Effects of the Australian New Tax System on Government Expenditure With and Without Behavioural Changes*

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Abstract

This paper uses the Melbourne Institute Tax and Transfer Simulator to examine the effects of the New Tax System introduced in Australia in July 2000. First the whole set of changes is studied and then some of its components are discussed separately. From the results it is clear that the change in income tax rates and thresholds had the largest effect, because it affected a large proportion of the population whereas the changes to the benefit system are only relevant to smaller groups. Families with children benefited on average most from the changes, firstly through the changes in income taxes and secondly through the changes in Family Payments. However, families with children were also more likely to experience a loss indicating a wider range of positive and negative outcomes for this group.

1. Introduction

In July 2000, several reforms were made to the Australian Tax and Social Security System. These changes were introduced simultaneously with the new 10 per cent Goods and Services Tax (GST) and were at least partly meant to offset the increase in taxes paid through expenditures. Important changes in this reform were the decrease in personal income taxes, increases in benefit levels of pensions, allowances and additional benefits such as rent assistance and assistance available to families with children. This latter assistance also underwent a substantial amount of restructuring.

An evaluation of this reform would be difficult to perform. Firstly, no suitable data covering the period just before and after the reform are available. Secondly, even if such data were available, disentangling the effects of the separate components of the reform and other events taking place at the same time would be complicated.

This paper takes an alternative approach and investigates the effects of this reform on expenditure of the government and on labour supply of Australian households through simulation. For this simulation we use the Melbourne Institute Tax and Transfer Simulator (MITTS), a behavioural microsimulation model. Expenditure, revenue and labour supply are simulated before and after the reform, so that a comparison of the before and after situation can be made. The before reform date is set at January 2000 and the after reform date is set at July 2000. Section 3 of the paper provides a brief description of MITTS. Additional detail can be found in Creedy et al. (2001 and 2002).

Warren et al. (1999a, 1999b) analysed distributional effects of this reform while plans were still in a developmental stage. They indicate the difficulties of assessing the effect of the reform while not knowing the impact of the GST on price levels. At this stage, the Consumer Price Indices (CPI), for the period in which the reform was introduced, are of course known. This means that we can use the level of inflation, calculated by comparing the CPI of the first and the third quarter of 2000 (the before and after reform dates), to take out the effect of the GST (and other price effects). The level of inflation between the two quarters was 4.6 per cent, which includes the GST effect and the usual inflation. Although we account for the increased price as a result of the GST, the increased revenue from the GST is not included in the comparison of the costs to the government before and after the reform. It would be outside the scope of this paper to include this.

Whenever real tax and transfer systems at different moments in time are compared in MITTS, the results are corrected for the different price levels at the different points in time (here the first and third quarter of 2000). This prevents nominal changes in benefits from having an effect whenever the nominal change is equal to the general increase in prices. The assumption in the labour supply model underlying the behavioural results is that households are aware of the actual price changes after introduction of the GST and the effect this has on their real incomes. This may not have been true immediately after 1 July 2000, but in the longer term the real implications of the new system should become clear to most households and they are expected to behave accordingly.

This paper sets out to describe the effect that the changes to the tax and transfer system have had on the marginal tax rates and net incomes of Australian households and on the overall cost and it explores the changes in costs of the different payments and rebates. First, the effects are simulated without taking into account any potential labour supply responses resulting from the changed marginal tax rates at the different hours of labour supply. Later, labour supply responses are taken into account as well. It examines the effects on couples with and without children, single men, single women and sole parents separately.

After analysing the overall effect of the reforms, some of the more relevant individual changes are studied separately to reveal their effect on labour supply, net income, marginal tax rates and costs. Individual changes examined here include the personal income tax changes, introduction of the new family tax benefits (parts A and B), change in the pension taper rate, and change in the second threshold for recipients of the partnered Parenting Payment. Note that the combined effect of changes is not necessarily equal to the sum of all separate changes.

This paper gives an overview of the main results from the simulations. Full details of the results are presented in Kalb, Kew and Scutella (2002). The paper's structure is as follows. Section two discusses the approach taken for the simulations and the data used. It also outlines the qualifications we need to make in interpreting the results. Eight different simulations are carried out in the following sections. First, the complete package of changes is evaluated in Section three. This is followed by a brief discussion of simulations for the above described individual components in Section four. Section five concludes, summarising and comparing the effects over the different groups.

2. Methodology

MITTS calculates net incomes for each household in the 1997/98 Survey of Income and Housing Cost based on the wage rates of individuals (either observed in the data or imputed using the estimated wage equations as described in Kalb and Scutella (2002)), other income, and some individual and household characteristics. The net incomes can be calculated imposing different tax and transfer systems, allowing hypothetical and real policy changes to be analysed. In these calculations several issues need to be addressed. We discuss a few of the more important aspects of MITTS in this section[1].

These are, first the issue of eligibility and take up of benefits; second the need to combine information from different years and the need to simulate changes starting from a year for which no data is yet available; and third the use of labour supply modelling to estimate behavioural responses.

2.1. Eligibility

The information in the Survey of Income and Housing Cost (SIHC) is used to calculate eligibility for the different social security payments. Detailed information on the different sources of income are available that help in determining this eligibility. However, we cannot check all requirements for eligibility with the available data. For example, information on assets is not available and the amount of assets may also influence eligibility. Fortunately, the group of households that would not be eligible based on their level of assets (which excludes the home), but would be deemed eligible based on their level of income is relatively small. Particularly, because the SIHC records income from investments (like dividends or interest) and superannuation income, which are incorporated in the calculations, this is unlikely to be a major problem. Other requirements for eligibility, which we cannot check, are whether someone has been a resident for at least two years and is actively looking for work.

At the moment, MITTS does not allow for individuals who decide not to take up the benefits for which they are eligible. This is likely to cause overestimation of expenditure on the different payments. Although the current receipt of benefits as recorded in the SIHC could be used to get an amount closer to the actual amount, this cannot help us to decide whether after a reform someone will take up a benefit. In this paper we assume 100 per cent take up of benefits and argue that when one is interested in the *change* in expenditure as a result of the reform, this approach is reasonably satisfactory. Both the amounts before and after the reform

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[1] More information on MITTS can be found in Creedy et al. (2001, 2002).

will be overestimated and because the changes are not expected to expand eligibility to a large extent, the predicted percentage changes are expected to be reasonably informative.

2.2. *Combining different years of data*

The simulation procedure involves data from several years of the Survey of Income and Housing Cost and information on the taxation and social security regimes of several years. A few transformation steps are needed to combine these years in the analysis.

First of all, the behavioural part of the simulation procedure is based on labour supply models. These models are estimated using the Survey of Income and Housing Cost from 1994/95, 1995/96, 1996/97 and 1997/98 with the corresponding taxation and social security rules. Combining several years of data actually helps to identify the model, since slightly different tax regimes were operational in the four years. This provides more variation in net incomes at different hours of labour supply than would otherwise be the case. To estimate one model combining the four years, the net incomes calculated over a range of different possible hours have to be made comparable over the four years. This can be achieved by expressing the calculated net incomes in each of the years in the dollar value of one year. That is, we have to account for the change in the real value of the dollar. We choose to express all net incomes in 1997/1998 dollars and use the CPI to inflate the other year's net incomes to the corresponding 1997/98 level before using them in the labour supply model.

Second, to be able to use data from 1997/98 for simulations of the effect of a change in taxation and social security rules from January 2000 to July 2000, we need to update the wage rates of the respondents and the level of their other income (excluding social security payments) to the wage rates and other income that similar households would have experienced in January 2000 and July 2000 respectively. To achieve this, the average wage rate increase measured over this time and the CPI are used to update the wages and the value of other income respectively. Additionally, we update the observed labour supply of 1997/98 to the levels expected given the change to the January 2000 taxation regime and social security system. The availability of more recent data would have made this last step unnecessary or at least bridging fewer years between the year of data collection and the year of interest would have made the uncertainty associated with creating an artificial dataset smaller. Better and more up-to-date data would improve the quality of simulations done by MITTS (or any simulation model).

