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Another day, another dollar?

The effective tax rates and labour force participation of partnered mothers in Australia

Alicia Payne, Ann Harding, Quoc Ngu Vu and Richard Percival



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Abstract

Parents are a key focus in the discussion about work incentives and labour force participation in Australia. Family payments have been expanded substantially over the last decade in Australia. While this is generally a positive thing for families, it can make it difficult for some to increase their incomes beyond certain levels. Australia's highly targeted transfer system means that a delicate balance must be struck between directing payments to those who most need them through income tests and taper rates and ensuring that these regulations do not create disincentives for people to increase their labour force participation. Effective Tax Rates (ETRs) measure the proportion of additional earnings that are lost to the combination of income tax and the reduction of government benefits. This paper analyses ETRs in 2007-08, including changes introduced in the 2007 Budget. The first section of this article analyses the ETRs experienced by hypothetical families as the mother increases her hours in paid employment from zero to full-time. It compares the experience of three families, on low, average and high incomes, and also analyses the impact of childcare costs and Rent Assistance. The second section compares the labour force status and hours worked of partnered mothers in Australia in 1996-97 and 2003-04.

Key words: Effective Tax Rate, ETR, labour force participation, family payments, mothers

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General caveat

NATSEM research findings are generally based on estimated characteristics of the population. Such estimates are usually derived from the application of microsimulation modelling techniques to microdata based on sample surveys.

These estimates may be different from the actual characteristics of the population because of sampling and nonsampling errors in the microdata and because of the assumptions underlying the modelling techniques.

The microdata do not contain any information that enables identification of the individuals or families to which they refer.

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1 Introduction

Labour force participation and the incentives and disincentives that impact upon it are of key political concern in Australia. The dramatic changes to the taxation and welfare systems that were implemented in July 2006, along with changes to childcare benefit and income tax introduced in the 2007 Budget demonstrate that the interaction of taxation and the transfer system, and their impact on labour force participation, are currently considered issues of great importance by the government. This is particularly so as the country faces the fiscal burden of its ageing population, and thus a very slowly growing workforce (Treasury, 2007).

Australia's system of government cash benefits and tax concessions is one of the most highly targeted in the world, with most pensions, allowances and benefits involving income tests and taper rates to ensure that they go to those who need them most. As one's earnings increase, benefits can be reduced and eventually withdrawn completely. Income tax also increases. With the aim of encouraging increased labour force participation, it is a concern of governments that the combination of these factors does not create an unduly high disincentive for people to increase their income from wages and salary. When the loss of benefits and increase in income tax diminishes gains from working, families can be locked into a position where it is difficult for them to increase their incomes, which can create a 'poverty trap'. Thus, this interaction is also of key concern to individuals.

Effective Tax Rates (ETRs) provide a way to quantify this interaction, showing the amount of an increase in earnings that remains in the hand after income tax and the reduction of government benefits. For example an ETR, of 70 per cent means that 30 cents in an additional dollar of earnings is retained after benefits and income tax have been adjusted for the increase.

A recent analysis of ETRs showed that in 2006 around seven per cent of working age Australians faced ETRs of 50 per cent or more, meaning that they kept 50 cents or less of an additional dollar of income (Harding et al, 2006:6). This can be considered 'high' as it exceeds the highest rate of income tax, 45cents, plus Medicare Levy (1.5 cents). The report showed that people with children were most likely to have high ETRs (2006:10).

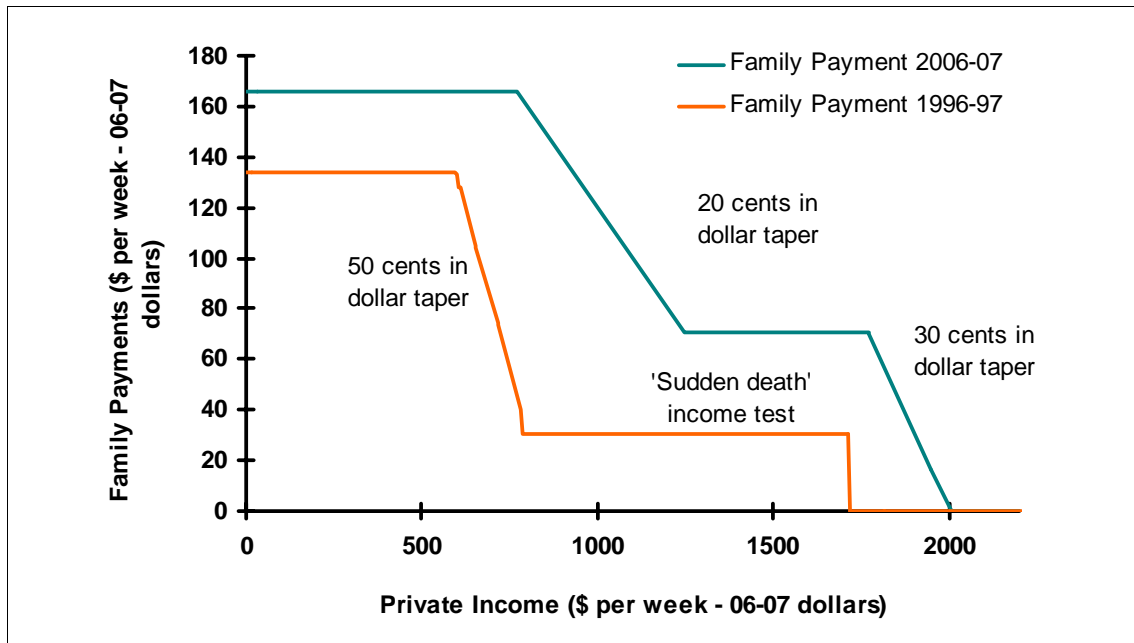
Parents are a key focus in the discussion about work incentives and labour force participation. Family payments have been expanded substantially under the Howard Government (see Figure 1). While this is generally a positive thing for families, it can make it difficult for some families to increase their incomes beyond certain levels. The increased availability of payments such as Family Tax Benefit A and B could perhaps encourage many to limit their labour force participation. Family Tax Benefit

A (FTBA) is tested on the income unit's (family's) income. In June 2007 for a two parent family with one child, the payment begins to be reduced by 20 cents for each dollar of earnings over \$40,000 annually. When the family's income reaches \$88,622 annually this taper rate increases to 30 cents in the dollar. Family Tax Benefit B (FTBB) is tested on the 'stay-home' parent, or 'secondary earner's' income, and begins to be reduced when their annual income reaches \$4,234 (Centrelink, 2007). Earlier research by Toohey and Beer showed that often families' income increased by very little as mothers increased their labour force participation, and in some cases they were even worse off (2004). Patricia Apps examines the strong disincentives facing secondary earners (usually mothers) and the detrimental effects on their life long labour force participation (2006).

The extension of family payments to people on higher incomes has meant that since 1996-97 high ETRs, traditionally confined to people on lower incomes, have shifted up the income distribution (Harding, Vu, Payne and Percival, 2006:14). While high ETRs can be detrimental for families trying to increase their incomes, this effect probably varies from family to family, with income, both the mother's and father's. The hypothetical module of NATSEM's STINMOD model, a static microsimulation model of Australia's tax and transfer systems, allow the ETRs of individual families to be calculated.

