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Family Taxation: An Unfair and Inefficient System

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ABSTRACT

This paper presents an analysis of the 2005-06 family tax system comprising the personal income tax, the Medicare Levy, Family Tax Benefits Parts A and B and tax offsets. The results show that most families are now taxed, in effect, on the basis of joint income. Through a succession of reforms the Howard Government has shifted the tax burden to two-earner families to such an extent that many now pay close to the same amount of tax as a family in which only one parent need work to earn the same income while the other works full time at home. This is a defining feature of joint taxation.

The study also finds that families face a marginal rate schedule that is no longer progressive but tends to have an inverted U-shaped profile – working families in the middle of the distribution face the highest marginal rates. As a consequence, the incomes of second earners in low and average wage families are taxed effectively at the highest *average* rates in the economy. The study explains why the system is unfair and seriously damaging for the economy in its effects on female labour supply in an ageing population. On the basis of the results, the paper argues for a return to a progressive individual income tax system, to improve support for families and to raise female participation and productivity.

JEL classification: H24, H31, J22

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1   Introduction

There are two key criteria for evaluating a family tax system: fairness and efficiency. To assess fairness it is necessary, at the very least, to develop a ranking of households defined on a reliable measure of living standards, and then to examine the correlation between tax burdens and living standards. To estimate efficiency gains or losses, information on behavioural responses to changes in net wage rates or prices is required.

A number of studies assume that fairness can be assessed on the basis of tax burdens as a percentage of family income. A recent example is the OECD's (2006) comparisons of tax burdens as a percentage of the combined gross wage earnings of couples.[1] This is a mistake. Combined earnings do not provide a reliable measure of livings standards. Household survey data show that parents with the same gross wage rates and childcare responsibilities make widely different work choices. In a large proportion of families, one parent, typically the mother, works full time at home providing childcare and related services, and in an almost equally large number she works full time in the market using her income to buy-in substitute services.[2] A young family in which both parents work full time to earn, say $70,000 pa, does not have the same standard of living as another in which one parent alone earns $70,000 while the other works full time at home. A family tax system that imposes equal burdens on these families is unfair. When the work choices of parents vary in this way, a progressive individual income tax system is required for fairness in the treatment of families with the same standard of living, and of those with varying living standards, that is, for horizontal and vertical equity.

The basic rule for efficiency, established by Frank Ramsey in 1927, requires that effective tax rates be related inversely to (compensated) wage/price elasticities. The international literature on labour supply contains an extensive body of research on wage elasticities. While findings vary, the evidence suggests that male wage elasticities, compensated and uncompensated, are low (and possibly zero) at high income levels, and

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[1] See Tables III.5c, p.92, III.6c, p.95, and III.7c, p.98.
[2] For a life cycle analysis that shows this using Australian data see Apps and Rees (2003).

therefore reducing effective tax rates on the incomes of high wage male earners will have little effect on either efficiency or labour supply. In contrast, low wage earners, and married women in particular, tend to exhibit much more responsive labour supplies. High effective tax rates on their earnings can therefore be expected to reduce significantly the hours they work and the efficiency of the economy. Thus, it would makes no sense to advocate as a priority a cut in the top tax rate on personal income if there are higher effective rates on the earnings of married women. This is an implication of the well known Boskin and Sheshinski (1983) result on the taxation couples – an individual tax system at progressive rates is required for efficiency because it implies lower marginal rates on married women as second earners.[3]

The aim of this paper is to evaluate the fairness and efficiency of the 2005-06 income tax system comprising the personal individual income tax, the Medicare Levy, Family Tax Benefits Parts A and B and tax offsets. The analysis focuses on families with dependent children and couples without dependents. Section 2 presents an analysis of tax rates on the incomes of parents using unit record data for "in-work" families. The results show that most Australian families are now taxed, in effect, on the basis of joint income. They are also found to face a marginal rate schedule that is no longer progressive but tends towards an inverted U-shaped profile – families in the middle of the distribution face the highest marginal rates. As a consequence, the incomes of second earners in low and average wages families are taxed at the highest *average* rates in the economy. This new tax rate structure has shifted the tax burden towards two-earner families to such an extent that many now pay close to the same amount of tax as a family in which only one parent need work to earn the same income.

Section 3 demonstrates that these findings cannot be attributed to heterogeneity, for example, to variation in family responsibilities across single and two-earner families. The section goes on to explain how the shift to joint taxation has been implemented through a succession of changes to family tax benefits and the use of bracket creep to shift the tax

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[3] See also Feldstein and Feenberg (1996).

burden in real terms towards those on lower pay, and therefore towards the vast majority of working married women. Section 4 examines the tax treatment of couples with no dependents, and compares the very different labour supplies of younger married women without children and married women over 40, a group likely to have older children who are no longer dependent or have left home. Section 5 follows with a more detailed analysis of the life cycle labour supply of families and couples, to highlight the large gap between male and female labour supplies and the dangers of a tax system that continues to impose high average tax rates on the second income in an ageing population. Concluding comments and directions for reform are discussed in Section 6.

2 Taxation of "in-work" families in 2005-06

An important lesson of modern tax theory, originating with the optimal tax literature of the early 1970s, is that it makes no sense to analyse personal income taxes separately from tax credits, levies or offsets, or from cash transfers such as family tax benefits, as in a number of recent studies.[4] Any such set of policy instruments can always be translated into an effective marginal rate schedule and an implicit "lump sum" or non-means tested benefit for a given family or individual. In other words, a change in marginal tax rates can be introduced either by changing benefit withdrawal rates, tax offsets, etc, or simply, and more transparently, by announcing a new set of marginal rates.

This section examines the structure of marginal and average tax rates faced by parents, as determined by four key policy instruments of the income tax system: the individual personal income tax, the low income tax offset, the Medicare Levy, and Family Tax Benefits Part A and Part B (FTB-A and FTB-B).[5] Consistent with international tax literature, cash transfers in the form of FTBs are treated as negative taxes.

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[4] See, for example, Turnbull and Temple (2005) and Davidson (2005).
[5] The analysis does not incorporate Child Care Benefit. This is unlikely to alter the findings of the study. The available evidence suggests that subsided childcare is used extensively by single-earner families, and household expenditure survey data indicate that government expenditure on childcare tends to be distributed independently of employment status.

The analysis draws on a sample of 1656 two-parent families from the ABS 2002 Survey of Income and Housing (SIH) selected on the following criteria: the family is a couple income unit with dependent children, at least one parent is employed, both parents are aged between 20 and under 65 years; earnings are principally from wages and salaries; and incomes from earnings, investments and unincorporated enterprises are non-negative. All incomes are indexed to the 2005-06 financial year.

