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**Reforming the Australian
Tax Transfer System**

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CONTENTS

	Page
Abstract	i
1 Introduction	1
2 Distributional Outcomes	5
3 Effects of Reforms on Labour Supply and Saving Behaviour	15
<i>Labour supply effects</i>	16
<i>Household saving</i>	19
4 Concluding Comment	22
References	23

REFORMING THE AUSTRALIAN TAX-TRANSFER SYSTEM

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ABSTRACT

The tax policy agenda in Australia for more than a decade has been largely driven by a perceived need to reduce the level of income taxation and the progression of marginal rates, financing the revenue shortfall with a broad based consumption tax. A major reform of this kind is now being implemented under the Howard plan for “a new tax system”. Recent debate has turned to the possibility of an Earned Income Tax Credit scheme as a solution to the problem of an emerging class of working poor resulting from ongoing labour market reforms.

This paper subjects these policy reforms to a detailed theoretical and empirical analysis. The findings suggest that the reforms are seriously limited in terms of their distributional outcomes, particularly in the context of growing wage inequality in the labour market. The analysis also shows that the reforms are unlikely to improve the efficiency and growth of the economy due to disincentive effects on labour supply and saving behaviour.

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1 Introduction

According to OECD estimates Australia is not a highly taxed country and has a direct-indirect tax mix which is close to the average of member countries¹. The personal income tax is the cornerstone of the Australian tax system, raising about 40 per cent of total tax revenue. The rate schedule is progressive and, most importantly, applies to the income of an individual, not the combined income of family members. The findings of tax reform studies suggest that these design features of the personal income tax, together with its central revenue raising role, ensure a basic structure of taxation which is fundamentally sound and superior to that of many other countries, such as the US with its system of joint filing.²

Despite this evidence there has been a long standing view among policy makers that Australia relies too heavily on the personal income tax. It is argued that tax rates towards the top of the scale are too high and cut in at too low an income level. The problem can, ostensibly, be attributed to decades of “bracket creep”. The failure to adjust tax brackets for inflation however is in turn due to the loss of revenue from widespread non-compliance and use of tax minimisation schemes by those who work outside the p.a.y.e. system. Successive governments have been surprisingly reluctant to treat non-compliance as a key policy issue and to legislate against tax minimisation through the exploitation of family trusts, negative gearing and the proscribed payment system.³ Instead, the focus of debate among policy makers has been on the need for lower and less progressive rates of tax on personal income with the revenue shortfall financed by a broad based consumption tax.

¹ See OECD (1996) for 1994 rankings defined on the level of taxation as a percentage of GDP. In 1993 Australia was second only to Turkey as the lowest-taxed country. See Warren (1990) for a discussion of Australia’s low ranking among OECD countries based on earlier figures. The tax mix ranking is based on an estimate of total revenue from direct taxes, computed as the sum of collections from personal income taxation and social security, as well as taxes on profits.

² For tax reform studies which identify the merits of taxing individual incomes at progressive marginal rates, see Symons and Walker (1990), Feldstein and Feenberg (1996) and Apps and Rees (1999a).

³ For an excellent article on the need for reform in the area of family trusts, see Quiggin (1997). For an estimate of the loss of tax revenue from paye taxpayers switching to the proscribed payment system, see Buchanan and Allan (1998).

Given this policy agenda, Australians have been presented with a series of proposals for a tax mix change of this kind since the mid 1980s. Now, following the re-election of the Howard government, we are seeing the implementation of such a system, with the introduction of the 10% Goods and Services Tax (GST) proposed in the Government's plan for a new tax system⁴. The new GST will replace the existing multi-rate WST and various other indirect taxes and, importantly, it will raise additional revenue for funding substantial cuts in income taxes concentrated at the upper end of the distribution.

A second long term focus of policy makers has been on contracting the "welfare state", primarily by shifting towards a more highly income targeted cash transfer system.⁵ While, in contrast to Germany and the US, the Australian personal income tax is levied on individual incomes, eligibility for many cash transfers and family tax benefits is based on joint income. Consequently, increasing targeted forms of family assistance can result in a significant shift towards a joint tax system. The government's tax plan is designed to achieve this outcome. Important elements of its package include increased rebates for children (Family Tax Benefit (A)) means-tested on joint income. The package also offers increased rebates for the dependent spouse (Family Tax Benefit (B)). The latter are untargeted on primary earner income but tightly income-tested on the spouse's own earnings from market sector employment. This feature of the Australian income tax justifies its classification as a system of *partial* joint taxation.⁶ The Prime Minister has consistently supported joint taxation in the form of income splitting, asserting that the existing individual tax system is unfair because a single income family pays more tax than a dual income family with the same joint income. It therefore comes as no surprise that his plan for "a new tax system" represents a significant shift in this direction.

⁴ See Commonwealth of Australia (1998).

⁵ Other important strategies include the introduction of mandatory occupational superannuation for the purpose of reducing reliance on age pension payments, and the increasing privatisation of segments of the public health care system.

⁶ The classification is taken from Boskin (1980). Based on a model which treats primary income as given, joint taxation can be defined as a system under which the additional income of a second earner is subject to a higher effective tax rate than the income of the primary earner, at any given level of income. Systems of partial joint taxation are those under which this condition applies to a limited range of the second earner's income.