Finally, when calculating the expected labour supply under a particular regime, the net incomes need to be translated from their January 2000 or July 2000 value to the 1997/98 values needed as input in the labour supply model. For this the CPI is used again.

The costings in the tables in the following sections are all expressed in July 2000 dollars.

2.3. *The labour supply response*

The estimation of the expected labour supply changes is based on the labour supply model estimated in Kalb (2002a). A discrete model specification is chosen to enable us to deal with the full detail of the tax and transfer system, both for single person households and for couples. A relatively large number of labour supply points is chosen. Households are assumed to choose from 0, 5, 10, 15,…, 50 hours of labour supply. However, fewer points are allowed for married men given the low number of married men working part-time hours (which can be caused by factors on both the supply and the demand side). They are assumed to choose from 0, 10, 20, 30, 40 or 50 hours.

Given the choice for this particular type of labour supply model, simple simulations of a change in all taper rates to 30 per cent show that the model seems quite robust to alternative specifications (Kalb, 2002b). The alternative specifications assessed in this paper included a reduction in the number of labour supply points, an alternative specification of the utility function and an alternative specification of the cost of working. Notwithstanding the reassuring result with regard to alternative specifications, when analysing the results one needs to keep in mind that the behavioural responses are based on a statistical model with the uncertainty that is always associated with modelling complex behaviour. A model is a simplified representation of reality, however, it is based on observed patterns of behaviour and it helps us to think about the possible effects of changes in a structured framework.

In 586 cases starting from January 2000 and in 555 cases starting from July 2000 could the labour supply model not generate 100 draws at the observed labour supply within a total of 5000 draws. This indicates that for these cases the model does not do so well and the predicted level of labour supply is far from the observed level of labour supply. For these households, labour supply after the reform is kept at the same level as before the reform, thus possibly underestimating the total number of changes as a result of the reform.

The approach taken ensures that the results before the reform from MITTS-A (the part of MITTS without behavioural changes) and from MITTS-B (with behavioural changes) are quite similar. The difference between the two is the rounding to quintuples in MITTS-B and

the dropping of a few observations, which have wages under $4 or over $100 per hour (only 89 observations out of more than 10,000 observations drop out because of this selection).

Labour supply is kept constant for some groups who are expected to differ in their responses (that is, be less responsive) compared to the average working-age individual. These groups are the self-employed (864 cases), those on disability payments (508 cases), full-time students (256 cases) and people over 65 years of age (1601 cases). This leaves us with 8022 households for whom we simulate the effect of the policy reform on labour supply. This is the group for which we allow a behavioural change to occur.

Finally, it should be noted that MITTS is a partial-equilibrium supply-side model and thus the behavioural changes do not account for any changes in labour demand. If individuals prefer to work more hours after a reform then they can only do so if there is a demand for their labour. In MITTS it is assumed that all additional labour supply is met by a sufficient demand for labour.

3.   Simulation of the effect of all changes in the New Tax System

The first simulation examines the full effect of all changes for the total population. Detailed information on the pre-reform and post-reform systems can be found in tables in the Appendix. These tables include information on personal income taxes, the family assistance schemes, allowances, and pensions. It is expected that households with children will benefit most from the tax and transfer changes, given the reform in family allowances.

Table 3.1a presents the expected change in government revenue and expenditure, assuming there is no change in people's behaviour as a result of the reform. The reduction in marginal tax rates and the increase in income thresholds have reduced tax revenue for the government by about $11 billion. With the reform of family assistance, several rebates have been abolished (-1.7 billion dollars) and the old family payments (-7 billion) have been transferred to the FTP/FTB (family tax payment/family tax benefit) category (+10 billion). The number and amount of allowances declined (-0.5 billion), because the basic parenting allowance has been integrated into the family assistance system. However examining the combined change in these three categories, it can be seen that the overall support for families seems to have increased by about 0.7 billion. As a result of the pension rate increases and the taper rate decrease, the number of recipients and total expenditure on pensions have also increased.

Table 3.1a: Main Revenue and Expenditure

Tax or Transfer	Cost ($million)		Number of income units (× 1000)	
	Pre-ANTS	Δ^a	Pre-ANTS	Δ^a
Government Revenue				
Income Tax	80059.8	-10491.0	11236	-17
Medicare Levy	5023.1	-56.3	7037	60
Total	85082.9	-10547.3		
Government Expenditure				
Tax Rebates	4440.7	-1688.6	6969	-1013
Family allowance	6636.1	-6636.1	1790	-1790
FTP/FTB	644.0	9583.8	1020	955
Allowances	15629.0	-515.9	2688	-448
Pensions	22816.9	816.0	2754	95
Pharm Allow	346.4	8.6	3174	115
Rent Allowance	1671.5	143.2	1266	50
Total	52,184.5	1,711.0		
Net Expenditure		12,258.3		

Note a: Δ represents post-ANTS amounts minus pre-ANTS amounts

More details on the changes are presented in Table 3.1b. The decrease in allowances is clearly a result of the decreased parenting payment for couples, which used to include the basic parenting allowance before it was abolished in July 2000. All other payments have increased except for the AUSTUDY/ABSTUDY. The other payment type to the group of younger recipients, the Youth Allowance payments, has increased but at a much lower rate than the other allowances.

All pension payments have increased after July 2000, with the Age Pension increasing at the highest rate, because the decrease in taper rate is most likely to benefit this group, which has a larger proportion of working recipients and recipients receiving other income (such as superannuation) than the other groups. The slight decrease in War Widow Pension indicates that the increase in the basic rate was less (percentage wise) than for other groups and has not completely compensated for the increase in the CPI as a result of the newly introduced GST. The payment rate was relatively generous at $385.40 per fortnight before the introduction of

the New Tax System, but it only increased to $400.90 per fortnight in July 2000. This is an increase of only 4 per cent compared to an inflation rate of 4.6 per cent from January to July.

Table 3.1b: Detailed Costs and Revenues

Tax or Transfer	Cost ($million)		Number of income units (× 1000)	
	Pre-ANTS	Δ[a]	Pre-ANTS	Δ[a]
Allowance Costs				
Parenting Pmnt (sgl)	2864.8	138.3	332	15
Parenting Pmnt (cpl)	2633.6	-799.6	788	-479
Sickness Allowance	385.9	3.8	46	0
Widow's Allowance	656.8	8.9	80	3
AUSTUDY/ABSTUDY	786.0	-2.6	106	0
Newstart Allowance	4984.9	89.5	765	6
Mature Age Allowance	187.1	6.6	45	0
Youth Allowance	677.4	1.2	175	3
Special Benefit	981.2	10.0	129	0
Partner Allowance	1471.3	28.1	223	3
Pension costs				
Age Pension	14044.3	619.1	1756	90
Dis.Support Pension	4121.7	90.9	473	1
Wife's Pension	779.0	25.8	103	1
Widow B Pension	396.0	5.8	41	0
Carer's Payment	193.7	2.7	21	0
Veteran Pension	1487.7	64.6	195	2
Veterans Dis.Pension	833.5	8.2	92	0
War Widows Pension	961.1	-1.1	74	0
Rebate Costs				
Beneficiary Rebate	548.0	-84.4	1203	7
Pension Rebate	2146.4	-0.70	2021	16
Sole parent Rebate	655.0	-655.0	504	-504
SP Pension Rebate	280.0	-37.1	331	-2
Low Income Rebate	1190.9	-99.7	7988	-308
Dep Spouse Rebate	1542.8	-1069.4	1369	-930
Total Rebate Cost	6363.1	-1946.2		

Note a: Δ represents post-ANTS amounts minus pre-ANTS amounts

The detailed rebate costs reveal clearly that the sole parent rebate and the dependent spouse rebate for those with children have been abolished.[2] Note that they have been replaced by additional Family Assistance payments for the relevant groups.

