is the second-best alternative for all other groups. The decrease in the lowest tax rate and the increase in the tax-free threshold have very similar effects, which is not surprising when comparing Figure 1 and Figure 2. The tax rate decrease is expected to be only slightly more effective.

Table 6 Additional participation in employment in per cent (first row) and new participants in persons (second row) for different policy options

	Couple Men	Couple Women	Single Men	Single Women	Single Parents	Total
Decrease lowest tax rate	0.18	0.36	0.19	0.19	1.44	0.29
	7,919	15,837	5,546	4,983	8,486	42,770
Increase tax-free threshold	0.17	0.38	0.17	0.19	0.96	0.27
	7,479	16,717	4,962	4,983	5,657	39,797
Low Income Tax Offset	0.15	0.53	0.21	0.3	3.01	0.41
	6,599	23,316	6,130	7,867	17,738	61,649
Reduced Tapers	-0.21	-0.69	0.06	0.12	2.40	-0.14
	-9,238	-30,354	1,751	3,147	14,143	-20,552
Earned Income Tax Credit	0.19	-0.15	0.37	0.52	4.41	0.35
	8,358	-6,599	10,800	13,637	25,988	52,184

A second comparison of the options examines the changes in hours of work per week effects. Table 7 reports the average hours change and the percentage change by family type. The table shows that the tax rate decrease is most effective overall in increasing the average hours of work. The reduction in taper rates again has a negative effect. Comparing the two tables shows that for singles the reduced taper rates increase participation but decrease the overall number of hours worked.

Table 7   Changes in average hours per week (first row) and the percentage change (second row) for different policy options by family type

	Couple Men	Couple Women	Single Men	Single Women	Single Parents	Total
Average hours	24.35	14.88	13.74	10.95	14.44	
Decrease lowest tax rate	0.06	0.13	0.07	0.05	0.51	0.10
in percentage change	*0.25*	*0.87*	*0.51*	*0.46*	*3.53*	
Increase tax-free threshold	0.06	0.12	0.06	0.04	0.44	0.09
in percentage change	*0.25*	*0.81*	*0.44*	*0.37*	*3.05*	
Low Income Tax Offset	0.01	0.13	0.05	0.03	0.80	0.09
in percentage change	*0.04*	*0.87*	*0.36*	*0.27*	*5.54*	
Reduced Tapers	-0.21	-0.31	-0.07	-0.20	0.78	-0.17
in percentage change	*-0.86*	*-2.08*	*-0.51*	*-1.83*	*5.40*	
Earned Income Tax Credit	0.02	-0.09	0.09	0.06	1.48	0.07
in percentage change	*0.08*	*-0.60*	*0.66*	*0.55*	*10.25*	

As in Table 6, there are large differences between the different family types. Only for married men and women is the tax rate decrease the most effective in terms of increasing the average hours of labour supply. For the other groups, the EITC is most effective.

Both Table 6 and Table 7 show that the income effect dominates the substitution effect for married women when an EITC is introduced (and when taper rates are relaxed), which is a phenomenon commonly found for married women's labour supply. This is one disadvantage of an EITC, which is partly due to the means testing on family income and partly due to the increase in available household income. The former increases EMTRs for secondary earners, who fall into the withdrawal range of EITC, while at the same time increasing available net income over a range of gross household incomes. Both effects work in the same direction, discouraging labour supply of the secondary earner.

A third outcome of interest is the number of working-age jobless households by family type for the different policy options. Table 8 displays the reduction in the number of jobless households under the different policy changes. Overall, the EITC is clearly most successful at reducing the number of jobless families. In fact, EITC is the most effective policy to reduce the number of jobless families for each of the demographic subgroups. Reducing selected taper rates is nearly as effective for couple families, but not for the other family types.

Table 8 Reduction in the number of jobless households under the policy options by family type

	Couples	Single males	Single	Sole parents	Total
Number of jobless households in January 2006	412,138	549,189	412,683	304,400	1,678,409
Reduction in the number of jobless households under different policy changes					
Reduce lowest rate	-7,104	-5,584	-4,989	-8,467	-26,144
Increase tax-free threshold	-6,976	-5,207	-4,862	-5,636	-22,682
Increase low income tax offset	-7,471	-6,164	-7,720	-17,736	-39,091
Reduce selected taper rates	-11,347	-1,738	-2,960	-14,132	-30,176
Introduce earned income tax credit	-11,357	-10,884	-13,589	-25,950	-61,781

Table 9 presents the final comparison between the different policy options on the predicted cost to government after taking into account all labour supply responses. Decreasing the lowest tax rate has the lowest cost after the expected behavioural responses are taken into account. Whether this option is rated as the most successful depends on the aim of the policy changes. If the aim of the policy change is to increase the number of persons participating in the labour force, then this option may well be the most cost efficient of the five options. However, if a reduction in jobless households were the target, then the EITC would be the most cost effective option. Naturally, the policy changes could have been proposed with more than one objective in mind, which would need to be taken into account when assessing the different options.