Families in which both parents are unemployed or out of the workforce are excluded in order to focus the analysis on the income tax system, as defined by the above policy instruments, rather than on the wider welfare system. This restriction excludes relatively few records. In the full sample of families, 90 per cent of male partners aged 20 to 65 are employed - 85 per cent full time and 5 per cent part time. Of the remaining, 3 per cent are unemployed and 7 per cent are not in the workforce. In contrast, the full time employment rate of mothers is only 28 per cent. Their part time rate is 35 per cent. Only 2 per cent report being unemployed. The remaining 35 per cent are not in the workforce.

For the purpose of the analysis, the parent with the higher private income is defined as the "primary earner". Private income, as defined by the ABS (2005), is income from all non-government sources such as wages and salaries, profits, investment income and superannuation. The primary earner is the male partner in 87 per cent of records in the sample and therefore in the discussion to follow the second earner will be referred to as the female partner.

Table 1 first of all reports, in the upper panel, the amount of tax families would pay if all had only one earner, in other words, if the second earner did not work. The results are presented for a quintile ranking of families by primary private income. The first two rows give weighted data means for the primary earner's annual earnings and hours of work and the third row, the annual asset income of the household. The fourth row shows the percentage of primary earners employed full time in each quintile. Overall, 92 per cent are employed full time. The fifth row reports the average amount of tax the family pays when there is only one earner, and the final row, the family's average tax rate (ATR) as a

percentage of the income the family would have if there was only one earner, which is the sum of primary earnings and assent income.

The lower panel reports data means for the earnings and labour supply of the second earner and also gives the percentage of families in which she is employed full time and part time. The final two rows show the tax on her earnings, calculated as the increment in the family's tax burden due to her participation in the labour force. The ATR reports the result as a percentage of second earnings.

Table 1   Weighted data means for "in-work" families, 2005-06

Quintile	1	2	3	4	5	All
Panel 1						
1. Primary earnings $pa	26889	41154	52003	66329	113180	59404
2. Primary labour supply, hours pa	1989	2165	2234	2340	2419	2228
3. Asset income	258	695	740	1108	4288	1392
4. % employed full time	79.4	93.8	94.3	97.6	95.0	92.0
5. Tax on primary + asset income $pa	-9334	-640	3949	10706	36245	7923
6. ATR %	**-34.7**	**-1.6**	**7.6**	**16.1**	**32.0**	**13.3**
Panel 2						
1. Second earnings $pa	8421	16349	21736	21519	22702	18116
2. Second labour supply, hours pa	678	1001	1096	1054	970	960
3. % employed full time	24.3	33.7	34.1	31.7	26.4	30.1
4. % employed part time	25.6	34.2	34.9	38.3	38.5	34.3
5. Tax on second earnings $pa	4284	6010	7178	6784	6972	6243
6. ATR %	**50.9**	**36.8**	**33.0**	**31.5**	**30.7**	**34.5**

The results are striking. The average tax paid by the representative family in the sample is $14,166, the sum of the amount paid as a single-earner family, $7,923, and the tax on second earnings, $6,243. Thus, if all families had only one earner or, equivalently, if all second earners withdrew from work, the average tax per family in the sample would fall from $14,708 pa to $8,358 pa, that is, by over 44 per cent. This dramatic fall is due to very high effective ATRs on second earnings. The ATR on the single-earner family's average income of $59,404 pa is only 13.3 per cent. The second earner faces an ATR of 34.5 per cent on earnings of only $18,116. ATRs on the single-earner family are not only low on average but also highly progressive. We have a negative income tax up to the second quintile, with those in quintile 1 receiving a net transfer that averages $9,334 pa.

The ATR rises to 7.6 per cent in quintile 3 and then to 32.0 per cent in quintile 5. This progressive taxation of the single earner contrasts sharply with the treatment of the second earner. The profile of ATRs on her earnings is regressive. In the bottom quintile, the ATR is 50.9 per cent on an average income of only $8,421 pa.[6] The ATR falls to 30.7 per cent in the top quintile, where the average second income is $22,702 pa.

The lower panel of the table reports average tax burdens and therefore conceals the wide variation in burdens associated with the heterogeneity in female labour supply at each level of primary income, which is evident from the profiles of the full time and part time employment rates of second earners. In around 30 per cent of cases, both parents work full time and in over 35 per cent, only one parent is employed. Thus the tax profiles understate the actual burdens for the two-earner family, especially for those in which both parents work full time.

To show how tax burdens depend on the employment of the second parent, Table 2 presents results for the sample partitioned into three family groups: single-earner families, two-earner families with the second earner employed part-time (PT), and two-earner families with both parents in full-time (FT) work. The data means for these groups indicate there is relatively little variation in primary earnings, asset incomes and hours across these groups within each quintile, apart from the top quintile. In the top quintile the data mean for the primary earnings of the single-earner family is $125,164, which is significantly above the mean of $109,931 for the PT two-earner family and of $102,013 for the FT two-earner family.

As we would expect, the quintile profiles of average tax burdens and ATRs for the single-earner family tend to match those reported in Table 1 for the full sample with second earnings set to zero. In the PT two-earner family, the second earner pays an average tax of $7,081 pa, compared with her overall average of $6,243, shown in Table 1. Tax burdens on the second earnings are again relatively flat across the distribution, with the

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[6] The very high rate in the bottom quintiles is due partly to loss of welfare benefits as well as family tax benefits.

result that ATRs are strongly regressive on the second income. In quintile 2, the ATR is over 40 per cent on an average income of a little over $16,000 pa.

Table 2   Tax burdens and ATRs by employment status

Quintile	1	2	3	4	5	All
Single-earner families						
Family income $pa	28438	46059	56483	73178	132630	63928
Tax on family income $pa	-9106	-162	4356	11973	42818	8316
ATR - family income %	**-32.0**	**-0.3**	**7.7**	**16.4**	**32.3**	**13.0**
PT two-earner families						
Family income $pa	41135	57501	76268	89634	139011	83756
Tax on family income $pa	-1581	5339	11637	17321	42064	16233
ATR – family income %	**-3.8**	**9.3**	**15.3**	**19.3**	**30.3**	**19.4**
Second earnings $pa	13102	16328	23373	21738	25045	20409
Tax on second earnings $pa	6562	6585	7930	6683	7510	7081
ATR - second earnings %	**50.1**	**40.3**	**33.9**	**30.7**	**30.0**	**34.7**
FT two-earner families						
Family income $pa	44375	70471	88974	103110	151862	91138
Tax on family income $pa	-365	10672	16746	22928	45427	18741
ATR – family income %	**-0.8**	**15.1**	**19.8**	**22.2**	**29.9**	**20.6**
Second earnings $pa	16634	28036	36116	36110	45536	32718
Tax on second earnings $pa	8098	9706	11854	11447	14139	11060
ATR – second earnings %	**48.7**	**34.6**	**32.8**	**31.7**	**31.1**	**33.8**

What this means is that a married mother in quintile 2 who decides to work part time in the market rather than full time at home will, on average, earn a little over $16,000 and lose over 40 per cent in taxes and reduced FTBs. She will also contribute more to GST revenue, because her additional income will be used to buy-in GST rated goods and services as substitutes for those she could produce herself by working full time at home. [7]

