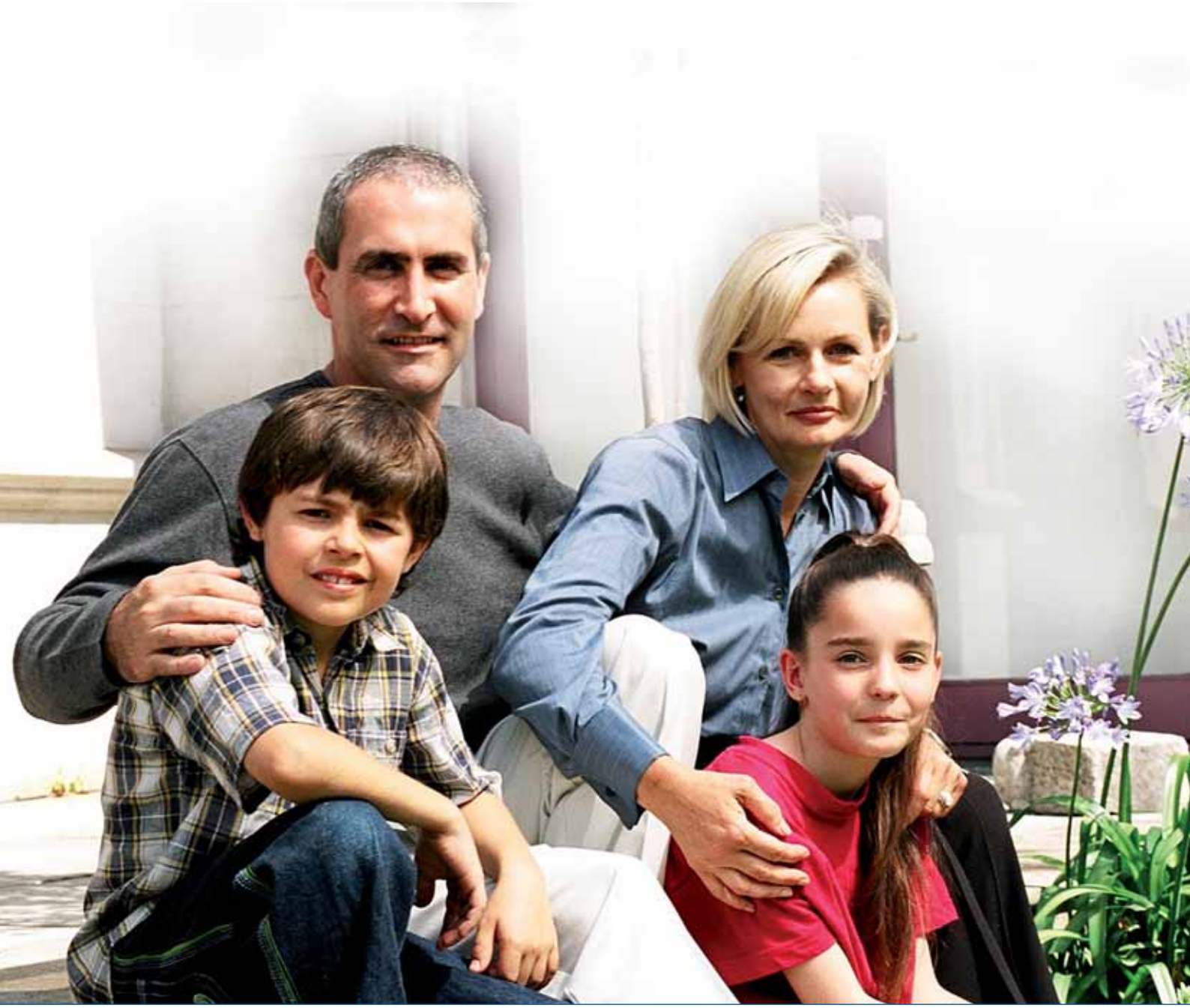
Trends in effective marginal tax rates 1996-97 to 2006-07

AMP.NATSEM Income and Wealth Report Issue 14. September 2006



Contents

1. Foreword

Governments face a delicate balancing act in setting means-tested taxation programs.

They must balance offering financial help to the people who need it most against the need to ensure that this financial help does not discourage these people from working, or penalise them for doing so.

The 14th AMP.NATSEM Report explores effective marginal tax rates (EMTRs), or how much of an additional dollar of income is kept by Australians after income tax is deducted and means-tested Government support is withdrawn.

The study shows that almost nine in every 10 working age Australians face an effective tax rate in their next dollar of income of 40 percent or less. Therefore the overwhelming majority of working age Australians do not face high EMTRs.

Average EMTRs increase steadily across the bottom half of the income spectrum as income rises, peaking at 35 percent for individuals in the fifth and sixth income deciles.

Today, an estimated 7.1 percent of working age Australians face an EMTR over 50 percent; this represents 910,000 Australians.

Almost two-thirds of these 910,000 Australians are parents living with their partner and dependent children who have not yet left the nest. Seven in every ten are middle income families or singles, on incomes that place them in the middle 40 percent of the Australian income distribution.

The past 110 years have seen sweeping changes in tax and cash transfer programs.

Interestingly, this has had little impact on EMTRs for the lowest four deciles. High EMTRs have, however, gradually extended their way up the income spectrum, due principally to the expansion of the Family Tax Benefit.

Therein lies one issue. On the one hand, families with children are getting much greater Government support, on the other, this may encourage some people to work less.

The importance of the interaction between the Government's assistance policies and the tax system has never before been so apparent.

Clearly, it is important that people, especially those with children, know exactly which Government benefits they can claim.

It's a case of use it or lose it.

People shouldn't fall into the trap of thinking Government support is only for a small section of the community. People who think they may not qualify may be surprised to learn they are in fact entitled to some financial relief from the Government. Some effort to research available benefits through Centrelink or some good advice from a financial planner could reap worthwhile rewards.

The picture of those facing high EMTRs also looks significantly different between the sexes: 10 years ago men were more likely to face high EMTRs than women, but this trend has reversed.

Not only are some women experiencing high EMTRs but they are faced with a delicate balancing act between income level and the government support they receive.

Putting aside personal reasons, when making a decision about returning to work after having a child, women and their partners also need to consider the financial juggling act they may face. A trade-off is often on the cards.

In some sense, Governments face exactly the same trade off. Two possible solutions to Australian's ageing population and demographic challenges are to increase work participation rates and to encourage families to have more children. High EMTRs flowing from increased family benefits might increase the birth rate, but at the same time encourage women to work less. This is no easy challenge.

Managing the balance between the tax system and financial assistance policies is clearly a vital area for both Government and families.

AMP publishes reports like this one as a service to the community and to our customers, who make up one in four working Australians. The objective of this report is to make our readers aware of current issues and trends, and how these could affect them.

Andrew Mohl
Chief Executive Officer
AMP

When the top income tax rate is 45 cents in the dollar, how is it possible "for some 900,000 working age Australians today to face EMTRS of more than 50 percent?"

2. Introduction

Australians often complain that they pay too much tax. But who really faces the highest tax rates? And has the picture changed very much over the past decade?

This AMP.NATSEM report examines effective marginal tax rates in Australia today – that is, the effective tax rate faced on the next dollar of income earned by families or individuals. It describes the characteristics of Australians facing high effective tax rates, looking at such issues as whether they:

- are low or high income earners
- are married or single
- have children or are childless
- work full-time or are unemployed.

This report also shows how the characteristics and numbers of Australians facing high effective tax rates have changed during the past decade, revealing whether more working age Australians face high effective tax rates now than 10 years ago.

2006-07 Income tax scales

Taxable income	Marginal tax rate
< $6000	0 (no tax paid)
$6000 to < $25,000	15 cents in each dollar above threshold
$25,000 to < $75,000	30 cents in each dollar above threshold
$75,000 to < $150,000	40 cents in each dollar above threshold
$150,000 plus	45 cents in each dollar above threshold

Note: In addition to these basic tax scales, there are also a very wide range of tax concessions and allowances, as well as the Medicare levy.

2.1 What are "effective marginal tax rates"?

An effective marginal tax rate (EMTR) shows how much of an additional dollar of income is kept by individuals and families, after the payment of income tax and the withdrawal of any means-tested cash payments from government (such as age pension, Family Tax Benefit and Newstart Allowance). For example, an EMTR of 70 percent means that only 30 cents is retained "in the hand" after a $1 increase in private income. "Private income" means the income received from personal effort or investments, including wages and salaries, interest, dividends and rental income. It specifically excludes cash payments from government, such as age pension or Family Tax Benefit. Put simply, private income is the income that individuals and families receive as a result of their own efforts.

