



The Role of Tax in Maintaining a Sustainable Fiscal Position

New Zealand Treasury

BACKGROUND PAPER FOR THE
2013 STATEMENT ON THE LONG-TERM FISCAL POSITION

JULY 2013



New Zealand Government

**BACKGROUND PAPER
FOR THE 2013
STATEMENT ON THE
LONG-TERM FISCAL
POSITION**

The Role of Tax in Maintaining a Sustainable Fiscal Position

MONTH/YEAR

July 2013

URL:

Treasury website at July 2013:
www.treasury.govt.nz/government/longterm/fiscalposition/2013

NZ TREASURY

New Zealand Treasury
PO Box 3724
Wellington 6008
NEW ZEALAND

Email information@treasury.govt.nz

Telephone 64-4-472 2733

Website www.treasury.govt.nz

Table of Contents

1	Executive Summary	1
	Summary of Analysis	2
2	Contribution of tax policy to maintaining a sustainable fiscal position	5
	Key Points	5
	Tax revenues – past and future trends	6
3	Options for Raising Revenue to Meet Fiscal Obligations.....	14
	Timing of Tax Changes	15
	Tax Enforcement	16
	Changes within Existing Tax Bases	17
	A – Personal Tax Changes	17
	B – Consumption Tax – GST	26
	C – Raising the Company Tax Rate	31
	Income Tax Base Broadening Options.....	35
	D – Capital Gains Tax.....	35
	E – Land Tax.....	43
	F – Other Tax Bases.....	48
4	Summary of Results.....	52
	Annex 1 - Capital Gains Tax Revenue Estimate	54
	Annex 2 - Illustrating Impact of Capital Gains Tax on Allocative Efficiency.....	58

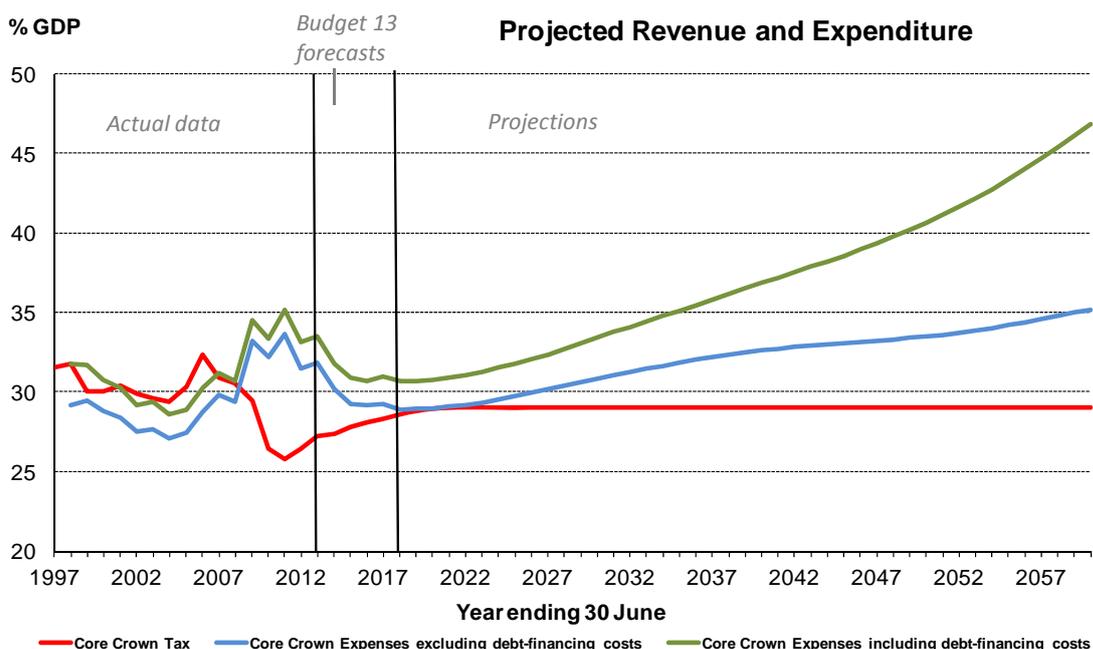
The Role of Tax in Maintaining a Sustainable Fiscal Position

1 Executive Summary

This paper outlines the central role of tax revenues in maintaining a sustainable fiscal position. It then analyses a range of potential future revenue-raising reforms against four criteria – economic efficiency, distributional equity, macroeconomic sustainability and revenue sustainability.

Maintaining strong revenue flows is a critical part of managing the government's fiscal position. New Zealand's broad-based income tax and consumption taxes are considered to be among the most efficient in the world. They raise large amounts of revenue at modest tax rates. In considering future tax changes we must keep in mind the need for the tax system to be efficient, fair, and robust.

As discussed in other papers, demographic changes will contribute to rising government expenditures if present policies continue, as illustrated below:



Even though increasing taxes may impair economic performance, options for increasing revenue must still be considered as an option for retaining fiscal credibility given the size of the fiscal challenge, particularly as other options (such as expenditure reductions) also impose economic and social costs. The mix of any tax policy response is important given the relative efficiency of different taxes and the disparate wider impacts of these taxes discussed in this paper. Projected deficits could be closed by further increasing tax revenues by 3% of GDP over the next 40 years. This paper discusses considerations pertaining to different options for raising revenue in order to meet future fiscal challenges.

Summary of Analysis

Raising **personal income tax**, whether by fiscal drag, tax rate changes, or adding a payroll tax, is likely to be very inefficient with adverse effects for labour force participation and (except for the payroll tax) savings and investment. Fiscal drag and a payroll tax are both regressive tax changes. Changing the personal tax rate scale could potentially be either progressive or regressive depending on how the scale is changed, although in practice it may be difficult to change personal income tax in a way that both raises substantial revenue and increases progressivity because much more revenue can be raised by raising rates on the lower income bands than on the higher income bands.

Raising **GST** has the lowest efficiency cost of the three main rate raising options (personal, company and GST) as its broad base means much revenue can be raised with modest increases. It does have some efficiency cost in terms of discouraging labour force participation. The equity impact of raising GST is largely proportionate when considered on a lifetime basis.

Raising **company income tax** (combined with aligning it with the top personal rate if it goes over 33%) has adverse efficiency effects because it reduces incentives for investment. On the other hand it also raises some revenue efficiently from non-residents where economic rents are being earned. However, in practice the company tax rate could not be raised much higher than it is currently due to raising incentives for multinational companies to structure profits away. The modelling shows that a company tax increase would have to be much higher rate increase to raise revenue compared to a personal income tax or GST increase, so it does not appear to be a viable option for raising significant revenue.

Base broadening by introducing a **capital gains tax** has an efficiency cost in terms of increasing the tax on capital overall, but it could also improve the allocation of savings by altering incentives so less investment would be made in real property and more in other forms, such as financial assets. It would also increase the progressivity of the tax system. It would also cause real property prices to be lower than they otherwise would be and that may reduce international vulnerabilities by reducing the demand for foreign borrowing. There are many design options; capital gains taxes can be complicated to design and implement and there are second order efficiency issues arising out of the design that would need to be considered.

Base broadening by introducing a well-designed **land tax** (based on the value of unimproved land and with no exemptions based on land use) should be very efficient with little reduction of economic performance. Historically, New Zealand has had a land tax

but it had been weakened with exemptions and ultimately repealed, so its sustainability may be questionable. Its distributional impact is largely proportionate. Its main disadvantage is a transitional inequity as the introduction of a land tax should cause land values to fall, so current land owners would bear the cost for introducing a tax which is efficient for the future. This could also raise political objections to introducing a land tax that applied on a broad basis. The land tax, by causing land values to fall, would also reduce international vulnerabilities over time as less foreign borrowing would be needed to buy land (although, to the extent that the tax imposes unexpected cash flow burdens on current land owners and reduces the value of land as collateral there could be a risk to some borrowers and lenders which would increase vulnerabilities in the short term).

Also discussed in this paper, but not modelled, are **other taxes**, such as **excise taxes, environmental taxes, and transaction taxes**. Generally, excise taxes have objectives other than raising revenue. They should be priced so that their cost reflects a social cost (externality) that should be internalised by the taxpayer/consumer. If priced correctly, this should improve social welfare. The revenue is welcome but it should not be an end because the other main tax bases raise revenue more efficiently than a tax on a particular good. The same applies for environmental taxes. For example, a **carbon tax** may raise some revenue but the tax should be set so the revenue is enough to offset the environmental externality or to meet our international climate change obligations. **Transaction taxes** are considered particularly inefficient because they tax transactions and inputs into production and not income or final consumption. **Financial transaction taxes** are generally considered to be inefficient for this reason and face the additional challenge of being impractical to enforce in an international financial system in the absence of capital controls.

A high-level summary of the modelled tax changes, against the four criteria noted at the start of the executive summary, is set out in the table below.

Tax change	Economic efficiency	Equity impacts	Macroeconomic sustainability	Revenue sustainability
Personal Income Tax – Fiscal Drag	↓	↓	↔	↑
Personal Income Tax – Increase all Marginal Rates	↓	↔	↓	↑
Personal Income Tax – Payroll Tax	↓	↓	↓	↑
Consumption Tax – Increase GST Rate	↓	↔	↔	↑
Company Tax – Increase Company Rate	↓	↑	↑	↓
Base-Broadening - Capital Gains Tax	↔	↑	↑	↓
Base-Broadening – Land Tax	↔	↔	↑ ¹	↑

Key: ↑ = significant positive impact, ↓ = significant negative impact, ↔ = negligible impact or unclear, ↕ = some positive impact, ↘ = some negative impact

¹ As noted above there may be a worsening of macro vulnerabilities in the short term - to the extent that the tax imposes unexpected cash flow burdens on current land owners and reduces the value of land as collateral there could be a risk to some borrowers and lenders.

Overall conclusions about which tax changes are most favourable rely on judgements about how to weight the key criteria noted above (and wider considerations, such as the complexity of the tax change, as well). This is necessarily subjective but should be considered in the context of the overall goal of raising living standards for New Zealanders now and in the future. However in focusing on each of the main criteria in turn (and being mindful of possible tradeoffs with other criteria) the analysis leads us to the following key judgements:

*If the **economic efficiency** of a tax change is the primary concern:*

- Then a well-designed land tax would be most efficient with little reduction of economic performance compared to raising revenue from other bases. While a GST rate increase does have some efficiency cost by discouraging labour force participation, it is the least inefficient rate rise among existing tax bases.

*If the **distributional impacts** of a tax change is the primary concern:*

- Then tax changes that increase the tax burden on capital income (for example increases to the company rate or introducing a capital gains tax) will increase the overall progressivity of the tax system.

*If the **sustainability of revenue** from a tax change is the primary concern:*

- Then increases to personal income tax rates, the GST rate or introducing a land tax are likely to offer the most stable sources of future tax revenue (although raising additional revenue through fiscal drag may not be sustainable over the longer term due to the perception of reduced equity in the personal income tax system).

*If the impact on **macro vulnerability/risk** from a tax change is the primary concern:*

- Then introducing either a land tax or capital gains tax could reduce international vulnerabilities by reducing the demand for foreign borrowing (from reduced land values) in the longer term.

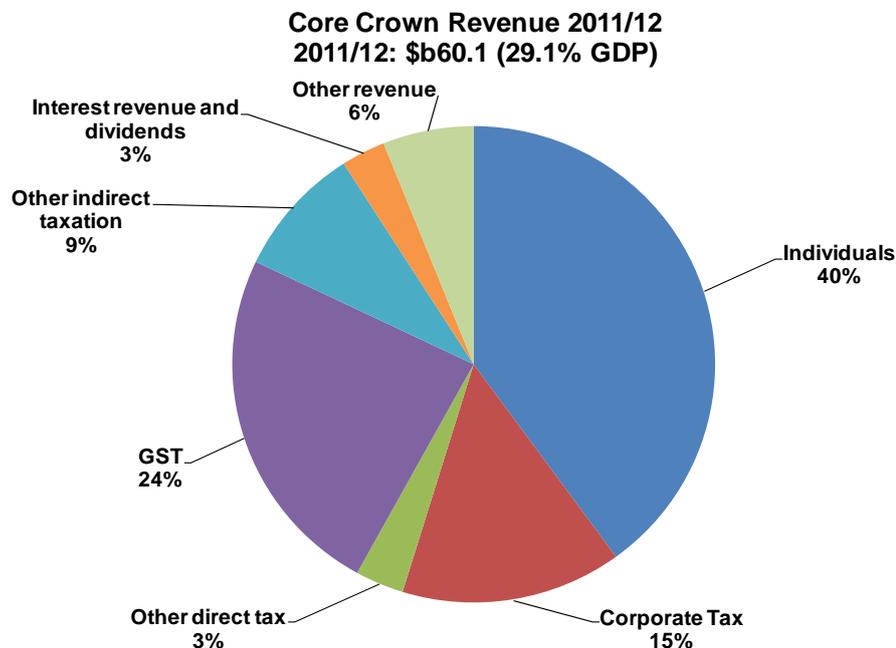
In reality, reforms may need to be considered as a 'package' – both in terms of implementing a combination of different tax changes or in combination with different expenditure reform options being considered in other parts of the Long-Term Fiscal work. This is particularly important given the size of the fiscal challenge, and the need to balance different distributional and sustainability impacts of different tax reforms.

2 Contribution of tax policy to maintaining a sustainable fiscal position

Key Points

- A sound, durable and robust tax system has an obvious role to play in maintaining sound fiscal policy.
- New Zealand's broad-base low-rate income tax system is a robust and efficient tax system.
- Any increase in taxes has some negative economic impact.
- However, we must remain cognisant of the need to raise the necessary revenue as efficiently as possible, taking into account likely future trends that could affect the sustainability or efficiency of exploiting some tax bases. Increasing trends towards capital and labour mobility may constrain our ability to bridge a revenue gap through higher taxes on mobile tax bases.
- Any changes to the tax structure should also take into account distributional impacts, operating in conjunction with the welfare system and other social programs.

The role of the tax system in providing government revenues is critical. The government does have other sources of revenue, but these are minor compared to the tax system. These are primarily income from SOEs and investment earnings of the New Zealand Superannuation Fund.²



New Zealand's central government tax system consists of two main systems: an income tax system and a consumption tax system.

² There are other funds such as ACC and the earthquake levy. However, use of these funds is earmarked for particular uses so they do not contribute to revenues that could be used to fund the major expenditures of the government.

The income tax system comprises a number of entity and withholding taxes (personal income tax, company income tax, PAYE³, resident withholding tax, non-resident withholding tax, and taxes on other entities such as PIEs⁴, trusts, and superannuation funds). The taxes are integrated so as to tax income as early as possible and to avoid double taxation as income is distributed through entities. The income tax system is characterised as broad-base, low-rate, which means taxable income is defined as broadly as possible so as to provide a large amount of revenue at a low tax rate. This has efficiency benefits because imposing the same tax wedge on all forms of income means investors and workers face private incentives to invest and work as efficiently as possible. The primary exception to the broad tax base currently is lack of a general capital gains tax.

The consumption tax system (the goods and services tax (GST)) is also broad-base, low-rate, applying to almost all goods and services at the same flat rate (15%). The main exception is financial services. Countries have looked at the possibility of extending GST to financial services but an acceptable way of doing so is yet to be discovered. No current GST is imposed on housing services (both owner-occupied housing and rental housing) but the GST impost on housing construction imposes an effective consumption tax burden on housing. As with the income tax system, the GST is imposed on entities (on the value added by each entity or group) with a system of input credits to ensure there is no double taxation. The final tax burden is borne by the end consumer.

Another source of revenue is excise taxes. The main ones are taxes on petrol, tobacco, and alcohol. These generally have purposes other than raising revenue, such as funding road construction and maintenance, and discouraging consumption of products that have a high personal or social cost. These taxes are imposed on narrow bases and have social objectives other than just raising revenue.

Tax revenues – past and future trends

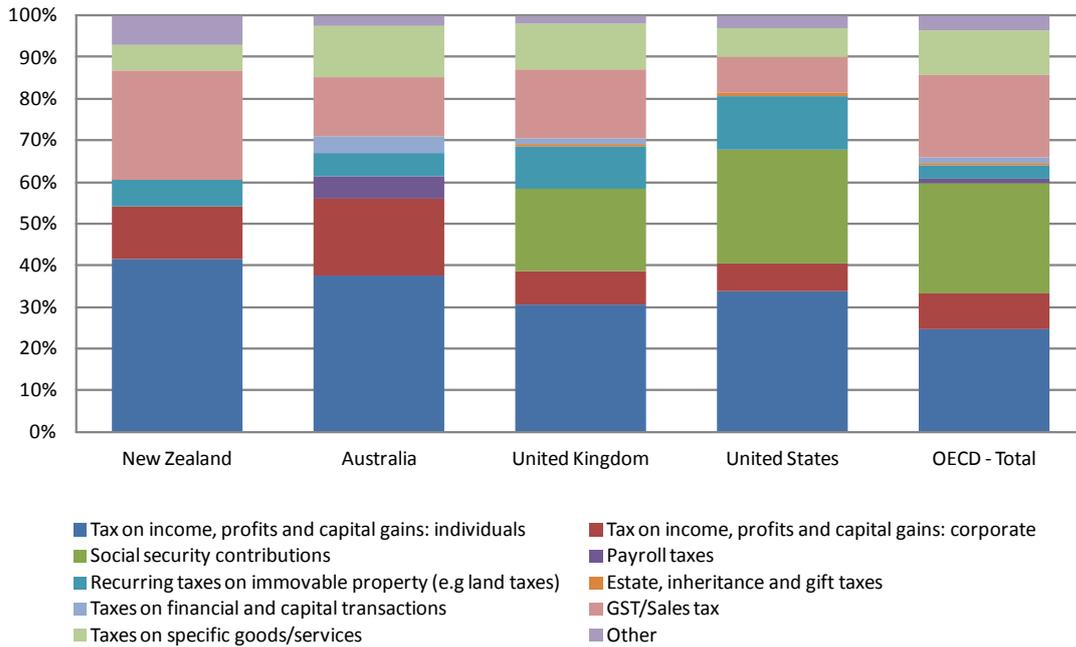
Past Trends

New Zealand, like most developed countries, earns most of its tax revenues from personal and company income taxes and consumption taxes. Unlike many countries, New Zealand does not have a payroll or social security tax, which is a tax on labour income only.

³ Pay-as-you-earn, the payroll withholding tax on wages and salaries.

⁴ Portfolio investment entities, a special tax regime for managed investment funds such as KiwiSaver funds.

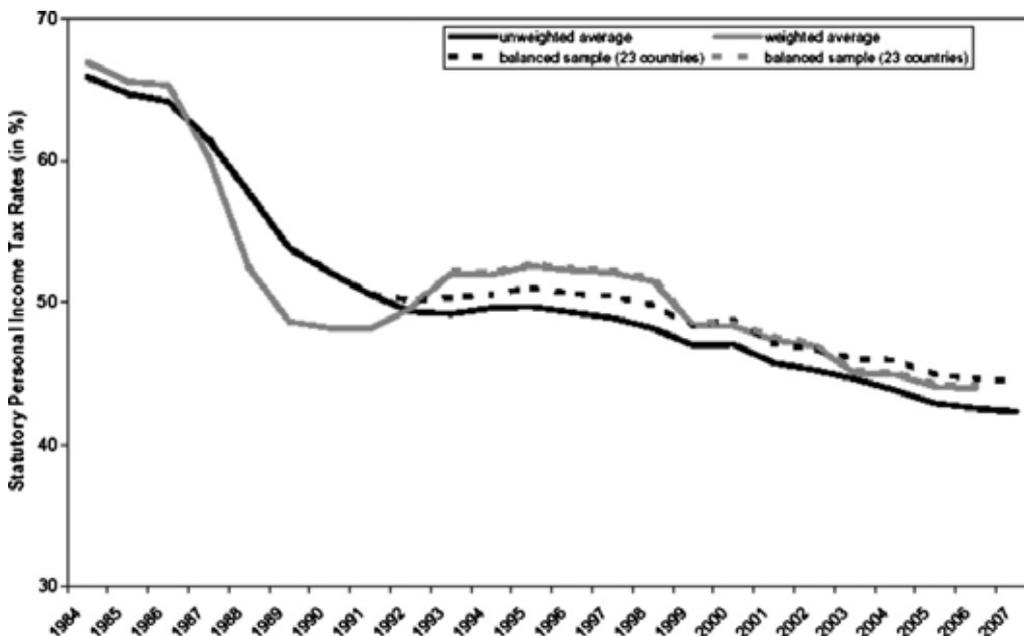
Comparison of tax revenue as a % of total tax by tax type (2009)



Source: OECD. Note data are from 2009 so do not include the Budget 2010 tax changes.