Comparing the Gini coefficient before and after the reform (0.298 and 0.301 respectively), reveals there has been little change in the income distribution. Thus the increased generosity towards higher incomes in the taxation regime has increased inequality slightly, but it did not have a large effect on the overall income distribution.

Tables 3.2a and 3.2b present the income gainers and losers by income unit type and income decile. From this we see that families with children gain on average the most. A similar effect is observed in Warren et al. (1999a), who analysed the potential effect of the New Tax System prior to its introduction. However, families with children are also the households with the largest proportion losing income as a result of the reform. Single-person households gain the least on average and are more likely than childless couples to have no change or a decrease in income.

Table 3.2a Income Gainers/Losers by Income unit type

Individual level per capita non-equivalised income unit income

	Decrease (row percentages)				Increase (row percentages)			
	<$10	$5-10	$1-5	none	$1-5	$5-10	>$10	Average in $
Couple	0.1	-	0.2	1.4	28.1	14.6	55.7	21.0
Cpl&dep	5.4	1.7	1.9	1.0	6.9	11.8	71.4	25.4
Single	0.1	-	2.9	12.4	41.2	17.7	25.7	8.8
Sngl&dep	3.9	1.4	0.6	0.2	2.8	1.2	89.9	23.0
Total	1.9	0.6	1.6	4.7	24.7	14.2	52.3	18.6

From Table 3.2b we learn that the higher income deciles have on average the highest increase in income. This is mainly driven by the tax reform, which reduced taxation rates and increased income tax thresholds, thus reducing the amount of tax paid, particularly by those on higher incomes. The tax reform is analysed separately in the next section. The largest percentage of households losing income is observed in the sixth and seventh deciles, just above the median income level.

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[2] The total amount of tax rebates shown in Table 3.1a does not match the total amount of tax rebates shown in Table 3.1b. The reason for this is that the different components of tax rebate presented in Table 3.1b show the potential tax rebates that people are eligible for, without considering the amount of tax paid. The potential rebate is compared to the total amount of tax paid and the minimum of these two amounts is the actual rebate.

Table 3.2b Income Gainers/Losers by Household Income deciles

Individual level per capita non-equivalised income-unit income

	Decrease (row percentages)				Increase (row percentages)			
	>$10	$5-10	$1-5	none	$1-5	$5-10	>$10	Average in $
Decile01	-	0.1	4.1	24.5	71.4	-	-	1.2
Decile02	0.4	0.1	5.3	7.4	55.2	15.0	16.7	5.7
Decile03	0.5	-	1.1	7.7	70.7	7.6	12.4	5.4
Decile04	1.3	0.1	0.4	2.6	36.1	34.8	24.8	8.3
Decile05	3.2	1.5	0.5	1.6	5.6	36.2	51.4	13.4
Decile06	5.6	1.8	1.7	0.9	3.1	19.1	67.8	18.4
Decile07	3.9	2.0	3.3	1.5	6.1	15.2	68.0	22.0
Decile08	2.2	0.2	0.2	-	1.1	3.0	93.4	23.3
Decile09	1.4	-	-	-	0.3	1.5	96.7	37.3
Decile10	2.0	0.6	0.3	0.3	1.1	1.9	93.7	51.7

The various taper rate changes combined with the tax regime reform have decreased the marginal effective tax rate for the majority of the population. However, the decreased taper rate has also drawn some previously ineligible households into the social security system, increasing their marginal effective tax rate. The shifts in marginal effective tax rates can be seen in Table 3.3.

The effect of all changes taken together is also simulated for the four subgroups separately. Using the weights provided by the Australian Bureau of Statistics, the results are weighted to represent 2,067,719 couples with children, 2,216,424 couples without children, 2,203,166 single men, 2,048,685 single women and 504,015 sole parents. These weights have not been updated to represent the Australian population in 2000 and thus the expenditure and revenue are likely to be somewhat underestimated as a result.

Tables 3.4a and 3.4b present the total costing by payment type and the detailed costing of allowances, pensions and rebates for each of the subgroups assuming that there are no behavioural responses to the reforms. This assumption is relaxed in Tables 3.5 and 3.6, which present the behavioural responses and the effects on government expenditure and revenue with and without accounting for behavioural responses. The results are discussed by subgroup in the following subsections.

Table 3.3: Distribution of METRs (row percentages): Pre-ANTS to post-ANTS from rows to columns.

After	0	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	>100	Total
Before													
0	99.6	0.0	0.1	0.2	-	-	0.0	-	-	-	-	-	28.6
0-10	100.0	-	-	-	-	-	-	-	-	-	-	-	0.1
10-20	6.7	0.7	89.9	-	0.5	0.8	1.4	-	-	-	-	-	2.1
20-30	8.0	-	53.8	6.3	23.8	3.5	0.5	2.2	0.3	1.1	-	0.4	4.5
30-40	0.1	-	-	0.2	90.6	0.3	1.2	6.3	0.0	0.5	0.4	0.3	24.3
40-50	-	0.1	0.0	0.3	41.4	50.9	1.4	3.8	2.0	0.2	-	0.1	26.4
50-60	-	-	-	2.1	8.6	41.0	31.7	12.8	3.9	-	-	-	0.5
60-70	-	-	0.2	0.3	14.1	2.5	52.2	26.9	2.9	0.5	-	0.4	3.8
70-80	0.1	-	0.2	0.3	0.7	3.8	6.6	27.8	54.3	6.1	-	-	4.0
80-90	-	-	-	8.7	0.9	0.4	9.4	25.4	11.1	41.4	2.7	-	3.1
90-100	-	-	-	-	-	-	0.5	3.4	1.7	20.8	73.6	-	2.0
>100	-	-	-	-	0.7	18.6	1.5	8.1	42.4	11.4	6.7	10.5	0.6
Total	29.1	0.0	4.4	0.8	34.7	14.3	3.4	5.7	3.5	2.2	1.7	0.2	100.0

3.1. Couples without dependent children

As expected (and similar to the results for other groups), tax payments decrease and as a result of the decreased tax payments tax rebates also decrease. The latter can be inferred from the difference in total tax rebates in Tables 3.4a and 3.4b. The change in potential rebate is less than half of the actual change in the total rebate received, indicating that a large part of the change is driven by the lower amount of tax paid by the households. The largest reductions in potential rebates occur in the Beneficiary Rebate and Low Income Rebate.

Table 3.5 shows that there is a slight increase in the expected labour supply. Both men and women in these couples are more likely to move into work and women are somewhat more likely to increase their working hours whereas men are somewhat more likely to decrease their working hours. However, all changes are rather small. Notwithstanding the small effects, the increased labour supply reduces the additional expenditure associated with the reform and reduces the decrease in revenue. In other words, the labour supply effects help to reduce the cost of the policy changes to the government by about 0.5 billion dollars (from 3.7 billion dollars).