In analysing the ongoing direction of tax reform it is relevant to consider trends in the economy and, in particular, changes occurring in the Australian labour market. As in the US and elsewhere, there has been a growth in wage inequality during the 1980s and 1990s. This rise in inequality is due to gains for those at top of the wage distribution, to a tendency for stagnation in the middle, and to lower rates of pay and the casualisation of work for those at the bottom. The Howard Government is committed to further deregulation of the labour market, especially at the lower end of the wage distribution. Given this commitment, together with the uncompetitive practices currently supporting excessive pay packages at the top of the income distribution, there is a general expectation of continuing growth in wage inequality.

A major but relatively recent concern regarding outcomes of labour market reform is the generation of a new class of “working poor” families on incomes below an acceptable poverty level. Policy makers and their advisors who argue for lowering wages to such levels typically refer to a stylised model of a competitive labour market that specifies a downward sloping demand curve – in other words they believe that lower wages mean more jobs.⁷ Many of those who take this view stress the importance of integrating tax-benefit and labour market reform. Their concerns centre not on poverty but on the labour supply disincentive effects of low wages combined with high effective marginal tax rates (EMTRs) associated with targeting family assistance. The increased emphasis on targeting in recent years has led to EMTRs over some income ranges that are in excess of 100 per cent.

In response to these issues, a group of economists, referred to in the media as the “Five Economists”, have proposed an Earned Income Tax Credit (EITC). The program has captured the attention of political parties and received extensive and highly supportive media coverage. At the last election the Australian Labor Party’s tax policy platform included a program of this kind, entitled Family Tax Credit (FTC). The proposed program is modelled on the EITC scheme in the US. The credit is phased in at a specified rate over an initial range of earned family income and withdrawn, at a faster

⁷ For a critique of the underlying model, see Watson (1999).

rate, across a higher range of income. Because the rate is based on family income, the reform implies a shift towards joint taxation. While the scheme lowers EMTRs over that phase-in range of earnings, EMTRs rise across the higher phase-out range of family income. While the former may have a positive effect on the labour supply of low wage families whose incomes are below the phase-out range, the latter may have a strong negative effect on the labour supply of dual income families whose second income raises family income to within or above the phase-out range. The explanation for this negative effect is straightforward. In a two-parent family a partner can specialise in work at home rather than enter the workforce, producing untaxed goods and services which are close substitutes for those available in the market place. An important example is childcare. We would therefore expect second earners, particularly in younger families, to have highly responsive labour supplies. This expectation is consistent with much of the available empirical evidence on the labour supply behaviour of married women.

In assessing the incentive effects of a reform it is essential to recognise that there can be conflicting behavioural responses of this kind depending on family structure. The analysis of distributional outcomes also requires careful consideration of family structure and work choices. The data show that the degree of specialisation in domestic work by one parent, usually the mother, varies widely across households even after controlling for wage rates, non-labour incomes and demographic characteristics. This means that distributional effects can be evaluated reliably only if the analysis takes account of each parent's work choice and the additional implicit income derived from specialisation in domestic work. Studies that compare living standards using observed family income fail to do this. In effect, they treat a multi-person household as if it were a single individual and assume that the partner working at home in the traditional single income family is unproductive.

This paper examines the impact of the Howard tax plan and the ALP's proposed FTC program, focussing on two-parent families and taking account of work choices. The analysis considers the role of the reforms as a response to rising family inequality and discusses the extent to which they can be justified on conventional vertical and horizontal

equity criteria. The paper is organised as follows. Section 2 presents an analysis of the distributional effects of the reforms. Section 3 examines likely labour supply effects based on available estimates of wage and income elasticities and outlines the potential impact on household saving. A concluding comment is contained in Section 4.

2 Distributional outcomes

A number of studies have investigated the distributional consequences of a tax mix change combining a less progressive income tax system and compensation targeted on family income, as formulated in the Howard tax plan.⁸ The studies typically report the change in average rates of tax on household income, computed as the difference between pre-reform rates and those implied by the reform, ignoring behavioural responses. The results tend to be consistent and are not surprising.

In general, the studies find that the reform reduces relative tax burdens at the upper end of the distribution of household income, due to the combined effect of larger reductions in income taxes for high income earners and the regressive impact of the GST. Compensation, typically based on family income, together with a more tightly targeted welfare system, tends to maintain the pre-reform income levels of most groups at the bottom of the family income distribution. Overall, the outcome is a shift in the tax burden from households with very high incomes towards those in the middle of the distribution. This general outcome applies in a straightforward way to single individuals and single parent families, for a reform that is revenue neutral with respect to these groups. For two-parent families the effect is more complex. A revenue neutral reform for these households also shifts the tax burden from single to dual income families, due to the “joint tax” elements and flattening of the income tax schedule. Thus, single income families as a group gain, as well as both household types in which there is at least one

⁸ See, for example, Brooks (1993), Savage (1993) and Apps (1997). These studies examine predecessors to the Howard tax plan, including the reform proposed by the Liberal and National Parties (1991) in their “Fightback!” document.

high income earner. Those who suffer significant losses are low to middle-wage dual income families.

