10 December 2007 SH-13-5

To: Office of the Minister of Finance

From: Tax Strategy, Treasury

AIDE MEMOIRE: SUPPORTING INFORMATION TO INFORM POTENTIAL TAX CHANGES

Purpose of note

As indicated in our previous note *"Impact of recent major Government policies by family type and income quartiles",* we are able to provide a very wide range of information that can be used when making distributional tradeoffs within a package of tax reforms.

This note seeks direction on what is considered the most useful classes of supporting information. That direction will help focus future work on tax change options.

The note uses the current tax system and draws on two notional tax change scenarios to illustrate some of the possible approaches. The first scenario replaces the low income rebate with a $5000 tax free zone and has rates of 21% rate on income to $42 000, 33% to $75 000 and 39% thereafter. Scenario 2 has a 10% rate on income to $9 700 and is otherwise the same as scenario 1. Both scenarios have a net fiscal cost of around $1720 million (after changes to Super Fund contributions, and financing cost).

Broadly, for any given tax change, we can show how it:

- Affects the broad shape of the personal income tax scale and interacts with working for families.
- Is spread across the income distribution and particular taxpayer groups such as families, super annuitants and beneficiaries.
- Might reverse or extend recent changes to tax burdens.

We also outline further information that could help in considering labour supply and efficiency effects.

Next Steps

The supporting information that is indicated to be most useful can be included in future work on tax change scenarios. Feedback is sought on different ways in which this information might be presented or additional information that could also be included.

Summary

Table 1 summarises the examples of supporting information outlined in this note and indicates what distributional result arises from analysis of the notional scenarios.

Table 1: Summary of supporting information

Measure	Policy relevance under notional scenarios	Interested in this analysis for further work?
Average Tax Rates	The notional tax scenarios reduce average tax rates for all taxpayers, with larger reductions for those lower in the income distribution, with scenario 1 offering a larger reduction at incomes below $9 500	**Yes/No**
Effective Marginal Tax Rates from Tax and Working for Families	The 20% abatement rate for *Working for Families* tax credits means that second earners may not receive full benefit of a tax free zone.	**Yes/No**
Net Transfers/net tax burden	On aggregate households within the bottom four income deciles face a negative net tax burden (i.e. receive net transfer payments). The notional tax changes reduce net tax burdens across all deciles and increase the number receiving positive net transfers..	**Yes/No**
Tax changes by family types	Tax changes will affect family types differently depending on where they sit in the income distribution. Considering impacts on family groups helps to determine whether relief is targeted in the desired areas. Singles without children are highly represented at the bottom of the income distribution as are single parent families. The latter also derive a large proportion of income from benefits. Working for families has increased incomes for families with children, reducing the likely proportional impact of tax changes relative to families without children. Scenario 1 provides slightly more tax relief for non-benefit income in the bottom quintile. Family groups that could be included in future analysis include:	
	1. Sole Parent Families	**Yes/No**
	2. Couples with Children	**Yes/No**
	3. Single persons without children	**Yes/No**
	4. Couples without children	**Yes/No**
	5. Super annuitants	**Yes/No**
	6. Beneficiaries	**Yes/No**
	7. Other groups or	

	combinations of the above groups – Please Specify:	
Income information for family groups	Households in the lowest income quintile derive a high proportion of income from benefits, so will benefit less from the notional scenarios.	**Yes/No**
Tax changes for taxpayers in work	Threshold changes from the notional scenarios affect a high proportion of those taxpayers working more than 20 hours per week. Note we could consider a different hours criteria if desired.	**Yes/No** 20 hours? **Yes/No**
Tax change effects on real net income growth	In addition to providing a one off increase in real net income, changes to marginal tax rates can affect rates of real net income growth. The notional tax changes increase growth in real net income for taxpayers facing lower marginal tax rates resulting from threshold shifts.	**Yes/No**
Gains from income splitting	Reduction in average tax rates for low income earners can increase gains from income splitting. Scenario 1 provides a greater incentive for income splitting at lower incomes.	**Yes/No**

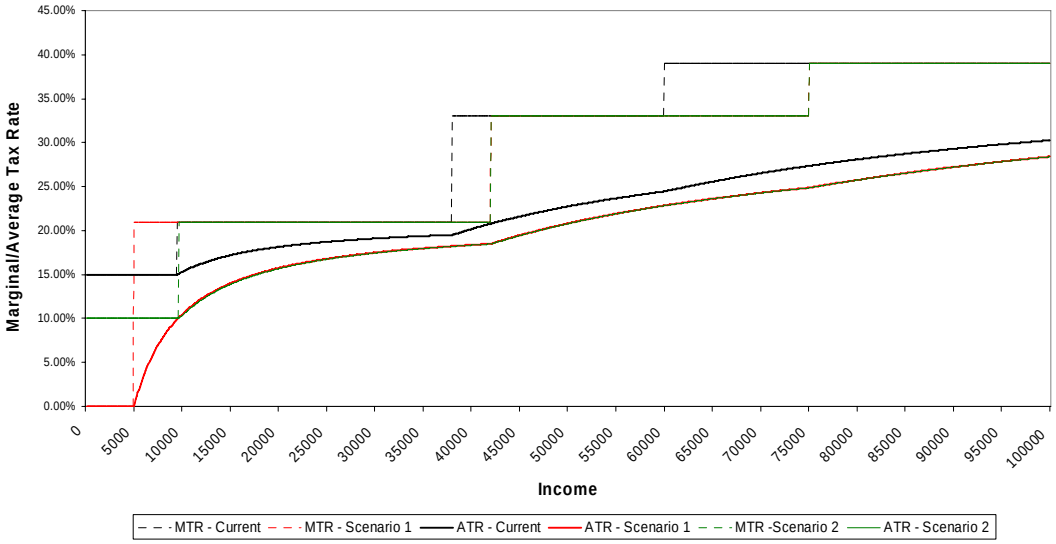
BROAD SHAPE OF THE TAX SYSTEM

To date we have provided static snapshots of how tax changes affect marginal tax rates and the weekly tax savings provided at different levels of income.

Changes to marginal and average tax rates

We can also present changes to average tax rates to show movements in the tax burden across the income distribution. Figure 1 shows marginal and average tax rates for the status quo and notional tax changes. The two notional tax changes reduce average tax rates at the lower end of the income tax distribution, but to different extents. The free zone in scenario 1 provides a tax reduction of $750 at an income of $5 000, however the higher 21% marginal rate means this reduction from the status quo falls to $480 at an income of $9 500. By comparison, at an income of $9 700 scenario 2 provides a tax reduction from the status quo of $497. Thus for income above $9 700 the average tax rate for scenario 2 is marginally lower than scenario 1.

