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*DISCUSSION PAPER*

**WHY THE HENRY REVIEW FAILS ON  
FAMILY TAX REFORM**

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## **Abstract**

While acknowledging the importance of fairness and the need to avoid creating disincentives in the design of tax reform, the Henry Review recommends a simplified Personal Income Tax and child payments withdrawn on a single family income test. This paper shows that the proposed reforms would consolidate the existing family tax system, which clearly fails in terms of both fairness and disincentives. In the early 1980's Australia had a highly progressive individual income tax and universal family payments. Since then family income tests on child payments and tax cuts at high income levels have transformed the system into one of joint taxation with the highest marginal rates on low and average wage two-earner families. Under the Review's recommendations the same families would continue to face the highest tax rates. Data presented indicate strong negative effects on productivity and the tax base due to disincentive effects on labour supply and saving over the life cycle. The paper proposes a return to a strongly progressive individual based income tax and universal family payments.

**JEL Codes:** D91, H21, H31, J13, J16, J22

**Keywords:** Taxation, Family payments, Time allocation, Labour supply, Saving, Life cycle

# 1 Introduction

The Henry Tax Review<sup>1</sup> refers to the concept of horizontal equity and draws on the supposed cost-reducing advantages of targeting child payments, in support of the key elements in the future income tax and family payment system that it is proposing for Australia. The Review acknowledges the importance of taking considerations of fairness in the distribution of tax burdens into account, and of the need to avoid creating disincentives to labour force participation, while stressing also the importance of simplicity, transparency and coherence of the tax and child payment system. This paper examines the Review's main recommendations for reforms of the Personal Income Tax and structure of child payments, using the available data and a realistic conceptual model of the household to assess their likely impact. The key changes considered are the recommendations for a simplified PIT scale and a "single family payment" per child to cover the "direct costs of children in a low-income family (that is, the costs associated with food, clothing, housing, education expenses)", together with the recommendation that the latter be withdrawn on a single income test defined on family income.<sup>2</sup>

It will be shown that the proposed reforms are a simplification and further extension of the existing system, which has been introduced incrementally across successive government Budgets during the last two and a half decades. In the early 1980s Australia had a highly progressive individual-based income tax and universal child payments. The family tax system now tends towards joint taxation with an inverted U-shaped rate scale, and therefore a system with very high rates on the incomes of married mothers as second earners. As argued in some detail in Apps and Rees (2010a), the "new" system is much less progressive in its distribution of tax burdens, has severe problems of horizontal inequity and imposes a high efficiency cost by inhibiting the growth of female labour supply and household saving over the life cycle.

The shift towards joint taxation and the new rate scale has been achieved gradually through the less than transparent approach of switching from universal to family income-targeted

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<sup>1</sup> Australia's Future Tax System Review Panel, *Australia's future tax system: Report to the Treasurer* (December 2009) (AFTS Report).

<sup>2</sup> AFTS Report, Recommendations 90 and 96.

child payments (now Family Tax Benefit Part A)<sup>3</sup> combined with tax cuts at high income levels. The argument used to support the Review's recommendations for joint income-targeted family payments is that universal payments are more "costly".<sup>4</sup> However, reference to optimal tax theory shows that the idea of a cost saving achieved by targeting reflects a misunderstanding of the trade-off between efficiency and equity in tax design.<sup>5</sup> The true cost of the tax system (apart from its costs of administration and compliance) consists of the deadweight losses arising from the incentive effects of the marginal rate scale on family work and saving, given the distribution of tax burdens, or average tax rates, it imposes. I argue in this paper that the move to targeting child payments on joint income has worsened the performance of the Australian tax system along both these dimensions.

I present data on time use, consumption and saving, organised according to a "family" life cycle model, to support the argument that family income-tested child payments are unnecessarily costly in terms of deadweight losses. By organising the data according to family phases defined on the presence and age of children, rather than on age of "head" of household as is usual in the literature, the very large fall in female labour supply in the early child-rearing years, and the life cycle persistence of labour supply decisions at that time, becomes evident. Moreover, among families with similar demographic characteristics and earnings possibilities there is a high degree of heterogeneity – some households decide that the female partner, as "second" earner, will withdraw entirely from the workforce to provide child care at home, while in others she remains in full time work and buys in child care. The data also indicate that household saving at average earnings levels is strongly positively associated with the labour supply of the second earner.

On the basis of this evidence I propose a return to a strongly progressive individual-based income tax and universal family payments, for reasons of fairness as well as economic growth. Given the evidence that female labour supply among couples of prime working age

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<sup>3</sup> 1983 saw the first step in the process, with the introduction of the "Family Income Supplement" withdrawn on joint income, which has since evolved into Family Tax Benefit Part A excluding the base rate. A series of subsequent reforms have completely eliminated universality.

<sup>4</sup> For example, the AFTS Report (Pt 2, Vol 2, p 557) states that "...it would be extremely costly to provide universal payments. Phasing out payments using a low withdrawal rate can provide some level of assistance to most families without the full cost of a universal payment".

<sup>5</sup> For a detailed exposition of the error in the logic of the "cost" saving argument, see Apps and Rees (2010a) and Rees (2010).

is only around 50% of that of their male partners, I suggest that the gains in terms of the increase in the tax base and GDP would be well above previous estimates.

The paper is organised as follows. Section 2 presents a comparative analysis of the 2009-10 income tax and child payment system and the Review's recommendations. Section 3 presents and interprets the data on time use and saving. A concluding comment is contained in Section 4.

## **2 Income taxation and family payments**

The Review recommends a simple three-bracket Personal Income Tax (PIT) rate scale that incorporates the Low Income Tax Offset (LITO) and Medicare Levy (ML). The first part of this section compares the Review's scale with the 2009-10 scale applying to individual incomes under the PIT and LITO. The ML is omitted because it is based partly on joint income (due to the withdrawal of the "reduction amount" on family income) and therefore cannot be included in a rate scale that applies to individual incomes. The section goes on to describe the rate structure of the overall 2009-10 family tax system incorporating the ML and Family Tax Benefits, and provides examples of how it would change if the Review's recommended reforms to the Personal Income Tax and family payments for the direct costs of children were introduced.

### **2.1 Review's rate scale vs. 2009-10 rate scale**

The 2009-10 Personal Income Tax scale is strictly progressive and simple. There are just five marginal rates, 0, 15, 30, 38, and 45 cents in the dollar, with the zero rate applying to incomes from \$0-\$6,000 and the top rate of 45 cents in the dollar to incomes above \$180,000.

However, the formal PIT rates are not the true or "effective" rates that apply to individual incomes. The true rate scale is obtained by adding the LITO. The result is shown in Table 2.1. The LITO increases the zero rated threshold and simultaneously raises the PIT rates by four cents in the dollar over the range from \$30,000 to \$63,750. The Australian individual-based income tax is no longer strictly progressive. The LITO is in fact an entirely redundant policy instrument that has served only to reduce the transparency of the rate increase across the "middle" of the distribution.

The Review argues for a simplified rate scale that has a “*high tax-free threshold with a constant marginal rate for most people [...]*”.<sup>6</sup> The recommended scale is shown in Table 2.2. Note that the middle rate of 35 cents in the dollar on incomes from \$25,000 to \$180,000 is just one cent higher than the current 34 cent rate on incomes from \$35,001-\$63,750 or, if the 1.5 cents ML rate is added across this band of income, just half a cent lower.

**Table 2.1 2009-10 MTR scale**

<b>Taxable Income \$pa</b>	<b>PIT + LITO (\$1,350)</b>
\$0-15,000	0.00
\$15,001 - \$30,000	0.15
\$30,001 - \$35,000	0.19
\$35,001 - \$63,750	0.34
\$63,751 - \$80,000	0.30
\$80,001 - \$180,000	0.38
\$180,000 +	0.45

**Table 2.2 MTR scale recommended by Review**

<b>Taxable Income \$pa</b>	<b>Review</b>
\$0 - \$25,000	0.00
\$25,001 - \$180,000	0.35
\$180,000 +	0.45

The Review notes that:

*A progressive income tax is characterised by average rates that rise with income, ... Progressivity can be achieved either through a flat tax rate with a tax free threshold, a rising personal income tax rate scale, or a combination of both.*<sup>7</sup>

However, the relevant concern is not so much how progressivity is achieved but, all other things equal, the *degree* of progressivity. Figure 2.1(a) compares the 2009-10 marginal tax rate (MTR) scale with that proposed by the Review, with respect to primary income. Figure 2.1(b) compares the resulting average tax rate (ATR) profiles. The Review obviously offers the more simple scale but, as the figure makes clear, some income groups win and others lose.