To illustrate this outcome we can take examples from the Howard tax plan document showing gains derived from the proposed income tax cuts and additional family benefits, net of GST effects, for different family types.⁹ Tables 1 and 2 reproduce figures for couples with one child aged from 5 to 13 years. Table 1 illustrates the effects of the joint tax elements of the scheme. The table compares the gains for a single and a dual income family each with a “primary income” of \$30,000 pa. The lower gain for the dual income family indicates the effect of the joint tax elements of the package (associated with Family Tax Benefits (A) and (B)). For the single income family the dollar value of the gain is \$47.56 pw. In the dual income family the second income is only \$15,000 pa yet the gain falls to \$26.34, a figure that is close to half that offered to the single income family.¹⁰ In other words, in a family in which the husband is the primary earner and the wife goes out to work, she is not only denied a gain but causes her husband to lose almost half of his. Under a reform which achieves revenue neutrality, for example, by a uniform increase in marginal rates, the lower gain for the dual income family translates into a loss that contributes to financing a net gain for the single income family

Note that the shift in the overall tax burden to dual income families is a consequence of lowering the average tax rate (ATR) on the income of the primary earner and raising it on that of the second earner. According to the Howard tax plan document, the “current tax liability” of the single income family on \$30,000 is \$127.96 pw and that of the dual income family with a joint income of \$45,000 and a 67%:33% income split is \$166.63. These figures yield pre-reform ATRs on primary and second incomes of 22.2 per cent

⁹ The gains reported in the document (Commonwealth of Australia, 1998) are based on a non-revenue neutral reform, as well as on CPI assumptions which lead to an underestimate of losses for lower income groups from the GST and of gains for higher income groups. Simulations show that, under a revenue neutral reform, the lower gains reported for dual income families on relatively low rates of pay translate into significant losses.

Table 1: Effects of joint tax elements

	Primary income \$pa	Second income \$pa	Tax cuts + add ben. \$pw	Change in ATR%
Single income family	\$30,000	0	\$47.56	-8.2
Dual income family	\$30,000	\$15,000	\$26.34	-3.0

and 13.4 per cent, respectively.¹¹ The corresponding post-reform rates are 14.0 per cent and 20.8 per cent. As shown in the table, the net effect is a fall of 8.2 percentage points in the tax rate on primary income and a rise of 7.4 percentage points in the rate on the second income. The result is that the second earner, with only half the income of the primary earner, becomes subject to the higher rate of tax.

Table 2 illustrates the differential impact on primary and secondary incomes of the flatter income tax rate scale implied by the proposed cuts in marginal rates.¹² The table reports outcomes for a single and a dual family each with a joint income of \$60,000 pa.¹³ The largest cut, that of 13 cents in the dollar, begins at \$38,000 pa, an annual taxable income above that of both partners in the dual income family. As a consequence the gain for the single income family is almost twice that for the dual family even though the employed partner in the single income family has twice the earning capacity of each partner in the dual income family.

If we compare the tables for single income families and for dual incomes families with a 67%:33% income split, where both have one child aged 5 to 13 years (Chapter 5, pages 183 and 189 respectively, Commonwealth of Australia, 1998), we find that the gain,

¹⁰ The figures are from the tables in Chapter 5, p. 183 for the single income family and p.195 for the dual income family, Commonwealth of Australia, (1998).

¹¹ The tax on the second income is calculated as the additional tax paid by the dual income family, in this case, as \$166.63 less \$127.96. The analysis implies a model in which primary income is treated as given.

¹² The proposed cuts in marginal tax rates on bands of individual taxable incomes are as follows:

\$6,000 - \$20,000	-3%
\$20,000 - \$38,000	-4%
\$38,000 - \$50,000	-13%
\$50,000 - \$75,000	-7%

¹³ The figures are from the tables in Chapter 5, p. 183 for the single income family and p.189 for the dual income family, Commonwealth of Australia, (1998).

Table 2: Effect of flattening income tax rates

	<u>Primary income \$pa</u>	<u>Second income \$pa</u>	<u>Tax cuts + add ben. \$pw</u>	<u>Change in ATR%</u>
Single income family	\$60,000	0	69.47	-6.0
Dual income family	\$30,000	\$30,000	34.98	-3.0

measured as “cuts in personal income tax and increases in Family Package Benefits”, is considerably greater for the single income family until joint income reaches \$100,000. At this point, the pattern reverses. From the results in these tables it is evident that the reform is designed to shift the tax burden to low and middle wage dual income families, and to widen the degree of overall inequality across families.

A reform which provides the largest gains for households in which there is at least one high income earner is clearly not designed to redress recent wage trends or, more generally, to improve vertical equity. The question then arises as to whether the higher taxation of dual income families can be supported on the basis of horizontal equity, by imposing more equal tax burdens on families with the same joint income. The answer to this question depends on how we value domestic production.

The argument in support of equal taxation of family incomes is based on the assumption that the combined income of parents with the same childcare responsibilities is perfectly correlated with family well-being. The assumption implies that the domestic time of the “home-maker”, typically the female partner, allocated to the provision of childcare and substitute services for market goods does not yield an output that contributes to family living standards. In other words, the home-maker is essentially unproductive. An assumption of this kind contradicts casual observation and is inconsistent with information on domestic work available in time use survey files. A more plausible assumption is that the productivity of a partner specialising in domestic work

approximates that of her counterpart in market work,¹⁴ particularly for second earners on low to average rates of pay.¹⁵ Under this assumption we require, for the purpose of comparing family living standards, a measure of income which includes domestic output evaluated approximately at market prices for equivalent services.