Figure 1: Marginal and Average tax rates for the status quo and notional tax change



Tax and family support

Tax changes can also affect the high effective marginal tax rates (EMTRs) on earned income from the abatement of *Working for Families* tax credits. Figure 2a shows the change to EMTRs under the notional scenarios for a single earner family with two children aged 15 and 16 (it is assumed the family does not receive benefit income and is eligible for the minimum family tax credit, this also means that 20 hours per week must be worked for a single parent, so income starts at $10 000). Figure 2b shows the EMTRs faced by a secondary earner in this family where the primary earner is on the average wage; under both the status quo and the notional scenarios EMTRs remain high for second earners on low incomes.

Figure 2a: EMTR for family with children aged 15 and 16 with one earner

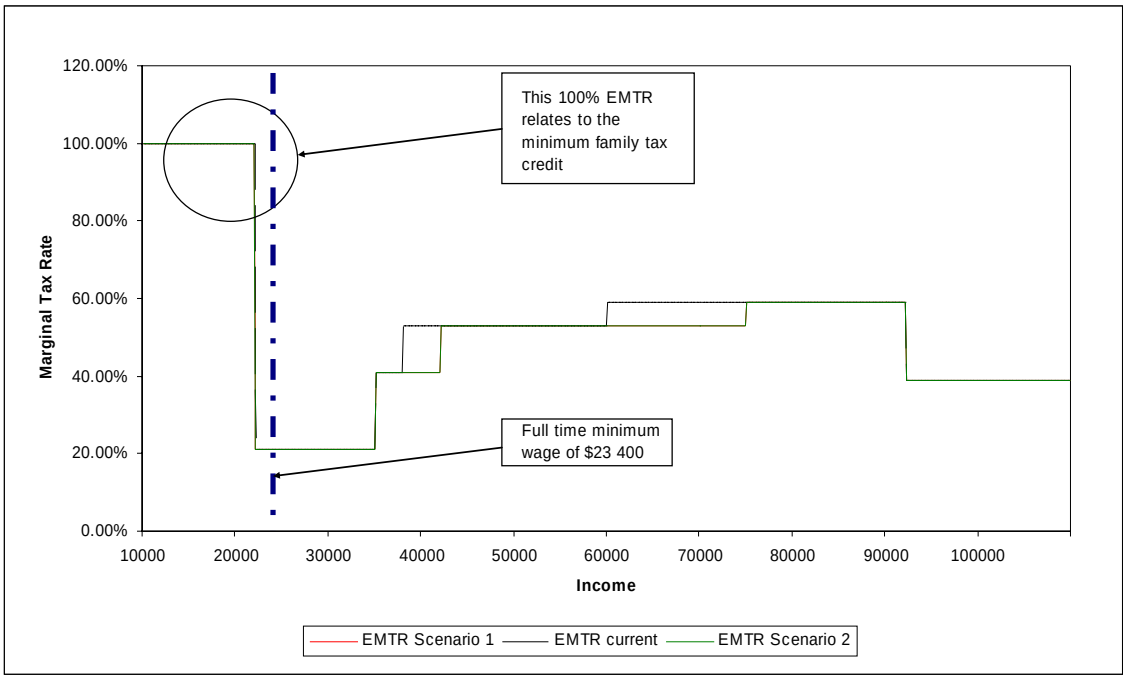
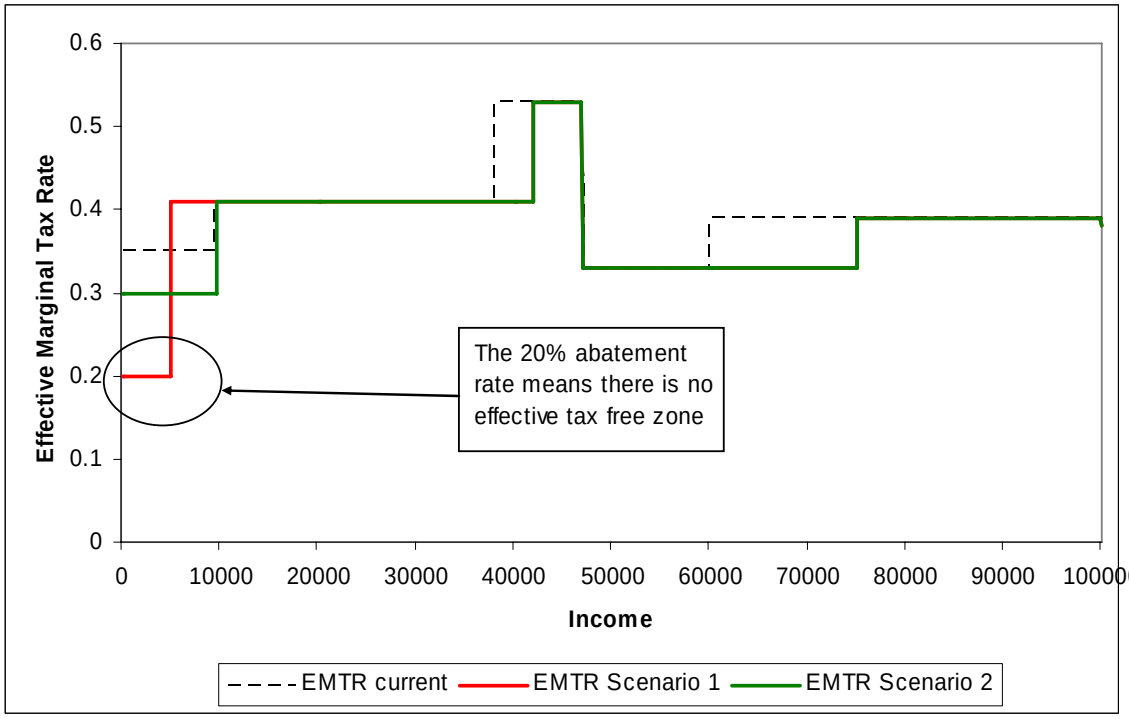


Figure 2b: EMTR faced by secondary earner where primary earner on the average wage



Key Points

- Families receiving the minimum family tax credit are not affected by changes to the bottom of the income tax scale, so both scenarios have an equivalent impact.