Table 9 Cost of policy changes without and with labour supply response

	Cost to budget without labour supply responses ($b.)	Cost after full effect on labour supply ($b.)
Decrease lowest tax rate	5.0	4.4
Increase tax-free threshold	5.0	4.5
Low Income Tax Offset	5.0	4.7
Reduced Tapers	5.1	6.4
Earned Income Tax Credit	5.0	4.7

6.   Summary and Conclusions

Using about $5 billion per year of the budget surplus, the paper explores the relative merits of different policy options in changing the tax and social security system to make paid work more attractive to reduce the number of jobless households and to increase the supply of labour. The five options considered are: reduction of the bottom marginal income tax rate from 15 per cent to 11 percent; raising the income tax-free threshold from $6,000 to $10,000; increasing the low income tax offset (LITO) from $235 a year to $1,400 a year; introducing an earned income tax credit (EITC) means tested on family income and worth up to $2,444 a year; and reducing taper rates on NewStart Allowances, Partner Allowances, Youth Allowances and Partnering Payments from 70 and 50 per cent to 32 per cent. The microsimulation model MITTS is used to evaluate the effects of the policy options on revenue costs when taking into account the labour supply responses.[10] The options are designed in such a way that each of them cost about $5 billion when behavioural responses are not included. In addition, the analysis includes the distribution of winners by family type and by income quintile; changes in effective marginal tax rates; changes in labour supply responses, both for participation in the workforce and for hours worked; and changes in the number of jobless households.

The option of reducing the taper rates on social security allowances for those of working age is the least attractive of the five options considered. While the lower withdrawal rates reduce the EMTR for about 7.5 per cent of households, the extended income range over which the allowances are withdrawn raises the EMTR for another 15 per cent of households. The lower EMTR encourages a significant increase in the participation rates of sole parents and in aggregate the policy option is estimated to reduce the number of jobless households by about 26,000. However, the complementary zone of higher EMTR induces a large fall in the participation rate of married females. In aggregate, across the economy both labour force participation and hours offered for work fall. These behavioural responses cause the annual budget cost of the option to increase from $5 to $6.4 billion.

---

[10] In the calculations in this paper, it is assumed that individuals can change labour supply in response to the policy changes without being restricted by labour demand.

The income tax policy change options of reducing the bottom marginal tax rate or of raising the tax-free threshold have similar general effects. Both reduce marginal income tax rates and the EMTR at the lower income levels in excess of $6,000 a year and up to $21,600 for the lower rate option and $10,000 for the higher threshold option. Those with higher incomes experience flat sum reductions in tax paid, but no changes in their marginal tax rates. All taxpayers with taxable income above $6,000 gain, and in total 67 per cent of all households gain. The lower EMTR for both options encourage workforce participation by about 40,000 people and reduce the number of jobless households by about 25,000. The labour supply increase would reduce the budget cost by about 10 per cent to $4.5 billion. The lower rate option achieves a smaller reduction in the marginal tax rate but over a wider taxable income range when compared with the higher threshold option. The EMTR falls for 11.5 per cent of households with the tax rate reduction option and for just 3.5 per cent of households with the threshold increase option. The tax rate reduction is estimated to be slightly more effective in reducing the number of jobless households and in increasing the supply of labour.

Compared with the lower bottom tax rate and higher threshold options, which provide average tax reductions to all middle- and high-income taxpayers as well as lower-income taxpayers, the LITO and EITC options target the reduction of taxation on those households with lower incomes. In essence, the reductions in marginal and average tax rates at lower income levels, and the associated reductions in EMTR, are recaptured for those at higher income levels. This raises the EMTR for many households on middle incomes. In terms of after-tax income gains, it is estimated that 56 per cent of all households benefit from LITO and 30 per cent benefit from the EITC, with those in the second income quintile being the largest winners under both options. Whereas the LITO means tests the tax offset on income of the individual, the EITC recaptures the low income work incentive by testing against income of the family. One consequence of this key difference is that LITO is more attractive to secondary income earners than is the EITC, whereas the EITC provides greater incentives for sole parents to join the workforce and to increase hours of work than does the LITO option. In terms of the aggregate effects, it is estimated that LITO is slightly more effective in increasing workforce participation and hours of work, an increase of 62,000 participants and of 0.08 hours of work per week on average, when compared with the EITC, with an increase of 52,000 participants and of 0.07 hours per person per week. On the other hand, the EITC is far more effective in reducing the number of jobless households, with 62,000, or 3.7 per cent

