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Taxing capital income in New Zealand: an international perspective

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Taxing capital income in New Zealand: an international perspective.

Andrew Coleman, University of Otago. January 2019.

Abstract

In the 1980s and 1990s New Zealand undertook a large number of tax reforms designed to improve the performance of the economy. Top marginal income-tax rates were reduced, a value-added tax (GST) was introduced, a system of imputation credits for dividend income was implemented, and the taxation of retirement savings was reformed. As a result of these reforms, New Zealand now has a tax system that differs in many ways from the tax systems of other OECD countries. Even though there is no capital gains tax, it is characterised by relatively high taxes on business and capital income and low taxes on labour incomes. Part of the difference occurs because New Zealand has very low social security taxes, and because retirement savings are taxed differently in New Zealand than in most OECD countries.

This paper provides a review of the ways that the taxation of capital income in New Zealand may be affecting the economy. It argues that the idiosyncrasies of New Zealand's tax structure favour investments in urban real estate relative to investments in other productive assets, and that this may be hindering productivity growth. One part of the problem is a lack of a comprehensive capital gains tax, while another is relatively high taxes on business and capital income.

The paper discusses some of the different possible reforms that the 2018 Tax Working Group has identified in its Interim Report. While supportive of a capital gains tax, it argues that aspects of the suggested reforms are inconsistent with standard international practice and may (i) further distort the tax advantaged position of owner-occupied property in the economy and (ii) raise effective tax rates on real capital income above statutory rates. Since New Zealand already has some of the highest taxes on capital income in the OECD, further increases in these taxes may adversely affect the accumulation of capital in the economy and make it difficult for New Zealanders to catch up with OECD productivity levels and incomes. Although New Zealand could introduce a capital gains tax without worsening the distortionary effects of the tax system on investment patterns by adopting the standard OECD method of taxing retirement savings, the Interim Report appears to rule this out. Part of the difficulty is that the terms of reference for the Tax Working Group limit its ability to design a tax system for the future by constraining it to adopt many features of the tax system designed in the past. In contrast, this paper supports general OECD recommendations that a country may wish to reduce taxes on business income. For this reason, in addition to introducing a capital gains tax and reforming retirement income tax policy, a full discussion of the future of New Zealand's tax system should seriously consider altering the balance between capital and labour taxes by reducing income taxes, increasing taxes on land, and increasing social security taxes. This would bring New Zealand in line with standard OECD practice, and closer to the highly progressive tax systems adopted by most Scandinavian countries.

1. Introduction

For several decades, New Zealand has had an economy characterised by high labour participation rates but low capital intensity, low productivity levels, and low per capita incomes. A programme of reforms in the 1980s and 1990s raised income growth rates and arrested the decline of incomes relative to other OECD countries. However, the increase in productivity growth rates has not been large enough to enable New Zealand to catch up with other countries.

Some of the 1980s and 1990s reforms involved significant changes to the tax system. Many of these reforms were aimed at reducing the ways taxes can alter the economic choices that people and firms make. Top marginal income-tax rates were reduced, a value-added tax (GST) was introduced, a system of imputation credits for dividend income was implemented, and the taxation of retirement savings was reformed. As a result of these reforms, New Zealand has a tax system that differs in many ways from the tax systems of other OECD countries. While many of the tax reforms have been successful, and have been lauded internationally, some tax distortions remain and some may have been exacerbated.

By world standards, New Zealand has relatively low taxes on labour incomes (see the discussion in Section 2). Economic logic suggests low taxes on labour incomes should promote or at least not discourage labour participation and encourage people to undertake rewarding activities. Consistent with this logic, New Zealand has the fifth highest labour participation rate in the OECD, and particularly high participation rates for people aged over 55. Taxes may not be a particularly important determinant of participation rates, however. There is reasonable consensus among tax experts that income taxes have only modest effects on the labour participation decisions of prime-age males, although there is less consensus on the extent that taxes affect the participation decisions of women with children (Slemrod and Bakija 2017). New Zealand's labour force participation rate is high, but it is not dissimilar to several countries with high taxes on labour incomes such as Iceland, Sweden, Denmark, the Netherlands and Norway.

In contrast to the low taxes on labour incomes, New Zealand collects relatively large amounts of tax from capital incomes (also see the discussion in section 2). There is growing although not yet conclusive international evidence that high taxes on corporate income reduce economic *growth* rates by reducing the speed at which firms make productivity-enhancing investments to catch up with the leading firms in their sectors (Lee and Gordon 2005; Arnold et al 2011; Gemmell et al 2018). Moreover, New Zealand's taxes on capital income are unevenly applied, as some forms of capital income are taxed at much lower rates than other forms. The uneven way capital incomes are taxed may be reducing investment in sectors subject to high tax rates and encouraging investment in sectors subject to low tax rates. To the extent this is happening, it is liable to reduce economic efficiency and the overall productivity of the economy.

Even though the ways capital-income taxes affect investment patterns and productivity levels are imperfectly understood, most countries are concerned that poorly designed capital income taxes may impose large economic costs because they divert investment flows towards sectors that are lightly taxed or towards foreign jurisdictions (Mankiw et al 2009). Since the 1980s most countries including New Zealand have reduced taxes on capital income. Indeed, many countries including all of the Nordic countries have chosen to tax capital incomes at lower rates than labour incomes out of concern that high taxes on capital incomes impose economic costs that do not justify the revenues they raise.

The structure of taxes may also affect productivity levels by changing where people choose to live. Globally, a rising fraction of people choose to live in regions of a country that have relatively low productivity levels but offer desirable natural facilities rather than regions that have high productivity levels (Graves 1980; Chen and Rosenthal 2008; Partridge 2010). High taxes on

consumption and income may reduce productivity by deterring internal migration flows to the most productive cities and by encouraging migration to less productive cities with favourable but untaxed amenities (Albouy 2009). Because it alters location decisions, this mechanism is similar to the effect that restrictive development regulations may have on aggregate productivity (Hsieh and Moretti 2015; Schleicher 2017).

In recent years the OECD has argued that the tax reforms with the greatest scope to enhance productivity growth concern the way capital incomes, particularly property incomes, are taxed (Johansson et al 2008; Brys et al 2016). For this reason, this paper primarily concerns the taxation of capital income and asks whether New Zealand's productivity performance may have been adversely affected by the way capital income is taxed. Three issues are addressed:

1. Does the tax system reduce productivity levels by encouraging investment in low productivity *sectors*?
2. Does the tax system reduce productivity growth rates by discouraging investment in the most productive and dynamic *firms* within sectors?
3. Does the tax system reduce productivity levels by deterring investment in high productivity *regions*?

These questions are addressed sequentially. First, the paper examines the extent that New Zealand imposes different effective tax rates on different forms of capital income, and how this may encourage over-investment in lightly taxed sectors or asset classes. Much of this analysis concerns residential property taxation as this sector is extremely large and has particularly low tax rates. Secondly, the paper reviews the recent literature examining the way taxes on businesses may reduce the growth rate of more productive and dynamic firms. A key issue that arises when examining this question is whether the dynamic effects of business taxes on productivity growth may justify taxing capital incomes at lower rates than labour incomes. In contrast to the position adopted by the Tax Working Group, this paper argues that standard economic analysis provides no reason to tax capital and labour incomes at the same rates and several reasons not to tax these incomes at the same rates. Indeed, consistent with this theoretical position most OECD countries tax capital incomes at lower rates than labour incomes. Thirdly, the paper briefly considers how income and consumption taxes may encourage migration to low-productivity regions with desirable natural amenities.

A major reason that this paper focuses on the taxation of capital income is that New Zealand has a capital-shallow economy and levels of labour productivity which are low by OECD standards. It is possible but by no means proven that New Zealand's unusual tax system may be affecting investment and saving patterns in ways which are detrimental to productivity growth. There has been little research undertaken about the way that New Zealand's tax system affects productivity growth rates and levels, which is surprising since New Zealand's tax system is now quite different to those in many OECD countries. Indeed, in writing this paper it was striking how little agreement there is even over such basic issues such as whether New Zealand has high or low taxes on capital income, an issue that is inadequately addressed in the Tax Working Group Interim Report. Whatever the outcome of the Tax Working Group recommendations, it is to be hoped that considerably more research is undertaken about the ways New Zealand's tax regime may be affecting its productivity outcomes. Currently little is understood about the incidence, productivity and distributional consequences of several aspects of the New Zealand tax system. Nor does there appear to be a work programme aimed at resolving several areas of uncertainty. It will be difficult to design a tax system that will enhance New Zealand's society in the future unless there is a greater understanding of the ways New Zealand's unusual tax system affects economic decision-making and aggregate economic outcomes.

2. Tax neutrality, allocative efficiency, and the taxation of capital income

New Zealand's tax structure

New Zealand has a very different tax structure from most OECD countries. While some of the differences occur because New Zealand has a very low top marginal tax rate, most occur because New Zealand raises an extremely low share of taxes from social security taxes. In most OECD countries, social security taxes are levied on labour incomes but not capital incomes and thus labour incomes are taxed at higher rates than capital incomes. In 2016, New Zealand raised about 1.1% of GDP in social security taxes (the ACC levy). The average OECD country raised 9% of GDP in social security taxes, primarily to pay pensions (see Tables 1 and 2). New Zealand does not have dedicated social security taxes partly because pensions are unrelated to the size of the tax payments a person makes.¹

Taxes on labour incomes

Since New Zealand does not raise much tax from social security taxes applied to labour income, more revenue needs to be raised through taxes that are applied to both capital and labour income including business taxes. The difference is large. New Zealand raises 17.5% of GDP in income taxes whereas the average OECD country raises only 11.5%. Because capital income is only subject to income tax but labour income is subject to income tax and Social Security taxes, labour income is taxed at considerably higher rates than capital income in most OECD countries. As a consequence, New Zealand raises a larger fraction of its tax revenues from capital income and corporate taxes than other countries (see Table A1.2 in Appendix 1). If income taxes and business taxes are more distortionary than labour taxes, as international evidence suggests, New Zealand's decision to fund pensions out of general taxation rather than social security taxes may be reducing productivity levels and economic growth rates.

As New Zealand does not use social security taxes to fund government retirement incomes, New Zealand has very low taxes on labour incomes by OECD standards. The OECD reports that while a New Zealand worker earning the average wage faces the 10th highest income taxes in the OECD, the combined income and social security taxes they pay are the second lowest in the OECD (see Table A1.1 in Appendix 1).² For people earning 167% of average income, the respective figures are 13th highest and 3rd lowest. The labour share of taxes is also low because New Zealand's top marginal tax rate is only 33%, payable on incomes over \$70,000. In contrast, the top marginal tax rates in Australia, Germany and the United Kingdom are 45%, although these top rates apply at much higher thresholds. The top marginal tax rate in the United States is 39.6%.

¹ In most OECD countries a person receives a pension that depends on the tax contributions they make during their working lives. One other OECD country, Ireland, provides a pension unrelated to the size of tax payments or contributions to a compulsory saving schemes. However, Ireland has social security taxes applied to labour but not capital incomes.

² OECD Tax Policy Database Table I5. https://stats.oecd.org/index.aspx?DataSetCode=TABLE_I5 The OECD calculates the average personal income tax and social security contribution rates on gross labour income for someone on a wage 100% or 167% of the national average.

Table 1: New Zealand's tax revenues in 2016

	Tax take	% GDP
Income tax	\$31.6 billion	12.5%
Corporate tax	\$11.1 billion	4.4%
Interest and Dividends	\$2.3 billion	0.9%
GST	\$18.2 billion	7.2%
Other indirect	\$6.5 billion	2.8%
ACC levies	\$2.8 billion	1.1%
Total	\$74.3 billion	29.4%

Source: New Zealand Government (2016). Author's calculations

Table 2: Tax collection by country - 2015/ 2016

	US	UK	Germany	OECD Average	NZ
Income Tax	12.0%	11.7%	11.3%	11.5%	17.8%
-Personal	9.9%	9.1%	9.5%	8.8%	13.4%
-Corporate	2.2%	2.5%	1.8%	2.9%	4.4%
Consumption Taxes	3.7%	10.4%	9.8%	10.7%	10.0%
Social Security Taxes	6.1%	6.2%	13.9%	9.1%	1.1%
Total	25.4%	32.9%	36.5%	34.2%	29.4%

Source: Slemrod and Bakija (2017 p 16) plus New Zealand Government (2016). Author's calculations.

Taxes on capital incomes

There are many ways to measure taxes on businesses and on capital income, and it is possible to argue that New Zealand has very high or very low taxes on business income depending on the measures that are used. It is useful to classify these measures three ways: the total amount of revenue raised from capital income taxes; the tax rates applied to businesses; and the tax rates applied to the income paid by businesses to their equity and debt claimants.

In the 1980s, New Zealand aligned the corporate tax rate with the maximum income tax rate and reduced the rate to 33 percent. At the time this rate was low relative to the rates in many OECD countries. No longer. New Zealand now has the ninth highest corporate statutory tax rate in the OECD. However, the effective tax rate may be even higher as by some measures New Zealand has the highest effective corporate tax collection as a fraction of the total tax collection in the OECD. For example, according to the OECD, taxes collected on the income, profits and capital gains of corporates were a higher fraction of GDP in New Zealand than any other OECD country in 2015 (see Table A1.2 in Appendix 1).³

New Zealand's effective capital income tax rates may be high because of the way various deductions are made. There are two separate international comparisons of how this affects

³ See the OECD website <https://stats.oecd.org/index.aspx?DataSetCode=REV> Category 1200 - Taxes on income, profits and capital gains of corporates. These data were reported by the Tax Working Group in their paper "The future of Tax" Section 6.

effective tax rates. Price Waterhouse, in conjunction with the World Bank, calculate the tax owed on a standardised medium size company taking into account depreciation and all adjustments. If social security payments and other labour taxes paid by firms are excluded, because their incidence falls on labour, in 2016 New Zealand had the highest effective tax rates in the OECD in the first two years of a company's life in 2016.⁴ The second international comparison is by the OECD which has recently tried to calculate forward looking tax rates taking into account deductions and allowances for a firm financed by debt and by equity, for several different types of investments, in environments that differ in terms of inflation and interest rates (Hanappi 2018). By this measure, New Zealand also has moderate to high effective tax rates – many of these numbers suggest New Zealand's effective tax rates are in the upper third and often the upper quarter of business taxes in the OECD (see table A1.3 in Appendix 1). For example, in a relatively high interest rate, high inflation environment (real interest rates = 5%, inflation = 2%) New Zealand had the 9th highest effective marginal tax rate for equity financed investments out of 36 OECD countries. (It was the 6th highest among the 20 OECD countries with incomes at least as high as New Zealand, and 3rd largest amongst the 21 small OECD countries). It had the highest effective taxes on investments in research and development amongst rich or small OECD countries, and the 4th highest out of all 36 OECD countries. Collectively, these numbers all suggest businesses in New Zealand are taxed at relatively high rates.

There is one published measure that suggests New Zealand has relatively low tax rates on capital income. This is the tax rate after imputation on dividend income paid to high income domestic shareholders, a measure mentioned in the Tax Working Group interim report: for example, they write (page 16)

“New Zealand's company rate is above average, and company tax revenue to GDP is high. After imputation, however, New Zealand's tax rate on domestic shareholders is the sixth lowest in the OECD. New Zealand is more reliant on company tax revenue than most other countries.”

Unfortunately, this measure provides a misleading perspective of New Zealand's taxes on capital incomes. It is misleading because the calculation refers to the amount of tax paid by a person in an OECD country on the top marginal tax rate who pays income tax on dividend income in the same year it is earned; that is, it refers to the tax paid by extremely high income earners who do not hold their assets in a retirement scheme taxed on an expenditure basis. This measure is not comparing the tax paid by a New Zealander earning \$NZ100,000 with a citizen of the United States or the United Kingdom earning the equivalent of \$NZ100,000, for the latter people are not being taxed at the top marginal tax rate and they are likely to hold their assets in a retirement saving account that is not subject to further taxation until money is withdrawn. Rather, it is comparing the tax paid by extremely wealthy people in each country. While the Tax Working Group focuses on this measure – possibly because they believe it is important that high-income New Zealanders should pay relatively low taxes on their dividend income as well as their labour income – it does not mean that New Zealanders earning normal incomes pay low taxes on capital incomes by international standards.⁵ There is no evidence they do. Rather, by most other

⁴ See <https://www.pwc.com/gx/en/paying-taxes-2016/paying-taxes-2016.pdf>. In 2004 New Zealand was rated third highest (Djankov et al 2010). When social security payments are included in the taxes paid by businesses, New Zealand falls to 23/35 further suggesting that New Zealand has very high taxes on corporate income because it does not have social security taxes. The summary data are presented in Table A1.3 in Appendix 1.

⁵ There are three reasons why this measure should not be taken to indicate that ordinary New Zealanders pay much lower taxes on capital income than people in other countries. First, New Zealand has much lower top marginal income tax rates than other countries, but marginal income tax rates for other incomes are not particularly low. For example, the marginal tax rate on a person earning \$NZ90,000 in New Zealand is 33%; an Australian earning \$A90,000 has a marginal tax rate of 32.5% (not 45%, their top marginal rate); a citizen of the United Kingdom earning £45,000 has a marginal tax rate of 20%; an American earning \$US90,000 has a marginal income tax rate of

measures taxes on capital incomes capital are actually rather high, even though New Zealand does not tax capital gains.

The key question concerns the ways taxes affect economic decision-making, for taxes on capital incomes affect the way firms and people make investment and saving decisions, and the way incomes are determined and distributed. Most international tax experts focus on the effective marginal tax rates paid by businesses, for this affects investment decisions by firms considering different investment opportunities within a country, or effective average tax rates, as this affects decisions whether to invest in one country or another. By these measures – except the tax paid by extremely high income people on dividends not held in retirement income accounts - New Zealand has relatively high taxes on capital income. Since it is not obviously true that the after-imputation tax rate on the dividend income received by very high income people is a more important determinant of the way investment decisions are made by firms than, say, the tax rate applying to overseas investors or the effective tax rates levied on small firms, it appears reasonable to categorize New Zealand as having some of the highest taxes on capital income in the OECD.

Optimal tax systems

The key factors for a government when it chooses a set of taxes are the extent that people and firms change their behaviour in response to particular taxes, how the incidence of these taxes affects the distribution of resources, and the administrative complexity of the taxes. A tax system is neutral if it does not distort the decisions people make. As neutrality is only one goal of a tax system, different classes of income do not have to be taxed equally and it is appropriate for a government to choose taxes that distort economic behaviour if it believes this will help achieve some of its equity objectives. Similarly, it may reject taxes that are neutral if it believes these are unfair.⁶

An efficient tax system can have different tax rates on different activities. If people do not change their behaviour in response to a particular tax, it will not be very distortionary to impose that tax at a high rate. If people make large, undesirable changes to their behaviour in response to a particular tax, it may be appropriate to have those taxes imposed at low or zero rates. However, a tax system should avoid uneven taxes on capital incomes if investment decisions are very responsive to any differences in the taxes on different forms of capital income or it is administratively difficult to tax different activities at different rates.

New Zealand's high effective corporate tax rates relative to other OECD countries reflects some fundamental structural features of its tax system. Unlike most OECD countries, New Zealand attempts to tax corporate incomes, labour incomes and capital incomes at similar rates, although corporate tax rates are slightly lower than either of the other rates. New Zealand's choice, which is affirmed in the Interim Report of the Tax Working Group at several places, reflects three long-standing positions:

- it is inequitable to tax capital and labour incomes at different rates;
- it is often impractical to tax labour and capital incomes at different rates; and

25%; and a German earning €55,000 pays 42%. Secondly, in most OECD countries (except Australia) the dividend payment is likely to be held in a retirement saving account that is not subject to additional taxation. New Zealand's imputation system provides much less tax advantage in these circumstances, but this factor is ignored in the comparison. Lastly, New Zealand high income earners have a much smaller advantage when it comes to interest income – they ranked 11th out of 33, not 27th out of 33, by this measure. (See Harding and Marten 2018).

⁶ For example, the poll tax that was introduced in the United Kingdom in 1989 was neutral, but it was widely considered unfair and subsequently abandoned.

- it is inefficient to tax capital income at low rates as other taxes must be raised to offset the revenue loss, and these taxes entail efficiency losses that increase more than proportionately with the size of the tax.