It is important to appreciate that an effective marginal tax rate does not tell us anything about the total amount of tax paid by an individual or family. An EMTR just shows us how much of a $1 increase in private income an individual will lose to increased taxes or reduced government benefits. It is quite different to an average tax rate, which typically shows total income tax paid as a percentage of total income. Thus, while an EMTR of 50 percent means that an individual will keep half of their *next dollar* of private income, an average tax rate of 50 percent means that half of the *total income* of an individual will be taken in income tax.

The recent major changes to the income tax scales have focused attention on the tax rates paid by Australians. In just four years, the Federal Government has more than doubled the threshold at which the top marginal income tax rate cuts in – from $60,000 in 2002-03 to $150,000 today. At the same time, the top marginal income tax rate has been reduced, from 47 cents to 45 cents in the dollar. A casual glance at the income tax scales that apply today, shown in the box *2006-2007 Income tax scales,* would suggest that all Australians should keep at least half of the next dollar of income that they earn – as even those on the highest incomes pay no more than 45 cents in the dollar in income tax (plus usually another 1.5 cents in Medicare levy).

So how is it possible for some 900,000 working age Australians today to face EMTRs of more than 50 percent? The answer is that Australia has developed an extremely complex system of means-tested government cash payments and tax concessions, designed to target scarce resources to those "most in need". By definition, means-tested programs require that government assistance be progressively withdrawn as private resources increase – otherwise millionaires would be receiving government cash handouts intended for the poor.

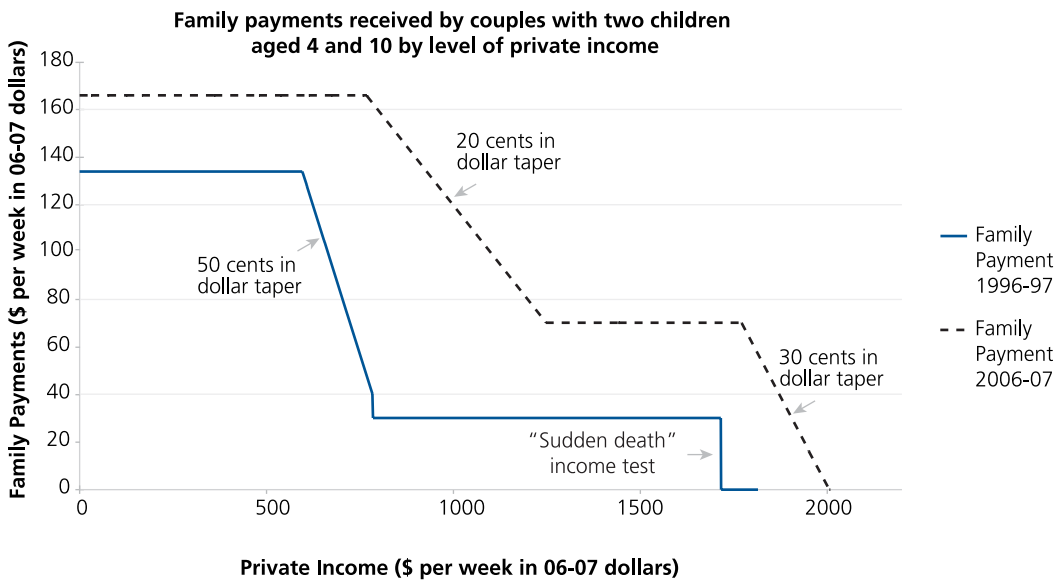
But means-testing necessarily creates high EMTRs – and particularly when the means-tests for two or more programs overlap and/or there is also a liability for income tax.

Australia's means-tested tax and spending programs are so extraordinarily complicated that they cannot be easily summarised here[1]. But some general trends over the past decade are apparent. First, there has been a major expansion in means-tested programs of cash assistance to families with children – today called the "Family Tax Benefit". Even after taking out the impact of inflation, these programs are much more generous than they were 10 years ago (see the box *Assistance to families with children*).

Assistance to families with children

One of the major areas for expansion of assistance during the past decade has been for families with children. The figure below compares the amount of assistance provided to a couple with two children in 1996-97 and 2006-07, at different levels of private income. Both private incomes and the amount of family payments received are expressed in 2006-07 dollars, so that the amount and extent of assistance can be readily compared.

The figure shows that the real (after-inflation) value of family payments has increased substantially, particularly for families with private incomes between about $700 and $1,300 per week. The slope of the lines represents EMTRs in action – with the first slope in 2006-07, for example, showing the 20 cents in the dollar income test that applies to Family Tax Benefit. The sharp extinction of assistance for high income families shown in the 1996-97 world is a "sudden death" income test (under which all family payment was reduced to zero when income moved $1 above a threshold).



Note: The graph does not include cash transfers and tax rebates provided only to single income families (today called Family Tax Benefit Part B). It contrasts what is today called Family Tax Benefit Part A with the 1996-97 equivalent.

Previous studies have shown that the highest EMTRs are often experienced by lower income earners, including the unemployed

In recent years, the government has reduced the severity of the means-tests associated with the Family Tax Benefit, partly to reduce EMTRs. While in 1996-97 many families would lose 50 cents of family assistance for every one dollar of additional earnings, today this is down to only 20 cents in the dollar across a broad range of family income. Yet despite this, the expansion of family assistance higher up the income spectrum raises the possibility that EMTRs have increased over the past decade for families with children.

A second feature of the landscape over the past decade has been the extension of means-tested assistance delivered via income tax concessions rather than cash outlays. The value of the Low Income Tax Offset has been quadrupled to $600 since 1996-97 and the Senior Australian Tax Offset has been introduced. These tax concessions, like the other tax concessions for social security pensioners and allowees, are gradually withdrawn as taxable income increases. Their means-tests often overlap with other means-tests, resulting in high EMTRs.

2.2 Why worry about high EMTRs?

In designing means-tested programs, governments face a delicate balancing act. On the one hand, for a given amount of government spending, a tighter means-test means that greater assistance can be delivered to those who need it most. This helps to meet the goal of providing an adequate standard of living for those who, for example, cannot work because they are disabled, retired or can't find a job.

On the other hand, tightly targeted payments may reduce the financial returns from paid work, thus affecting work incentives. Australia's ageing population means that in the future governments will face severe fiscal pressures, with a decreasing proportion of workers supporting an increasing number of retirees (Treasury, 2002; Productivity Commission, 2005). As a result, across the industrialised world, governments are re-examining their tax and transfer programs to see if they create undue incentives to stay out of or leave the labour force (Cotis, 2003).

A high EMTR can mean that, looking at financial benefits alone, for some it is simply not worth working. This creates difficulties for Australian families and lessens the impact of policies aimed at promoting workforce participation. The interaction of government assistance policy settings and the tax system is thus a vital issue for both governments and families.

High EMTRs can discourage people from entering the workforce, or working longer hours because the combination of their loss of benefit and/or greater income tax liability diminishes the increase in income they receive from an increase in earnings. This can create "poverty traps", locking families into a situation where it is difficult for them to increase their incomes.

Looking at our whole economy, this interaction of incentives and disincentives has implications for labour supply and economic growth (Gruen, 2006). A key aim of the tax and transfer system is to foster increased workforce participation. EMTRs are a useful way to assess the incentives and disincentives to work that people are experiencing, and how the interaction of the taxation and transfer systems might be impacting on labour force participation.

Certain groups are more likely to experience high EMTRs. Previous studies have shown that the highest EMTRs are often experienced by lower income earners, including the unemployed (Beer, 2003) and people with dependent children, including sole parents. Married mothers whose partners work have been shown in the past to face high EMTRs and disincentives to work (Toohey and Beer, 2004). This is because as family income increases, benefits such as the Family Tax Benefit are reduced or lost. This can decrease the incentives for mothers to work, with adverse implications for their future work and income prospects (Apps, 2006:26). High EMTRs could lead workers to retire rather than remaining in the workforce, with implications for aggregate labour force participation (Nielson, 2005:24) – especially as our population ages.

This report is the first to analyse EMTRs since the implementation of the major changes to taxation and government cash payments on 1 July 2006. This report focuses on Australians aged 15 to 64 years (see Technical Notes for more details of the methodology).

For almost nine in every 10 working age Australians, "the effective tax rate on their next dollar of income is 40 percent or less".

3. Distribution of EMTRs in 2006-07

This section looks at the pattern of EMTRs facing Australians aged 15 to 64 years in 2006-07. These estimates take full account of the changes to income tax and the Family Tax Benefit announced in the recent 2006-07 Federal Budget.