For the FT two-earner family, the picture is more extreme in terms of absolute tax burdens. The average income of the second earner is $32,718, on which the tax is $11,060 pa. Note that the ATR on the FT two-earner family in quintile 2 is 15.1 per cent on a family income of $70,471, only slightly below the ATR of 16.4 per cent on the

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[7] In addition, she will have to pay the 9 per cent Superannuation Guarantee Charge (SGC).The ongoing debate concerning whether the SGC is a tax misses the point. The central question is whether the reduction in the net wage it causes has significant disincentive effects, and whether its overall distributional

single-earner family's income of $73,178 in quintile 4. Thus, on average, the FT two-earner family in quintile 2 pays close to the same amount of tax as the single-earner family in quintile 4. Similarly, the ATR for the PT two-earner family in quintile 2 is close to that of the single-earner family with almost the same family income in quintile 3. These figures reflect the Howard Government's shift towards a system of joint taxation, through successive increases in joint and second income targeted family benefits combined with the use of bracket creep to reduce the progressivity of the individual personal income tax and, thereby, to increase the tax burden on low and average wage workers. The latter include the vast majority of employed married mothers.

The pivotal role of bracket creep, in combination with the FTB system, in the shift towards the joint taxation of families up to around the mean of the fourth quintile, should not be underestimated. The Howard Government has compensated higher income earners by raising the upper tax thresholds and single-earner families by increasing family tax benefits. Because FTBs are withdrawn on family income and on the income of the second earner, two-earner families on low to average pay, especially those in which both parents are in full-time work, are largely excluded from both forms of compensation. Low to average wage single individuals have also been heavily penalised, together with couples without children in the same wage categories as shown in Section 4 below.

A defining feature of joint taxation is equal, or near equal, taxation of families with the same combined income. This means that family tax burdens are independent of the intra-family distribution of earnings and therefore of total hours worked, at a given level of joint income. Under such a system the FT two-earner family is required, in effect, to work longer hours for the government than the single-earner family able to earn the same income with only one full-time job. Table 3 shows the distribution of "hours worked to pay tax", or the "hours of work equivalent" of the family's tax, across single and two-earner families for those quintiles in which average burdens are positive. In quintile 2,

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impact is fair. For low income earners who would otherwise be recipients of the age pension, it is clearly not a fully contributory levy, especially in an imperfect capital market.

the average tax burden on the FT two-earner family is the equivalent of 706 hours of work for the government, almost as many hours as the representative single-earner family in quintile 5. In quintile 3, the single-earner family works the equivalent of 139 hours to pay tax while the PT two-earner family in the same quintile works 706 hours and the FT two-earner family, 892 hours. In last case, the FT two-earner family works more hours for the government than the single-earner family in quintile 5 on a much higher income.

Table 3   **Hours worked to pay tax**

Quintile	1	2	3	4	5
Single-earner families					
Hours worked to pay tax pa	-	-	139	349	775
PT two-earner families					
Hours worked to pay tax pa	-	313	533	660	1012
FT two-earner families					
Hours worked to pay tax pa	-	706	892	967	1270

Can a tax system, which imposes such unequal burdens on single and two-earner families in the same quintile of primary income, be judged as fair under any set of empirically plausible conditions? The answer to this question depends on how we view home production. If we believe it is plausible to assume that there is no home production, that the stay-at-home mother spends her time entirely on leisure, then it could be viewed as fair to allow couples to split their incomes or, equivalently, to tax families on the basis of joint income. The assumption is, however, contradicted by time use data, as well as by casual observation. Moreover, there is as at least one further assumption required. Husbands must be assumed to share their incomes equally with their wives. In other words, we need a model in which mothers are totally unproductive at home and, motivated by altruism, husbands fund an intra-household lump sum transfer equal to half their incomes to support the consumption of their wives. There is no exchange within the household.[8] This model is rejected by the results of the literature on the intra-household distribution of family resources.[9]

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[8] For models that recognise household production and intra-family exchange, see Apps and Rees (1999a, 1999b).
[9] See, for example, Apps and Rees (2002) and Lundberg et al (1997).

Time use data indicate clearly that, after the arrival of the first child, the lower wage parent, typically the mother, faces the choice between working at home, providing childcare and related domestic services, or working in the market and buying-in childcare and substitutes for related home produced goods and services. There are gains and losses associated with each option. Mothers who work full-time at home avoid personal income taxes, the GST and the SGC on their implicit income from, and expenditure on, home production, and they gain large FTBs. However, they lose work experience and may therefore face a lower wage later in the life cycle, which has associated risks especially in relation to single parenthood. On the other hand, the mother who goes out to work may find that her after tax income is not sufficient to cover the high cost of childcare run for profit in a market with excess demand. The family may actually have to borrow to finance childcare in an imperfect capital market with a high borrowing rate.[10] In both cases the family needs to predict the mother's future earning capacity. Under these conditions it is not surprising to observe low average female hours relative to male hours, despite the large fall in fertility over recent decades. Nor is it surprising to observe a high degree of heterogeneity in female hours across seemingly identical families, who are making different assessments of the gains and losses associated with the choice between working at home and in the market.

The system also makes no sense in terms of distributional outcomes. It is clear that in the short run a household in which the primary income parent earns around $70,000 pa for full-time work while the second parent works at home providing child care and other domestic services has a much higher standard of living than a family in which both parents must work full-time to earn the same income and must buy-in childcare. As noted in the Introduction, a system that places the same tax, or close to the same tax, on these two families fails in terms of horizontal equity. It also fails in terms of the progressivity of the overall system, due to the higher tax burdens on lower wage families, as indicated by the "hours of work to pay tax" profiles in Table 3.

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[10] For an analysis of the effects of these conditions on female labour supply, see Apps and Rees (2003).

3   Tax rates for representative families

The preceding analysis raises an obvious question: To what extent is the gap between the average tax profiles of single and two-earner families an artifact of demographic variation across the two groups, or of other sources of heterogeneity, rather than an outcome of the tax rate structure? For example, if, on average, single-earner families have more children they will receive more in FTBs, and this could account for their lower ATRs. In fact, the data show that single-earner families have an average of 1.93 children whereas the figure for two-earner families is 1.85.

To demonstrate that the results are driven by the tax rate structure and not by variation in family size, primary earnings or asset incomes, this section presents tax profiles for hypothetical single and two-earner families with identical demographic characteristics and primary earnings within each quintile. Primary and second earnings across quintiles are set at the data means reported in the preceding tables. Asset incomes are set to zero. Taxes are calculated as the sum of personal income taxes and the Medicare levy, less the low income tax offset and FTBs. Government cash benefits outside the FTB system, which are included in the calculation of effective taxes in the preceding section, are excluded. Table 4 reports the tax profiles for a family with 2 children under 13 and at least one under 5, and Table 5, for a family with 3 children under 13 and at least one under 5.