There are a number of difficulties associated with constructing such a measure due to missing data. The literature contains various approaches. Some studies use potential income defined as the income a family could earn if both partners worked the same “full-time” hours.¹⁶ The computation of potential income is not straightforward. For example, the wage rate of each partner needs to be instrumented to avoid endogeneity bias when the gross wage is computed from hours and earnings data. However, cross-section datasets typically yield very poor instruments for wage rates, and available Australian Bureau of Statistics (ABS) survey files are no exception. For studies based on data for employed families with similar demographic characteristics, primary earner income may provide a reliable indicator of relative living standards.¹⁷ The approach assumes assortative pairing and, provided there is little variation in primary earner hours of work, implies the use of primary income as an instrument for the wage of the second earner. We use this approach below to illustrate the significance of incorporating domestic production in the analysis of distributional outcomes.

Table 3 compares quintile rankings of families defined on household income and primary earner income, based on a sample of full-time employed families with broadly similar demographic characteristics. The sample is drawn from the ABS 1993 Household Expenditure Survey (HES) file on criteria that ensure that at least one dependent child under 15 years is present and the employed “household reference head” is likely to be the

¹⁴ A productivity difference is required to explain variation in the domestic/market work choices of single and dual income families, across families with the same demographic characteristics, wage rates, non-labour incomes and work-leisure preferences. However, the difference can be small (see, Apps and Rees (1999a)). It is also worth noting that the available data on time allocations to pure leisure and work (market and domestic) suggest that the two household types tend to make similar work-leisure choices.

¹⁵ The assumption of similar productivities is unlikely to hold in the case of the few female second earners on high pay in protected labour submarkets, such as the CEO submarket.

¹⁶ Alternatively, potential income may be computed on the basis of the wage rates of parents, as in the Gentry and Hagy (1996) analysis of the distributional effects of the tax treatment of childcare expenses.

¹⁷ See Apps and Savage (1988).

primary earner¹⁸. The sample is split into “traditional” (T) and “non-traditional” (NT) families on the basis of the employment status and earnings of the spouse.¹⁹ The categories broadly represent single and dual income families respectively. The upper section of the table reports results for the household income ranking and the lower half for the primary income ranking, in ascending order across rows. Row 1 of each section reports the percentage of non-traditional families in each quintile of the ranking and row 2 gives the mean of the ranking variable. The subsequent rows report means for the earned incomes of partners within each household type.

Table 3: Quintile rankings by household income and primary income

Quintiles	1	2	3	4	5	All
<u>Household income ranking</u>						
1. % NT households	14	36	67	80	84	56
2. Household income \$pa	28,335	39,552	50,123	63,451	105,463	57,356
3. T primary income \$pa	24,806	35,590	43,700	54,283	105,834	39,819
4. T second earned income \$pa	253	692	1,370	2,157	13,413	1,683
6. NT primary income \$pa	19,650	25,777	31,192	37,731	59,190	39,819
7. NT second earned income \$pa	7,869	12,326	17,000	21,708	31,473	21,590
<u>Primary income ranking</u>						
1. % NT households	50	57	56	55	63	56
2. Primary income \$pa	20,954	28,069	35,011	42,784	72,376	39,819
3. T second earned income \$pa	870	981	1,331	2,533	3,023	1,683
4. NT second earned income \$pa	18,139	20,248	19,992	22,014	26,579	21,590

From the results it can be seen that the two household types tend to polarise across the household income ranking. Over 80 per cent of records in quintile 1 represent traditional households and over 80 per cent of those in quintile 5 are non-traditional households. From the data means for the incomes of primary and secondary earners in each household type it can be seen that household income is strongly positively correlated with the second income and, since second earnings reflect market hours, with the additional

¹⁸ The sample is selected on the criteria that the household reference head is employed full time and earns over \$10,000 pa, and that wage and/or salary income is the principal source of earnings. Records reporting negative earnings for the spouse of the reference persons are excluded.

¹⁹ Non-traditional households are selected as those in which the spouse of the reference person reports working full or part time and earns at least \$5000 pa. Traditional households are the remainder.

market hours of the second earner.²⁰ In effect, the ranking makes no allowance for the fact that the spouse in the traditional household is working productively at home. Consequently traditional households with relatively high primary incomes are placed in the same quintile as non-traditional households with much lower primary incomes but a spouse also working. For example, in quintile 3, the mean primary income of traditional households is just over \$50,000 whereas that of non-traditional households is close to \$31,000 pa. for full time employment in both cases. In contrast, the two household types tend to be evenly distributed across the primary income ranking. Provided there is a sufficient degree of assortative pairing, the primary income ranking effectively incorporates an implicit adjustment for the contribution of domestic work to family living standards in the traditional household.