These positions have been easy to articulate and were encapsulated in the “Broad-base low-rate” mantra of the 1980s. Why should a labourer earning \$35,000 pay more tax than a someone receiving \$35,000 in interest and dividend income? If capital incomes were taxed at lower rates than labour income, would it not provide a small business-person with an incentive to classify most of the income from their business as capital income rather than labour income? And surely the efficiency costs from raising labour income taxes must be worse the efficiency gains from reducing capital income taxes?

The philosophy of taxing capital and labour incomes at the same rates has been a central component of New Zealand’s tax system since the 1980s. While this philosophy sounds sensible to many, it needs to be emphasised that it has very little theoretical basis, it is not standard OECD practice, is not consistent with the widely praised and progressive tax systems of the Nordic countries, and, given the way New Zealand taxes residential property income, it is not even applied consistently in New Zealand. It is perhaps surprising that the Tax Working Group has uncritically adopted a position so at odds with standard theory and practice. There is, of course, nothing inherently wrong with New Zealand adopting a tax system different from the rest of the OECD. However, if New Zealand wishes to adopt a tax system quite different from that of the rest of the world, and suggest reforms that accentuate these differences further, it would be useful to ensure a programme of research is undertaken to ensure that the tax system is not harming the performance of the economy. Unfortunately, recent research suggests that the cost in terms of productivity and economic growth rates of having very high taxes on capital income may be higher than was understood when many of the reforms were undertaken in the 1980s (see section 4).

The statement that taxes on labour, capital, and business incomes need not be the same may sound foreign to many New Zealand ears. However, since Mirrlees (1971) almost all theoretic work in the tax literature argues that capital income and labour income need not be taxed at the same rates (for recent discussions see Mankiw et al 2009; Mirrlees et al 2010; Mirrlees et al 2011; Diamond and Saez 2011; Auerbach 2012; and, in an Australian and New Zealand context, Diamond 2011). Thirty years ago, following Atkinson and Stiglitz (1976), Judd (1985), and Chamley (1986) a much stronger view was popular, that it was optimal to have a zero tax rate on capital incomes. While the theoretical literature has largely moved away from this position, there is no theoretical basis for taxing capital and labour at the same rates.⁷

The key issue concerns an equity-efficiency trade-off. Capital income taxes tend to be more distortionary than labour income taxes, which suggests capital income should be taxed at lower rates.⁸ However, capital incomes tend to be higher for those with more income and wealth, which provides an ‘equity’ motivation to tax capital incomes at a higher rate than labour incomes. The balance depends on how much a government wants to reduce economic distortions and enhance income levels and growth rates, and how much it favours redistribution. The answer may change over time. If income inequality increases due to an increase in the size of capital incomes, for example, a society may wish to increase the taxes on capital incomes for

⁷ There is still some debate as to whether or not it is optimal to tax capital income at all: for example, consider the contrasting positions of Mankiw et al (2009) and Diamond and Saez (2012). Nonetheless, most experts now appear to believe that while there is no good reason to tax capital and labour incomes at the same rate, the optimal tax rate for capital incomes is not zero.

⁸ See Slemrod and Bakija (2017) for an extensive discussion on the relative size of the distortionary effects of taxes on labour market decisions and capital allocation decisions.

equity reasons. If the capital share of output gets very large in the future, and these incomes are earned by a small number of people, governments may want to tax capital more than labour. Nonetheless, whatever solution a society favours, there is no inherent reason to tax capital income and labour income at the same rates. If a country wishes to enhance growth rates by taxing capital incomes, including business incomes, at lower rates than labour incomes, it can make this choice.

New Zealand is unusual because it tries to tax capital and labour incomes at the same rate. Most OECD countries do not, choosing to tax labour incomes at higher rates than capital incomes. The difference largely occurs because New Zealand raises an extremely low share of taxes from social security taxes. As indicated above, social security taxes in most OECD countries are levied on labour incomes but not capital incomes and thus labour incomes are taxed at higher rates than capital incomes.

While social security taxes allow most OECD countries to tax capital incomes at lower rates than labour incomes, the four Scandinavian countries have adopted a different approach, the Nordic Dual Tax model. This tax system, introduced by Norway, Denmark, Sweden and Finland in the 1990s, deliberately taxes capital incomes at a lower rate than labour incomes in order to minimise the distortionary effects of taxes. In the basic version of the model, capital incomes are taxed at a minimum flat rate and labour incomes are taxed at graduated rates that are at least as high. This tax system stems from a belief that the distortionary effects of capital income taxes are much worse than the distortionary effects of labour income taxes. This model is garnering considerable praise. As Slemrod and Bakija (2017) write:

If the VAT is the world's tax success story of the past half century, then a contender for the success story of the next fifty years is a Scandinavian innovation known as the dual income tax.The argument for the DIT, which is especially relevant for small open economies like the Scandinavian countries, is that a low capital income tax rate would lessen the incentive for domestic wealth owners to invest capital outside the country and to invest in hard to measure types of capital that aren't include in the tax base.it may come as a shock that the Nordic countries, with a reputation for highly progressive tax and other policies would abandon a graduated tax schedule for capital income. Apparently, they believe that a highly progressive tax on at least some forms of capital income is an inefficient means of redistributing income. compared to a progressive labour income tax.

These four countries are all considered progressive and all have *much* lower income inequality than New Zealand - and yet all have decided to tax labour incomes at higher rates than capital incomes. Most have labour participation rates similar to those in New Zealand. All four countries have adopted means to ensure that small-business owners do not try to shield their labour income from tax by reclassifying it as capital income. This suggest that it is not necessary to tax capital incomes at high rates to achieve progressive income distribution goals.

The taxation of capital income

For the last thirty years, a key goal of New Zealand's tax policy has been to avoid taxes that provide artificial incentives to invest in one class of assets rather than another.⁹ When different activities are taxed at different rates, people and firms have incentives to invest more in lightly

⁹ For example, this theme is a focus of the following reports: "The tax treatment of superannuation" (1988); "Consultative document on the taxation of income from capital" (1989), "The taxation of income from capital - an overview" (1989), and "Final report of the consultative committee on the taxation of income from capital" (1992); "Private Provision for Retirement: The Issues" (1991) and "Private Provision for Retirement: The Options" (1992) (The Todd Task Force on Private Provision for Retirement); "Tax Review 2001 – Final Paper" (The McLeod Review, 2001); and "A Tax System for New Zealand's future" (2010) (Victoria University of Wellington Tax Working Group).

taxed activities and to invest less in heavily taxed activities. To the extent people respond to these incentives, we can expect to see an economy that over-invests in lightly taxed asset classes that have a low pre-tax yield and under-invests in highly taxed asset classes that have a high pre-tax yield.

New Zealand does not tax all capital income equally. There are a variety of exceptions.

1. The imputed rent associated with owner-occupied housing is taxed at low rates.
2. Capital gains are not systematically taxed. This means there are different effective tax rates on investments generating cash incomes at different time horizons, with short-horizon investments taxed at higher effective rates than long-horizon investments.
3. When there is inflation, real interest earnings are taxed at above normal rates, because the inflation component of interest income is taxed. Conversely, investors who borrow are allowed to deduct the inflation component of interest payments from taxable income, artificially reducing their tax rates.
4. There are a variety of rules governing collective investment vehicles such as Portfolio Investment Entities (PIES) or KiwiSaver funds that result in income from assets held in different accounts being taxed in different ways.
5. There is different tax treatment of tangible investments and some classes of non-tangible investments (such as marketing expenses) because of the rules governing the deductibility of capital investments.
6. Nominal interest payments made to foreign entities are (in general) taxed by the New Zealand Government at lower rates than nominal interest payments paid to residents.

Most of these examples have been thoroughly discussed in the various investigations of the tax system that have taken place since 1985. Collectively they mean that income from residential property, New Zealand's largest asset class, is taxed at lower rates than income from other assets.

There are many reasons why different types of capital income are taxed at different rates. Governments may wish to alter the distribution of income or wealth by taxing some sources of capital income at low rates. Some sources of capital income may be administratively difficult to tax. And some of the reasons are philosophical, reflecting debates about the extent that income should be taxed when it is earned (income taxes) or taxed when it is spent (expenditure taxes). Most countries attempt to tax some types of capital income on an income basis, and other types of capital income on an expenditure basis, and this inconsistency is one of the factors that causes capital income to be taxed unevenly.

New Zealand's tax regime embodies this inconsistency. New Zealand has an indirect expenditure tax, the Goods and Services tax (GST), but largely levies direct taxes on an income basis. There are exceptions to this rule, however. For example, income from owner-occupied housing is taxed on an expenditure basis and income in the form of capital gains are generally exempt from tax. Other countries make different choices. Many countries choose to tax owner-occupied housing and funds placed in specialised retirement-savings accounts on an expenditure basis, but tax other classes of income including capital gains on an income basis. Each system creates its own inefficiencies and distortions. A key question for New Zealand is whether the distortions and inefficiencies in our system could be reduced by altering the way different types of capital incomes are taxed.

There are two basic approaches to reform the way capital income is taxed in New Zealand. The first approach is to tax income on an income basis but to impose taxes more consistently so that capital incomes are taxed more evenly. If this approach were taken, the key issues concern the taxation of income from owner-occupied housing, the taxation of capital gains, and the taxation of real interest income. If New Zealand were to follow this path, taxes on incomes from owner-occupied housing and capital gains should be increased until they equal the tax rates on other assets, but taxes on the income from interest-earning assets should be reduced.

The second approach would be to increase the types of capital income that are taxed on an expenditure basis. The most common way to do this around the world is to tax income placed in a retirement-savings fund on an expenditure basis, but more radical options such as the Hall-Rabushka (1985) flat tax or the Bradford (1986) X-tax are possible. If New Zealand were to follow this path, it would mean reducing taxes on the income from some classes of assets such as retirement savings until they were more in line with the taxes on owner-occupied housing.

Either of these approaches is possible. In practice, however, neither approach is likely to be consistently implemented, so different classes of income will still be taxed differently. This means some economic distortions and inefficiencies will remain. Moreover, the community and political support necessary to ensure reforms are long lasting might be easier for one approach than the other. In these circumstances the overall costs and benefits of each package of reforms can be evaluated using a comparative institutions perspective. In adopting this perspective, it should be noted that some of the measures necessary to equalise the taxation of different types of capital income on an income basis are explicitly ruled out by the Tax Working Group's Terms of Reference. This may make it difficult to obtain the results that would be achieved if a broader set of reforms were implemented.

Since Mirrlees (1971) and Diamond and Mirrlees (1971a, 1971b), the effects of potential tax reforms have been examined by considering a trade-off between economic efficiency and the distribution of income or wealth. This "optimal taxation" approach requires an analysis of the ways taxes alter economic behaviour and prices, the way that price changes may shift the incidence of the tax from those who make the tax payment to other parties, and way society values the welfare of the parties affected by the taxes. This analysis is difficult to do as the incidence of taxes can be shifted in complex ways, and there is considerable uncertainty as to the size of these effects. Even though there is relatively little empirical evidence about some of these factors, it is important that they are not ignored.

The successive reviews of New Zealand's tax system that have been undertaken since 1985 have discussed the trade-off between the efficiency and equity objectives of different tax reforms at some length. These reviews have consistently argued that a tax regime should not provide artificial tax incentives to invest in one class of assets rather than another, but exceptions have been made for residential property which is lightly taxed because neither imputed rent nor capital gains are taxed. Given the thoroughness of these reviews, are there reasons to revisit the arguments? There may be. To date, New Zealand's governing bodies have thought the distributional disadvantages of increasing taxes on residential property owners outweighed the productivity benefits. They may be wrong. Since the last tax review, advances in modelling techniques and new international empirical evidence have provided additional insights into the way the incidence of taxes on residential property incomes affect economic outcomes.

The biggest shift in the literature concerns the analysis of the way that income and wealth are redistributed when taxes are capitalised into residential property prices. Many of New Zealand's earlier tax reviews assumed that residential property prices would be little affected by the tax system, or that the response would not have a material bearing on New Zealand's productivity

and equity objectives.¹⁰ There is now greater support for Ricardo's (1817) contention that distortionary taxes are often capitalised into property prices, which changes the incidence of the taxes dramatically (for a recent review, see Hilber, 2017). If property prices are highly responsive to the tax system, the equity and efficiency implications of different tax policies could be very different from those suggested by previous enquiries into the tax system.

Tax neutrality and income taxes

What would a tax system look like if all income were taxed on an income basis? The standard definition for income is the Haig-Simon definition¹¹:

$$\text{Income} = \text{consumption plus change in wealth.}$$

This definition of income includes:

- labour income;
- capital income adjusted for the loss of value of assets, including corporate income, interest, and dividends;
- the imputed rent from owner-occupied housing; and
- capital gains, which should be taxed on an accruals basis.

Table 3 shows how different classes of capital income would be taxed under a neutral income tax system, and contrasts this with the way capital income is actually taxed in New Zealand. Under a neutral income tax system, real (inflation-adjusted) capital gains would be taxed wherever they occur, be it owner-occupied housing, rental housing, retirement savings accounts, or other asset classes. The imputed rent that people obtain from living in their own homes, adjusted for real depreciation, real interest payments, and other charges would also be taxed. Finally, real interest earnings, but not the inflation component of interest earnings would be taxed, and real interest payments but not the inflation component of interest payments would be deductible from tax.¹²

The table shows capital income is not taxed evenly in New Zealand. The three biggest differences are

- imputed rent on owner-occupied housing is not taxed;
- real capital gains are not generally taxed;
- nominal interest earnings rather than real interest earnings are taxed, and firms deduct nominal interest not real interest payments to calculate their taxable income.

¹⁰ An exception is the 2009/10 Tax Working Group. In its final report it acknowledges that a land tax might lower property values, but it restricts its equity analysis to a discussion of the effects of lower prices on current land-owners.

¹¹ While standard, this definition is not free from controversy. One difficulty with this definition is that income defined in this manner can exceed production. For instance, if a decline in interest rates leads to an increase in the present value of assets, positive capital gains can result even though there is no increase in the current or future value of production. For a contemporary discussion of some of the issues surrounding the Haig-Simon definition, see Slemrod and Bakija (2017).

¹² If nominal interest earnings or nominal capital gains were taxed, real incomes would be taxed at higher-than statutory rates in circumstances that the inflation rate was positive.

Table 3: The taxation of different classes of capital income

Owner-occupied housing	Rental housing	Retirement- savings accounts	Other capital income	Interest income
Nominal value of private wealth in March 2016 (\$million)				
(total gross wealth = \$1,495,335m; total net wealth = \$1,309,229m)				
\$677,035	\$228,329	\$69,136	\$349,658	\$159,381
Neutral tax system				
-Tax imputed rent net of real depreciation and real interest payments and other related charges.	-Tax rent net of real depreciation and real interest payments and other related charges.	-Tax dividend income and other earnings.	-Tax dividend income and other earnings net of real depreciation and real interest payments.	
-Tax real capital gains and losses.	-Tax real capital gains and losses.	-Tax real interest earnings.	-Tax real capital gains and losses.	-Tax real interest earnings.
		-Tax real capital gains and losses.		-Tax real capital gains and losses.
Current New Zealand tax system				
-No tax on imputed rent, and no deductions.	Rents net of <i>nominal</i> interest payments and other related charges are taxed.	Dividend income and other earnings are taxed.	-Dividend income and other earnings net of nominal depreciation and real interest payments taxed.	
		-Nominal interest earnings are taxed.		-Nominal interest earnings are taxed.
-No capital gains taxes.	-Capital gains not usually taxed, except in specific cases.	-Capital gains not usually taxed, except in specific cases.	-Capital gains not usually taxed, except in specific cases.	
		Maximum tax rate capped at 28%.		

Other differences exist. For example, income earned in some unit trusts and superannuation schemes are taxed at a maximum rate of 28% rather than the usual maximum rate of 33%.¹³

The taxation of residential property income

The taxation of residential property income is the most important capital-income issue, for three reasons. First, residential property is the single biggest asset class in New Zealand. Secondly, income from property income is lightly taxed. Thirdly, the way the tax regime is capitalised into property prices is likely to be a key determinant of inequality as this determines the extent that the incidence of the tax is shifted from those who pay the tax to other parties.

Residential property is the largest class of assets in New Zealand. In 2016 the value of owner-occupied housing was \$677 billion, financed by \$154 billion debt claims and \$523 billion residual equity. This was 52 percent of net household wealth, and 46 percent of gross private assets in New Zealand. There was an additional \$228 billion in leased residential real estate, financed by \$62 billion debt. In total, residential property assets comprised 69 percent of net household wealth, and 61 percent of gross private assets. Holdings of interest earning securities by New Zealand residents were only \$159 billion, assets in retirement savings accounts were \$69 billion and net business assets (excluding investments in residential property) were \$350 billion. New Zealand's balance sheet, and the various ways the size of the real estate sector can be measured, are discussed in Appendix 2.

The extent that property income is taxed less (or more) than other assets depends on the other assets being considered. The most commonly held classes of assets in New Zealand are directly held interest-earning securities such as bank accounts, and interest-earning and equity securities held in KiwiSaver and other retirement income accounts.¹⁴ Because most people hold these assets, they are the natural benchmarks with which to compare the taxation of other asset classes.¹⁵

In Appendix 3, the tax regimes for income from owner-occupied and leased residential property and other commonly held assets are compared. In all but two of the comparisons the income from residential property is taxed less than income from the other assets. The biggest tax advantage is obtained by debt-free owner-occupied residential property relative to interest-earning securities, as neither imputed rent or capital gains are taxed but the inflation component of nominal interest earnings is taxed. The two exceptions concern rental property which is taxed in a similar manner to equities held in KiwiSaver accounts, but less than income from interest earning assets.

When property is under-taxed relative to other classes of capital income, households and property investors have an incentive to invest too much in residential property. This has two effects. First, owner-occupied households may choose to live in larger or better-quality houses than otherwise, rather than investing in other income-generating assets. Secondly, the price of land may be driven up. The extent that land prices increase depends on the extent that land is supplied elastically or inelastically and the size of the tax advantage to the marginal purchasers of land (Hilber 2017). The elasticity of land supply depends on a variety of factors including the availability of land suitable for residential construction, the ease with which land can be converted from one use to another, the regulations governing construction, and the speed and

¹³ The statutory income tax rate for a person earning more than \$70,000 is 33 percent. New Zealanders have the option of investing in Portfolio Investment Entities (PIES). These are managed trusts that collect funds from multiple investors and invest these funds. The maximum tax rate on a PIE is only 28 percent, and people on lower marginal tax rates who invest in PIES pay tax at their marginal tax rate.

¹⁴ In 2017 more than 2,700,000 people had KiwiSaver accounts. Annual contributions exceed \$5 billion dollars.

¹⁵ While these assets are held by most people, in total they only account for 25-30 percent of the economy's non-owner-occupied housing assets (see Table A2.2).

cost of transport. When the supply of land responds only slowly to increases in demand, and people expect demand to increase, the absence of a capital gains tax makes the speculative purchase of property particularly attractive.

If the price of property is artificially increased when property income is taxed at lower rates than the income from other assets, the tax system causes an intergenerational wealth transfer. The first generation of property owners benefits because they can sell their land at artificially high prices to the next generation. All subsequent generations lose because they have to pay higher rents or higher prices to purchase property (Feldstein 1977). This intergenerational transfer has both welfare consequences and macroeconomic consequences that arise because of the changes in the distribution of wealth. Since these effects occur as a result of changes in house prices they are sometimes ignored in welfare analyses of the tax system.

Various authors have developed theoretical models to assess the macroeconomic and welfare consequences of taxing property income less than the income from other assets when the supply of housing is not perfectly elastic.¹⁶ These papers develop the argument that land prices are likely to be artificially high if land is lightly taxed relative to other asset classes, inducing an intergenerational transfer that adversely affects young and future generations. Some of the adverse effects can be offset if the older generations bequeath their property to younger generations. Even in this case, however, there can be adverse welfare consequences as young households may be forced to delay homeownership or the purchase of a large house until they inherit – and some people will not inherit at all.