This paper analyses ETRs in 2007-08, including changes introduced in the 2007 Budget. Section 2 of this article analyses the ETRs of a low, average and high income family as the father works full-time and the mother increases her working hours from zero to full-time. The impact of childcare costs and the receipt of Rent Assistance are also analysed. Section 3 of this article compares the labour force participation of partnered mothers in 1996-97 and 2003-04 including by the father's income and the age of the youngest child in the family. Section 4 concludes.

Figure 1 **Family payments received by a couple with two children aged 4 to 10, by level of private income, 1996-07 and 2006-07**



Data source: STINMOD calculations. It is assumed that one parent stays home and that there are no child care costs.

2 Hypothetical families

2.1 Methodology

This section examines how the incomes of three hypothetical (or ‘illustrative’) families are affected when one parent increases their working hours and earnings, using the hypothetical module of STINMOD/06A. For each family, the father earns a constant weekly income. The mother increases her hours over eight incremental scenarios from no work to full-time, earning an assumed hourly wage. The family’s ETR is calculated for the increase in private (‘earned’) income between each hours scenario, as one minus the change in the family’s disposable income divided by the change in the family’s private income. That is:

$$ETR = 1 - \frac{\text{Change in family disposable income}}{\text{Change in earnings}}$$

A ‘low’, ‘average’ and ‘high’ income family are simulated. The fathers’ weekly incomes are based on ABS average weekly total earnings for male employees in 2006-07, and the mothers’ wages on ABS full-time adult female ordinary time average weekly earnings, divided by 38 hours. The families’ incomes are as follows:

Family 1: Father earns \$512 per week; Mother earns \$12.30 an hour. This is half the ABS average weekly earnings for men and women respectively in 2006-07.

Family 2: Father earns \$1,024 per week; Mother earns \$24.60 an hour. This is based on the mean ABS average weekly earnings in 2006-07.

Family 3: Father earns \$1,536 per week; Mother earns \$36.86 an hour. This is 1.5 times the ABS average weekly earnings for men and women in 2006-07.

Each family is first simulated with the assumption that they have one child in long day care (LDC) and one at school, and then with the assumption that they have two school-age children and do not require childcare. The cost of childcare is assumed to be five dollars an hour.

The eight scenarios of the mothers' working hours, and corresponding hours of childcare required (when it assumed the family has a child in LDC) are as follows:

Scenario	Paid Working Hours	Childcare Hours
1. Half a day	3.75	5
2. One day or two half days	7.5	10
3. One and a half days work	11.25	15
4. Two days work	15	20
5. Two and a half days	18.75	25
6. Three days	22.5	30
7. Four days	30	40
8. Full-time	38	50

Families 1 and 2 are simulated both with and without the assumption that they are paying \$200 a week rent. This is to assess the impact of receiving Rent Assistance on their ETRs. As Family 3 does not receive any pension or allowance income, they are not eligible for Rent Assistance. Therefore renting or not renting would not make a difference to Family 3's ETRs and the assumption of \$200 rent a week is constant.

2.2 The lower income family

Family 1 is a on a lower income. Whether Family 1 rented or not made no difference to their ETRs, as even when the renting mother was working full-time their income had not reached a level where it would begin to be withdrawn. Thus because the non-renting family would not receive this payment at all, and the renting family

would receive it constantly, their ETRs are the same although the family receiving Rent Assistance would have a higher income.

Figure 2 **Family 1 with one child in LDC and one at school, 2007-08**

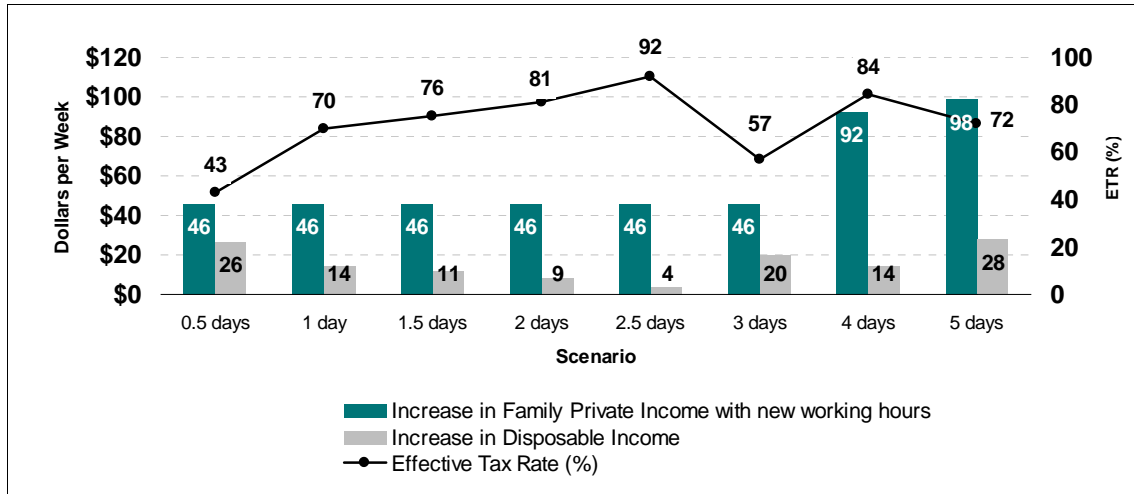
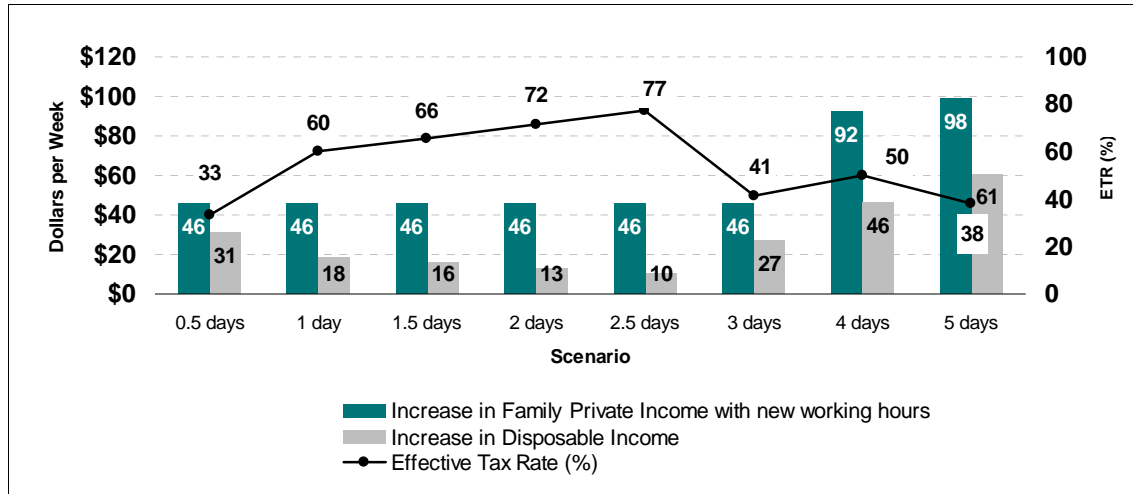


Figure 2 shows the experience of Family 1 assuming that they have one child in LDC and one of school-age who does not require childcare. For each incremental increase in the mother’s hours after one half day their ETR remains well above 50 cents in the dollar. When the mother takes on half a day of work, the family’s ETR is 43 per cent, that is, they keep 57 cents in each dollar of her new earnings, after which they will keep even less of each increase. That is, once she works for half a day or more she is effectively working for a maximum after-tax wage of about \$7.00 an hour.