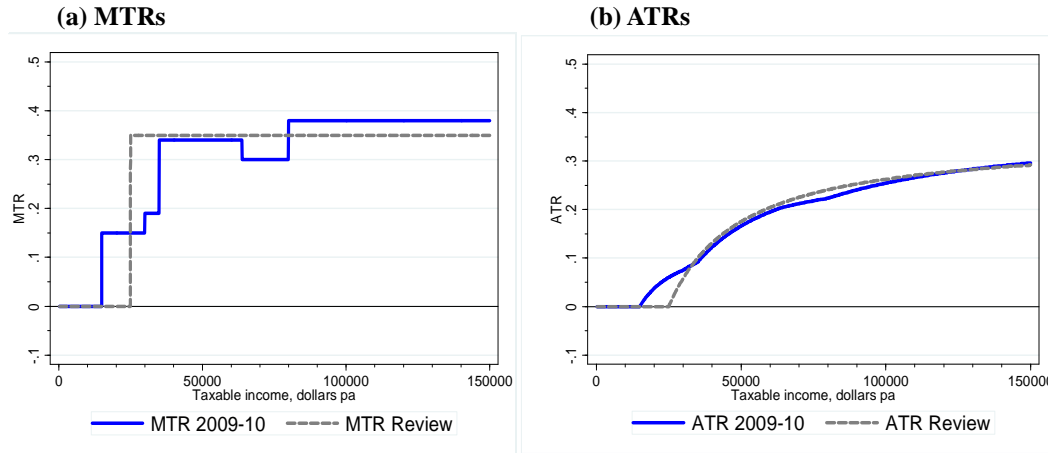
The increase in the zero-rated threshold clearly makes a group of very low income earners better off. Individuals on taxable incomes from \$15,000 to \$33,125 are better off. This is shown in Table 2.3, which reports ATRs at selected income levels. Above \$33,125 the ATR of the Review’s scale is higher than that of the 2009-10 scale and remains above it up to

<sup>6</sup> AFTS Report, Recommendation 2.

<sup>7</sup> AFTS Report, Pt 2, Vol 1, p 13.

\$127,667. At \$72,700 the ATR of the Review’s scale is 1.5% above the 2009-10 scale. If the ML rate of 1.5 cents in the dollar is included, the individual would break even at this point, but would lose thereafter until reaching an income of just above \$85,100. Beyond this point all gain even with the ML included in the 2009-10 scale.

**Figure 2.1 Tax rates on individual incomes**



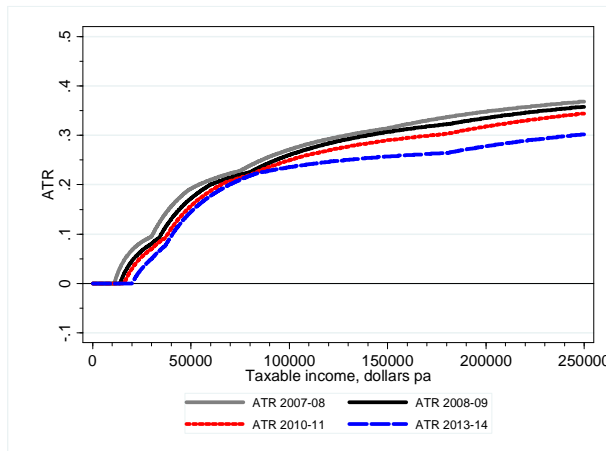
**Table 2.3 ATRs of 2009-10 and Review tax scales**

<b>Taxable income \$pa</b>	<b>2009-10 ATRs</b>	<b>Review ATRs</b>
\$25,000	0.060	0.00
\$33,125	0.086	0.086
\$72,700	0.215	0.230
\$80,000	0.223	0.241
\$123,667	0.281	0.281

Ongoing changes in the PIT scale and expansion of the LITO can be shown to have resulted in a significant shift in the tax burden towards the middle range of incomes. The incremental shift achieved in each successive government Budget, when considered in isolation, appears so small as to be unimportant, and the same assessment might be made of the Review’s recommended scale on the basis of the preceding analysis. However, when seen as part of a cumulative process, the overall shift in the tax burden towards the middle has been substantial.

To show this, Figure 2.2 compares the ATR profiles of the PIT+LITO rate scales for the years 2007-08, 2008-09, 2010-11, and the “aspirational” rate scale and LITO for 2013-14. The unequal downward shifts in the ATR profile in each successive year indicates the role played by the LITO and PIT rate scale changes in shifting a disproportionate share of the tax burden towards middle income earners. In effect, individuals on average earnings have been denied an equi-proportional rate of compensation for the failure to index tax bands, as shown by the far smaller vertical gap between the ATR profiles for each year across taxable incomes from around \$60,000 to \$90,000 per year.

**Figure 2.2 ATRs: PIT+LITO 2007-08, 2008-09, 2010-11 & 2013-14**



Overall, the Review’s scale may be close to revenue neutral with respect to the 2009-10 PIT scale and LITO. However, if the ML is included in the calculation, the Review’s scale, as a stand-alone reform, would very likely lose revenue. The significance of the Personal Income Tax as the centrepiece of the Australia’s tax system would be diminished. Given the strong emphasis the Review places on the efficiency merits of an indirect tax at a constant rate on all consumption expenditure, including food, the proposed rate scale would appear to be part of a package that involves a tax-mix change, from income to consumption taxation. However the argument that indirect taxation is more efficient than direct taxation draws on models that treat the family as a single person and therefore fail to define the tax base as *joint consumption*. The base for indirect taxation is inevitably some measure of joint consumption because, unlike individual earnings, the consumption of family members cannot be observed. It is therefore a more constrained policy instrument than an individual income tax, and can be expected to have disincentive effects on family labour supply and saving that are similar to those of a joint income tax.



## 2.2 Income tax rate scale and family payments

Because child payments vary with the number and age of dependent children, marginal and average tax rates at given income levels will vary accordingly. For the purpose of exposition I present results for two demographic groups:

- Two-child family: one child under five and the other under 12.
- Three-child family: children aged from 13 to 15 years.

The relevant 2009-10 Family Tax Benefits for these groups are:

### **FTB-A:**

*Maximum rate* for each child: \$4,803.40 pa for a child under 13 years and \$6,033.45 pa for a child aged 13 to 15 years, withdrawn at 20 cents in the dollar at a family income threshold of \$44,165 down to the base rate.

*Base rate* for each child: \$2,018.45 pa withdrawn at 30 cents in the dollar at a family income threshold of \$94,316 plus \$3,796 for each additional child after the first.

### **FTB-B:**

*Maximum rate* for family: \$3,828.85 pa if the youngest child is under 5 years or \$2,774 pa if the youngest child is aged from 5 to 15 years, withdrawn at 20 cents in the dollar on a second income above \$4,672. Families where the primary earner has an adjusted taxable income of more than \$150,000 are not eligible.

The ML, which also varies with demographics, is included. The 2009-10 family income threshold for the full ML reductions for a two-parent family is \$31,196 plus \$2,865 for each dependent child. An additional 8.5 cents in the dollar applies to income above this limit until the reduction is entirely withdrawn.<sup>8</sup>

My analysis of the Review's recommendations for family payments focuses on the following:

#### *Recommendation 90:*

*Current family payments, including Family Tax Benefit A and B, should be replaced by a single family payment. The new family payment should:*

- (a) cover the direct costs of children in a low-income family (that is, the costs associated with food, clothing, housing, education expenses); and*
- (b) assist parents nurturing young children to balance work and family responsibilities.*

#### *Recommendation 91:*

*The direct cost of children component of family assistance should be a per child payment.*

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<sup>8</sup> This raises the MTR across bands of taxable family income by 10 cents in the dollar. For example, a single-income family with two dependent children faces a MTR of 44 cents in the dollar on income from \$36,927 to \$43,442.