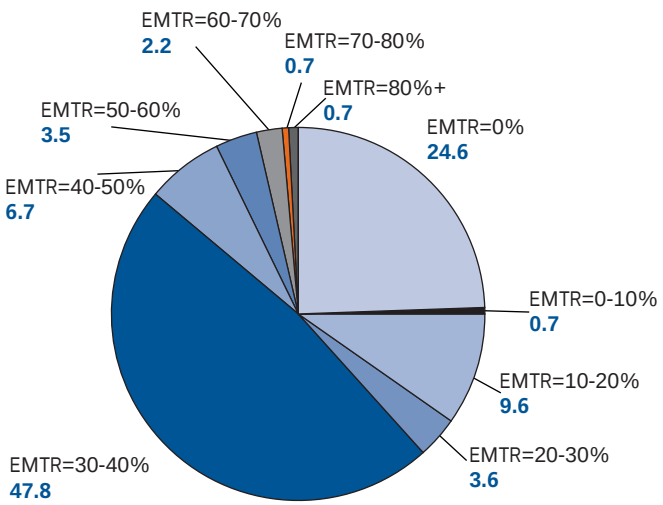
3.1 How many face high EMTRs?

As Figure 1 shows, one-quarter of working age Australians face an EMTR of zero on the next dollar of private income that they receive. This suggests that they are below the threshold for the payment of income tax and not affected by any social security or Family Tax Benefit income tests.

Once Australians move above the income tax-free threshold, they initially encounter a marginal tax rate of 15 cents in the dollar. About another one-tenth of working age Australians face an EMTR of between 10 and 20 percent on their next dollar of income (Figure 1). Just under half of Australia's working age population faces an EMTR of between 30 and 40 percent, making this the single largest group shown in Figure 1. Overall, almost nine in every 10 Australians will keep at least 60 cents of their next dollar of additional income. So, for the overwhelming majority of working age Australians, the effective tax rate on their next dollar of income is 40 percent or less.

The highest marginal tax rate in the income tax system is now 45 cents in the dollar – plus a Medicare levy of 1.5 percent (or 2.5 percent for those above certain income levels without private health insurance). So why do about seven percent of working age Australians face an EMTR of more than 50 percent?

Figure 1. Distribution of effective marginal tax rates in 2006-07



As noted earlier, these are usually Australians who are affected by the income tests for social security payments or Family Tax Benefit, which overlap either with other income tests or with income tax liabilities and the withdrawal of tax concessions. Of those in the 50 percent plus EMTR zone, about half experience EMTRs of 50 to 60 percent (ie about 3.5 percent of all working age Australians). Thus, just under four percent of working age Australians face very high EMTRs of 60 percent or more and less than one percent face EMTRs of 80 percent or more. About 910,000 Australians will keep less than half of their next dollar of private income, out of the 12.8 million working age Australians included within our analysis in 2006-07. Of these, about 460,000 will keep less than 40 cents from their next dollar of income.

3.2 EMTRs by income group

Do affluent or poorer Australians face the highest effective marginal tax rates? To look at this issue, we have ranked all Australians by their family income (or just by their own income if they are single). We have then divided them into 10 equally sized groups, called deciles. The *average* EMTR faced by those within each income decile generally increases as income rises. As Figure 2 shows, the poorest working age Australians in the bottom decile on average face an EMTR of only two percent. This is in sharp contrast to the average EMTR of about 31 to 35 percent experienced by those in the top 60 percent of the income spectrum (deciles 4 to 10). It should be emphasised that the slight dips in the average EMTRs between the sixth and subsequent deciles do not mean that the top deciles pay less tax than the other deciles. This is because we are only looking here at the effective rate of tax paid on the *next dollar* of private income, not at the tax paid on *all* income.

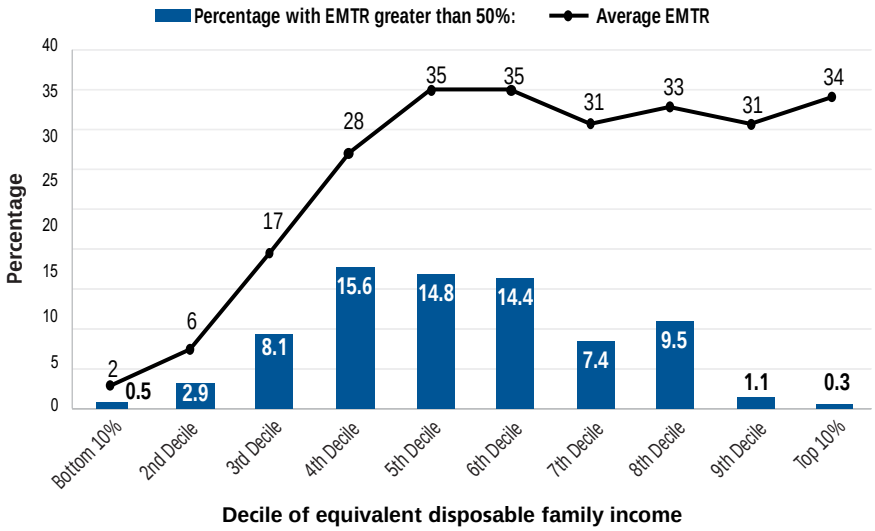
As Figure 2 shows, across the bottom half of the income spectrum, average EMTRs increase steadily as income rises, peaking at 35 percent for individuals in the fifth and sixth income deciles. Around 14 to 15 percent of working age Australians in each of the middle three income deciles also face high EMTRs (defined here and throughout this report as being EMTRs of more than 50 percent). Almost one in every seven adult Australians in the fourth, fifth and sixth income deciles stands to lose more than half of the next dollar that they earn. The average gross incomes of the families and singles in these deciles range from about $40,000 to $75,000 (Table 1), so many are in the income ranges where Family Tax Benefit Part A is being withdrawn.

Once income is high enough to catapult families and singles to the top of the income spectrum, almost no individuals face EMTRs above 50 percent.

There is also a notable increase in the proportion of individuals facing high EMTRs in the eighth income decile, with the average gross income of families and singles in that decile being about $87,000. Around one in every 10 working age individuals in this decile will lose more than half of the next dollar of income earned. Most of these are likely to be parents in couple with children families affected by the "top end" withdrawal of Family Tax Benefit Part A, as the average gross income of couple with children families in the eighth decile is $115,000 (bottom row, in Table 1).

Once income is high enough to catapult families and singles to the top of the income spectrum, almost no working age individuals face EMTRs above 50 percent (final two right-hand bars in Figure 2).

Figure 2. High and average EMTRs, by income group 2006-07



Note: All individuals aged 15 to 64 years have been ranked by the equivalent disposable income of their income unit (see Technical Notes). For couples, this is their combined income whereas, for single persons, this is their own income. The top 10 percent refers to those working age Australians living in income units whose incomes are high enough to place them in the top 10 percent of the after-tax, needs-adjusted income distribution for the whole Australian population.

Table 1. Distribution of effective marginal tax rates, by income group, 2006-07

	Decile of equivalent disposable family income										
Measure	**Bottom 10%**	**2nd Decile**	**3rd Decile**	**4th Decile**	**5th Decile**	**6th Decile**	**7th Decile**	**8th Decile**	**9th Decile**	**Top 10%**	**Total**
Effective marginal tax rate range											
0%	91.3	77.3	45.3	15.4	6.6	4.9	5.8	3.7	3.4	3.7	24.6
0 to 20%	6.7	17.1	16.3	35.9	11.1	8.3	6.9	4.7	4.3	3.0	10.3
20 to 40%	0.2	0.9	23.3	21.9	56.5	64.8	77.0	79.4	89.0	73.6	51.3
40 to 60%	1.4	1.8	6.9	16.7	20.4	16.8	7.7	8.4	2.7	19.4	10.2
60 to 80%	0.1	2.8	7.6	6.3	4.3	4.6	2.6	3.7	0.4	0.0	2.9
80% +	0.3	0.1	0.5	3.8	1.1	0.7	0.1	0.2	0.3	0.3	0.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Average EMTR	**2**	**6**	**17**	**28**	**35**	**35**	**31**	**33**	**31**	**34**	**26**
EMTR greater than 50%											
Percentage	0.5	2.9	9.0	15.6	14.8	14.4	7.4	9.5	1.1	0.3	7.1
Number	8,500	26,000	85,000	170,500	182,500	183,000	103,000	131,000	15,000	5,000	910,000
Average weekly gross income											
For all couples, families and singles	$185	$395	$525	$745	$900	$1,090	$1,315	$1,675	$1,990	$3,405	$1,230
For couples with children only	$405	$645	$780	$1,035	$1,305	$1,535	$1,845	$2,220	$2,545	$4,440	$2,070

Note: All individuals aged 15 to 64 years have been ranked by the equivalent disposable income of their income unit (see Technical Notes). When calculating average weekly gross family income, negative private incomes (eg due to negative business income) have been reset to zero. All income figures have been rounded to the nearest $5. The number facing high EMTRs has been rounded to the nearest 500. Note also that, within the results for each specific decile, cells that contain less than two percent of the relevant population are subject to high sampling error and should be treated with great caution. The final two rows in the table show first, the average gross income of all families and singles in that decile and, second, the average gross income of only couples with children in that decile. Within any given income decile, the gross incomes of couples with children are generally higher, because all families and singles have been ranked by an equivalent income measure which takes account of the number of people that have to be supported by that income. Thus, while a couple with two children with a gross income of $50,000 might be placed in the fourth decile, a single person with an income of $50,000 will be placed in a much higher equivalent income decile, reflecting their higher relative standard of living.