By two and a half days per week the family is no longer eligible to receive any income from government allowances (that may have included Newstart or Youth Allowance for example), from which they received \$110.30 a week when the mother was not working. The ETR peaks at 92 per cent as she increases her hours from two to two and a half days a week, and keeps \$4.00 of a \$46.00 increase in private income. This means that she retains only about 98 cents an hour for each of the additional hours in this transition. This seems to be primarily driven by the loss of \$27.60 of allowance income at this point.

Figure 3 Family 1 with two school-age children, 2007-08



Next the family’s experience assuming that both children were at school was simulated. The family without a child in childcare has a lower ETR in each hours scenario, although it remains high in most scenarios for this family also.

FTB is initially slightly lower for the family with two school-age children, but is ultimately reduced to the same level of \$197.40 as that of the first family. Allowance income is the same for both families also, being fully withdrawn by two and a half days of work each week. This suggests that childcare costs are possibly the major driver of higher ETRs for the family with a child in LDC.

2.3 The middle income family

Figure 4 Family 2 with one child in LDC and one at school, renting, 2007-08

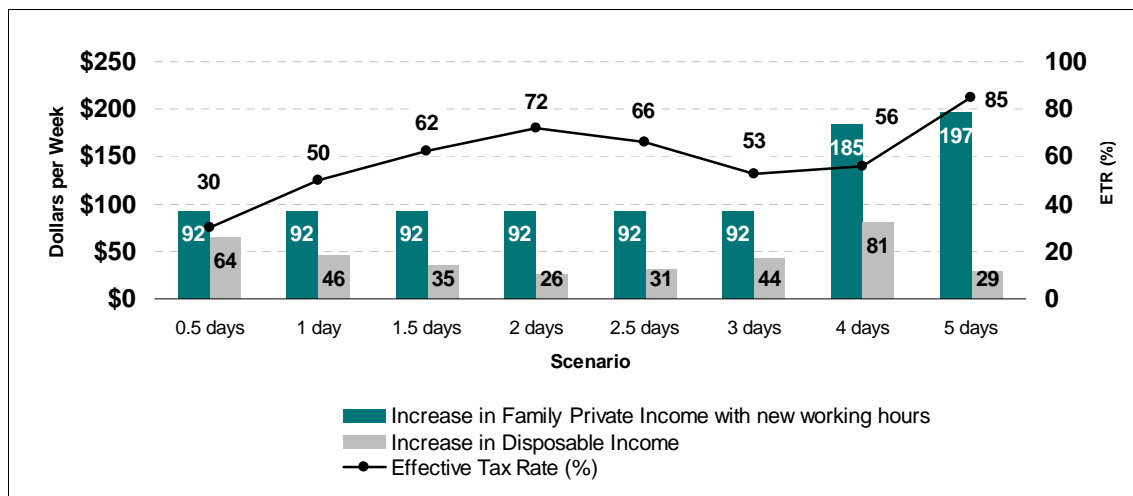
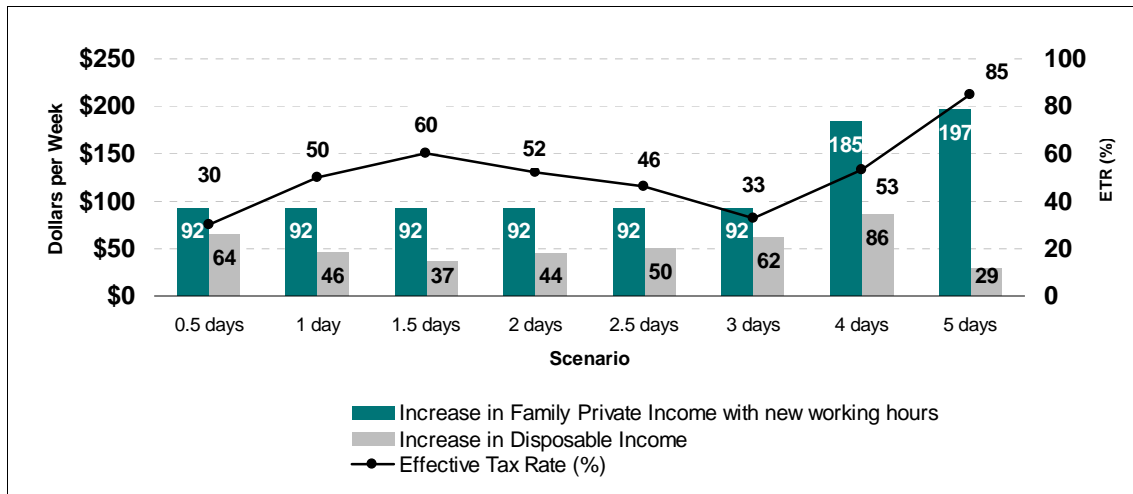


Figure 5 Family 2 with one child in LDC and one at school, not renting, 2007-08



Family 2’s income is based on the average of Australian weekly earnings, with the father earning the average weekly income for employed men in 2006-07 of \$1,023.73 and the mother an hourly wage of \$24.60, based on the average full-time ordinary time earnings of Australian women in 2006-07.

At this level of income Rent Assistance does affect ETRs, as can be seen in Figures 4 and 5. From one and a half days of work for the secondary earner onwards ETRs are higher for the renting family, as their rent assistance is withdrawn. When the mother takes on five days of work, Rent Assistance has been completely withdrawn and the ETRs of both the renting and non-renting family are the same from that point on.

Generally Family 2’s ETRs are lower than those of Family 1, except as the mother nears full-time hours. The fact that Family 2 is eligible for less FTB and no allowance income from the outset contributes to this. However Family 2, especially when renting, does experience high ETRs at many points throughout the mother’s transition to full-time work. As she increases her hours from four to five days, the family’s ETR increases to 85 cents in the dollar, meaning she ‘takes home’ \$3.69 of her gross hourly wage of \$24.60. This is driven by a substantial reduction in FTB (from \$72.70 to \$35.10 weekly) and a simultaneous increase in income tax paid (from \$293.90 to \$366.10 weekly).