- (a) *Rates of payment should increase with the age of the children to recognise the higher costs of older children. Three rates of payment should apply: for 0-11 year olds; 12-15 year olds; and 16-18 year olds while in secondary school.*

*Recommendation 96:*

*The total amount of family assistance should be withdrawn with a single means test to avoid cumulative withdrawal rates which create unnecessarily high disincentives for working. A single low taper rate of 15-20 per cent would be appropriate to minimise work disincentives.*

The Review does not specify the size of family payments or the family income threshold at which they would begin to be withdrawn. It does however provide the following “*estimates of the cost of children based on the cost of children research*” from “*FaHCSIA modelling*”:<sup>9</sup>

Age band	Average cost in a low income family (\$ per annum)
0-4	3,842.72
5-11	4,803.40
12-15	6,033.45
16-18	7,541.81

The payments for the 5-11 and 12-15 bands are the same as those for 2009-10 FTB-A for a child under 13 and from 13-15 respectively. In the analysis to follow these figures are used for child payments, and the lower family income limit is set at \$44,165, the 2009-10 threshold, for withdrawal of the payments. The withdrawal rate is set at 20 cents in the dollar.

The aim of the analysis is to identify the basic structure of tax rates implied by the above recommendations, and in particular the recommendation to replace FTB-A with a single family payment withdrawn on a single means test defined on family income. The focus of the analysis is on “in-work” families, and especially those with a primary earner on low to average earnings. I do not include elements of the welfare system. As explained in Section 3.3, family payments are a policy response to market failures that differ fundamentally from those that give rise to the need for unemployment and disability benefits, and they are therefore associated with very different information and moral hazard problems.

To help families “*nurturing young children to balance work and family responsibilities*” the Review recommends the following supplements for the “*direct costs of children*”:<sup>10</sup>

*A supplement for parents nurturing young children (aged under six years) should be provided as a per-family payment, means tested on family income...For couples with children aged six*

<sup>9</sup> AFTS Report, Pt 2, Vol 2, p 568.

<sup>10</sup> AFTS Report, Pt 2, Vol 2, p 577.

*or older, a parental supplement at the same rate as for single parents should be paid through the income support system.<sup>11</sup>*

Given the conditions specified, the supplement proposed for a family with a child aged six or older appears to be set at approximately the full FTB-B payment for a child over five, while that for a family with a child under six, at a considerably higher level than the current FTB-B payment for a child under five. However the Review also proposes combining Child Care Benefit and the Child Care Rebate into a single payment based on 35% of child care costs, rather than the current 50%, and so a significant component of the higher supplement for the child under six may represent an offset for the reduction in the child care payment for the second earner. The two recommendations need, therefore, to be examined together. For this reason I do not include these supplements in the analysis, other than to point out the effects of including the net gain they might provide on the direction of the results.

Under joint taxation the tax rates of partners are interdependent. This means that the marginal and average tax rates faced by a family member will vary with their partner's earnings as well as their own income. To capture the effects of this I take the case of a family in which the male partner, as primary earner, works full time in the market and the female partner can allocate her time to untaxed work at home or to taxed market work, and I show what happens when the female partner changes her employment status. In other words, I show how tax rates change when the family switches "type" by changing the labour supply of the female partner as second earner. There are therefore the two household types:

- **Type SE:** A single-earner household in which the male works full time in the market and the female works full time at home;
- **Type FT:** A two-earner household in which both partners work full time in the market and earn the same incomes.

For reasons of simplicity, I assume that non-labour incomes are zero and that there is no gender wage gap. The latter implies that both partners earn the same income for full time market work.

*Two-child family: 2009-10 system*

Figure 2.3(a) compares the MTRs faced by the SE and FT households as primary income rises. The profiles of MTRs indicate the overall tendency towards an inverted U-shaped

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<sup>11</sup> AFTS Report, Pt 2, Vol 2, Recommendations 92 and 94.

profile of marginal tax rates for both family types, due to the withdrawal of FTBs. The strong shift towards joint taxation, also introduced by the FTB system, is captured by the gap between the MTR profiles, with the FT MTR profile substantially to the left of the SE profile. This is a characteristic feature of joint taxation: both earners in a two-earner household face a higher MTR at a given level of *individual* earnings than the single earner, because their higher total earnings put them in a higher tax bracket. Under an individual income tax, both partners face the same MTR at the same given level of individual earnings, and so the MTR profiles of the two household types coincide. Note, however, that under individual taxation the FT household still pays twice as much tax as the SE household because the female partner has chosen to work in taxed market work rather than in untaxed household production.

**Figure 2.3 2009-10 family tax rates: PIT+LITO+FTBs+ML**

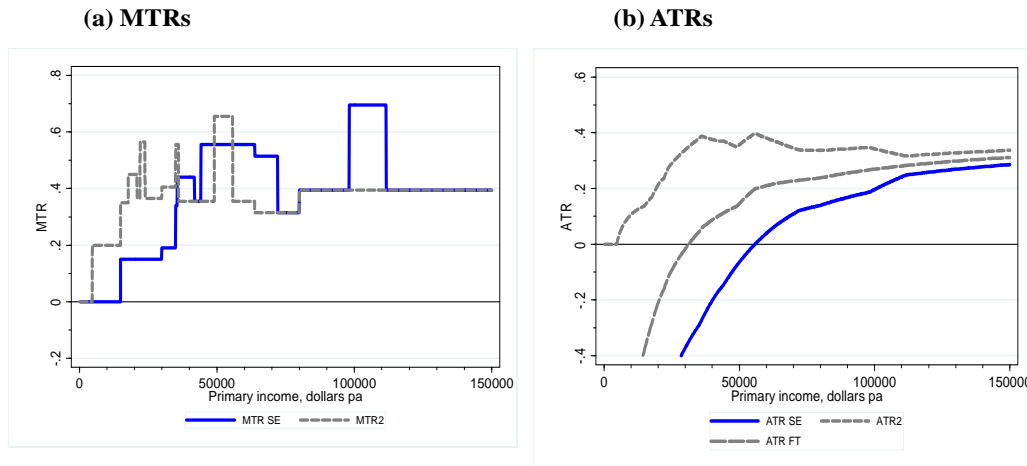


Figure 2.3(b) plots the resulting ATR profiles of the two household types, and includes the ATR profile of the female as second earner in the FT household, labelled ATR2. The figure shows how the FTB system increases the tax burden on the two-earner household by imposing a higher ATR on the increment in the household's income resulting from the second partner going out to work. This is higher than the ATR on the primary earner's income when she does not go out to work, because of the effect her income has in raising the marginal tax rate they both face. The higher effective ATR on her income then raises the overall ATR on joint income of the two-earner household, labelled ATR FT in the figure.

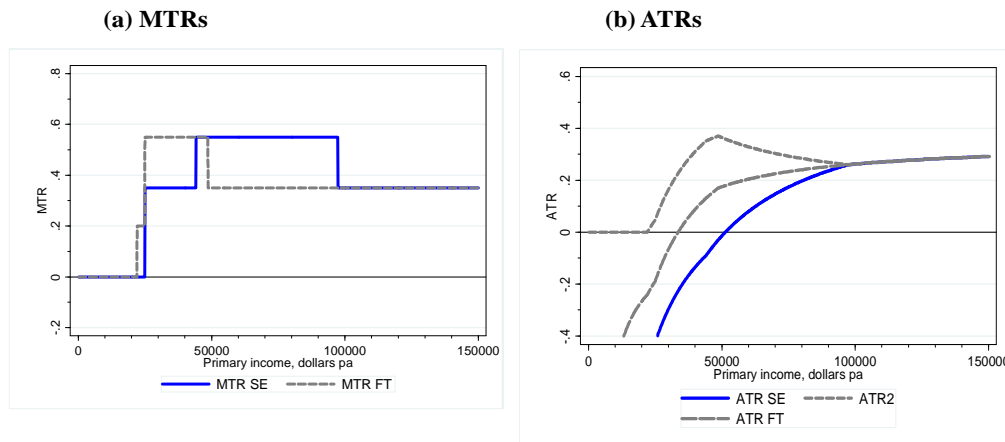
Under joint taxation the FT household now pays more than twice as much tax as the SE household.

*Two-child family: the Review’s recommendations*

Because the current system has been introduced in a gradual, piecemeal way through the use of very indirect policy instruments, rather than explicitly as a new inverted U-shaped rate scale with a shift in the tax base from individual to joint income, it has very irregular MTR profiles, as Figure 2.3(a) illustrates. This sometimes leads to the view that the system is an accident. This is a mistake. The successive changes have resulted in a structure of *average* rates that has been carefully planned. The same ATR structure is supported by the Review’s recommendations. Their main effect is to “tidy up” the MTR profile, as the following diagrams illustrate.