One consequence of artificially high land prices may be a low aggregate capital stock. If the generation benefiting from high property prices increases its consumption spending, there will be a decline in savings and a reduction in the ownership of non-residential property assets by subsequent generations. If the reduction is not offset by an increase in foreign investment, there will be a reduction in the amount of non-residential capital in the economy. Following the work of Feldstein-Horioka (1981), most international studies suggest that foreign investment is not a perfect substitute for domestic investment, so artificially high land prices reduce other forms of investment in the economy. There is no definitive evidence that such a reduction has occurred in New Zealand, but most evidence suggests New Zealand has low levels of non-residential capital by OECD standards.¹⁷ Given the link between capital investment and productivity, understanding whether low levels of capital are a result of the way residential property is taxed relative to other assets should be a priority for future research.¹⁸

Some features of New Zealand's recent economic performance are consistent with the ideas that (i) tax rules may be capitalised into property prices and (ii) the tax system may direct investment towards relatively lightly taxed areas. By some measures New Zealand has had the fastest increase in residential property prices of any OECD country since 1990, when the tax advantages

¹⁶ Key papers include Feldstein (1977), Calvo, Kotlikoff and Rodriguez (1979), Fane (1984), Chamley and Wright (1987), Skinner (1996), Batina and Ithori (2000), Gervais (2002), Petrucci (2006), and Hilber (2017).

¹⁷ See the discussion in Appendix 2.

¹⁸ One of the reasons why it is difficult to obtain clear evidence about the economic effects of uneven capital income taxes is that the size of the effect depends on a variety of factors, not just the tax rate, and these factors change through time. For example, the tax advantage of investments in residential property relative to interest-earning securities depends on the inflation rate, real interest rates, and the expected rate of property price inflation, all of which have changed substantially since 1990. As each of these other factors changed over time, the size of the tax advantage changed over time. Since factors such as people's expectations about property price growth are poorly measured, the size of the tax advantage enjoyed by residential property is uncertain and so it becomes difficult to untangle the evidence about its macroeconomic consequences.

of property relative to some other classes of assets were increased.¹⁹ Moreover, New Zealand has relatively low levels of investment in business assets for a country with its population growth (Conway 2018), and the ratio of non-property business assets to GDP declined between 2000 and 2017 even though the ratio of residential property assets to GDP nearly doubled (see Appendix 2). Neither the steep increase in property prices nor the small amount of investment in business assets may be related to the tax system. But if investors over-invest in lightly taxed asset classes and under-invest in highly taxed asset classes, New Zealand's tax system may be behind *some* of the extraordinary large increases in property prices seen since 1990. If that is true, New Zealand's tax system will have adversely affected the welfare of poorer and younger households in ways that have largely been ignored.

3. Possible tax reforms when capital incomes are taxed on an income tax basis

This section considers the different ways the 2018/2019 Tax Working Group could reform the way capital incomes are taxed. The Terms of Reference of the Tax Working Group rule out taxing the imputed rent of owner-occupied housing, taxing capital gains on owner-occupied housing, or imposing land taxes on owner-occupied housing. These restrictions clearly prevent taxes from being equalised across asset classes by increasing taxes on owner-occupied property. Some reforms are still possible, since the distortionary effects of the tax system depend on the way different classes of income are taxed relative to each other, not just the way each class of asset is taxed. If taxes on property income cannot be increased, the tax on other classes of assets can be reduced. For this reason, the Tax Working Group could consider changing the way that interest income is taxed and the way that retirement-savings accounts such as KiwiSaver accounts are taxed as an alternative to considering the way that taxes on property income can be raised.

Most tax reform options have been discussed in detail previously – by the 1988 Brash Committee investigating the taxation of superannuation, the 1989 Review of the Taxation of Capital Income, the 1992 Todd Task Force on Private Provision for Retirement, the 2001 McLeod Review, the 2009 Tax Working Group and the 2010 Saving Working Group. These reforms have also been discussed at length by the OECD (Johansson et al 2008; Brys et al 2016). Many of these reviews agreed that there was a logical case for introducing a capital gains tax, for introducing a land tax, or for changing the way inflation is treated in the tax system, but they further argued that change is politically difficult or administratively costly. Most but not all argued against an expenditure-tax treatment of retirement savings. So why should the recommendations of the 2018/2019 Tax Working Group be different?

There are two reasons, one analytic and one welfare-related. The new analytic issue is the extent that asset prices, particularly property prices, respond to differences in the taxation of different asset classes. In the last two decades the theoretical models analysing the effects of tax on residential property markets have become much more sophisticated and have been able to analyse how the incidence of difference taxes depends on the supply and demand elasticities of property markets. These models show that the importance of price capitalisation may be greater than previously recognized (see for example, the reviews by Batini and Ileri 2000, Coleman 2008, Hilber 2017, or Sommer and Sullivan 2018.) In addition, there have been new empirical results examining how particular types of taxes are capitalised into property prices. This literature suggests there are some circumstances where taxes are strongly capitalised into property prices and some circumstances where they are not (Palmon and Smith 1998; Hilber and Turner 2014; Hilber 2017; Elinder and Persson 2017; .Hoj et al 2018.) It has further demonstrated that the

¹⁹ See the data in Appendix 2 from the International House Price database.

welfare implications of tax policy depend on the extent that taxes are capitalised into property prices and to ignore these effects raises the risks of making significant analytical mistakes. This issue has not been prominent in the earlier New Zealand reviews.

The second new issue concerns the distribution of wealth and income. The increases in wealth and income inequality in most OECD countries have made it harder to ignore arguments that taxes on high capital or labour incomes or on wealth should be increased where they do not cause large efficiency losses (Brys et al 2016). One of the most efficient ways to reduce wealth inequality is to raise taxes on property income. Because property ownership is highly unequal, and because property income is significantly under-taxed relative to other types of income, significant tax revenue can be raised from under-taxed wealthy people without efficiency losses. This allows taxes on other forms of income to be reduced. This argument is true irrespective of the extent that taxes are capitalised into property prices. To the extent that taxes are capitalised into property prices, the incidence of the new taxes will be shifted to current owners of property, reducing the extent that wealth inequality has been artificially increased by the tax system.

Possible tax reforms (1) – the taxation of imputed rental income

Imputed rent is the effective value of the rent that an owner-occupier obtains from living in their own house. This is not taxed in New Zealand, or in most other countries. If New Zealand wishes to tax income *on an income basis* the imputed rent earned by owner-occupiers should be taxed or else there is a tax incentive to invest in owner-occupied housing. To the extent that people respond to this incentive, it should generate demand pressures for larger houses and increase the price of property conveniently located to desirable amenities. Taxing imputed rent would correct these problems, and would reduce the price of residential property to the extent that the supply of property is not perfectly elastic. The revenue raised from these taxes would enable other taxes to be reduced. Coleman (2017) argues that the failure to tax imputed rent when other income is taxed on an income basis may be regressive not only because higher-income working-age people are likely to own bigger houses and thus are getting larger tax concessions, but because it drives up the price of property and causes rents to be higher as well.

Some countries such as Switzerland tax imputed rent. A majority of OECD countries do not. Following Kaldor (1955), most of these countries recognize that it is not necessary to tax imputed rent if a society also taxes other income *on an expenditure basis*. New Zealand and Australia are two of the small number of countries that are prepared to bear the adverse efficiency and distributional consequences of exempting imputed rent from tax when retirement savings are taxed on an income basis.

Taxing imputed rent is ruled out by the Terms of Reference of the Tax Working Group. If imputed rent cannot be taxed, and other income is taxed *on an income basis*, a large distortion in the tax system will remain irrespective of what other policies are adopted. Since equity in owner-occupied residential housing comprises over 40 percent of net household wealth, any attempt to correct other aspects of capital income taxation will necessarily be partial. It is difficult to see how a tax system that provides incentives to over-invest in residential property will not reduce the overall efficiency of the economy. It is also difficult to see how a tax system that engineers a transfer from young generations to the land-owning members of older generations by placing upward pressure on property prices will not be regressive.

If the New Zealand policy makers are serious about improving the allocative efficiency of the tax system without taxing imputed rent, they should consider changing the way retirement savings are taxed income so that owner-occupied residential property is no longer tax advantaged relative to all other asset classes. New Zealand's position is different from that adopted in most OECD

countries and is likely to be compromising productivity aspirations by misallocating resources towards residential property investment.

Possible tax reforms (2) – the taxation of interest income

Additional details on this topic are contained in Appendix 4.

Economists universally agree that the inflation component of nominal interest earnings is not income. For a lender, the inflation component of interest income compensates them for the loss of purchasing power of the sum they lend, because of generalised price increases. If the inflation component of interest income is taxed and the inflation rate is positive, the effective tax rate on real interest income is increased above the statutory rate. For a borrower, the inflation component of interest payments reduces real debt and thus it should be counted as savings. If a firm is allowed to deduct the inflation component of their interest payments from their taxable income, they pay less tax than they ought.

The distortions that arise when the inflation component of interest income is taxed are substantial, even at low inflation rates. Each year, New Zealand households pay more tax than they should on \$1,500 million interest earnings for every 1 percent inflation. Data limitations mean it is unclear how much the interest deduction is worth to business, but it is plausible that the deduction is larger than the interest paid by lenders as New Zealand entities borrow in excess of \$200 billion from overseas lenders, and these lenders are only lightly taxed by the New Zealand government. Eliminating the ability to deduct the inflation component of interest earnings would reduce the tax deduction claimed by residential landlords by \$600 million per year alone. Consequently, if the Government were to start taxing real interest rather than nominal interest, the fiscal cost might not be very great, and the reform could even be fiscally positive.

If real interest income rather than nominal interest income were taxed there would likely be a reallocation of capital resources within the economy. There should be a reallocation of investment towards assets that are less amenable to debt financing, reducing investment in some business sectors and reducing the price of assets in those sectors. There would be less incentive to purchase large houses or to pay artificially high prices for property.

If real interest income rather than nominal interest income were taxed there would likely be a redistribution of income between lenders and borrowers that is equity enhancing, as lenders tend to be older and less sophisticated investors. These are not the only distributional considerations, however. A full analysis of the effects of the policy needs to take into account any response of property prices to the tax regime. Since the current policy provides a subsidy to debt-financed residential landlords, and over-taxes some alternative investment opportunities, rent/price ratios should increase if the inflation component of interest income were exempt from tax. This change could take place as an increase in rents or a decrease in prices. If the supply of housing is relatively inelastic, exempting the inflation component of interest income from tax is likely to reduce house prices, whereas rents could increase if the supply of housing is relatively elastic (Coleman 2008). In either case, home-ownership rates are likely to increase.

The main cost of exempting the inflation component of interest income from tax is an increase in the complexity of the tax system. It is not difficult to adjust interest earnings and payments on an ex-post basis. The larger difficulty is indexing the depreciation allowances claimed by business for inflation. Previous working groups have convinced themselves that these difficulties are sufficiently large that it is not worth the bother of properly indexing the tax system for inflation, a position that many find surprising given the modest compliance cost reported by Israel (Elkins 2007). In its Interim Report, the current Tax Working Group reiterates these claims, although the evidence it provides is scarcely compelling. In particular, it has not appeared to explore why

it is not possible to adjust the taxation of interest payments and receipts for inflation without adjusting the depreciation regime, which would be a straightforward exercise. It appears that the Tax Working Group is happy to tax lenders – often the least sophisticated and most risk averse investors – at above statutory rates so it long as it can provide a subsidy to investors who borrow to invest.

On balance, it appears there are few good reasons for taxing the inflation component of interest income and receipts, except for administrative convenience. The policy is likely to lead to a misallocation of investment, an excessive use of debt-financing, higher property prices, and a redistribution of resources away from low-income young households and from unsophisticated investors. The revenue raised from this policy may not be large. The administrative difficulty of exempting the inflation component of interest income from tax may not be high. All in all, there is a strong prima-facie case for changing the tax basis of the tax system from nominal interest income and receipts to real interest income and receipts.

Possible tax reforms (3) – capital gains taxes

Standard tax theory suggests an income tax regime that does not have an accruals-based capital gains tax generates financial incentives that distort investment patterns by increasing the effective tax rate on investments that generate cash earnings early relative to those that generate cash earnings over much longer time frames (Samuelson 1964). In this light, the primary economic purpose of a capital gains tax is to correct some of the distortions caused by an income tax, just as a pollution tax corrects the incentive to produce too much pollution. Put more bluntly, the failure to tax capital gains on an accruals basis increases the distortionary effects of income taxes and creates incentives to invest too much in low-yielding long-horizon assets. In an environment where property prices tend to increase, the prospect of large tax-free capital gains provides an incentive to bid up the price of property to artificially high levels.

Capital gains taxes tend to be progressive, as capital gains are disproportionately earned by high-income people. Since capital gains taxes are efficient and progressive, most OECD countries have a capital gains tax of one form or another.²⁰ Typically the family home is exempt and nominal capital gains are taxed on a realisation basis at lower than normal rates out of recognition that some capital gains occur because of general inflation. Capital gains taxes are almost never levied on an accruals basis. Capital gains taxes are more complex to administer than most other taxes as detailed records of asset purchase and sale must be kept.

Capital gains that occur because of generalised inflation are not income. With one exception, there is no good theoretical case for taxing the inflation component of capital gains. The exception occurs when society taxes the inflation component of interest income for in this case taxing the inflation component of capital gains equates the tax treatment of debt and equity claims. If the inflation component of capital gains is taxed for this reason, real income from debt and equity will both be taxed at effective rates that are higher than the statutory rates. While taxing the inflation component of capital gains in these circumstances will equate the taxes on both classes of assets, a better solution is to exempt the inflation component of capital gains and interest income from tax, on the basis that neither is income. If the inflation component of capital gains is taxed, real capital gains will be taxed at higher than statutory rates, reducing the incentives of people and firms to make productivity enhancing investments. A decision to tax nominal capital gains at full statutory rates in New Zealand, when capital income taxes are

²⁰ The few exceptions include New Zealand and the Netherlands. Switzerland does not have federal capital gains taxes on shares or property, but there are canton-based capital gains taxes. South Korea does not have capital gains taxes on property.

already very high by international standards, could be foolhardy, although consistent with New Zealand's recent policy of taxing real interest income at above-statutory rates.

It is useful to categorize the effects of capital gains taxes along two dimensions. The first is whether the taxes apply to residential property or other assets. The second is whether the capital gains stem from recurrent factors or non-recurrent factors. Recurrent capital gains are those that can be expected to occur in response to ongoing economic phenomena such as inflation, income growth, population growth. (They may also occur if firms reinvest rather than distribute their profits.) Non-recurrent capital gains occur when an asset is revalued for a non-recurring reason such as a change in interest rates or an increase in prices that raises the value of the output of a firm. The failure to tax recurring capital gains is likely to be more distortionary than the failure to tax non-recurrent capital gains, as they are more predictable and less likely to be reversed should interest rates or prices revert to their long run values. However, the failure to tax non-recurrent capital gains may raise significant equity issues as some people will be observed obtaining large increases in wealth on which they have paid few taxes.

Since 2000 most capital gains in New Zealand have stemmed from the rising value of residential real estate, and the majority of these have enriched owner-occupiers rather than residential landlords. Between 2007 and 2016 the value of household wealth increased in New Zealand by a total of \$252 billion in inflation adjusted (2016 dollar) terms, of which \$138 billion reflects the increased value of owner-occupied housing, \$71 billion reflects the increased value of rental housing, and \$44 billion is associated with the increase in value of non-housing investments (see Table A2.2 in Appendix 2).²¹ On average, therefore, the real increase in the value of owner-occupied housing averaged \$15 billion per year, and the real increase of the value of assets (including rental property) averaged \$12 billion per year. As some of the increase reflects real investment, revenue of around 1 percent of GDP per year would likely have been raised if real capital gains had been fully taxed. In Australia capital gains taxes raised a similar amount (Clark 2014). Of course, if a capital gains tax were introduced and it deterred some speculation, less revenue would be raised as the prices of some assets would increase by less.

The Terms of Reference for the Tax Working Group rule out the taxation of capital gains from owner-occupied housing. At first glance, the exemption of owner-occupied housing from capital gains taxes is consistent with the practice in most OECD countries. It is not, however. If New Zealand were to adopt a capital gains tax that exempted owner-occupied property, the economic effects would be different than those in most OECD countries as most of these countries also tax retirement savings on an expenditure (EET) basis. When retirement savings are taxed on an expenditure basis, it is not necessary to tax either the imputed rent or the capital gains associated with owner-occupied housing. For this reason, even though they exempt owner-occupied housing from capital gains taxes, most OECD countries tax owner-occupied housing and retirement savings on a consistent (expenditure) basis.²²

When retirement savings are taxed on an income basis, exempting owner-occupied housing from capital gains taxes is likely to reduce the overall effect of a capital gains tax on housing markets. The effect of a capital gains tax that exempts owner-occupiers on prices depends on the relative valuation placed on houses by landlords and owner-occupiers. If owner-occupiers tend to be the

²¹ In nominal terms, the value of household wealth increased in New Zealand by \$420 billion to \$1311 billion between 2007 and 2016. Of this increase, \$223 billion reflects the increased value of owner-occupied housing, \$95 billion reflects the increased value of rental housing, and \$101 billion reflects the increased value of other investments. These figures do not take into account the effect of inflation or the net investment, although the latter is relatively small.

²² Of course, the tax regimes of these OECD countries embody a different inconsistency: they tax housing and retirement savings on an expenditure basis but other assets on an income basis.

marginal purchasers of property (i.e. the people most likely to bid the highest price for a property) changing taxes on landlords without changing taxes on owner-occupiers is likely to raise rents without reducing housing prices. In contrast, if landlords tend to be the marginal purchasers of property, a capital gains tax will raise the rent/price ratio but whether this takes place as an increase of rents or a reduction in house prices depends on how much owner-occupiers are willing to pay for houses. Landlords probably have been the marginal purchasers of lower priced real estate, for their share of the market steadily increased from 27 percent of total housing to 33 percent between 1998 and 2017.²³ This means prices could fall if a capital gains tax were introduced, but they are unlikely to fall by much if the demand from owner-occupiers remains high. One reason demand would remain high is that property would remain a tax advantaged asset for owner-occupiers. Indeed some models suggest exempting owner-occupiers from capital gains tax could raise property prices by a small amount, as it reduces the advantages of renting and may expand the total demand for property.²⁴

If property prices were to change little once a capital gains tax were introduced, rents would need to rise (relative to the status quo) to make rental property an attractive investment. Since a capital gains tax that exempts owner-occupiers will not raise much revenue, it is likely to reduce welfare for a large number of low-income people (Coleman 2010).²⁵ In contrast, a capital gains tax applied to all households is likely to raise large amounts of revenue that can be used to offset other taxes, and is more likely to reduce property prices. In this case low-income people could benefit despite the increase in rents because they could be compensated from the much higher revenues that would be obtained from taxing owner-occupiers, many of whom have high incomes as well as valuable, appreciating properties. When other assets are taxed on an income basis, a capital gains tax that exempts owner-occupiers has inferior welfare properties than a capital gains tax applied to all households, as low-income people will face higher rents but wealthy home-owners will not pay taxes on their capital gains. Given that much less revenue is likely to be raised, a capital gains tax that exempts owner-occupied housing provides less scope to reduce other distortionary taxes and so is unlikely to lead to large allocative efficiency or productivity gains.

Even though a capital gains tax that exempts owner-occupied housing is likely to be much less efficient than one that includes owner-occupied housing, and even though it may be less progressive and may reduce the welfare of a large number of low-income people, a capital gains tax applied to all other assets including rental housing would have some benefits. It would correct the way the current tax systems favours low-yielding investments with long-horizon cash flows relative to high-yielding but short-horizon investments, particularly when these differences occur on a recurring basis. It would provide some revenue to reduce other distortionary taxes. Moreover, it may enhance public support for the tax system. When capital gains from rental property are not taxed and there are large non-recurring increases in the value of these properties, many people consider that is unfair that the windfall gains made by these investors are not taxed while ordinary income is taxed.

While residential real estate price increases have been the main source of capital gains in New Zealand in recent years, it is not clear what fraction are these capital gains were recurring rather than non-recurring. If the gains are temporary and non-recurring the government will not gain

²³ Statistics New Zealand (2018) Dwelling and Household Estimates: December 2017 quarter. When these data are combined with Reserve Bank of New Zealand data on household balance sheets, it appears that the average value of a rental property is 65 – 70 percent of the average value of owner-occupied housing.

²⁴ This outcome could occur if young people reduce the time that they spend in shared accommodation because of an increase in the cost of renting.