Table 3.4a Main Revenue and Expenditure by subgroup (amount in millions)

	Couples without children		Couples with children		Single men		Single women		Sole parents	
	Pre-ANTS	Δᵃ	Pre-ANTS	Δᵃ	Pre-ANTS	Δᵃ	Pre-ANTS	Δᵃ	Pre-ANTS	Δᵃ
Government Revenue										
Income Tax	23726.5	-3344.6	32744.7	-3866.7	13654.7	-1947.2	7959.2	-1078.7	1974.7	-253.8
Medicare	1501.5	-9.5	1977.4	-32.0	934.4	-17.3	525.5	2.3	84.3	0.2
Total Revenue	25228.0	-3354.1	34722.1	-3898.7	14589.1	-1964.4	8484.7	-1076.4	2058.9	-253.7
Government Expenditure										
Tax Rebates	1444.3	-175.5	1232.8	-997.8	433.2	-78.6	742.3	-127.6	588.1	-309.0
Family allowance	0.0	0.0	4332.0	-4332.0	0.0	0.0	0.0	0.0	2304.0	-2304.0
FTP/FTB	0.0	0.0	407.7	6717.6	0.0	0.0	0.0	0.0	236.3	2866.2
Allowances	2901.2	63.8	4391.5	-767.1	3167.6	35.1	1967.3	14.6	3201.4	137.7
Pensions	10636.7	499.8	792.2	36.3	3461.8	105.6	7758.7	172.0	167.5	2.3
Pharm Allow	110.3	4.3	9.3	0.0	57.9	0.8	117.4	1.5	51.5	2.1
Rent Allow	174.3	7.2	378.4	94.1	384.3	13.6	310.2	8.5	424.3	19.7
Total Expenditure	15266.9	399.6	11543.9	751.1	7504.7	76.6	10895.9	68.9	6973.1	414.9
Net Expenditure		3753.6		4649.9		2041.0		1145.3		668.6

Note a: Δ represents post-ANTS amounts minus pre-ANTS amounts

Table 3.4b Detailed Costs and Revenues by subgroup (amount in millions)

Allowance Costs	Couples without children		Couples with children		Single men		Single women		Sole parents	
	Pre-ANTS	Δ[a]	Pre-ANTS	Δ[a]	Pre-ANTS	Δ[a]	Pre-ANTS	Δ[a]	Pre-ANTS	Δ[a]
Parenting Pmnt (sgl)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2864.8	138.3
Parenting Pmnt (cpl)	0.0	0.0	2633.6	-799.6	0.0	0.0	0.0	0.0	0.0	0.0
Sickness Allowance	42.7	0.4	112.3	1.1	158.3	1.6	59.3	0.6	13.3	0.1
Widow's Allowance	0.0	0.0	0.0	0.0	270.8	4.9	381.2	3.9	4.8	0.0
AUSTUDY/ABSTUDY	48.6	-0.3	108.6	0.8	205.2	-0.7	181.1	-1.1	242.6	-1.3
Newstart Allowance	1032.1	24.0	1319.7	27.1	1823.5	27.0	756.3	10.9	53.2	0.6
Mature Age Allowance	171.1	5.6	10.9	0.7	5.1	0.3	0.0	0.0	0.0	0.0
Youth Allowance	31.2	5.2	20.7	0.0	351.3	-1.5	271.6	-2.5	2.7	0.0
Special Benefit	271.8	3.6	18.2	0.0	353.4	3.7	317.7	2.7	20.2	-0.1
Partner Allowance	1303.8	25.3	167.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Allowance Cost	2901.2	63.8	4391.5	-767.1	3167.6	35.1	1967.3	14.6	3201.4	137.7
Pension Costs										
Age Pension	7362.8	395.9	31.3	7.5	1480.0	72.2	5156.3	143.2	13.9	0.4
Dis.Support Pension	1247.0	33.2	415.3	14.6	1351.6	26.0	1013.2	15.7	94.7	1.3
Wife's Pension	554.3	19.4	224.7	6.3	0.0	0.0	0.0	0.0	0.0	0.0
Widow B Pension	0.0	0.0	0.0	0.0	0.0	0.0	350.1	5.4	45.8	0.4
Carer's Payment	41.6	0.4	33.3	1.1	37.2	0.4	68.5	0.7	13.1	0.1
Veteran Pension	1013.5	47.3	20.3	0.2	288.4	8.7	165.4	8.4	0.0	0.0
Veterans Dis.Pension	404.0	3.6	67.3	6.5	292.8	-1.5	69.4	-0.4	0.0	0.0
War Widows Pension	13.6	-0.1	0.0	0.0	11.8	-0.1	935.7	-1.0	0.0	0.0
Total Pension Cost	10636.7	499.8	792.2	36.3	3461.8	105.6	7758.7	172.0	167.5	2.3
Rebate Costs										
Beneficiary Rebate	131.2	-34.2	107.5	21.5	177.2	-40.8	105.0	-24.7	27.1	-6.3
Pension Rebate	1045.1	-3.7	22.1	-1.1	256.0	1.8	814.7	2.2	8.5	0.1
Single Parent Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	655.0	-655.0
SP Pension Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	280.0	-37.1
Low Income Rebate	416.2	-31.8	319.4	-27.3	180.9	-16.2	214.1	-18.4	60.2	-6.0
Dep Spouse Rebate	488.1	-14.7	1054.7	-1054.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Rebate Cost	2080.6	-84.4	1503.8	-1061.6	614.2	-55.1	1133.8	-40.9	1030.8	-704.2

Note a: Δ represents post-ANTS amounts minus pre-ANTS amounts

Table 3.5 Behavioural responses: change in labour supply after reform

	Couples without children		Couples with children				
	Men	Women	Men	Women	Single men	Single women	Sole parents
Workers (%Pre-ANTS)	45.43	40.08	72.82	51.67	59.94	45.15	42.44
Workers (% post-ANTS)	46.50	41.17	74.27	54.03	61.54	46.35	43.89
Non-work --> work (%)	1.07	1.09	1.45	2.38	1.60	1.20	1.52
Work --> non-work (%)	0.00	0.01	0.00	0.02	0.00	0.00	0.06
Workers working more	0.22	0.29	0.53	0.44	0.13	0.03	1.07
Workers working less	0.29	0.11	0.99	0.20	0.32	0.82	0.53
Average hours change	0.41	0.35	0.53	0.67	0.59	0.26	0.40

Table 3.6 Behavioural responses: change in tax and transfer costs (amount in millions)

	Couples without children			Couples with children			Single men			Single women			Sole parents		
	Abs.	Δ^a		Abs.	Δ^a		Abs.	Δ^a		Abs.	Δ^a		Abs.	Δ^a	
	Pre-ANTS	LS	Fixed	Pre-ANTS	LS	Fixed	Pre-ANTS	LS	Fixed	Pre-ANTS	LS	Fixed	Pre-ANTS	LS	Fixed
Government Revenue															
Income Tax	23264.3	-3097.4	-3310.6	30876.8	-3469.7	-3742.8	13742.7	-1806.0	-1960.8	7965.9	-1050.3	-1078.3	1963.9	-235.9	-253.2
Medicare	1471.1	9.9	-8.8	1856.9	-1.7	-28.4	939.1	-4.5	-18.5	525.9	7.5	3.6	84.8	1.3	0.1
Total	24735.4	-3087.5	-3319.4	32733.7	-3471.4	-3771.2	14681.8	-1810.5	-1979.3	8491.8	-1042.7	-1074.7	2048.7	-234.5	-253.1
Government Expenditure															
Tax Rebates	1434.5	-187.2	-172.7	1221.2	-1000.8	-988.5	427.1	-88.3	-77.0	741.1	-131.5	-127.5	584.6	-307.4	-307.5
Fam Payment	0.0	0.0	0.0	4292.3	-4292.3	-4292.3	0.0	0.0	0.0	0.0	0.0	0.0	2289.8	-2289.8	-2289.8
FTP/FTB	0.0	0.0	0.0	409.9	6493.6	6609.3	0.0	0.0	0.0	0.0	0.0	0.0	234.9	2845.5	2850.8
Allowances	2859.6	-156.9	62.9	4329.6	-1129.2	-744.9	3095.1	-201.6	34.5	1949.9	-80.4	14.7	3190.2	102.7	136.0
Pensions	10600.5	481.4	500.5	793.8	26.7	35.9	3320.2	99.2	104.3	7746.9	135.6	174.0	167.3	0.8	2.3
Pharm Allow	110.1	3.6	3.9	9.3	-0.2	0.0	56.0	0.5	0.8	117.3	1.3	1.5	51.2	1.8	2.2
Rent Allow	176.3	2.7	7.2	363.8	98.2	105.8	379.2	-3.2	12.5	310.5	4.5	7.7	423.5	21.4	20.9
Total	15180.9	143.6	401.8	11419.8	196.1	725.4	7277.7	-193.3	75.1	10865.7	-70.5	70.4	6941.5	375.0	414.8
Net Expenditure		3231.2	3721.2		3667.5	4496.6		1617.2	2054.4		972.3	1145.1		609.6	667.9