Figure 2.4(a) plots the MTR profiles for the two household types when the HTR tax scale is combined with family payments withdrawn on a single family income test. Although the MTR profiles are now far simpler and neater, the basic rate structure is unchanged – both MTR scales exhibit an inverted U-shaped profile with respect to primary earnings, with the FT profile far to the left of the SE profile over the range \$25,000 - \$50,000. The highest MTR of 55 cents in the dollar applies across a wide band of middle income SE households,

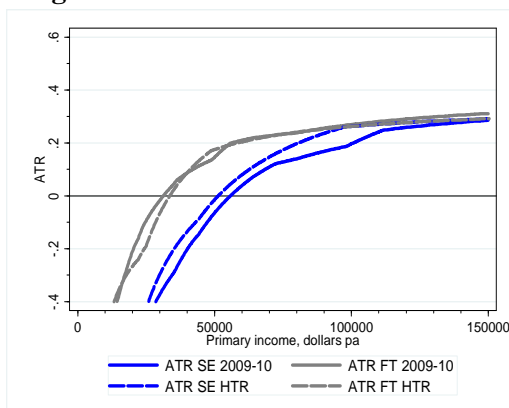
**Figure 2.4 HTR tax rates: PIT scale+family payments**



and across a lower and narrower band of earnings in the case of the FT household. Figure 2.4(b) shows the resulting ATR profiles.

Figure 2.5 combines the ATR profiles in Figures 2.3(b) and 2.4(b) for each household type. The ATR for the two-earner FT household is almost unchanged because the Review’s system continues to impose high effective average tax rates on increments in household income due to the second earnings, as in the existing system. Adding the supplement for the family with a child under six, net of a significant reduction in the child care payment, would have the effect of reducing the ATR at lower income levels but of raising it further along the distribution. The ATRs for the SE household are above those under the 2009-10 tax system, but the differences could be expected to be reversed by the large “nurturing” supplement for the child under six. Overall, the results suggest that the Review’s recommendations would more firmly establish the basic structure of the existing system.

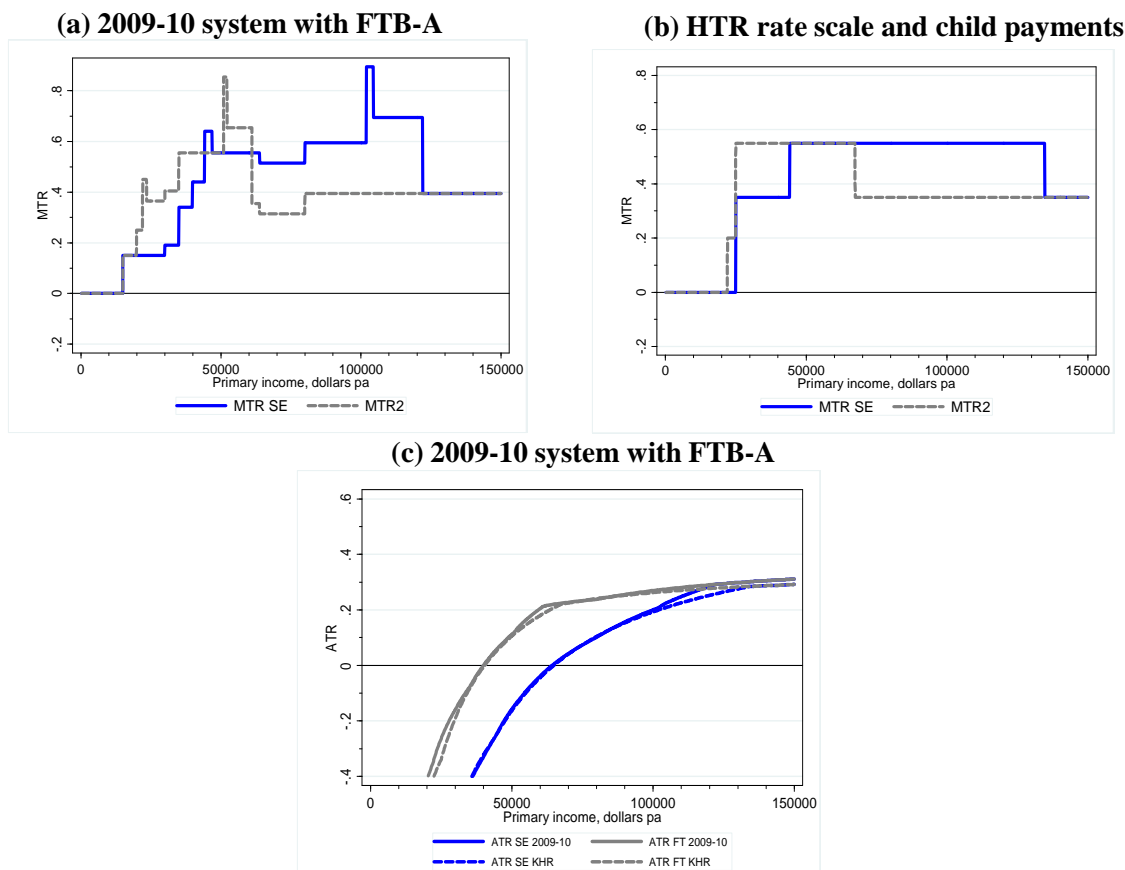
**Figure 2.5 ATRs: SE and FT households**



*Three-child family: 2009-10 system and the Review’s recommendations*

Figures 2.6(a) and 2.6(b) compare MTRs for the SE and FT household with three children aged from 13 to 15 years. Figures 2.6(c) compares the ATRs of the two household types. Given that the supplements for the direct costs of children, net of a reduction in the child care payment for the “in-work” family, appear to be related to payments under FTB-B, the following analysis omits FTB-B. The aim is to make a more direct comparison between FTB-A and the Review’s single payment withdrawn on a single family income test. The results in Figure 2.6 show that, even though the MTR profiles differ dramatically, the ATR profiles are almost identical under both systems for each household type.

**Figure 2.6 3-child family: MTRs and ATRs**



### 2.3 Impact of 2009-10 family tax system on “in-work” families

Table 2.4 reports the distribution of tax burdens across “in-work” families ranked by quintiles of “primary income”, defined as the private income of the higher income partner, under the 2009-10 family tax system. The analysis is based on data for a sample of families drawn from the ABS 2007-08 Survey of Income and Housing (SIH) on the criterion that at least one dependent child is present. Given the focus of the analysis on “in-work” families, the sample is also selected on the criteria that combined private income is greater than \$15,000 per annum, neither partner is unemployed or a full-time student, and neither partner reports a negative private income. All income figures are indexed to 2009-10 dollars.

The first panel of the Table shows what would happen if all second earners withdrew from work. The ATRs are those that would apply to primary earnings and non-labour incomes if second earnings were zero. The “lost revenue” is the tax paid on the increment in household income due to the second partner working in the market. At an average of \$7110 it represents almost 40% of total income tax revenue collected from working families. This is an especially high figure given that secondary earner hours are less than 50% of primary hours, and average second earnings are only 30% of average primary earnings.

<b>Quintiles of primary income</b>	<b>30386</b>	<b>49122</b>	<b>64534</b>	<b>82842</b>	<b>172722</b>	<b>All</b>
<b>SE</b> Taxes if zero 2 <sup>nd</sup> earnings						
Net tax \$pa	-9149	-1092	5969	13248	45135	10822
Lost revenue \$pa	3577	5894	6806	9588	9685	7110
<b>ATR %</b>	<b>-30.1</b>	<b>-2.2</b>	<b>9.2</b>	<b>16.0</b>	<b>26.1</b>	<b>13.3</b>
<b>PT</b>						
Second earnings \$pa	12808	18385	19466	22110	26046	19763
Tax on second earnings \$a	4576	6106	5885	7095	9588	6650
<b>ATR2 %</b>	<b>35.7</b>	<b>33.2</b>	<b>30.2</b>	<b>32.1</b>	<b>36.8</b>	<b>33.6</b>
<b>FT</b>						
Second earnings \$pa	17055	27744	36761	49224	50486	36985
Tax on second earnings \$pa	6106	9006	11652	16649	15809	11844
<b>ATR2 %</b>	<b>35.8</b>	<b>32.5</b>	<b>31.7</b>	<b>33.8</b>	<b>31.3</b>	<b>32.0</b>

The second panel of the table reports the data means of taxes paid by two-earner families with the second earner in part-time work (PT) and the third panel, with a second earner in full time work (FT). The distribution of ATRs reflects the very high marginal rates on the second income at low and average levels of primary income, as would be expected from the preceding diagrammatic analysis.