²⁵ This result is an example of Lipsey and Lancaster's (1956) theory of second best – that if there are two related policy problems and you only correct one of them, you can sometimes make things worse.

much revenue over a whole economic cycle from taxing them. Moreover, if it introduces a capital gains tax at the top of an asset price cycle it risks losing considerable revenue.²⁶ It is likely that much of New Zealand's increase in asset prices during the last three decades has occurred because of the decline in international interest rates to record low levels, combined with the growing inelasticity of the housing supply (Dimson et al 2013).²⁷ If interest rates increase from these low levels, some asset prices can be expected to fall, reducing the attractiveness of introducing a capital gains tax immediately.

The absence of a capital gains tax is one of the ways that capital incomes are taxed differently in New Zealand than other countries. It is one of the three main reasons why capital incomes are taxed at such uneven rates in New Zealand, and it seems increasingly difficult to justify if New Zealand wishes to tax capital incomes from different sources equally. Like environmental taxes, capital gains taxes do not need to raise a lot of revenue to be successful. They are successful if they change behaviour and prevent costly distortions from occurring. If New Zealand once again experiences excess demand in its housing markets, perhaps because of supply constraints in land markets or because inward migration occurs at higher rates than new houses can be constructed, the lack of a comprehensive capital gains tax may artificially inflate house prices.

On many occasions since 1990 the OECD has recommended that a capital gains tax should be seriously considered. The 2001 McLeod Review and the 2009 Tax Working Group both considered the introduction of a capital gains tax, and both rejected the idea on the basis of its administrative complexity. One thing that has changed since 2009 that suggests the issue should be revisited is the large and largely unanticipated additional increase in property prices. If, as theory suggests, the prospect of untaxed capital gains have contributed to the increase in house prices, the costs imposed on young New Zealanders and future generations of New Zealanders from not taxing real capital gains by adopting a comprehensive capital gains tax may have been underestimated.

A capital gains tax that exempts owner-occupied housing provides only a partial correction to the distortionary aspects of the current tax regime, as it omits the largest and most lightly taxed class of capital assets. If taxes cannot be raised on owner-occupied property, a different type of solution may be necessary to solve the basic problem that New Zealand taxes different classes of assets at different rates. These solutions can be supplementary to a capital gains tax, or an alternative strategy can be adopted. One such strategy is to move towards taxing incomes on an expenditure basis, by taxing retirement savings when they are spent. This approach, which is the practice adopted in a large number of OECD countries, reduces the need to have a capital gains tax to correct the inefficiencies of income taxes. This issue is discussed in the next subsection.

Possible tax reforms (4) - the taxation of retirement income accounts.

Additional details on this topic are contained in Appendix 5.

The previous subsections have discussed the problems that arise because New Zealand imposes direct taxes on an income basis while simultaneously taxing the inflation component of interest income but exempting imputed rent and capital gains from tax. While each of these problems could be fixed, many of the policies necessary to correct the flaws of the current *income* tax system have been ruled out by the Terms of Reference of the Tax Working Group. In any case,

²⁶ Nonetheless taxing non-recurrent capital gains corrects the problem that assets that generate short term cash-flows are taxed at higher effective rates than assets that generate cash over longer horizons. If the capital gains are temporary and subsequently reversed the government does not earn much revenue, but it does transfer resources from those who made capital gains and those who made capital losses.

²⁷ This is not to deny a role for capital income taxes. When taxes are non-neutral they exacerbate the effects of interest rate changes on property prices, by exacerbating the after-tax return of different classes of assets.

it may be difficult to obtain sufficient community support for these reforms to make them politically sustainable. Fortunately there is another approach, one that taxes real interest returns and does not require a capital gains tax on owner-occupied property or taxes on imputed rent. This approach reduces the extent that owner-occupied residential property is tax advantaged by changing the taxation of dedicated retirement-savings schemes such as KiwiSaver so that they are taxed on an expenditure basis.

Since Fisher (1937) and Kaldor (1955), it has been understood that it is possible to have progressive direct expenditure taxes by taxing income adjusted for the net purchase and sale of assets, on the basis that this total is close to a person's expenditure on consumption goods and services. For example, if someone earns \$50,000 and saves \$5,000 in a retirement account, they would pay tax on \$45,000, as the \$5,000 contribution is saved and not spent. Conversely, if someone earns \$20,000 and spends \$55,000 after drawing \$35,000 from a retirement-savings account, they would pay taxes on \$55,000 in the year that the money was withdrawn and spent.

In theory, all money that is saved could be deducted from taxable income in the year that it is saved, and taxed in the year that it is spent. In practice, this is administratively difficult, as all loans and asset purchases and sales would need to be monitored, particularly as people have an incentive not to declare asset sales to the tax authorities. For this reason, a large number of OECD countries (including the US, UK, Germany, France, Japan, Canada but not Australia) have adopted a partial approach to direct expenditure taxes.²⁸ All money deposited and withdrawn from sanctioned retirement-savings accounts (such as but not limited to KiwiSaver accounts) are taxed on an expenditure basis. Most other forms of saving, except for owner-occupied housing and some specialised general purpose savings accounts, are taxed on an income basis.

Retirement-savings accounts can be taxed on an expenditure basis in a variety of ways. The most common approach is to adopt an "Exempt-Exempt-Taxed" (EET) treatment. Income that is placed into a retirement account is exempt from tax when it is earned; the earnings of the account are exempt from tax when they accumulate; but the whole sum is taxed when it is withdrawn on the basis that it will be spent and it has never previously been taxed. An alternative approach is to adopt a "Taxed-Exempt-Exempt" (TEE) approach. In this case, which is considered a "prepayment" form of an expenditure tax, money is placed in a retirement-savings account out of tax-paid income, but no further tax is paid on interest or dividend earnings, or on capital gains. An EET treatment taxes the full return of any investment when it is withdrawn and spent, whereas above-normal returns are not taxed under a TEE treatment.²⁹ In either case, income from all assets held in the retirement account are taxed identically so there is no tax incentive to hold one type of asset rather than another within these accounts.

Owner-occupied housing is currently taxed in New Zealand on a TEE basis: a property is purchased out of after-tax income, or loans are repaid from after-tax income, but neither imputed rent nor capital gains are subsequently taxed. Consequently, if New Zealand were to tax funds placed in a special retirement-savings account on an expenditure basis, they would be

²⁸ Austria, Belgium, Canada, Finland, France, Germany, Greece, Iceland, Ireland, Japan, Korea, Mexico, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Spain, Switzerland, Turkey, the United Kingdom, and the United States all have a version of an EET retirement income saving scheme. Hungary has an alternative form of an expenditure tax, a TEE scheme, which. Denmark, Italy, and Sweden have ETT schemes. New Zealand and Australia are the obvious outliers, and Australia provides some 'concessions' to the taxation of retirement income saving by having low taxes on employee contributions and low taxes on interest and dividend income. See Whitehouse (1999) or Yoo and de Serres (2004).

²⁹ See Auerbach (2009) for a comprehensive discussion.

treated in a similar fashion to owner-occupied housing.³⁰ This would reduce the extent that owner-occupied housing is taxed less than other types of assets, so long as these assets were held within a sanctioned retirement-savings account. For people who hold most of their wealth except an owner-occupied home within a retirement-savings account, the distortions induced by the current tax system would be significantly reduced, particularly if people could change the contributions they make into a retirement-savings account at the margin.

Since 1989, it has routinely been argued by New Zealand policy-makers that taxing retirement savings on an EET basis when other assets are taxed on a TEE basis will create a tax distortion by taxing different classes of assets differently. For instance, in its document “The Future of Tax” the Tax Working Group appears to dismiss arguments in favour of an EET tax system for retirement savings on the basis that the current approach “ensures that economic distortions to save in a retirement account instead of through other savings are minimised.”(p26). This argument might be correct if all other assets were taxed equally. However, they are not. Because income from owner-occupied property is taxed on a TEE basis, because capital gains are not taxed, and because real interest income is over-taxed in an inflationary environment, it is not necessarily true that taxing retirement savings on a TTE basis will minimise economic distortions. Unfortunately, very little evidence has been presented in previous discussions to show that adopting an EET tax system for retirement savings would increase rather than reduce the unevenness with which different forms of capital income are taxed relative to New Zealand’s current tax system, and the proposition is not self-evident. Indeed, given the size of the owner-occupied residential property sector in New Zealand, and the other distortionary aspects of the current tax system, providing people with the option to hold assets in a retirement-savings account that is taxed on an EET basis could reduce the economic distortions that exist in New Zealand’s current system. It is perhaps noteworthy that no OECD countries have followed New Zealand’s lead and adopted a TTE tax system for retirement-savings accounts, and there has been little support for the idea in the international academic literature.

Within an optimal tax framework, there are four key issues concerning the adoption of an expenditure basis for the taxation of retirement savings:

- Would the reform enhance or diminish economic efficiency, by reducing or increasing overall tax distortions?
- Would the reform change welfare, by changing the distribution of income and wealth, and by changing prices?
- Would the reform affect tax revenue?
- Would the system be complex to administer?

Each of these topics is discussed in Appendix 5.

The efficiency issue is most important from a productivity perspective. The main efficiency argument in favour of a TTE taxation regime is that it would mean that identical assets held within a retirement savings account or outside a retirement savings account would be taxed at the same rate. This is true, and it would be an important argument if all classes of assets were evenly taxed. When they are not, there can be advantages from allowing assets inside and outside retirement savings accounts to be taxed at different rates. For instance, interest earnings securities are currently at a tax disadvantage relative to equity securities, but this tax disadvantage

³⁰ The tax treatment would be identical if retirement savings were taxed on a TEE basis; if retirement savings were taxed on an EET basis, expected returns would be taxed the same, but actual returns would be taxed differently as the full return to capital is taxed under an EET system.

does not exist inside an EET-taxed retirement-savings account. Similarly, the large tax advantages enjoyed by owner-occupied residential property would be reduced if other asset classes were taxed on an expenditure basis. Since agents have an incentive to hold the most heavily taxed classes of assets within a EET-taxed retirement-saving account, there is considerable scope for an EET taxed retirement-saving scheme to reduce the variation of tax rates across asset classes and thereby improve asset allocation and economic efficiency.

It is also true that an EET regime for retirement savings schemes would reduce government tax revenue, and this revenue would need to be made up by imposing distortionary taxes elsewhere. But even this argument is not clear cut. The government obtains a lot of revenue from taxing retirement savings accounts on a TTE basis, but much of this revenue comes because the government imposes distortionary taxes on the return to savings. This is not just because the government taxes the inflation component of interest income (an issue that would be solved if interest-earning securities were taxed on an EET basis). It is true more generically because when the return to assets is taxed on an income basis, a wedge is created between the pre-tax and after-tax return that distorts the decision to save (see Diamond 2011 for a statement of this argument in a New Zealand and Australian setting). To some extent, therefore, the additional revenue raised by New Zealand's TTE taxation of retirement savings accounts arises because of the distortions the system imposes on the decisions to save and the excessive taxation of interest earning securities. The relevant question is whether the revenue raised by imposing these distortions could be raised at lower cost by imposing less distortionary taxes elsewhere. New Zealand's answer to this question seems to be "No," although it is not an answer shared around the world. Again, the answer is not self-evident.

The efficiency costs of taxing retirement savings on a TTE basis might be justified if they helped achieved the Government's welfare objectives. This justification for a TTE tax regime also has superficial plausibility, as the beneficiaries of the lower EET tax regime are disproportionately high-income individuals even though KiwiSaver membership is now widespread across people of all age groups and income levels. This argument is explicitly made in the Interim Report. However, the superficial plausibility of the argument may be incorrect, for two reasons. The first is simple: if the Government were interested in equity arguments, it could raise the top marginal tax rate, which is very low by international standards, to offset some of the benefit that high income earners would get from deferring the tax payments they make on savings placed in retirement income accounts. If this were done, the average marginal tax rate on high income earners need not change by much, because the higher marginal tax rate would not apply to income placed in a retirement savings account. The second reason is more subtle. Under an EET tax regime, owner-occupied housing and retirement savings are both taxed on an expenditure basis, providing households with a much smaller tax incentive to purchase real estate assets. If these incentives are capitalised into house prices, the main beneficiaries of a TTE tax regime for retirement savings will be the first generation of land owners (and their heirs), while low income renters and all future generations of young people wishing to purchase property will be disadvantaged by artificially high house prices. Coleman (2017) analysed this issue and argued that at current interest rates and inflation rates the regressive effects of a TTE tax treatment of retirement income savings could be substantial. Moreover, in line with the results of Feldstein (1977) and others, when the tax system artificially raises property prices, the intergenerational transfers tend to reduce capital accumulation in the economy, further undermining productivity performance.

These three arguments all suggest the taxation of retirement-savings accounts on a TTE basis may not be achieving the hoped-for outcomes. It may be reducing allocative efficiency in the economy by encouraging over investment in real-estate assets and by reducing the incentive to save in other assets. It eliminates the way savers can avoid the excessive taxation of interest

earning securities in an inflationary environment. It means all investors face an artificial tax wedge between the pre-tax and after-tax returns to saving, which may discourage saving. It may be making the tax system more regressive, depending on how the tax advantages pertaining to owner-occupied property are capitalised in to property prices. These disadvantages are a high price to pay to raise revenue, one that very few other countries are willing to entertain.

The above discussion has considered taxing retirement-savings accounts on an expenditure basis. There is no inherent reason why an expenditure tax treatment should be limited only to retirement savings account, however, and other countries offer savings accounts that are taxed on an expenditure basis. The United Kingdom, for example, allows residents to place up to £20,000 per year into Individual Savings Accounts that are taxed on a TEE basis that can be invested in cash, bonds, shares or even innovative financial products. The aim of such accounts is to reduce the distortionary effects of income taxes on savings and investment patterns wherever it is administratively simple to do so. Such an approach was extensively discussed in the 2010 Mirrlees Tax Review.

The popularity of EET-taxed retirement-savings accounts in many other countries appears to reflect a judgement that income taxes have sufficiently bad effects on the allocation of capital that the additional revenues raised do not justify their adverse distortionary effects. For nearly thirty years, successive New Zealand governments and their advisors have come to a different set of judgments. It would be useful to understand whether the reasons for these differences primarily reflect differences in beliefs about the behaviour of the economy (e.g. the responsiveness of house prices to differences in the way housing and other assets are taxed) or differences in preferences over the distribution of income and consumption. If the government is concerned about the productivity performance of the economy, it would be useful to better understand the productivity consequences of taxing retirement-savings accounts on an income basis when the income tax system is applied so unevenly to different forms of capital income. The answer may not be encouraging.

4. Tax, Productivity and Economic Growth

Since New Zealand's last major tax reforms in the 1980s, there has been a substantial change in the way economists analyse economic growth. Whereas much of the literature before 1990 focussed on the ways a society's rules and institutions affect participation in the labour force, the accumulation of capital equipment, and the development of skills, the new literature has focussed on the ways new technologies, production methods, and products are developed and diffused across an economy.

A key feature of the economic growth process is that firms in any sector use a wide range of different technologies, have a wide range of productivity levels, and differ significantly in terms of their performance and profitability. There are typically a small number of very successful firms at the productivity and profitability frontier. These firms use the latest technologies, undertake a lot of innovative activity, operate in many countries, and are typically large. Behind them is a range of firms. In the middle are firms that, while less profitable, are copying and adopting the technologies that the lead firms use. After them are firms that are much less profitable and productive. These firms are often small, may have limited managerial capacity, or may be in business for reasons other than to maximise profits. Lastly there are new entrants, hoping to succeed, but unsure whether they have the correct mixture of talents to prosper. Some of these firms exit quickly. Others enter with new approaches and technologies and quickly become highly productive and profitable.

Economic growth rates depend on each of these four types of firms. Ultimately, the frontier defines the maximum productivity and profitability levels that can be obtained, and innovation at the frontier defines the ultimate speed at which an economy can expand. However, the speed by which these technologies diffuse to following firms also determines growth rates, for if high productivity practices are not widely copied average productivity levels will grow only slowly. The diffusion can take place in two ways: existing firms can make productivity enhancing investments to catch up with the frontier firms; or new firms with high levels of productivity can enter. Finally, average growth rates depend on how quickly low productivity firms exit. If a large number of low productivity firms survive, average growth rates will be reduced.

Since 2000 a small literature has examined how different types of taxes affect the dynamic behaviour and growth of an economy. Broadly speaking, this literature has asked how different types of taxes (corporate taxes, personal taxes, consumption taxes and land taxes) affect economic growth rates, and whether they do so by affecting innovation, diffusion, or entry and exit rates. This literature has a different flavour than the earlier literature which analysed the ways output levels by changing participation rates or the accumulation of capital.

The literature has attempted to measure the effect of tax changes on each of the four components of dynamic growth processes. Some studies have used variation in corporate taxes in Europe or in different U.S. states to analyse firms' innovative activities or the speed at which firms converge to the productivity frontier. Other studies have analysed what happens when a country cuts corporate taxes but neighbouring countries do not. Still more have looked at the ways corporate taxes affect firm entry rates, foreign direct investment, or investment in new technologies.

Overall, the literature has been remarkably consistent in its main finding: that high corporate taxes are bad for growth, and that significant improvements in growth rates may be possible if countries cut corporate tax rates (Kneller, Bleaney and Gemmell 1999; Gemmel, Kneller and Sanz 2015). High corporate tax rates tend to reduce research and development activity, patenting, and the development of new products (Mukerjee et al 2017). They slow down the speed at which lagging firms catch up with the frontier firms (Arnold and Schwellnus 2008; Arnold et al 2011; Gemmell et al 2018; Bartolini 2018). They reduce entrepreneurship rates of entry, and rates of incorporation (Gentry and Hubbard 2000; Djankov et al 2010; Da Rin et al 2011). They lower rates of investment by firms (Romer and Romer 2010; Djankov et al 2010, Bond and Xing 2015; Serrato 2018) discourage inward foreign direct investment (Desai, Foley, Hines 2004; Djankov et al 2010), and encourage investment in foreign countries (Serrato 2018). The effects are large in magnitude and generally statistically significant. Lee and Gordon (2005) estimate that a 10 percentage point decrease in the corporate tax rate is associated with a 0.6 percentage point increase in growth rates. Gemmell et al (2018) analysed the effect of corporate tax changes across Europe and concluded that reducing corporate taxes by 10 percentage points could increase the speed at which firms converge to the productivity frontier by 0.4 – 0.9 percent.³¹ Serrato (2018) demonstrated that a large increase in the effective tax rate on U.S. multinational firms resulted in large job losses as firms reduced their investment inside the U.S. and invested elsewhere in the world. Studies of individual countries such as Germany, Sweden or Estonia that have had large cuts in corporate tax rates also report higher levels of new investment and faster growth.

Various mechanisms to explain these results have been proposed. One mechanism is linked to the disincentive effects of taxes – firms are less likely to innovate or undertake risky investments

³¹ The speed of convergence depends on a firm's distance from the productivity frontier. A firm at 95% of frontier productivity will only converge faster at an additional 0.4% faster rate, but a firm at 75% productivity will converge at a 0.9% faster rate.

when they pay high taxes as the rewards are reduced. Another mechanism recognizes that smaller firms often finance their investments by reinvesting their profits. High corporate taxes reduce the speed at which firms can make new investments by reducing their after-tax profits. These mechanisms affect different firms in different ways. Very low productivity firms make relatively low profits in any case and so are less affected by the disincentive effects of high taxes (Arnold et al 2011). Middle productivity firms are often smaller than frontier firms, and may be more affected by cash-flow considerations (Gemell et al 2018). Bartoli (2018) also notes that the tax system can affect whether firms make investments in plant and equipment or undertake intangible investments such as research and development or marketing, as the latter investments are immediately deductible against profits but investments in plant and equipment are deducted according to a depreciation schedule. He argues this is a major reason why frontier firms pay lower taxes than less productive firms.

High taxes on capital incomes may not only be bad for economic growth, but they may also reduce wages. Recent studies using large administrative datasets have refined estimates of the extent that the incidence of corporate taxes falls on wage earners rather than the customers or owners of firms. Two high profile studies have used variation in corporate tax rates across U.S. states or German administrative taxes to study this issue. In their analysis of wages in Germany, Fuest, Peichl and Siegloch (2018) argue that 40 – 50 percent of the incidence of corporate taxes falls on wage earners as firm owners respond to higher taxes by reducing the wage increases their employees obtain. The effect is greatest on employees of local rather than multinational owned firms. Using U.S. data, Suarez Serrato and Zidar (2016) make a similar sized estimate. In both cases some of the incidence of corporate taxes does fall on the owners of firms, but clearly a large fraction of the incidence of the tax falls on wage earners.