From the early 1980s, there has been a trend of OECD countries to reduce their marginal tax rates on companies (see chart on p.34) and individuals (see chart below), while at the same time maintaining revenue flows by base broadening.

Trends in top statutory personal income tax rates in OECD countries, 1984-2007⁵

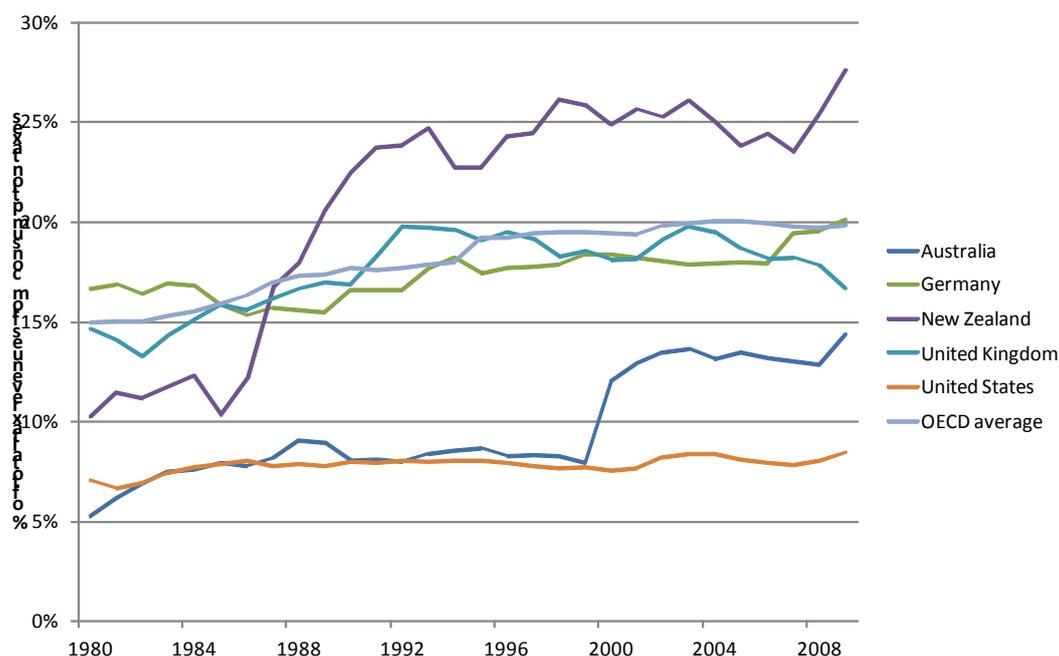


Note: "Weighted average" is GDP weighted average top statutory personal income tax rates.

In addition, there has been an increased reliance on general consumption taxes for revenues.

⁵ Source: Lorentz, S (2008), "Corporate taxation in the OECD in a wider context", *Oxford Review of Economic Policy*, Vol. 24, Number 4, pp.639-660.

Trends in consumption tax revenue as a % of total tax revenue (1980-2009)



There have been a few reasons for these trends:

- Increasing mobility of both capital and labour means high tax rates have been becoming more counterproductive in their tendency to discourage investment and individual residence/labour force participation; and
- An increased understanding that high marginal tax rates have a high level of economic cost, and a more efficient tax system raises more revenue by having a broader base and lower rates.

New Zealand has been following these same international trends, most recently in the changes announced in the 2010 Budget which reduced marginal income tax rates, broadened the income tax base, and increased the rate of GST.

Recent Changes – Global Financial Crisis

The global financial crisis in 2008 provoked a number of responses in tax policy. The initial response in many cases was to use tax changes as a form of fiscal stimulus in order to reduce the risk of a major recession. These included the United States, which enacted a per taxpayer refundable tax credit of \$400 per taxpayer, and the United Kingdom, which temporarily reduced its VAT rate from 17.5% to 15%⁶ in order to stimulate short-term consumption.

The global financial crisis also drew attention to weak balance sheets and poor credit risks first in the financial industry (which received a substantial bail out), and later among sovereign debtors, which in some cases became weaker as a result of bailing out their own banks. This has led to pressure on some countries to reduce their net deficit through domestic political pressures and in some cases through pressure from

⁶ Between 1 December 2008 to 31 December 2009 – see <http://www.parliament.uk/briefing-papers/SN00701.pdf>

creditors and the International Monetary Fund and European Union countries which had to aid some countries and required some fiscal consolidation as a condition of providing aid.

After letting the temporary reduction in the VAT rate expire, the United Kingdom tried to raise additional revenues by raising the top rate of personal income tax from 40% to 50% in 2010. However, the top rate was subsequently reduced to 45% in 2013. The UK estimated that the revenue gain from an increase in the top rate to 50% was much lower than originally forecast, with the estimated “elasticity of taxable income” (the propensity of reported taxable income to fall as the tax rate increases) around 0.50 as opposed to an expected 0.35.⁷ This shows the need to continue to be cautious about trying to raise revenues through increasing marginal tax rates as the response of taxpayers may undermine its revenue raising potential, and efforts to minimise tax liabilities may cause economic inefficiencies. France is proposing to raise the top rate on very high personal incomes (75% on incomes over €1 million). It remains to be seen how successful it will be in raising revenue.

Given the practical difficulties and economic inefficiencies from attempting to raise revenues by increasing marginal income tax rates, the IMF has been advising countries to raise revenues by taxing immobile bases, such as land and property. Under IMF advice, Greece and Italy have recently enacted new property taxes or expanded existing property taxes to apply to owner-occupied housing. Ireland has recently enacted a local property tax, which came into effect from 1 July 2013 with a rate of 0.18% for the first €1 million and 0.25% on values over €1 million.

Another area of taxation which has been discussed as a result of the global financial crisis has been attempting to raise revenue from the financial industry itself, as a way of recouping the costs of the banking bailouts or to discourage speculative behaviour which may have contributed to the crisis. Among these ideas, the IMF has opposed forms of financial transactions taxes as an inefficient tax discouraging efficient operation of the capital markets and in raising revenue.⁸ However, the IMF has indicated that taxes on banking capital may be acceptable as a way of funding past or future bailout costs⁹ or a tax on banking activity (a Financial Activity Tax). Both of these are discussed more fully in Section F.

Future Trends

Looking ahead, many countries will be facing long-term fiscal challenges similar to New Zealand, and will be looking at policy options, including tax, to help address these. Future trends in tax policy are of course subject to some speculation. Unlike for some of the expenditure areas, we do not see demographic changes as having a material impact for raising future tax revenues.¹⁰ However, other future changes may be more

⁷ See <http://www.hmrc.gov.uk/budget2012/excheq-income-tax-2042.pdf>, p.46

⁸ Stijn Claessons, Michael Keen, Ceyla Pazarbasioglu; *Financial Sector Taxation: The IMF's Report to the G20 and Background Material*, International Monetary Fund (2010).

⁹ New Zealand had a charge which was similar to this when it had its deposit guarantee scheme and charged banks a premium based on a percentage of total deposits in order to participate.

¹⁰ Ball, C., and Creedy, J. (2012) Population Ageing and the Growth of Income and Consumption Tax Revenue, *Paper to the Long-Term Fiscal Panel No.1* Available at:

relevant for tax. In general, we do not see any reductions in the pressures against high marginal income tax rates as trends towards high capital and labour mobility are not likely to decrease. However there are two possible caveats to this. First, there may be a reduction in competition for low company tax rates if other countries stop reducing their company tax rates in order to maintain revenue flows. However, New Zealand should wait to see how the international environment changes before having any serious consideration of a major company tax increase. Concerns over growing inequality could also prompt governments to consider imposing higher marginal tax rates on higher incomes as a way of increasing progressivity, although other trends towards higher labour and capital mobility may make such policies difficult to sustain (see discussion below on changes to income distribution and the role of tax policy regarding this).

Given that international pressures against raising marginal tax rates remain overall, other options which may be less inefficient may be more plausible. These include broadening the income tax base in order to raise revenue without increasing marginal tax rates, such as taxing capital gains more comprehensively (most other OECD countries have some form of capital gains tax already).¹¹ Another option would be to tax immobile bases. A tax on land (or property, as recommended by the IMF) could be a sustainable source of revenue for the future. These tax changes are discussed later in the paper under Sections D and E.

There is a current focus on environmental harm resulting from things such as carbon emissions and degradation of water supplies. Growing intensification of the economy and exploitation of resources is likely to raise these concerns in the future. This leaves using taxation or other regulation as a way of regulating environmental harm, which could also provide a possible revenue source for the future. This could be an efficient source of revenue if taxes are set in order to internalise externalities resulting from environmental harm. This could be the case for regulating carbon emissions. This is discussed later under Section F.

Changes to Income Distribution and the Role of Tax Policy

Data suggest that the direct tax and transfer system in New Zealand had a relatively consistent redistributive effect over time. The tables below show how income inequality, as measured by the Gini coefficient, changed across different types of income measures between 1988 and 2010. The impact of the direct tax and transfer system (measured as the difference between market income and disposable income)¹² has been relatively constant over time: the second table below shows that the difference between the Gini coefficient for market income and disposable income

<http://www.victoria.ac.nz/sacl/about/cpf/publications/pdfs/8-Creedy-Bal-Tax-Revenue-with-Pop-Ageing-1-August-2012.pdf>

¹¹ However, the detailed design of capital gains taxes could be complicated and result in their own inefficiencies. These would have to be fully considered before deciding if a capital gains tax is a worthwhile policy.

¹² *Market income* is income from wages and salaries, investments, self-employment, and from other forms of taxable income earned by private means. *Disposable income* is market income plus cash benefits, housing subsidies and pensions, but less income tax payments. *Final income* is disposable income plus the cost of subsidised or free health and education services, but less indirect tax payments.

changed from -29% in 1987/88 to -31% in 2009/10. Treasury's Fiscal Incidence study suggests that changes to the tax and benefit system over the last 20 years were not the main drivers of an increase in income inequality. In fact any increase in income inequality that has occurred between 1988 and 2010 is due mainly to growing disparities in market incomes.¹³

Gini Coefficient				
	1987/88	1997/98	2006/07	2009/10
Market Income	0.42	0.49	0.54	0.52
Disposable Income	0.30	0.35	0.38	0.36
Final Income	0.27	0.30	0.35	0.33

% Changes in Gini Coefficient				
	1987/88	1997/98	2006/07	2009/10
Market → Disposable	-29%	-27%	-29%	-31%
Disposable → Final	-10%	-16%	-10%	-9%
Market → Final	-36%	-39%	-36%	-37%

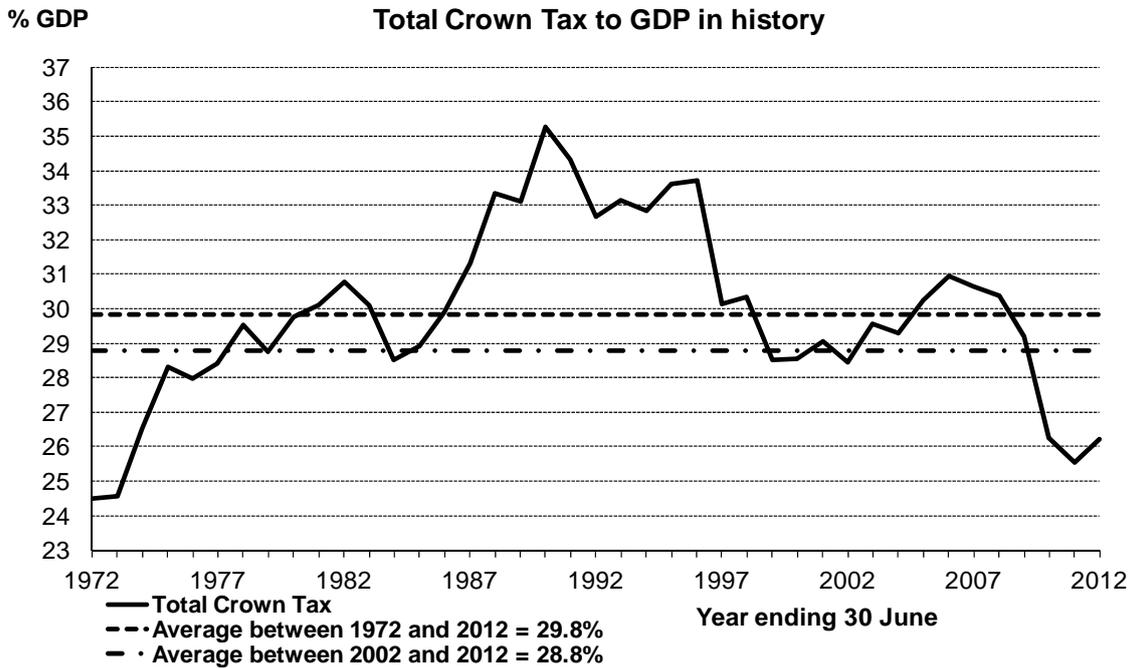
* Decrease in Gini implies more equality

The OECD has reported on trends in income inequality and has also noted that the main driver appears to be changes in market incomes more than changes in tax policy.¹⁴ They indicate the best policy approaches to address this are likely to be in providing access to education and labour market participation. To the extent the tax system could be used to address inequality, the report recommends that the focus should be on removing tax expenditures that tend to favour high income individuals, rather than increasing the progressivity of the rate structure. The former approach is likely to be more efficient as a way of addressing distributional concerns.

¹³ Aziz, O., Gibbons, M., Ball, C., and Gorman, E., 2012, The Effect on Household Income of Government Taxation and Expenditure in 1988, 1998, 2007 and 2010, Policy Quarterly, v. 8, n.1, p. 29 – 38 (<http://ips.ac.nz/publications/files/2d6039de603.pdf>)

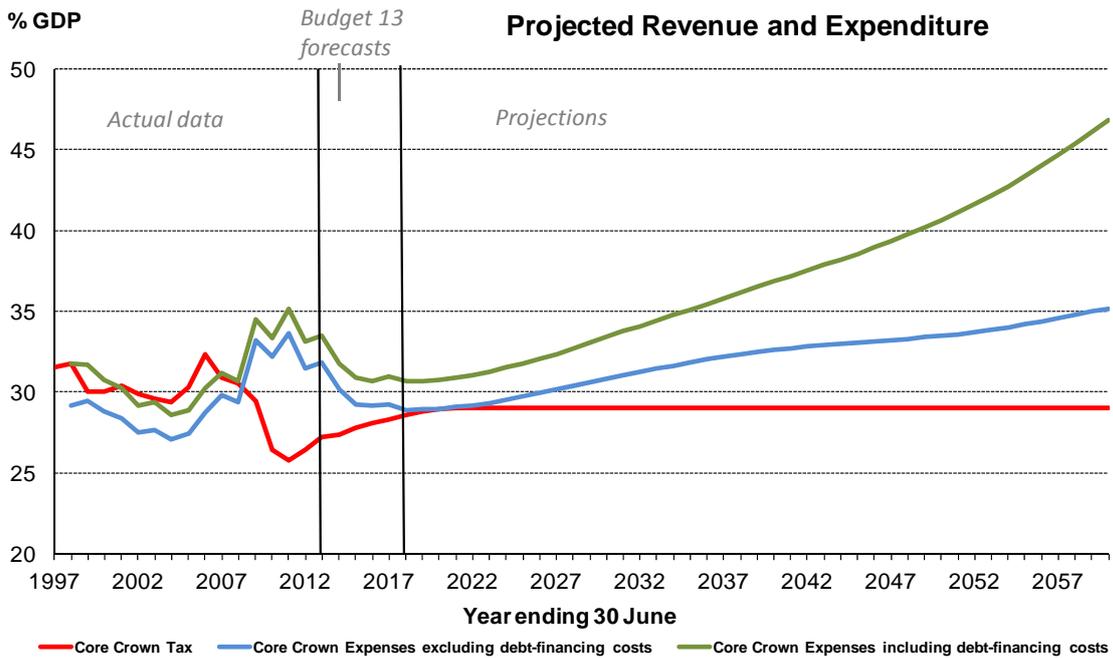
¹⁴ OECD, *An Overview of Growing Income Inequalities in OECD Countries: Main Findings* (2011)

Revenue and Expenditure Projections



Historically tax revenues have averaged about 29% to 30% of GDP since 1972. However, this has varied significantly with tax revenues high in the early to mid-1990s (33% to 34% of GDP). They fell back to 29% of GDP after personal tax reductions in 1996. They rose during the housing boom period of the mid-2000s and fell from 2008 with the onset of the global financial crisis and changes to personal and company tax rates.

For projecting future revenue we have followed the Budget 2013 forecasts for tax revenue, which project a rise from 26.4% in 2011/12 to 28.6% of GDP in 2017/18. We have projected a continuation of that rate of revenue increase after the forecast period until it reaches a steady state of 29% of GDP in 2020/21.



Combining projected revenues with our base case of projected expenditures shows that significant revenue increases would be needed in order to achieve sustained net debt at 20% of GDP.

3 Options for Raising Revenue to Meet Fiscal Obligations

Broadly there are two ways of collecting more tax revenue. We increase tax rates, or we increase the range of activities subject to tax, either by broadening existing tax bases, or adding new ones.

- Revenue options should be considered alongside spending control as a way of managing the fiscal position.
- Different revenue raising options have different economic performance and distributional equity consequences.
- Options to raise potentially large amounts of revenue include:
 - Allowing fiscal drag to continue for some period;
 - Raising tax rates on existing bases, eg, GST, personal income, and company income;
 - Base broadening for existing tax bases, eg, taxing capital gains more comprehensively; or
 - Adding a new tax base, eg, a land tax.
- Other options include:
 - Increase rates and scope of excise taxes, eg, alcohol, tobacco, and petrol and adding new taxes to address environmental externalities; and
 - Adding transaction taxes such as stamp duties or a financial transactions tax.

This section discusses some options for using changes to the tax system to raise revenue, and discusses their impacts against the following criteria:

- Efficiency and economic growth – assesses how well the tax change contributes (or detracts from) economic growth and efficiency by changing incentives for investment and labour force participation.
- Equity – assesses how the tax change may impact distributional equity by increasing or decreasing the overall progressivity of the tax system.¹⁵
- Sustainability/risks – assesses sustainability and risk together with the following considerations: how reliable is the future revenue source (stable or volatile), how does it impact on the macroeconomic cycle (strength of its countercyclical impact), and how does it affect the balance of domestic savings and foreign investment to impact overall macro vulnerability.

¹⁵ This assessment is generally based on current equity impacts. Assessing equity impacts on a lifetime basis, preferred by most economists, has not been possible for the majority of tax reforms given the lack of longitudinal data and methodology to make the assessment. However such assessments would act to dampen any equity impacts noted in this paper.

In each case the impact of tax changes on net debt (as a percentage of GDP) is shown against the base case scenario. This was done in a simple way which disregards the impact of the tax change on the economy. Different tax changes are likely to have a different impact on the economy and this is discussed under efficiency implications. Because any tax increase is likely to reduce economic performance, the tax rate would in reality have to be raised by more than the amount indicated in order to offset these negative economic effects and still raise the desired amount of revenue.