ATRs on the second income at the levels indicated mean that, on average, married mothers who go out to work lose around a third of their income in taxes and reduced FTBs. They also contribute more to GST revenue because their additional income is spent at least partly on goods and services subject to GST, and bought as substitutes for those that can be produced by working full time at home. The evidence on life cycle labour supply presented in the section to follow indicates that the decision to withdraw from the workforce in the early child rearing phases has strong persistence effects over the remainder of the working age phases of



the life cycle.<sup>12</sup> Thus the introduction of a less distortionary tax system could be expected to increase not only the labour supply of those who currently have dependent children but also that of working age households in which dependent children are no longer present.

### **3 Labour supply, saving and household welfare**

Evaluation of the effects of changes in a tax system on tax revenues, aggregate taxable incomes and individual wellbeing requires modelling the behavioural responses economic agents make to these changes, in particular as they relate to labour supplies, consumption and saving. In this section I present the empirical evidence which underlies the modelling approach I use to evaluate the Review's proposals. The data lead to the conclusion that the type of tax system resulting from these proposals, as well as being excessively costly in achieving its desired income redistribution, which in any case is quite inequitable, would actually reduce household saving, and therefore risk undermining macroeconomic policy objectives of high investment and growth.

#### **3.1 Time use and the family life cycle**

The available evidence on wage elasticities indicates that the labour supply of prime age males is much less responsive to changes in the net wage than that of females in the same age category. However, a serious limitation of much of the literature on labour supply is that it assumes that the adult members of a household have only two uses of their time, market labour supply and leisure, and so ignores the existence of household production and intra-family exchange of domestic for market output.<sup>13</sup> This cannot be excused on the grounds of data availability, since a large body of data on intra-household time use now exists, and a large and growing literature is concerned with analysing it.<sup>14</sup>

Time use data reveal two important facts. First, they show that the allocation of time to household production, especially by the female partner, is a very significant form of time use, above all when young children are present in the household, and that there is a high degree of

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<sup>12</sup> See Apps and Rees (2009) and (2010a), and *Labour supply, saving and household welfare, Life cycle time use* below.

<sup>13</sup> The household is, in fact, a small economy, with taxes on trade between households but not on trade within the household. For a formal model, see Apps and Rees (1999).

<sup>14</sup> See for example, Gronau and Hamermesh (2006)

substitution between market work and work at home, especially child care. It is this substitution which drives the observed much higher labour supply elasticities of women relative to men. Second, the data reveal a high degree of heterogeneity in the time use allocations of the female partner, as the second earner, across households with similar demographic profiles and wage rates. The conventional model is entirely inadequate to deal with this because, in effect, there is a missing price variable – the price of child care. More generally, the models need to be extended to include a child care production function that captures the substitution between home and market child care.<sup>15</sup>

Time use data also indicate that, as pointed out earlier, labour supply decisions in the child-rearing phase tend to persist after the children leave home, for a not insignificant proportion of families. It is therefore important to evaluate the effects of proposed reforms to family payments within a life cycle approach. However, again, the mainstream literature is seriously limited for this purpose. The convention is not only to assume (at best) a simple work-leisure choice, but to treat the household as a single person whose life cycle is defined on the age of “head” of household. It is essential to take a “family” life cycle approach in order to identify the relationship between family policies and household labour supply and saving decisions.

A further crucial implication of introducing household production is that total family income, with or without an equivalence scale adjustment, and household consumption are no longer reliable measures of family living standards, or of household welfare. This is most obvious in the case of families with pre-school children. Two young families can have the same joint income but very different wage rates, if in one family the income is earned by one partner and, in the other, by both partners. For these families to be equally well off, it would have to be the case that the value of child care produced by full time work at home in the first household is less than that produced in the second household with a much lower parental time input. This requires implausibly large differences in home child care productivity and/or a much lower price of bought-in child care.

This section supports the foregoing assertions by presenting life cycle profiles of the time use, consumption and saving behaviour of couples, drawing primarily on data for couple income units selected from the Australian Bureau of Statistics (ABS) 2005-06 Time Use

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<sup>15</sup> For a formal model, see Apps and Rees (2009, 2010b) .

Survey (TUS) and the ABS 2003-04 Household Expenditure Survey (HES). The TUS provides detailed information collected by diary on the allocation of time to labour market activities and nine non-market activities.<sup>16</sup> The non-market activities are aggregated into three categories: domestic work, child care and leisure.<sup>17</sup> Total time allocated to domestic work and child care is labelled as "household production" and the sum of time allocations to all other activities as "leisure". These time use data are merged with the information for each record in the selected HES sample, which includes all couple income units apart from those in which a partner is a full time student or reports a negative private income.<sup>18</sup>

The data are organised according to a "family" life cycle consisting of five phases:

- Phase 1: the couple are of child-bearing age but do not yet have children;
- Phase 2: there is at least one child aged under 5 years in the household;
- Phase 3: the still-dependent children are all aged over 5 years;
- Phase 4: the couple are of pre-retirement age with no dependent children present;
- Phase 5: the couple are of retirement age.

The sample is partitioned into these phases on the following criteria. Phase 1 contains couples with no dependent children present and a female partner aged from 20 to 39 years. In phase 2 there is at least one child under 5 present, and in phase 3 there is at least one dependent child but none under 5 years. Phase 4 includes couples in which the male partner is under 60 years and there are no dependent children present. In phase 5 the male partner is aged 60 or over and there are no dependent children present. The number of records in the full sample is 3,963, and in phases 1 to 5: 389, 726, 1044, 747 and 1057, respectively. All income figures are indexed to 2009-10 dollars.

### **3.2 Life cycle time use**

The pivotal relationship between female labour supply and the demand for child care becomes evident when time use data are organised according to the above family phases. Table 3.1 reports data means for the allocation of time to market work, domestic work and child care across the phases, and Figures 3.1a to 3.1c present the results graphically for each time use, including annual leisure hours.

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<sup>16</sup> The activity categories are: personal care, education, domestic activities, child care, purchasing goods and services, voluntary work and care, social and community interaction, active recreation and passive leisure.

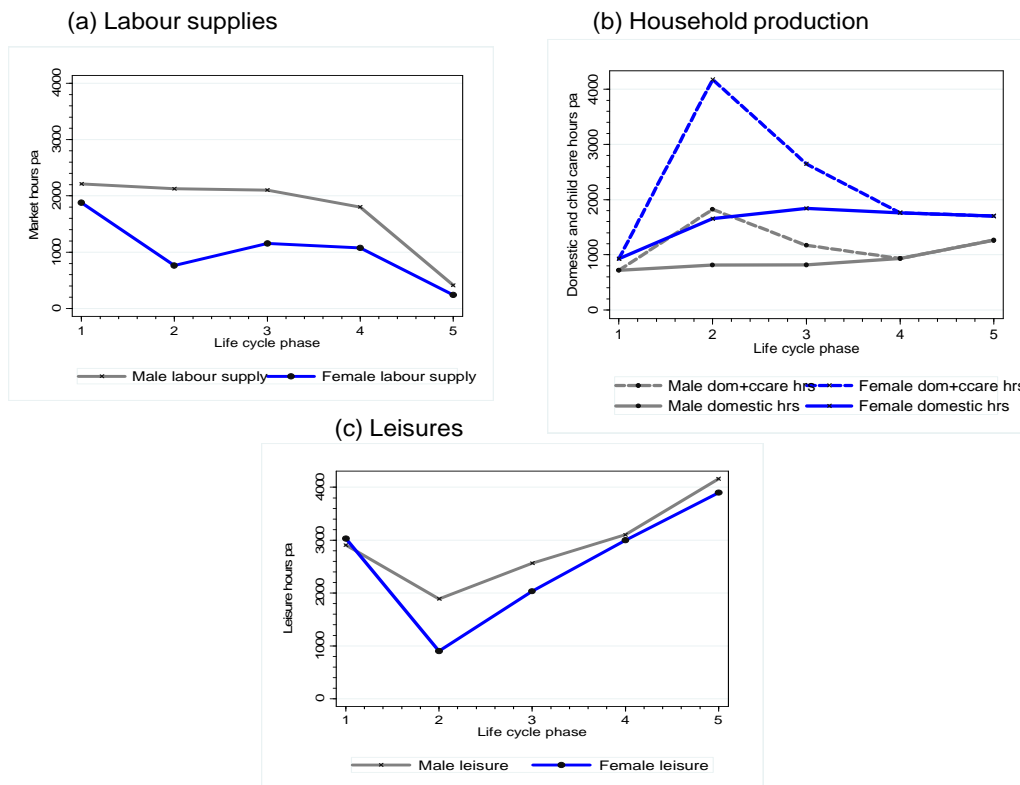
<sup>17</sup> Domestic work includes the activity episodes classified as "domestic activities" and "purchasing goods and services".