Is New Zealand's tax structure hurting economic growth? It is difficult to know for sure. There are no specific studies comparable to the recent international literature that examine how New Zealand's corporate income taxes affect the growth of firms that systematically differ in terms of their productivity. According to the cross-country data compiled by Djankov et al (2010) to examine the relationship between taxes and economic outcomes around the world in 2004, New Zealand had high effective tax rates on businesses but also had very high levels of new business entry, high numbers of business per capita, and high inward foreign direct investment. Innovative activity does not seem to have been hampered by high tax levels according to this study.

It has previously been shown that by world standards New Zealand raises a large amount of tax from businesses. Some of the proposals in the Tax Working Group Interim Report suggest taxes on capital and business income should be increased further, particularly by introducing a tax on nominal rather than real capital gains. The recent international evidence suggests high corporate taxes are a drag on innovation, technology diffusion and productivity convergence, and there is no obvious reason to discount this evidence or believe New Zealand an exception. If New Zealand wants to place a high priority on raising economic growth rates, this evidence suggests that it may be advantageous for New Zealand to reduce taxes on corporate and capital incomes, a position supported by the OECD (Brys et al 2016). New Zealand's current tax structure means there is plenty of scope to reduce business and capital income taxes. New Zealand could shift the balance of taxes by adopting social security taxes on labour income like most OECD countries. It could adopt a version of the Nordic tax model. It could even consider introducing a compulsory retirement saving scheme funded from contributions on labour incomes, as Australia has done.³² These options will all result in a redistribution of the tax burden, although

³² A compulsory savings scheme is a reform option that meets the Terms of Reference of the Tax Working Group. It is not a tax scheme, as funds placed in the scheme belong to the depositor or his or her estate, not the government. For this reason it is incentive compatible and unlikely to reduce labour participation rates as much as

all countries have managed to do this in a way that results in a progressive tax system. It is particularly noteworthy that the Scandinavian countries have followed this approach despite – and maybe because – of their reputation for highly redistributive social policies (Lindert 2004, chapter 10.) Unfortunately, there is no reason to believe that New Zealand’s current approach to the taxation of capital income is leading to either optimal growth or welfare outcomes.

Land Taxes, regional migration, and productivity.

New Zealand, like most countries, allows free internal migration within its borders. When people migrate from one place to another they do so for a variety of reasons. Some migrate to obtain higher wages, more interesting jobs, or an education. Others migrate to follow friends or family. Some migrate to take advantage of attractive natural amenities, including a good climate, while still more migrate to cities with attractive consumption facilities such as opera houses or a buoyant night life. The combination of push and pull factors is probably unique for each individual.

People weigh up the financial and non-financial benefits when they move to a new location. The non-financial benefits include the various natural and constructed amenities in the region. The financial benefits are the after-tax incomes, taking into account any differences in the cost of living, including housing costs. If a place has very high incomes, or very nice amenities, it will attract people placing upward pressure on housing prices. In equilibrium locations that offer high incomes or nice amenities will attract population until housing prices are sufficiently high that they deter newcomers.

In recent years, there has been considerable concern in the United States that internal migration to highly productive places such as San Francisco or New York has been declining because building restrictions in these cities make housing prices artificially high and deter inward migration (Hsieh and Moretti 2015; Schleicher 2017). A similar argument concerns the effect of income and consumption taxes on migration (Albouy 2009). Consider someone who is contemplating moving to a location where they can earn \$20,000 more before taxes, or a different location where wages are lower but the climate or natural amenities were better. Because income and consumption are taxed, the net financial benefits (before housing costs) of moving to the productive city might only be \$12,000 whereas the benefits of the natural amenities are the same as they are not taxed. This increases the relative attractiveness of moving to places with good natural amenities rather than places that have highly productive firms and offer high incomes. In equilibrium, the movement to either location will be curbed by increasing housing prices. Albouy (2009) demonstrated that income and consumption taxes should alter the equilibrium, resulting in more people and higher prices than otherwise in places with desirable consumption amenities, and lower numbers of people and lower house prices than otherwise in highly productive regions. The size of the phenomena may be considerable; as a series of authors beginning with Graves has pointed out, large numbers of people in the United States migrate to regions with nice consumption amenities but relatively low wages (Graves 1980; Chen and Rosenthal 2008; Partridge 2010). In New Zealand sunny places have also been rising magnets for internal migration (Grimes et al 2016).

It has been difficult to ascertain empirically the extent that income and consumption taxes deter migration to high-productivity, high-income locations, and no New Zealand studies have attempted it.³³ (In New Zealand there has been far more interest in the way that land restrictions may deter migration to high-productivity, high-income locations.) However, there is no reason to

labour income taxes (Disney 2004). If New Zealand were to seriously consider a compulsory saving scheme, it would be able to reduce income tax rates, enhancing economic growth rates.

³³ Nevertheless, Grimes et al (2016) has demonstrated that since the 1970s New Zealand’s population has grown significantly faster in sunny cities than cities with a raw climate.

doubt the claim that consumption and income taxes reduce the attractiveness of high income locations relative to location with desirable amenities. Fortunately, there is a way New Zealand's tax structure can be changed to reduce the effect. The core issue is that the consumption benefits obtained from moving to highly productive cities are taxed, but the non-financial benefits obtained from moving to places with nice amenities are not taxed. Yet locations that are attractive for either reason have a symmetric effect on property prices. The solution, therefore, is to reduce income and consumption taxes, and impose urban land taxes. These taxes are neutral as to whether a place is desirable because it offers high incomes or desirable amenities, and therefore do not deter people from moving to high productivity places.

Land taxes, which are currently applied by local governments rather than central governments, have a long history in New Zealand. In 2013, land and property taxes raised \$4.6 billion in revenue, of which 70 percent came from residential property and the rest came from commercial property. These taxes are levied on owner-occupied and rental property. Land taxes have been widely used in the past in other countries and were the dominant source of government income in the United States from the 1840s to the 1930s (Wallis 2000).

Land taxes can be considered as an alternative tax to income tax. Their main advantages as a separate tax source is that they cause minimal distortions to economic behaviour, they can raise large amounts of revenue, and their incidence largely falls on people who own land when the tax is introduced, people who are typically relatively wealthy (Ricardo 1817; Oates and Schwab 2009). From an optimal tax perspective, this makes them nearly perfect taxes. Their main disadvantage is that they have proven difficult to sustain politically. One explanation for this difficulty is that a majority of voters own land in many countries, and they realise that they could raise the price of land if they were to reduce land taxes. Land taxes are most successful where governments have few alternative means of raising revenue, for voters are less likely to cut taxes if it means cutting necessary services. In New Zealand land and property taxes imposed by local governments have been easy to sustain for this reason. Similarly, land taxes were most successful in the United States in the years prior to the widespread introduction of income taxes.

The incidence of the various taxes that affect the relative attractiveness of purchasing property was discussed in section 2. When the supply of land is relatively inelastic, the incidence falls on the owners of land when the taxes are first introduced. This, of course, is one reason why they are unpopular amongst existing land owners: they are likely to see the value of their assets decline. From an equity point of view, the rights of urban land owners would be of more concern if they were already paying an appropriate amount of tax on their residential property incomes. As has been previously demonstrated, they are not. In 2013, for instance, when local taxes on residential property raised approximately \$3.2 billion dollars, the value of housing services in the economy was about \$29 billion. This means the average tax rate on housing income was about 11 percent, a value that can be considered low relative to the statutory income tax rates.

The Terms of Reference rule out applying additional land taxes to owner-occupied property. This rather negates the purpose of using land taxes. Coleman and Grimes (2010) used the Coleman (2008) model to explore the possible effects of different types of land taxes in New Zealand. They did not concentrate on the case that a land tax would only be applied to rental property, for the model suggested it would lead to a significant reduction in the size of the rental sector and little revenue would be raised. (The rental sector would shrink because it would become relatively cheaper to purchase owner-occupied property than to rent property for all who households that could raise a sufficiently large deposit.) In their examination of the effects of land taxes applied to all property, they showed the distributional consequences would depend on the elasticity of the supply of property. When the supply of property is inelastic, increases in

land taxes would tend to lower property prices, reduce inequality, cause an intergenerational transfer from the first generation of property owners to all subsequent generations, and, in the long run, reduce the net foreign debt position of the economy. The main downside is the willingness of society to make such an intergenerational transfer. This is a political issue, but the willingness may be quite high given that the current tax system artificially inflates property prices and a land tax would merely be a means of reducing the extent that the current tax system imposes high costs on young people.

What types of land should be taxed? One of the reasons why it is desirable to tax urban residential land is that the value of urban residential land is rarely due to improvements that landowners put in place. Rather, the price of urban land is the capitalised value of externalities adjusted for any tax liabilities, and most of the value of urban real estate is due to its proximity to desirable consumption amenities, workplaces, schools, or attractive neighbourhoods. In contrast, the value of rural real estate often reflects investments made by its owners to improve its productivity. A tax on urban land is unlikely to reduce the investments that make the land valuable, as these are not generally undertaken by the owner. In principle, it would not be difficult to introduce property taxes on urban residential land while exempting rural land from such taxes.

Several recent academic studies, often with OECD-based authors, have contemplated the productivity consequences of different types of taxes (Johansson et al 2008; Arnold et al 2011; Brys et al 2016). They conclude that corporate taxes have the most adverse effects on productivity levels and growth rates, and recurrent land taxes are the least damaging. If New Zealand were to place a high priority on raising economic growth rates, one option would be to raise land taxes and use the revenues to reduce corporate taxes or income taxes. This would have a double benefit. First, it would reduce the current disincentive to move to high productivity locations rather than regions with favourable consumption amenities. Secondly, the reduction in corporate taxes is likely to stimulate growth rates. These taxes would also be easy to administer, since a basis for local government property taxes already exists.

5. Conclusions

In the 1980s and early 1990s, New Zealand reformed its tax system in many ways. A Goods and Services tax was introduced. Top marginal personal income tax and business tax rates were aligned and reduced. The taxation of retirement savings was moved to an income basis. A dividend imputation system was introduced. While many of these changes were lauded internationally, they left New Zealand with a tax system that differs in many respects from those in other OECD countries. With thirty years of hindsight, it is now difficult to be confident that these reforms left New Zealand with a tax system that is world class in terms of its ability to enhance productivity or even to achieve its welfare objectives.

There are two big problems, and both concern the ways that capital incomes are taxed. One difficulty is the uneven taxation of capital incomes. The unwillingness to tax imputed rent or capital gains, and the excessive taxation of real interest income when there is inflation means that income from different classes of assets are taxed at very different rates. Owner-occupied property is highly taxed advantaged, whereas interest-earning securities are disadvantaged. This problem is much more acute in New Zealand than in many other countries because retirement savings accounts are taxed on an income basis rather than an expenditure basis. If New Zealand taxed imputed rent and capital gains, and if it taxed real rather than nominal interest income, it would make sense to tax retirement savings accounts on an income basis. If New Zealand adopted standard OECD practice and taxed retirement savings accounts on an expenditure basis, it would not matter so much that there is no capital gains tax on owner-occupied property, that imputed rent is not taxed, or that nominal interest income is taxed. Taxing owner-occupied

housing on a TEE expenditure basis while failing to tax other capital income on a consistent income basis is an experiment few other countries having been willing to risk. It is an experiment with little logical basis, unless the aim is to provide people with as many incentives to invest in owner-occupied residential real estate as possible, short of providing them with direct subsidies.³⁴ It should come as no surprise that New Zealand has had one of the largest increases if not the largest increase in real estate prices in the OECD since 1990, and the fastest increase in the size of newly constructed houses, although the tax system is only one of the contributing factors to these phenomena.

The second issue is the size of business taxes, which are now high by OECD standards. There has been a noticeable movement around the world to reduce statutory and effective corporate tax rates since 1990. New Zealand has also reduced its corporate tax rates, but effective tax rates on businesses remain high. Modern evidence suggests that high corporate tax rates reduce investment, reduce research and innovation, reduce the speed at which less efficient firms make investments to copy frontier firms, and reduce economic growth rates. Several countries, particularly the Scandinavian countries, have responded to the detrimental effects of high corporate taxes by deliberately reducing taxes on capital incomes so that they are lower than taxes on labour incomes. Most other countries have lower taxes on capital incomes than labour income by imposing social security taxes on labour incomes. Either way, New Zealand's attempts to tax labour, business, and other capital incomes (except incomes from owner-occupied housing) at similar rates has little theoretical justification. The high taxes that businesses pay as a result may be reducing productivity levels and economic growth rates.

High productivity levels, buoyant per capita incomes and fast economic growth are not the only or even the main objectives of tax policy. Taxes are designed to raise revenues to achieve particular welfare objectives, and it is appropriate for any country to impose distortionary taxes on its citizens to achieve those goals. However, modern theory and evidence is questioning whether the best way to achieve these goals is to impose taxes that are capitalised into property prices. There are now a large number of theoretical models, supported by a smaller but growing amount of empirical evidence, that tax policies which favour urban land ownership can artificially raise land prices and reduce the welfare of low-income and young households by engineering a resource transfer to older land-owning households. It is not clear how much this is a problem in New Zealand, but it would be surprising if this was not an important issue given the tax advantages enjoyed by the owners of urban property, particularly owner-occupiers but also landlords, and given the extent that house prices have increased since the tax changes of the late 1980s.

There are several ways that some of these tax issues could be solved. In recent years the OECD has forcefully made the case that corporate taxes and personal income taxes should be reduced, and that these reductions could be funded by an increase in land taxes. This proposition has considerable appeal from a productivity perspective. It is also likely to redistribute resources to low income and young households if it reduces the extent that property prices are raised to artificially high levels due to their current tax advantaged position. Higher land taxes may also reduce the extent the tax system discourages migration to high income locations in favour of locations with nice natural amenities, which would further enhance national productivity levels. The main disadvantage is the likely difficulty of getting social and political support for the introduction of land taxes because a majority of voters are landowners and may oppose measures to reduce the tax advantages they enjoy. It is worth noting that the introduction of land taxes on

³⁴ The New Zealand Government also has schemes to do this, both the Accommodation Supplement (which is primarily targeted at renters, but which is available to some owner-occupiers) and the KiwiSaver housing start programme.

owner-occupied housing is ruled out of the Terms of Reference of the Taxing Working Group, despite the likely productivity and equity advantages.

If land taxes are ruled out, New Zealand could contemplate the introduction of much higher social security taxes in order to reduce corporate or capital income taxes. Alternatively, it could contemplate the introduction of a compulsory retirement saving scheme as a way of reducing the taxes needed to fund New Zealand Superannuation in the future. This is standard practice in most OECD countries, and in fact the low level of social security taxes in New Zealand is the single biggest difference between New Zealand's tax system and the tax systems of other OECD countries. Overseas experience suggests that such a transformation of the tax system need not be regressive. This proposition may appear radical given New Zealand's past history, but in reality New Zealand's current tax system is highly unusual and may be harming economic growth.

A capital gains tax on real income is also likely to enhance the efficient allocation of resources, by reducing the incentive to invest in low-yielding long-horizon assets. New Zealand is unusual in not having a general-purpose capital gains tax. Nonetheless, a capital gains tax that exempts owner-occupied housing is likely to raise much less revenue than one which includes owner-occupied housing, is likely to be more regressive if it leads to higher rents, and is likely to further increase the relative tax advantages of owner-occupied property. It is not enough to justify the exclusion of owner-occupied property from a capital gains tax on the basis of overseas practice, for this ignores the differences in the way retirement savings are taxed in New Zealand and other countries. When retirement savings accounts are taxed on an expenditure basis, as happens in most OECD countries, it makes sense to exempt owner-occupied housing from capital gains taxes. When they are taxed on an income basis, as is the New Zealand practice, it does not. Since the Terms of Reference of the Tax Working Group rule out the imposition of capital gains taxes on owner-occupied property, if the Government wishes to introduce a capital gains tax it should consider changing the way retirement savings accounts are taxed or otherwise risk the introduction of further incoherence into the tax system.

One relatively minor reform concerns the way nominal interest income and payments are taxed. Taxing the inflation component of interest income, and allowing businesses that borrow to deduct from their taxable income the inflation component of their interest payments has been recognized by economists as a distortionary practice for almost a century. In a country like New Zealand where there is a large amount of foreign owned debt, the practice not only distorts saving decisions by raising the effective tax rates on real interest earnings but it subsidises businesses that borrow and raises little revenue. It may not even be revenue positive. The traditional rationale is that it is too difficult to adjust the tax system for inflation as depreciation allowances need to be adjusted as well. This justification seems stretched in a modern world where computing costs are tiny. This issue is likely to be more important to New Zealand than other countries for two reasons: New Zealand has unusually large overseas borrowings; and New Zealand citizens cannot shelter interest earning assets from excessive taxation by holding them in an EET-taxed retirement-savings account.

It is sometimes argued that nominal capital gains should be taxed if nominal interest is taxed, on the basis that one distortion may be worse than two distortions. While the Lipsey-Lancaster theorem makes it clear that one distortion can be worse than two distortions, it is also clear that a case by case evaluation should be considered. Between 2008 and 2016 nominal capital gains excluding owner-occupied and leased residential property were three times as large as real capital gains, suggesting the introduction of a nominal rather than real capital gains tax would substantially increase taxes on business incomes above statutory rates. Given New Zealand's already high capital income taxes and low capital-GDP ratios, it would appear to be very

important that a proper analysis of the effect of taxing nominal capital gains on economic activity and economic growth rates be undertaken.

This document has not discussed more radical tax options such as the Hall-Rabushka (1985) flat tax proposal or the Bradford X tax scheme. Both of these schemes abolish direct income taxes in favour of direct, progressive consumption taxes. They have not been adopted overseas, but enjoy academic support. In combination with land taxes, they would represent a radical departure from the past, one which would significantly reduce the way the tax system adversely affects economic performance. They have not been discussed as most countries do not like the challenge of radical reform and New Zealand policy makers appear strongly committed to applying direct taxes on an income basis. Should New Zealand wish to shift towards an expenditure basis for direct taxation, perhaps by changing the way retirement savings accounts are taxed, these ideas would merit proper investigation.

This paper has been silent about most aspects of tax policy other than capital taxation and it has not discussed the ways labour incomes can be taxed. At several places it has been suggested that labour income taxes or social security taxes could be raised relative to capital income taxes without unduly compromising productivity or welfare goals. Given New Zealand has low social security taxes and low marginal tax rates, this position reflects the international evidence that top marginal tax rates have little distortionary impact on participation decisions, particularly for full time workers. Overseas experience with social security taxes suggest the problems are far from insurmountable should there be a willingness to adopt higher social security taxes as a means of reducing capital income taxes. Nonetheless, previous attempts to raise the top marginal tax rate in New Zealand shows tax rates need to be raised carefully, as New Zealanders can easily use legal trusts to shelter income from tax when there is a large difference between tax rates on personal income and tax rates on trust income.

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Appendix 1. Capital and labour income taxation around the world.

Labour income taxes

The following table shows the average tax rate on labour incomes for different countries. The data, taken from OECD Tax policy database, shows the average personal income tax and social security contribution rates on gross labour income for someone on the average wage (Table I5).³⁵ The left hand side of the table includes social security contributions, including those made by employers; the right hand side excludes them.

Table A1.1 International labour income taxes

Country	Average tax Rate – mean income	Rank		Country	Average tax rate – mean income	Rank
Including social security contributions				Excluding Social Security contributions		
Chile	7.0	34		Chile	0.0	34
New Zealand	18.1	33		Korea	6.1	33
Mexico	20.4	32		Poland	7.2	32
Switzerland	21.8	31		Japan	7.9	31
Israel	22.1	30		Israel	9.7	30
Korea	22.6	29		Mexico	9.8	29
Ireland	27.2	28		Greece	10.0	28
Australia	28.6	27		Slovak Republic	10.1	27
Canada	30.9	26		Switzerland	10.7	26
United Kingdom	30.9	25		Slovenia	11.6	25
United States	31.7	24		Turkey	12.9	24
Japan	32.6	23		Czech Republic	13.1	23
Iceland	33.2	22		United Kingdom	14.0	22
Poland	35.6	21		Austria	14.4	21
Norway	35.9	20		Spain	14.7	20
Denmark	36.3	19		France	14.8	19
Luxembourg	36.7	18		Hungary	15.0	18
Netherlands	37.5	17		Ireland	15.4	17
Turkey	38.7	16		Canada	15.4	16
Estonia	39.0	15		Portugal	16.5	15
Spain	39.3	14		Luxembourg	16.7	14
Greece	40.8	13		Estonia	16.8	13
Portugal	41.4	12		Netherlands	17.3	12
Slovak Republic	41.6	11		Sweden	18.0	11
Sweden	42.9	10		New Zealand	18.1	10
Finland	42.9	9		United States	18.4	9
Slovenia	42.9	8		Germany	19.1	8
Czech Republic	43.4	7		Norway	19.4	7
Hungary	46.2	6		Finland	20.9	6
Austria	47.4	5		Italy	21.7	5
France	47.6	4		Australia	24.4	4
Italy	47.7	3		Belgium	26.5	3
Germany	49.7	2		Iceland	28.3	2
Belgium	53.7	1		Denmark	36.1	1

³⁵ https://stats.oecd.org/index.aspx?DataSetCode=TABLE_I5 The data exclude Latvia.