Figure 6 Family 2 with two school-age children, renting, 2007-08

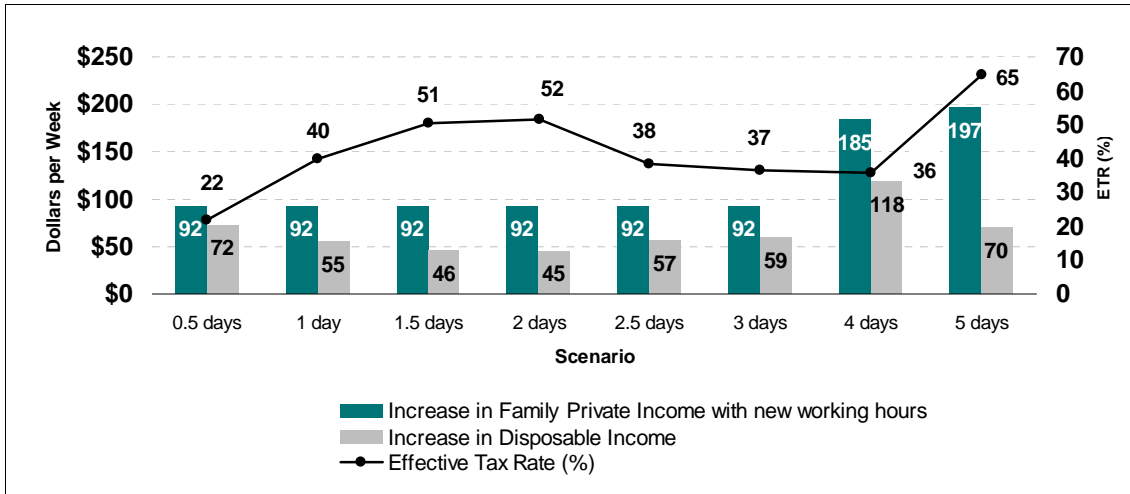
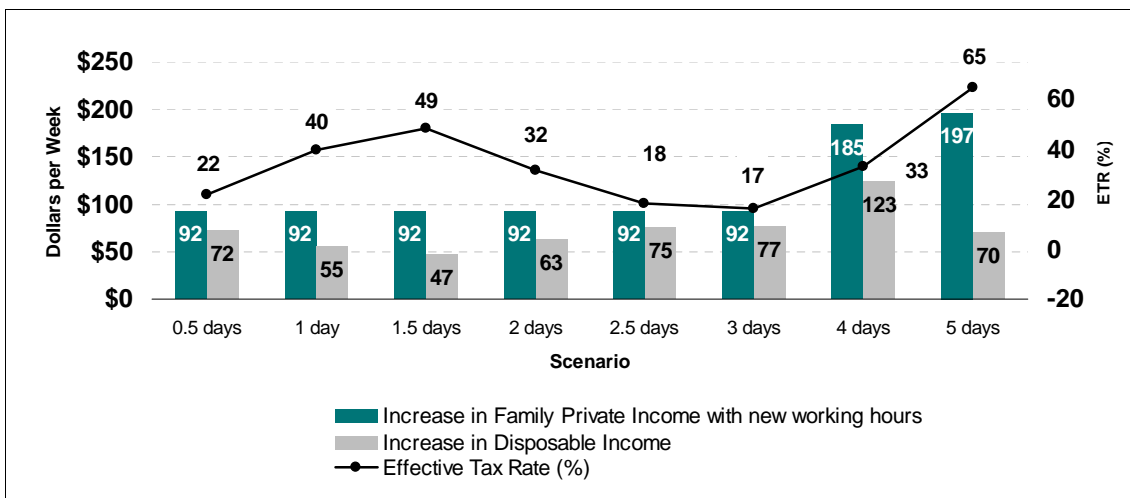


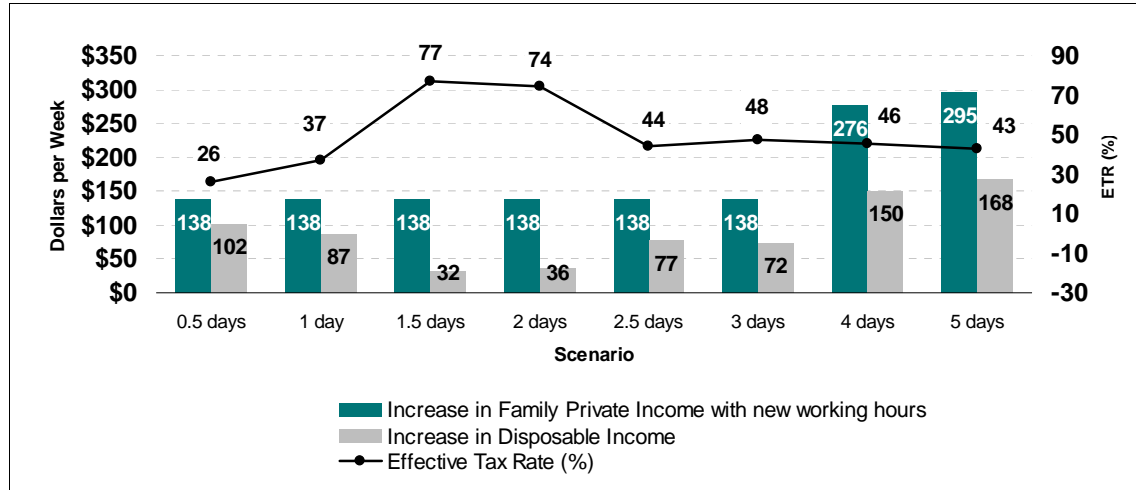
Figure 7 Family 2 with two school-age children, not renting, 2007-08



When it is assumed that Family 2 has two children of school age, thus not requiring childcare, ETRs are lower with each incremental increase of the mother’s hours than for the family with one child in LDC. FTB is initially a little lower for the family not requiring childcare beginning at \$238.40 compared to \$257.40 for the family with one child in LDC, although for both families it is reduced to \$35.10 weekly when the mother works full-time. The family’s ETR peaks at 65 per cent when the mother increases her hours from four to five days a week, meaning that she ‘takes home’ about \$8.60 an hour.

2.4 The higher income family

Figure 8 Family 3 with one child in LDC and one at school, renting, 2007-08

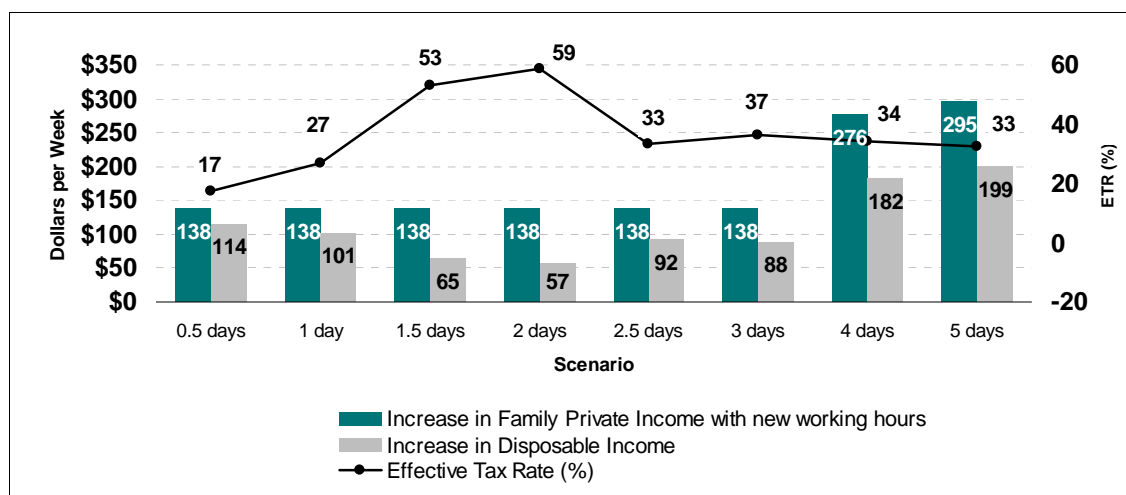


Family 3 is on a relatively high income, with both the mother and father earning one and a half times the average. The father earns \$1,536 per week and the mother \$36.86 an hour.