Note a: Δ represents post-ANTS amounts minus pre-ANTS amounts

3.2. Couples with children

As expected, the simulation shows that government expenditure on benefit payments has increased more for couples with children than for couples without children, because a large component of the change involved family payments, which are only payable to households with children. To see this most clearly we need to look at the combined effect of tax rebates, family payments, FTP/FTB and allowances in both groups (given that the pension payments to couples without children mostly consist of age pensions, which means the recipients are an older age group than most couples with children). Couples with children receive an additional 620.7 million dollars in these categories whereas there is a reduction for couples without children as a result of the lower rebates. The reduction in allowances is caused by the abolition of the Basic Parenting Payment for couples, however this payment is replaced by increased FTP/FTB payments for one-earner families. Similarly the reduction in rebates is mainly caused by the abolition of the rebate for a dependent spouse with children and families have been compensated for this through FTP/FTB payments.

The labour supply effects for couples with children are larger than for couples without children. There were more changes as a result of the introduction of the new system for households with children than for those without. The larger effect, therefore, does not necessarily indicate that couples with children are more responsive to changes. From Table 3.5, it is clear that the changes in all directions are somewhat larger for the group with children. The changes seem to induce an additional 2.4 per cent of married women with children into the labour market, which is the largest participation effect observed for any of the demographic groups. One of the components of the new system was an increased threshold for the 50 per cent taper rate for married women with children under 16 years of age. Furthermore, several changes have been made to family assistance, reducing the number of different taper rates, which may be most important for women. In the next section, the results from a separate simulation of these components of the change are discussed.

3.3. Single men

The largest difference in the tax and social security changes for single men compared to couples is on the expenditure side. The decrease in rebates is relatively large whereas the increase in allowance payments and pensions is relatively small, making the overall increase smaller than for couples. The relative increase in nearly all payments is smaller than for couples with a decrease evident for youth allowance, AUSTUDY/ABSTUDY, and the

veteran's disability pension. The latter does not mean that the payment rates for these three groups have actually gone down, but only that the rates have not increased by enough to keep up with the inflation rate. The inflation rate from January 2000 to July 2000 was relatively large (at 4.6 per cent) because it incorporates due to the effect of the GST.

The average change in labour supply is about the same for married men with children as it is for single men. However, smaller proportions of single men already working before the reform change the amount of labour supply than married men, whereas a slightly larger proportion of non-participating single men move into work. The reduction in government revenue after taking into account labour supply responses is similar to that for couples. The increase in expenditure predicted when labour supply changes are not taken into account turns into a decrease in expenditure after accounting for the behavioural changes. This decrease is mainly the result of the decreased allowance payments. The increase in net expenditure also decreases by about 20 per cent after accounting for potential labour supply changes.

3.4. Single women

Table 3.4a clearly shows the difference between payments received by single men and women. A large proportion of single women receives a pension whereas single men are nearly equally divided between allowances and pensions. Women are also more likely to receive a rebate given the pension-linked rebate.

Comparing the types of allowance received by single men and women in Table 3.4b, it is evident that women are more likely to receive a widow's allowance. Somewhat lower amounts (in absolute terms) are received on AUSTUDY/ABSTUDY and youth allowance by single women. It is also evident that a large proportion of single women receive the age pension. This is not surprising, given the slightly lower pension age at the time of the reform for women and the fact that women are more likely to live to an older age. In addition, women are less likely to have participated in superannuation schemes during their working lives or to have worked at all. As a result they are more likely to depend on the age pension than men are. Women are also more likely to receive a form of widow's pension whereas men are more likely to be on a disability or veteran's pension.

Similar to the changes for their male counterparts, the decrease in rebates is relatively large whereas the increase in allowance payments and pensions is relatively small, making the overall increase smaller than for couples. For youth allowance, AUSTUDY/ABSTUDY, the

veteran's disability pension and the war widow's pension there is even a decrease, which indicates that the rates have not increased by enough to keep up with the inflation rate.

The behavioural changes for single women are generally smaller than for single men. Given the large proportion of age pensioners amongst single women this is as expected. Behavioural changes are not simulated for people over 65 years of age. The effects in this older age group are likely to be small anyway. Fewer single women move into work or increase their working hours, and a larger proportion decreases their working hours, resulting in a smaller expected increase in the average hours worked. Therefore the difference between expenditure whilst taking into account behavioural changes and expenditure whilst keeping labour supply at the before reform hours is not as large as for single men. However, expenditure on single women still turns from an increase to a decrease after accounting for the labour supply changes.

3.5. *Sole parents*

Not surprisingly, the simulation results in Tables 3.4a and 3.4b show that the largest expenditures for sole parents are on parenting payment single allowances (that is, the sole parent pension) and on family allowances. The relative change in revenue for sole parents is similar to that in the other groups. However, the relative change in total expenditure is higher for sole parents than for other groups except couples with children. More was spent on allowances (mainly the parenting payment single) and family payments for sole parents after the reform.

The labour supply effect of sole parents is smaller to the labour supply effect of married women with children but larger than the effect observed for single women or married women without children (see Table 3.5). Although the expected increase in expenditure is lower after accounting for labour supply changes than it was before, the reduction in the increase is not as pronounced as for some other groups, such as couples with children or single men. This is not surprising given the smaller behavioural response. Similarly, the reduction in the expected increase in net expenditure is lower than for these other groups. The changes in the payments relevant to sole parents may have had lower work incentive effects than the changes for other demographic groups. This can be further explored in the following sections, where the effects of components of the reform are analysed.

Comparing the results from the above subsections, we find that the largest increases in expenditure are on households with children. Warren et al. (1999a) come to a similar

conclusion in their distributional analysis. This is not surprising given the major focus of the reform on the restructuring of family assistance.

4. Simulation of some separate components of the reform

In this section, the effect of individual components is discussed. Full details of the simulation of these separate components can be found in Kalb, Kew and Scutella (2002)

4.1. Changes to marginal tax rates and tax thresholds

One of the major reforms of the July 2000 tax and transfer system was the increase in income thresholds and the decrease in taxation rates. We do not account for inflation in this simulation, however the percentage increase in the thresholds was mostly far above the inflation level. The actual effect would have been slightly lower.

The effect of this component of the overall reform is a large part of the overall effect. The reduction in taxation rates after July 2000 is expected to decrease revenue, but this is partly compensated (a reduction in the decrease of about 34 per cent for sole parents and about 7 per cent for the other groups) by the increased labour supply resulting from the improved work incentives.

4.2. Introduction of Family Tax Benefit Part A

Family Tax Benefit Part A (FTB-A) was a payment replacing three former payments: Family Allowance (including Minimum Family Allowance), Family Tax Payment Part A (FTP-A) and Family Tax Assistance Part A (FTA-A). Payment rates and income test thresholds were increased by much more than the inflation rate[3], with the payments tapered out at a more gradual rate than they were prior to July 2000.