The two rankings have different implications for policy. The assumption that household income can be used as a measure of family welfare implies not only that a partner specialising in domestic work is unproductive but also that her lifestyle is supported by a “share” of household income. Typically, a husband is assumed to share his income with his wife, in effect making an intra-household lump sum transfer equal to half his income. This assumption underlies the standard argument for basing taxes and eligibility for cash transfers on family income. In contrast, the ranking by primary income implies that a partner specialising in domestic work is no less productive than her counterpart in the market place. A policy implication of this productivity assumption is that, for horizontal equity, traditional and non-traditional households in the same percentile of the ranking should be taxed the same amount. However this is not a policy option because domestic production, like pure leisure, is excluded from the tax base. When household production is untaxed, a system which imposes a higher rate on the income of the primary earner than on the income of the second can have the effect of taxing home production indirectly. A progressive individual income tax implies this rate differential because second earners are typically on lower pay.²¹

²⁰ Hours of market work are missing in the 1993 HES file and therefore cannot be reported here. For an analysis of rankings based on a dataset which contains hours data, see Apps (1999).

²¹ In Apps and Rees (1999a) we analyse the effects of tax reforms using a model which incorporates domestic production and recognises that domestic output as well as pure leisure are excluded from the tax

To see the potential gain in horizontal equity from a progressive individual income tax, consider the distribution of burdens between the two family types under a flat rate income tax. Take, for example, the case of two families, one traditional and the other non-traditional, in which all partners have the same market wage (or reservation wage in the case of the non-participant in the traditional household), work the same hours (market and domestic) and all have zero non-labour incomes. Under a flat rate tax the single income family contributes only half as much as the dual income family to tax revenue. Ideally, they would pay close to the same amounts.²² More equal taxation can be achieved by raising the marginal rate, and therefore the average rate, on the primary income partner in each household and lowering it on the second. In an economy in which second earners have lower incomes this can be achieved by introducing progressive rates on individual incomes.

Introducing progressive rates on *joint* income raises the marginal and average rates faced by a dual income family at any given level of primary income, and therefore has the opposite effect. The Howard tax plan, in selectively disadvantaging dual income families on low to average wages and reducing the progressivity of taxes on individual incomes, is therefore inconsistent with horizontal equity as well as with vertical equity. The plan can also be expected to increase intra-family inequality, by widening the net wage differential within the family.

We now turn to the FTC program proposed by the ALP. The ALP (1998) policy document presents the program as an initiative designed to assist low and middle income working families. The maximum credit varies with the number of dependent children,²³ beginning at \$3,000 for one child, increasing by \$300 for each additional child, and reaching a maximum of \$3,900 for four or more children. The credit phases in at a rate

base. We specify a model which attributes variation in the degree of specialisation in household production to domestic human capital, which may or may not be directly correlated with market wage rates and demographics, and maintain the assumption of identical preferences.

²² This assumes they have similar domestic productivities. If, for example, the traditional household is marginally more (less) productive at home than the non-traditional household, the former should pay a correspondingly higher (lower) tax than the latter. For a formal proof, see Apps and Rees (1999a).

of 10 cents for every dollar of earned family income up to a plateau of \$10,000, and then phases out at a rate of 15 cents in the dollar of earned income.²⁴ The phase-in, plateau, and phase-out ranges of earned family income to which the rate scale applies are as follows:

No of children	Phase-in range at 10 cents	Maximum Credit applies to plateau of	Phase-out range at 15 cents
One	\$1-\$30,000	\$30,000-\$40,000	\$40,001-\$60,000
Two	\$1-\$33,000	\$33,000-\$43,000	\$43,001-\$65,000
Three	\$1-\$36,000	\$36,000-\$46,000	\$46,001-\$70,000
Four or more	\$1-\$39,000	\$39,000-\$49,000	\$49,001-\$75,000

A crucial feature of the reform is the specification of joint earned income as the base to which the phase-in and phase-out rates apply. The policy document emphasizes that the program provides gains for all families on low to middle joint incomes and demonstrates this by tabulating results for “single income” and “double income” families by household income. However the presentation of gains by household income tends to obscure the very significant shift in the overall tax burden from single income families to a wide band of relatively low and middle wage dual income families, due to the joint income basis of the scheme. The shift is a consequence of the fact that the program lowers average tax rates on primary incomes and raises them on second incomes.

Table 4 illustrates this distributional effect of the program, taking the case of families with one child aged from 5 to 13 years. The table reports tax cuts and the change in the average rates of tax on the joint incomes of four families, two single and two dual. Primary incomes are \$30,000 and \$40,000 pa and second incomes are half those of the primary incomes (67%:33% income split). The results are presented in the same format as Table 1.

The single income family with an earned income of \$30,000 receives the maximum credit of \$3,000 and this reduces the family’s ATR by 10 percentage points, from 22.4 per cent

²³ Dependent children are defined as children up to the age of 16 or student dependents under 18.

²⁴ This measure of income is defined to include total wage and salary income, and the positive business income of both parents together. Families with more that \$5000 in annual unearned income are ineligible.