Only about one in every 20 single Australians or persons living as part of a couple without children face EMTRs above 50 percent.

3.3 EMTRs by family type

What types of families record EMTRs above 50 percent, thus keeping less than half of any increase in their income? Just under two-thirds of all individuals facing these high EMTRs live in *couple with children* families (Figure 3). Just under 12.8 million individuals are captured within the scope of our study and about 910,000 of them face high EMTRS, so this represents 574,000 working age Australians living in *couple with children* families. As Figure 3 shows about another 13 percent of those working age Australians facing high EMTRs are, respectively, sole parents, couples without children or singles.

However, while sole parents make up only a relatively small proportion of all those facing high EMTRs, this is largely because they are a much less common type of family. As Figure 8 on page 16 shows, sole parents face a greater risk of experiencing high EMTRs than the other three types of families examined here. Thus, about one in every five sole parents faces an EMTR of 50 percent of more, compared with about one in every seven parents living in *couple with children families*. It must be stressed again that this does not mean that sole parents pay more income tax than couple with children families but, rather, that they face a higher effective tax rate on their next dollar of private income.

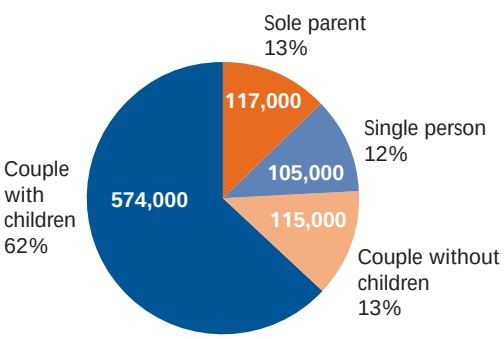
The risk of facing high EMTRs is very low among those without dependent children. Only about one in every 20 single Australians or persons living as part of a couple without children face EMTRs above 50 percent (Figure 8).

3.4 EMTRs by state and territory

Three in every 10 working age Australians facing high EMTRs live in New South Wales. Thus, of the 910,000 Australians who will lose more than half of the next dollar of income they receive, about 270,000 live in New South Wales. Another 215,000 are Victorians, representing almost one-quarter of all those working age Australians facing high EMTRs (Figure 4). Just over one-fifth of all those facing high EMTRs live in Queensland, followed by around one-tenth each for South Australia and Western Australia.

This spread of high EMTRs across the breadth of Australia in part simply reflects where Australians actually live. But there are some interesting differences in the proportion of working age Australians *within* each state and territory facing EMTRs above 50 percent. For example, it is estimated that only three percent of all those working age Australians facing high EMTRs live in Tasmania (Figure 4), partly reflecting the fact that only about 2.4 percent of all working age Australians live in this state. But a Tasmanian of working age is slightly more likely than a Victorian, for example, to face an EMTR of greater than 50 percent – with 8.6 percent of all working age Tasmanians set to lose more than half of their next dollar of income, compared with only 6.9 percent of Victorians. South Australians are the next most likely to face high EMTRs, with an estimated 8.5 percent of working age South Australians expected to lose more than half of their next dollar of earnings.

Figure 3. Distribution of Australians facing high EMTRs, by family type 2006-07

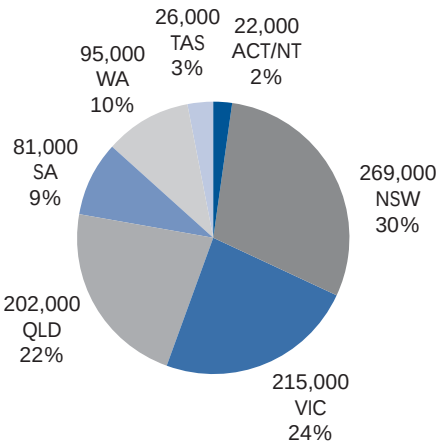


Note: In this and subsequent graphs, "high" EMTRs are defined as those above 50 percent.

The risk is lowest for those living in New South Wales and the two territories (with results not available separately for the ACT and Northern Territory because of ABS data restrictions), at 6.4 percent of working age residents. For Queensland, the rate is 7.9 percent and for Western Australia 7.3 percent.

The relatively low number of people captured in our sample means that we cannot explore the reasons for these differences in too much depth. But it is clear that higher unemployment and different family structures and incomes play a role. For example, if we randomly pick someone from the pool of people facing high EMTRs within each state, in South Australia and Tasmania they are much more likely to be unemployed while, within New South Wales and Victoria, they are much more likely to have a full-time job. Similarly, in New South Wales and Western Australia they are much more likely to be part of a couple with children family while, in South Australia and Tasmania, they are more likely to be single.

Figure 4. Distribution of Australians facing high EMTRs, by state and territory 2006-07



Note: The figure shows the state or territory that the 910,000 working age Australians facing EMTRs of greater than 50 percent live in. All figures rounded to nearest 1,000.

Overall, the average EMTR faced by all working age Australians in 2006-07 was 26 percent.

4. Trends during the past decade

The past ten years have seen sweeping changes in tax and cash transfer programs. In July 2000, the 10 percent Goods and Services Tax (GST) was introduced, accompanied by reductions in income tax and the creation of the Family Tax Benefit. The Family Tax Benefit has since become much more generous and its income test has been liberalised. As noted earlier, there have also been ongoing changes in welfare and tax payments, including the introduction of new tax concessions such as the Senior Australian Tax Offset.

4.1 Changes in distribution

Figure 5 summarises the impact of all these changes on the EMTRs faced by working age Australians. The proportion of working age Australians facing EMTRs of 50 percent or more has increased marginally over the decade, from 4.8 percent in 1996-97 to 7.1 percent of all Australians today. Interestingly, however, this has not resulted from an increase in the proportion of working age Australians facing very high EMTRs.

The numbers affected are small, which means we should treat the estimates with caution as they may be affected by sampling error. But the estimates suggest that the number of working age Australians facing EMTRs of more than 80 percent has fallen during the past decade, from about 110,000 in 1996-97 to about 87,000 today. Given the growth in the population during this decade, this means that the proportion of working age Australians set to keep less than 20 cents from their next dollar of income has also fallen, from one percent in 1996-97 to just under 0.7 percent today. So today, we estimate that only one in every 143 working age Australians is likely to lose more than 80 cents of their next dollar of private income.

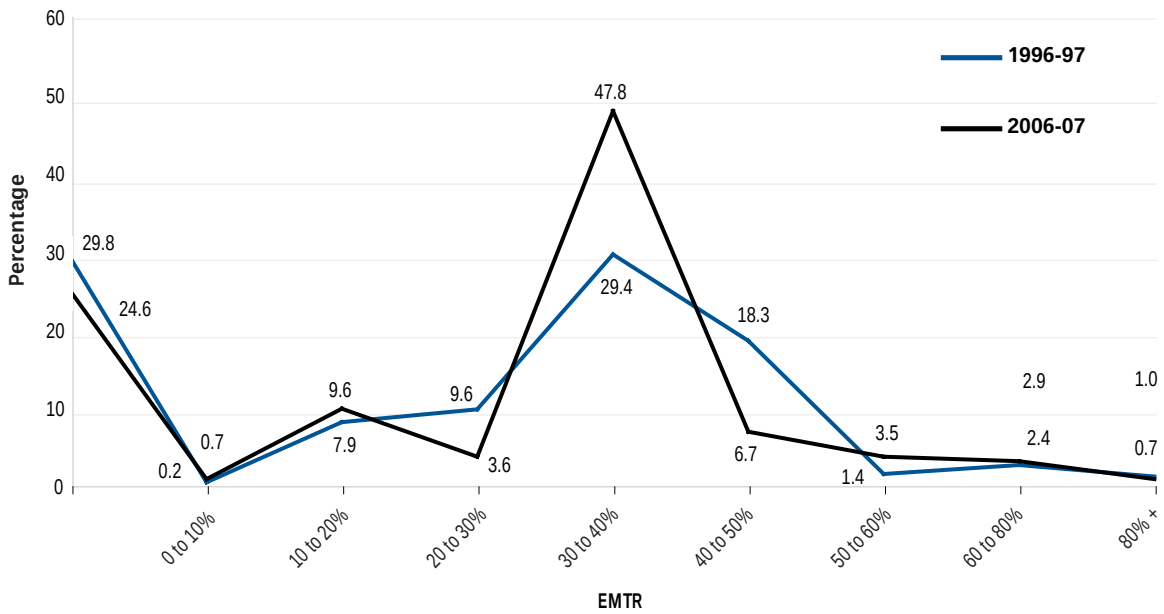
The proportion of all working age Australians facing EMTRs of more than 60 percent has remained almost unchanged, at 3.4 percent in 1996-97 and 3.6 percent now. This means that almost all the growth in high EMTRs that we have seen over the past decade has been among working age Australians facing EMTRs of between 50 and 60 percent.