The tax changes discussed are:

- A. Personal tax changes, including:
 - 1. Allowing for fiscal drag
 - 2. Level tax increases
 - 3. Payroll tax
- B. Consumption tax changes (GST)
- C. Company tax changes
- D. Base-broadening – capital gains tax
- E. Base-broadening – land tax
- F. Other taxes

In reality, reforms may need to be considered as a ‘package’ – both in terms of implementing a combination of different tax changes or in combination with different expenditure reform options being considered in other parts of the Long-Term Fiscal work. This is particularly important given the size of the fiscal challenge, and the need to balance different distributional and sustainability impacts of different tax reforms.

Timing of Tax Changes

Some of the fiscal scenarios presented in this paper suggest that taxes can be raised either once, to meet revenue needs for the following 40 years, or in two steps, with a smaller increase followed by a larger increase. This raises a number of issues in thinking about the timing of raising tax rates.

Higher tax rates cause disproportionate damage to economic efficiency. Standard economic theory shows that a rate increase will increase “deadweight loss” (a measure of loss of economic output caused by the tax system) by the square of the proportionate tax increase. For example, doubling a tax rate will increase deadweight losses by four times. This suggests that if a given revenue need is known for a certain period, it is better to raise the tax rate early and keep it stable as that would result in lower total deadweight losses over the period than having a low tax rate early in the period and a high tax rate in the end. However, there are some significant caveats to this:

- The fiscal projections we are basing this analysis on extend out a long period (to 2060, about 50 years) and there is significant uncertainty as to how accurate they are as they go out farther in the future. A policy maker now may not want to raise more revenues than necessary in the short term in order to fund a shortfall in the future that is possible but uncertain to arise;
- Even if we are confident that the future shortfall is very likely, there are still equity reasons why we may not want to raise excess revenues from a current generation in order to fund government expenditures for a later generation;

- There may be practical reasons to resist raising tax rates early if the result could be to drive people away to countries that have lower tax rates in the near term; and
- The projections shown that the early rate increase scenarios generally result in “overshooting” along the way to 20% net debt, with the government going through periods of negative net debt. Institutional arrangements may be necessary to prevent governments from spending the surplus during the period and to resist political pressures for spending increases or tax reductions.

Subject to those caveats, the general advice would be to have smooth tax rates over a long period to raise the revenues needed for that period rather than to have tax rates change, as the damage caused by the high rates will be much greater than the economic benefits of having the rates lower for a period.

Tax Enforcement

Greater enforcement to close the tax gap (ie, the difference between the amount of taxes imposed and the amount collected) could also provide another way of increasing tax revenues. Estimating the size of the tax gap is incredibly difficult to do. While some international comparisons have been conducted including New Zealand, the methodology and resulting estimates are not robust.¹⁶ Some countries do use more advanced techniques to estimate their tax gaps but these have a high compliance burden. There are no reliable estimates of the size of the tax gap in New Zealand.

A reasonable general order of magnitude for the tax gap across OECD countries would be 5 to 20 percent of total tax collections.¹⁷ This implies a tax gap for New Zealand of around \$3-11 billion. We expect New Zealand to be at the lower end of this general range owing to our general broad-base, low-rate tax settings, significant reliance on indirect taxes, and low levels of corruption – all things that are thought to be correlated with a smaller tax gap.

As part of Budget 2010, the Government allocated Inland Revenue extra funding to strengthen its audit activity. The focus of this extra audit was in the property and hidden economy sectors. So far an extra \$86.9 million of tax has been assessed, representing a return of \$6.62 for every \$1 spent. In light of this success, the Government allocated Inland Revenue additional funds in Budget 2013, to further its enforcement in the hidden economy and following up on overdue returns.

Budget 2010 also provided Inland Revenue with additional funding for debt collection. It has used this funding to launch an early intervention campaign in its debt collection activities. For example, it is now proactively contacting taxpayers with text messages and outbound calls to inform people of due dates and quickly inform them if they miss a payment deadline.

For the year ending June 2012 debt collections were \$231 million against a target of \$200 million. The return on investment was \$12.50 per \$1 spent. Despite these successes debt continues to be a significant challenge. Inland Revenue’s debt book

¹⁶ <http://www.econstor.eu/dspace/bitstream/10419/21427/1/dp514.pdf>

¹⁷ This range is consistent with the results of numerous studies for a range of countries surveyed by Gemmell and Hasseldine in “The Tax Gap: A Methodological Review”, VUW Working Paper, September 2012 (see table 2).

continues to grow and the portion of the debt that is two years or older is increasing. This older debt is particularly difficult to collect.

Going forward, Inland Revenue's Business Transformation programme aims to make it easier for taxpayers to meet their obligations. For example, improvements in data collection will allow Inland Revenue to pre-fill tax return information, making it easier to comply with filing requirements. Inland Revenue will also make greater use of intelligence-based systems to better target risk areas. This will improve rates of return for both audit and debt collections.

Changes within Existing Tax Bases

A - Personal Tax Changes

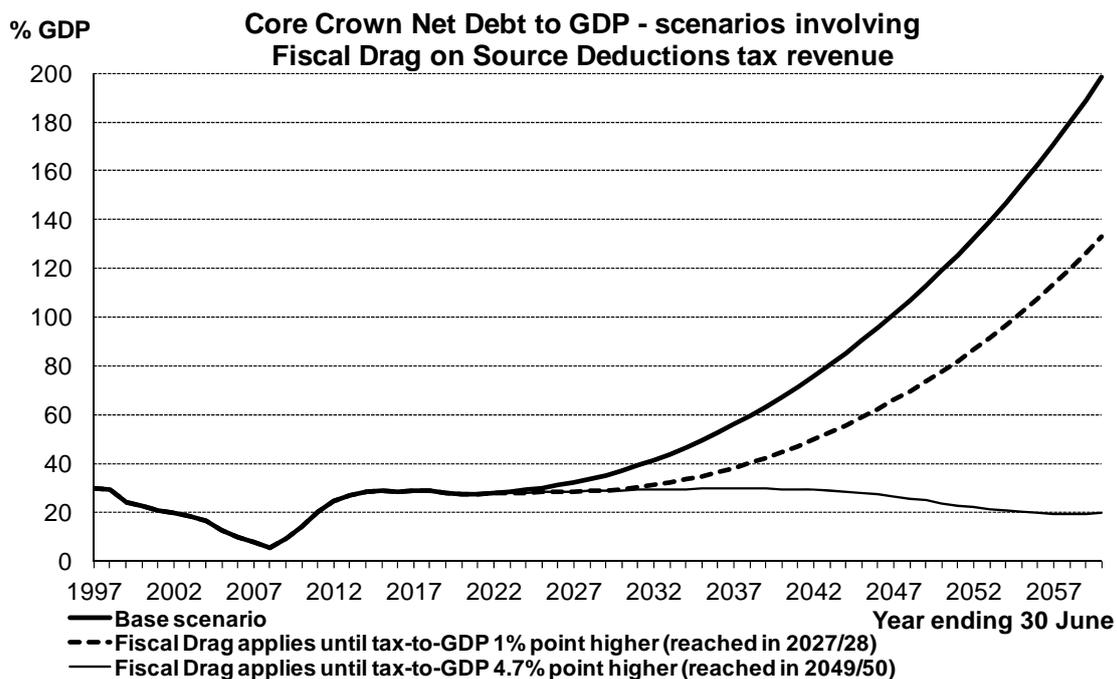
1 - Fiscal Drag

- Fiscal drag is the effect that constant real income (but rising nominal income) becomes subject to a higher effective tax rate over time due to the interaction between inflation and the personal income tax scale.
- This can be addressed by indexing personal tax rate thresholds to inflation, or making periodic adjustments to the personal tax scale.
- To raise 1% of GDP fiscal drag would need to continue over nine years from 2018/19 and to retain net debt at 20% fiscal drag would need to continue for 31 years from 2018/19.
- Fiscal drag has some efficiency costs in that lower real wage income becomes subject to progressively higher marginal tax rates, discouraging entry into the labour market.
- Fiscal drag would also reduce the progressivity and redistributive effect of the personal tax scale.

Fiscal drag describes the relationship between inflation, which means nominal incomes rise more than real incomes, and the progressive personal tax rate schedule. This means a given real income, which increases in nominal terms, becomes taxed at higher effective rates over time. Another way to describe it is the tax rate thresholds fall in real value every year.

Some countries explicitly index tax rate thresholds to adjust for fiscal drag. New Zealand does not. Instead governments periodically changed the personal tax rate scale. The most recent changes have been for the 1995/96, 2008/09, 2009/10 and 2010/11 income years.

If we project fiscal drag from the 2018/19 income year, the impact of fiscal drag would cause revenues to be 1% of GDP higher in 2027/28, and 4.7% of GDP higher in 2049/50, than they otherwise would be if the tax rate thresholds were adjusted for inflation. Allowing this to happen would allow net debt to be stable at about 20% of GDP.



Although allowing fiscal drag to occur is a simple and passive way of raising more revenue, it is generally not sustainable as eventually even low levels of income, such as income of beneficiaries, become taxable at the highest tax rate and the lower tax rates become ineffective in achieving progressivity.

Efficiency Considerations

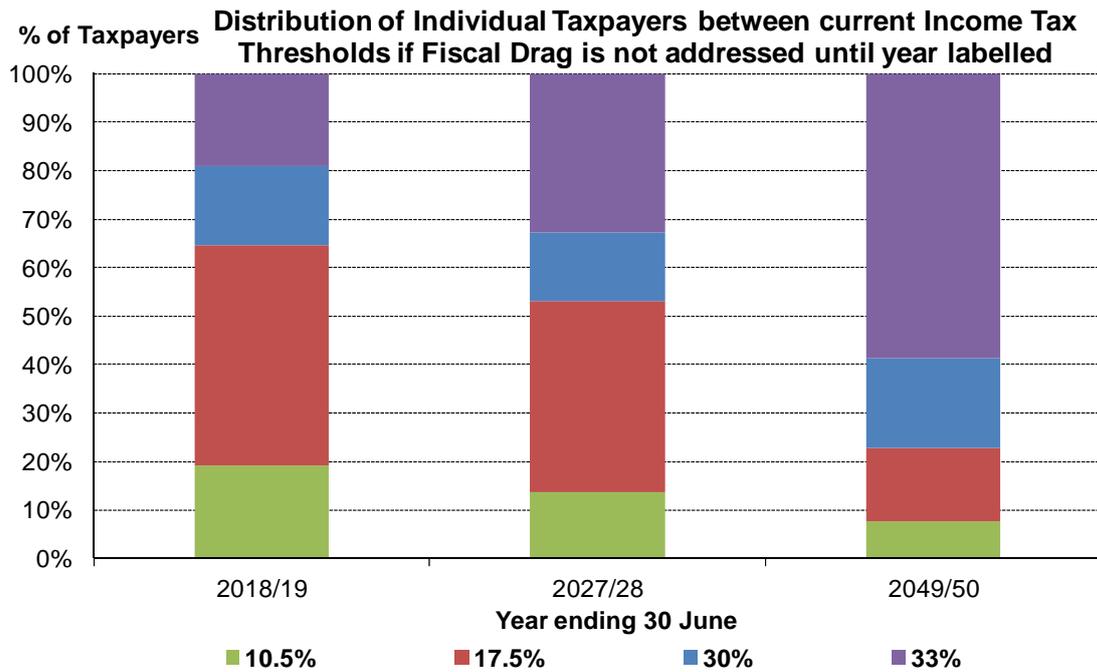
Fiscal drag would cause the average tax rates faced by workers to slowly increase, resulting in slowly declining take-home pay. For some, this would result in working no longer being as attractive as alternatives, such as being on the benefit and not working. Moreover, fiscal drag will raise the marginal tax rates of low and middle income workers, reducing incentives to work more or find better paying jobs. The interaction of a higher marginal tax rate with benefit phase-out regimes may raise disincentives further. Fiscal drag is likely to be more efficient in terms of investment incentives compared to an increase in all personal tax rates, however, as most savings and investment is made by higher income individuals and the maximum individual rate (33%) would not change through fiscal drag.

The following table illustrates the personal tax thresholds in real terms (2019 dollars) for the years 2018/19, 2027/28, and 2039/40 if we allowed fiscal drag to continue through those periods (assuming annual 2% inflation):

Marginal Tax Rate	2018/19	2027/28	2049/50
10.5%	\$0 - \$14,000	\$0 - \$11,715	\$0 - \$7,577
17.5%	\$14,001 - \$48,000	\$11,716 - \$40,164	\$7,578 - \$25,980
30%	\$48,001 - \$70,000	\$40,165 - \$58,573	\$25,981 - \$37,887
33%	\$70,001 +	\$58,574 +	\$37,888 +

Equity Considerations

As fiscal drag would raise the effective tax rate on lower incomes more than it would raise the effective tax rate on higher incomes, the income tax would become less progressive over time and would have less redistributive effect. If we assume the current income distribution remains constant, and all incomes rise by 3.5% in nominal terms every year¹⁸ then ultimately the portion of taxpayers paying the highest rate of tax would rise from 20% to 60% over 31 years as shown on the following chart:



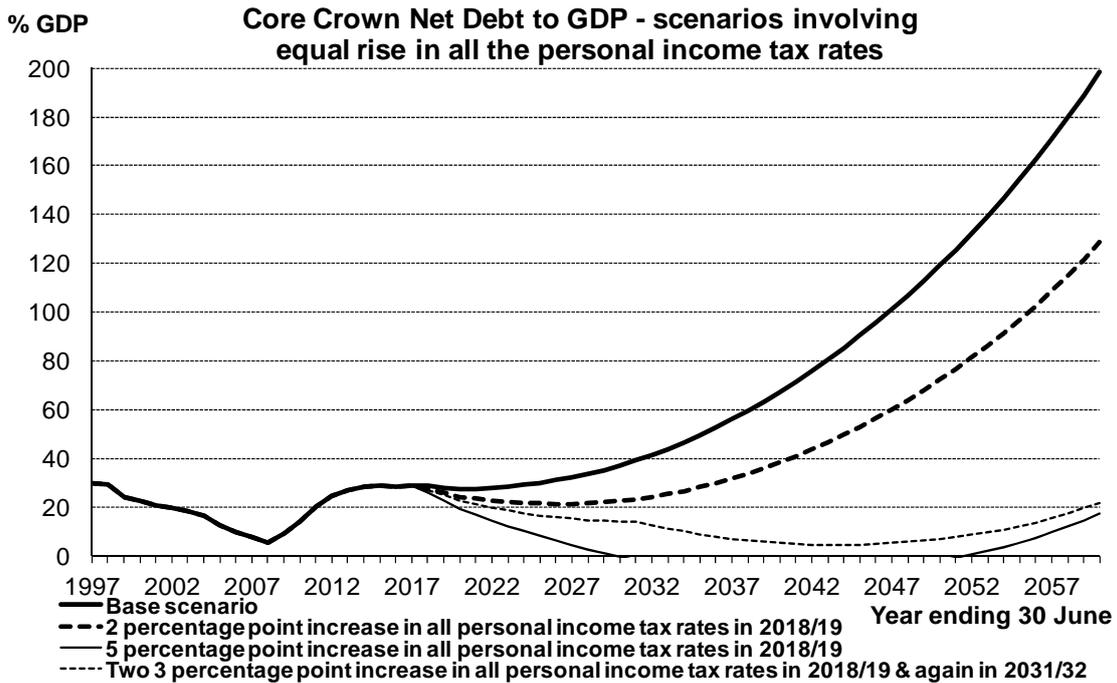
Risk and Sustainability

Increasing personal tax, such as through fiscal drag, should raise a stable source of revenue. However, the higher tax rate on low incomes and reduced progressivity may make the fiscal drag scenario unsustainable politically after a period. Because the fiscal drag scenario does not involve raising the highest rate of tax (and higher income people tend to save more) the overall disincentive to save is probably less than for a general tax personal tax rate increase, although more than for a payroll tax.

¹⁸ 2% inflation plus 1.5% real labour productivity growth.

2- Raising Personal Income Tax Rates

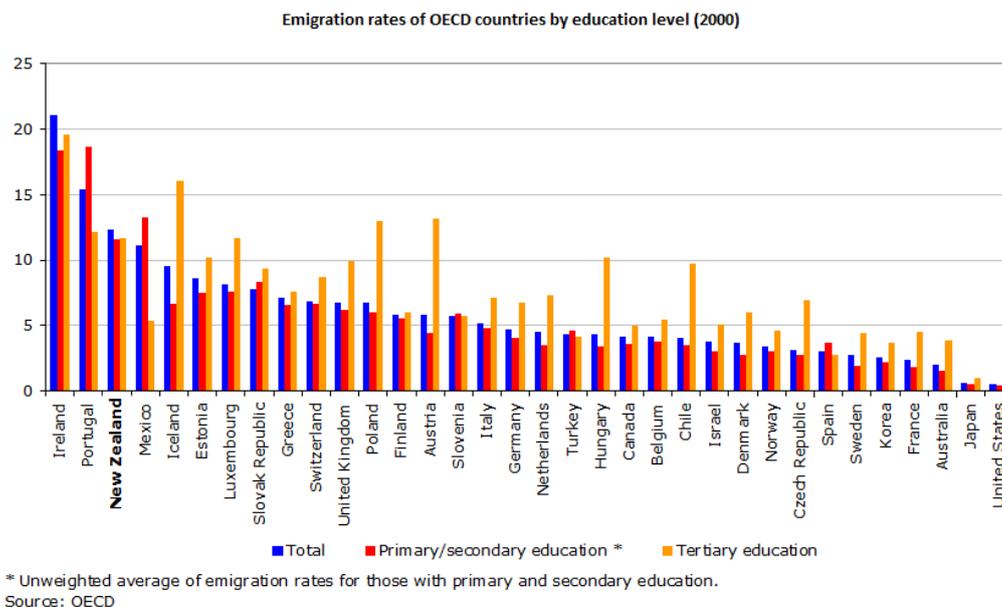
- In order to raise an additional 1% of GDP all personal income tax rates would need to rise by two percentage points from 2018/19 (with thresholds then adjusted for fiscal drag).
- In order to achieve 20% net debt by 2060, either:
 - All personal income tax rates would need to rise 5 percentage points from 2018/19 (then adjusted for fiscal drag), or
 - All personal income tax rates would need to rise by three percentage points from 2018/19 and then a further three percentage points from 2031/32 (with fiscal drag adjustments from 2018/19).
- Raising all personal income tax rates would discourage labour force participation and effort and incentives to save and invest.
- Increasing the gap between the top personal tax rate and the company tax rate would also impose efficiency costs.



In order to achieve 20% net debt for 2060 all personal income tax rates could rise by five percentage points from 2018/19. However, this would tend to overshoot net debt targets in the medium term and raise the prospect of the government raising its spending during this period. The net debt target could also be reached by raising all personal tax rates by three percentage points in both 2018/19 and 2031/32. This would tend to have a more stable impact on net debt but there would be greater economic costs from the higher tax rates in the later period.

Efficiency Considerations

Raising personal tax rates would discourage labour force participation and effort and the incentives to save and invest. It is also likely to raise the post-tax income gap between New Zealand and higher income countries such as Australia and those in North America and Europe. The New Zealand workforce is very mobile and this would be likely to increase their propensity to emigrate.¹⁹



The top personal tax rate, 33%, is currently five percentage points higher than the company tax rate of 28%. Raising the personal tax rate and leaving the company tax rate the same is likely to increase some other efficiency costs:

- Encouraging an individual to invest or run a business through a company, even when there may be no other reason to;
- Discourage companies from paying dividends; and
- Encourage individuals to save through managed funds which can be taxed as PIEs, even when this may be less efficient.

On the other hand, raising the personal tax rate and leaving the company tax rate the same is likely to have little disincentive for non-residents to invest in New Zealand through a company or to raise the activity of companies to structure profits away from New Zealand.