<sup>18</sup> For further detail, see Apps and Rees (2010a).

**Table 3.1 Life cycle time use, hours per annum**

Phase	Male hours			Female hours		
	Market	Domestic	Child care	Market	Domestic	Child care
1	2213	718	-	1882	928	-
2	2127	815	1008	764	1654	2521
3	2103	816	355	1158	1840	807
4	1803	934	-	1078	1761	-
5	413	1265	-	238	1703	-

**Figure 3.1 Life cycle time use, hours pa**



In phase 1 the time allocations of partners are closely matching. On average both work above full time annual hours (calculated on the basis of 35 hours per week). They spend a minimal amount of time on household production, as would be expected since there are no children present and both partners have had similar educational opportunities and work histories, and therefore have close to the same wage rates. When the family enters phase 2 female labour supply falls by over 50%. This fall is more than matched by a rise in the allocation of time to household production, around 80% of which is child care. Because there are no children

under five in the household in phase 3, child care hours fall to a small fraction of their phase 2 level. Domestic hours rise only marginally, and similarly in phase 4. Nevertheless, average female labour supply remains well below its phase 1 level for the remainder of the life cycle. There is relatively little change in average male hours during the working age phases. While the decline in phase 4 is significant, it in no way matches the drop in female hours in the younger phase 2 age category. The overall result is a large gender gap in hours.

Studies that organise the data by age of head diffuse the dramatic fall in female labour supply in phase 2 by combining couples in phase 1 with those in phases 2 in the younger age of “head” categories. The result is a female profile that tends to replicate the male profile at a lower level of hours. This may in part account for the acceptance of the single-person model as a harmless simplification. However, the model can lead to a misinterpretation of the data. For example, Erosa and Gervais (2002, p 340) using a life cycle model based on a within-period single-person work-leisure choice decision, base their conclusions for tax policy on the assumption that “consumption and leisure [measured as non-market time] generally move together over time”. The data in fact show that the rise in female non-market time in phase 2 strongly dominates any increase in both partners' non-market time allocations in the pre-retirement phase.<sup>19</sup>

### **3.3 Life cycle income, consumption and saving**

Defining the life cycle on family phases also gives a very different picture of family consumption and saving decisions. Much of the standard literature generates “hump” shape profiles of both income and consumption, but this is a misreading of the data due to averaging across young couples in phases 1 and 2.<sup>20</sup> As shown in Table 3.2, the usual single “hump” shaped profile of median net income<sup>21</sup> is missing,<sup>22</sup> despite the moderating effect of

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<sup>19</sup> The Erosa and Gervais analysis has had a strong influence on the discussion of tax reform. See for example, Banks and Diamond (2008).

<sup>20</sup> This is referred to as the “excess sensitivity puzzle” and has generated a vast literature offering a range of explanations, one of the most widely accepted being the “buffer stock” model. See, for example, Carroll (1997) and Gourinchas and Parker (2002).

<sup>21</sup> Net income is the sum of labour and non-labour incomes, net of taxes and government cash transfers.

<sup>22</sup> As for example in Attanasio and Browning (1995), Blundell, Browning and Meghir (1994), Deaton (1991) and Gourinchas and Parker (2002).

direct taxes and benefits, because household income strongly tracks female labour supply and is therefore at its lowest level in phase 2.<sup>23</sup>

**Table 3.2 Private income, female earnings, consumption and child costs, \$pa**

Phase	H'hold income*	Female earnings*	Net income*	H'hold prod	Adult mkt+hhp	Costs of children
1	98602	42400	79836	27978	110390	-
2	74836	7844	67767	95071	80791	95600
3	91137	24989	77484	59172	88084	64068
4	89082	27560	74339	42241	111043	-
5	22229	0	36367	46966	86774	-

\*Medians

When the family's opportunity cost of time spent on household production ("hhp") and their spending on market consumption are added together, and the full costs of children are subtracted, a U-shaped profile of adult consumption across the life cycle is obtained, shown in the column "Adult mkt+hhp".<sup>24</sup> This finding is consistent with the U-shaped leisure profiles in Figure 3.1c. The result is driven by the very high cost of children to parents in phase 2, measured correctly to include parental time costs.<sup>25</sup> It is concluded from these findings that the average family is not using the capital market to smooth consumption. In Apps and Rees (2010b) we calibrate a model to show that the life cycle profiles of parents' consumptions and leisures are consistent with a capital market in which the borrowing rate is significantly above the lending rate for the average family. In the presence of this kind of capital market failure, child payments are a necessary policy correction.<sup>26</sup> They are not a response to the kinds of insurance market failures that create the need for unemployment or disability benefits. The associated moral hazard and information problems of the latter differ fundamentally.

Table 3.3 presents the family life cycle profile of median saving, calculated as the difference between net income and consumption expenditure. Saving is at its highest level in phase 1,

<sup>23</sup> The income figures are based on the 2007-08 SIH data and the consumptions figures on 2003-04 HES data, both indexed to 2009-10 dollars.

<sup>24</sup> The opportunity cost of time is evaluated at the respective partner's net wage. For further detail, see Apps and Rees (2010b).

<sup>25</sup> These child costs are consistent with the results in Apps and Rees (2001). When indirect government benefits are included, the cost of a school aged child is closer to that of a child under 5 due to the much higher level government investment in the education of the school child.

<sup>26</sup> Child payments, in common with education benefits, are also a correction for agency problems that arise in an economy in which a child draws heavily on family income for access to funds for investment in their human capital. For further discussion of this point, see Apps and Rees (2001).

then falls to its lowest level in phase 2 and thereafter rises until the retirement phase, but does not return to its phase 1 level. The results indicate that saving, as well as household income, strongly tracks female labour supply.

**Table 3.3: Long term vs short term saving, \$pa**

Life cycle phase	Long term saving*	Short term saving*	Super+life insurance**	Mortgage repayments**	% home owners	Debt/ house price ratio %
<b>1</b>	11107	-1373	1186	11477	64.8	49.0
<b>2</b>	2839	-4524	1679	9648	70.4	34.9
<b>3</b>	4618	-3494	2035	7721	83.3	20.3
<b>4</b>	8049	3432	3477	4694	87.3	8.9
<b>5</b>	1560	1123	1129	454	90.3	1.1

. \*Medians. \*\*Weighted data means

The calculation of saving as the difference between net income and consumption expenditure gives, in effect, the household's long term saving. The data indicate that many households are, in fact, borrowing short term to meet various forms of long term contractual saving, such as mortgage payments on housing loans and mandatory contributions to superannuation. The second column of Table 3.2 lists the median short term saving in each phase, obtained by subtracting total spending from net income. While median long term saving is positive in each phase, short term saving is negative in phases 1 to 3: the median household in these phases is in the position of having to borrow short term to finance long term saving.

Table 3.3 also lists average contributions to superannuation and life insurance, average mortgage payments, the percentage of households who are home owners or purchasers, and the average debt to house price ratio. The strong incentive to save for house purchase is reflected in the decline in the housing debt to house price ratio from 49% in phase 1 to 1.1% in phase 5, a decline that follows a rise in the percentage of home owners, from 64.8% in phase 1 to 90.3% in phase 5. It is straightforward to show that the user cost of owner occupied housing, obtained by discounting payments of capital and the initial equity at the time of purchase, approaches zero and may become negative over time. This clearly creates a strong incentive for both labour supply and saving across the wage distribution.<sup>27</sup>

<sup>27</sup> The data suggest that home ownership is analogous to an annuity with a high rate of return, due importantly to low transactions costs if households rarely move house over the life cycle. Preferential tax treatment is a contributing factor but cannot alone explain the user cost differential between owning and renting over time if one assumes, implausibly, a perfect capital market.