The profiles confirm the findings of the preceding section.   Second earners face high ATRs consistent with a system of joint taxation. Moreover, from a comparison of profiles across the tables we can see that the tax treatment of the second earner tends to get worse as the number of children increases. For the 3-child, FT two-earner family in quintile 2, the ATR on the second income is almost 50 per cent. The excessively high ATRs on second earners translate into a large "tax wedge", defined as the ratio of the effective tax on the second income and the tax the second earner would face as a single individual on

Table 4   Families with 2 children under 12 and one under 5

Quintile	1	2	3	4	5
Primary earnings $pa	26889	41154	52003	66329	113180
Single-earner families					
Tax on family income $pa	-7872	-1393	4194	10225	35070
ATR - family income %	**-29.3**	**-3.4**	**8.1**	**15.4**	**31.0**
Two-earner families PT					
Tax on family income $pa	-3313	5880	11744	16076	42094
ATR – family income %	**-8.3**	**10.2**	**15.6**	**18.3**	**30.5**
Tax on second earnings $pa	4559	7273	7550	5851	7025
ATR - second earnings %	**34.8**	**44.5**	**32.3**	**26.9**	**28.0**
Tax wedge	5.49	5.20	2.47	2.36	1.92
Two-earner families FT					
Tax on family income $pa	-1317	9960	15922	24388	48646
ATR - family income %	**-3.0**	**14.4**	**18.1**	**23.7**	**30.6**
Tax on second earnings $pa	6554	11352	11728	13416	13576
ATR – second earnings %	**39.4**	**40.5**	**32.5**	**39.2**	**29.8**
Tax wedge	4.35	2.42	1.62	1.96	1.33

Table 5   Families with 3 children under 12 and one under 5

Quintile	1	2	3	4	5
Primary earnings $pa	26889	41154	52003	66329	113180
Single-earner families					
Tax on family income $pa	-12073	-5594	-7	7771	35070
ATR - family income %	**-44.9**	**-13.6**	**0.0**	**11.7**	**31.0**
Two-earner families PT					
Tax on family income $pa	-7514	1679	9967	14298	42094
ATR – family income %	**-18.8**	**2.9**	**13.2**	**16.2**	**30.5**
Tax on second earnings $pa	4559	7273	9973	6528	7025
ATR - second earnings %	**34.8**	**44.5**	**42.7**	**30.0**	**28.0**
Tax wedge	5.49	5.20	3.26	2.63	1.92
Two-earner families FT					
Tax on family income $pa	-5518	8077	14145	20835	48646
ATR – family income %	**-12.7**	**11.7**	**16.1**	**20.3**	**30.6**
Tax on second earnings $pa	6554	13671	14151	13064	13576
ATR – second earnings %	**39.4**	**48.8**	**39.2**	**36.2**	**29.8**
Tax wedge	4.35	2.91	1.96	1.95	1.33

the same income.[11] Second earners in part-time work and those in full-time work in the bottom two quintiles face a tax wedge that ranges from 2.91 to 5.49 and higher.

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[11] Jaumotte (2003) ranks OECD countries according to this tax wedge, for female earnings levels of 67 per cent and 100 per cent of Average Production Worker earnings (APW) and the male level held at 100 per

Because the Howard Government's strategy for switching towards joint taxation has been to use a succession of family tax benefit reforms combined with bracket creep, rather than through a transparent change in the tax base from the individual to the family, the system now in place differs from the more conventional joint tax systems of other countries in two important respects. First, the taxation of incomes at the top of the distribution tends to remain on an individual basis because FTBs are fully withdrawn at high income levels, apart from FTB-B. Second, because the system been introduced by withdrawing family benefits on joint income and the income of the second earner, the marginal tax rate (MTR) schedule tends to exhibit an inverted U-shaped profile with respect to joint income, instead of the usual progressive profile. Consequently, when combined with the entire welfare system, the overall profile of effective marginal tax rates on income tends to be downward sloping.

It is of interest to see more precisely how family tax benefits, tax offsets, and the Medicare Levy have been used to replace Australia's progressive individual income tax with a system that approximates one of joint taxation with high MTRs across average incomes. For the purpose of illustration we take the case of the family with three children in Table 5, and show how these policy instruments have been used to change dramatically the structure of tax rates on primary and second incomes.

Table 6 first of all lists the 2005-06 schedule of MTRs on personal income and then reports the effective marginal rates that apply when the low income tax offset is included.[12] The offset raises the tax free threshold from $6,000 to $7,567 and introduces a new MTR of 34 cents in the dollar across a new income band of $21,600 to $27,475, and so we see the emergence of a "hump" in an otherwise progressive MTR profile. The offset is entirely redundant as a separate policy instrument. The same changes could

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cent of APW, in 2000-2001. The study obtains a result for Australia of 1.4. The figures here show that the tax wedge is much higher than this for most families.

[12] A taxpayer with a taxable income below $27,475 is entitled to a low income tax offset of up to $235. This offset is withdrawn at a rate of 4 cents in the dollar on an income over $21,600, to create the new MTR of 34 cents in the dollar above this threshold.

have been announced simply, and more transparently, as a new MTR schedule on individual incomes.

The third section of the table lists the MTR schedule when the Medicare Levy is included.[13] The number of bands increases to eight and there is a more pronounced hump in the profile. In fact, the highest MTR no longer applies to the top income band, but to a relatively low income band. We begin to see a shift towards an inverted U-shaped profile. This is due to the withdrawal of the Medicare Levy exemption at 20 cents in the dollar at the specified lower and upper family income limits. For the 3-child family, the limits are $34,227 and $37,000,[14] respectively, and so the family's MTR rises to 50% across this range of income. Because the limits are defined on family income, the Medicare Levy is also a step towards joint taxation. Again, as a separate policy instrument, the Medicare Levy is entirely redundant and serves only to reduce the transparency of the underlying tax rate changes.

Table 6   3-child family - effective MTRs

Individual income tax		+ Low income tax offset		+ Medicare Levy	
Taxable Income $pa	MTR	Taxable income $pa	MTR	Taxable Income $pa	MTR
$0 - $6,000	0.00	$0 - $7,567	0.00	$0 - $7,567	0.00
$6,001 - $21,600	0.15	$7,568 - $21,600	0.15	$7,568 - $21,600	0.15
		$21,601-$27,475	0.34	$21,601 - $27,475	0.34
				$27,476 - $34,226	0.30
$21,601 - $63,000	0.30	$27,476 - $63,000	0.30	$34,227 - $37,001	0.50
				$37,002 - $63,000	0.315
$63,001 - $95,000	0.42	$63,001 - $95,000	0.42	$63,001 - $95,000	0.435
$95,001 +	0.47	$95,001 +	0.47	$95,001+	0.485

Family tax benefits have a more profound effect of the same kind on the MTR profile. Table 7 shows the income profiles of effective MTRs after adding in FTB-A for the single-earner family. The maximum rate of FTB-A is $4201.15[15] for a dependent child under 13. The base rate, including the supplement, is $1,777.55 for each child. Benefits

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[13] The Medicare levy is normally calculated at 1.5 per cent of taxable income. There are exemption categories or reductions based on income, and there is a surcharge for individuals and families on higher incomes who do not have private patient hospital cover, calculated at an additional 1 per cent of taxable income.