As Figure 5 also shows clearly, there has also been a large fall in the proportion of working age Australians experiencing EMTRs of between 40 and 50 percent. While almost one-fifth of working age Australians faced an EMTR of 40 to 50 percent a decade ago, today the proportion is down to less than seven percent. Many of these Australians appear to have benefited from a reduction in their EMTRs, reflected in a substantial increase over the decade in the proportion of working age Australians experiencing a 30 to 40 percent effective tax rate on their next dollar of private income – up from 29 percent of working age Australians in 1996-97 to 48 percent today.

Fewer Australians today face a zero EMTR compared with a decade ago, presumably reflecting the increased likelihood of women holding a job (analysed in AMP.NATSEM Report No 12 *May the labour force be with you*), as well as the impact of tax and transfer policy changes.

Overall, the average EMTR faced by all working age Australians in 2006-07 was 26 percent. This was marginally lower than the 27 percent prevailing in 1996-97, despite the substantial increases in real incomes during these 10 years and even though more Australians found jobs.

Figure 5. Distribution of EMTRs in 2006-07 and 1996-97



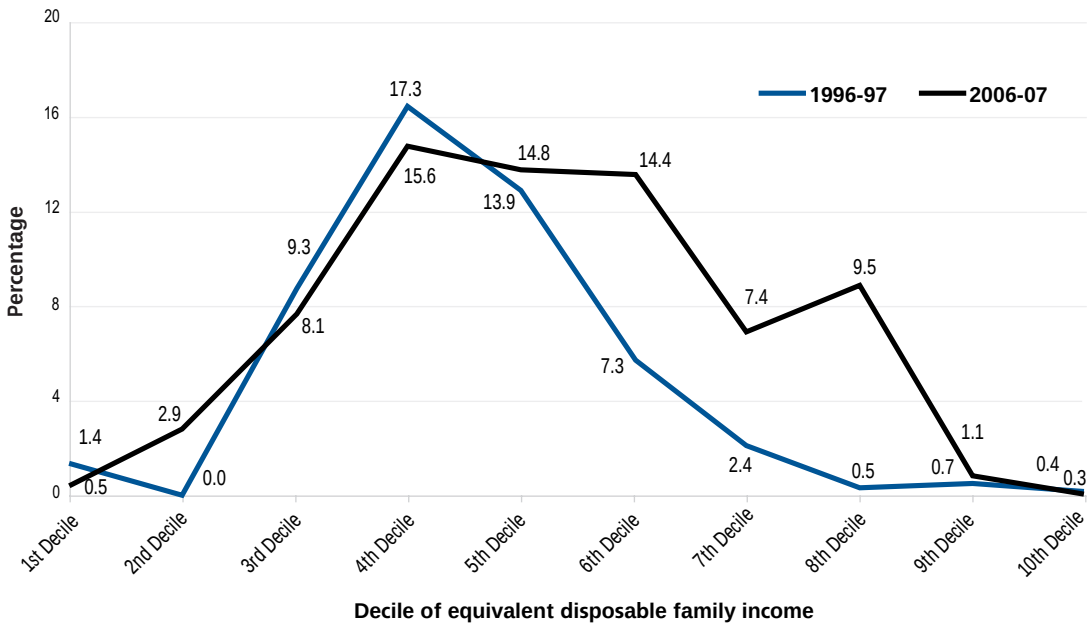
While men were more likely than women to face high EMTRs in 1996-97, today that picture has reversed.

4.2 Changes by income group

Figure 6 traces the proportion of Australians within each income group facing EMTRs of more than 50 percent. While 17.3 percent of those in the fourth income decile could expect to lose at least half of the next dollar of income that they earned in 1996-97, this is now down to under 16 percent. Instead, high EMTRs have gradually extended their way up the income spectrum, due principally to the expansion of Family Tax Benefit.

Today, about one in every seven Australians in the fifth and sixth income deciles face an EMTR of more than 50 percent on their next dollar of income. The change has been most dramatic for the eighth income decile. About one in every 10 working age Australians in the eighth income decile will keep less than 50 cents from their next dollar of private income, up from one in every 200 working age Australians a decade ago. While previous research has suggested that high EMTRs tended to be concentrated among the lower to middle part of the income spectrum, it is clear that they have now also moved into the upper middle part of the income distribution.

Figure 6. High EMTRs, by income group, 2006-07 and 1996-97



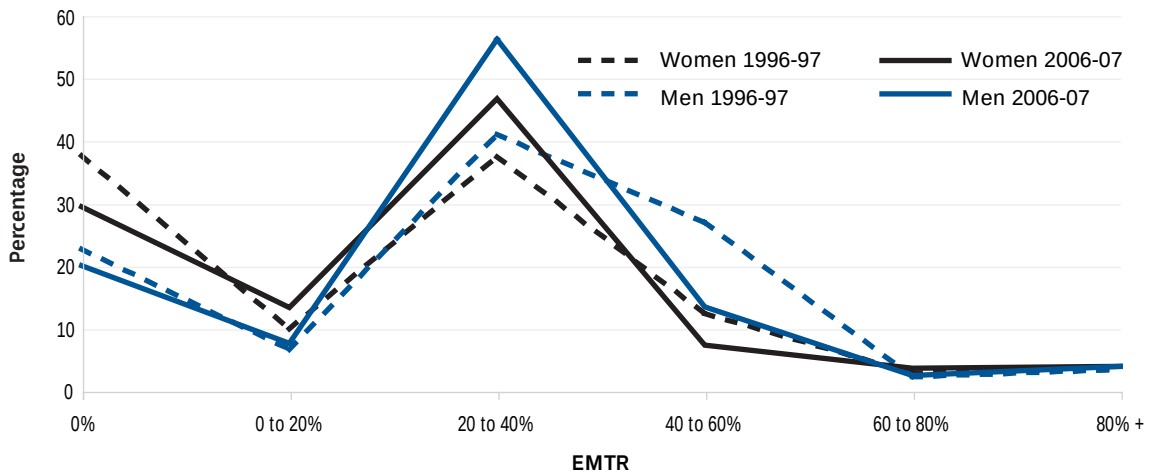
4.3 Changes by gender

There have been major changes in the pattern of EMTRs by gender since 1996-97. There has been a sharp fall in the proportion of working age men facing EMTRs between 40 and 60 percent, from about 27 percent of all such men in 1996-97 to 13 percent today (Tables A1 and A2 in the appendix). Today, almost three out of every five working age men face an EMTR of between 20 and 40 percent.

For women, there has been a fall in the proportion facing EMTRs ranging from 40 to 60 percent, although the fall has not been as pronounced as for men (Figure 7). As with men, there has been an increase in the proportion in the 20 to 40 percent range so that, today, almost half of all working age women face an EMTR within this range.

Overall, the proportion of all working age women expected to lose more than half of their next dollar of income has increased from 4.3 percent of women in 1996-97 to 7.3 percent today. For men, the rise has been slower, from 5.2 percent of working age men in 1996-97 to 6.9 percent today facing EMTRs of more than 50 percent. Therefore, while men were more likely than women to face high EMTRs in 1996-97, today that picture has reversed.