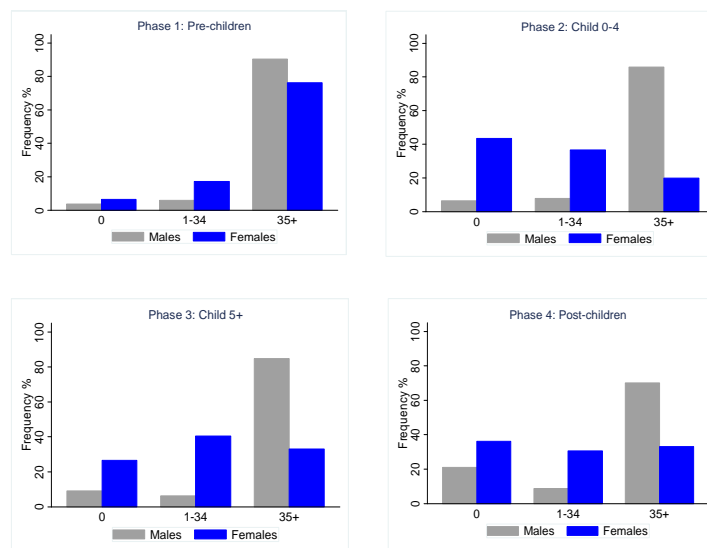
### 3.4 Time use heterogeneity

The preceding life cycle time use profiles based on data means conceal the high degree of heterogeneity in female labour supply, which is evident from gender differences in employment status. Table 3.4 reports the distribution of female employment status within each of phases 1 to 4. As above, "FT" refers to full-time employment and "PT" to part-time employment. "NE" denotes not in employment.

**Table 3.4 Employment status by gender**

Phase	Males			Females		
	FT	PT	NE	FT	PT	NE
<b>1</b>	90.4	5.9	3.7	76.3	17.2	6.5
<b>2</b>	85.8	7.8	6.4	19.9	36.6	43.5
<b>3</b>	84.7	6.3	9.0	33.0	40.4	26.6
<b>4</b>	70.1	8.8	21.1	33.1	30.6	36.2
<b>5</b>	14.8	6.8	78.4	6.2	6.9	86.9

**Figure 3.2 Employment status by gender across phases 1 to 4**



The histograms in Figure 3.2 show graphically the significant heterogeneity in female employment that emerges in phase 2 and continues until the retirement phase. Full time female employment falls from 76.3% in phase 1 to 19.9% in phase 2, and stays below 33% in subsequent working age phases. Over 26 per cent remain out of employment in phase 3 and over 36 per cent in phase 4. These figures indicate a high degree of persistence of decisions



made in the child rearing phases.<sup>28</sup> In contrast, male employment is around 85 per cent until the pre-retirement phase, where it drops to 70.1 per cent.

Time use data show that married women employed full time within each of phases 2 to 3 allocate considerably less time to domestic work and child care than those employed part time or not in employment. To illustrate, Table 3.5 reports phase 2 data means for female hours of market work, domestic work and child care, by employment status. On average, those employed FT work a total of 5227 hours in the market and at home, and those in PT employment, work a total of 5094 hours per year. The average for those not employed is only fractionally lower, at 4786 hour per year.

**Table 3.5 Female time use and demographics (phase 2)**

Female employment	Female hours pa			Deps< 5 years	# deps
	Market	Domestic	Child care		
<b>FT</b>	2110	1276	1841	1.20	1.71
<b>PT</b>	959	1602	2533	1.26	1.94
<b>NE</b>	0	1893	2893	1.37	2.12

These diverse time use choices cannot be explained adequately by demographics because there is little variation in the average numbers of dependent children, as well as the numbers aged under five, with employment status. There is also little variation in predicted gross wage rates in the early phases. More significant differences emerge later in the life cycle, as would be expected, given the evidence in the literature on the loss of human capital associated with an extended period of withdrawal from the labour market. It is therefore inferred from these data that many families with the same demographic characteristics and earnings possibilities are making very different time use decisions during the earlier phases of the life cycle.

As argued in Apps and Rees (2010b), the family tax system can be expected to contribute significantly to the degree of heterogeneity. The effective rate structure described in Section 2 defines a non-convex piecewise linear tax system. Two households can therefore be equally well off at either high or low hours, and so small differences in characteristics can be transformed into a large difference in labour supply.

<sup>28</sup> This is consistent with the results of US panel data studies (see, for example, Shaw, 1994).

### 3.5 Heterogeneity, household income and welfare ranking errors

If families with the same wage rates and demographic characteristics were observed to make the same time allocation decisions, then, all else being equal, it could reasonably be expected that a strong correlation would be found between household income and family welfare within a demographic group. Under these conditions, joint taxation would not necessarily be unfair in terms of the distribution of tax burdens *across* households. It would, of course, widen the net-of-tax gender wage gap and could therefore be expected to disadvantage women in general by widening inequality within the family. However, it would not discriminate against two-earner households because, at given wage rates, all would be the same type.

In this section, I investigate the limitations of household income as a welfare indicator using the 2007-08 SIH sample of “in-work” families described in Section 2.3. Since the female partner has the higher earnings in a non-trivial proportion of households, the analysis is based on the income status of partners, “primary” vs. “secondary” as defined previously, rather than on gender.

The degree of re-ranking is due not only to heterogeneity in second earners' labour supplies, but also to the shape of the distribution of primary income. To show this, I rank households by quintiles of primary income and then split the records in each quintile into two household of types:

**Type H1:** The second earner is working at or below median second earner hours;

**Type H2:** The second earner is working above median second earner hours.

Table 3.6 and Figure 3.3 present the profiles of hours and incomes of these two types, by quintiles of primary income. An important feature of the results is the relatively flat profile of primary income up to the 5th quintile, at which point it more than doubles. The increase is due almost entirely to an increase in the primary earner's wage, since average hours increase by less than 10%. In a distribution of primary income of this shape, the position of a family in a ranking defined on household income will be very sensitive to the labour supply of the second earner, because it will take only a small increase in her earnings to shift the family to a significantly higher point in the distribution.

**Table 3.6 Labour supplies and incomes by primary income (phases 2 and 3)**

Primary income quintiles	30386	49122	64534	82842	172722
<b>(a) Labour supplies</b>					
<b>H1:</b> Primary market hours pa	1928	2167	2245	2307	2521
Second market hours pa	124	312	407	377	389
<b>H2:</b> Primary market hours pa	1903	2136	2273	2292	2403
Second market hours pa	1696	1920	1921	1915	1993
<b>(b) Incomes</b>					
<b>H1:</b> Primary income \$pa	29645	49138	63980	83073	185463
Second income \$pa	5627	10158	13166	14920	21793
<b>H2:</b> Primary income \$pa	31188	49106	65124	82643	158012
Second income \$pa	19740	30686	35914	45520	53729

**Figure 3.3 Labour supplies and incomes by household type**

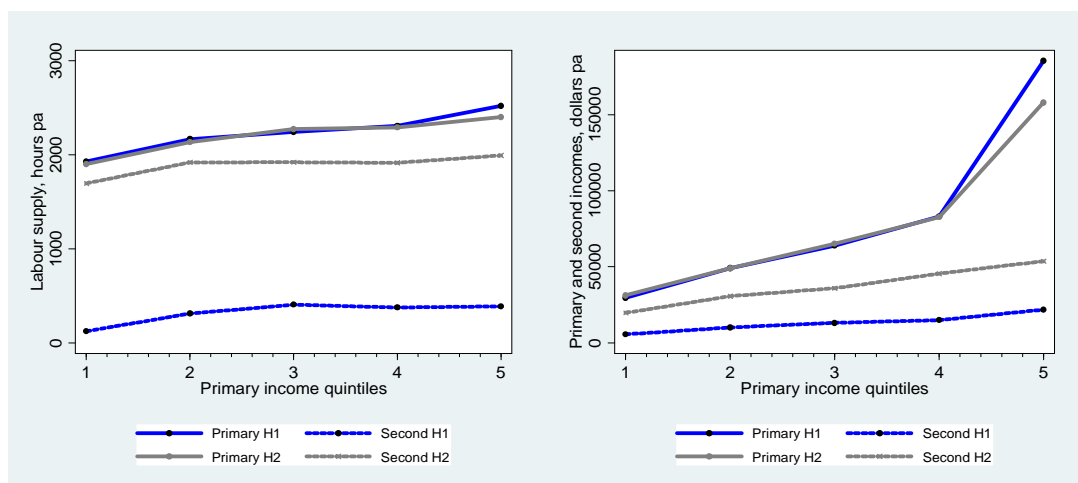


Table 3.7 presents a quintile ranking by household income. The two household types tend to be reordered towards opposite ends of the distribution. The percentage of H2 households in quintile 1 falls to 29% and rises to 62% in phase 5, respectively. The data means for primary income give an indication of the extent to which a household income ranking places two-earner households with lower wage rates in the same percentile as a single-earner family on a significantly higher wage.<sup>29</sup>

<sup>29</sup> The re-ranking could be justified on the basis of the assumption that the single earner has married a low wage partner, but this assumption is rejected by the evidence on assortative matching.