We first examined the total effect of the introduction of FTB-A. Then we isolated the effects of increasing the household-income threshold where the payment is withdrawn along with decreasing the withdrawal rate followed by the introduction of a gradual withdrawal of the minimum rate of payment rather than the previous "sudden death" income test.

Total effect of the changes in FTB-A

The July 2000 values result in slightly lower net incomes for sole parents. Overall FTB-A contributes significantly to the expenditure of the government. Obviously expenditure on Family Allowance decreases with the inclusion of FTB-A in the ANTS reform, with the

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[3] Thus the results presented here (not accounting for inflation) are only a slight overestimate of the expected effects.

change in expenditure on FTB-A more than outweighing this for couples with children but not for sole parents. The change in income tax revenue is due to the re-arrangement of FTA-A (FTA-A was paid out through the tax system as an increase in the tax-free income range), which is now part of FTB-A and is paid through the social security system. An increase in income tax revenue is evident as the tax-free threshold is effectively decreased with the amount of FTA-A.

The expenditure changes on family payments are the main drivers of the overall net effect on government expenditure. As the number of individuals in receipt of FTB-A is greater than the numbers on Family Allowance, the expenditure on Rent Assistance is higher in the new family payments system since eligible families will receive Rent Assistance over a larger range of income, given that it is associated with the receipt of family payments.

The introduction of FTB-A, conditional on all other changes already being implemented, is expected to have a positive labour supply effect on sole parents (which can be explained by the higher amount of family payments paid to sole parents in the old system), a negligible effect on married men and a slightly adverse effect on married women.

In conclusion, the cost of implementing FTB-A, conditional on all other changes already being implemented, is lower when labour supply responses are taken into account than would be expected under fixed labour supply. The reduction in expenditure on sole parents is even more apparent once the increased hours of work for this group are taken into account. Expenditure on allowances and family payments is reduced when allowing for labour supply responses. This is caused by the increase in workforce participation and working hours for married men and sole parents, which reduce the amount of Parenting Payment Single and Partnered claimed.

Effect of the decreased taper rate and the increased threshold associated with the maximum rate of FTB-A

There are various changes in the structure of family payments associated with the introduction of FTB-A. We isolated the effect of decreasing the taper rate and increasing the free area for entitlement to the maximum rate of FTB-A. These changes increase the total cost of the ANTS reform by around $812 million to the government. This is mainly caused by the increase in the number of couples with children who are entitled to more than the minimum rate of family payment. This also increases expenditure on Rent Assistance, which is linked to family payments. Government revenue is not affected as both FTB-A, and the earlier Family Allowances (FA), are tax-free payments.

The change in the distribution of METRs is quite similar to the changes associated with the total FTB-A effect. Thus we conclude that the change in the income free area and the change in the withdrawal rate of FTB-A are the main causes of any work-incentive changes for families with children. As was the case when looking at the total effect of FTB-A, not many sole parents seem affected by the change, as sole parents tend to earn relatively low levels of income below the relevant range of income.

Again we see that sole parents are the most responsive to the increase in the free area and the decrease in taper rate, with slightly more sole parents participating in the workforce and working longer hours under the reform. This pattern is also exhibited by married men with children, however to a much smaller extent. Married women with children follow an opposite pattern due to the income effect associated with an increase in family income as a result of the changes.

These results lead to the conclusion that the introduction of the reduced taper rate and the increased free area in the new tax system increase net government expenditure. However given the positive labour supply effects the increase was lower than what would be expected under unchanged labour supply behaviour. Married males with children and sole parents increase their overall hours of work, so they receive less in terms of basic allowance payments, and pay more tax. For sole parents, the increase is even expected to turn into a decrease in expenditure.

Effect of the gradual withdrawal of the minimum rate of FTB-A

Finally, we turn to examining the effect of introducing a gradual withdrawal of the minimum rate of FTB-A instead of the "sudden death" income test associated with Family Allowance. Moving from 'sudden death' of eligibility for the minimum rate of FTB-A to a gradual taper, reducing entitlement by 30 cents for each dollar above a certain threshold level of family income, increases net government expenditure, largely due to an increased expenditure on couples with children since more households qualify for the minimum benefit level.

Introducing the taper rate actually increases METRs faced by families with children. The large majority of families would not be on an income exactly at the point where the minimum rate of family payment is removed, or withdrawn. However, several families may have incomes in the range where the new 30 per cent withdrawal applies. These families' METRs have increased as a consequence of the gradual taper rate. If their payment had completely

cut out at the threshold level of income they would not have been exposed to the added 30 per cent of effective tax rate. Only a small proportion of families face changes in their METRs.

The behavioural response associated with the change to a withdrawal rate on the minimum rate of FTB-A is negligible. The change is of minor importance to the overall net income of the affected families, given that the amount of income associated with the payment is quite small; that the affected family income range is small; that family incomes, at which this payment starts to be withdrawn, are quite high; and that the majority of families falling into the affected income range are already working close to full-time hours. There is a small decrease in labour force participation of married women, perhaps resulting from the slightly increased income of their partners.

The change in labour supply has a small, but negative effect on the extra expenditure to government. On average, people are slightly induced to increase their labour supply when moving from a 'sudden death' income test to a gradual withdrawal of the minimum rate of FTB-A. As a result, net costs by the government are slightly lower when labour supply responses are taken into consideration as more is saved on basic allowances, rent assistance and family payments, and income tax revenue increases.

To summarise the overall effect of FTB-A, the introduction of FTB-A induced some positive labour supply responses reducing the total amount of net expenditure required by the government. The most relevant change made to the structure of family payments in terms of generating positive labour supply responses (but also the more expensive change), was the increase in the free area for family income and the associated reduction in the withdrawal rate of the maximum rate of family payment. Married men and sole parents increase their supply of labour while married women typically reduce their participation in the workforce and hours of work. The introduction of the gradual withdrawal of the minimum rate of family payment had a negligible effect on labour supply. Finally, the reduced expenditure on sole parents in the new system is caused by other changes than the separate components explored in this section. Probably, the payment rates of the different components before the reform added up to a larger amount than the payment after the reform for a substantial number of sole parents. However, sole parents may be compensated for the lower amount received under part A by a larger amount under part B. This is explored in the next subsection.

4.3. Introduction of Family Tax Benefit Part B

In July 2000, six forms of assistance, three social security payments and three forms of assistance available through the taxation system, which were all available to single income earner families (including sole parent families) were simplified and merged into one Family Tax Benefit Part B (FTB-B). The new FTB-B payments, explicitly designed for single income and sole parent families, were more generous particularly for sole parents on lower incomes.

Overall, net government expenditure is slightly lower after the inclusion of FTB-B, with increased spending on sole parents but a decrease in spending on couples with children. The decrease in spending on couples mainly comes through the abolition of BPP and the DSR.

METRs for couples with children are generally lower with the introduction of FTB-B. As many payments are merged and the overlapping tapers on BPP and DSR are replaced by a single payment and a single income test, a reduction in the METRs of most families is expected with the introduction of FTB-B. For some sole parents the METR is lower after the introduction of FTB-B. However, for the majority of sole parents, FTB-B increases the METRs by a substantial amount. For a large proportion of sole parents initially facing METRs of between 30 and 40 per cent, METRs are increased to between 50 and 60 per cent. The explanation for this is that with the introduction of FTB-B the Sole Parent Rebate was abolished. This rebate, which is replaced by a lump sum payment in FTB-B (which is not income tested for sole parents), used to decrease the amount of tax paid for some of the sole parents and thus the METR.