Family 3's ETRs are generally lower in each scenario than those of the other families, given the same childcare assumptions. Both with and without one child in LDC, Family 3 only experiences ETRs greater than 50 when the mother extends her working hours from one to one and a half days, and then to two days a week.

The lower ETRs of Family 3 are attributable to the fact that they are eligible for less government assistance. Initially the family's FTB is relatively low at \$155.00 for the family with a child in LDC and \$136.00 for the family with two school age children. For both it is completely withdrawn when the mother begins to work two days a week. Family 3's ETRs peak when she increases her hours to one and a half days a week in the family with one child in LDC and to two days a week for the family with two school-age children. For the family with one child in care the ETR at this point is 77 cents in the dollar, meaning that the mother's take-home wage for the additional hours is about \$8.48 an hour. For the mother with two school age children the ETR is 59 cents in the dollar, giving her a take-home wage of approximately \$15.11. By the time the mother is working full-time the family's ETR has reduced to 43 cents in the dollar for the family with a child in care and 33 cents in the dollar for the family with two school age children, in contrast to the experience of Family 2 whose ETRs peak when the mother works full-time.

Figure 9 Family 3 with two school-age children, renting, 2007-08



3 The labour force participation of mothers

So how have Australian mothers responded to these possible disincentives to increase their labour force participation? This section presents an analysis of the labour force participation of partnered mothers in Australia, comparing the ABS *Survey of Income and Housing Costs* from 1996-97 and the most recent issue from 2003-04. For both years, the subset of 'partnered mothers' was defined as the female parent in an income unit defined as a couple with dependent children. In 1996-97 this included an estimated 2,057,009 women and in 2003-04, 2,123,878 women. The section compares labour force status and hours worked by partnered mothers in the two years, as well as how it differed with the father's income, and with the age of the women's children.

The scope to draw conclusions about the effect of the ETRs shown in Section 2 on mothers' labour force participation is limited by the fact that Section 2 represents the 2007-08 system, while the data presented in Section 3, although the most recent data available, does not reflect the further expansions of family payments in later budgets. Also, this analysis of mothers' labour force participation does not capture the impact of the mother's wage, or the non-monetary values of work that may entice her to join the workforce regardless of ETRs. This section does however provide insight into how partnered mothers' labour force participation has changed over this eight year period in which family payments, and thus perhaps incentives to reduce participation, were expanded.

As is widely known, the labour force participation rates of women have been increasing steadily during the past few decades (Kelly et al, 2005). This is reflected in

Figure 10 which shows that the rate of female employment has increased across various family types between 1996-97 and 2003-04. Figure 10 shows that in spite of the high ETRs that partnered mothers might be facing as shown in Section 2 of this paper, the proportion of the group that is working has increased. This indicates that the expansion of family payments over this period has not deterred mothers from working; instead a greater proportion are joining the workforce.

Over this period, the rate of employment for partnered mothers increased by almost 12 per cent, from 59 per cent to 66 percent of all partnered mothers being employed full or part-time. Notably the greatest increase in female employment was among sole parents, whose rate of employment increased by 30 per cent.

Figure 10 Percentage of women aged 20-49 years employed full or part-time by family type, 1996-97 and 2003-04

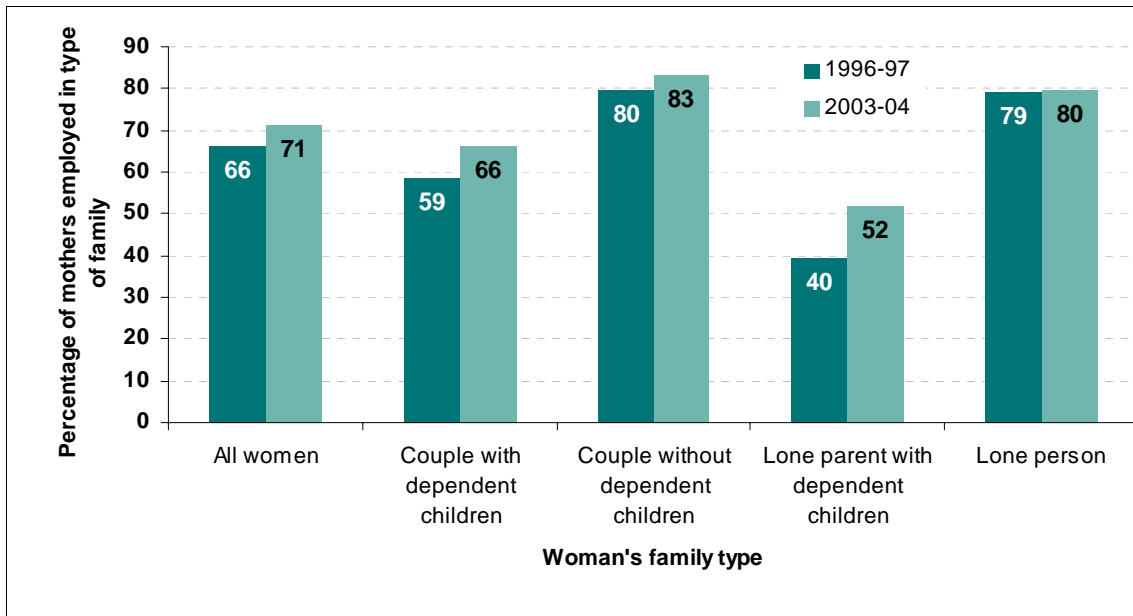
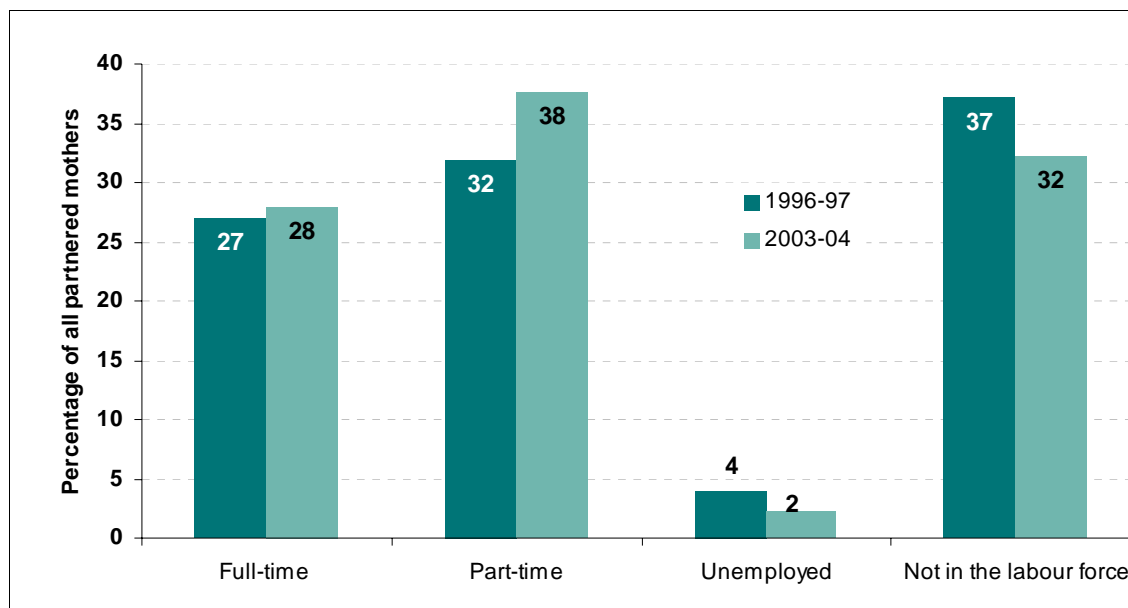


Figure 11 Labour force status of partnered mothers, 1996-97 and 2003-04

As Figure 11 shows, the rate of both full and part-time employment of partnered mothers was greater in 2003-04 than in 1996-97, and less mothers were unemployed or not in the labour force. The increase in part-time employment was greater than that of full-time employment. It is possible that this is related to the higher ETRs faced by many mothers on middle incomes as they near full-time hours, as demonstrated in Section 2 of this paper.