of current jobless households, against 39,000. The labour supply behavioural responses recapture about 6 per cent of the original $5 billion annual budget outlay, resulting in a net cost of about $4.7 billion a year.

What then are the relative merits of the pairing of LITO and the EITC versus the pairing of a higher tax-free threshold and a lower bottom tax rate? In terms of redistributional effects, although there are no losers under any option, the latter pairing provides income tax reductions to all taxpayers including over two-thirds of all households, whereas only a third to a half of all households benefit from the LITO or EITC options. The gains for those on low incomes are greater for the LITO and EITC options. In terms of the effects of changes in EMTR and incentives to work, the LITO and EITC options, which target EMTR reductions on low income earners who have relatively high labour supply elasticities, are more effective in increasing labour force participation than are the reduced bottom tax rate and higher tax-free threshold options. On the other hand, the lower bottom tax rate and higher tax-free threshold options are more effective in increasing overall labour supply than LITO, and especially the EITC. As a consequence, although the EITC and LITO recapture some of the revenue outlay under fixed labour supply, this is less than for the other pairing. In terms of reducing the number of jobless households and thus the rate of dependence on welfare, it is estimated that the EITC is clearly superior. The reduction in the number of jobless households is more than double the reduction compared to using the lower tax rate and higher threshold policy options. Not surprising, and as is normally encountered, when there are several criteria or objectives of tax policy change it will be desirable to use more than one tax and social security system policy option as part of a package.

Appendix A: Detailed results for the analysis in Section 4.3

Table 10 Low wage sole parent

	Sole parent	Sole parent	Sole parent	Sole parent	Sole parent	Sole parent
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Number of children < 13	1	1	1	1	1	1
Hourly wage Head	12.75	12.75	12.75	12.75	12.75	12.75
Hourly wage Partner	-	-	-	-	-	-
Non-work family						
Gross family income	0	0	0	0	0	0
Net family income	409.20	409.20	409.20	409.20	409.20	409.20
Head works 20 hours per week						
Gross family income	255.00	255.00	255.00	255.00	255.00	255.00
Net family income	569.88	575.70	569.88	592.04	577.61	581.81
Share of extra income from work family loses when moving from non-work to a single part-time job (by the head)	**37%**	**35%**	**37%**	**28%**	**34%**	**32%**
Head works 40 hours per week						
Gross family income	510.00	510.00	510.00	510.00	510.00	510.00
Net family income	647.80	656.56	656.09	668.13	665.73	671.65
Share of extra income from work family loses when the head moves from a part-time to a full time job	**69%**	**68%**	**66%**	**70%**	**65%**	**65%**
Share of extra income from work family loses when the head moves from non-work to a full time job	**53%**	**51%**	**52%**	**49%**	**50%**	**49%**

Table 11 Average wage sole parent

	Sole parent	Sole parent	Sole parent	Sole parent	Sole parent	Sole parent
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Number of children < 13	1	1	1	1	1	1
Hourly wage Head	25	25	25	25	25	25
Hourly wage Partner	-	-	-	-	-	-
Non-work family						
Gross family income	0	0	0	0	0	0
Net family income	409.2	409.2	409.2	409.2	409.2	409.2
Head works 20 hours per week						
Gross family income	500	500	500	500	500	500
Net family income	645.55	653.56	653.09	666.12	661.7	668.93
Share of extra income from work family loses when moving from non-work to a single part-time job (by the head)	**53%**	**51%**	**51%**	**49%**	**50%**	**48%**
Head works 40 hours per week						
Gross family income	1000	1000	1000	1000	1000	1000
Net family income	879.86	891.86	891.4	883.4	879.86	884.78
Share of extra income from work family loses when the head moves from a part-time to a full time job	**53%**	**52%**	**52%**	**57%**	**56%**	**57%**
Share of extra income from work family loses when the head moves from non-work to a full time job	**53%**	**52%**	**52%**	**53%**	**53%**	**52%**