- For a second income earner, scenario 1 offers a lower EMTR on the first dollar of income, but a higher EMTR than scenario 2 for income between $5 000 and $9 700.

EFFECTS ON DISTRIBUTION AND SPECIFIC GROUPS OF INTEREST

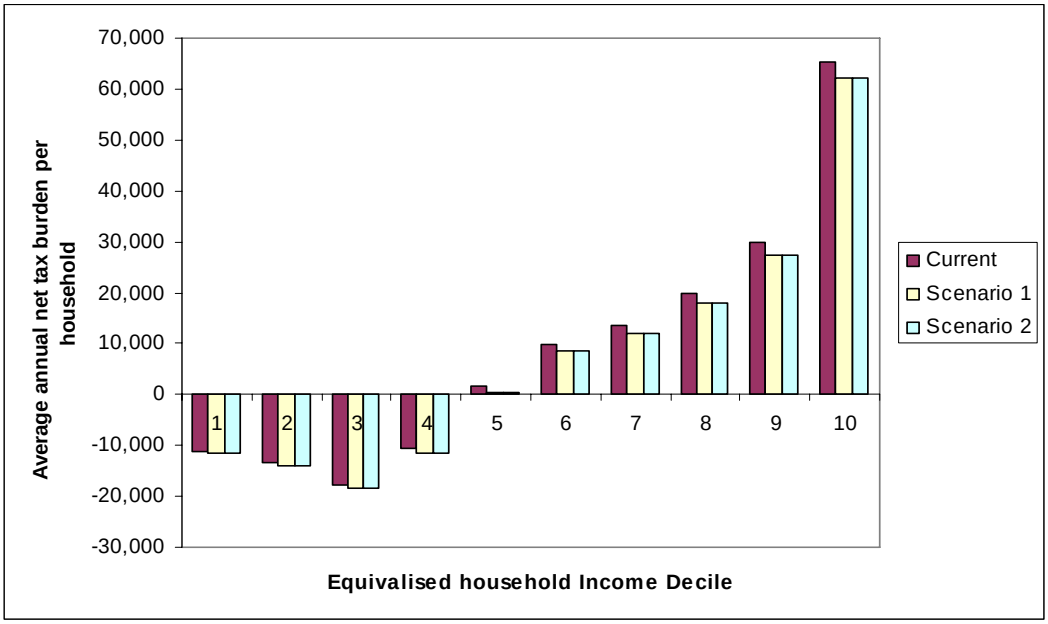
Overall redistribution

The impact of tax changes at different points within the income distribution help determine any impact on inequality. We have previously shown the level of tax savings available, in absolute and average terms, for individual and household deciles. This shows where the benefit of tax changes arise within the household income distribution.

We have also introduced the concept of a Gini coefficient for tax payments; this indicates where in the income distribution tax payments are made. Tax changes that increase the value of $\mathbf{G_T}$ transfer a higher proportion of the total income tax burden to those higher in the income distribution.

The tax payment Gini considers the incidence of tax payments only; it does not take into account redistribution through spending. We can show the level of redistribution by way of personal income tax and transfer payments and how this changes under different tax change scenarios. To give an indication of current amounts of redistribution figure 3 shows the net tax burden for each household decile in 2009/10 for the status quo and notional tax scenarios (this is the average income tax paid less working for families tax credits, core benefit income and superannuation for each decile). Figure 3 includes only that information that is readily available and so is a partial analysis, it would be difficult to extend this analysis to include other taxes and areas of government expenditure.

Figure 3: Net transfers by income decile



Key Points

- Both scenarios have an identical effect on overall distribution, and while tax burdens are reduced for those in the higher income deciles, decile five households have their average net tax burden reduced to almost zero. This means almost half households receive positive net transfers.

Potential groups of specific interest

Our analysis of tax changes has so far been based on household and individual level data; it has not considered specific groups of taxpayers. In this section we provide some disaggregated analysis for groups that may be of interest. Tax changes can also have different effects for particular groups, for example:

- Beneficiaries would not automatically get the benefit of any tax reduction
- Super-annuitants can benefit more than other taxpayers
- Taxpayers receiving targeted assistance may see smaller changes in disposable income from tax changes.

Categorisation of families

Table 2 sets out where different family types fall within the income distribution. We have ordered all families into equivalised taxable income quintiles, and indicated the number of each family type within each income quintile (Figure 4 shows this same information but in graphical form).

Equivalised income adjusts the family income for family size, so families of different size can be compared and ordered according to income. The Household Economic Survey data which we have used allows us to categorise by either families or households. We have chosen families. The key difference is that there can be more than one family in a household: for example four students flatting together would make up one household but would be separate families, while extended families living together would count as one household but more than one family. While there are disadvantages with each approach, using families avoids having categories for "extended family" and "non family" households.

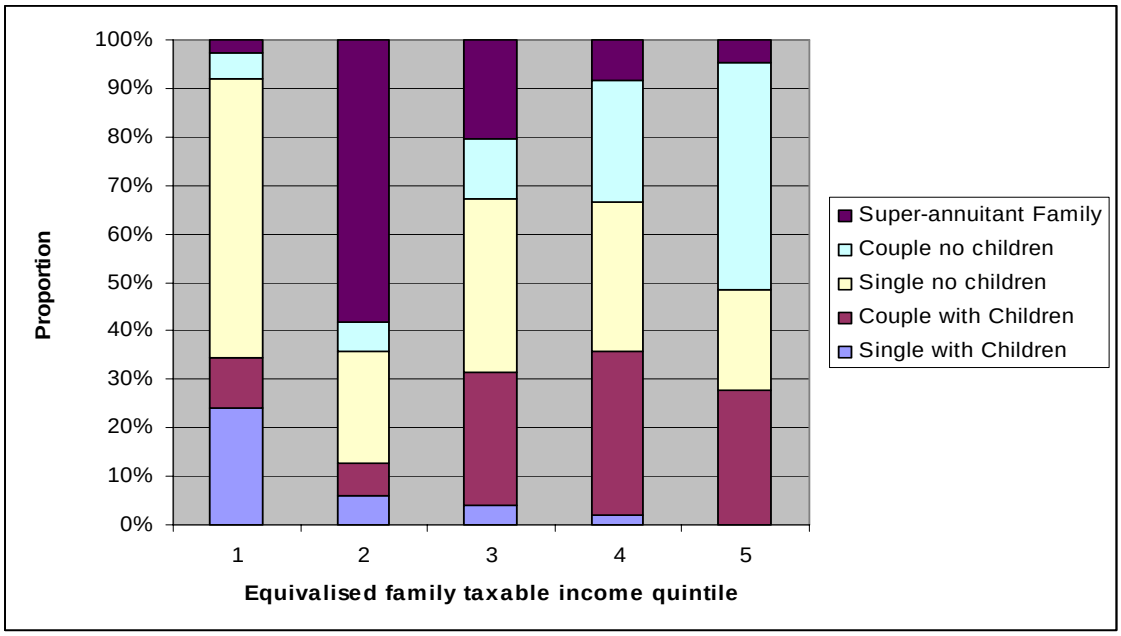
Note that table 2 shows the number of each family type within each income quintile.