Figure 7. Distribution of EMTRs by gender, 2006-07 and 1996-97



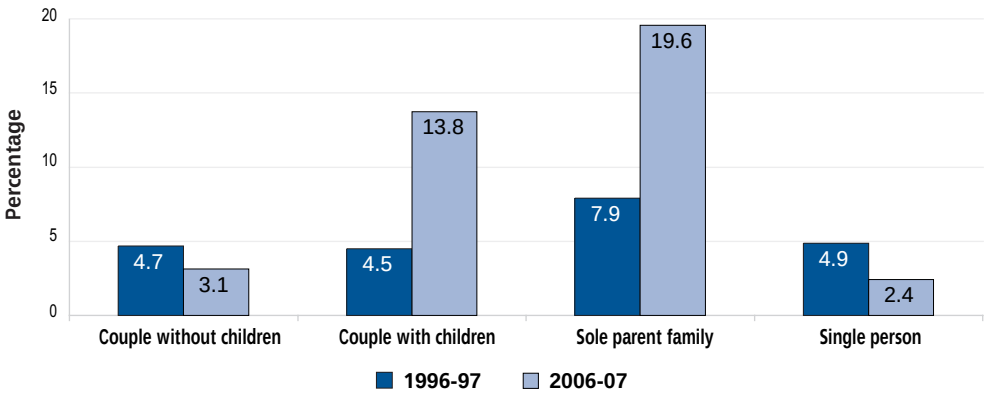
The proportion of working age Australians living in couple with children families and facing EMTRs of 50 percent plus has tripled since 1996-97.

4.4 Changes by family type

There have also been significant changes over the past decade in the types of families that face high EMTRs (Figure 8). The proportion of working age Australians living in couple with children families and facing EMTRs of 50 percent plus has tripled since 1996-97, reflecting the sharp expansion in the Family Tax Benefit. The proportion of sole parents facing EMTRs of 50 percent plus has also almost tripled during these ten years so that, today, almost one in every five sole parents will lose more than half of their next dollar of income. In part, this reflects the growing labour force participation rates of sole parents (Harding et al, 2005), with higher earnings meaning that more of them are likely to be subject to both the pension income test and income tax liabilities.

The proportion of single Australians facing EMTRs of more than 50 percent has declined during the past decade, as has the proportion in couple without children families – in both cases at least partly a result of the fall in unemployment.

Figure 8. Proportion of people in each family type facing high EMTRs, 2006-07 and 1996-97.

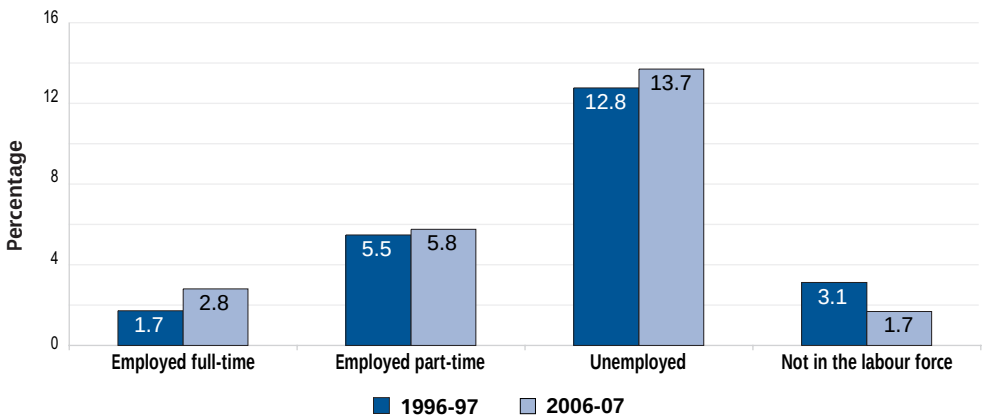


4.5 Changes by labour force status

Changes in the pattern of high EMTRs by labour force status since 1996-97 have been less dramatic than by family type. There has been only a slight increase in the proportion of unemployed people facing EMTRs of more than 50 percent since 1996-97 (and it must be noted that we have been unable to model the impact of the Working Credit Scheme, which will ameliorate the impact for some of this group). The government has introduced a number of measures in recent years to reduce the EMTRs facing the unemployed, with the most recent changes applying from 1 July 2006. Immediately prior to July, an unemployed single adult could earn only $71 a week before their Newstart Allowance was reduced by 70 cents for each dollar of additional earnings. The government has now increased this threshold to $125 a week and has also reduced the "clawback" rate from 70 to 60 cents in the dollar. However, the unemployed face a 50 percent reduction in their Newstart Allowance for every dollar of earnings between $31 and $125 a week. This $31 a week "free area" has remained almost unchanged since 1996-97 (when it was $30 a week). As a result, unemployed people are more likely today to reach the 50 percent "tax rate" embedded in the Newstart Allowance income test – resulting in the high EMTRs shown in Figure 9.

The proportion of part-time workers facing EMTRs of more than 50 percent has remained at around six percent of part-time workers. About three in every 100 full-time workers now also face EMTRs of more than 50 percent – and about two in every 100 working age individuals who are out of the labour force.

Figure 9 Proportion of people in each labour force status category facing high EMTRs, 2006-07 and 1996-97



5. Conclusions

An effective marginal tax rate shows how much of the next dollar of private income an individual keeps, after the payment of income tax and the withdrawal of means-tested cash assistance or tax concessions from government. Thus, an EMTR of 60 percent means that an Australian will have an extra 40 cents left to spend from their next dollar of private income. High EMTRs may produce work and savings disincentives and create "poverty traps".

This study shows that almost nine in every ten working age Australians face an effective tax rate on their next dollar of income of 40 percent or less. Therefore, the overwhelming majority of working age Australians does not face high EMTRs.

High EMTRs are defined in this report as being over 50 percent – and thus being higher than the income tax rate faced by the most affluent income taxpayers in 2006-07 (with this rate being 45 percent plus 1.5 percent for the standard Medicare levy). Today, an estimated 7.1 percent of working age Australians face high EMTRs. This represents 910,000 Australians.

Almost two-thirds of these 910,000 Australians are parents living with their partner and dependent children who have not yet left the nest. Seven in every 10 are middle income families or singles, on incomes that place them in the middle 40 percent of the Australian income distribution.

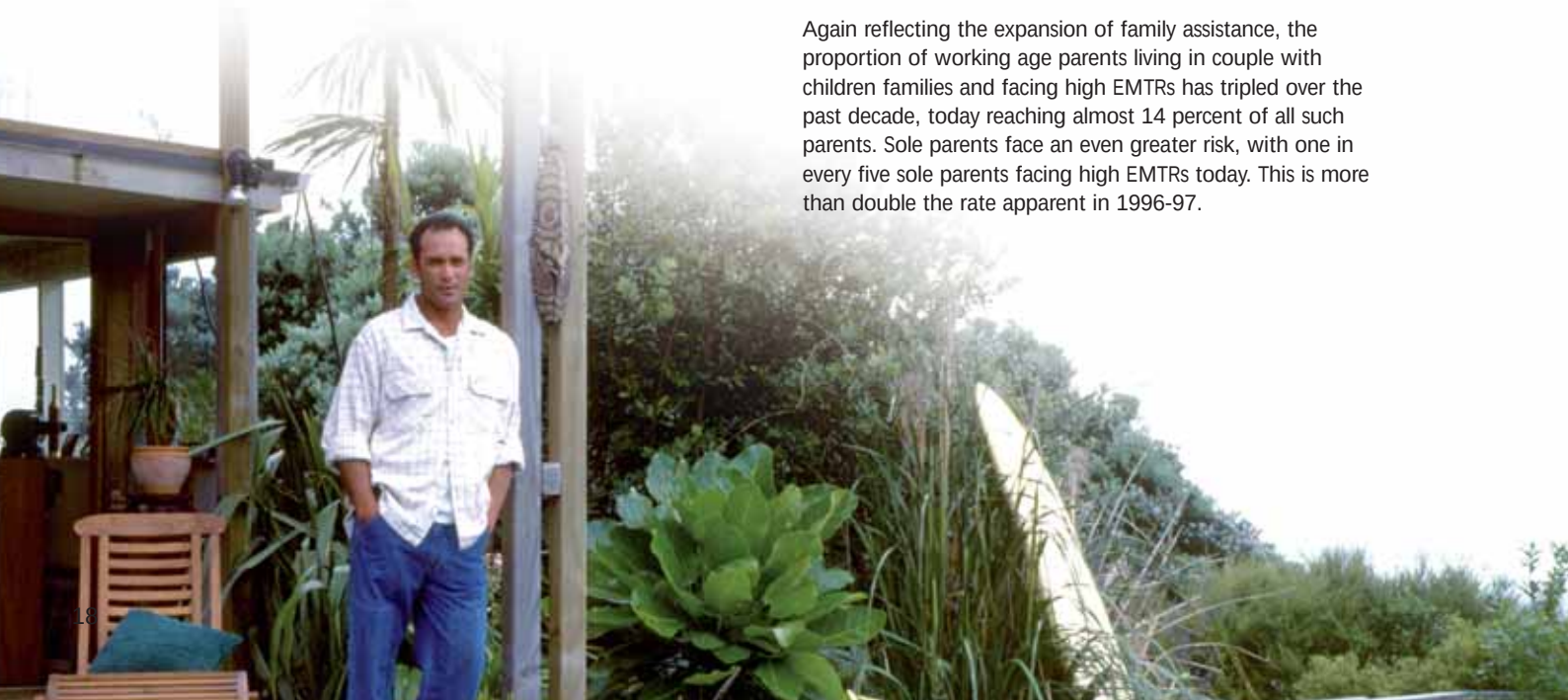
Government policy changes, falling unemployment, rising earnings and changes in labour force participation have all combined to produce major shifts in the characteristics of Australians facing high EMTRs during the past decade.