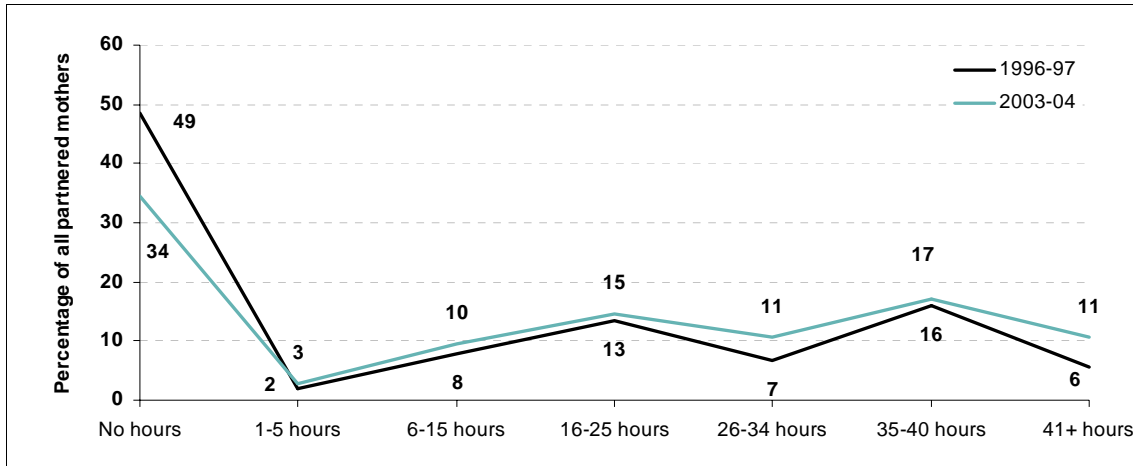
Figure 12 compares the hours worked by partnered mothers in the two years, based on the 'hours worked in main and second job' variable in the ABS surveys¹. The only category to have decreased in 2003-04 is the percentage of mothers not working, with the proportion of mothers in each other category of working hours increasing between 1996-97 and 2003-04. The greatest proportion of mothers in both years was working between 35 and 40 hours a week and the smallest proportion in both years between one and five hours a week.

Notably a lesser proportion of mothers work 26-34 hours weekly than those in the 16-25 and 35-40 hour brackets. This may be due to the structure of hours favoured by employers; however this bracket does cover the four day scenario of Section 2, in which several of the simulated families experienced high ETRs, especially Family 1 on the lowest income when they were assumed to have one child in LDC. The

¹ The hours worked have been categorised to compare as closely as possible with the hours scenarios in Section 2, given the categorisation used in the ABS data in both years.

proportion of mothers in this category was greater in 2003-04 than in 1996-97 however. Notable also is in the increase in the proportion of mothers working long hours of 41 or more a week.

Figure 12 Hours worked by partnered mothers, 1996-97 and 2003-04



Building on Section 2, a point of interest was how the father’s income relates to the labour force participation of the mother. To do this the subset of mothers were divided into quintiles of the fathers’ income. Quintiles were created by ranking all the fathers by their total private income and then dividing them into groups of 20 per cent². Table 1 shows the average weekly earnings of fathers in each of the income quintiles, in 2004 dollars.

Table 1 Average weekly earnings for partnered fathers in each quintile, 1996-97 and 2003-04, 2004 dollars

Quintile	All partnered fathers	Lowest 20%	Second	Middle 20%	Fourth	Highest 20%
	\$	\$	\$	\$	\$	\$
1996-97	889	190	550	785	1,056	1,863
2003-04	1,017	227	622	858	1,147	2,228

Note: in 2004 dollars.

Source: ABS Survey of Income and Housing Costs, 1996-97 and 2003-04

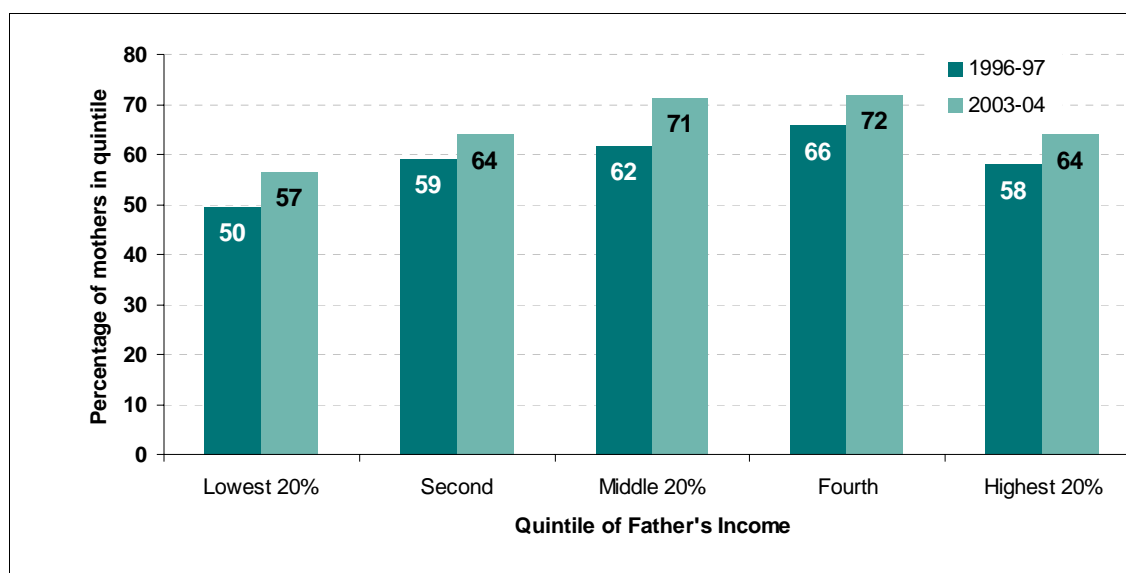
Figure 13 shows that partnered mothers increased their rate of employment across all income groups. As shown in Figure 13, the rate of employment for mothers increases

² Negative incomes were reset to zero.

with the fathers' income, until the top quintile where it decreases slightly. Although ETRs tended to be higher for the lower income families shown in Section 2, the lowest and middle quintiles experienced the greatest proportional growth between 1996-97 and 2003-04 (14 and 14.5 per cent respectively).