Table 2: Family types by taxable income quintile

	Equivalised family taxable income quintile					
	1	2	3	4	5 total	
Single with Children	99,610	24,881	16,353	8,713	SOME	**149,556***
Couple with Children	42,859	27,165	113,829	139,219	114,309	**437,382**
Single no children	238,389	95,744	147,428	127,435	84,910	**693,906**
Couple no children	22,119	25,188	51,572	102,883	191,210	**392,971**
Super-annuitant Family	11,000	240,967	84,715	35,061	19,789	**391,532**

*The total number of single with children families does not include those in quintile 5 as there are too few observations in the sample to report this group separately.

Figure 4: Composition of income quintiles by family type



Particular groups that may be of interest might be singles without children – who make up more than 50% of those families in quintile 1 – and single parents, two thirds of whom fall in quintile 1. Also of interest would be super-annuitants who make up nearly 60% of families in quintile 2.

Beneficiaries

Because benefits are set on a net basis, tax reductions will not automatically flow through to benefit income. This means a low income household reliant on benefit income will not benefit directly from any tax change (although there may be indirect benefits through increased replacement rates). Figure 5a shows that 55% of family income within quintile 1 is benefit income. The high proportion of benefit income limits the extent to which tax changes can increase disposable incomes in this quintile. Also some family groups are more reliant on benefit income than others; figure 5b shows the proportion of total income derived from benefits for family groups in quintile 1 (excluding super-annuitants).

Figure 5a: Sources of income by income quintile

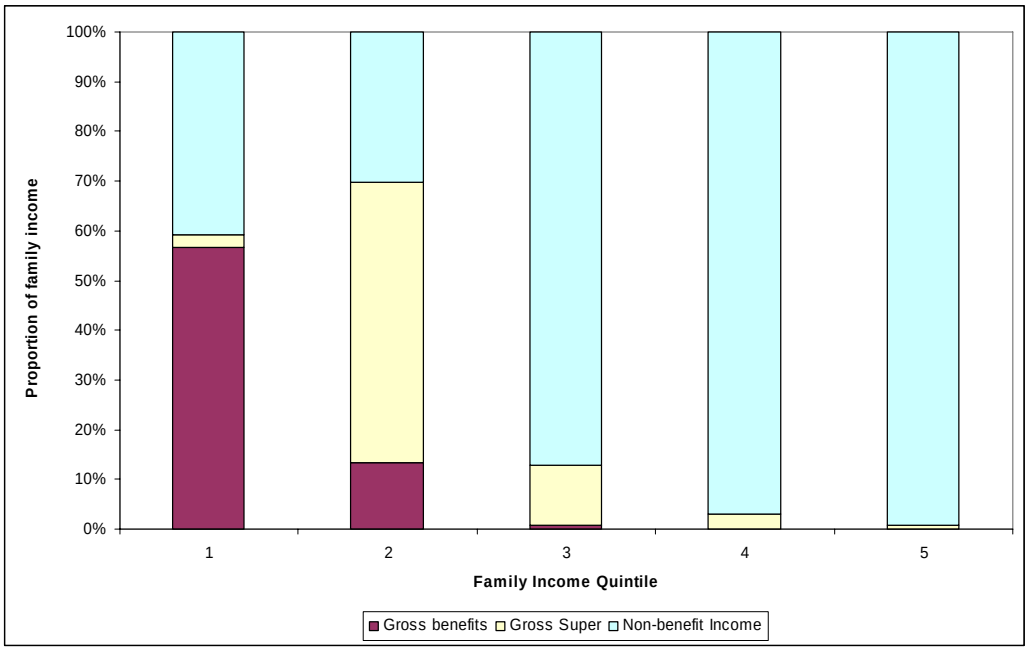
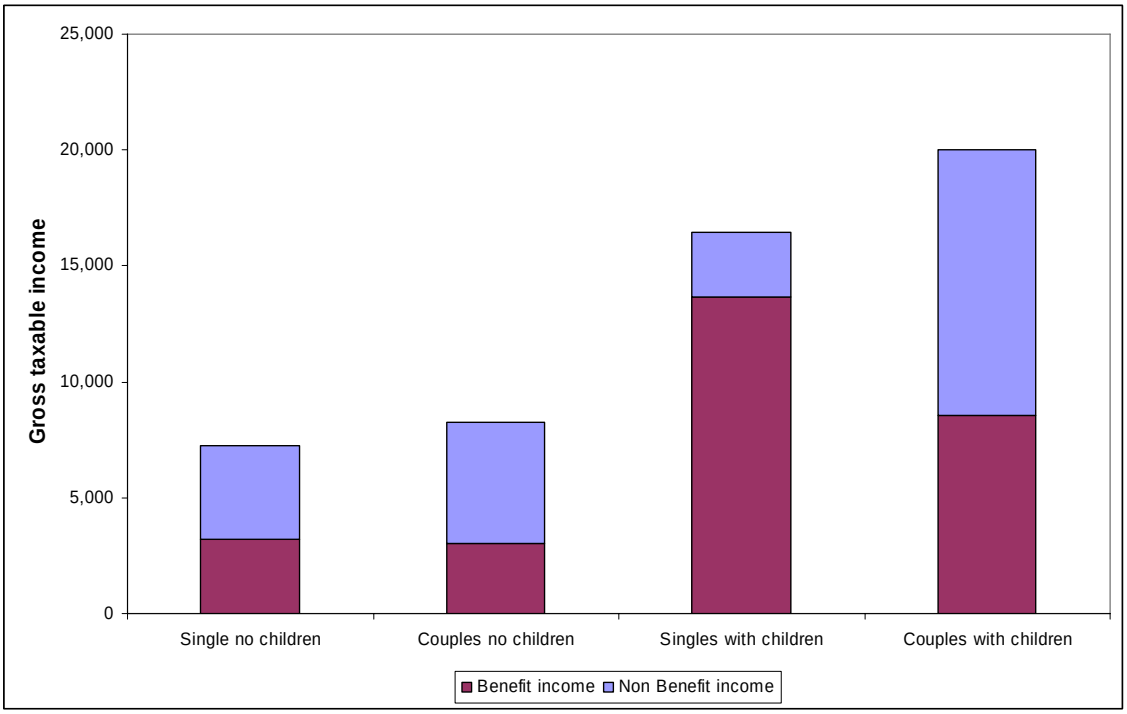
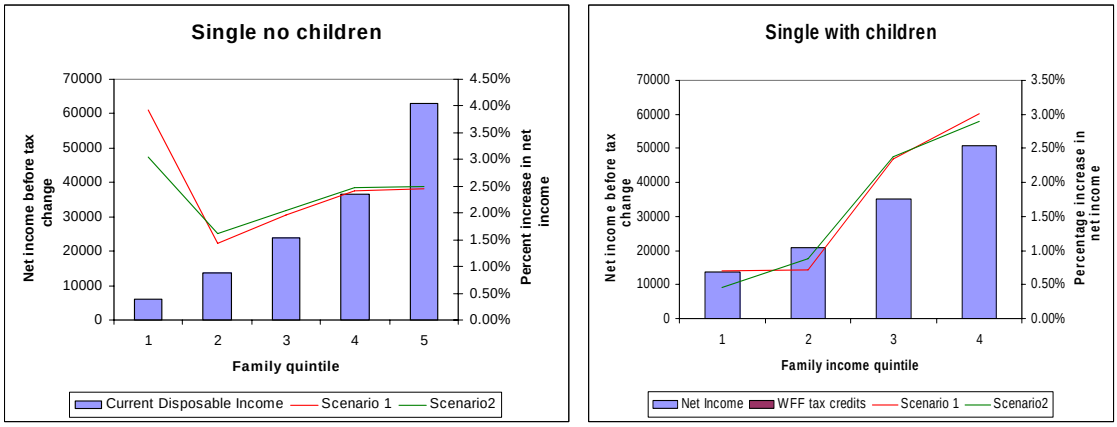