[14] The figures are based on rates for 2004/05. Those for 2005/06 are not yet available.

[15] This includes the $627.80 Supplement for 2005-06.

up to the base rate are withdrawn at 20 cents in the dollar on every dollar above the lower family income threshold of $33,361. For the 3-child family, the income limit at which the benefit, excluding the base rate, is completely phased out is $69,715. The effect is to create a much more significant hump in the middle of the distribution, with MTRs of over 50 cent in the dollar on incomes from just over $34,000 to almost $70,000 pa. At $93,075 the base rate of FTB-A is withdrawn at 30 cent in the dollar and so effective MTRs rise by this amount until the upper income limit of $110,851. The gap between the two humps depends on the number and ages of the children.[16]

Table 7   Single-earner 3-child family: effective MTRs and ATRs

Taxable Income $pa	MTR	ATR at upper threshold
$0 - $7,567	0.00	-2.111
$7,568 - $21,600	0.15	-0.642
$21,601 -$27,475	0.34	-0.432
$27,476 - $33,361	0.30	-0.303
$33,362 - $34,226	0.50	-0.283
$34,227 - $37,001	0.70	-0.209
$37,002 - $63,000	0.515	0.090
$63,001- $69,715	0.635	0.142
$69,716 - $93,074	0.435	0.216
$93,075 - $95,000	0.735	0.226
$95,001- $110,850	0.785	0.306
$110,850+	0.485	-

The final column of the table lists ATRs, calculated at the upper income thresholds for each MTR. Although the family faces high MTRs across a wide band of income above $33,361, ATRs are low, and in fact negative up to over $50,000, as in the tables of the preceding section. This is because FTBs, including FTB-B of $3372.60, are large. The system is equivalent to one under which income is taxed at the MTRs shown in the table and the family receives a universal or lump sum transfer equal to its FTBs, which in this case amounts to $13,165.55 pa. This example serves to illustrate how a change in the withdrawal rates of family benefits, or in tax offsets and credits, can always be translated into a new MTR schedule, while a change in the size of FTBs represents a change in the implicit lump sum. The widely prevalent idea that universal benefits are "unaffordable"

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[16] An EITC program of the kind proposed, for example, by the "Five Economists" eliminates a gap of this kind, by taxing families within the relevant income range at higher rates, as shown in Apps (2003).

reflects a fundamental misunderstanding of the tax structure and the criteria that are relevant for evaluating a tax change. What matters is the distributional impact of the reform and the efficiency gains/losses induced by the changes in the MTR schedule.

It is an open question as to whether the high MTRs across the middle of the distribution of primary earnings in Table 7 have large work disincentive effects. Empirical estimates tend to indicate that the labour supply of prime age males, especially those in higher paying jobs, tends to be unresponsive to a change in the net wage. Thus, the high MTRs at the middle and upper end of the distribution of primary income may have a relatively small effect on labour supply, and a low efficiency cost. However, the effects on the lower to middle range of the distribution may be significant.

Given that FTB-A and the Medicare Levy are withdrawn on family income, the tax rates faced by the second earner depend on the primary earner's income, as in any joint tax system with varying MTRs. Thus we need to choose a level of that income. We first select a primary income of $41,000 pa for full time work, which is approximately equal to average primary earnings in quintile 2 (Table 1). Table 8 lists the effective MTRs and ATRs faced by the second earner and also includes the ATRs she would face as a single individual. The final column of the table reports the *tax wedge* she faces, computed as the ratio of her tax as a second earner and as a single individual.

Table 8   3-child family: Primary earnings = $41,000 pa

| Taxable Income $pa | Second earner | | | Single indiv. | Tax |
	Tax $pa	MTR	ATR	ATR	wedge
$0 - $4088	$879	0.215	0.215	0.00	-
$4089 - $7,567	$2,323	0.415	0.307	0.00	-
$7,568 - $20,951	$9,885	0.565	0.472	0.111	4.26
$20,952 - $21,600	$10,122	0.365	0.469	0.112	4.17
$21,601 - $27,476	$13,383	0.555	0.487	0.164	2.96
$27,477 - $28,761	$14,021	0.515	0.488	0.171	2.86
$28,762 - $41,000	$17,981	0.315	0.436	0.214	2.04

The second earner's first dollar of income is taxed at a rate of 21.5 cents due to the withdrawal of FTB-A at 20 cents in the dollar on joint income and the 1.5 Medicare Levy

rate. At the lower income limit of $4,088 for FTB-B, her MTR rises another 20 cents, to 41.5 cents.   The withdrawal of FTB-B on the second income, together with the withdrawal of FTB-A on joint income, has the effect of denying the second earner a zero MTR on her income up to the individual threshold of $7,567. She is also denied a low MTR of 15 cents in the dollar across the next band of the individual income tax scale. Instead, she faces an MTR of 56.5 cents in the dollar. On a very narrow band of income - $20,953 to $21,600 - she faces an MTR of 36.5 cents in the dollar because FBT-B has been completely phased out at the lower threshold of this band. At $21,601, her MTR rises to 55.5 cent in the dollar. Only when her income reaches $28,762 does her MTR fall substantially because, at this level of income, family income has moved into the income range that is taxed at lower rates under the inverted U-shape schedule applying to family income.

The profile of ATRs indicates the consequences of high MTRs at low levels of second income. As the second earner moves across the second band above the zero rated threshold of the personal income tax, her ATR reaches 48.8 per cent, in other words, the second earner loses almost half her income in taxes and reduced FTBs, well over twice the amount she would lose as a single individual, as indicated by the tax wedge figures. For example, if she earns $29,000 to raise her family income to $70,000, she loses $14,111, or 48.7 per cent of her income. Had she chosen to work full time at home, the family would have received a negative tax of $5,673. By going out to work, the second earner has raised the family's tax burden to $8,437, or 12.1 per cent of family income. The tax paid by a family able to earn the same income with only one parent in work, and the other working full time at home, is $10,045, or 14.3 per cent of family income. By taxing the second earner at very high average rates, the Howard Government has raised the burden on the two-earner family to such an extent that it now pays close to the same amount in tax as a single-earner family with the same income.

The tax penalty on a second earner in a family with a lower primary income can be even greater. Table 9 reports the marginal and average tax rates, as well as the tax wedge, faced by the second earner in a family in which the primary income is $35,000. Her

effective tax at $29,000 of income is $14,538, which is over half her income. At $35,000 it is $17,571, again over half her income. The family's ATR on a joint income of $70,000 is 12.1, the same as in the previous example. In terms of hours of work to pay tax, the FT (40 hour per week) two-earner family with a joint income of $70,000, with each parent earning $35,000 pa, works 20.1 hours per week for the government. The single-earner family with the same income, and therefore on a much higher wage, works 5.7 hours per week for the government.