Table 12 High wage sole parent

	Sole parent	Sole parent	Sole parent	Sole parent	Sole parent	Sole parent
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Number of children < 13	1	1	1	1	1	1
Hourly wage Head	50	50	50	50	50	50
Hourly wage Partner	-	-	-	-	-	-
Non-work family						
Gross family income	0	0	0	0	0	0
Net family income	409.2	409.2	409.2	409.2	409.2	409.2
Head works 20 hours per week						
Gross family income	1000	1000	1000	1000	1000	1000
Net family income	879.86	891.86	891.4	883.4	879.86	884.78
Share of extra income from work family loses when moving from non-work to a single part-time job (by the head)	**53%**	**52%**	**52%**	**53%**	**53%**	**52%**
Head works 40 hours per week						
Gross family income	2000	2000	2000	2000	2000	2000
Net family income	1391.2	1403.2	1402.74	1391.2	1391.2	1391.2
Share of extra income from work family loses when the head moves from a part-time to a full time job	**49%**	**49%**	**49%**	**49%**	**49%**	**49%**
Share of extra income from work family loses when the head moves from non-work to a full time job	**51%**	**50%**	**50%**	**51%**	**51%**	**51%**

Table 13 Low wage single person

	Single	Single	Single	Single	Single	Single
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Number of children < 13	-	-	-	-	-	-
Hourly wage Head	12.75	12.75	12.75	12.75	12.75	12.75
Hourly wage Partner	-	-	-	-	-	-
Non-work family						
Gross family income	0	0	0	0	0	0
Net family income	202.25	202.25	202.25	202.25	202.25	202.25
Head works 20 hours per week						
Gross family income	255	255	255	255	255	255
Net family income	282.05	289.77	293.58	304.45	346.06	293.97
Share of extra income from work family loses when moving from non-work to a single part-time job (by the head)	**69%**	**66%**	**64%**	**60%**	**44%**	**64%**
Head works 40 hours per week						
Gross family income	510	510	510	510	510	510
Net family income	429.7	441.7	441.24	452.1	462.51	453.55
Share of extra income from work family loses when the head moves from a part-time to a full time job	**42%**	**40%**	**42%**	**42%**	**54%**	**37%**
Share of extra income from work family loses when the head moves from non-work to a full time job	**55%**	**53%**	**53%**	**51%**	**49%**	**51%**

Table 14 Average wage single person

	Single	Single	Single	Single	Single	Single
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Number of children < 13	-	-	-	-	-	-
Hourly wage Head	25	25	25	25	25	25
Hourly wage Partner	-	-	-	-	-	-
Non-work family						
Gross family income	0	0	0	0	0	0
Net family income	202.25	202.25	202.25	202.25	202.25	202.25
Head works 20 hours per week						
Gross family income	500	500	500	500	500	500
Net family income	423.25	435.25	434.79	445.65	457.85	446.63
Share of extra income from work family loses when moving from non-work to a single part-time job (by the head)	**56%**	**53%**	**53%**	**51%**	**49%**	**51%**
Head works 40 hours per week						
Gross family income	1000	1000	1000	1000	1000	1000
Net family income	754.62	766.62	766.15	758.15	754.62	754.62
Share of extra income from work family loses when the head moves from a part-time to a full time job	**34%**	**34%**	**34%**	**38%**	**41%**	**38%**
Share of extra income from work family loses when the head moves from non-work to a full time job	**45%**	**44%**	**44%**	**44%**	**45%**	**45%**

Table 15 High wage single person

	Single	Single	Single	Single	Single	Single
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Number of children < 13	-	-	-	-	-	-
Hourly wage Head	50	50	50	50	50	50
Hourly wage Partner	-	-	-	-	-	-
Non-work family						
Gross family income	0	0	0	0	0	0
Net family income	202.25	202.25	202.25	202.25	202.25	202.25
Head works 20 hours per week						
Gross family income	1000	1000	1000	1000	1000	1000
Net family income	754.62	766.62	766.15	758.15	754.62	754.62
Share of extra income from work family loses when moving from non-work to a single part-time job (by the head)	**45%**	**44%**	**44%**	**44%**	**45%**	**45%**
Head works 40 hours per week						
Gross family income	2000	2000	2000	2000	2000	2000
Net family income	1326.35	1338.35	1337.88	1326.35	1326.35	1326.35
Share of extra income from work family loses when the head moves from a part-time to a full time job	**43%**	**43%**	**43%**	**43%**	**43%**	**43%**
Share of extra income from work family loses when the head moves from non-work to a full time job	**44%**	**43%**	**43%**	**44%**	**44%**	**44%**