Figure 5b: Total income derived from benefits for families in quintile 1



The higher proportion of benefit income for singles with children mean the effect of any tax reductions is reduced; figure 6 compares the effects on net income from the notional tax changes for singles with and without children. The percentage increase in average net income for singles with children in quintile 1 is less than 1%, compared to the 3-4% increase for singles without children in the same quintile: We have not shown weekly tax reductions because it can be misleading in the current context; beneficiaries will receive a tax reduction, but gross benefit payments will be reduced to offset this.

Figure 6: Change in net income for singles with and without children under notional tax scenarios



As there are too few observations for singles with children in quintile 5 we have not shown the results for this group.

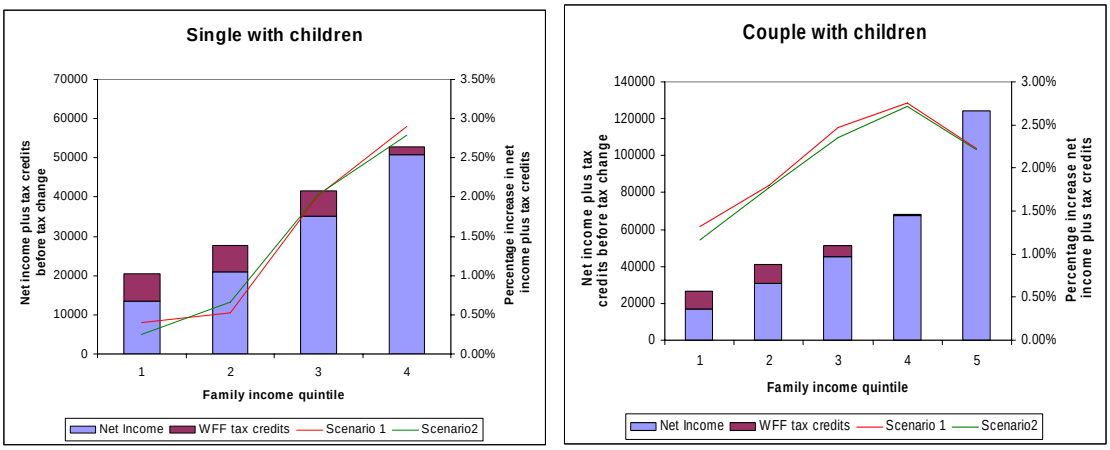
Key Points

- For singles with no children in quintile 1, the increase in net income is greater under scenario 1. This difference relates to the different treatment of earned income below $9 700.
- For singles with children the difference between the two scenarios is smaller. This is due to the higher proportion of benefit income and the higher average net income for families in that quintile.

Families with children

The more precise focus on particular family types means we can better incorporate the impacts of targeted policies such as *Working for Families* tax credits. Although a high proportion of families with children sit within the bottom income quintiles, the situation looks much different once *Working for Families* tax credits are taken into account. Figure 7 shows the net income plus *Working for Families* and the impact from the notional tax scenarios for single parents and couples with children. This shows higher incomes for families in the lower income quintiles; working for families increases the average disposable income for single parents in quintile 1 by up to 50 percent.

Figure 7: Net income and *Working for Families'* credits for singles and couples with children[1]



Key points

- For single parents the proportional increase in net income plus credits under both scenarios is low. This is due to a high proportion of benefit income and existing relief through working for families' tax credits. This latter effect applies for couples with children also.