Table 9   3-child family: Primary earnings = $35,000 pa

	Second earner			Single	Tax
Taxable Income $pa	Tax $pa	MTR	ATR	ATR	wedge
$0 - $2,000	$800	0.400	0.400	0.00	-
$2,000 - $4,088	$1,250	0.215	0.306	0.00	-
$4089 - $7,567	$2,693	0.415	0.356	0.00	-
$7,568 - $20,951	$10,255	0.565	0.489	0.111	4.42
$20,952 - $21,600	$10,492	0.355	0.486	0.112	3.32
$21,601 - $27,476	$13,753	0.555	0.501	0.164	3.05
$27,477 - $34,715	$17,481	0.515	0.503	0.196	2.58
$34,716 - $35,000	$17,571	0.315	0.502	0.197	2.55

FTB-B is an especially anomalous component of the system. For a two-earner family with a child under 5, it is fully withdrawn on a joint income of $41,906 if earned equally by both parents. If only one parent needs to work to earn the same income, the family receives the full amount of FTB-B, $3372.60[17] for a child under 5 years. Thus, the role of FTB-B cannot be said to be that of supporting families, since it fails to support the two-earner family on a very low joint income and working longer hours.

A family tax system with such punitive taxes on the income of second earners can be expected to have large and significant effects on female labour supply. Available estimates of female wage elasticities indicate that high tax rates have a strong negative impact when the children are young, and that this effect persists across the life cycle. The result is easy to understand. For families with young children, home production is a close substitute for market output over a range of services, most importantly, childcare. If

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[17] This includes the supplement available only at the end of the financial year.

married mothers face ATRs on their earnings in the order of 50 per cent for part time and full time work, and quality child care is not available at an affordable price, it is not be surprising to find that they reduce their hours significantly, or switch from working in the market to working at home entirely. And as a consequence, their productivity in the market work declines, which results in a long term negative effect over the life cycle, in addition to the short term impact when the children are young.[18]

4   Taxation of "in-work" couples with no dependents

We now turn to couples without children, and examine the tax rates they face due to the combined effects of the individual income tax, the low income tax offset, the Medicare Levy, and the dependent spouse tax offset. The analysis is based on a sample of 1313 couple income unit records drawn from the ABS 2002 SIH on the same criteria as the sample for families, but excluding records with dependent children present. As before, incomes are indexed to the 2005-06 financial year.

Again, for the purpose of the analysis, the partner with the higher private income is defined as the "primary earner". Following the format of Table 1, Table 10, Panel 1, reports weighted data means for primary income and hours, asset incomes, and the amount of tax couples would pay, and their ATR, if all had only one earner. For the purpose of comparison, the results are presented for the same quintile ranking of primary private income as in Table 1. Couples without children make up 44.4 per cent of the full sample of married couples selected on the criteria outlined, and their distribution by primary income closely follows that of families, as indicated by the quintile profile in the last row of the table.

From row 6 of Panel 1 it can be seen that single-earner couples pay much higher taxes than single-earner families in the first four quintiles, as we would expect since they do not receive FTB-A and the dependent spouse tax offset is less than FTB-B. Second earners with no dependents in quintiles 2 and 3 have higher incomes than working

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[18] For an analysis of these effects in the US context, see Attanasio et al. (2003).

married mothers because they have a higher full time employment rate and work longer hours as shown in row 3 of the tables. Nevertheless they effectively pay lower taxes, because they lose only the dependent spouse tax offset. However, due to the withdrawal of the offset, ATRs on second earnings are above those on primary incomes in the lower three quintiles. The dependent spouse tax offset, like FTB-B, has the effect of denying the second earner a zero rated threshold and of raising the marginal rate up to the next tax threshold by several percentage points.

Table 10   Weighted data means for "in-work" couples with no dependents, 2005-06

Quintile	1	2	3	4	5	All
Panel 1						
1. Primary earnings $pa	25645	40683	51930	65677	108567	55940
2. Primary labour supply, hours pa	1879	2085	2245	2337	2450	2183
3. Asset income	688	624	1434	3157	5016	2014
4. % employed full time	69.5	92.5	96.3	96.8	98.1	90.2
5. Tax on family income $pa	-1017	6923	11309	16707	37335	13106
6. **ATR %**	**-4.0**	**17.0**	**21.8**	**25.4**	**34.4**	**23.4**
Panel 2						
1. Second earnings $pa	12190	21795	26947	29136	35471	24509
2. Second labour supply, hours pa	1082	1367	1554	1375	1381	1351
3. % employed full time	43.2	56.0	62.8	57.4	53.1	54.5
4. % employed part time	31.6	24.2	19.5	21.2	19.9	23.5
5. Tax on second earnings $pa	4539	5026	6215	7022	9354	6275
6. **ATR %**	**37.2**	**23.1**	**23.1**	**24.1**	**26.4**	**25.6**
% - couples with no dependents	45.9	46.2	45.9	41.8	41.3	44.4

The higher hours and full-time employment rates reported in Table 10 for second earners with no dependents should not be interpreted as evidence of a substantial increase in the labour supply of mothers after the children leave home. In fact, there is relatively little change. This becomes evident when the sample is split into two broad life cycle phases: couples in the early phase who have not yet had children and those in the later phase when the children have left home. Since data on whether the female partner has had children, or plans to have them, are not available, the sample is split according to whether the female partner is aged less than 40 years or 40 years or over. Table 11 reports the results for the former group in Panel 1, and for the latter group, in Panel 2.

If the female partner is under 40, the full time employment rate of second earners is 73.3 per cent, and they work an average of 1713 hours pa. In contrast, couples in which the female partner is over 40 years or more have a full time employment rate of only 41.3 per cent, and average annual hours that are much closer to the hours worked by married mothers, at 1097 pa. This is consistent with US studies that find strong evidence of "persistence" – mothers who work significant hours after the children have left home are mostly those who worked while the children were present, and conversely.[19]

Table 11   Couples – life cycle effects

Panel 1: Pre-child phase	38.8	42.7	46.3	40.2	38.0	41.4
1. Second earnings $pa	14163	27699	35640	36422	46242	31343
2. Second labour supply, hours pa	1423	1721	1882	1701	1798	1713
3. % employed full time	50.9	77.5	84.0	75.6	76.1	73.3
4. % employed part time	35.6	17.6	10.0	16.0	9.7	17.8
5. Tax on second earnings $pa	5426	6419	8371	8954	12206	8041
6. **ATR %**	**38.3**	**23.2**	**23.5**	**24.6**	**26.4**	**17.4**
Panel 2: Post dependent child phase	61.2	57.2	53.7	59.8	62.0	58.6
1. Second earnings $pa	10941	17379	19463	24235	28875	19677
2. Second labour supply, hours pa	866	1104	1254	1164	1123	1096
3. % employed full time	38.3	39.9	44.5	45.1	38.9	41.3
4. % employed part time	29.1	29.2	27.7	24.7	26.1	27.5
5. Tax on second earnings $pa	3977	3984	4359	5723	7607	5026
6. **ATR %**	**36.3**	**22.9**	**22.4**	**23.6**	**26.3**	**25.5**

Note, finally, that younger couples pay, on average, significantly higher taxes than older couples because a higher proportion pays tax on two incomes and lose the dependent spouse tax offset. And since the vast majority has earnings below the upper income tax thresholds, they are hit twice by the lack of compensation for bracket creep. This limits their capacity to save for the purposes of house purchase and for the future costs of children. Singles on low and average incomes are also more highly taxed due to bracket creep.