Table 16 Low wage earning couple

	Low Wage Couple	Low Wage Couple	Low Wage Couple	Low Wage Couple	Low Wage Couple	Low Wage Couple
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Number of children < 13	2	2	2	2	2	2
Hourly wage Head	12.75	12.75	12.75	12.75	12.75	12.75
Hourly wage Partner	12.75	12.75	12.75	12.75	12.75	12.75
Non-work family						
Gross family income	0	0	0	0	0	0
Net family income	570.66	570.66	570.66	570.66	570.66	570.66
Head works 20 hours per week						
Gross family income	255	255	255	255	255	255
Net family income	655.39	662.32	666.92	676.86	720.94	667.31
Share of extra income from work family loses when moving from non-work to a single part-time job (by the head)	**67%**	**64%**	**62%**	**58%**	**41%**	**62%**
Head works 40 hours per week						
Gross family income	510	510	510	510	510	510
Net family income	701.74	713.74	713.28	724.14	784.28	725.59
Share of extra income from work family loses when the head moves from a part-time to a full time job	**82%**	**80%**	**82%**	**81%**	**75%**	**77%**
Share of extra income from work family loses when the head moves from non-work to a full time job	**74%**	**72%**	**72%**	**70%**	**58%**	**70%**
Head works 40 hours per week and partner takes up a part-time job (20 hrs)						
Gross family income	765	765	765	765	765	765
Net family income	834.75	852.34	857.83	873.58	903.31	870.52
Share of extra income the family loses when the spouse takes up a part time job	**48%**	**46%**	**43%**	**41%**	**53%**	**43%**
Both head and spouse work 40 hours per week						
Gross family income	1020	1020	1020	1020	1020	1020
Net family income	945.29	969.29	968.37	990.1	1040.26	992.99
Share of extra income the family loses when the spouse moves from a part time to a full-time job	**57%**	**54%**	**57%**	**54%**	**46%**	**52%**
Share of extra income the family loses when the spouse moves from non-work to full-time work	**52%**	**50%**	**50%**	**48%**	**50%**	**48%**

Table 17 Average wage earning couple

	Avg Wage Couple	Avg Wage Couple	Avg Wage Couple	Avg Wage Couple	Avg Wage Couple	Avg Wage Couple
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Number of children < 13	2	2	2	2	2	2
Hourly wage Head	25	25	25	25	25	25
Hourly wage Partner	20	20	20	20	20	20
Non-work family						
Gross family income	0	0	0	0	0	0
Net family income	570.66	570.66	570.66	570.66	570.66	570.66
Head works 20 hours per week						
Gross family income	500	500	500	500	500	500
Net family income	702.14	714.14	713.68	724.54	782.18	725.52
Share of extra income from work family loses when moving from non-work to a single part-time job (by the head)	**74%**	**71%**	**71%**	**69%**	**58%**	**69%**
Head works 40 hours per week						
Gross family income	1000	1000	1000	1000	1000	1000
Net family income	919.37	931.37	930.91	922.91	919.37	949.37
Share of extra income from work family loses when the head moves from a part-time to a full time job	**57%**	**57%**	**57%**	**60%**	**73%**	**55%**
Share of extra income from work family loses when the head moves from non-work to a full time job	**65%**	**64%**	**64%**	**65%**	**65%**	**62%**
Head works 40 hours per week and partner takes up a part-time job (20 hrs)						
Gross family income	1400	1400	1400	1400	1400	1400
Net family income	1189.39	1212.78	1212.47	1215.33	1189.39	1189.39
Share of extra income the family loses when the spouse takes up a part time job	**32%**	**30%**	**30%**	**27%**	**32%**	**40%**
Both head and spouse work 40 hours per week						
Gross family income	1800	1800	1800	1800	1800	1800
Net family income	1437.78	1461.78	1460.85	1452.85	1437.78	1437.78
Share of extra income the family loses when the spouse moves from a part time to a full-time job	**38%**	**38%**	**38%**	**41%**	**38%**	**38%**
Share of extra income the family loses when the spouse moves from non-work to full-time work	**35%**	**34%**	**34%**	**34%**	**35%**	**39%**