Raising the personal tax rate is also likely to engender a tax planning response so it is likely to raise less revenue overall than a simple static calculation would suggest.

¹⁹ A number of studies have found an impact of income tax rates on migration levels. For example emigration of skilled workers from Canada to the United States is highly influenced by tax rates (see Iqbal, M. (1999) Are We Losing Our Minds?: Trends, Determinants and the Role of Taxation in Brain Drain to the United States', Conference Board of Canada). A separate study in Switzerland also found that tax rates affect outward migration and that such effects are generally larger for younger, highly educated persons than for older, less educated individuals (Liebig, T., Puhani, P., and Sousa-Poza, A. (2006) Taxation and Internal Migration: Evidence from the Swiss Census Using Community-Level Variation in Income Tax Rates, IZA, Discussion paper No. 2374).

Equity Considerations

The scenarios modelled of equal percentage point increases in all tax rate bands would tend to be a proportionate change since all the rates would increase by the same amount. Obviously the personal tax rate scale can be changed in different ways to achieve a different desired impact on progressivity and this will also have different efficiency impacts. However, if revenue raising is the objective, then raising the lower rates may be necessary as this would raise revenue from a larger group of taxpayers compared to just raising the higher rates or raising the higher rates more than the lower rates. The following table shows the number of taxpayers from the 2009/10 in each tax rate band and what the tax rate for the band would need to be to raise 1% of GDP (\$2.18 billion) if only that tax rate were to change.

Taxable Income Band	Tax Rate in Band	Taxpayers Paying Some Tax at this Rate		Taxpayers Facing this Marginal Tax Rate		Tax Rate Needed to Raise 1% of GDP
		Number	Percent	Number	Percent	
\$1 - \$14,000	10.5%	3,308,740	100.0%	807,800	24.4%	17%
\$14,001 - \$48,000	17.5%	2,500,940	75.6%	1,689,120	51.1%	22.5%
\$48,001 - \$70,000	30.0%	811,820	24.5%	463,350	14.0%	38.5% ²⁰
\$70,001 +	33.0%	348,470	10.5%	348,470	10.5%	45%

Risk and Sustainability

Increasing personal tax rates should raise a stable source of revenue as long as the increase does not cause too great a loss of high income households through emigration, depending on the impact of tax on labour mobility (see footnote 19). However, raising all personal tax rates is likely to reduce incentives for personal savings.

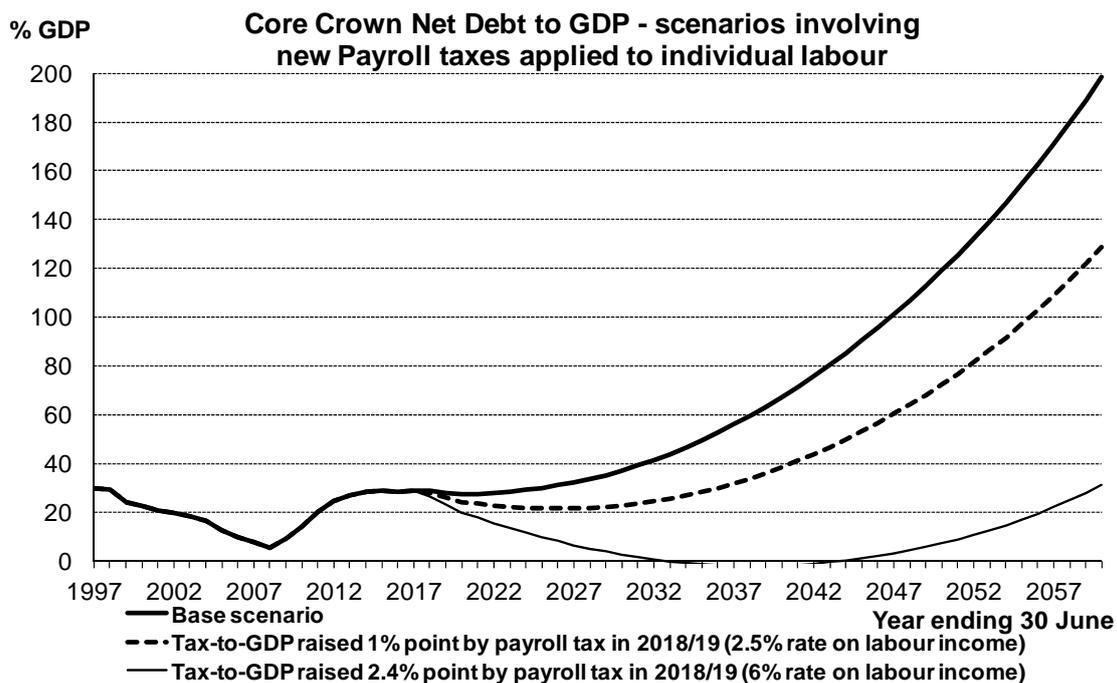
²⁰ 38.5% would apply to both the current 30% and 33% bands, becoming the new top tax rate.

3 - Payroll Tax

- A payroll tax is common internationally and is a tax on personal labour income only.
- Revenue raised from a payroll tax is often used to fund retirement income payments (or other forms of social security – e.g. unemployment benefits).
- Payroll taxes are often capped (in the same manner that the ACC levy on wages is capped at \$116,089 for 2014).
- To raise 1% of GDP an uncapped payroll tax would need to be 2.5% of wages from 2018/19.
- To raise enough revenue to stabilise net debt at 20% an uncapped payroll tax would need to be 6% of wages from 2018/19.

New Zealand does not have a payroll tax. Labour income is subject to personal income tax together with capital income earned by individuals. Different countries have had different variations of payroll taxes: In some cases legal liability for the tax is on the employee, in some cases on the employer, and in some cases on a combination of both. In most cases the funds from payroll taxes are used to fund retirement income, and in some cases other employment-related benefits as well, such as unemployment insurance.

We have estimated that a payroll tax of 2.5% of payroll would raise 1% of GDP from 2018/19, and a payroll tax of 6% from 2018/19 would raise enough to stabilise net debt at 20% in 40 years under current projections. The estimates are based on an uncapped payroll tax. A capped payroll tax would have to have a higher rate to raise the same revenue. In addition, the modelled tax would not apply to self-employment earnings due to the difficulty of estimating self-employment earnings as separate from other income reported on personal tax returns, although logically if New Zealand were to seek to tax labour income separately from capital income it would tax self-employment income at the same rate as a payroll tax.



Efficiency

The efficiency implications of a payroll tax are similar to those of personal income taxes. Whether legal liability for the tax is on the employee or the employer, we would expect the incidence of the tax to be borne by the employee. Because the tax is imposed only on labour income and not on capital income, raising a given amount of revenue from a payroll tax is likely to have a more detrimental impact on labour supply incentives than raising the same amount of money from personal income taxes. However, there would be a smaller disincentive to save and invest compared to a general personal tax increase.

There is a question about whether hypothecating the revenue from a payroll tax could lead to different efficiency impacts. By hypothecating we mean the payroll tax goes into a dedicated fund and the ultimate retirement benefit the taxpayer receives is partly or wholly dependent on the amount of contributions made, that is, the higher the contributions made by a taxpayer, the higher their government pension after retirement.²¹ To the extent that hypothecated revenue is perceived to give individuals rights to future income payments, a hypothecated tax could have different behaviour effects (reducing disincentives to work but also reducing incentives to save) which will have a different overall efficiency implication than an unhypothecated tax. While evidence is limited on this issue, there is some evidence²² to suggest that a high savings component of public pension programmes has a positive impact on labour participation rates for women. Where the tax component is high (i.e. where pensions are funded by redistributing current tax revenues such as in New Zealand) there is a negative labour participation effect. In both cases the impact on male labour supply is not significantly affected. This suggests hypothecation done so that the government

²¹ This could also be done using mandatory saving schemes, as discussed in the Long-Term Fiscal Paper on retirement income policy (2012)

²² Disney, R., Boeri, T., and Jappelli, T., *Are Contributions to Public Pension Programmes a Tax on Employment?*, *Economic Policy*, Vol. 19, No. 39 (Jul., 2004), pp. 267-311

benefits received by an individual is dependent on the amount of tax paid by the individual may have different economic effects than a general revenue tax, although given limited evidence in this area further analysis will be needed to explore such effects more fully.

Equity

A payroll tax is less progressive than a personal income tax. A payroll tax generally applies at either a flat rate for all labour income, or in some cases it is capped and does not apply at all above a certain amount (or is subject to a lower tax rate above a certain amount). This is regressive. Even a flat rate payroll tax applying to all labour income is regressive, relative to a general personal income tax increase, because lower income households tend to earn more labour income as a proportion of total income than higher income households. A payroll tax also violates horizontal equity (i.e. the principle that individuals earning similar levels of income should pay the same amount in taxes) because it is imposed only on labour income and not on capital income.

Risk and Sustainability

Increasing personal tax through a payroll tax should raise a stable source of revenue. Because a payroll tax applies only to labour income and not to capital income, there should be less disincentive to save compared to the other personal tax increases.

B – Consumption Tax – GST

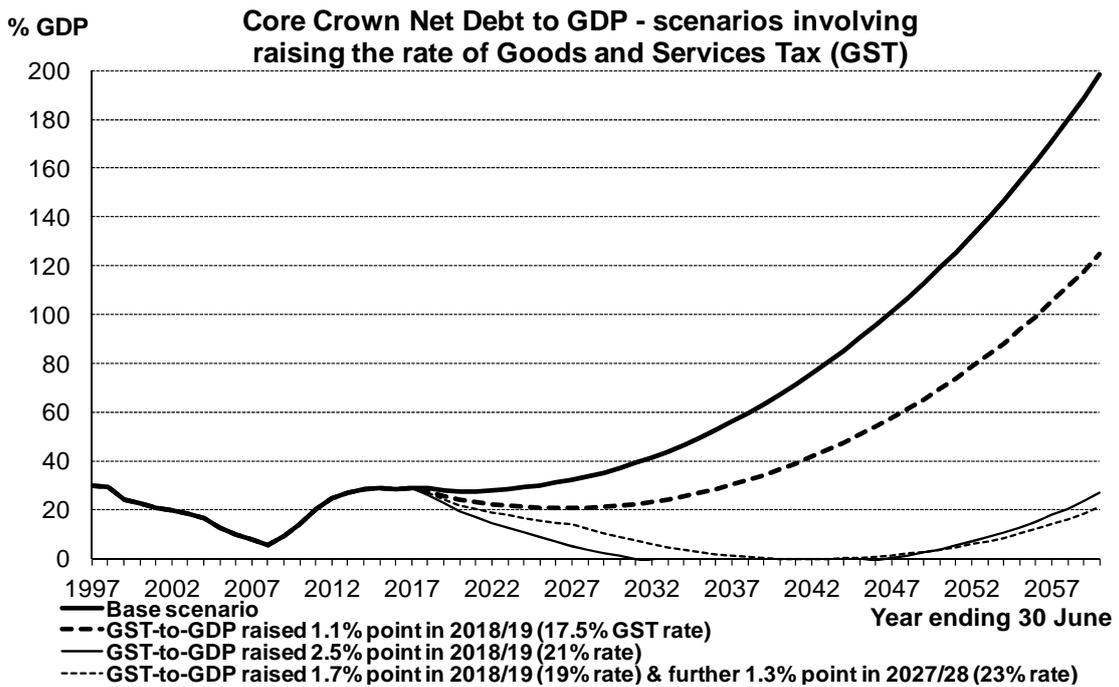
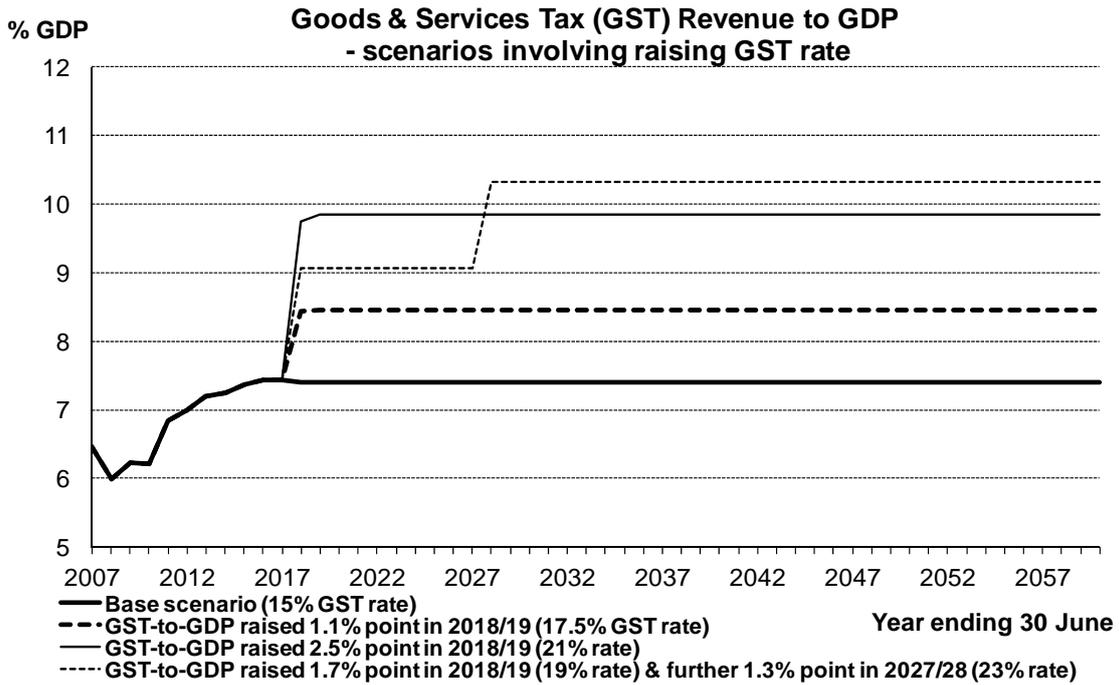
- New Zealand's GST is considered the most efficient consumption tax in the world.
- To raise 1.1% of GDP the GST rate would need to be raised to 17.5%.
- Net debt would be at about 20% of GDP in 2060 if we either:
 - Raise GST to 21% in 2018/19, or
 - Raise GST to 19% in 2018/19, followed by an increase to 23% in 2027/28.
- Although GST is considered more efficient than an income tax, it does act as a tax on labour, so raising it may discourage labour force participation and work effort.
- GST generally has a proportionate distributional impact when viewed on a lifetime basis.

The GST rate is 15% and applies to almost all goods and services consumed in New Zealand. Consumption taxes generally are usually considered to be more efficient than income taxes, and New Zealand's GST is considered particularly efficient internationally because of its broad base and uniform rate.

The GST base is already as broad as it could practically be implemented. Theoretically there is some value-added component bundled into financial services payments (such as interest) and a number of jurisdictions have commented on this. However, no simple way of separating the value added component from the finance charge itself has been found and so jurisdictions exempt the entire financial services payment.

This leaves raising the rate of GST as the main viable option for raising additional revenue from the GST base. To achieve net debt at 20% of GDP we could raise GST to 21% from 2018/19. However, this would tend to overshoot net debt targets in the short term and, unless institutional arrangements are made to prevent this, raises the prospect of the government increasing spending during this period in a way which would not be sustainable in the longer term. Another option would be to raise GST to 21% in 2018/19 and then to 23% in 2027/28. This would present a more stable net debt level but would impose much greater economic efficiency costs in the latter period with the higher GST rate.²³

²³ Net debt projections include factoring in higher inflation-adjusted benefits caused by the GST increase in the projection.

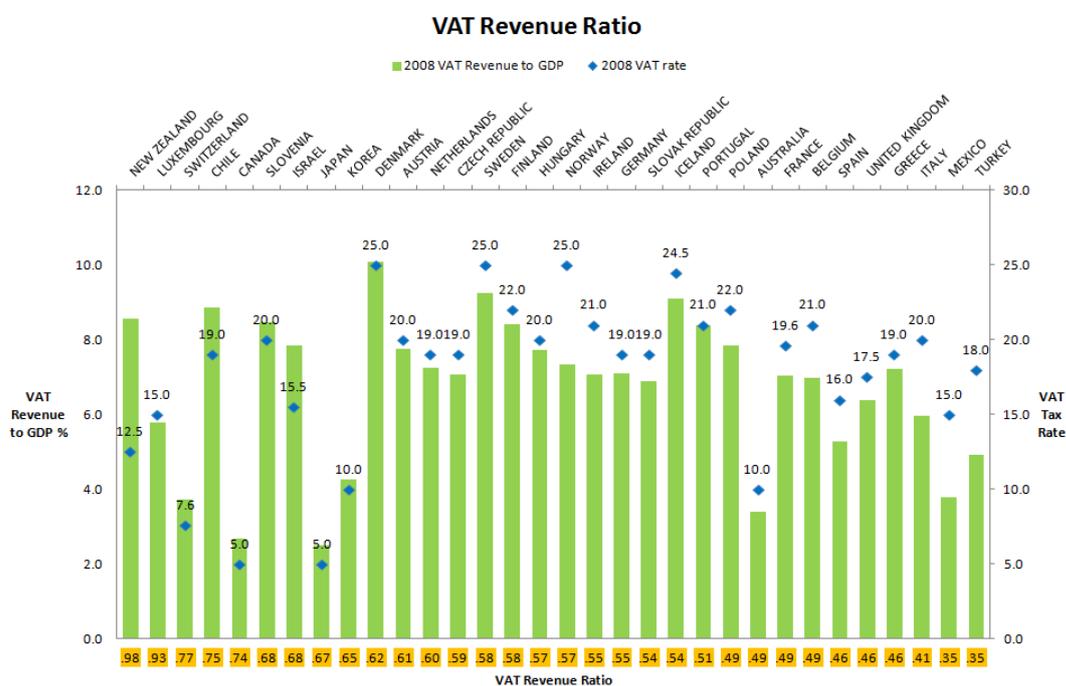


Efficiency Considerations

Economists generally view consumption taxes as more efficient than income taxes, although not as efficient as property taxes.²⁴ New Zealand's GST is considered particularly efficient among consumption taxes worldwide because:

- Its very broad base means it has little impact of distorting consumption decisions; and
- The broad base allows much revenue to be raised at a low rate.

The following table illustrates how efficient New Zealand's GST is at raising revenue at a moderate rate compared to other OECD countries:²⁵



GST is considered a tax on labour plus existing savings. It is considered not to impose a tax on capital income because unlike an income tax, GST imposes no tax on capital income as it is earned, instead the tax is imposed when savings are withdrawn and consumed. This is conceptually similar to EET²⁶ taxation of savings, which in effect taxes labour income on a deferred basis with the capital income not bearing any tax at

²⁴ See, eg, Tax and Economic Growth, Economics Department Working Paper No. 620, OECD (2008).

²⁵ The data is from 2008 when the GST rate was 12.5%. The VAT revenue ratio (the number in the yellow box at the bottom) is a measure of consumption tax efficiency, that is the ratio of consumption tax revenue actually collected compared to the amount that would be collected if the tax applied to all final consumption. New Zealand's VAT revenue ratio (0.98 in 2008) is the highest in the world.

²⁶ EET, or exempt-exempt-taxed, refers to a system of taxing savings where the contribution to savings is from untaxed income (exempt), the savings income itself is not taxed (exempt), but the entire withdrawal from savings is taxed (taxed). The post-tax return to the saver is the same as for TEE (taxed-exempt-exempt) where the contribution to savings is from post-tax income, but neither the savings income nor the withdrawal are taxed. So both EET and TEE systems effectively do not tax capital income.

all. Therefore, although more efficient than an income tax, increasing GST may still have an efficiency cost in discouraging labour force participation.