However, the rate of employment in the bottom two quintiles remained below that of the middle and fourth quintiles in both years. This may support the wealth of Australian and international research that indicates that the labour supply of secondary earners (often mothers) and especially those in lower income households is most elastic, and thus responsive to monetary incentives and disincentives (Kalb et al, 2002, Breunig et al, 2005, Aaberge et al, 2007).

Figure 13 Partnered Mothers in Full and Part-time Employment by Father's Income, 1996-97 and 2003-04



Figures 14 and 15 compare rates of full and part-time employment for mothers by the quintile of the fathers' income. It shows that in the highest two quintiles the rate of full-time employment has in fact decreased, although it has increased for each of the other quintiles. The incomes of the fathers in this group ranged from \$991 to \$1,369 before-tax weekly in 2003-04 and from \$908.80 to \$1,233.92 in 1996-97 (in 2003-04 dollars, uprated based on ABS average total weekly earnings for males in November 1996 (\$680.20) and November 2003 (\$891.70)). Thus the incomes of the fathers in the fourth quintile are probably most like those of the Family 2 father in Section 2. As shown in Section 2, Family 2 experienced high ETRs (of up to 85 per cent for the family with one child in LDC, both when renting and not renting) as the mother took on full-time work. This may suggest that high ETRs experienced when the secondary earner works full-time may encourage mothers in this income group to limit their working hours. However, the two top quintiles also experienced the

greatest increase in part-time employment of mothers, in spite of evidence in Section 2 that higher income families experience high ETRs when the secondary earner works part-time.

Figure 14 Partnered Mothers in Full-time Employment by Father's Income, 1996-97 and 2003-04

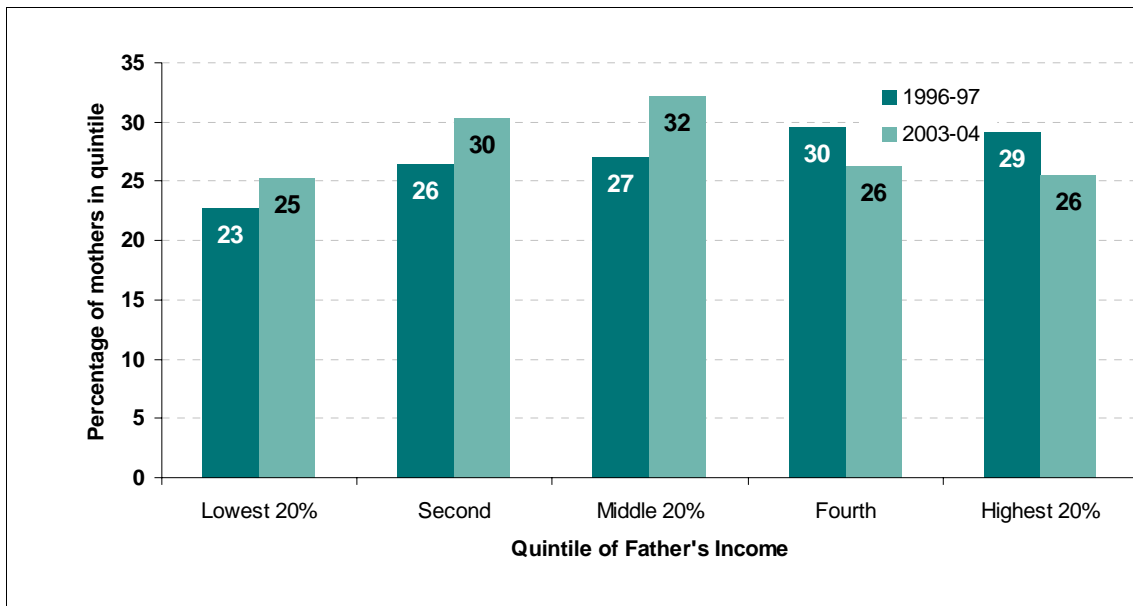
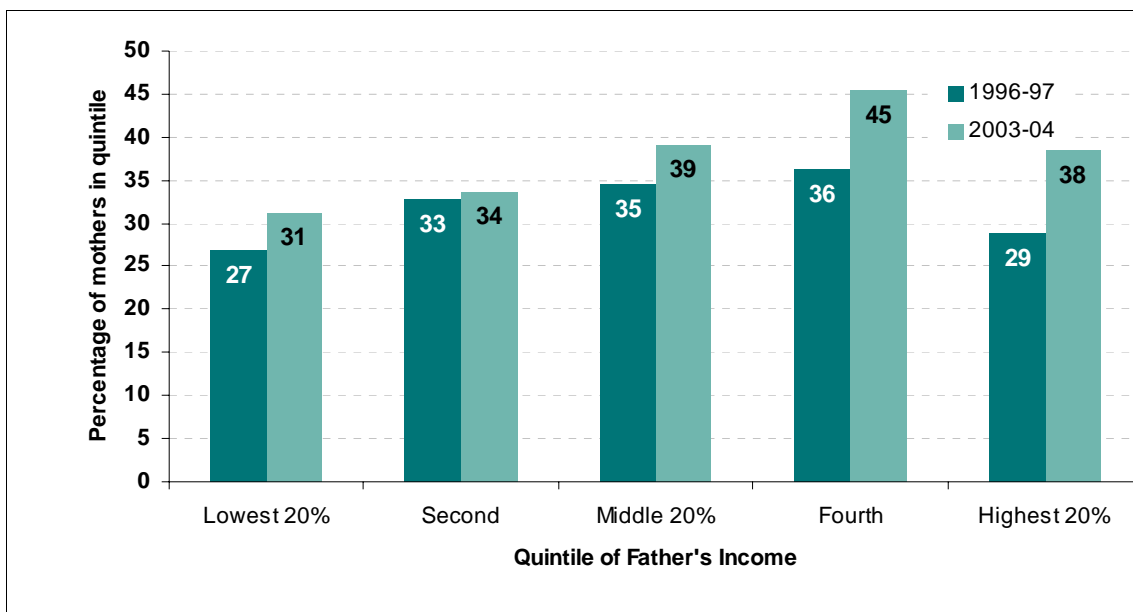