Table 4: Effects of joint taxation under and FTC program

	<u>Primary income \$pa</u>	<u>Second income \$pa</u>	<u>Tax cuts + add ben. \$pw</u>	<u>Cut in ATR%</u>
Single income family	\$30,000	0	\$3,000	-10.0
Dual income family	\$30,000	\$15,000	\$2,250	-5.0
Single income family	\$40,000	0	\$3,000	-7.5
Dual income family	\$40,000	\$20,000	\$ 0	0.0

to 12.4 percent. In the dual income family with the same primary income, the additional \$15,000 income of the second earner reduces the credit to \$2,250. The family's overall ATR falls by only 5 percentage points, from 19.5 per cent to 14.3 per cent. As a consequence, while the tax rate on primary income falls from 22.4 per cent to 12.4 per cent, the rate on the second income goes up from 13.4 per cent to 18.4 per cent. In the case of the \$40,000 primary income families, the single income family again receives the maximum credit of \$3,000. The ATR on primary income, and therefore the family income, falls by 7.5 percentage points, that is, from 25.9 per cent to 18.4 per cent. In the case of the dual income family, the credit is entirely withdrawn. This has the effect of raising the ATR on the second income by 15 percentage points, that is, from 15.5 per cent to 30.5 per cent. Comparing these changes in rates on primary and second incomes with those reported for the Howard tax plan, it is evident that the ALP policy implies an even greater relative shift in the tax burden from primary to second earners in families on low to middle wages.

The FTC proposed by the ALP (1998) is unfunded within the tax system. This allows the program to be presented as a reform which makes some families better off and no family worse off. Results of this kind can give a particularly misleading picture of the true impact of the program, for two related reasons. First, the proposed FTC is costly and so it is essential to model a package which specifies who pays for it. Clearly, some families must lose, at least in relative terms. Second, the reform has emerged in a political climate in which there is strong support for the ongoing trend towards a flatter income tax rate scale. Members of the team of Five Economists promoting the program explicitly argue for a lower top marginal tax rate. For example, Garnaut (1999) views the introduction of

an EITC program as an important step towards a tax system with a top rate of around 36 cents early in the next century. In other words, he see the program as a strategy for funding tax cuts for high income earners from a source of revenue which does not raise EMTRs for those on very low pay who might otherwise find there is no financial gain from working. The source of revenue is the income of second earners across a wide band of families in which the wage of the primary earner is close to the median. Under these conditions the program can be categorised as a strategy for “fine tuning” income targeting, allowing it to be carried much further along the distribution than previously envisaged, for the purpose ultimately of financing tax cuts for high income earners.

3 Effects of reforms on labour supply and saving behaviour

The preceding analysis suggests that the Howard plan for “a new tax system” and the ALP’s proposed FTC program cannot be justified on conventional equity criteria. We now consider whether the reforms can be supported on efficiency grounds. It has been strongly argued that, for example, lower and less progressive income taxes improve the incentive to work, save and invest, and lead ultimately to welfare gains that offset losses due to “first round” distributional effects such as those described above.

To assess incentive effects we need to identify the change in EMTRs that the reforms imply. As in most countries, EMTRs under the Australian tax-benefit system tend to exhibit a “U” shaped profile, skewed to the left, with respect to earnings. They are highest at low income levels, they fall as income rises and then tend to rise again at higher income levels. Since the tax mix change and income tax cuts in the Howard tax plan shift the tax burden from high income earners to a wide band of middle income households, the reform implies a more strongly left-skewed U shaped profile of EMTRs. It increases “on average” EMTRs for those on low earnings and reduces them for those on the highest incomes. At the same time, the reform raises ATRs and therefore EMTRs for second earners in low to middle wage families, while reducing them for primary income earners. The FTC program proposed by the ALP has a similar intra-household

effect for many middle wage families. While the program reduces, by 10 percentage points, the high EMTRs that apply to the earnings of families whose income falls within the phase-in range, it raises ATRs and therefore EMTRs for many second earners further along the distribution of family income. The likely effects of these marginal tax rate changes on household labour supply and saving behaviour are examined below, drawing on estimates of wage and income elasticities in the literature and on available data on household saving.

Labour supply effects

While empirical research provides widely varying estimates of labour supply responses to changes in the net wage, there is considerable agreement on a number of general patterns.²⁵ Most studies report a significant and large difference by gender. Labour supply elasticities estimated for married women as second earners tend to be much larger than those estimated for husbands as primary earners. On the basis of this result, tax reform studies typically find that, for efficiency, the female partner should face a lower marginal rate than the male partner. The result is a straightforward application of the Ramsey pricing rule (in its simplest form, ignoring cross elasticities). The finding supports progressive individual income taxation on efficiency grounds because, as explained above, under such a system married women on lower pay face lower marginal rates than husbands. Flat rate taxation and joint taxation imply a greater efficiency loss because they conflict with the Ramsey rule. The optimal tax analysis by Boskin and Sheshinski (1983) and, more recently, the tax reform study by Feldstein and Feenberg (1996) demonstrate this efficiency result.²⁶ A more general theoretical analysis is provided in Apps and Rees (1999a).

In a review article Heckman (1993) is highly critical of many labour supply studies. In particular he rejects the findings of those that obtain large elasticity estimates for males

²⁵ For a survey, see Killingsworth and Heckman (1991). For estimates based on Australian micro data, see Apps and Rees (1996).