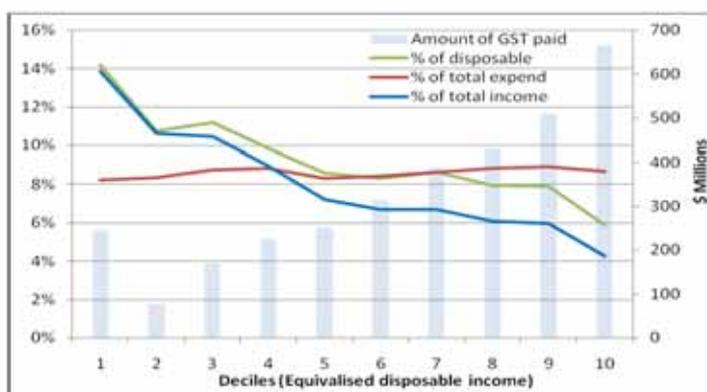
In addition, raising the rate could result in pressure for exemptions (such as for food) that, if given, would reduce the efficiency and increase the complexity and compliance costs of GST. Increasing GST would also have an efficiency cost in that it may encourage more purchases of consumer goods from offshore to the detriment of the local retail industry. This harm would be mitigated if we could reduce the GST de-minimis for direct imports (\$400 in value) in a way which could be efficiently administered and with low compliance costs.

Equity Considerations

Raising the rate of GST imposes a windfall cost on existing savings, as the value of savings in terms of future consumption would fall.

GST appears to be regressive when measured on an annual income basis:

Distributional Analysis



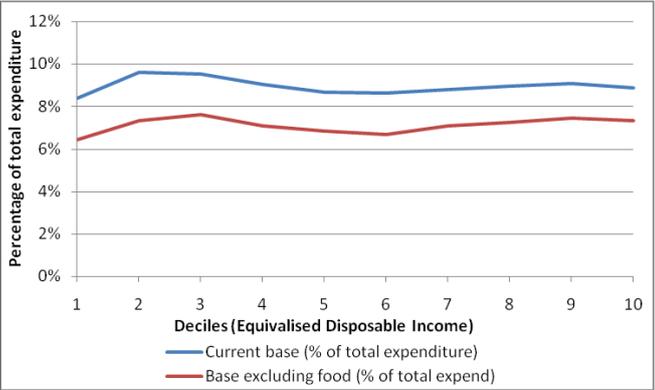
However, most economists consider that the distributional impact of a consumption tax should be measured over a lifetime in order to better assess its impact. Almost all savings are consumed in the future, and the lifetime distributional impact of consumption taxes is largely proportionate.²⁷

It is also worth noting that the broad base of GST supports it as having a proportionate impact. Having an exemption for food, as many countries do, would not change the distributional pattern of taxable consumption over income deciles as illustrated below:²⁸

²⁷ “The distinction [between annual and lifetime measurement of distributional impact] is important, as while consumption taxes appear to be regressive based on annual income, they are likely to be less regressive and even progressive when their effect is assessed over an individual’s life time.” OECD (2008) *Consumption Tax Trends 2008: VAT/GST and Excise Rates, Trends and Administration Issues*.

²⁸ Removes food purchases other than takeaways and restaurant meals.

Distributional Impact of Exempting Food from GST



Risk and Sustainability

Raising GST should raise a stable source of revenue. Despite there being no direct increase in tax on savings, there would still be less savings because nominal spending must increase to maintain real consumption, leaving less post-consumption income for savings. However, there should be less of a disincentive to save than in the case of an income tax increase.

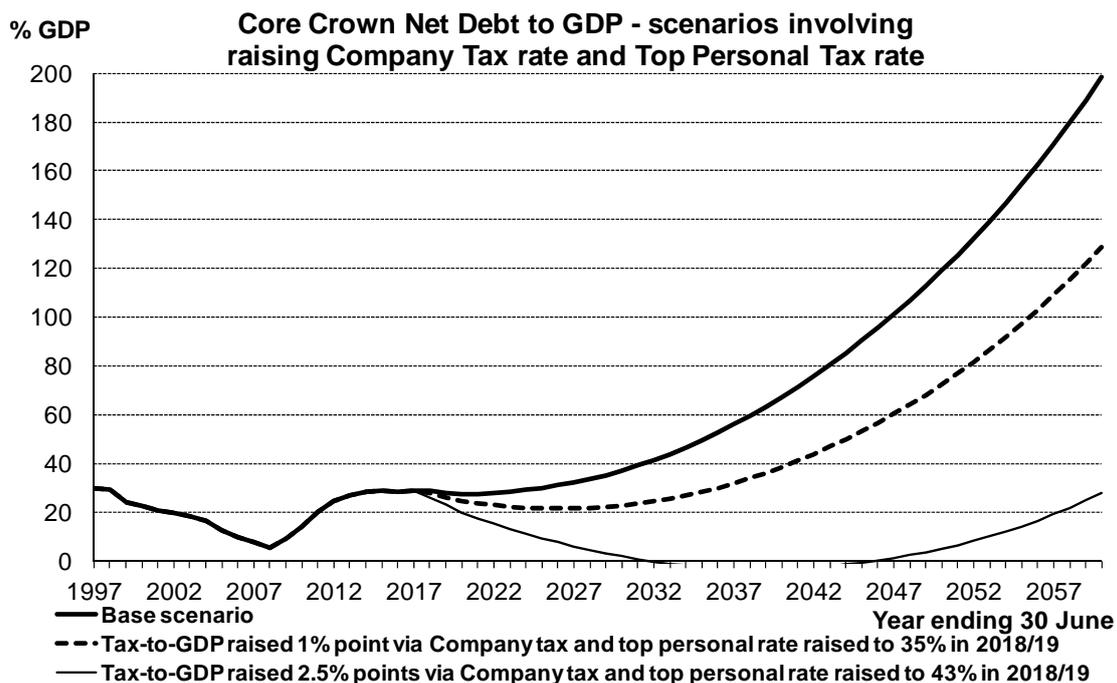
C – Raising the Company Tax Rate

- In order to fund a 1% of GDP increase in revenue, the company tax, superannuation tax, top PIE tax rate, individual tax rate, and trustee tax rate would all have to rise to 35% from 2018/19.
- To raise enough revenue to stabilise net debt at 20% in 40 years under current projections the company tax, superannuation tax, top PIE tax rate, individual tax rate, and trustee tax rate would all have to rise to 43% from 2018/19.
- Raising the company tax rate should increase the cost of capital and reduce the amount of foreign capital imports. It would also reduce the efficiency of investment decisions. However, to the extent raising the company tax rate is borne by non-resident shareholders and not passed on to domestic factors it could impose lower efficiency costs than other tax increases borne by residents.
- Given trends towards low company tax rates and the ability of multinational companies to structure profits into different countries, raising the company tax rate much above the rate of other comparable countries may not be realistic and may not raise much revenue in comparison to a static costing.
- If the company tax rate were aligned with the top personal tax rate there would be efficiency and simplicity advantages.
- Raising the company tax rate should increase the overall progressivity of the tax system, especially if the top personal tax rate is also raised.

Revenue could be raised by raising the company tax rate. Given the structure of our income tax system with imputation, we do not consider that the company tax rate should be raised above the top personal tax rate unless we were considering a major change to the structure of the tax system. Therefore, in modelling options around raising the company tax rate we think the appropriate tax structure changes should be:

- First, raise the company tax rate and the other tax rates that derive from it (the superannuation fund rate and the top PIE tax rate) to achieve the revenue goal, but not to the extent it would exceed the top personal tax rate; and
- Once the company tax rate is equal to the top personal tax rate, it should be raised together with the top personal tax rate and trustee rate until the revenue target is reached.

We have estimated that to raise an additional 1% of GDP from company tax, the company tax, superannuation tax, top PIE tax rate, individual tax rate, and trustee tax rate would all have to rise to 35% from 2018/19. To raise enough revenue to stabilise net debt at 20% in 40 years under current projections the company tax, superannuation tax, top PIE tax rate, individual tax rate, and trustee tax rate would all have to rise to 43% from 2018/19. We emphasise that these are static costings and do not take into account behavioural effects. In practice companies would be likely to structure profits away from New Zealand and the actual revenues raised would be less.



Efficiency Considerations

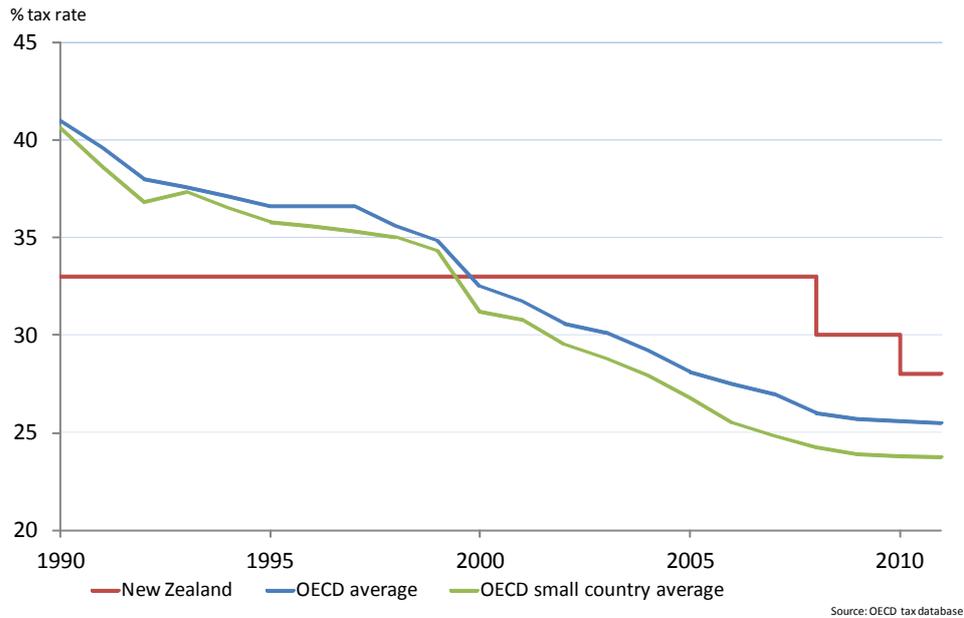
The main consequence of raising the company tax rate is that it raises the tax rate on non-resident investment into New Zealand and also domestic savings through the PIE regime. Its impact on domestic investors in companies is less since the effect is partly mitigated by the imputation system on dividends. Raising the company tax rate has no direct effect on labour participation incentives, unlike raising the personal tax rate. However, to the extent the cost of the tax may be borne by domestic labour, it would reduce pre-tax labour income and therefore have some disincentive effect. This could happen to the extent the company tax reduces total investment, and therefore results in less capital in the economy and consequently lower labour productivity.

How to raise taxes on non-residents poses difficult questions. It is often assumed that capital imported from non-residents is highly elastic, as non-residents exporting their capital for investment have choices of many countries into which to invest. If capital were perfectly elastic and there were no economic rents (ie, all investment earned only just enough to provide the marginal return that investors demand), some analysis has suggested that the optimal tax rate on non-residents is nil. Any tax imposed on the non-resident investors would be borne by domestic labour, but with a greater reduction in economic efficiency than if the domestic labour were taxed directly.²⁹

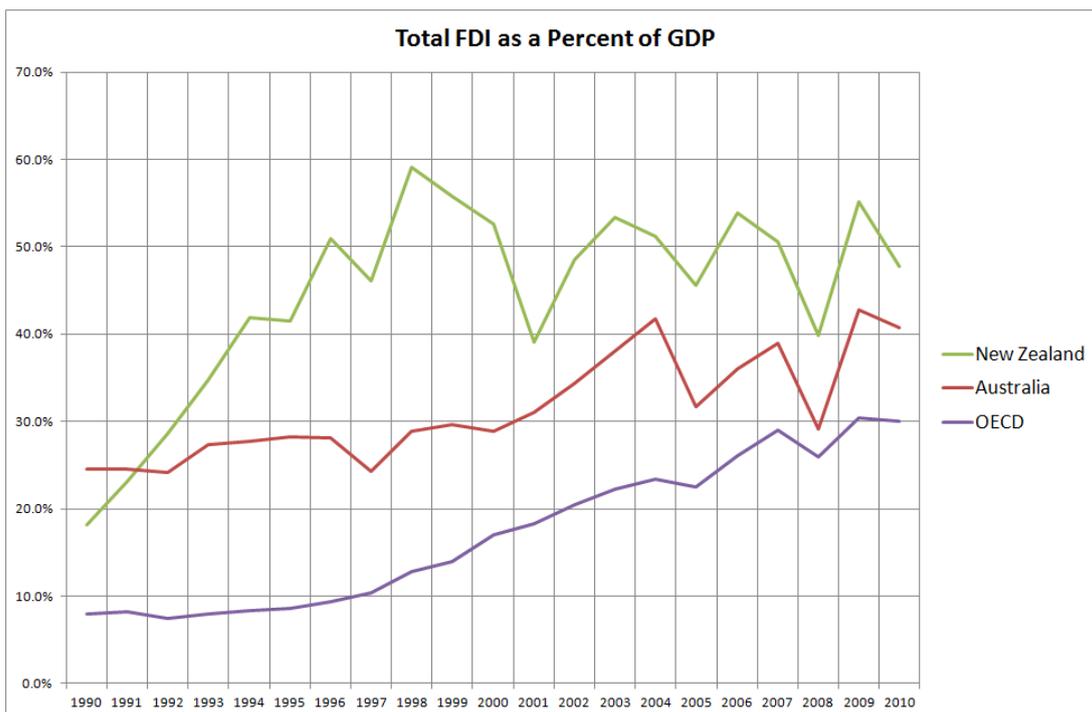
In reality, much foreign capital is likely not to be perfectly elastic. In this case, there should be a positive rate of tax imposed on investment income. Some investments into New Zealand may earn economic rents. This is a second reason why a positive tax on investment income may be desirable. If location-specific economic rents are significant, cutting company tax rates can provide a windfall to foreign shareholders in domestic companies and mean that higher taxes need to be levied on New Zealanders

²⁹ See Tax Effects on Foreign Direct Investment – No. 17 Recent Evidence and Policy Analysis, OECD (2007)

to bridge the revenue gap. However, we are unlikely ever to be sure of the most efficient rate of company tax. It should be greater than zero, but as the rate is increased, the amount of investment made into New Zealand would fall. If foreign investment earns more than it costs, this can have an adverse impact on economic performance. So there is a trade-off between raising revenue from non-resident investment and the total amount of capital imports into the country. Although New Zealand has been reducing its company tax rate, the rate is still higher than the average for OECD countries.



New Zealand is very dependent on investment funded by non-residents, so it needs to be careful not to impose too high a level of tax on non-residents which could deter non-resident investment or impose economic costs on New Zealand. On the other hand, to the extent the incidence of tax on non-residents is borne by the non-residents and not by domestic factors (such as labour) it could be an efficient source of revenue.



There are other practical factors to take into account in setting the tax rate on non-residents (which is generally the company tax rate). If the company tax rate were too high, non-residents may incrementally structure profits away from New Zealand, thus reducing tax revenue despite having a higher tax rate. Alternatively if tax rates were low, New Zealand companies could attract higher levels of such profits from inbound tax structuring, thus increasing revenues. This suggests the tax rate should not be much higher than that of other countries the same non-residents may invest into.³⁰ This means we should be concerned if the New Zealand company tax rate were higher than Australia's. Currently, the New Zealand company tax rate is a little lower than Australia's.

Equity Considerations

The cost of increasing the company tax rate (and associated rates, such as the top PIE rate) is likely to be primarily borne by higher income households, since they tend to save and invest more than lower income households. This would increase the overall progressivity of the tax system. If the top personal tax rate were also increased, this would increase progressivity further. To the extent the tax is borne by domestic labour, the distributional impact is less straightforward.

³⁰ See de Mooij and Ederveen "Corporate Tax Elasticities: a Readers Guide to Empirical Findings", *Oxford Review of Economic Policy*, v.24, n.4 (2008), pp. 680-697. This study was a meta analysis of a number of studies of elasticities of foreign direct investment. It found that profit-shifting was the most sensitive to different tax rates, followed by choice of organisational form for investment, and that followed by choice of location for real investment. Choice of investment by debt or equity was least affected by the host country tax rate.

Risk and Sustainability

Company tax revenues are more volatile and subject to the business cycle than the other revenue sources discussed in this paper (other than taxing capital gains). Therefore they make a useful contribution as a natural countercyclical contributor to aggregate demand. However, as a revenue source they also are less reliable for forecasting compared to personal taxes and GST. Due to the muted impact on incentives for residents compared to non-residents (due to the imputation system) raising company taxes is likely to have a stronger disincentive impact on total investment compared to national savings, which may reduce international vulnerability.

Income Tax Base Broadening Options

D – Capital Gains Tax

- In the income tax base, capital gains is the largest category of untaxed income.
- Taxing capital gains as they accrue (and deducting capital losses) would improve efficiency in a first order analysis.
- However taxing capital gains on realisation, and incorporating other mechanical rules, is likely to reduce its efficiency in practice.
- Revenues are potentially large, but they would take some time to earn if reasonable transitional rules apply, and they would be a highly volatile source of revenue.
- A capital gains tax is likely to increase complexity and compliance and administrative costs.

Another option for raising revenue would be to extend the current BBLR tax base by taxing capital gains more comprehensively. In principle this should be efficient as investment income earned in the form of capital gain would be taxed at the same rate as other forms of investment income. Further, in practice much of the revenue from capital gains taxes would come from investment in real property, so it has the additional advantage of taxing an immobile factor.

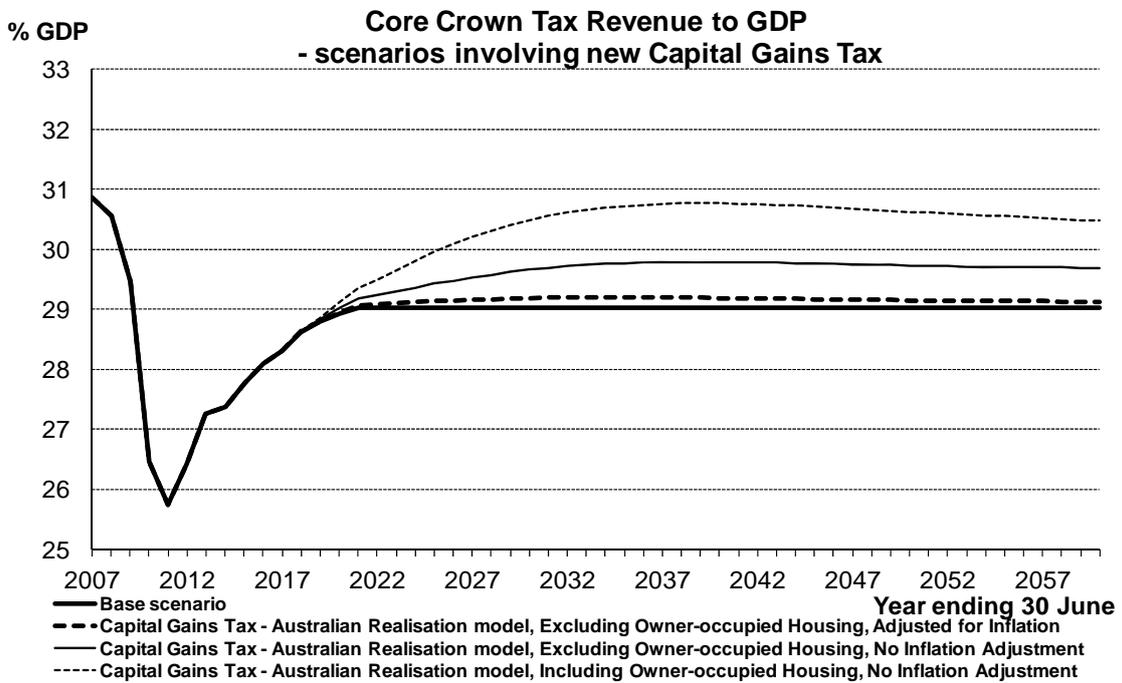
There are costs to a capital gains tax to consider. The Tax Working Group considered the tax in 2009 but ultimately did not recommend it due to concerns over complexity and reduction in efficiency if the base excluded owner-occupied housing.