Sole parents are the most responsive to the FTB-B reform. This is due to an income and a substitution effect. As sole parents receive a net increase in their benefit income and METRs increased for a substantial proportion of sole parents, they move out of the workforce and work less hours. Even the prospect of being able to keep the additional benefit regardless of the level of income earned does not induce sole parents to increase their labour supply. Married men and women with children are much less responsive. Introducing FTB-B has a small positive effect mainly on participation in the workforce, more so for women than for men, possibly due to the overlapping tapers on the second earner's income in the January 2000 system. However the effect on average hours is quite small in comparison to sole parents. Introducing FTB-B is expected to result in a net saving, which is further increased by the labour supply response. Although the labour supply response for couples with children is

small, the size of the group within the population makes the further saving in cost quite large. This more than outweighs the additional cost involved with sole parents.

From this and the previous subsection it is clear that FTB-A and FTB-B work in opposite directions for couples and sole parents. The higher expenditure on FTB-B more than compensates for the lower expenditure on FTB-A for sole parents and the higher expenditure on FTB-A more than compensates for the lower expenditure on FTB-B for couples. This indicates that payments are now perhaps more targeted to low-income couples independent of whether they are one- or two-earner households. The labour supply effects for couples are quite small with opposite effects for married women as a result of introducing FTB-A and B. The overall labour supply effect for sole parents is likely to be negative with the negative effect resulting from the introduction of FTB-B being much larger than the positive effect from the introduction of FTB-A.

4.4.   Decreasing the pension taper rate

As expected the overall net expenditure has increased after the reduction in the taper rate from 50 to 40 per cent. This is caused firstly by the larger number of households who are eligible after the increase in taper rate and secondly by the larger amounts of benefits paid to households with other income. Couples without children contribute the most to the additional cost because this group contains the highest number of recipients eligible for pensions. The relative contribution of sole parents is however similar in size. The contribution of the group of single women is much smaller than that of the sole parents even though it receives quite a large amount of pension payments. It is likely that relatively few single women on age pension participate in the labour force, which means the change in taper rate will not affect them. The effect on the pension payments flows on to the amount of income tax and Medicare Levy paid by households and to the amount of rebate received. Family payments, pharmacy allowance and rent allowance, which are all dependent on eligibility for pensions or allowances increase as well after the taper rate decrease[4].

Age Pensions contribute most to the decrease in expenditure compared to other types of pensions. There is no effect for the Veteran's Disability Pension because the benefits received in this scheme are not means-tested. For sole parents, the increase in costs is mainly due to the increased cost of Parenting Payment (single).

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[4] While eligibility for family payments is not per se dependent on the eligibility for a basic pension or allowance benefit, the income test is waived for families in receipt of a pension or allowance. Thus with the increase in pension and allowance receipt, more families are entitled to the maximum rate of family payment.

The net income of a sole parent or a pension recipient with zero earnings has not changed, because their basic rate remains the same following the decrease in taper rate in the July 2000 system, whereas net incomes at low part-time hours have increased, making employment more attractive. This is consistent with the findings, which confirm that no one, except a very small group in the category of couples with children, move from work to non-work. In the group of couples, the increased income of one partner, as a result of the decreased taper rate, may induce the other person to leave the labour force. In the simulations where we account for labour supply changes, we do not allow people of age-pension age or people with a disability to change their labour supply. Because these are the largest groups receiving a pension, the estimated labour supply changes are virtually zero in these groups. However, the change in taper rate also affected the Parenting Payment Single and the recipients of this payment are of working age and mostly able to work.

The increased net income can induce some sole parents to work fewer hours (the income effect). However, because the net wage rate has increased at the same time, the value of one hour of work may have risen above the value of one hour of leisure and recipients may choose to work more hours and have less non-work time (the substitution effect). Therefore the effect on labour supply is theoretically ambiguous. The simulation shows that 0.44 per cent of sole parents work less hours whereas 0.28 per cent of sole parents work more hours and 1.47 per cent enters the labour force. On average, labour supply is predicted to increase by about 0.36 hours. This is a small change.

The anticipated increase in expenditure on benefit payments and rebates as a result of the reduction of the pension withdrawal rate in the July 2000 reform is nearly halved for sole parents when changes in labour supply are included in the predicted change. Including the reduced pension withdrawal rate in the reform for sole parents is not costly. Overall, the change in the pension taper rates has a relatively minor effect and has not been a major component in the overall change.

4.5. *Increasing the income threshold in the Parenting Payment partnered*

In the July 2000 system, the Parenting Payment Partnered is reduced by 70 cents for every dollar of income above $243 per fortnight instead of $140 per fortnight. The increase in the income threshold means that income in the range from $140 to $243 is now tapered at 50 per cent instead of 70 per cent. The income effects of this change are quite minor and only affects married women with children under 16 years of age. As expected, the expenditure on

allowances due to this reform increases by $26.7 million, which is directly due to the change in Parenting Payment Partnered. There are some minor flow-on effects, slightly increasing the amount of tax and Medicare paid and decreasing the amount of family allowances received.

From the small change in METRs and the small increase in net incomes we do not expect a major effect on labour supply behaviour. The likely direction of changes in a spouse's labour supply is ambiguous for some couples since the income and substitution effect work in opposite directions. However, the change in net income is small and the results show that there are basically no labour supply changes. There is a tiny increase in the female participation rate and none of the couples with children drop out of the labour force. The small change in net income and the small number of people experiencing a change in METR are probably reasons why couples do not alter their labour supply behaviour.

Given the nearly non-existent labour supply changes, accounting for labour supply does not make much difference in predicted expenditure. We conclude that the changed threshold for the Parenting Payment Partnered has not had much impact in the overall reform.

5. Conclusion

This paper uses MITTS, a behavioural microsimulation model of the Australian tax and transfer system, to analyse the effects of the introduction of the Australian New Tax System. At present there is no data available on the general population that would allow us to examine and compare the before and after July 2000 situations. Therefore, the only way to analyse the reform is through the use of microsimulation.

Keeping the qualifications of the microsimulation model in mind (explained in Section 2), we compare the effects from the different components in the reform. Changes to marginal tax rates and income tax thresholds are shown to have had the largest effect, which is not unexpected given that these changes affect the largest proportion of the Australian population. The change also increased labour supply for all groups, in particular for sole parents, making up part of the loss in tax revenue. Compared to the change in revenue resulting from the complete reform the increase in expenditure on social security payments is quite small.

For families with children the changed structure and rates of family payments were shown to be important as well. The effects of the new FTB-A and FTB-B appear different for sole

parents and couples with children, FTB-B being more generous towards sole parents and FTB-A more generous towards couples. A strong income effect associated with the increased generosity of FTB-B appears to have induced sole parents to reduce labour supply. Other components of the reform provided several positive incentives for sole parents but the family payment reforms seem to partly counteract this, resulting in a small positive overall effect. In addition, the simulation results show that the introduction of the gradual withdrawal of the minimum rate of family payment rather than the previous "sudden death" cut out did not have a significant effect as the reform only involves a small amount of income at a relatively high level of family income.

The paper further shows that the reduction in pension taper rates had very little effect on expenditure, given that a large proportion of pensioners are not working and will not be affected by a change in the taper rate. The reduction in the taper rate did have a small positive labour supply effect for sole parents. For most individuals in the other groups, labour supply changes were not simulated given that these individuals were mostly age pensioners or on a disability pension. The effect of an increase in the threshold of the Parenting Payment Partnered is even smaller both in expenditure and in labour supply effects. This is not surprising given that the reform only had a minor effect on net incomes of a small proportion of the population.

Looking at the combined effect of all changes, we conclude that families with children experienced the largest increase in net government expenditure, mainly caused by increased family payments. This is also reflected in the average increase in income in these households, which is higher than in other households. However, from a comparison of the proportion of households experiencing a loss, we see that this proportion is higher for households with children as well. This indicates a wider variety in both positive and negative effects for these families than for others resulting from the reform. Single person households had the lowest average increase in average income. Given the large effect of the tax reform, it is also found that families in higher income deciles had larger average income gains.