Capital income taxes

The OECD tax policy database presents tables of revenue raised from corporate taxes. Table 2 shows the ranking for 2016. New Zealand is ranked as having the highest fraction of GDP raised from corporate taxes in the OECD.

Table A1. 2 Taxes on Capital income in New Zealand and the OECD

Country	Revenue/ GDP	Rank
Turkey	1.4	35
Slovenia	1.5	34
Latvia	1.6	33
Germany	1.7	32
Hungary	1.8	31
Poland	1.8	30
Italy	2.0	29
France	2.1	28
Estonia	2.1	27
Greece	2.2	26
Finland	2.2	25
United States	2.2	24
Austria	2.3	23
Iceland	2.4	22
Spain	2.4	21
United Kingdom	2.5	20
Denmark	2.6	19
Ireland	2.6	18
Netherlands	2.7	17
Sweden	3.0	16
Israel	3.0	15
Switzerland	3.0	14
Portugal	3.1	13
Canada	3.2	12
Mexico	3.3	11
Korea	3.3	10
Belgium	3.3	9
Czech Republic	3.6	8
Slovak Republic	3.7	7
Japan	3.8	6
Australia	4.3	5
Chile	4.3	4
Luxembourg	4.4	3
Norway	4.4	2
New Zealand	4.6	1
OECD - Average	2.8	

Source: <https://stats.oecd.org/index.aspx?DataSetCode=REV>

Category 1200 - Taxes on income, profits and capital gains of corporates

While New Zealand may raise the largest amount of taxes from corporate income in the OECD, this is not necessarily the best measure of the size of capital income taxes in an economy. Other measures include the statutory corporate tax rate, the effective tax rate on capital income taking into account depreciation schedules and other deductions, or the amount of taxes individuals pay on dividend paid by business to their owners. Table A1.3 shows a variety of different measures of taxes on capital incomes in New Zealand relative to those in other OECD countries. These measures are described below.

Row 1: *Statutory corporate rate*

Source: Hanappi (2018) Appendix B pp 51–59 from OECD sources.

Row 2: *Corporate tax take as a percentage of GDP*

Source: OECD: Category 1200 - Taxes on income, profits and capital gains of corporates
<https://stats.oecd.org/index.aspx?DataSetCode=REV>

Row 3: *Effective average tax rate on capital income (EATR) – equity*

Source: Hanappi (2018) Table 3, averaged over all categories of investment goods. These numbers are calculated assuming a 2 percent inflation rate and 5 percent real interest rate.

Row 4: *Effective average tax rate on capital income (EATR) – debt*

Source: Hanappi (2018) Table 6, averaged over all categories of investment goods. These numbers are calculated assuming a 2 percent inflation rate and 5 percent real interest rate.

Row 5: *Effective marginal tax rate on capital income (EMTR) – equity*

Source: Hanappi (2018) Table 4, averaged over all categories of investment goods. These numbers are calculated assuming a 2 percent inflation rate and 5 percent real interest rate.

Row 6: *Effective marginal tax rate on capital income (EMTR) – equity*

Source: Hanappi (2018) Table 4. These numbers are calculated assuming a 2 percent inflation rate and 5 percent real interest rate.

Row 7: *Effective tax rate on standardised small business, excluding social security and payroll contributions*

Source: Price-Waterhouse/ World Bank (2016) Paying Taxes 2016 (10th edition).
<https://www.pwc.com/gx/en/paying-taxes-2016/paying-taxes-2016.pdf>

Row 8: *Effective tax rate on standardised small business, including social security and payroll contributions*

Source: Price-Waterhouse/ World Bank (2016) Paying Taxes 2016 (10th edition).
<https://www.pwc.com/gx/en/paying-taxes-2016/paying-taxes-2016.pdf>

Row 9: *Marginal tax rate on distributed dividend income for high income earner*

Source: Harding-Marten (2018) Table 1.

Table A1. 3 Taxes on Capital income in New Zealand and the OECD

	NZ	Average OECD rate			OECD Ranking		
		All (36)	Rich (20)	Small (21)	All (36)	Rich (20)	Small (21)
1.Statutory Rate	28%	25%	26%	23%	12	8	4
2.Corporate tax take (% GDP)	4.6%	2.8%	2.8%	2.7%	1	1	1
3.Effective ATR (equity)	28.1%	24.4%	25.4%	22.4%	13	9	5
4.Effective ATR (debt)	18.8%	16.6%	17.0%	15.2%	14	9	5
5.Effective MTR (equity)	27.5%	20.9%	23.1%	19.7%	9	6	3
6.Effective MTR (R&D, equity)	36.6%	21.0%	17.6%	17.0%	4	1	1
7. Small business tax (ex social security)	30.0%	15.9%	14.7%	13.5%	1	1	1
8. Small business tax (inc social security)	34.3%	41.2%	38.5%	38.5%	24	12	12
9. High income dividend tax rate	33.0%	41.3%	38.8%	37.2%	28	16	14

Source: Author's calculations from sources cited above.

The table shows the tax rate in New Zealand, the average rate in three groups of OECD countries, and New Zealand's rank within each of the groups (a rank of 1 means it has high taxes.) The three groups are:

- (i) all 36 OECD countries;
- (ii) the 20 rich OECD countries with average incomes at least as high as New Zealand;
- (iii) the 21 small OECD countries with populations of less than 15 million.

Appendix 2: The value of the capital stock and real estate in New Zealand

The value of New Zealand real-estate and household wealth

There is no single best way to compare the value of the residential property sector with the value of other assets. There are several measures that are relevant to a discussion of the role of tax in the economy.

7. The separate value of debt and equity claims on owner-occupied and residential property, for the tax treatment of each of these claims is different.
8. The total value residential property relative to the net-of-borrowing value of all business and housing assets owned by households, as this indicates the relative importance of the housing assets in the nation's private sector wealth.
9. The total value residential property relative to the value of all private sector business and housing assets in the country, as this indicates the relative importance of the housing assets relative to all of the assets in the country.

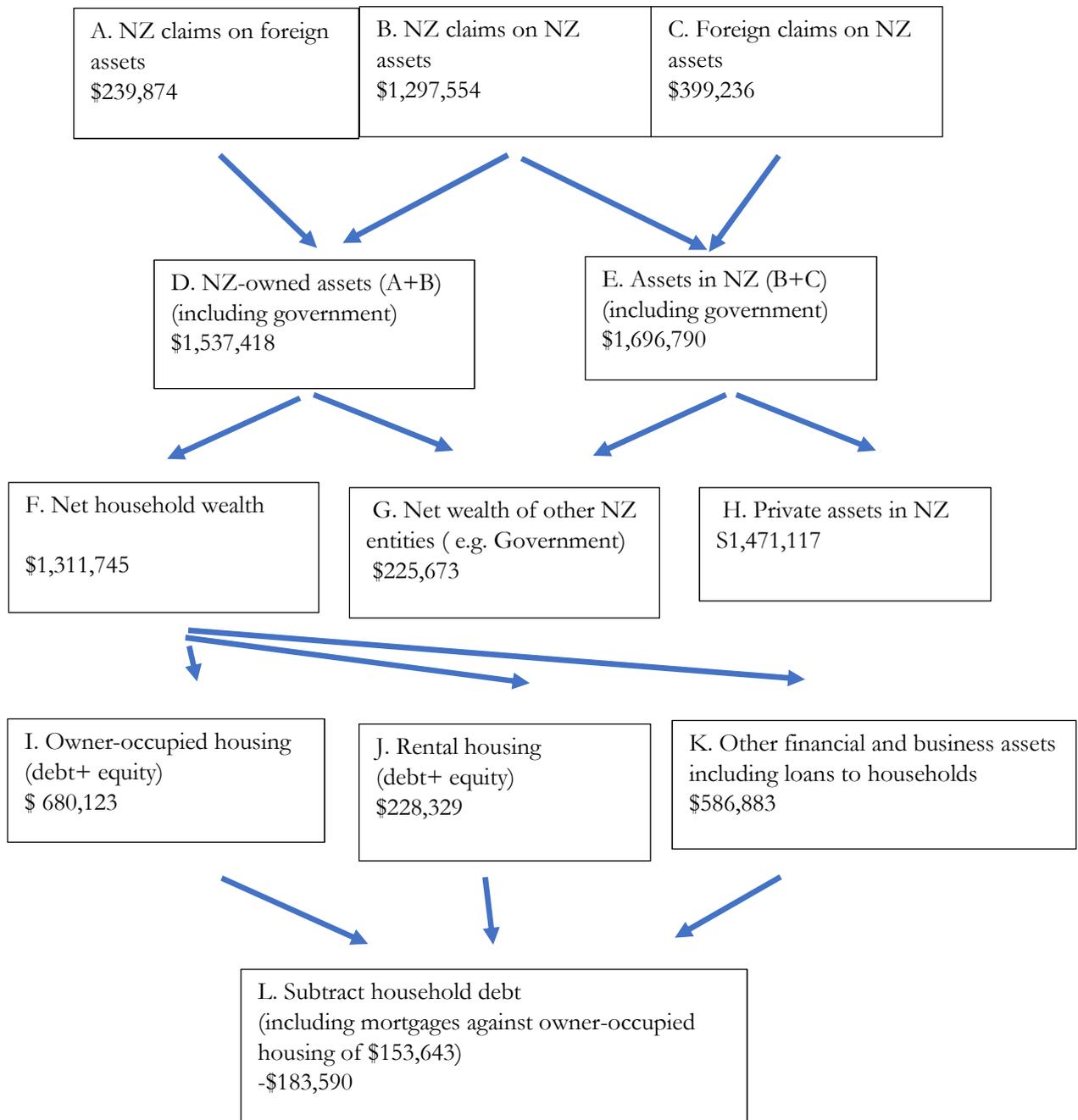
The first two sets of measures are relatively straightforward to calculate in New Zealand using data on the household balance sheet compiled by Statistics New Zealand and the Reserve Bank of New Zealand. The last set of measures are more difficult to calculate as different conventions on the treatment of debt claims on business can be adopted when calculating the size of the business sector. Internationally, it is common to compare the value of housing with the value of net household wealth, and these calculations are reported here, but other methods are possible. However, making international comparisons is fraught with difficulty as some of the data are compiled differently in different countries.

The data necessary to calculate the size of the residential property sector relative to net household wealth are available up to December 2017. The data necessary to compare the residential property sector with all private sector assets are only available up to March 2016. The following tables include data for both 2016 and 2017, plus earlier years to provide a comparison. In all but one case the tables are expressed in current dollar terms and not adjusted for inflation.

Figure A.1 outlines the basic calculations, using data from the Annual Balance Sheet compiled by Statistics New Zealand for March 2016, supplemented by data provided by the Reserve Bank of New Zealand. (The raw data are in Table A2.2) Three issues should be noted. First, the value of assets owned by New Zealand residents is significantly less than the value of assets located in New Zealand. For this reason the value of housing is a larger fraction of the value of household wealth than a fraction of the value of assets located in New Zealand. Secondly, the loan and debt statistics do not always record the sectors on which the claims are owing. This means it is necessary to add up the value of assets including the value of loans held by households and then subtract the value of debt owed by households rather than separately add up the total of debt and equity claims on different sectors. Thirdly, the value of business assets is based on Statistics New Zealand's estimates of the value of the non-financial assets owned by business. It excludes the value of financial assets to avoid the way that financial intermediation inflates the value of the underlying assets in the economy.³⁶

³⁶ For example, if a business has assets worth \$100m and borrows \$40 million directly from households, the assets of the economy are the \$100m business asset and the liabilities are a \$40 debt claim and a \$60m equity claim held by households. If the households deposit the money in a bank, which lends to the firm, gross business assets in the economy are the \$100m business asset plus the \$40m loan held on the bank's books, and gross liabilities are the \$60m equity claim held on the business plus the \$40 million debt claim on the business held by the bank plus the \$40m million claim on the bank held by the household. On most occasions it is useful to net out the debt claims associated with financial intermediation to calculate the underlying asset position.

Figure A2.1 New Zealand Balance Sheet March 2016 (\$million)



Total gross assets = \$1,495,335

Table A2.1 Claims against residential property in 2016

	Owner-occupied	Rental	Total
Equity	\$526,480	\$166,579	\$693,059
Debt (mortgages)	\$153,643	\$61,750	\$215,393
Total	\$680,123	\$228,329	\$908,452

In 2016, the total value of non-financial assets in New Zealand, whether owned by New Zealand private entities, the government, or foreign entities was \$1,697 billion (Box E). The value of assets owned by New Zealand entities including the Government was \$1,537 billion (Box D). The value of private assets held in New Zealand was \$1,471,111 (Box H), and the value of net household wealth was \$1,311 billion (Box F). The total value of housing assets including both owner-occupied and rental housing was \$908 billion (boxes I and J). Consequently, the value of housing assets in New Zealand was 69% of net household wealth, 62% of private assets located in New Zealand including those owned by foreign entities, and 53% of the value of all assets in New Zealand.

Table A2.2 provides a snapshot of New Zealand's household balance sheets for March 2000, 2007, 2016, and 2017. All data are in contemporary nominal prices, \$millions. The data show that between 2000 and 2017 the value of residential housing had increased from 53 percent of net household wealth to 73 percent, with most of the increase occurring between 2000 and 2007. Using a different metric, between 2000 and 2017 the value of housing increased from 2.0 times GDP to 3.8 times GDP. During the same time the value of business assets actually decreased as a fraction of GDP, from 2.07 to 1.90.

The value of assets held in superannuation funds increased decreased from 28 percent of GDP in 1999 to 19 percent of GDP in 2007, before steadily increasing back to 28 percent of GDP in 2017 after KiwiSaver was introduced. The value of other investment funds slowly decreased throughout the period from 36 percent of GDP to 28 percent of GDP. These funds – and the value of business assets in general – are now dwarfed by the value of housing in the economy.

Table A2.3 indicates the size of the change in the nominal and real value of assets in the economy between 2007 and 2016. These are a proxy for nominal and real capital gains - they are not an exact measure, as part of the change in the value of assets reflects new investment.³⁷ Between 2007 and 2016 net household wealth increased by \$420 billion, of which \$319 billion was associated with the increase in the value of real estate. In inflation adjusted 2016 dollar terms, the increase was \$252 billion, of which \$208 billion was associated with real estate assets. Real capital gains associated with other business assets were \$42 billion. The capital gains from 2000 to 2007 were even larger: in 2016 dollar terms, the value of real estate increased by \$368 billion, and net household wealth increased by \$434 billion.

³⁷ The total value of new residential construction between 2007 and 2016 was \$60 billion, excluding the value of newly developed land. Approximately half of this construction is estimated to replace existing building. The total increase in the real value of housing over the period was \$208 billion. This suggests capital gains accounted for over 70 percent of the increase in the value of new construction.

Table A2.2 New Zealand Household Balance sheet, 1999 – 2017 (March years)

		2000	2007	2016	2017
Nominal GDP	1	113,228	172,112	254,704	270,265
CPI Index		687	824	975	1000
Housing and Land					
Owner-occupied	2a	181,920	455,096	677,039	770,947
- Equity	2b	137,066	353,891	523,396	603,432
- Debt	2c	44,854	101,205	153,643	167,515
Rental properties	2d	47,080	131,461	228,329	259,998
- Equity	2e	28,729	89,773	166,579	193,033
- Debt	2f	18,301	41,688	61,750	66,965
Total	2g	229,000	586,557	905,368	1,030,945
Financial and Business assets owned by New Zealand households					
Total	3a	309,426	557,894	815,843	847,893
- Currency and debt	3b	44,424	86,442	159,381	169,365
- Superannuation	3c	31,530	31,919	69,136	76,732
- Other investment funds	3d	40,403	53,045	71,089	74,556
- Net rental	3e	28,729	89,773	166,579	193,033
- Other business assets	3f	162,290	296,735	349,658	334,207
Household debt	4	-55,231	-122,851	-183,590	-198,636
Net Wealth	5=2a+3a-4	436,115	890,140	1,309,292	1,420,203
Assets located in New Zealand					
Total national assets	6a		1,182,180	1,696,285	
- Residential property	6b		586,557	905,368	
- Business (exc rental)	6c		448,407	574,339	
- Government/other	6d		147,216	217,078	
Net Foreign Assets	7a	-91,720	-129,757	-159,360	-152,972
- NZ claims on foreign	7b	83,163	137,981	239,875	244,887
- Foreign claims on NZ	7c	174,883	267,738	399,235	397,859
Ratios					
Total Housing/ Net Wealth	2g/5	53%	66%	69%	73%
Total Housing/ GDP	2g/1	2.02	3.41	3.55	3.81
Business assets / GDP	(3c+d+f)/1	2.07	2.22	1.92	1.80
Superannuation funds/ GDP	3c/1	28%	19%	27%	28%

Notes:

Author's calculations from Reserve Bank of New Zealand household balance sheet data HC21 and HC22 and International Balance Sheet HM7 and Statistics New Zealand Annual Balance sheet.

Section 2 - 5: RBNZ HC22. 2a – 2g from columns AF AL AN AO. 3a – 3f: 3a=B; 3b=C+D+G+K; 3c=X; 3d=R+U-X; 3e = 2e; 3f = 3a-3b-3c-3d-3e; 4 = Z; 5=AM.

Section 6 Statistics New Zealand Annual Balance Sheet. 6a = AH12; 6b=2g; 6c = B12+D12-2d; 6d = X12+Z12+AB12+AD12. Business assets

Section 7: RBNZ HM7. 7a = M; 7b = K; 7c = L. The 2000 figure is for June, not March

Table A2.3 Real and nominal capital gains, 2008 - 2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016	Sum
Nominal value										
Owner-occ. housing	478	437	468	462	470	509	548	596	680	
Rental housing	138	131	141	143	151	163	176	195	225	
Total Housing	616	568	609	605	621	672	725	791	905	
Business (exc rental)	484	508	505	504	506	511	518	558	574	
Househld net wealth	913	848	905	933	947	1,019	1,076	1,178	1,312	
Nominal Capital Gains										
Owner-occ. housing	1	-41	31	-6	8	39	39	48	84	223
Rental housing	8	-7	10	2	8	12	14	18	31	95
Total Housing	29	-48	40	-3	15	51	53	67	114	319
Business (exc rental)	36	24	-3	-1	2	5	7	40	17	126
Househld net wealth	21	-65	58	27	15	71	58	101	134	420
CPI										
CPI	824	852	877	895	935	949	958	972	975	
Real Values										
Owner-occ. housing	549	488	512	484	485	520	552	599	680	
Rental housing	158	146	154	150	155	166	178	196	225	
Total Housing	708	634	666	634	640	686	730	794	905	
Business (exc rental)	556	567	552	528	522	522	521	560	574	
Househld net wealth	1,049	946	990	977	977	1,041	1,084	1,183	1,312	
Real Capital Gains										
Owner-occ. housing	7	-61	24	-28	1	35	32	47	81	138
Rental housing	4	-12	8	-4	6	11	11	18	30	71
Total Housing	11	-73	31	-32	7	46	44	65	111	208
Business (exc rental)	23	11	-15	-25	-6	0	-1	39	14	42
Househld net wealth	-11	-103	44	-14	1	64	43	99	129	252

Notes:

Author's calculations from Reserve Bank of New Zealand household balance sheet data HC21 and HC22 and International Balance Sheet HM7 and Statistics New Zealand Annual Balance sheet. See Table A1.1 for series definitions. Note that Business assets exclude rental housing and refer to business assets located in New Zealand, not business assets owned by New Zealanders. The capital gains on the net value of business assets (excluding rental property) owned by New Zealanders can be calculated as the difference between household net wealth and the total value of housing. The total capital gains are similar in the two cases.