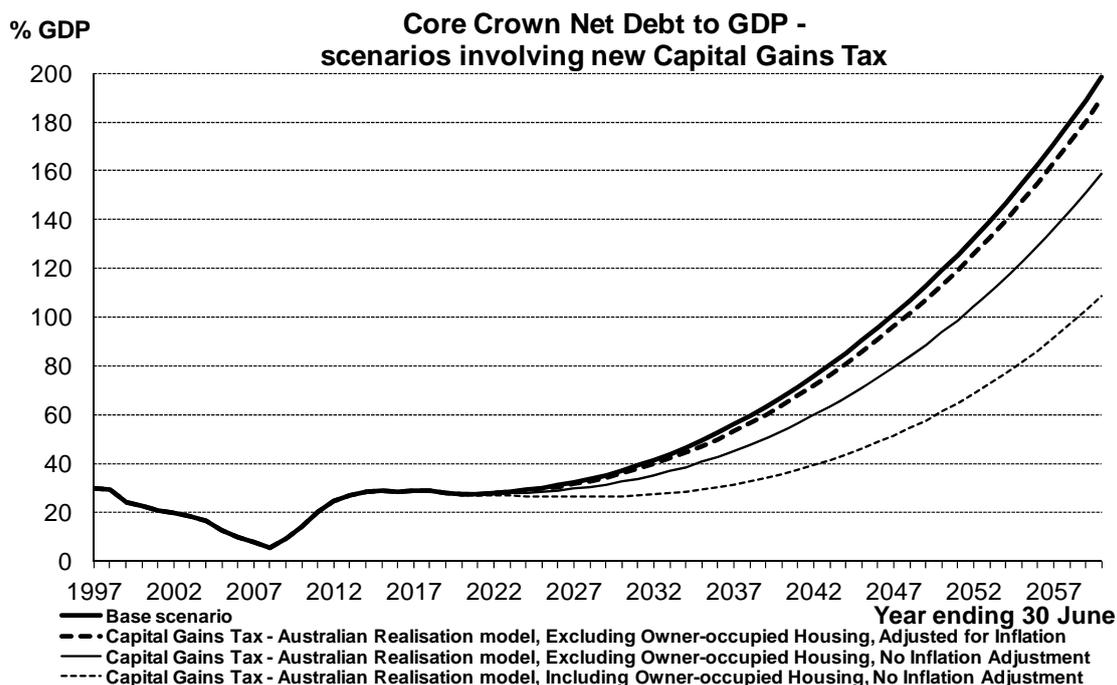
If the government were to consider a capital gains tax a number of design issues (for example, whether or not to allow roll-over relief) would need to be worked through in order to evaluate the overall benefits and disadvantages of a capital gains tax. In theory an efficient capital gains tax would tax capital gains as they accrue. However, this raises practical issues of both availability of cash flow to pay the tax and measurement of the gain. In practice most countries therefore tax capital gains when the asset is sold (realisation basis). However, this then raises the prospect of deferring sales to avoid triggering the tax, which has its own economic cost (lock-in).

We have modelled four capital gains tax bases (where inflation is included or excluded from the computation, and with and without owner-occupied housing in the base). We

have also modelled two transitional methods, “Australian” where only property acquired after the date the tax is introduced (“the effective date”) is in the base, and “Canadian” where all property sold after the effective date is in the base, but for property held on the effective date, its market value on that date will be treated as its initial cost for calculating capital gains.

We estimate that a realisation based tax with “Australian” transition would have revenues increasing to peak about 18 years after the effective date. Taxing capital gains at normal tax rates, with no adjustment for inflation, and excluding owner-occupied housing would raise about on average 0.8% of GDP after the transitional period, and if owner-occupied housing were included it would raise about 1.8% of GDP. A capital gains tax could therefore contribute to meeting fiscal pressures but it is unlikely to be sufficient to address the entire projected fiscal deficit. For more information on how the revenue estimate was derived see Annex 1.





For more information on a capital gains tax see the Treasury and Inland Revenue report to the Tax Working Group.³¹

Efficiency

Allocative Efficiency

Taxing capital gains, and deducting capital losses, is *prima facie* efficient. It is consistent with broad-base, low-rate tax, and would remove a bias which favours investment in assets that are expected to rise in value, such as real property.

For example, the following table illustrates nominal and real effective tax rates on alternative debt and investment housing investments under the following conditions:

- Inflation 2%;
- Nominal interest 6%;
- Nominal real property appreciation rates 3%; and
- Nominal rents 3%.

	Nominal ETR		Real ETR	
	Debt	Housing	Debt	Housing
No CGT	33%	16.5%	50%	25%
With CGT	33%	33%	50%	50%

³¹ http://www.victoria.ac.nz/sacl/cagtr/twg/Publications/3-taxation-of-capital-gains-ird_treasury.pdf

In order to equalise the post-tax returns between debt and housing investment, the difference in effective tax rates without a CGT would cause the housing investment to be worth 25% more than it otherwise would in the absence of the tax distortion. This causes real property investments to cost more than they otherwise would and less capital would be invested in other investments. See Annex 2 for an illustration of how not taxing capital gains results in an increase in value of real property.

In practice the allocative efficiency benefit is not as clear cut as this. This is because:

- Even with a capital gains tax, the effective tax rate on the capital gain is likely to be lower than for other forms of income. With a realised capital gains tax, the tax liability for many years of capital appreciation is deferred until the year of sale. This reduces the effective tax rate due to the deferral, and
- If a base or rate preference is given, this will reduce the effective tax rate even further. A base preference may be an exclusion of a fixed proportion of income (such as Australia's 50% exclusion) or indexing the gain for inflation so only real gains are taxed. This would be a preference over other aspects of the general tax system where nominal income is taxed, such as nominal interest, which includes compensation for inflation.

Despite these, the distortion would be lower in magnitude than the current environment where capital gains are completely untaxed.

Lock-In

Lock-in has been much discussed as an efficiency cost of a capital gains tax. Lock-in refers to the incentive for owners of assets that have accrued capital gains to defer their sale in order to defer the tax. The change in behaviour (deferring sales) may deter assets from being transferred freely to different owners to be put to their most efficient use. Although there has been much discussion of lock-in, most empirical evidence suggests it is not that significant in practice at least with respect to sales of liquid portfolio investments.³²

Owner-Occupied Housing

It is common internationally for capital gains taxes to exempt some or all of the gain from selling owner-occupied housing. This is often done for reasons of equity and political sustainability. It is also sometimes argued that it is good to exempt owner-occupied housing for efficiency reasons: labour mobility may otherwise be constrained if people do not want to move in order to take up new work because they would have to pay the tax. Another design option is to put a high threshold on the amount of the gain that is exempt.³³ This limits the amount of investment that can be diverted into owner-occupied housing to enjoy a tax preference, and it would also increase the overall progressivity of the tax.

Other Efficiency Issues

Other efficiency issues that are often raised regarding capital gains taxes are:

³² See http://www.victoria.ac.nz/sacl/cagtr/twg/Publications/3-taxing-capital-gains-burman_white.pdf pp. 12-15.

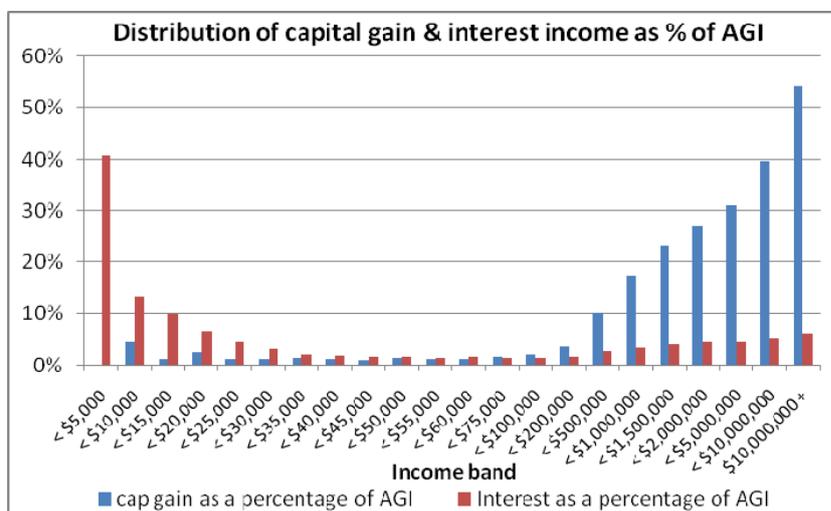
³³ For example, the United States exempts the first \$250,000 of capital gain on an owner-occupied house from tax, rather than exempt the entire amount.

- Roll-over relief³⁴ – whether roll-over relief should be provided for sales of certain types of assets (eg, farms and family businesses) and whether providing such relief improves or reduces efficiency;
- Loss ring-fencing – whether capital losses should be allowed to set off against any kind of taxable income, or if they will be ring-fenced so they can only be set off against capital gains;
- Company form – whether a capital gains tax discourages business from being conducted through a company or from investors to purchase company shares instead of other assets; and
- Risk taking – whether a capital gains tax discourages or encourages or is neutral towards risk taking.

As this report is only a high level discussion of a capital gains tax these issues are not explored here but would have to be explored more closely if a capital gains tax reform were to be seriously considered.

Equity

Ownership of investment assets that accrue capital gains is highly skewed towards high income households. Taxing these gains would impact high income households the most, and therefore would increase the progressivity of the tax system. For example, data from the United States from 2006 show capital gain income is highly skewed towards high income household, while simple interest income is skewed towards low income households:³⁵

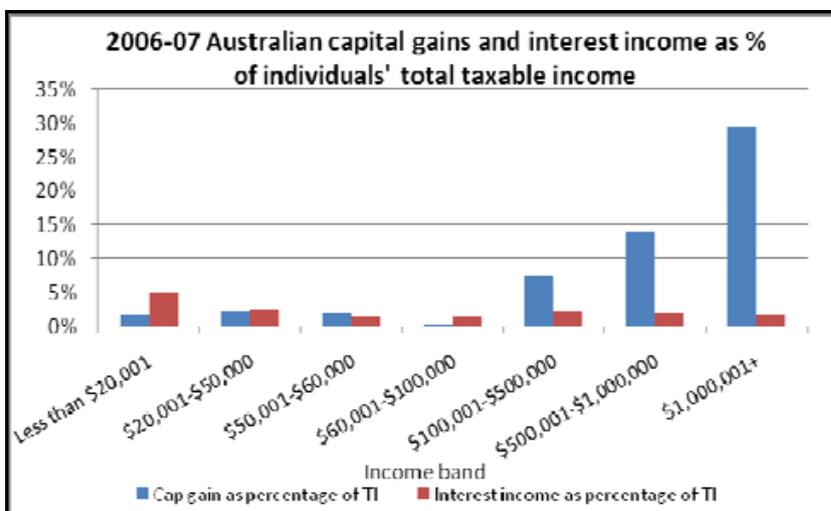


AGI: adjusted gross income

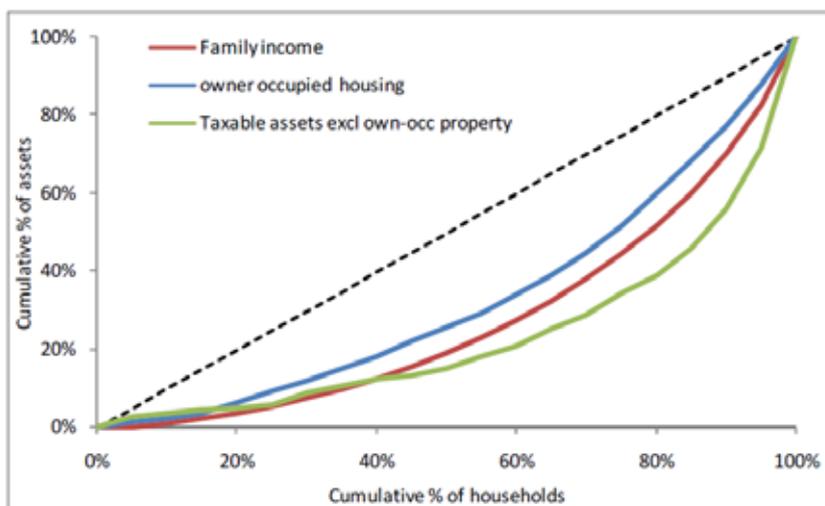
³⁴ Roll-over relief refers to allowing the capital gain on some sales to be deferred when certain similar types of assets are purchased by “rolling” the deferred gain into the new asset to be taxed when it is sold.

³⁵ (Source: Individual Income Tax Returns with Itemized Deductions: Sources of Income, Adjustments, Itemized Deductions by Type, Exemptions, and Tax Items, Individual Complete Report (Publication 1304), Table 2.1, IRS Taxation Statistics).

Similarly, in Australia earning capital gain income appears to be skewed towards high income households, while earning simple interest income appears to be modestly skewed towards lower income households:



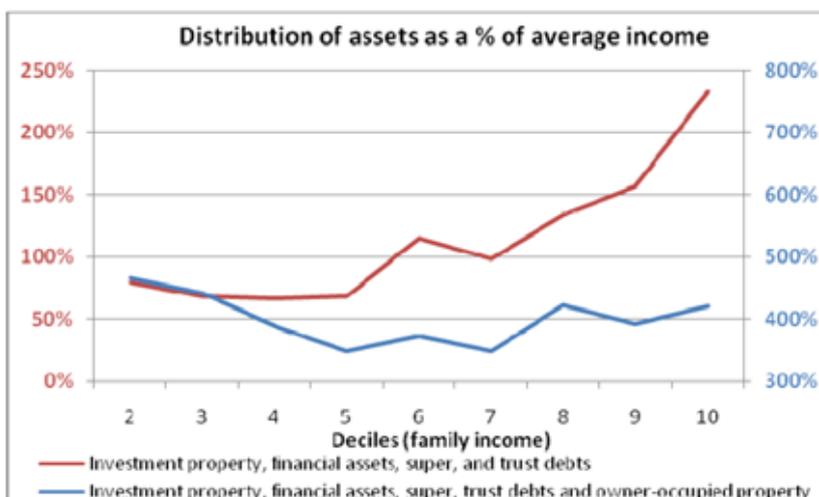
In New Zealand, ownership of potentially taxable capital assets is more highly skewed towards higher incomes than household income, but the value of owner-occupied property is less skewed towards high income than household income:³⁶



With this distributional pattern, taxing gains of investment assets other than owner-occupied housing would be progressive (higher proportionate tax liability on higher incomes), but if the tax base also included owner-occupied housing, the tax burden would be broadly proportionate rather than progressive:³⁷

³⁶ Source http://www.victoria.ac.nz/sacl/cagtr/twg/Publications/3-taxation-of-capital-gains-ird_treasury.pdf

³⁷ Source http://www.victoria.ac.nz/sacl/cagtr/twg/Publications/3-taxation-of-capital-gains-ird_treasury.pdf



Risk and Sustainability

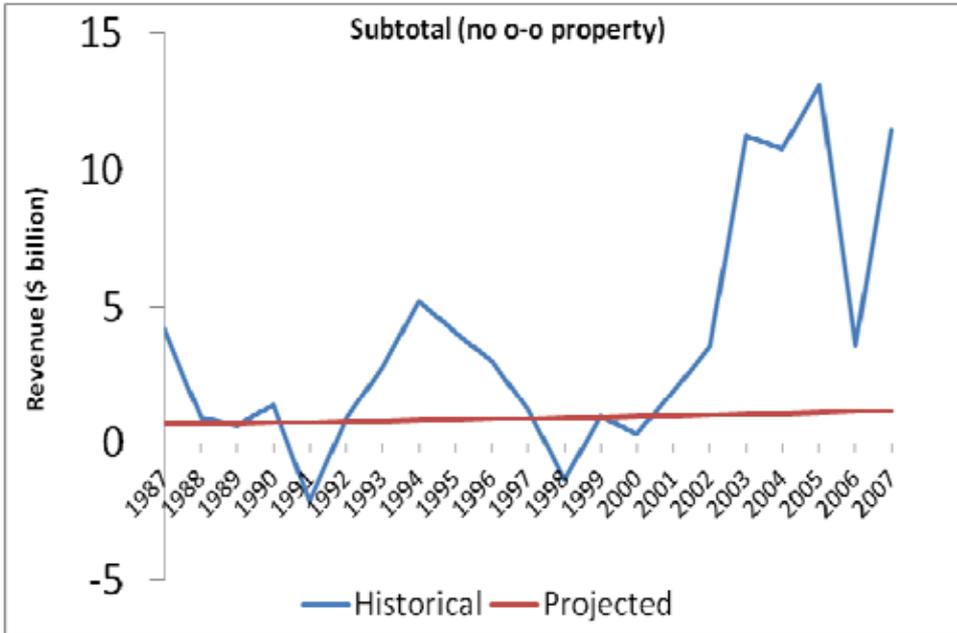
A capital gains tax, like other taxes on investment, by itself would tend to discourage savings and investment. However, it would alter the allocation of savings by residents so they would invest less in real property and more in other forms of savings than in the absence of a capital gains tax (discussed earlier under efficiency). In addition, a capital gains tax, by contributing to a one-off reduction in the value of housing and other real property assets, would reduce demand for foreign borrowing, which in turn may reduce vulnerabilities.

The revenue from a capital gains tax would be highly volatile. This would make capital gains tax difficult to forecast. This may affect macro sustainability and vulnerability two ways. On the one hand, providing the asset price cycle is correlated with the economic cycle the direct effect of a capital gains tax is to be strongly countercyclical (i.e. it constitutes a strengthening of the automatic stabilisers). The higher taxes resulting at the peak of property price cycles would dampen the cycle and so reduce its volatility. On the other hand, an incumbent government could view the revenues as structural rather than cyclical, and spend the windfall putting the government on a higher spending track. It would take some discipline and recognition of the volatile nature of capital gains tax revenues to avoid this. Another way to avoid the risks associated with volatility could be to put CGT revenues into a stabilisation fund³⁸ or to the New Zealand Superannuation Fund. This would assist sustainability with both the immediate countercyclical impact and building up government funds and national savings.

The graph below illustrates the volatility of capital gains tax revenue by showing what revenue³⁹ would have been earned if an accrual capital gains tax had been in effect since 1987. The red line reflects what projected revenues would have been using the methodology used in this paper (which is based on the methodology used in the 2009 report to the Tax Working Group).

³⁸ As suggested in Brook, A. (2012) 'Making fiscal policy more stabilising in the next upturn: Challenges and policy options', *New Zealand Economic Papers*, 24 September 2012, p.17.

³⁹ For purposes of the illustration, the actual revenues were calculated under the income tax rates in effect in 2009 so changes in tax rates would not affect the revenues.