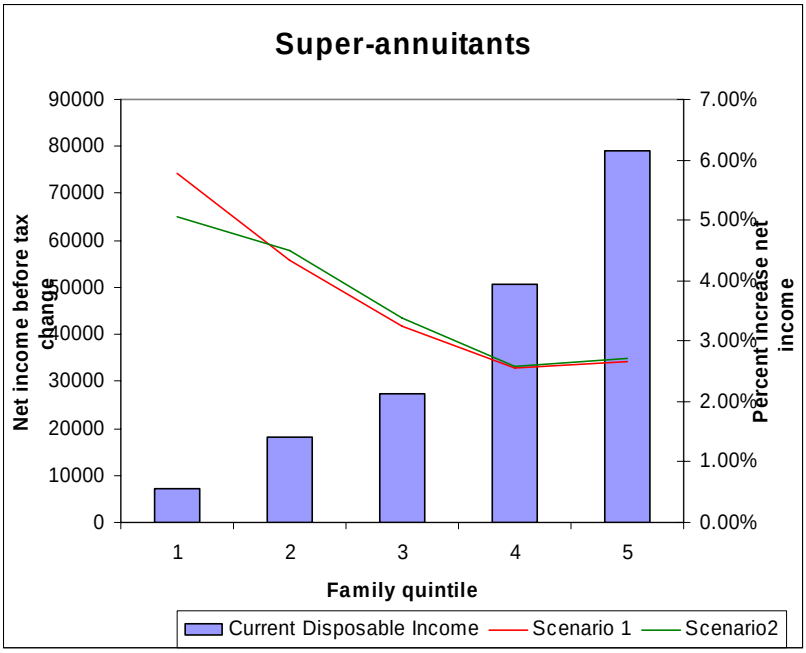
Super-annuitants

Super-annuitants may also be of specific interest due to recent policy changes and the benefit derived from tax changes through the mechanism for setting net NZ Super. NZ Super is legislated on a gross basis, so any tax change would directly increase the amount of net NZ Super payments. This higher level of net NZ Super is then CPI

[1] Although average income for couples with children appear higher, this is a result of ordering families by equivalised taxable income; larger families are given a lower equivalised income, so appear further down the income distribution. Larger families will have higher actual incomes than smaller families within the same quintile..

adjusted on 1 April each year.[2] Finally, because this CPI adjusted net NZ super cannot fall below 65% of the net ordinary time average wage, net NZ super may be increased again depending on the level of the tax reduction to the average worker. Figure 8 shows the increase in net income for beneficiaries from the notional tax change scenarios. The increase in net income is around 4% for the 60% of super-annuitant families sitting in quintile 2.

Figure 8: Changes in net income for super-annuitants from notional tax change scenarios



The effect of tax changes differ for each family group. Between the scenarios, the main difference arises for families in the first income quintile, where the free zone in scenario 1 provides a slightly higher increase in net income. This effect is smaller where families derive a lot of benefit income. We are currently doing further work to identify the characteristics of these low income taxpayers and whether this low income is persistent. Separating out impacts for low income taxpayers with earned income and those on benefits is one area of focus. We hope to complete this work in January.

Taxpayers in the workforce

Taxpayers in work are another group that might warrant separate consideration. Previous analysis of individual taxpayers has included those with negligible or zero taxable income (in effect the entire population older than 15 years have been included). As a result the left hand side of the income distribution is extended significantly. Taxpayers in this left hand side of the distribution have little income and could be little affected by tax changes (this is in addition to the beneficiaries discussed above). Including all taxpayers can be misleading, as someone earning the full time minimum wage of $23,400 sits within the middle income quintile for all individual taxpayers but

[2] Where taxes are changed on 1 April of the new income tax year the new rate of NZ Super for the that year is calculated in the following order: (1) the new tax schedule is applied to the prior year Gross NZ super which gives a new rate of net NZ Super; (2) the CPI adjustment is then applied to the new rate of net NZ Super; (3) the CPI adjusted rate of net NZ Super is increased again if it is below the floor of 65% of the net ordinary time average wage.

when considering those taxpayers working more than 20 hours per week in their current job this person sits towards the bottom of the second income quintile.

Considering taxpayers working more than 20 hours per week also focuses the analysis on those paying the majority of personal income tax (this group derives 81% of taxable income). Table 3 shows the average income by quintile for all taxpayers and for the subset working more than 20 hours per week for the 2007/08 year; these income distributions are markedly different.

Table 3: Average income by quintile for all taxpayers and those working more than 20 hours per week

	All Indivuduals	Individuals > 20 Hours pw
Quintile 1	$2,434	$14,120
Quintile 2	$14,266	$29,718
Quintile 3	$22,314	$40,833
Quintile 4	$39,817	$54,721
Quintile 5	$85,559	$107,808

Key Points

- The proportion of taxpayers facing the different marginal tax rates also depends on the group considered.
- The often quoted figure of 14% of taxpayers facing the 39% marginal rate is based all individual taxpayers over 15 years. Of those taxpayers working more than 20 hours per week nearly 25% pay the top marginal tax rate and a further 30% pay the 33% rate.
- These percentages would fall under the notional scenarios; based on 2007/08 income data only 14% of taxpayers working more than 20 hours per week earn more than $75 000 and would pay the 39% rate.

The above example is one way to focus on taxpayers in work. If desired, the above analysis can also be done for other hours per week of interest, such as 30 hours (Stats NZ definition of full-time). We could also refine the analysis further to look specifically at employment and self employment income.