The large real capital gains experienced between 2000 and 2017 are probably not representative of the capital gains that can be expected in the future. The prices of many assets increase when interest rates fall, and this period was one when international interest rates declined to the lowest levels seen in a century. While asset prices increased in real terms in most OECD countries during the last century, real asset price increases of this magnitude are rare historically (Dimson et al 2013).

Non-residential capital stock data

An alternative approach to measuring the relative size of New Zealand's capital stock is to compare the size of the private and public capital stocks with other countries. Table A2.4 shows the size of the private non-residential and the public capital stocks as a fraction of GDP for 29 high income countries in 2013, using IMF data.³⁸ In 2013, New Zealand's private capital stock was 112 percent of GDP, 37 percent lower than average and the third lowest of the countries in the table. In contrast, New Zealand's public capital stock was estimated at 60 percent of GDP, 8 percent higher than average and the 8th highest in the table.

International comparisons of housing wealth

It is not straightforward to make a comparison with other countries as other countries present their household balance sheets differently. However, it appears that New Zealand has a relatively large fraction of its wealth held in housing assets – and a low fraction held as other assets. The following comparisons are with Australia, the United Kingdom, and various European countries.

Australia

In March 2017, residential land and housing was valued at \$A6312 billion, or 64 percent of household wealth, compared to 73% in New Zealand. In 1999 and 2007, the ratios were 57% and 62%.³⁹ The value of housing was 3.65 times GDP, compared to a ratio of 3.81 in New Zealand. The ratio of non-housing assets to GDP was 2.04, compared to 1.44 in New Zealand.

United Kingdom

In the year ending December 2016, the value of UK residential buildings owned by households was £1,521 billion, with an additional £3,866 billion in land. Non-financial corporations owned an additional £227 b worth of dwellings. If the land associated with these dwellings was valued in the same ratio as household land, the associated land value would be £576b. (Households plus non-financial corporations account for 98% of dwellings.) The total value of residential property can therefore be estimated at £6296b. This is 63 percent of the value of household net worth.⁴⁰ The ratio of directly held household property wealth/total wealth is 54%

Other countries

The quality of published data for other countries is uncertain. The OECD has published some cross-country tables calculating household wealth, but retirement savings are included in the tables in an inconsistent manner which devalues their approach. It was not possible to reconcile the OECD tables with the national data for Australia and the United Kingdom, for example: in the latter case non-housing assets worth close to 25 percent of household wealth were excluded from the calculation.

³⁸ The data is sourced from the website <https://data.world/imf/investment-and-capital-stock-i> Series KGOV and KPRIV.

³⁹ Data from Australia Bureau of Statistics Table 5232.0 Australian National Accounts Table 34 Household Balance sheet, Current prices. Series A83728305F (housing value) A83722648X (net worth).

⁴⁰ Data from the Office of National Statistics, The UK National Balance Sheet, Table C

In their publication “Household Wealth in Europe,” ING (2016) compiled data on household property wealth and household wealth for various European countries in 2015 (see Table A2.5). Most countries had ratios between 50 and 65 percent, and the Eurozone average was 59%. Spain and Slovakia were the two exceptions with ratios in excess of 75%. Their calculation methods are unknown, although their ratio for the United Kingdom is consistent with the data in the U.K. national accounts.

New Zealand and international property price increases

Table A2.6 presents information on average house prices and rents for New Zealand from 1923-2017 from a variety of Statistics New Zealand and Reserve Bank of New Zealand sources. From 1923 – 1990, average real house price increases were 1.4% per year. Since 1990, the average increase in real house prices has been 4.2 % per year, with most of the increase taking place since 2000. In contrast, average rents have scarcely changed since 1990.

The Federal Reserve Bank of Dallas compiles property price data for 23 rich countries. Their database, the International House Price database, has data back to 1975. Table A2.7 shows house price increases between March 1990 and 2017. According to their methodology, New Zealand house prices increased by 234 percent in real terms over the period, the largest increase of any of the countries in the table.⁴¹

The 1990 start date is chosen so the change in New Zealand property prices could be compared with the change in world property prices since the 1989 tax reforms. It should be stressed that New Zealand property prices were near a cyclical low in 1990. Over the whole period 1975 – 2017 New Zealand house price increases were not as high as those in several other countries. Indeed, New Zealand had the third *smallest* property price increase between 1975 and 1990, in part because New Zealand house prices experienced a cyclical peak in 1975.

⁴¹ This increase is slightly higher than the increase calculated using Statistics New Zealand and Reserve Bank data. New Zealand would still have either the highest or second highest increase in the table if the New Zealand data were used. The International House Price Database is used to ensure consistency with the way the data are compared across countries.

Table A2.4 Private and public capital/output ratios in various IMF countries, 2013

	Private capital 2013		Public capital 2013		Total capital 2013	
	% GDP	Rank	% GDP	rank	% GDP	Rank
Australia	183	3	40	24	224	8
Austria	164	12	33	27	197	16
Belgium	169	8	33	28	202	14
Canada	148	15	51	14	199	15
Denmark	163	13	43	22	206	12
Finland	169	9	48	18	216	10
France	137	21	51	15	188	18
Germany	143	17	35	25	178	22
Greece	167	10	54	13	221	9
Hong Kong SAR	140	19	48	17	188	20
Iceland	165	11	64	4	229	7
Ireland	129	23	59	10	188	19
Israel	138	20	27	29	165	25
Italy	179	5	60	7	239	5
Japan	156	14	107	1	263	1
Korea	184	2	60	9	243	3
Mexico	131	22	55	12	185	21
Netherlands	128	24	50	16	178	23
New Zealand	112	27	60	8	172	24
Norway	146	16	45	20	190	17
Portugal	181	4	56	11	237	6
Singapore	189	1	69	2	257	2
Spain	178	6	64	5	242	4
Sweden	115	25	44	21	158	27
Switzerland	171	7	40	23	211	11
Taiwan	96	29	68	3	163	26
Turkey	103	28	45	19	148	28
United Kingdom	113	26	34	26	147	29
United States	141	18	63	6	204	13

Source: <https://data.world/imf/investment-and-capital-stock-i> Series KGOV and KPRIV

Table A2.5 Residential Property/ wealth ratios in various European countries, 2015

Country	Residential property/ Net wealth ratio	Country	Residential property/ Net wealth ratio
Austria	48%	Italy	62%
Belgium	54%	Netherlands	50%
Czech Republic	56%	Poland	35%
Denmark	48%	Portugal	58%
Finland	43%	Slovakia	79%
France	52%	Slovenia	61%
Germany	54%	Spain	78%
Greece	65%	Sweden	31%
Hungary	59%	United Kingdom	55%

Source: ING (2016) "Household Wealth in Europe" from tables p37,41.

Table A2.6 Annual average property price increases in New Zealand, 1923 – 2017

House prices 1923- 2017			
	Nominal increase	Inflation	Real increase
1923:2 – 1963:2	3.7%	2.2%	1.5%
1962:2 – 1990:2	11.1%	9.7%	1.3%
1990:2 – 2017:4	6.2%	2.0%	4.2%
House prices and rents, 1975 – 2017			
	Nominal increase	Inflation	Real increase
		1975:1-2000:1	
House prices	8.4%	8.0%	0.4%
Rents	9.5%	8.0%	1.4%
		1990:2 – 2017:4	
House prices	6.2%	2.0%	4.2%
Rents	2.2%	2.0%	0.1%
		2000:1- 2014:4	
House prices	7.3%	2.2%	5.1%
Rents	2.2%	2.2%	0.0%

Source: Author's calculations from Reserve Bank and Statistics New Zealand data. See Coleman (2017) for a description of the series used for the pre 1960s data.

Table A2.7 International property price increases 1990- 2017

Country	Percentage change	Country	Percentage change
Japan	-47%	UK	109%
S. Korea	-35%	Canada	117%
Italy	-11%	Netherlands	125%
Switzerland	0%	Sweden	127%
Germany	5%	Belgium	128%
Finland	20%	Norway	143%
Spain	25%	Luxembourg	167%
Croatia	28%	Israel	168%
US	45%	Australia	181%
S. Africa	53%	Ireland	215%
France	85%	New Zealand	234%
Denmark	103%		

Source: Author's calculations from the International House Price database, Federal Reserve Bank of Dallas Table RHPI.

Appendix 3. The tax advantages of residential property relative to other asset classes.

This appendix considers the extent that residential property income is taxed less than other commonly held assets. It makes the comparison with income from directly held interest-earning securities such as bank accounts, and income from interest-earning and equity securities held in KiwiSaver and other retirement income accounts. These are the most commonly held classes of assets in New Zealand.

New Zealand taxes nominal interest earnings. While the effective tax rate on nominal interest earnings is the standard income tax rate, the effective tax rate on real interest earnings is much higher than the statutory rate when the inflation rate is positive because the inflation component of nominal interest rates is taxed. This raises the effective tax rate on real interest payments by an amount $(1 + \pi)i/(i - \pi)$ where i is the nominal interest rate and π is the inflation rate. For instance, if the nominal interest rate were 4% and the inflation rate were 1.5%, this would increase the effective tax rate by more than 60 percent. For someone facing a 33% marginal tax rate, the effective rate on real interest income in this case would be 54%.

Income earned in most KiwiSaver accounts is taxed either at a 28 percent rate or at the appropriate PIE rate, depending on the scheme. Nominal interest income and dividend income are both taxed at these rates. In general, capital gains from investments in New Zealand and Australian shares are not taxed, but the taxation of other capital gains depends on the exact structure of the fund. Thus real income from debt securities held in KiwiSaver accounts is taxed at rates higher than statutory rates, because the inflation component of income is taxed, while real income from equity securities held in KiwiSaver accounts is likely to be taxed at rates lower than statutory rates, because capital gains are not taxed.

Table A2.1 indicates the major tax advantages of owner-occupied and rental property investments relative to interest-earning securities and KiwiSaver accounts. The extent of the tax advantage varies across the twelve possible comparisons, but in all but two cases (rental property investments versus equities held in KiwiSaver accounts) property is tax advantaged. These differences are discussed in detail below.

Approximately half of all owner-occupied housing is owned debt free. The tax rate on income from debt-free owner-occupied housing is lower than the tax rates on income from either debt or on KiwiSaver assets. According to the Haig-Simon definition, the income from debt-free owner-occupied housing is the implicit rent earned from the 'housing services' generated by the property plus any change in the real value of the property. The change in the value of the property should include the effects of depreciation. Neither of these components are currently taxed. Moreover, real income from interest-earning accounts are over-taxed in an inflationary environment. Consequently, income from owner-occupied property is taxed substantially less than income from interest earning securities, whether these are held directly or in KiwiSaver accounts. Income from owner-occupied property is also taxed less than the income from equity securities held in KiwiSaver accounts, for while both are largely exempt from capital gains taxes, dividend income is taxed but the value of imputed rent is not.

Table A3.1 The tax advantages of residential property relative to other investment classes

	<i>Interest-earning securities (directly held – 33%)</i>	<i>Interest-earning securities (Kiwisaver – 28%)</i>	<i>Equity securities (Kiwisaver -28%)</i>
Owner occupied housing (debt-free)	-No tax on imputed rent -No tax on capital gains <i>-Tax paid on inflation component of interest income</i>	-No tax on imputed rent -No tax on capital gains <i>-Tax paid on inflation component of interest income</i>	-No tax on imputed rent
Owner occupied housing (debt-financed)	-No tax on imputed rent net of interest payments -No tax on capital gains <i>-Tax paid on inflation component of interest income</i>	-No tax on imputed rent net of interest payments -No tax on capital gains <i>-Tax paid on inflation component of interest income</i>	-No tax on imputed rent net of interest payments
Rental housing (debt-free – 33%)	-No tax on capital gains <i>-Tax paid on inflation component of interest income</i>	-No tax on capital gains <i>-Tax paid on inflation component of interest income</i>	
Rental housing (debt-financed-33%)	-No tax on capital gains -inflation component of interest payments deductible <i>-Tax paid on inflation component of interest income</i>	-No tax on capital gains -inflation component of interest payments deductible <i>-Tax paid on inflation component of interest income</i>	-inflation component of interest payments deductible

A neutral tax regime for debt-financed owner-occupied housing is similar, except the owner of the property should be taxed on the imputed rent net of real interest payments, and the holder of the debt security should pay tax on the real interest payment. Since real interest payments are not deductible, debt-financed owners of owner-occupied property are less tax advantaged than debt-free owners of owner-occupied property. Nonetheless, real capital gains are still tax exempt, and in circumstances where capital gains are large and expected to continue, debt-financed property is still likely to be tax advantaged relative to interest-earning securities.

The tax situation for owner occupiers is complicated by local government property taxes. In 2013 local government rates totalled \$4.6 billion, of which approximately 30 percent was paid by non-residential entities.⁴² As the value of residential property services was \$29 billion, or 4.3 percent of the estimated value of property, the average rate of local property taxes was 11 percent of the value of residential property services.⁴³ If these payments were a proxy for income tax payments, they would need to be counted when comparing the income tax paid on property income and other classes of capital income. These payments are not income taxes, however, just

⁴² Local Government New Zealand (2015) p19.

⁴³ The 2013 input-output tables produced by Statistics New Zealand record the value of residential property operation as \$8472 million, and the value of owner-occupied housing services as \$20,7175 million. The value of the housing and utility final consumption component of GDP for the year to March 2013 was \$33198 (Infos series SNE036AA.) The value of residential property in March 2013 was \$672 billion (Reserve Bank of New Zealand series HC22 HHAL.QC1).

as tobacco taxes are not income taxes, and under the current tax regime they should not be treated as such, partly because the incidence of property taxes does not normally fall on those paying the tax.^{44,45} Consequently, they need not be counted when comparing taxes on different classes of capital income. Even if they were counted, income from owner-occupied property would still be taxed lower than normal rates, as the average local property tax rate is much lower than normal income tax rates.

Taxes on rental property are less than they would be under a neutral tax system for two reasons. First, real capital gains and losses are not taxed. The treatment of capital gains and losses is particularly complex, for while depreciation allowances should be incorporated into the calculation of capital gains and losses, they are not. Consequently, neither capital gains nor losses are taxed appropriately. Secondly, investors who borrow can deduct nominal interest payments rather than real interest payments from their taxable income even though the inflation component of interest payments is properly treated as a real debt repayment. This factor is sizeable: in March 2017, mortgage debt held against rental property was \$67 billion.⁴⁶ When the inflation rate is one percent, this means the interest deduction that is claimed by residential landlords is approximately \$700 million too large, a subsidy worth over \$200 million.

Investments in leased residential property are taxed lightly relative to interest-earning securities because real capital gains are not taxed, the inflation component of interest payments is deductible, and the inflation component of interest income is taxed. Investments in leased residential property are taxed lightly relative to equity investments held in KiwiSaver accounts because the inflation component of interest payments is tax deductible.

To summarise, both owner-occupied and rental property are taxed less than the two most common alternative forms of investments, interest-earning securities and KiwiSaver accounts. Debt-free owner-occupied property is particularly tax advantaged relative to interest-earning securities but is also tax advantaged relative to equity securities as imputed rent is not taxed. The tax advantage of debt-financed owner-occupied property is smaller, as mortgage payments are not deductible, but for households expecting to be debt free at some stage owner-occupied property is taxed at significantly lower rates than interest-earning securities. The tax advantages of rental property relative to interest-earning securities occur because capital gains are not taxed, and the inflation component of interest payments are incorrectly taxed. The advantage relative to equities held in KiwiSaver accounts primarily concerns the way residential landlords who borrow can deduct the inflation component of interest payments.

⁴⁴ A government could use a property tax as a proxy for an income tax if it were difficult to tax the value of imputed rent directly. To do this they would need estimate the imputed value of rent conditional on the property value and then tax this sum at the householders' individual income tax rate.

⁴⁵ Standard theory dating back to Ricardo (1817) argues that property taxes are partially capitalised into the value of the land and thus the incidence of the tax is different to an income tax. If land is supplied inelastically, the incidence of the tax falls on the owner of the property at the time the tax is introduced, although the incidence will partially fall on the contemporaneous occupants to the extent that the supply of land is elastic. See Hilber (2017) for a discussion of the conditions where a property tax will fall on the contemporaneous occupants of residential housing.

⁴⁶ This is calculated as the difference between all housing loan and housing loans borrowed by residential households, calculated from the Reserve Bank of New Zealand household balance sheet HC22.

Appendix 4. The taxation of real interest income

For nearly a century, economists have universally agreed that the inflation component of nominal interest earnings is not income (Viner 1923). For a lender, the inflation component of interest income compensates them for the loss of purchasing power of the sum they lend, because of generalised price increases. If the inflation component of interest income is taxed and the inflation rate is positive, the effective tax rate on real interest income is increased above the statutory rate. For a borrower, the inflation component of interest payments reduces real debt and thus it should be counted as savings. If a firm is allowed to deduct the inflation component of their interest payments from their taxable income, they pay less tax than they ought.

These distortions are substantial, even at low inflation rates. In March 2016, New Zealand households held various types of interest-earning securities worth \$156 billion.⁴⁷ In that year New Zealand households paid tax on more than \$1,500 million interest earnings for every 1 percent inflation because the inflation component of interest earnings were taxed. Foreign entities interest-earning securities worth an additional \$246 billion. The interest on these securities is only taxed lightly by the New Zealand Government, in the form of a small withholding tax levied on foreign lenders. The fraction of the interest paid on these securities that can be deducted from taxable income by firms is not precisely known. Households had liabilities of \$184 billion in March 2016, but not all of the remaining \$218 billion balance may have been deducted by firms. Nonetheless, because New Zealanders borrow so much from foreign entities, and because so little tax is collected from these entities, it is possible that the value of the business tax deductions exceeds the tax payments made by households and foreign entities. Eliminating the deduction of the inflation component of interest earnings would have reduced the tax deduction claimed by residential landlords on their \$62 billion debt by \$600 million per year alone. For this reason, if the New Zealand Government were to start taxing real interest rather than nominal interest, the fiscal cost might not be very great, and the reform could even be fiscally positive.

What would be the consequences of no longer taxing the inflation component of interest? There are five considerations.

10. Capital resources might be reallocated within the economy, due to the reduction in the tax incentive to live in large houses or to pay artificially high prices for property. The reduction in the subsidy for debt-financed business may reduce investment in some business sectors and reduce the price of assets in those sectors. There may be a reallocation of investment towards assets that are less amenable to debt financing.⁴⁸
11. After-tax income would be redistributed away from the owners of debt-financed businesses towards lenders. Since domestic lenders are disproportionately older, less sophisticated investors, many people may consider that this will improve equity.
12. Property prices are likely to decline and rent/price ratios should increase. Home-ownership rates are likely to increase, but the effect on welfare is ambiguous, depending on the supply elasticity of land (see paragraph A3.4).
13. There will be a change in government revenue. This may be modest given the reduction of revenue from savers will be offset by an increase in revenue from debt-financed businesses.

⁴⁷ The data in this paragraph are from Statistics New Zealand Annual balance sheet, March 2016, provisional, and Reserve Bank of New Zealand Household Balance Sheet HC22.

⁴⁸ There is an additional issue. Currently the depreciation allowances used to adjust income for tax purposes are not adjusted for inflation. This leads to an overstatement of taxable income when there is inflation, which offsets the understatement of taxable income for firms that borrow to invest. If the government decides to change the way interest payments and receipts are adjusted for inflation, it should also reconsider how depreciation allowances are adjusted for inflation.

14. There will be an increase in the complexity of the tax system. Most of the complexity occurs because the depreciation allowances claimed by business are not adjusted for inflation, and these adjustments are complicated. (Indeed, it is often argued that one of the attractions of taxing income on an expenditure basis rather than an income basis is the substantial reduction in compliance costs because investment expenses would be immediately deductible and would not be subject to incredibly complex deduction rules.). In contrast, Elkins (2007), based on the experiences of Israel, suggests that compliance costs may be modest. Since the government has already substantially simplified the process of claiming depreciation allowances in the residential property sector, this issue bears reinvestigation.