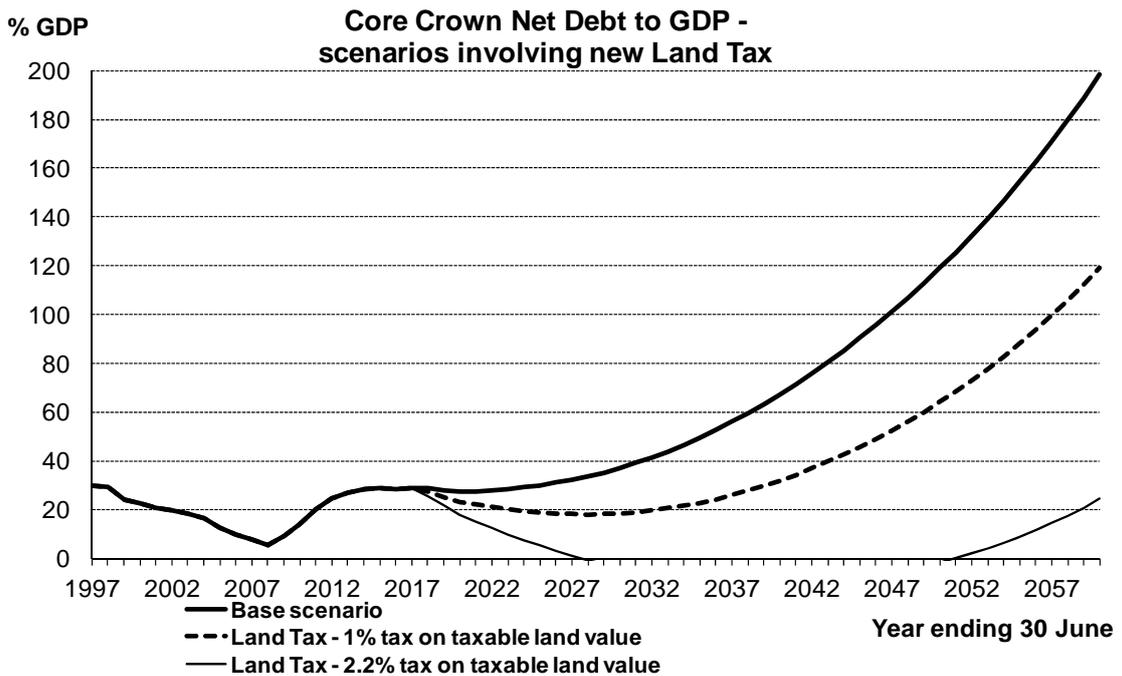
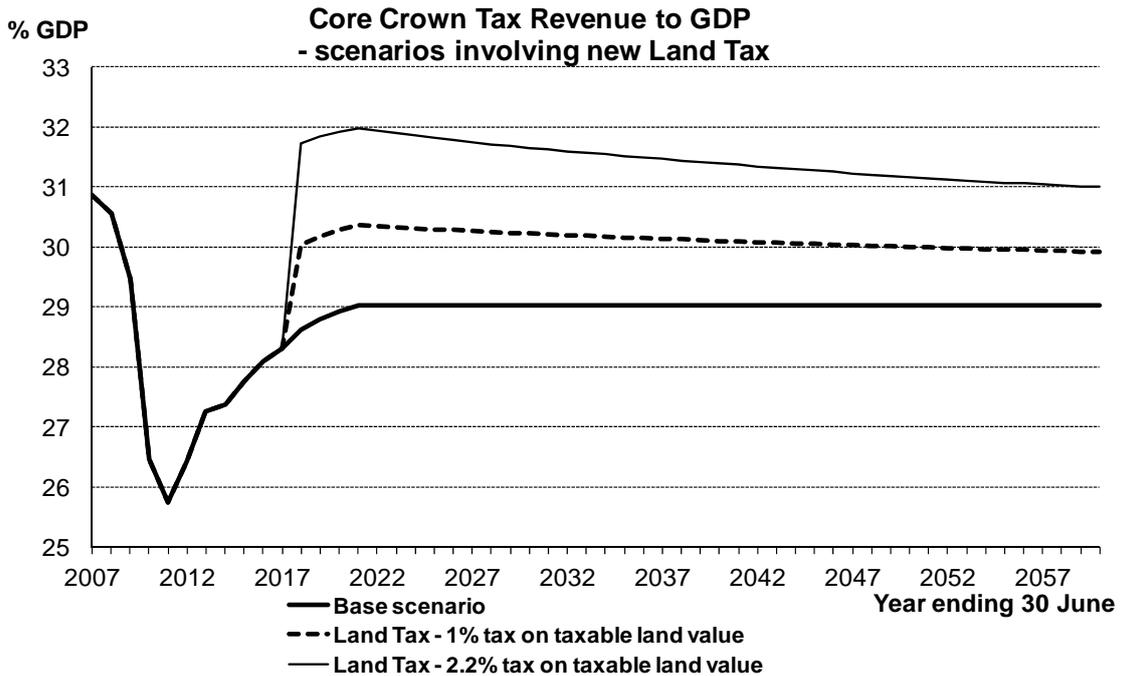
E – Land Tax

- A land tax of 0.7% would raise 1% of GDP in the first year (\$2.7 billion (2017/18)). A land tax of 2.2% would raise sufficient revenue to achieve 20% net debt in 2060.
- It is considered to be very efficient economically causing very little distortions in behaviour or reduction in economic performance compared to other revenue sources.
- In order to be efficient there should be no exemptions, such as for owner-occupied housing.
- Its ongoing equity impact would be largely proportionate.
- However it would likely impose a large windfall loss to current landowners as the value of land would be expected to fall when the tax is announced.
- It would be fairly simple to comply with and administer.

A tax on the value of unimproved land has the potential to raise much revenue and is considered to be a very efficient tax base. A tax of 0.7% would raise 1% of GDP the first year (\$2.7 billion for 2017/18)⁴⁰ and a tax of 2.2% would raise sufficient revenue to achieve 20% net debt for 2060.⁴¹ A land tax was recommended by a majority of the Tax Working Group in 2010. For more information on a land tax see http://www.victoria.ac.nz/sacl/cagtr/twg/Publications/3-impacts-land-property-taxes-coleman_grimes.pdf and http://www.victoria.ac.nz/sacl/cagtr/twg/Publications/3-land-tax-ird_treasury.pdf.

⁴⁰ For the projections we assumed land prices would rise by 3% per year, and that GDP would rise by 3.5% per year. This results in projected land tax revenue as a percent of GDP to be highest in the earliest year it is in effect and then to gradually decline over the projection period.

⁴¹ Revenues estimated by projecting land values to 2016/17 according to Treasury's forecast residential property price changes from Budget 2012, and assuming that land tax on business property would be deductible for income tax purposes.



Efficiency Considerations

A tax on the unimproved value of land is considered to be very efficient. This is because taxing land does not affect the quantity available in the economy. In contrast, taxing other assets is likely to reduce the quantity of those assets employed in the economy, which would harm economic performance. Theoretically the deadweight cost of a land tax is nil.

When most goods are taxed, there is a gap between the price paid by the consumer and the price received by the supplier. This prevents the quantity supplied to reach the market clearing quantity that would be reached in the absence of the tax, and there is less of the particular good in the economy as a result of the tax. The reduction in quantity supplied/consumed results in a deadweight cost, the economy does not produce as much because of the tax.

In the case of land, there is no reduction in the amount of land supplied, because land is in fixed supply. The introduction of a land tax does cause the price to fall, but the amount of land in the economy is not impacted. This means general economic performance does not suffer. This results in the deadweight cost of a land tax being nil.

In order to achieve an efficient outcome, there should be no exemptions based on the use of the land. For example, if there were an exemption for owner-occupied housing, there would be a bias favouring land to be used for owner-occupied housing compared to other uses. It is difficult to estimate the cost of this inefficiency. Moreover, residential property is by far the most valuable category of land use (in aggregate), so including residential property is important for keeping a broad base and allowing revenue to be raised at a low rate. The tax should be based on the value of unimproved land, because then there is no tax disincentive to developing vacant land. Historically, New Zealand has had a land tax but it was weakened with politically driven exemptions, such as for owner-occupied housing, so it is questionable whether an efficient broad-based land tax is politically sustainable.

Equity Considerations

The largest equity cost of a land tax is that it would impose a windfall loss on current owners of land as the value of land would fall when the tax is announced, creating horizontal equity concerns. Andrew Coleman and Arthur Grimes have estimated that a 1% land tax would cause land values to be 16.7% lower than they would be without a land tax.⁴² Current landowners would effectively pay the price of establishing an efficient revenue source for the future. This could raise political objections to introducing a broad-based land tax. Cash flow hardship is also possible for some land owners who purchased land without knowing of a potential land tax and/or who hold valuable land but have little disposable income (although this may be addressed, in part, in the short term through transitional arrangements - e.g. introducing a small land tax that increases each year to the final rate).

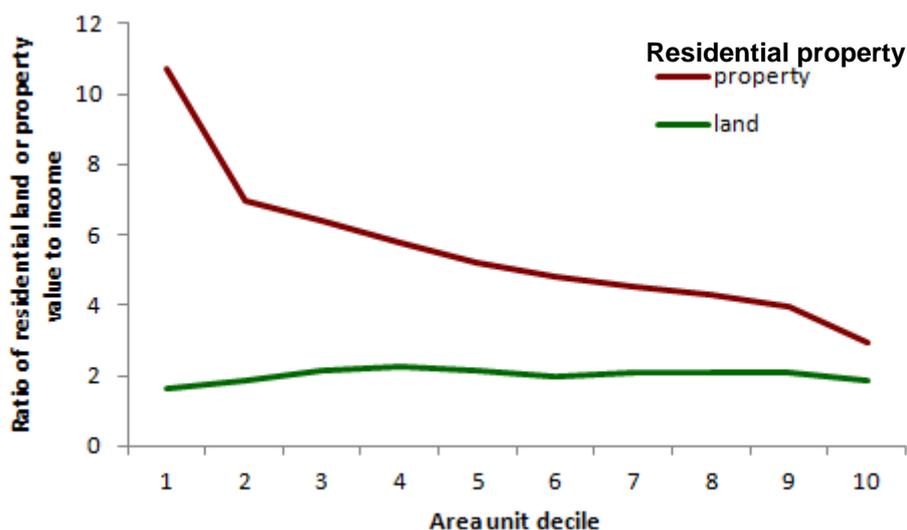
The calculation of a 16.7% price reduction for a 1% land tax assumes 100% pass-through or capitalisation of the net present value of the tax. There have been a number of empirical studies of property taxes in the United States attempting to assess the amount by which property taxes have been capitalised into property prices in practice. These have generally found that much less than 100% of the cost of the tax has been capitalised into prices, but the studies have generally been confused by the fact that areas with higher property taxes also benefit from greater public services and higher amenity values which may also be positively capitalised into property prices.⁴³ One

⁴² http://www.victoria.ac.nz/sacl/cagtr/twg/Publications/3-impacts-land-property-taxes-coleman_grimes.pdf

⁴³ See, eg, William B. Conway, "Capitalization of the Property Tax: An Empirical Study", *The Journal of Finance*, Vol 26, No. 4 (Sep. 1971), pp. 984-985; Thomas King, "Estimating Property Tax Capitalization: A Critical Comment", *Journal of Political Economy*, Vol. 85, No. 2 (Apr. 1977), pp. 425-

study tried to completely control for these factors and still found that on average only about 62% of the cost of the tax was capitalised into property prices⁴⁴ (although this was generally more than the amount found in the other studies). Another complication is if a land tax is introduced in substitution for another tax, such as an income tax, higher after-tax incomes may tend to increase land prices, partially offsetting the reduction caused by the tax itself. Even in the situation of a revenue-raising uncompensated land tax, the impact of the tax has to be considered against counterfactuals of raising revenues in other ways which could also affect land prices.

On an ongoing basis the cost of a land tax is largely proportionate to income, so it is neither progressive nor regressive. This is shown in the chart below, which indicates that the imposition of a land tax at a flat rate will, on average, lead to tax payments that are a fairly constant proportion of income as income rises. In comparison, a flat rate property tax would have a greater impact on low income earners than on high income earners, as tax payments would become a declining proportion of income as income rises.



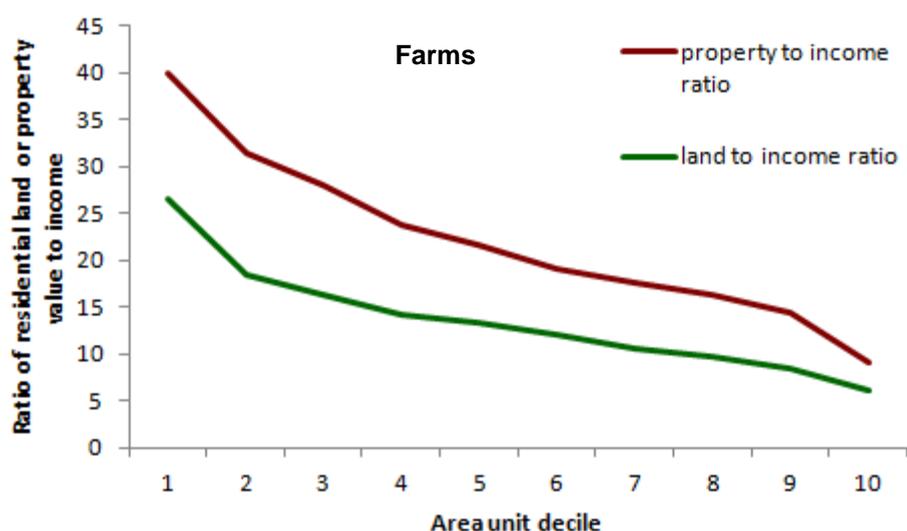
There are two other main equity considerations for specific groups:

- *Farms* – Farms have much higher land values compared to residential property across area unit deciles⁴⁵ as shown in the chart below. This means for farmers in all deciles they would, on average, pay more land tax than non-farmers (farmers would also be entitled to a tax deduction for the land tax, so the total cost would be less than the gross land tax). The distributional pattern for farmers is also regressive while it is proportional for residential property owners.

431; Wallace E. Oates, “The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis”, *The Journal of Political Economy*, Vol. 77, Issue 6 (Nov-Dec 1969), pp. 957-971; and Raymond M Reinhard, “Estimating Property Tax Capitalization: A Further Comment”, *Journal of Political Economy*, Vol. 89 No. 6 (Dec. 1981), pp. 1251-1260.

⁴⁴ Oded Palmon and Barton A. Smith, “New Evidence on Property Tax Capitalization”, *Journal of Political Economy*, Vol. 106, No. 5 (Oct. 1998) pp. 1099-1111.

⁴⁵ Using the geographic distribution of property values (i.e. so decile 1 is the bottom 10% areas with the lowest property values, and decile 10 is the top 10% areas with the highest property values).



The design of the land tax could be made more progressive to help address this by allowing a ‘credit’ (or rebate) for each hectare of land. This would preserve the main efficiency attractions of a land tax but as the credit would favour land-extensive activities (such as farming and forestry), where land values are typically lower, it would help to ease distributional concerns. There may be some distortive effects which will need to be considered more fully in the design of such an approach.

- *Superannuitants* – Superannuitants tend to live in more valuable properties than non-superannuitants on the same levels of income.⁴⁶ They may therefore typically need to devote a larger proportion of income to paying land tax liabilities. However, as superannuitants already receive a universal transfer payment, an administrative mechanism already exists for delivering to superannuitants targeted compensation for a land tax, should that be considered necessary. Alternatively, payment of the land tax liability could be deferred until the property was sold (although this could be seen as undesirable as due to lock in effect and would become a barrier to the efficient use of the housing stock).

Risk and Sustainability

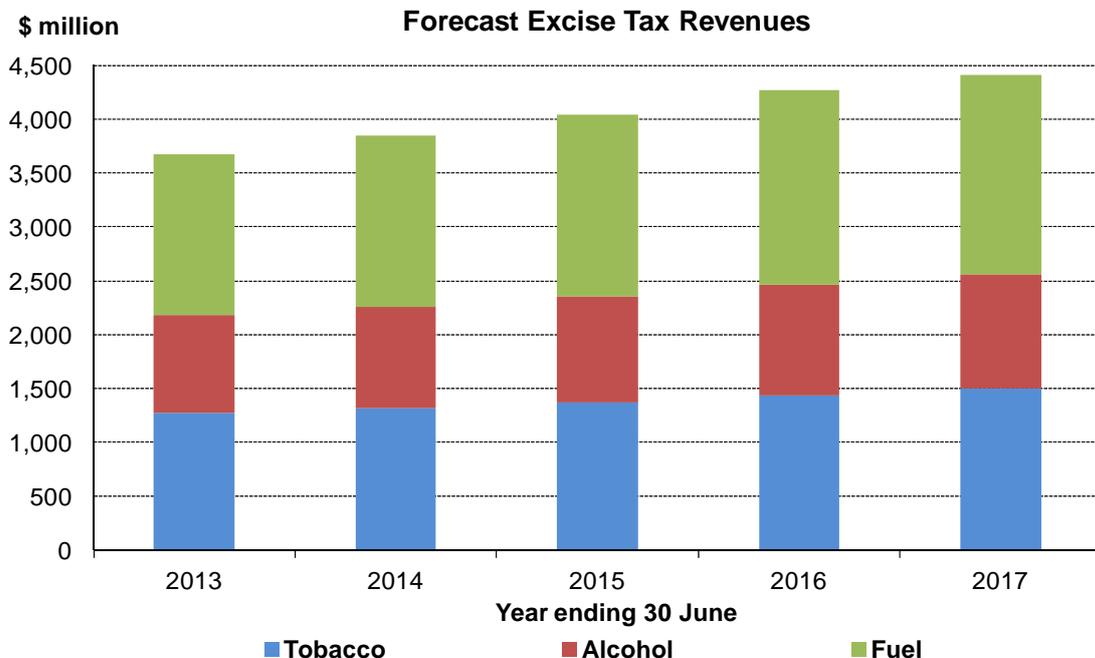
A land tax should yield a robust and stable revenue source. However, if land prices do not appreciate as quickly as overall economic growth, the revenue yield as a percent of GDP could fall over time. Unlike an income tax, a land tax should not result in a disincentive to save. However, by suppressing land prices, the demand for borrowing from offshore should decline, which may improve macro vulnerabilities overall. On the other hand, if the transition to a land tax causes land prices to fall and places cash flow burdens on land owners, there could be a risk to some borrowers and lenders which would increase vulnerabilities to that extent. A progressive land tax (per hectare rebate) should reduce this risk. Historically, New Zealand has had a land tax, but it was weakened and ultimately repealed, so that raises a question of whether a land tax is politically sustainable.

⁴⁶ Based on Treasury analysis of SoFIE data.

F – Other Tax Bases

Excise Taxes and other Taxes Addressing Externalities

Excise taxes raise about \$3.5 billion per year and are forecast to rise to almost \$4.5 billion per year in 2017.



Excise taxes are not imposed solely to raise revenue but usually have other social objectives. The most significant excise taxes in New Zealand are imposed on petrol (to pay for the cost of the roading network), and on alcohol and tobacco (to discourage over-consumption and compensate for the social costs, or externalities, of consuming those products). In principle, taxes intended to “internalise externalities” are efficient. These cause the consumer to bear a private cost for the harm imposed on society caused by his or her consumption. If the tax is set at the correct amount, social welfare would be enhanced because the consumption would be done only when the private benefit exceeds the social cost. In practice, setting the tax at the “correct” amount is a very difficult exercise that requires some application of judgement and overcoming informational challenges in measuring the externality. If the excise tax is set at the wrong amount, for example too high, it can be welfare reducing because it would discourage private consumption even when the private benefit exceeds the social cost. The case needs to be made on administrative and equitable grounds as well as efficiency. See *2001 Tax Review, Final Report*⁴⁷ for a further discussion on excise taxes.

It may be possible to extend excise type taxes in some areas, particularly to respond to environmental externalities. If the cost of the externalities can be reasonably quantified then an excise tax may be an efficient way of addressing them, and the additional revenue would make a useful contribution to maintaining a credible fiscal position. For

⁴⁷ Available at <http://www.treasury.govt.nz/publications/reviews-consultation/taxreview2001>

example, a carbon tax could be used to internalise the externality of emitting greenhouse gases, which could have efficiency benefits as well as raise revenue and helping New Zealand meet its international climate change obligations.

The revenue-raising aspect of a carbon tax is what makes a carbon tax distinct from an emissions trading scheme. While a carbon tax would not be imposed solely to raise revenue, such a tax, set at a fixed price, would be a more predictable source of revenue than a carbon trading scheme which has a variable carbon price. The variations in revenue would result from changes to emissions levels – which, even allowing for economic growth, should theoretically reduce over time in response to a cost being placed on carbon. However, given New Zealand's high cost of carbon abatement⁴⁸, it is likely that for a moderate carbon price, e.g. \$25 per tonne, revenue would rise in the event of sustained economic growth.