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[19] See, for example, Shaw (1994).

5   Life cycle labour supplies

The report of the Australian Government (2004) entitled "Australia's Demographic Challenges" offers the following assessment of the Howard Government's family tax system:

> "The Government has already introduced extensive changes to taxes and benefits to assist families. Analysis has shown that the tax and social security system is neutral in its treatment of dual versus single income families. That is, the balance of the system is about right."

No studies showing that "the balance is about right" are cited.

The report also fails to acknowledge the large and persistent gap between female and male labour supplies that is evident in household survey data. Instead, it cites OECD statistics showing a sharply rising female participation rate from 1960 to recent years. This is a misleading indicator of changes in female labour supply. The steep increase in participation has not been matched by an increase in female hours of work because much of the growth in female employment is due to part-time work, which is often at low annual hours. Thus, while female and male rates of participation are tending to converge, with the former now over 75 percent of the latter, average female hours of work remain at only around half males hours for the population aged under 65. This estimate is based on data from the ABS 1997 Time Use Survey (TUS) sample.[20]

The gap between female and male labour supplies is even greater for married couples. Table 12 presents the labour supply profiles of couples by age of male partner using data for a sample of 1679 couples from the ABS 1997 TUS.[21] Figure 1 plots the profiles to show graphically the very large gap between male and female hours. The overall mean for females in the under 65 age category is 956 pa, which is 45.6 per cent of male hours.

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[20] The female employment rate is 61.6 per cent and the male rate, 80.8 per cent, for those under 65 years, which gives a ratio of 76.1 per cent. The weighted mean of female hours is 883 pa, and for males, 1758 pa, which gives a ratio of 50.2 per cent for the full sample.

[21] The sample excludes only those with missing data on the two diary days for which data were collected, and a small number of hard to classify records in complex households.

Table 12: Labour supplies by gender

| Male age	Females			Males			% with children	# children
	Hours	**FT%**	**Emp.**	**Hours**	**FT%**	**Emp.**		
<30	1295	50.0	74.0	2305	90.8	95.1	39.6	1.52
30-34	993	33.2	64.9	2448	89.6	93.1	73.0	1.95
35-39	853	27.8	62.0	2365	84.0	88.6	86.0	2.27
40-44	1093	33.5	70.6	2426	88.3	94.4	87.7	2.29
45-49	1097	37.7	70.5	2241	88.4	92.3	64.7	1.83
50-54	977	34.5	67.4	2037	79.0	85.9	46.6	1.68
55-59	771	27.8	55.1	1770	68.7	77.4	21.9	*
60-64	468	14.0	34.4	912	31.8	42.8	8.8	*
65+	80	1.9	8.7	183	6.4	14.4	1.7	*
<65	956	32.6	63.2	2098	78.9	84.8	56.9	

Figure 1: Labour supplies by gender
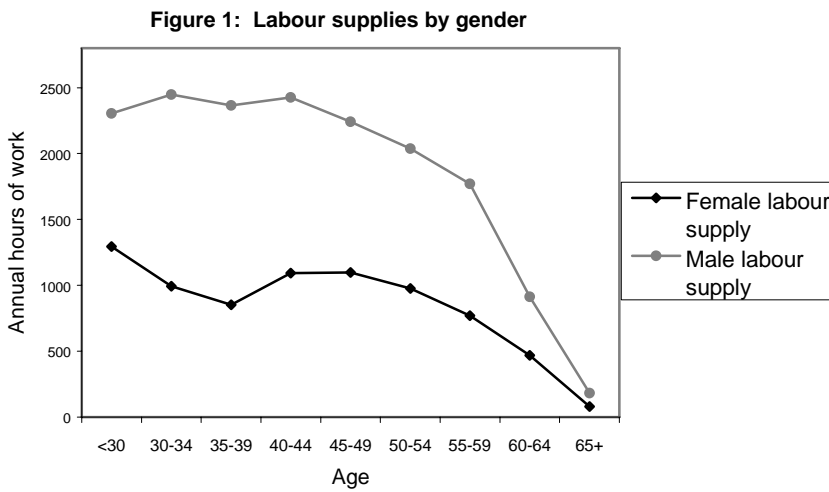
The profiles in the table indicate the inverse relationship that is typically observed between female labour supply and the presence and number of children in the early phases of the life cycle. Note, however, that in the later phases when the children have left home, there is little to no increase in average female hours, and the gender gap in market hours remains at over 50 per cent as hours decline in the later phases of the life cycle.

The profile of female hours in Figure 1 is obtained by averaging across women with children and those with no dependents, and therefore conceals the very large gap that exists between the hours worked by women who have not yet had children and those who have. Table 13 presents the data means for female and male hours for the sample of all couples split into families with dependent children and couples with no dependents. Figure 2 depicts the hours profiles graphically.

Table 13   Labour supplies by gender and family status

Male	Female hours pa		Male hours pa	
Age	Children	No children	Children	No children
<30	471	1606	2226	2036
30-34	593	1694	2206	2301
35-39	626	1643	2062	2337
40-44	946	1308	2146	2382
45-49	946	1102	2020	2020
50-54	814	920	1738	1941
55-59	*	686	*	1546
60-64	*	371	*	805
65+	*	56	*	153

Figure 2: Labour supplies by gender and family status
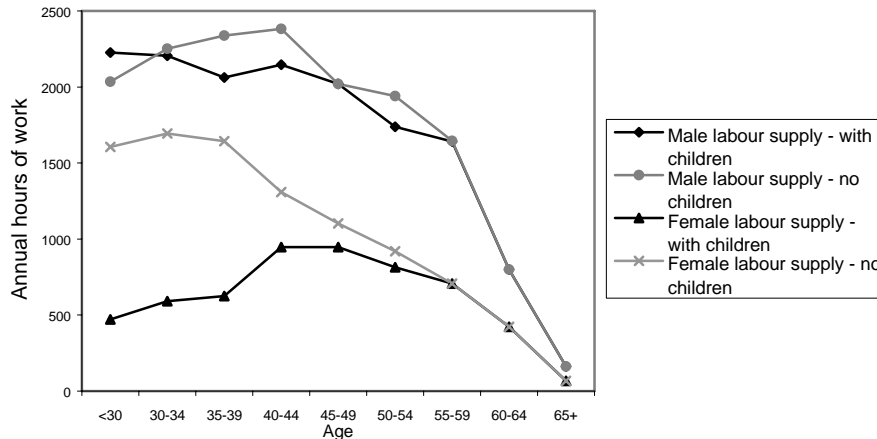
The average hours of married women without children in the under 30 age category is 1606 pa, and for those with dependent children, 471 pa. The profiles for the two groups

tend to merge after age 40 because an increasing proportion of the sample begins to represent couples whose children have left home after this age, as indicated by the peak in the percentage of couples with children at around age 40 in Table 11.