There has been a slight increase in the proportion of working age Australians facing high EMTRs of more than 50 percent, from 4.8 percent in 1996-97 to 7.1 percent now. However, the good news is that fewer of these Australians face extremely high EMTRs of more than 80 percent. This means that almost all the growth in high EMTRs that we have seen over the past decade has been among working age Australians facing EMTRs of between 50 and 60 percent.

High EMTRs have crept further up the income spectrum during the past decade, due partly to the expansion of income-tested assistance for families with children. Today, almost one in every 10 working age Australians with family incomes high enough to place them in the eighth income decile face high EMTRs – a sharp rise on the one-in-200 ratio applying to this group in 1996-97.

While working age men were more likely than working age women to face high EMTRs in 1996-97, today this picture has reversed. The proportion of working age women facing high EMTRs has increased from 4.3 percent of women in 1996-97 to 7.3 percent today.

Again reflecting the expansion of family assistance, the proportion of working age parents living in couple with children families and facing high EMTRs has tripled over the past decade, today reaching almost 14 percent of all such parents. Sole parents face an even greater risk, with one in every five sole parents facing high EMTRs today. This is more than double the rate apparent in 1996-97.



References

Apps, P., 2006, *Family Taxation: An Unfair and Inefficient System*, Discussion Paper No. 524, Centre for Economic Policy Research, Australian National University.

Beer, G., 2003, "Work Incentives under A New Tax System: The Distribution of Effective Marginal Tax Rates in 2002", *The Economic Record*, Special Issue, Vol. 79, pages 14-25.

Centrelink, 2006, *A Guide to Australian Government Payments*, (available from http://www.centrelink.gov.au/internet/internet.nsf/publications/co029.htm).

Cotis, J., 2003, "Population Ageing: Facing the Challenge", *OECD Observer*, September.

Gruen, N., 2006, *Tax Cuts for Growth: the Impact of Marginal Tax Rates on Australia's Labour Supply*, Committee for Economic Development of Australia (CEDA) Information Paper 84.

Harding, A. and Polette, J., 1995, "The Price of Means Tested Transfers: Effective Marginal Tax Rates in 1994", *Australian Economic Review*, Third Quarter, pages 100-6.

Harding, A., Vu, Q.N., Percival, R. & Beer, G., 2005, " Welfare-to-Work Reforms: Impact on Sole Parents", *Agenda,* Volume 12, Number 3, pages 195-210.

Nielson, L., 2005, "Superannuation, social security and retirement income", Parliamentary Library Research Brief, Parliamentary Library, Canberra, available at www.aph.gov.au/library.

Productivity Commission, 2005, *Economic Implications of an Ageing Australia, Overview*, Canberra (available from www.pc.gov.au).

Toohey, M. and Beer, G., 2004, "Financial Incentives to Work for Married Mothers under A New Tax System", *Australian Journal of Labour Economics*, Vol. 7, No.1, pages 53-69.

Treasury, 2002, *Budget Paper No. 5*, Intergenerational Report 2002-03, May.

Appendix A: detailed tables

Table A1: Summary of EMTRs, 2006-07

	Effective marginal tax rate band						
Effective marginal tax rate	**t=0**	**0<t<=20**	**20<t<=40**	**40<t<=60**	**60<t<=80**	**t>80**	**Total**
Gender							
All	24.6	10.3	51.3	10.2	2.9	0.7	100.0
Female	29.3	13.2	46.5	7.2	3.5	0.4	100.0
Male	19.9	7.5	56.1	13.2	2.4	1.0	100.0
Family type							
Couple without children	26.4	10.5	55.2	5.9	1.4	0.6	100.0
Couple with children	12.0	10.8	50.5	21.7	3.7	1.2	100.0
Sole parent family	56.2	1.3	15.1	12.2	15.2	0.1	100.0
Single person	30.7	10.9	53.8	2.5	1.8	0.3	100.0
Number of children							
None	27.9	10.6	55.0	4.4	1.7	0.4	100.0
One	19.0	6.8	52.3	14.7	6.2	1.0	100.0
Two	15.8	10.5	45.0	22.1	5.4	1.2	100.0
Three or more	19.5	13.7	25.2	35.4	4.4	1.8	100.0
Labour force status							
Employed full-time	3.6	6.4	74.1	13.2	1.9	0.9	100.0
Employed part-time	11.7	22.3	49.1	11.2	5.2	0.6	100.0
Unemployed	72.4	4.2	3.2	6.6	13.3	0.5	100.0
Not in the labour force	70.6	12.4	11.7	3.6	1.4	0.3	100.0
Age group							
15-24 years	30.9	19.1	45.9	1.5	2.1	0.5	100.0
25-44 years	20.0	8.8	53.3	13.3	3.7	1.0	100.0
45-54 years	20.5	9.2	56.8	10.6	2.6	0.4	100.0
55-64 years	36.7	9.3	43.4	8.1	1.9	0.5	100.0
State							
NSW	26.1	9.4	51.1	10.3	2.5	0.7	100.0
VIC	24.4	9.6	52.6	9.7	3.0	0.7	100.0
QLD	24.2	11.5	50.4	10.3	3.0	0.7	100.0
SA	23.5	11.6	50.2	10.0	4.0	0.7	100.0
WA	23.0	11.6	50.9	11.1	2.9	0.5	100.0
TAS	29.1	12.5	44.4	9.2	4.1	0.7	100.0
ACT/NT	16.0	9.8	60.3	11.3	2.4	0.3	100.0

Table A2: Summary of EMTRs, 1996-97

	Effective marginal tax rate band						
Effective marginal tax rate	**t=0**	**0<t<=20**	**20<t<=40**	**40<t<=60**	**60<t<=80**	**t>80**	**Total**
Gender							
All	29.8	8.1	39.0	19.6	2.4	1.0	100.0
Female	37.5	9.8	37.2	12.3	2.8	0.6	100.0
Male	22.5	6.5	40.8	26.7	2.1	1.4	100.0
Family type							
Couple without children	26.7	9.0	41.2	19.9	2.6	0.7	100.0
Couple with children	26.8	9.4	35.3	25.5	1.7	1.4	100.0
Sole parent family	62.8	0.6	14.3	15.8	6.5	0.0	100.0
Single person	31.7	6.9	44.7	13.3	2.5	0.9	100.0
Number of children							
None	28.9	7.9	42.9	17.2	2.4	0.7	100.0
One	30.0	6.6	35.6	24.5	2.4	1.0	100.0
Two	29.5	10.1	31.0	25.7	2.1	1.6	100.0
Three or more	38.0	9.2	27.6	20.5	2.7	2.0	100.0
Labour force status							
Employed full-time	4.4	6.0	57.2	30.7	0.9	0.9	100.0
Employed part-time	17.5	25.5	41.4	10.1	4.5	1.0	100.0
Unemployed	82.9	1.8	0.7	1.9	8.6	4.2	100.0
Not in the labour force	78.0	5.1	8.3	5.5	2.9	0.3	100.0
Age group							
15-24 years	32.6	12.0	48.3	4.1	1.9	1.0	100.0
25-44 years	26.2	7.1	40.2	23.2	2.3	1.1	100.0
45-54 years	25.5	8.6	37.8	26.2	1.3	0.7	100.0
55-64 years	46.2	6.6	26.3	14.7	5.2	0.9	100.0
State							
NSW	31.3	8.0	38.1	19.5	2.1	1.1	100.0
VIC	29.0	8.0	40.0	19.6	2.3	1.1	100.0
QLD	29.0	8.8	42.0	17.2	2.3	0.7	100.0
SA	31.4	7.1	37.6	18.5	4.3	1.1	100.0
WA	27.0	9.3	37.0	23.9	2.0	0.8	100.0
TAS	33.7	7.8	36.4	17.5	2.9	1.6	100.0
ACT/NT	25.6	5.7	35.9	29.2	3.1	0.5	100.0

Technical notes

STINMOD

NATSEM used the 1996–97 ("96A") and 2006–07 ("06A") versions of its STINMOD model to calculate the EMTRs presented in this report. STINMOD is a static microsimulation model of Australian income taxes and cash transfers. The model provides estimates of the distributional, revenue and expenditure impacts of taxation and transfer policies on Australian individuals and families. STINMOD is now the standard model used by Australian Federal Government departments for their analyses of possible budget policy options.