The marginal cost of reducing emissions varies across the economy, and it is very difficult to accurately cost the negative externalities associated with emissions. These factors, and a variable international carbon price, mean that it would be very difficult to correctly price a tax to either offset the environmental externality or meet our international climate change obligations. These factors are partly why New Zealand has adopted an emissions trading scheme – as a scheme theoretically allows the market to correctly price the cost of carbon and meet our international climate change obligations with carbon units – reducing the Government's fiscal risk.

Modelling has suggested the distributional effect of a carbon price is not clear.⁴⁹

The distribution of a carbon price burden is differential by sector, depending on the availability and cost of mitigation options in each industry.

The biggest drawback of a price on emissions is the potential competitiveness impact on emissions-intensive and trade-exposed industries. In the event that trade competitors do not have an equivalent price, New Zealand companies are placed at a disadvantage. This disadvantage impairs economic growth, primarily as a result of 'leakage' whereby output is shifted to another country with a lower price on emissions⁵⁰.

Overall though, excise taxes should not be viewed primarily as a mechanism for raising revenue, because if they are not correctly pricing the externalities they are likely be a less efficient way to raise revenue than a broad-based income tax or consumption tax.

Transaction Taxes

Other forms of taxes that are used globally are transactions taxes. Stamp duties are widely used to tax sales of real property in Australia and among other OECD countries, and some European countries are considering whether to implement a financial transactions tax.

Transactions taxes are generally considered to be inefficient because they are not applied uniformly and they may affect behaviour by discouraging sales. Stamp duties

⁴⁸ NZIER and Infometrics report, "Economic modelling of New Zealand Climate Change Policy", (2009),

⁴⁹ Creedy, J. & Sleeman, C. "Carbon Taxation, Prices and Household Welfare in New Zealand". (December 2004)

⁵⁰ NZIER and Infometrics report, "Economic modelling of New Zealand Climate Change Policy", (2009),

on real property transactions, however, disproportionately tax real property sales and not other sales. Unlike a capital gains tax, they are not calculated as a form of income tax, which has some efficiency benefits, but are instead calculated based on gross value. Because real property sales have high values, the stamp duty cost is high, which means it will be worthwhile for the seller to engage in tax planning and alter behaviour in order to avoid the tax. This tends to make stamp duties a very inefficient way of raising revenue. Principled reviews of tax systems tend to recommend that transactions taxes be removed in favour of value-added taxes like GST.⁵¹

Financial transactions taxes are being discussed in Europe and elsewhere as a way of raising revenue from the financial services industry that benefitted from state bailouts in the wake of the global financial crisis. Some also think that the tax itself would discourage financial speculation which would make another financial crisis less likely. There are generally two concerns with financial transactions taxes. One is whether they are enforceable. Since financial services are global, particularly transaction such as foreign exchange, it may be easy to execute potentially taxable transactions offshore and avoid the tax. This would have the effect of shifting financial transactions offshore without raising revenue.

The EU has not reached a consensus on implementing an EU financial transaction tax. A subset of eleven EU countries is considering implementing a tax among themselves. Some EU countries have already implemented forms of financial transactions taxes, such as France and Switzerland. Some general observations of the experience of these countries are:

- The only base that can effectively be captured is taxing one's own residents on share purchases. This is because the large institutional investors will transact offshore and avoid the tax.
- The tax base on which the tax could be imposed is effectively the domestic shares base.
- Switzerland found that institutional investment management services moved offshore after the tax was introduced. For example, Switzerland once had a large funds management industry, but this moved to London and Ireland after the tax was introduced in the 1980s.

Although the motivation for such a tax may be to tax financial institutions, effectively the tax is borne by individual investors rather than the financial institutions.

The tax imposed is cumulative. For example, a tax rate of 0.1% on the value of any shares transferred would mean the minimum tax on sale of shares would be 0.2% (0.1% on each of the seller and the buyer). In addition, if the transfer is executed through a market maker⁵², the tax imposed is 0.4%. As this is imposed on a principal amount, it is a high level of tax compared to an annual income flow, and could have an inefficient impact of discouraging sales. If it discourages activities such as being a market maker, that could reduce the efficiency of the local capital markets.

⁵¹ See Australia Future Tax Review (2010), for example – available at <http://www.taxreview.treasury.gov.au/>

⁵² A market maker is an intermediary in the stock market who will buy shares from sellers and hold them temporarily until a buyer can be found to buy them.

A variation raised more favourably by the IMF is a Financial Activity Tax (FAT). This has been discussed at a high level as an additional tax on bank profits (a surtax) including the remuneration of bank officials by disallowing a deduction for their wages and salaries.⁵³ A variant of this would disallow a deduction for wages and salaries only to the extent they exceed “ordinary” wages as a way of taxing only economic rents from bank profits. Although the IMF appears to find such a tax more favourable than a financial transactions tax, it would seem to suffer from some of the same disadvantages of encouraging banking activities to shift offshore to avoid the tax and we are not aware of any country considering implementing such a tax.

Bank capital taxes

Since the Global Financial Crisis, there has also been an active debate around the use of taxation as a prudential control on the financial sector. There is also a building consensus within the IMF that such forms of taxation may help reduce the build-up of systemic financial risks.⁵⁴ South Korea, for example, has established a macroprudential levy designed to restrict banks from hedging foreign exchange financed local debt purchases. While these taxes can would raise revenues (in the South Korean case revenues will be earmarked for the rescue of failing banks during a downturn), their primary aim is to alter incentive structures of banks and financial institutions, and provide funding for future bailout costs, and as such are not seen as avenues of raising general revenue.

⁵³ Claessens, Keen, and Pazarbioglu; *op cit*.

⁵⁴ Claessens, Keen, and Pazarbioglu; *op cit*. Also see:
<http://www.imf.org/external/pubs/ft/wp/2012/wp1227.pdf>

4 Summary of Results

Tax Type	Rate needed to raise 1% of GDP	Rate needed for 20% net debt in 2060	Efficiency / Economic Growth	Equity	Sustainability / Risks	Other Comments
Personal Income Tax – Fiscal Drag	Allow fiscal drag to occur for 9 years	Allow fiscal drag to occur for 31 years	Higher tax rates on low and moderate incomes are likely to reduce economic growth by raising disincentives for labour force participation	The personal tax system would become significantly less progressive	Likely to be a significant and sustainable revenue source if the policy could be maintained, but policy unlikely to be sustainable for a long period due to perception of reduced equity in the personal income tax system	No implementation needed
Personal Income Tax – Increase all Marginal Rates	Increase all rates by 2 percentage points	Either increase all tax rates by 5 percentage points from 2018/19; or increase all tax rate by 3 percentage points from 2018/19 and a further 3 percentage points from 2031/32	Higher tax rates would harm economic growth by reducing incentives for labour force participation and for savings and investment	Equity implication depends on how the personal tax rate scale would change. If significant revenue must be raised, it would be difficult to raise the rates in a way which would increase progressivity as much more revenue can be raised from the lower bands than the higher bands.	Likely to be a significant and stable source of revenue. Reduced incentive for personal saving could increase vulnerability.	Reasonably simple to implement
Personal Income Tax – Payroll Tax	Implement a payroll tax of 2.5%	Implement a payroll tax of 6%	Higher tax rates would harm economic growth by reducing incentives for labour force participation	Regressive change that would reduce the overall progressivity of the tax system	Likely to be a significant and stable source of revenue	Reasonably simple to implement. If it covers self-employment income, it would be more complex due to the need to distinguish labour income from capital income for closely held business.
Consumption Tax – GST	Increase GST to 17.5%	Either raise GST to 21% in 2018/19; or raise GST to 19% in 2018/19 and then to 23% in 2027/28	Would harm economic growth but by less than raising personal taxes or company+personal taxes. Although less harmful than an income tax on labour, it would still have an impact of discouraging labour force participation by reducing the value of wages in terms of consumption. It would be the least inefficient rate rise among the existing tax bases though.	Although GST is often viewed as regressive against when measured against current income, most economists considered it should be measured over a lifetime basis. In this case it is largely proportionate as most savings are consumed over a lifetime.	Likely to be a sustainable and reasonably stable revenue source. Some reduction in savings due to lower incomes post-consumption. Risk that a higher GST rate may undermine the level of support for the breadth of the base	Reasonably simple to implement
Company Tax	Increase the company tax, superannuation fund, top individual tax, trustee, and top PIE tax rates to 35%	Increase the company tax, superannuation fund, top individual tax, trustee, and top PIE tax rates to 43%	Raising the company tax and personal tax rates would harm economic growth by reducing incentives to invest and to save and reduce the total level of capital in the economy. Raising the personal tax rates would also reduce labour supply incentives.	Described tax rate changes would increase progressivity	High tax rates unlikely to be a sustainable source of revenue given the ability of companies to structure profits away to other jurisdictions. It may reduce vulnerabilities because it would increase the disincentive to invest to invest more than it would increase the disincentive to save.	Given all changes are tax rate changes should be reasonably simple to implement

Tax Type	Rate needed to raise 1% of GDP	Rate needed for 20% net debt in 2060	Efficiency / Economic Growth	Equity	Sustainability / Risks	Other Comments
Base-Broadening Capital Gains Tax	Taxing capital gains on a realisation basis, excluding owner-occupied housing, and making no adjustment for inflation would raise about 0.8% of GDP once fully phased in (18 years for "Australian" transition where the tax applies only to the sale of assets acquired after the effective date)	Taxing capital gains on a realisation basis, including owner-occupied housing, and making no adjustment for inflation would raise about 1.8% of GDP once fully phased in (18 years for "Australian" transition where the tax applies only to the sale of assets acquired after the effective date). This, by itself, would not be sufficient to achieve 20% net debt for 2060.	As part of an overall increase in the tax on capital it is likely to reduce economic performance. However, as the tax broadens the income tax base to be more neutral it should incentivise investors to maximise pre-tax returns, so the net impact on economic performance may be less damaging than from earning equivalent revenue from a rate increase.	Increase overall progressivity of the tax system	Would be a highly volatile source of revenue; would be difficult to forecast. Would follow property price cycles and act as a natural countercyclical balance into aggregate demand. Governments would need good institutional arrangements to avoid spending windfall gains. Likely to suppress land values compared to the status quo and this should reduce vulnerabilities by reducing foreign borrowing to purchase land.	Overall complexity depends on detail design, but overseas examples show it can be complex to design and implement and would likely raise compliance costs
Base-Broadening Land Tax	A land tax of 0.7% would raise about 1% of GDP in the first year	2.2% of the value of unimproved land	A well designed land tax (tax on unimproved value and with no exemptions based on land use) should be very efficient with little reduction of economic performance	On an ongoing basis, should have a broadly proportionate impact on income distribution. Retirees (land rich but income poor) may face some cash flow hardship, although this could possibly be addressed in a way similar to rates relief. Major equity impact would be on existing landowners who would be expected to suffer a loss of land value on announcement of the tax.	Should be a stable revenue source. Should cause a reduction in land values which should reduce vulnerabilities by reducing foreign borrowing to purchase land. Potential risk from transitional period to financial industry by increasing hardship to borrowers and reducing collateral values. It may be possible to mitigate this risk with design options.	Should be fairly simple to implement and comply with and could possibly be combined with administering local rates

Annex 1 – Capital Gains Tax Revenue Estimate

Revenue from a capital gains tax is likely to come from four main sources:

- Sales of real property;
- Sales of shares;
- Sales of business assets and intellectual property; and
- Increased income tax revenue from less tax avoidance activity exploiting the ability to convert income to capital gains.

The following graphs illustrate estimated revenues from a capital gains tax coming into effect in 2016/17. They are incomplete in that they estimate revenue from only two sources due to data limitations:

- Sales of real property; and
- Sales of shares of New Zealand companies.

Sales of shares in Australian companies would also potentially be subject to a capital gains tax but they are left out due to difficulty in determining the base of Australian shares separate from other foreign shares. Other foreign shares are currently subject to the Foreign Investment Fund/Fair Dividend Rate regime and they are omitted for simplicity, assuming the FIF/FDR regime continues.

The revenue estimation method is the same as used for the officials' estimate presented to the Tax Working Group in 2009⁵⁵ except:

- The starting values for the categories of real property bases are based on the latest available figures projected to 2016 values using Treasury's forecast residential property price index plus, in the case of residential property, Treasury's forecast of additional residential property investment;
- The tax rates used are those in effect in the 2012/13 income year;
- While the 2009 revenue estimate was based on average historical property appreciation rates, such as 2.2% real appreciation rate for residential property, we have made the new estimate on the assumption of a 1% real appreciation rate in order to reflect a lower likely appreciation rate following the housing bubble;⁵⁶
- We continue to assume 2% inflation in order to determine the nominal price appreciation rate; and
- For realisation basis tax, we used property turnover data supplied by Quotable Value.

⁵⁵ http://www.victoria.ac.nz/sacl/cagtr/twg/Publications/3-taxation-of-capital-gains-ird_treasury.pdf pp. 46,47.

⁵⁶ Except for categories of property where the historical average appreciation rate is less than 1% real per year, in which case the historical average is still used.

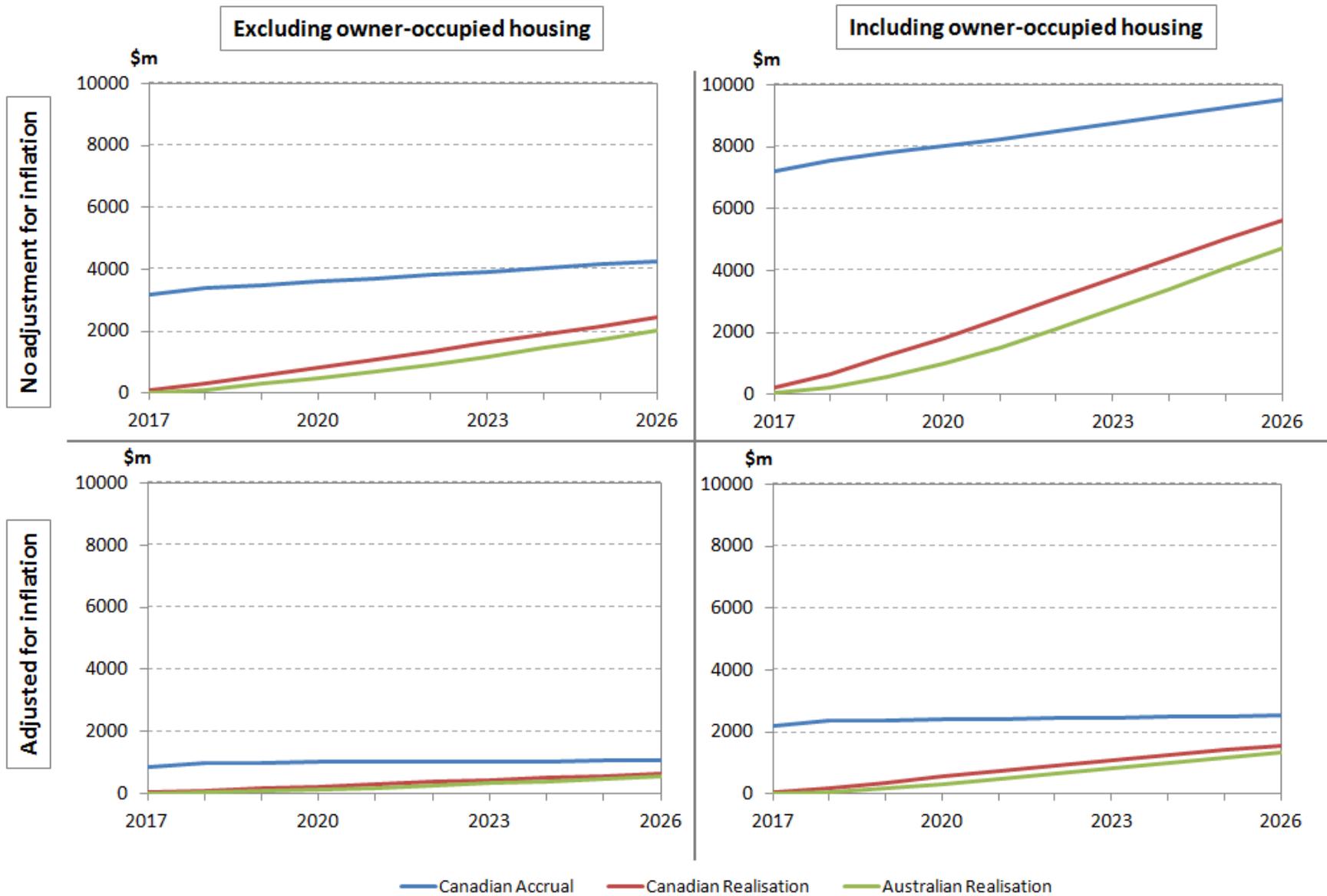
The revenue estimates below are based a combination of bases and calculation assumptions:

- Including or excluding owner-occupied property; and
- Taxing real or nominal gains.

We have also factored in three transitional rules:

- “Australian”, the green line, which means the capital gains tax applies only to assets acquired after the effective date which are then sold (realisation basis);
- “Canadian”, the red line, which means the capital gains tax applies to assets sold after the effective date, and if they were held on the effective date, the gain is calculated from the market value on that date (realisation basis); and
- “Canadian Accrual”, the blue line, which is full accrual capital gains tax.

Although projected revenue assumes a smooth appreciation path, in practice, appreciation rates are highly volatile and actual capital gains tax revenues are likely be highly volatile around the estimate.





Annex 2 - Illustrating Impact of Capital Gains Tax on Allocative Efficiency

Assume the following given a choice of investments between debt and residential investment property:

- Inflation 2%;
- Nominal interest 6%;
- Nominal real property appreciation rates 3%; and
- Nominal rents 3%.

	Nominal ETR		Real ETR	
	Debt	Housing	Debt	Housing
No CGT	33%	16.5%	50%	25%
With CGT	33%	33%	50%	50%

Investing \$100,000 in debt or housing in the absence of tax when each earns a nominal return of 6%:

	Debt	Investment Housing
Real Income	\$ 4,000	\$ 4,000
Nominal Income	\$ 6,000	\$ 6,000
Taxable Income	\$ -	\$ -
Tax	\$ -	\$ -
Real Effective Tax Rate	0%	0%
Rate of Return	6.00%	6.00%

However, different effective tax rates would cause post-tax returns to differ:

	Debt	Investment Housing
Real Income	\$ 4,000	\$ 4,000
Nominal Income	\$ 6,000	\$ 6,000
Taxable Income	\$ 6,000	\$ 3,000
Tax	\$ 1,980	\$ 990
Real Effective Tax Rate	50%	25%
Net Income	\$ 4,020	\$ 5,010
Rate of Return	4.02%	5.01%

The market would adjust for this by bidding up the price for housing:

			Debenture	Investment Housing
Real Income			\$ 4,000	\$ 4,000
Nominal Income			\$ 6,000	\$ 6,000
Taxable Income			\$ 6,000	\$ 3,000
Tax			\$ 1,980	\$ 990
Real Effective Tax Rate			50%	25%
Net Income			\$ 4,020	\$ 5,010
Rate of Return			4.02%	4.02%
New Investment Value			\$ 100,000	\$ 124,627

Taxing capital gains would remove this distortion so investment housing should not cost any more than an alternative investment earning the same pre-tax return:

			Debenture	Investment Housing
Real Income			\$ 4,000	\$ 4,000
Nominal Income			\$ 6,000	\$ 6,000
Taxable Income			\$ 6,000	\$ 6,000
Tax			\$ 1,980	\$ 1,980
Real Effective Tax Rate			50%	50%
Net Income			\$ 4,020	\$ 4,020
Rate of Return			4.02%	4.02%
New Investment Value			\$ 100,000	\$ 100,000