²⁶ For a study which claims to obtain a conflicting result see Piggott and Whalley (1996). For a critical comment see Apps and Rees (1999b).

due to functional form dependency²⁷ or which fail to correct for selection bias. He argues that careful examination of the research suggests that variation between female and male elasticities reflects wage and hours differences. Drawing on work which provides a careful econometric analysis of a range of issues, Heckman concludes that male labour supply shows little wage and income responsiveness at higher wages and at greater hours worked, and that virtually all of the responsiveness found for this group is at or near the zero-hours point, the “extensive” margin or point of entry and exit. He argues that a similar finding is supported by the evidence on female labour supply, and that the larger elasticities estimated for this group reflect the fact that women earn lower wages and are more concentrated at the extensive margin. An important implication of this critique is that it provides an efficiency argument for tax rate differentiation by wage and income. In other words, for efficiency, individuals on low pay should, *ceteris paribus*, face lower EMTRs.²⁸ The analysis offers a more general labour supply incentive argument, rather than one based solely on differences in wage elasticities by gender, for a progressive individual income tax system.

These findings suggest that the change in the earnings profile of EMTRs and the higher rates for second earners under the Howard tax plan cannot be justified on the basis of labour supply incentive effects. It raises EMTRs for those with the most responsive labour supply behaviour - low wage workers in general and married women as second earners in particular – and lowers them for those with the least responsive labour supplies - high wage and high income primary earners. The likely outcome is an overall decline in labour supply, due especially to a decline in participation and hours of married women, and a significant efficiency loss.

The overall impact of the FTC on the labour supply of two-parent families will depend on the relative strengths of the two conflicting effects of the program. On the one hand, the lower EMTRs over the phase-in range of family income can be expected to increase the

²⁷ An example is Hausman (1983).

²⁸ The result holds provided the compensated labour supply elasticities of lower income workers at the extensive margin are sufficiently large, or those of higher income workers at the intensive margin are

labour supply of those whose earnings fall within that range. On the other, the higher EMTRs over the phase-out range is likely to impact negatively on the labour supply of many second earners.

There are a number of studies that estimate the effects of the EITC program in the US on the labour supply of married couples. An example is the Eissa and Hoynes (1998) analysis of EITC expansions between 1984 and 1996. The authors find that the labour force participation of married men increased only slightly while that of married women fell by a full percentage point. The study concludes that the EITC program “effectively subsidises married mothers to stay at home”. Ellwood (1999) also finds a negative, although more modest, impact on the labour supply of married mothers.

A conflicting finding is reported in Duncan, Giles and MacCrae (1999) for the Working Families Tax Credit in the UK. However this result can be rejected because it is derived from a labour supply model which treats childcare expenses as a cost of working. Childcare costs are incurred irrespective of the work choices of parents. In the traditional family they are paid in-kind, largely as the mother’s direct input of time, and in the non-traditional family equivalent services are purchased from the market place. Studies which treat expenditures on childcare as a “cost of working” inevitably underestimate labour supply elasticities for second earners.

In the Australian context there are a number of factors which suggest that the negative effect on the labour supply of second earners would dominate. The results of a detailed analysis of changes in effective tax rates implied by the proposed FTC program in Apps (1999) show, first of all, that a large number of second earners are affected. Second, the study computes effective tax rates on primary and second incomes under the existing income tax-transfer system and finds that, on average, the second earners already face significantly higher EMTRs than primary earners at any given level of income. The FTC therefore represents a reform which increases the EMTRs faced by second earners

sufficiently small, to offset weighting by income. The findings of the studies cited suggest these conditions hold.

beginning from a “high base”. Given the number of second earners affected, the evidence on their labour supply behaviour, and the extent to which the FTC program adds to the already high EMTRs they face, the study concludes that the program would have a strong overall negative effect on family labour supply.

Household saving

We now consider the impact of the reforms on household saving behaviour, focussing on the incentive effects of high EMTRs on the incomes of second earners. This is an important issue because Household Expenditure Survey data indicate that the principal savers in the economy are households in which both partners have a significant workforce attachment, at all levels of individual earning capacities. A reform which reduces the labour supply of second earners can therefore be expected to have a negative effect of household saving.²⁹

To demonstrate this, Table 5 presents household saving profiles for the quintile rankings of families by household income and primary earner income reported in Table 3. The upper section of the table gives the results for the household income ranking and the lower section, for the primary income ranking. Rows 1 and 2 of the household income ranking report mean household disposable income and household saving per annum. The means for household saving exhibit the usual profile, beginning at negative numbers in quintiles 1 and 2, -\$4,985 and -\$3,183 pa, respectively, and rising to \$11,568 pa in quintile 5. Since a household income ranking tends to polarise traditional and non-traditional households, the profile reflects the fact that, among families with similar earning capacities and demographic characteristics, the former typically save less than the latter. This is evident from the primary income ranking.

The lower section of the table reports separately the saving profiles of the two household types with respect to primary income. Rows 1 to 3 and 5 to 7 give quintile means for primary earner disposable income, second earner disposable income and household saving pa, for traditional and non-traditional households respectively. From rows 3 and 7

²⁹ See Apps and Rees (1999c).

it can be seen that the mean levels of saving by traditional households are negative in all quintiles except quintile 5, whereas for non-traditional households they are positive in all quintiles apart from quintile 1. The difference between the means in each quintile indicates the average increment in household saving when the second partner goes out to work. The increment is substantial across the distribution, and results in overall means of -\$1783 pa for traditional households and \$4488 pa for non-traditional households. These results suggest that a reform which leads to a fall in the participation and labour supply of second earners, by raising the EMTRs they face, may have a significant negative effect on household saving and, in turn, on investment and growth.