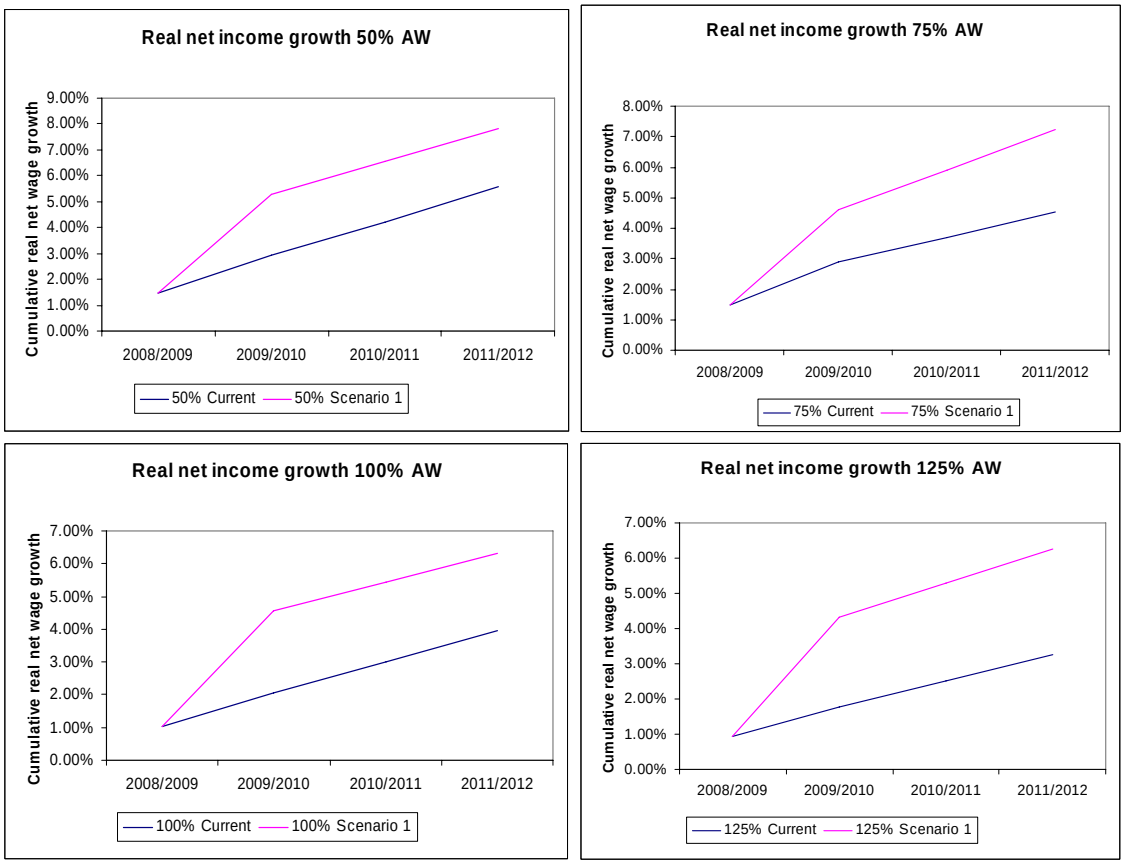
IMPACT ON RECENT CHANGES TO TAX BURDENS

Tax changes will have two important impacts on tax burdens. The first impact arises from the immediate effect on the average tax rate and second from changing how tax burdens evolve over time.

Because tax is imposed on nominal income this second impact is important. The combination of inflation and a progressive tax system mean that real after tax incomes increase at a slower rate than real gross incomes, due to average tax rates increasing with nominal income. Figure 9 shows the projected growth in real net income under the status quo and the notional scenarios for different proportions of the average wage (we have used the ordinary time average wage from the Quarterly Employment Survey and inflation and wage growth estimates from the 2007 BEFU). While each chart shows a one off increase in real net income from the tax change in 2009/10, the charts for 75% and 125% of the average wage also show an increased growth rate for real net

income following the tax change. Note there is negligible difference between the real net income growth under scenarios 1 and 2, so only scenario 1 has been shown.

Figure 9: Real net income growth under the status quo and notional scenarios



The increased rate of growth in the 75% and 125% charts reflects lower marginal tax rates as a result of shifting the 33% and 39% thresholds. By 2009/10, 75% of the average wage is expected to reach $38 000, so shifting the 33% threshold to $42 000 under the notional example reduces marginal tax rates for that level of income (for the 125% of the average wage example it is the shift in the 39% threshold that matters). These increased growth rates reflect continued reduction in average tax rates relative to the status quo. Taxpayers with incomes around 75% and 125% of the average wage therefore benefit twice, through an initial increase in net income and from a higher real net income growth. At 50% and 100% of the average wage, there are no changes to marginal tax rates, so net income growth is unchanged.

The impact on real net income growth from tax changes can be significant and could be further criteria for assessment. Growth in real net income has differed markedly for taxpayers that have benefited from recent tax changes, such as *Working for Families,* compared to those that have not. Figures 10a and 10b shows the growth in real net income since 1999/2000 for a single worker and for a one earner family with two children (15 and 16) earning different proportions of the average wage. For single workers, figure 10a shows that for those earning more than 85% of the average wage real net income growth (the red segment) has been much lower than growth in real gross income (the black line). The blue line in Figure 10a reflects the increase in real net income had the 1999/00 average tax rate been maintained; to the extent that real

net income growth lies below the blue line, this reflects an increase in average tax rates.

In contrast, changes to *Working for Families* have had a large effect on family disposable income; while growth in real net income is the same as for the single worker, the real increase in the value of *Working for Families'* tax credits (the light blue segment in figure 10b) has increased family net disposable income dramatically. For a one earner family with income up to 165% of the average wage, the increase in real net disposable income has exceeded the growth in real gross income (the black line).