Table 18 High wage earning couple

	High Wage Couple	High Wage Couple	High Wage Couple	High Wage Couple	High Wage Couple	High Wage Couple
	Jan-06	RLR	TFT	LITO	TAPERS	EITC
Number of children < 13	2	2	2	2	2	2
Hourly wage Head	50	50	50	50	50	50
Hourly wage Partner	40	40	40	40	40	40
Non-work family						
Gross family income	0	0	0	0	0	0
Net family income	570.66	570.66	570.66	570.66	570.66	570.66
Head works 20 hours per week						
Gross family income	1000	1000	1000	1000	1000	1000
Net family income	919.37	931.37	930.91	922.91	919.37	949.37
Share of extra income from work family loses when moving from non-work to a single part-time job (by the head)	**65%**	**64%**	**64%**	**65%**	**65%**	**62%**
Head works 40 hours per week						
Gross family income	2000	2000	2000	2000	2000	2000
Net family income	1391.2	1403.2	1402.74	1391.2	1391.2	1391.2
Share of extra income from work family loses when the head moves from a part-time to a full time job	**53%**	**53%**	**53%**	**53%**	**53%**	**56%**
Share of extra income from work family loses when the head moves from non-work to a full time job	**59%**	**58%**	**58%**	**59%**	**59%**	**59%**
Head works 40 hours per week and partner takes up a part-time job (20 hrs)						
Gross family income	2800	2800	2800	2800	2800	2800
Net family income	1945.96	1969.96	1969.04	1957.5	1945.96	1945.96
Share of extra income the family loses when the spouse takes up a part time job	**31%**	**29%**	**29%**	**29%**	**31%**	**31%**
Both head and spouse work 40 hours per week						
Gross family income	3600	3600	3600	3600	3600	3600
Net family income	2439.35	2463.35	2462.42	2439.35	2439.35	2439.35
Share of extra income the family loses when the spouse moves from a part time to a full-time job	**38%**	**38%**	**38%**	**40%**	**38%**	**38%**
Share of extra income the family loses when the spouse moves from non-work to full-time work	**34%**	**34%**	**34%**	**34%**	**34%**	**34%**

References

Australian Bureau of Statistics (ABS) (2003), "2000–01 Survey of Income and Housing Costs Australia: Confidentialised Unit Record File (CURF)", Technical Paper, ABS Catalogue No. 6541.0.30.001, Canberra.

ABS (2006a), "Average Weekly Earnings, Australia, November 2005", Catalogue No. 6302.0, Canberra.

ABS (2006b), "Consumer Price Index, Australia, Dec 2005", Catalogue No. 6401.0, Canberra.

Australian Government Treasury (2002), *Intergenerational Report 2002-03*, Budget Paper no. 5, 14 May, Commonwealth of Australia.

Australian Government Treasury (2005), Mid-Year Economic and Fiscal Outlook 2005-06, 15 December, Commonwealth of Australia.

Buddelmeyer, H., Freebairn, J. and Kalb, G. (2006) The heterogeneity of individuals' wage elasticities of labour supply. Mimeo, forthcoming in the Melbourne Institute Working Paper series, University of Melbourne.

Commonwealth Department of Family and Community Services, and the Department of Education, Science and Training (2006) A guide to Commonwealth Government payments.

Creedy, J., Duncan, A.S., Harris, M., and Scutella, R. (2002) *Microsimulation Modelling of Taxation and The Labour Market: The Melbourne Institute Tax and Transfer Simulator*. Cheltenham: Edward Elgar.

Creedy, J., Duncan, A.S., Kalb, G., Kew, H. and Scutella, R. (2004) The Melbourne Institute Tax and Transfer Simulator (MITTS). The latest version of this User's manual can be downloaded from the Melbourne Institute web site: http://www1.ecom.unimelb.edu.au/iaesrwww/lsfs/mitts.html

Creedy, J. and Kalb, G. (2005), "Discrete Hours Labour Supply Modelling: Specification, Estimation and Simulation", *Journal of Economic Surveys*, 19(5), pp. 697-734.

Department of Veterans' Affairs (2006). DVA FACTS, DP 43, IS 21, IS 22, IS 30.

Kalb, G. (2002), "Estimation of Labour Supply Models for Four Separate Groups in the Australian Population", Melbourne Institute Working Paper no. 24/2002.

Kalb, G. and Scutella, R. (2002), "Estimation of Wage Equations in Australia: Allowing for Censored Observations of Labour Supply", Melbourne Institute Working Paper no. 8/2002.

Productivity Commission 2005, *Economic Implications of an Ageing Australia*, Research Report, Canberra.