Table 5: Household saving by quintiles of household and primary income

Quintiles	1	2	3	4	5	All
Household income ranking %NT	14	36	67	80	84	56
1. H'hold disposable income \$pa	25,199	32632	40111	49268	75115	44447
2. Saving \$pa (data)	-4985	-3185	602	4732	11568	1741
Primary income ranking %NT	50	57	56	55	63	56
Traditional households:						
1. Primary earner disp. income \$pa	19157	23810	28011	32864	53213	30389
2. Second earner disp income \$pa	4563	5319	2836	3486	5036	3866
3. Saving \$pa (data)	-3092	-5061	-1947	-1006	3097	-1783
4. Saving \$pa (eval. at data means)	-4656	-4157	-3385	-1386	4864	-1766
Non-traditional households:						
5. Primary earner disp. income \$pa	17579	22435	27040	31472	45518	29436
6. Second earner disp. income \$pa	16457	17773	17537	18755	21736	18574
7. Saving \$pa (data)	-1846	2448	3333	6043	11013	4488
8. Saving \$pa (eval. at data means)	-823	1695	2850	5334	12809	4475

An obvious objection to the preceding analysis is that the observed variation between the saving behaviour of the two household types may be due to differences in demographic and other characteristics. To address this point, row 4 reports mean household saving pa controlling for demographics and the income of the primary earner, evaluated at data means, using a regression model. From the results it can be seen that, overall, there is almost no change in the mean saving by each household type, although there are differences within each quintile.

The analysis also raises the question as to whether the gap between the saving profiles of the two households reflect lifecycle effects. In other words, it may be argued that participation and hours vary over the lifecycle and the lower level of saving observed for traditional households at any point in time is a temporary phenomenon. At other points in the lifecycle they may be working longer and saving more. This would be a valid criticism if, *ceteris paribus*, second earners worked similar hours over the lifecycle. In general this is not the case. Those who work when the children are young tend to stay working in later years, and those who do not work in later years are less likely to have worked previously.

The differences between the saving decisions of traditional and non-traditional households indicated in Table 5 are rarely noted in the literature, despite the fact that they are so evident in the data. The reason for this is that empirical work on labour supply and saving behaviour is based on a modelling approach which does not allow within period and lifetime differences between the two types of households to be identified. The key problem is that the underlying theoretical model does not specify an exogenous variable which can explain the observed variation across households in the market and domestic hours of mothers in similar circumstances. In Apps and Rees (1999c) we formulate a model which attributes such variation to domestic human capital and we then define consumption to include domestic and well as market goods. We take account of the fact that domestic goods may be close substitutes for market goods. In a modelling framework of this kind we show that a reform which raises tax rates on second earners can, by inducing substitution of domestic for market work, reduce household saving and economic growth.

In contrast to this approach, the conventional analysis treats expenditure on market goods as total consumption spending. Time allocated to non-market activities is treated as pure leisure.³⁰ Using the standard life cycle model agents are assumed, in addition to having intertemporally additive utility functions, to have within period utility functions which

³⁰ Examples include Blundell, Browning and Meghir (1994) and Browning and Meghir (1991). For a survey of the literature, see Browning and Lusardi (1996).

are additively separable in consumption and leisure, where the latter includes domestic production. This rules out the possibility that market services, such as childcare, are substitutes for those provided at home.

A number of studies test the assumption of additive separability between consumption and leisure, and find that it is rejected by the data. Browning and Meghir (1991), for example, show that the participation and hours of work decisions of each partner can have a significant effect on the estimated parameters of a commodity demand system. The Blundell, Browning and Meghir (1994) article supports this result. The authors suggest that “intertemporal allocation does indeed depend on labour force participation; for example, there are positive costs in going out to work”. In other words, consumption expenditure and labour supply are, in some cases, complements. This finding implies that, *ceteris paribus*, having a second earner reduces household saving when in fact the opposite is the case as indicated in Table 5.

4 Concluding comment

This paper has investigated the distributional and incentive effects of the Howard plan for “a new tax system”, focussing on the impact of a tax mix change and the proposed cuts in income taxes. These key elements of the plan are shown to be consistent with the general trend of tax reform since the mid 1980s, with its emphasis on reducing the central role of the individual income tax in the tax-benefit system and on shifting, in effect, towards the taxation of family income. The economic impact of the ALP’s proposed FTC program has also been examined. The findings of the study suggest that these reforms are open to serious criticism on distributional grounds and that they are likely to have a significant negative effect on household labour supply and saving and, in turn, on the growth of the economy.

The results support the view that Australia would be better served by a policy agenda which took a more constructive approach to the individual income tax as the centerpiece

of the tax-benefit system and which relaxed family income tests for welfare benefits to achieve a more efficient economy. An approach of this kind would require a shift in the focus of reform, from strategies designed to shift the tax burden to low and middle wage families to measures that discourage non-compliance and the use of tax minimisation schemes, so that all contribute a fair share to tax revenue.

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