Figure 12a: Real net income growth for single worker from 1999/00 to 2006/07

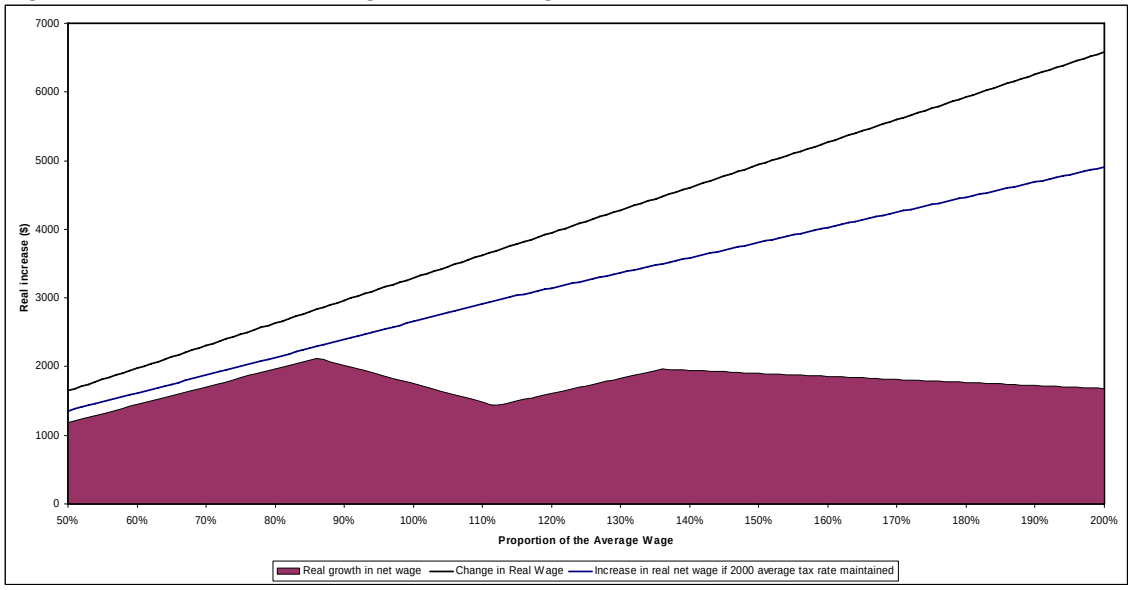
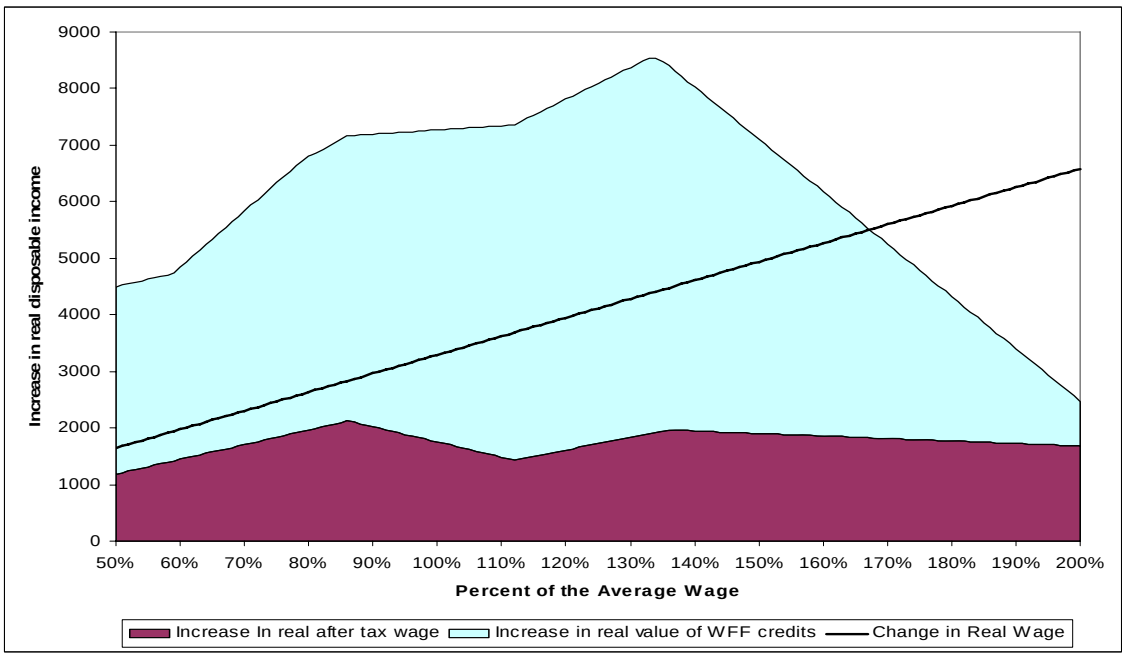


Figure 12b: Real net income growth for one earner family with *Working for Families*



How tax changes might further increase net incomes for families or reverse the low net income growth for taxpayers without children could be considered for future work. We can also apply this analysis to other groups of taxpayers that may be of specific interest.

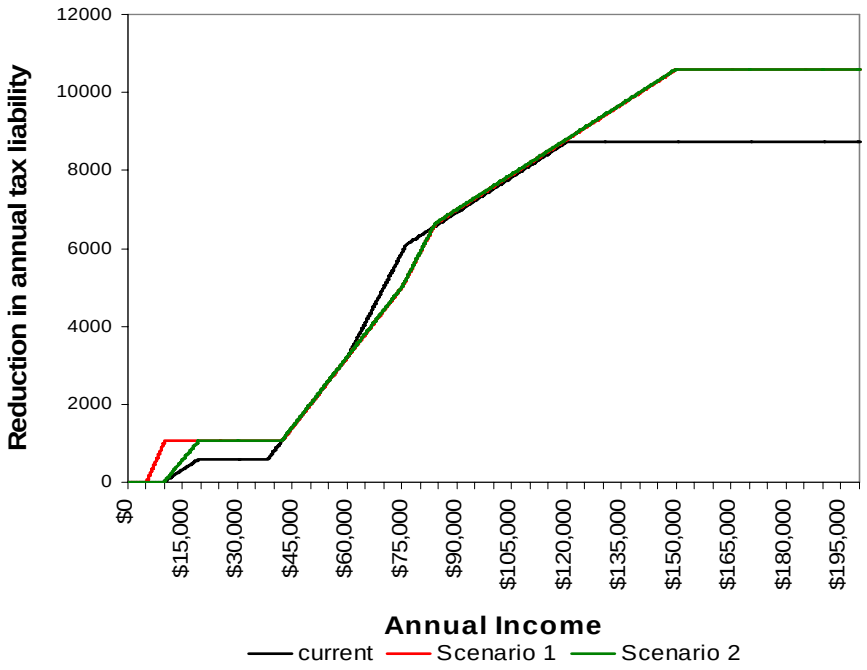
FURTHER INFORMATION THAT MAY HELP IN CONSIDERING LABOUR MARKET AND EFFICIENCY EFFECTS

Income Splitting

Progressive tax systems also create incentives for individuals to reclassify income. This not only reduces tax revenues and increases deadweight cost, but it can undermine the redistributive goals of the tax system. That said there are practical limitations to reclassifying income so large scale income splitting is not a viable option for most taxpayers. For example it is easier to reclassify investment income as opposed to labour income.

To illustrate how tax changes can affect incentives to reclassify income, we can consider the benefits available from income splitting. Under the current system the maximum benefit of $8 730 from income splitting is available where a taxpayer has an income in excess of $120 000 and can (through some means) transfer $60 000 of this income to their partner. Figure 11 shows that under the notional scenarios the maximum benefit from income splitting increases to $10 590 for scenario 1 and $10 607 for scenario 2 where combined income exceeds $150 000.

Figure 11: Maximum gains from income splitting



Key Points

- Incentives to find ways to income split would increase under both scenarios.
- Incentives to split even small amounts of income, in order to benefit from reduced rates at the bottom, are increased.

Tax benefit interface

The high EMTRs from the interaction of the benefit and tax system will also be affected by tax changes. Depending on how tax changes affect earned income versus beneficiary income, tax changes can increase the incentive to enter the workforce. We could calculate replacement rates for different tax scenarios comparing the net income for different hours worked and wages levels to that received from being on the benefit alone. A replacement rate of greater than 1 indicates higher disposable income from working compared to receiving benefit income only.

Human Capital

Tax can affect incentives to acquire human capital by affecting expected income and also the income foregone while acquiring additional qualifications (the opportunity cost of the qualification). How tax changes might affect these incentives are affected under different tax change scenarios could be pursued if this would help inform decisions between alternate options. While there is strong evidence that income increases levels of qualifications, the extent to which this is due to innate ability or the qualification is not as clear. Therefore any analysis would not be precise.