**Table 3.7 Household type by household income (phases 2 and 3)**

<b>Household income quintiles</b>	<b>37954</b>	<b>64868</b>	<b>87425</b>	<b>116101</b>	<b>218322</b>
<b>H1 %</b>	71	58	49	39	38
Primary income \$pa	34650	57333	72296	94862	215591
# Dependent children under 5	2.09	1.94	2.04	2.00	2.07
<b>H2 %</b>	29	42	51	61	62
Primary income \$pa	29115	43791	57734	74989	138332
# Dependent children under 5	1.76	1.70	1.80	1.84	1.88

The upper income limit of quintile 1 is \$53,292, and the lower limit of quintile 4, \$98,002. A single-earner family with an income of \$50,000 will be located in quintile 1. If the family switches “type”, with the second partner working full time for the same income, the family will be re-ranked from quintile 1 to quintile 4. If the household has a preschool child, much of the second net income may be spent on child care. Clearly, such a household cannot be said to have the same standard of living as another in which only one parent needs to work full time to earn \$100,000 while the other works full time at home.

Table 3.8 presents quintile data means for time use, which show that the second earner's shift to market work tracks a large fall in the allocation of time to household production, and especially to child care, within each quintile of primary income. The Table also reports the average number of children under five in each quintile. There is little variation in this across household types, especially in the lower quintiles. Thus, to justify the omission of household production from measures of household welfare it is necessary to assume either that bought-in child care is costless or that home child care makes little to no contribution to the welfare of the H1 household.

**Table 3.8 Second earner time use by primary income (phase 2)**

<b>Primary income quintiles</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>H1</b> Child care hours	2797	2902	2812	2950	2941
Domestic hours	1823	1866	1879	1845	1867
# Children under 5	1.28	1.37	1.28	1.49	1.46
<b>H2</b> Child care hours	2209	2225	2030	2195	2095
Domestic hours	1410	1440	1403	1454	1400
# Children under 5	1.26	1.25	1.06	1.26	1.18

### 3.6 Saving and labour supply

Studies that model the household as a single person with a life cycle defined on the age of household head do not provide the appropriate insights into the relationship between

household saving and labour supply. While it is recognised that the absolute amount of saving rises with the labour market participation of the female partner as second earner, the *saving rate*, measured as the ratio of saving to household income, is typically found to fall with an increase in female labour supply. Consequently, the overall saving rates of economies that have experienced significant increases in female labour supply since the 1960s have been observed to fall (see, for example, Attanasio and Banks, 1998). There is also the mistaken perception that it is very predominantly “the rich” who save.

The problem is that household income as conventionally measured omits home production. As time use data show, an increase in female market hours is closely matched by a fall in home production hours. To give a truer picture, the saving rate needs to be calculated with respect to a measure of household income that includes implicit income from home production, since then the effects of the switch from domestic to market work would be more accurately picked up.

As I have already shown, a ranking by household income places two-earner households with primary earners on relatively low-to-average wages in the upper percentiles of the distribution. The result is that the saving behaviour of two-earner households is misrepresented. Much of the saving in the economy is that of average-wage two-earner families in the middle of the distribution of *primary* earnings. I show this by comparing the distribution of savings with respect to primary income (Table 3.9a) and household income (Table 3.9b) based on regression estimates that control for the number and age of children and for the income ranking variable, primary and household income respectively. The data sample includes all records in phases 2 to 4.

The first row of Table 3.9a gives the predicted levels of household saving that would result if second earners withdrew from the workforce, that is, if all households became type SE. The following panels give the predicted levels of saving by household types, H1 and H2 (defined according to median hours of work of the second earner as above) and the earnings associated with the second earner’s hours of market work.

When households are ranked by primary income it can be seen that the level of saving depends very heavily on the contribution made by the second earner across the middle quintiles of the distribution. The results indicate that if all second earners were to withdraw

from the workforce after the arrival of children, their annual earnings up to retirement would fall by over 25% (sample data means for primary and second earnings are \$64,006 and \$21,842, respectively). Household saving would fall by over 75%, from an average of \$7,325 per year to \$1,575 per year.

The ranking by household income in Table 3.9b gives a different picture. The first row of the Table reports the level of saving by quintiles of household income, and shows that saving rises quite steeply with household income. The second two rows report the saving levels of the H1 and H2 household types. It can be observed that within each quintile, saving (and therefore the saving rate) falls. The very large addition to saving across the middle of the distribution of primary earnings due to the second earner is not immediately obvious, even though it is clear that the overall level of saving in the economy rises.

**Table 3.9a Long term saving and 2<sup>nd</sup> earnings by primary income, \$pa (phases 2 to 4)**

<b>Primary income quintiles</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>All</b>
<b>SE:</b> Saving <i>if</i> zero 2 <sup>nd</sup> earnings	-12306	-6506	-1514	3194	26514	1575
<b>H1:</b> Saving \$pa	-11900	-4649	358	5921	29344	3423
2 <sup>nd</sup> earnings \$pa	2005	7812	9323	12815	12912	11227
<b>H2:</b> Long term saving	-8196	1608	8005	15878	39068	9681
2 <sup>nd</sup> earnings \$pa	12051	27028	32832	42773	47266	32457

**Table 3.9b Long term saving by household income, \$pa (phases 2 to 4)**

<b>Household income quintiles</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>All</b>
<b>All:</b> Saving \$pa	-12223	-3866	3282	11509	37850	7325
<b>H1:</b> Saving \$pa	-12209	-3821	3381	11664	38103	3427
<b>H2:</b> Saving \$pa	-12268	-3941	3191	11428	37733	9681

These results suggest that the labour supply effects of high effective tax rates on the second earner may have a very significant negative effect of saving, far more so than a tax on saving directly or a tax on capital income. Female labour is arguably the most mobile factor of production in the economy, because of its high degree of substitutability with household production, especially child care in the early phases of the life cycle. OECD countries with family tax and child support systems that do not discriminate as heavily against the second earner have far higher female labour supplies, for example in the order of 50% higher in the case of Sweden. The preceding analysis suggests that the same countries also will tend to have higher levels of saving (as opposed to saving rates) and greater taxing capacity for the purpose of public investment in child care and education as a result of their larger tax base.

## 4 Conclusions

I have shown in this paper that the Review proposes a consolidation and extension of the changes that have over the last few decades made the Australian family tax system less fair and more costly in the true economic sense – in terms of the efficiency costs created by the incentives to work and save that it presents. The Review’s proposals on marginal tax rates represent simply a tidying up of the messy structure that was the legacy of the piecemeal and opaque way in which this reconstruction of the tax system was made. The Review preserves essentially the same structure of average tax rates. It perpetuates the fallacy that targeting child payments saves costs, while remaining silent about the fact that basing the withdrawal rates on joint income contradicts its rhetoric on the incentives for labour force participation. Reducing the relative contributions of direct as opposed to indirect taxation (for example, if in addition to the introduction of the Review’s recommended income tax changes, the GST base were widened by taxing food) worsens the effects on labour supply, by shifting the tax burden to working families. Finally, the Review does not appear to appreciate the effects that high effective tax rates on average wage families and second earners have on saving and therefore long term investment and growth. The Review leaves the Australian tax system still in need of substantial and genuine reform.

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