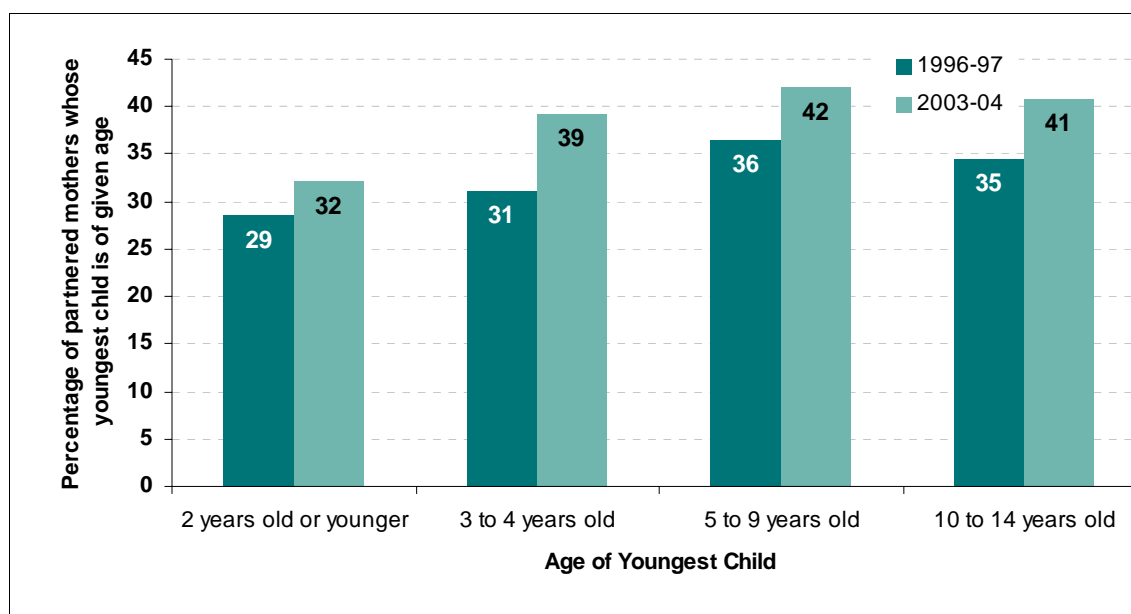
Figure 15 Partnered Mothers in Part-time Employment by Father's Income, 1996-97 and 2003-04



Across the spectrum of their partners' incomes, and thus the family assistance available to them, mothers increased their participation in the work force between 1996-97 and 2003-04. This suggests that other factors including the income available to the mother, and non-income factors have a substantial impact on mothers' labour force decisions.

Perhaps a key non-income factor in these decisions is the age of the children in the family, by which the mothers' labour force status was also compared.

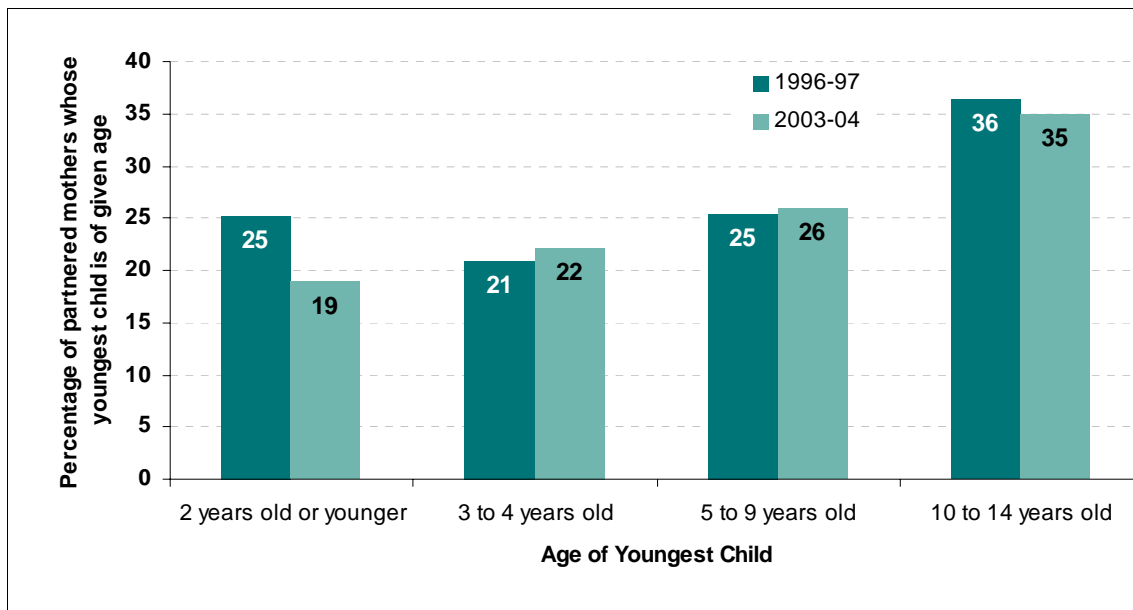
Figure 16 Partnered Mothers in Part-time Employment by Age of Youngest Child, 1996-97 and 2003-04



As shown in Figure 16, the rate of part-time employment was greater in 2003-04 for partnered women with children in each age group under 15. The greatest increase was for those with children aged three to four.

The picture of full-time employment was quite different however. Unsurprisingly the rate of full-time employment for mothers increased as the age of the youngest child did. Most notably the rate of employment for mothers with a child aged two or under fell from 25 per cent in 1996-97 to 19 per cent in 2003-04. This change might reflect the combined impact of childcare costs and increased access to family payments. The rate of full-time employment for mothers of other children below school-age (three to four year olds) rose slightly by nearly five per cent, similarly to the rate for those with children aged five to nine, which rose by four per cent. Interestingly the full-time employment of mothers of 10-14 year olds, perhaps requiring less childcare, fell by nearly three per cent.

Figure 17 **Partnered Mothers in Full-time Employment by Age of Youngest Child, 1996-97 and 2003-04**



The analysis in Section 3 has shown that generally the labour force participation of mothers was greater in 2003-04 than 1996-97. This does not necessarily suggest that the substantial ETRs faced by families shown in Section 2 have not influenced mothers to decrease their labour force participation. The participation rate of Australian mothers, while above the OECD average, is below that of the 'high participation countries' (OECD, 2006:134). The way in which families balance their work and family commitments is the result of a myriad of factors, among which ETRs and the availability of government assistance would likely have an impact to varying degrees.

4 Conclusion

Section 2 of this paper shows that generally mothers in the hypothetical families analysed face substantial ETRs as they increase their work force participation. ETRs were generally highest for Family 1 on the lowest income, and lowest for Family 3 on the highest income. For Family 1, ETRs were generally high throughout the mother's transition to full-time work. For the middle income family (Family 2), ETRs peaked at very high levels as the mother took on full-time employment. Family 3's ETRs were highest when the mother worked one and a half or two days a week, as the family became ineligible for the last of their benefits.

Families receiving Rent Assistance had higher ETRs also, as they had more to lose as their incomes increased. Families with children under school-age, with assumed childcare costs, also naturally faced greater disincentives for the mother to increase her workforce participation.

In spite of the high ETRs experienced by the hypothetical families in Section 2, Section 3's comparison of labour force participation of partnered mothers in 1996-97 and 2003-04 shows that mothers have generally increased their participation. Although government family payments have been expanded over this period, more partnered mothers are working and working longer hours. Across all quintiles of the fathers' income, mothers have increased their rates of employment, although rates have remained lowest for those in the lowest quintile. The rate of full-time employment for mothers whose partners' earnings are in the two highest deciles actually decreased between 1996-97 and 2003-04, while these groups experienced the greatest growth in part-time employment. The rate of full-time employment does increase with the age of the woman's youngest child. A decrease in the full-time employment of mothers whose youngest child is under two between 1996-97 and 2003-04 may be indicative of the impact of expanded access to family payments.

The results presented in this paper suggest that even though family payments have been expanded, and mothers can face high ETRs, their labour force participation has increased, generally in terms of both employment and hours worked. This suggests that perhaps many families feel the need to increase their incomes beyond that which is available from one income-earner and government assistance, or also that non-income factors are encouraging women into the workforce.

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