Although expenditure on benefit payments increases following the reform of July 2000, it is expected that this increase is lower after taking into account labour supply behaviour. For single men and women, the expectation is that the increase in expenditure may even turn into a saving on expenditure after the behavioural changes are taken into account. Similarly the decrease in revenue is lower after taking into account the increased labour supply amongst all groups. Thus, the expected changes in labour supply should help to reduce the cost of the

reform. Net expenditure (tax revenue and expenditure on benefit payments and rebates taken together) is also increased by less after accounting for behavioural changes.

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Appendix A Details of the tax and social security system

Table A.1a Taxation rates

1999/2000		2000/2001	
Income range in $ per week	**Tax rate**	**Income range in $ per week**	**Tax rate**
0 – 103.56	Nil	0 – 115.07	nil
103.57 – 396.99	0.20	115.08 – 383.56	0.17
397.00 – 728.77	0.34	383.57 – 958.90	0.30
728.78 – 958.90	0.43	958.91 – 1150.68	0.42
More than 958.90	0.47	More than 1150.68	0.47

Table A.1b Medicare levy

1999/2000		2000/2001	
If income is more than (in $ per week)	**Levy rate**	**If income is more than (in $ per week)**	**Levy rate**
256.78 (single)	1.5%	265.18 (single)	1.5%
433.31+40.27*nr of children (family)	1.5%	447.48+40.27*nr of children (family)	1.5%
Shade-in percentage	20%	Shade-in percentage	20%
958.90 for singles, additional Medicare levy[a]	1.0%	990.27 for singles, additional Medicare levy[a]	1.0%
1917.81 + 28.77*(nr of children –1) for families, additional Medicare levy[a]	1.0%	1980.54 + 28.77*(nr of children –1) for families, additional Medicare levy[a]	1.0%
No shade in		No shade in	

Note a)   additional Medicare levy is only payable for those who do not have private health insurance.

Table A.2 Family Assistance

January 2000		July 2000	
For all families with children			
Family Allowance		*Family Tax Assistance part A*	
Minimum rate per week ≤ 3 children	$12.00	Minimum rate per week	$18.69
		Minimum rate per week (18 to 24 yr old)	$25.06
Large family supplement for fourth and each subsequent child	$3.95	Large family supplement for fourth and each subsequent child	$4.00
Maximum basic rate per week for 0-12 yr old	$50.80	Maximum basic rate per week for 0-12 yr old	$58.10
Maximum basic rate per week for 13-15 yr old	$66.10	Maximum basic rate per week for 13-15 yr old	$73.64
Maximum basic rate per week for 16-17 yr old	$12.00	Maximum basic rate per week for 16-17 yr old	$18.69
Maximum basic rate per week for 18-24 yr old	$25.00	Maximum basic rate per week for 18-24 yr old	$25.06
Minimum rate payable for annual income below	$67,134+$3,359* (number of children – 1)	Minimum rate payable for annual income below	$73,000+$3000* (number of children – 1)
Maximum rate payable for annual income below	$23,800+$624* (number of children – 1)	Maximum rate payable for annual income below	$28,200
Taper rate for minimum rate	"Sudden death"	Taper rate for both payments	0.3
Taper rate for more-than-minimum rate	0.5		
Family Tax Payment part A			
Rate per child per week	$3.85		
Payable to families receiving the	More-than-minimum Family Allowance		
Family Tax Initiative part A			
Tax free threshold increases by	$1000* number of dependent children		
For families with income less than	$70,000+$3000* (number of children –1)		

Table A.2: continued

For single-income families with children

Basic Parenting Allowance		*Family Tax Assistance part B*	
Maximum rate per week if youngest is <16 yrs old	$33.10	Maximum rate per week if youngest child 5-18 yrs old	$34.79
		Maximum rate per week if youngest child 0-4 yrs old	$49.91
Maximum rate payable to second earners with weekly income of less than	$30.00	Maximum rate payable to all sole parents or second earners with annual income of less than	$1616.00 (per week: $31.08)
Taper rate	0.5 (up to $70) 0.7 (over $70)	Taper rate	0.3

Family Tax Payment part B (with child under 5 years)

Maximum rate per week per family with a 0-4 yr old	$9.62
Payable to all sole parents	
Payable to second earners with weekly income below	$87.90

Family Tax Assistance part B (with child under 5 years)

Tax free threshold for family with a 0-4 yr old increases by	$2500
Payable when second earner's annual income less than $4573 and household income less than	$65,000+ $3000*(number of children − 1)

Guardian Allowance

Maximum rate per week per family	$18.35
Payable to sole parents who	get more-than-minimum Family Allowance

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Dependent Spouse Rebate (with children)

Maximum rate per year	$1452
Maximum rate payable for spouse with children under 16 years and annual income below	$282
Taper rate	0.25

For single-income families with children

Sole Parent Rebate

Maximum rate	$1243

Table A.3 Weekly allowances

January 2000		July 2000	
Maximum rate single	$163.35	Maximum rate single	$172.45
Maximum rate sole parent/ single 60 years or older	$176.70	Maximum rate sole parent/ single 60 years or older	$186.50
Maximum rate couple (per person)	$147.35	Maximum rate couple (per person)	$155.50
Free area for income below	$30.00	Free area for income below	$31.00
Taper rate of *0.5* for income below	$70.00	Taper rate of *0.5* for women on parenting allowance partnered (with children under 16 years) with income below	$121.50
		Taper rate of *0.5* for all others for income below	$72.00
Taper rate of *0.7* for income over	$70.00	Taper rate of *0.7* for women on parenting allowance partnered (with children under 16 years) with income over	$121.50
		Taper rate of *0.7* for income over	$72.00

Youth allowance (for 16-20 yr olds and 16-24 yr old students)

Maximum rate for 16-17 yr olds (live at home)	$74.00	Maximum rate for 16-17 yr olds (live at home)	$76.95
Maximum rate for 18-20 yr olds (live at home)	$88.95	Maximum rate for 18-20 yr olds (live at home)	$92.50
Maximum rate for 16-20 yr olds (live away/student/couple)	$135.15	Maximum rate for 16-20 yr olds (live away/student/couple)	$140.55
Maximum rate for 16-20 yr old singles with children	$177.05	Maximum rate for 16-20 yr old singles with children	$184.15
Maximum rate for 16-20 yr old couples with children	$148.40	Maximum rate for 16-20 yr old singles with children	$154.35
Free area for income below (students)	$115.00	Free area for income below (students)	$118.00
Free area for income below	$30.00	Free area for income below	$31.00
Taper rate of *0.5* for income below (students)	$155.00	Taper rate of *0.5* for income below (students)	$159.00
Taper rate of *0.5* for income below	$70.00	Taper rate of *0.5* for income below	$71.00
Taper rate of *0.7* for income over (students)	$155.00	Taper rate of *0.7* for income over (students)	$159.00
Taper rate of *0.7* for income over	$70.00	Taper rate of *0.7* for income over	$71.00

Table A.4 Weekly Pensions and Parenting Payment Single

January 2000		July 2000	
Maximum rate single	$183.25	Maximum rate single	$193.45
Maximum rate couple (per person)	$152.95	Maximum rate couple (per person)	$161.45
Free area for income below (singles)	$51.00+$12.00*nr of children	Free area for income below (singles)	$53.00+$12.30* nr of children
Free area for income below (couples)	$90.00+$12.00*nr of children	Free area for income below (couples)	$94.00+$12.30* nr of children
Taper rate of *0.5* for income over	Free area	Taper rate of *0.4* for income over	Free area