Figure 2 shows that for families with dependent children, the gender hours gap is quite extreme. Up to the age 40 category, the market hours of married mothers are only a quarter the hours of husbands. This is due not so much to an especially high rate of non-participation but to a low rate of full-time employment. In fact, in the 20 to 60 age range married mothers have an overall employment rate that is 68.4 per cent of the male rate - the male rate is 91.4 per cent and the female rate, 62.5 per cent. However, the full-time male and female employment rates are 85.8 per cent and 26.1 per cent, respectively. The result is that married mothers with dependent children are found to work only 37 per cent of the hours of married men with dependent children. The more recent ABS SIH data for 2002 give almost identical labour force profiles for families with dependent children. For the matching sample drawn from the survey the employment rate of married males aged 20 to 60 and with dependent children is 90.5, and the full-time rate, 85.5. The overall female employment rate is 63.1 per cent while the full time rate is only 27.9 per cent.

This evidence suggests that the Howard Government's family tax policy, together with the failure of successive governments to develop an efficient and affordable public sector childcare system, has been effective in discouraging the expansion of female labour supply.[22] The very low average hours of married mothers in these data sets suggests that the decline in fertility over recent decades has not been matched by a decline in the allocation of time to home production, in line with the fall in the demand for domestic labour that might be expected to follow the large falls in fertility.

Policies that prevent the efficient reallocation of female time from the home to the market will have negative effects on productivity, GDP and the tax base that will be difficult to reverse for decades to come. US studies find that the growth in female hours in recent

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[22] The negative effects of these kinds of polices on female labour supply are predicted in Apps (1991) using the parameters of a labour supply estimated on Australian unit record data.

years is due primarily to an increase in hours worked by younger cohorts of women, and that the profile for later cohorts is relatively flat at significantly higher hours.[23] In other words, the data indicate strong shifts in the life cycle profile of female hours across successive cohorts, initiated in the later cohorts by an increase in the market hours of mothers with young children. Thus policies that prevent mothers with young children from combining work and family are likely to result in low average hours across the entire life cycle, including after the children have left home.

6   Concluding comment

Any family tax system that combines a set of policy instruments - a formal schedule of rates on income, tax offsets, credits and family tax benefits – can always be translated into an effective MTR schedule and implicit non-means tested benefit for a given family or individual. The fundamentally flawed feature of the Australian family tax system is not the size of family tax benefits, but the MTR schedule created by the withdrawal of benefits on joint income and the income of the second earner, with the effect of selectively taxing her income at a higher rate from the first dollar earned.

Large family benefits can be justified, on both fairness and efficiency criteria, as a response to market failure. It is well recognised in the literature that, in the absence of a publicly provided system of education and child care, there would be under investment in the next generation due to the failure of capital and insurance markets.[24] Moreover, also for reasons of market failure, the private, for profit provision of such services is known to results in poor quality at a high cost, as is now evident in the long neglected childcare

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[23] Attanasio et al. (2003) study the life cycle labour supply of three cohorts of American women : those born in the 1930s, 1940s and 1950s. The authors find large shifts in the labour supply behaviour of these cohorts and attribute it to increases in the early part of the life cycle.

[24] In a perfect capital market, children would be able to borrow to pay for their consumption and investment in their human capital, and they would repay the debt during their working years. Clearly, there are numerous reasons for why capital markets fail in this context. For a discussion of the effects on the costs of children for parents, see Apps and Rees (2002), and for an analysis of the effects of an imperfect capital market on the ability of parents to support their children without working long hours at home and/or in the market, see Apps and Rees (2003).

sector.[25] The same conditions justify direct benefits for children. However, there is no sensible rationale for withdrawing the benefits on the basis of family income or the income of the second earner, to construct the MTR schedules and distribution of tax burdens described in the preceding analysis. The results of the study highlight the need to return to a system that combines a progressive individual income tax with universal child benefits.

To see why such a system is superior on equity and efficiency criteria, it is useful to consider first the limitations of a flat rate tax. The problem can be illustrated by a simple example. Consider two identical young families in which the male partners face the same wage rate and, as primary earners, work full time to earn the same income. The female partners also face the same wage rate. If, in one family, the mother chooses to work full time at home and, in the other, she works full time in the market and uses her income to buy-in childcare and substitutes for domestic services, the tax burden of the latter can be up to twice that of the former, yet both families may have the same standard of living. There is a problem of horizontal equity. A progressive income tax reduces this problem by applying a lower rate to the lower income partner, typically the mother. Furthermore, and importantly, the more progressive the MTR schedule the greater the degree of vertical equity. At the same time the system is more efficient because it applies lower MTRs to the incomes of married mothers with highly responsive labour supplies. Thus the system allows the expansion of the tax base required for funding universal family support. Life cycle studies show that the gains from a higher level of female labour supply also extend quite dramatically to a much higher level of household saving.[26]

A joint tax system has opposite outcomes. It increases the tax burden on the two-earner family, by raising the rate on the second income, and it reduces female labour supply and the efficiency of the economy by imposing selectively higher rates on the income of the

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[25] To appreciate the inefficiencies and consequent high cost of private, for profit, child care, one need only consider what would happen if the government were to sell off all its physical assets associated with the early years of primary school, and allow the education of children in those years to be provided privately and run for profit, without central planning and government support. Many parents would be unable to afford the cost. Female labour supply would fall as well as school attendance.
[26] See Apps and Rees (2003) for a study demonstrating this using Australian data.

partner with the more responsive labour supply. It is essentially a system for introducing discrimination on the basis of marital and employment status, at a high cost to productivity and GDP, and it can expected to lead to a fall in the tax base that will ultimately make the present level of family tax benefits unsustainable.

The results of the study show that Australian families are now subject to a tax system that closely approximates one of joint taxation, and that they face an effective MTR schedule that tends to exhibit an inverted U-shaped profile. As a consequence, second earners in low and average wage families face the highest *average* tax rates in the economy. A tax system of this kind, together with a poorly developed childcare sector, offers an explanation for the very low average market hours of work by married mothers, and the resulting large gap between female and male hours that persists over the life cycle despite the sharp decline in fertility in recent decades.   These findings suggest that, in an ageing population, Australia's new family tax system could prove to be the most costly legacy of the Howard Government.

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