Coleman (2008) used a sophisticated model to analyse the welfare implications of exempting the inflation component of interest income from tax in a New Zealand context. His model suggests that when the supply of housing is relatively inelastic exempting the inflation component of interest income from tax would reduce house prices and improve the welfare of most young households. Conversely, if the supply of land is very elastic, exempting the inflation component of interest income from tax would impose welfare costs on low-income households because rents would increase. In both cases the rent/price ratio should increase, as residential property investment has smaller tax advantages, and home-ownership rates would increase. In practice, since the supply of land does not appear to be very elastic, exempting the inflation component of interest income from tax is likely to be welfare reducing for younger, less wealthy households and welfare reducing for the generation of landlords affected by the policy change.

Few countries around the world explicitly adjust interest income for the effects of inflation. However, the issue is more acute in New Zealand than in many other OECD countries, for many of these countries offer their citizens retirement-savings schemes that are taxed on an expenditure basis. As real interest income is taxed at the appropriate statutory rates when income from interest-earning securities is taxed on an EET basis, the tax advantage of owner-occupied property relative to interest-earning securities is less in these countries than it is in New Zealand.

On balance, it appears there are few good reasons for taxing the inflation component of interest income and receipts, except for administrative convenience. The policy is likely to lead to higher property prices, a misallocation of investment patterns, an excessive use of debt-financing, and a redistribution of income from low-income young households and from unsophisticated investors. The revenue raised from this policy may not be large. If the administrative difficulty of exempting the inflation component of interest income from tax are not high, there is a strong prima-facie case for changing the tax basis of the tax system so that real interest income and receipts are taxed.

Appendix 5. The taxation of Retirement Income Schemes

Since 1989, New Zealand has taxed retirement savings on an income or TTE basis: income placed in dedicated retirement savings account is taxed (T) when it is earned, the earnings on the savings are taxed (T) when they are earned, and the resultant sum is exempt (E) from additional direct taxes when it is withdrawn. This practice is different from the practice in most OECD countries, where funds placed in a retirement savings account are taxed on an expenditure basis. In most countries these funds are taxed on an EET basis (the funds are exempt (E) from tax when they are earned, the earnings on the fund are exempt (E) from tax when they earned, but the whole sum is taxed (T) when it is withdrawn) but in some countries they are taxed on a TEE basis (the funds are taxed (T) when they are earned, the earnings on the fund are exempt (E) from tax when they earned, and withdrawals are exempt (E) from further taxation.

Within an optimal tax framework, there are four key issues concerning the adoption of an expenditure basis for the taxation of retirement savings.

15. Would the reform enhance or diminish economic efficiency, by reducing or increasing overall tax distortions?
16. Would the reform change welfare, by changing the distribution of income and wealth, and by changing prices?
17. Would the reform affect tax revenue?
18. Would the system be complex to administer?

The answers will depend on whether an EET or a TEE system for retirement-savings accounts is adopted. The following discussion assumes an EET system. Note that EET and TEE tax regimes both reduce the taxes that are paid on the returns to saving relative to a TTE regime. (In most countries, this is seen as an advantage as it is recognized that taxing the returns to savings when they accrue distorts the decision to save.) Moreover, subject to certain conditions, the end of period value of savings placed in a retirement-savings account would be the same whether the scheme was taxed on an EET or a TEE basis.⁴⁹ Since capital income is not taxed under a TEE scheme, this suggests the effective tax rate on capital income earned in an EET-taxed retirement-savings account is zero, although this is not completely accurate.⁵⁰

⁴⁹ If people invested the same pre-tax amounts and held the same combination of assets in retirement-savings scheme, and if the marginal tax rates did not vary over time, the end of period value of savings would be the same. This does not mean there are no differences between EET and TEE taxation schemes, however, as the tax is paid at different times. The government collects revenue at the beginning of the period under TEE taxation, and people hold fewer assets in their retirement savings schemes. Unless the government uses the tax revenue to hold the same portfolio of assets that private investors hold, or private investors increase their holdings outside of the retirement income scheme, the aggregate demand for assets is smaller under TEE taxation than EET taxation.

⁵⁰ There is a subtle issue here. Under EET taxation, tax is paid on the income placed in the account and on all capital income earned from the account, but not until the money is withdrawn. Under TEE taxation, tax is collected when the income placed in the account is first earned, and zero tax is paid on the capital income on the account. Even though the after-tax value of the account is the same at the end of the period when the money is withdrawn, different amounts of tax are paid to the government under the two schemes. The discounted value of the two amounts is the same if the discount rate is the average rate of return of the assets held in the retirement accounts. This rate is usually higher than the government bond rate. It follows that if the government bond rate is used to calculate the relative value of the tax payments under an EET and a TEE scheme, the discounted value of the tax payments under an EET scheme is higher than the discounted value of the payments under a TEE scheme. This difference is the measure of the expected value of the taxes paid on capital incomes under an EET scheme. See Auerbach (2009) for a discussion of this difference.

The relative efficiency of EET and TEE taxation of retirement savings

The efficiency arguments are complex. The most important effect of introducing an EET-taxed retirement-savings scheme would be to reduce the relative tax advantage of owner-occupied housing by providing people with an alternative class of investments that are taxed on expenditure basis. This is likely to be the biggest improvement in economic efficiency, because owner-occupied housing is the largest single class of assets. In a New Zealand context Coleman (2017) analysed the size of the tax advantage that owner-occupied housing has relative to interest-earning securities and showed that it could provide people with an incentive to live in houses that were 25 percent higher quality than they would under a neutral tax system. More significantly, the tax advantage of owner-occupied housing provides an incentive to bid up the marginal price of conveniently located property by 60 – 100 percent. In both cases these tax distortions would shrink if the income from other assets including interest-earning assets was taxed on an expenditure basis.

Just because a tax system provides incentives for people to act in a certain manner does not mean that act in that manner. High labour taxes do not deter most males from full time work, for example, although they may influence where they work. Consequently, while the size of the tax distortion favouring owner-occupied housing is large when other assets are taxed on a TTE basis, the key question is ‘Do people change their housing demand in response to the way retirement savings are taxed?’ Unfortunately, there is little international evidence on this point, and the New Zealand evidence is not clear. Since New Zealand changed the taxation of retirement-savings scheme from an EET basis to a TTE basis in 1989, one way to assess the importance of the effect would be to see if there was a significant increase in the size of newly constructed houses or in the price of property after 1989 relative to other countries. There was: New Zealand experienced a faster increase in the size of newly constructed houses than either the United States or Australia (the only countries for which comparable data are available), and it had the fastest increase in real house prices of any of the 23 countries for which data are collected by the International House Price database produced by the Federal Reserve Bank of Dallas (Coleman 2017). However, as many other factors have changed in New Zealand since 1989, it is not possible to untangle the role of the tax change and the role of other factors. Evidence that there were very large increases in the size of newly constructed houses after 1989 and evidence that house prices increased extremely rapidly is not evidence that these increases were caused by changes to the tax system. Since the changes in the size of new houses and in house prices are in the predicted direction, they are obviously not evidence against the hypothesis that tax changes behaviour either.

When empirical evidence on the importance of an effect is not available or decisive, theoretical principles must be used to guide analysis, with the qualification that the theoretical principles will be misleading if they omit important aspects of the issue. The theoretical principles are reasonably clear that if income from owner-occupied residential property is taxed at lower rates than other assets, there is likely to be an increase in the quality of houses and the price of residential property. There is very little theory that suggests that taxing owner-occupied housing less than other assets will have no effect or reduce property prices. Consequently, it seems likely that taxing retirement-savings schemes on an expenditure basis would reduce the size of the tax advantage enjoyed by owner-occupied housing and reduce the extent that this tax advantage results in artificially high property prices.

Even though taxing retirement saving on an expenditure basis would reduce the distortion with respect to owner-occupied housing, it would mean income from assets held within retirement-savings accounts would be taxed differently than income other assets. Is this likely to be distortionary, and if so would it offset the benefits that would come from taxing retirement savings and owner-occupied housing on the same basis? The answer is ‘yes’: it would create

some distortions, but these may not be particularly harmful. One of the advantages of taxing savings in a specialised retirement-savings account on an EET basis is that all assets within the account would be taxed equally, reducing the tax incentive to invest in one type of asset rather than another. This improvement comes at the cost of taxing similar assets at different rates depending on whether they were in or out of the retirement-savings account. In turn, this provides a tax incentive to hold some classes of assets inside a retirement account and some classes of assets outside a retirement account.

The size of the tax advantage relative to a TTE regime depends on the class of assets being considered. The advantage is particularly high for interest-earning assets, which are over-taxed under the current TTE regime, and for equity instruments that earn income that is taxed at the full rate. In contrast, it is small for equity instruments whose earnings are dominated by capital gains, for these are taxed at low rates.⁵¹

Most countries that offer an EET-taxed retirement-savings scheme provide limits on the amounts that can be placed in the scheme. Since income from all assets are taxed the same way within these schemes, but income from other assets is taxed at different rates, people using these schemes have an incentive to hold the most highly taxed assets within the scheme and hold other assets outside the scheme. In practice, this means people should hold interest-earning securities and assets which have relatively minor capital gains within a retirement-saving account and hold other assets outside the account. This portfolio reallocation may reduce rather than increase the dispersion of rates at which income from different classes of capital assets are taxed. If most assets taxed under a TTE regime were taxed at the statutory rate, taxing assets in a retirement savings account at lower rates would increase the dispersion of effective tax rates across assets. However, when the income from assets is taxed at all sorts of rates under a TTE regime, an EET retirement-savings tax regime can reduce the dispersion of tax rates particularly if people hold the most highly taxed securities in their retirement savings accounts. This could improve the efficiency of the tax system. New Zealand's tax system currently provides an incentive to invest in assets that generate large capital gains even if the pre-tax returns are relatively low, and to avoid assets with high pre-tax returns if their returns are taxed at high rates. If people are provided with an option to hold the latter classes of assets in an EET-taxed retirement-savings scheme, is likely that investment in this class of assets would increase, improving average pre-tax returns. Unfortunately, this issue has yet to be comprehensively investigated, and definitive answers are unknown.

This portfolio effect can be illustrated with a simple example. Suppose 40% of capital incomes (owner-occupied housing) are taxed at 0%, 20% are taxed at 10%, 30% are taxed at 30%, and 10% (interest earnings) are taxed at 50%. In this case the mean tax rate is 16% and the standard deviation of tax rates across different classes of assets is 87%. Further suppose that after an EET-taxed retirement saving scheme were adopted, the effective tax rate on the 10% most highly taxed assets was reduced to zero. The fraction of capital income in each tax class would change to 50%, 20%, 30%, and 0%, and the mean and the standard deviation would decline to 11% and 57%. The standard deviation of the tax rates on the 60 percent of capital income initially taxed at positive rates also reduces in this case – suggesting that it is possible that an EET scheme would reduce the unevenness with which capital incomes are taxed even if owner-occupied housing were excluded. In contrast, if all non-owner-occupied income were taxed at the same rate, the introduction of an EET system might increase the standard deviation of tax rates. If the initial distribution were (40%,0%,60%,0%) but this changed to (50%,0,50%,0) after

⁵¹ The Tax Working Group document "The Future of Tax" calculates the tax rates on different classes of assets (Figure 21 p40). Their results broadly support this contention. To some extent they understate the diversity of tax rates on different classes of assets by presenting the tax rates for assets in which the income is fully taxable rather than in the form of non-taxable capital gains. When most of the variation in tax rates across different asset classes occurs because of variation in the amount of capital gains that are earned by different classes of assets, and not because the institutional form by which they are held, there would have been more variation.

the adoption of an EET scheme, the mean tax rate would decline from 18% to 15% but the standard deviation would increase from 51% to 58%.

A third tax distortion occurs because income taxes may affect the total quantity of savings, as well as the type of assets that people hold. This is because income taxes increase the effective tax rate measured in terms of deferred consumption opportunities, with the extent of the increase depending on the length of time that consumption is deferred.⁵² It is not clear the extent that people adjust the quantity of their savings, rather than the composition of their savings, in response to this distortion, but the balance of evidence suggests that the effect is small, and may be able to be ignored (see the review in Slemrod and Bakija 2017).

To summarise, the adoption of an EET-taxed retirement-savings scheme would have mixed effects on the efficiency with which capital is allocated. It would likely improve efficiency by reducing the tax advantage enjoyed by owner-occupied housing over funds invested in retirement saving schemes. This will likely reduce the demand for housing and lead to lower land prices, although the extent that this adjustment would occur is not clear. An EET scheme provides a tax incentive for people to rearrange their investment portfolios, as similar assets would be taxed differently depending how they were held. This would reduce efficiency if all capital incomes were taxed in the same way in New Zealand, but since they are not it could improve overall efficiency as it should reduce the fraction of capital income that is taxed at very high rates. Overall, taxing retirement-savings accounts on an EET basis should reduce economic distortions on some dimensions while increasing them on others. As the theory of second best makes clear, partially reducing the distortions of a distortionary tax system may make things worse or may make things better (Lipsey and Lancaster 1956). Consequently, it is difficult to know a priori how large the improvements – or reductions – in capital allocation efficiency are likely to be.

Distributional issues

How would adopting an EET-taxed retirement-savings scheme alter welfare? There are two main effects. First, since higher income people will disproportionately benefit from the reduction in effective tax rates on capital income, the tax change would have some regressive effects. The extent of these effects depends on the extent that lower income people currently pay the highest effective taxes on capital income because they disproportionately invest in interest-earning securities rather than assets that are lightly taxed. These distributional consequences could be partially undone by raising the top marginal tax rate, which is New Zealand is very low by international standards. Note that the taxes paid by high income earners need not rise appreciably from current levels if top marginal taxes were raised because not all income placed in retirement savings schemes would not be taxed immediately.

Secondly, if property prices reduce because their tax advantages relative to other asset classes have reduced, there will be an improvement in the welfare of current and future generations of young people. This effect could dominate the direct tax effect if property prices are quite responsive to the tax environment, as they are in the economic models developed by Skinner (1996), Gervais (2002) or Coleman (2008). While there is little direct evidence about the size of this responsiveness, there is no reason to believe it is small. If the effect is large, reintroducing an EET-taxed retirement-savings scheme could lead to a significant improvement in the living standards of young people and future generations of New Zealanders by reducing the extent that property prices are artificially high. Coleman (2017) argues this effect could be substantial.

⁵² Consider \$1000 invested at 3 percent pre-tax for 40 years. This would earn \$2262 interest. If the tax rate were 0.33, net after-tax interest of \$1516 would be earned under an expenditure tax regime, an implicit tax of 33 percent. If the interest earnings were taxed as they accumulated, only \$1217 interest would be available to spend, an implicit tax rate of 46 percent.

Revenue costs

What are the revenue cost of adopting an EET-taxed retirement-savings scheme? There is an immediate revenue cost, because tax is not collected on the income placed in a sanctioned retirement-savings account as it is earned. There is a second revenue cost, because tax is not collected on the interest and dividends paid into the accounts as they are earned. These two costs are offset by the taxes paid on the funds when they are withdrawn from the accounts. The present value of these sums depends on the types of assets held in the retirement-savings accounts, the taxes paid on these assets under the current tax regime, and the length of time the funds are invested. The more that assets in a retirement-savings account are invested in assets that earn higher returns than the risk-free rate, and the more the owners of these assets benefit from untaxed capital gains, the lower the cost of taxing the accounts on an EET basis.

Consider the example of a person placing \$1000 in a retirement saving account every year for forty years, and then withdrawing the funds evenly over a twenty-year period. If the funds were invested in risk-free assets earning 3 percent per annum and the inflation rate were zero, the present value of government revenues under an EET tax regime is 32 percent less than the revenue raised under the current TTE tax regime. If the inflation rate were 2 percent per annum, this fraction would increase to 42 percent because of the excessive taxation of real interest in an inflationary environment. However, if the funds were invested in fully taxed assets that earned a 2 percent premium above interest earning securities, the present value of taxes paid under an EET tax regime would be only 20 percent less the taxes paid under a TTE regime. This amount reduces further to 13 percent if a third of the real returns earned by the fund stemmed from capital gains, which are currently untaxed. It is also possible that more tax would be paid under EET taxation than TTE taxation if the returns to the fund exceeded the risk-free rate by more than 2 percentage points, as they have done historically.⁵³

If the government taxed retirement savings on an EET basis, this example suggests the revenue loss for depend on four factors. The government would lose revenue if the assets in these accounts were interest-earning securities and inflation rates were positive, because real interest earnings are currently taxed at higher than statutory rates. The government would also lose revenue because capital earnings would no longer be taxed as they accrue. This means private savings would accumulate at the pre-tax rate of return, eliminating the way the current tax system distorts saving decisions by driving a wedge between wedge between the after-tax and pre-tax returns to saving. There is also a loss if the tax rate imposed when funds are withdrawn under an EET scheme is lower than the tax rate that would be paid when the funds are earned under a TEE regime. Conversely, there is a gain if the funds are invested in assets that earn more than the risk-free rate, for while the government does not collect tax when the contributions are first made into the retirement saving account, it collects tax on a much larger sum when the funds are withdrawn.⁵⁴ There is also a gain if funds are invested in assets that earn real capital gains, for these are taxed under an EET scheme but not taxed under the current TTE regime. The first two revenue losses for the government occur because the distortions inherent in a TTE regime are eliminated. If the government decided to tax retirement-savings schemes on an EET basis, and needed to make up revenue, it would need to consider the relative magnitude of the

⁵³ These calculations assume (i) The same real amount is invested each year for a 40 year period; (ii) the funds accumulate at the appropriate after-tax rate of return, adjusted for inflation; (iii) nominal capital gains are not taxed; (iv) For the first 40 years the fund is invested either in riskless interest-earning securities, risky securities earning an additional 2 percent, or risky securities earning an additional 2 percent with of which one third comprises untaxed real capital gains; (v) after 40 years the total sum is invested in interest-earning securities and paid out over a 20 year period in equal inflation-adjusted amounts. The revenue loss from EET taxation would be even less if the funds were withdrawn immediately after contributions ceased after 40 years. An alternative scenario was calculated in which the funds were paid out in year 41, which reduces the tax collected under the TTE scheme. Labour taxes are assumed to be 33 percent and taxes on capital are assumed to be 28 percent.

⁵⁴ This leads to an increase in the present value because the discount rate used to calculate the future value of the tax payments is normally the government risk free rate (the government cost of borrowing) not the higher rate of return to a diversified portfolio of assets. This increase in government revenues would not occur if the retirement saving accounts were taxed on a TEE basis.

distortions it eliminates on saving and investment behaviour relative to the distortions that would occur from adjusting other taxes.

In addition to a change in the net present value of tax, there is a significant difference in the timing of tax receipts. The delay in tax receipts under an EET scheme would mean the government would need to borrow in the early years of the transition, and maintain a higher level of debt in equilibrium. The change in the implicit net wealth of the government would be much smaller than the increase in its debt, as it would have an implicit asset equal to the tax owing on the accumulated funds in the retirement savings funds. The amounts could be considerable – for instance, Isaksen et al (2014) estimated that the implicit value of these tax assets exceeded 50 percent of GDP in Denmark and the Netherlands in 2010. Currently the New Zealand Government has such a strong balance sheet that it is unlikely that this would be a serious constraint on the ability of the government to tax retirement savings accounts on an EET basis. It has not proved a barrier to the many other OECD countries that have adopted this taxation regime.

Administration issues

The fourth consideration concerns the administrative difficulty of taxing retirement savings on an expenditure basis. In the longer term, this would not seem to be a major issue: based on overseas experience, it would be administratively simple for New Zealand to tax savings placed in sanctioned retirement schemes such as KiwiSaver on an EET or a TEE basis. There are transitional issues, however.

The transitional administration costs, the size of any revenue loss, and the size of any additional debt would depend on the exact nature of the retirement savings scheme. It is not obvious that a government would need to change the taxation of all existing retirement-savings schemes, or even allow all people to take advantage of the new scheme. The scheme could be “grandchildrened” into existence, for example, by only allowing people born after a certain date to have access to retirement-savings schemes that were taxed on an expenditure basis. This would reduce the immediate fiscal cost of the scheme while ensuring the key distortion – the differential tax rate between owner-occupied housing and other capital assets – is reduced for those households who are yet to purchase housing. (It would also avoid the potential problem of older households adjusting their existing savings portfolios to take advantage of the less distortionary tax arrangements, without otherwise adjusting their behaviour.) If there were a date-of-birth eligibility criteria, the government would have to decide whether to only allow new contributions to retirement schemes to have different tax treatment, or whether to retrofit the scheme by placing additional funds in existing schemes, knowing that they would be repaid when the funds were withdrawn in the future. There is no obvious reason why such transition issues would prove difficult.