STINMOD uses microdata from Australian Bureau of Statistics (ABS) surveys for its basefiles. Version 96A of STINMOD used the1993-94 Household Expenditure Survey (HES) confidentialised unit record file and version 06A used the Survey of Income and Housing Costs (SIHC) 2000-01 and 2002-03 for its basefiles. These microdata provide information on the demographics, incomes and other characteristics of a representative sample of Australian individuals and their families. Different *ageing techniques* (such as the inflation of earnings) were then applied to these microdata to make them more closely represent the required year (ie 1996-97 or 2006-07).

Calculating EMTRs

The calculation of EMTRs facing working age individuals is undertaken by comparing the family disposable income of that individual before and after his/her private income is increased by one dollar. The first step for generating the EMTRs for individuals is to use STINMOD to calculate the family disposable income (income after income tax has been deducted) of all the families in the STINMOD database, using their existing level of private income (which includes income from wages or salary and investments). "Families" is used here as a colloquial term for "income units", with the income unit in STINMOD being a single person, a couple without dependent children, a couple with dependent children or a sole parent with dependent children. A dependent child is defined in STINMOD as one aged less than 16 years plus dependent students aged 16 to 24 years.

The private income of the family reference person is then increased by one dollar and the family's EMTR calculated (using the difference between their old and new disposable income). After this, the reference person's income is set back to its original level and the income of the spouse (if there is one) is increased by one dollar. Again, the family's EMTR is calculated. Results are then produced showing the EMTRs facing each *individual of working age*.

This methodology is required because it is possible for an individual to have a personal EMTR of zero, yet for the disposable income of their family to be affected if there is a one dollar increase in their private income. For example, let us take a low income couple family with two children where only the father is in paid work and the mother is initially not working. If the mother finds a very small amount of low-paid part-time work, her income may still be below the relevant tax and social security thresholds, so that her personal EMTR is zero. But if the family is already in the income zone where Family Tax Benefit Part A is being reduced as a result of the father's earnings, then the actual EMTR faced by the family when her private income increases could be 20 percent or more.

This raises a further important issue which is that, in the real world, income tests are sometimes based on individual or family private income received during the preceding financial year. In modelling EMTRs, we have had to base the amount of assistance received on current private income, rather than the previous year's income.

The same restriction applies in cases where assistance depends upon how often recipients have been in that situation. For example, another program that is not captured by STINMOD in 2006-07 is the Working Credit Scheme, introduced to allow recipients of benefits to keep more of their benefit income when they take up work. For each fortnight the person does not work, the allowable income that they could have earned (ie $62 for a NewStart recipient) accumulates so that the recipient is allowed to earn a greater amount without their benefit being reduced. For example, if a recipient of Newstart Allowance does not work for a fortnight, the $62 they could have earned is carried over to the next fortnight so that they could earn

$124 before their benefit would be reduced. This means that people can take up temporary jobs without having to reapply for their benefit and lose less of their benefit for doing small amounts of paid work.

The results presented for the 1996-97 financial year are based on the tax and transfer settings that were in place at the time. Results for the 2006-07 financial year take account of all new tax and transfer legislation enacted in July 2006, including the Welfare-to-Work package and the income tax cuts. For both periods the results incorporate the impact of all the key income tax/social security/family payment provisions; Medicare and private health insurance tax liabilities; and Commonwealth rent assistance. The results do not incorporate the impact of public housing rent rebate income tests, child care rebates and HECS, as sufficient information is not available in the ABS sample survey data which underlies STINMOD to allow us to calculate these liabilities.

It is also important to note that the EMTRs do not take account of other costs associated with working, or increasing work hours. These include possible increases in childcare and transport costs, as well as other work related costs such as clothing. For public housing tenants, rent can increase as their income increases. Another cost that is difficult to quantify is the loss of non-cash concessions, such as concession and health care cards, as income increases or benefits are withdrawn. While EMTRs provide insight into the effective gains of each additional dollar earned, there are other substantial costs of working that are not captured.

Certain groups are also excluded from the analysis. These are:

- People under the age of 15 years as they are not yet of working age.
- People aged 65 years and ove.
- Full-time students aged between 16 and 24 years living in the STINMOD family income unit (who must be single, never married, and not workforce independent to be considered to be a dependant within STINMOD).
- People whose EMTRs are negative, and
- People living in families where the change in Medicare levy resulting from a $1 increase in income is more than $1 (eg due to the family reaching the threshold for the Medicare levy surcharge).

Overall, it must be emphasised that, while the modelling that produces the estimates contained in this report is extremely sophisticated, the results are nonetheless only estimates and do have limitations.

Creating income deciles

To create the income deciles, the equivalent disposable income of every STINMOD income unit (family or individual) has been calculated. Disposable income means after-income-tax income. The OECD equivalence scale has been used to put income units of differing size and composition on a more comparable basis. This equivalence scale gives a value of 1 for the first adult, 0.5 for the second adult, and 0.3 for any dependent children. The income unit income is divided by this equivalence scale to create the equivalent disposable income of the income unit. All individuals (including children) are then ranked by the equivalent disposable income of their income unit (including those not of working age, such as children and the retired). The top decile is thus the most affluent 10 percent of Australians. This methodology differs from previous work on EMTRs published by NATSEM, which placed the top 10 percent of income units in the top decile. This new methodology reflects the emerging international consensus during the past decade that analysis should deal with individuals rather than income units, as changes in income unit size and composition over time can otherwise bias our assessment of change over time. It should also be noted that this methodology means that the number of working age individuals within each income decile varies from decile to decile (as 10 percent of *all individuals* are in each decile, rather than 10 percent of all *working age individuals*). The unit of analysis within each of the table cells is, however, the number of working age individuals.

End notes:

1. The main tax and outlay programs are well described in the "Government Programs" section of NATSEM's STINMOD manual, which is NATSEM's model of the Australian tax and transfer system (http://www.natsem.canberra.edu.au/products/STINMOD/stinmod%2005b%20user%20guide.pdf). Centrelink also regularly issues "A Guide to Australian Government Payments", which usefully describes the cash transfer programs but does not contain details of the various tax concessions.

This page has been left blank intentionally

AMP.NATSEM Income and Wealth Reports:

- Trends in Taxable Income (February 2002)
- Live long and prosper – the income and wealth of those about to retire (May 2002)
- All they need is love... and about $450,000 – the costs of children in Australia today (October 2002)
- Does your wealth depend on good health? – health and income in Australia (March 2003)
- You can't rely on the old folks' money – wealth and inheritance (June 2003)
- Generation Xcluded – income and wealth of Generation X (November 2003)
- The lump sum: here today gone tomorrow – income, superannuation and debt pre and post retirement (March 2004)
- Money, money, money – is this a rich man's world? Trends in spatial income inequality 1996-2001 (September 2004)
- Walking the tightrope – Household debt in Australia (November 2004)
- Love can hurt, divorce will cost – financial impact of divorce in Australia (April 2005)
- There's no business like small business. Small business in Australia 1995 – 2004 (July 2005)
- Who cares? The cost of caring in Australia today 2002 to 2005 – (May 2006)
- Trends in effective marginal tax rates 1996-97 to 2006-07 – (September 2006)

All the above reports are available from www.amp.com.au/ampnatsemreports

This report was written by Ann Harding, Quoc Ngu Vu, Alicia Payne and Richard Percival from the National Centre for Social and Economic Modelling Pty Limited ("NATSEM"), and published by AMP. This report contains general information only and although the information was obtained from sources considered to be reliable, the authors, NATSEM and AMP do not guarantee that it is accurate or complete. Therefore, readers should not rely upon this information for any purpose including when making any investment decision. Except where liability under any statute cannot be excluded, NATSEM, AMP and their advisers, employees and officers do not accept any liability (where under contract, tort or otherwise) for any resulting loss or damage suffered by the reader or by any other person.

NS2443 09/06